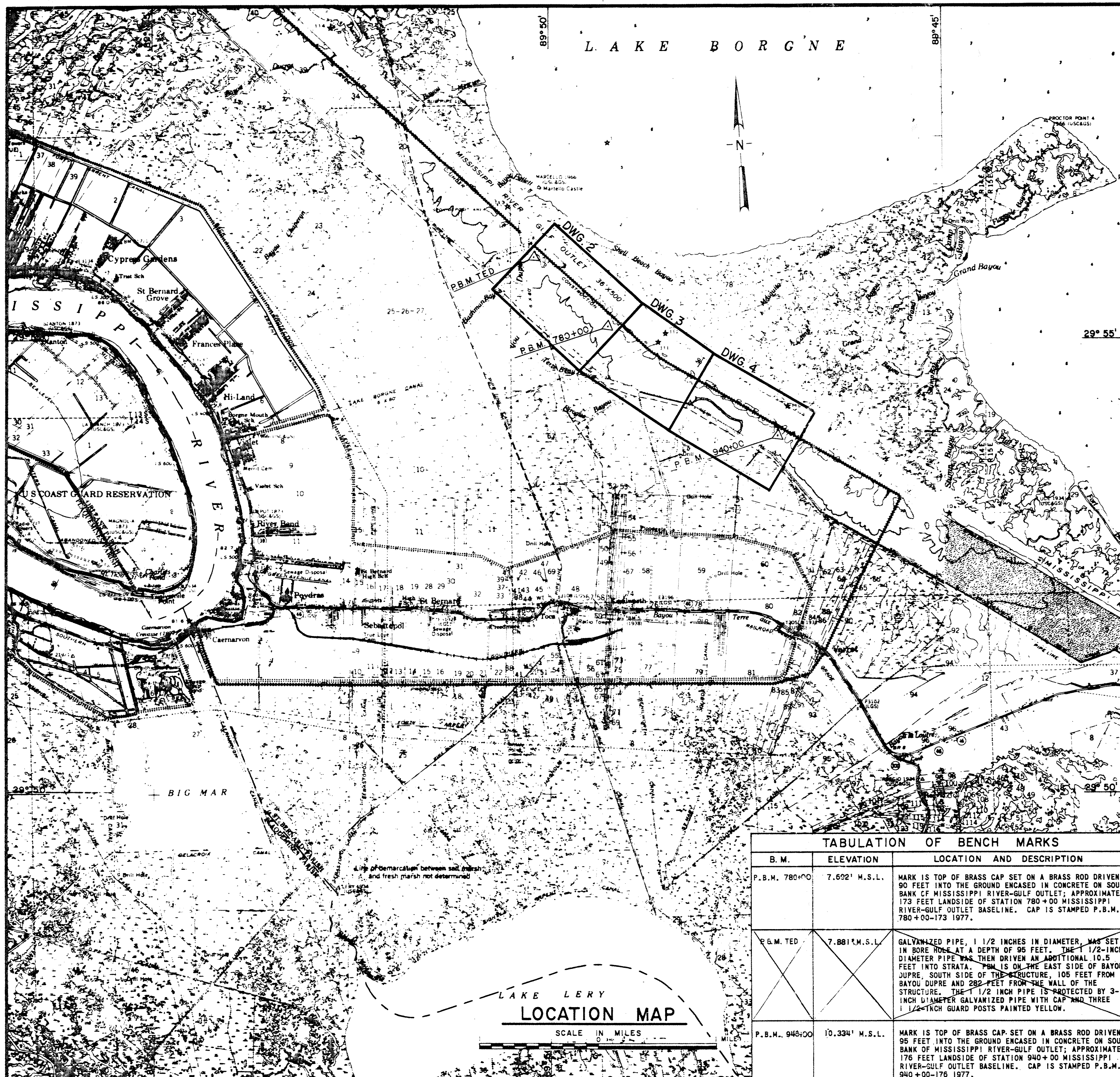
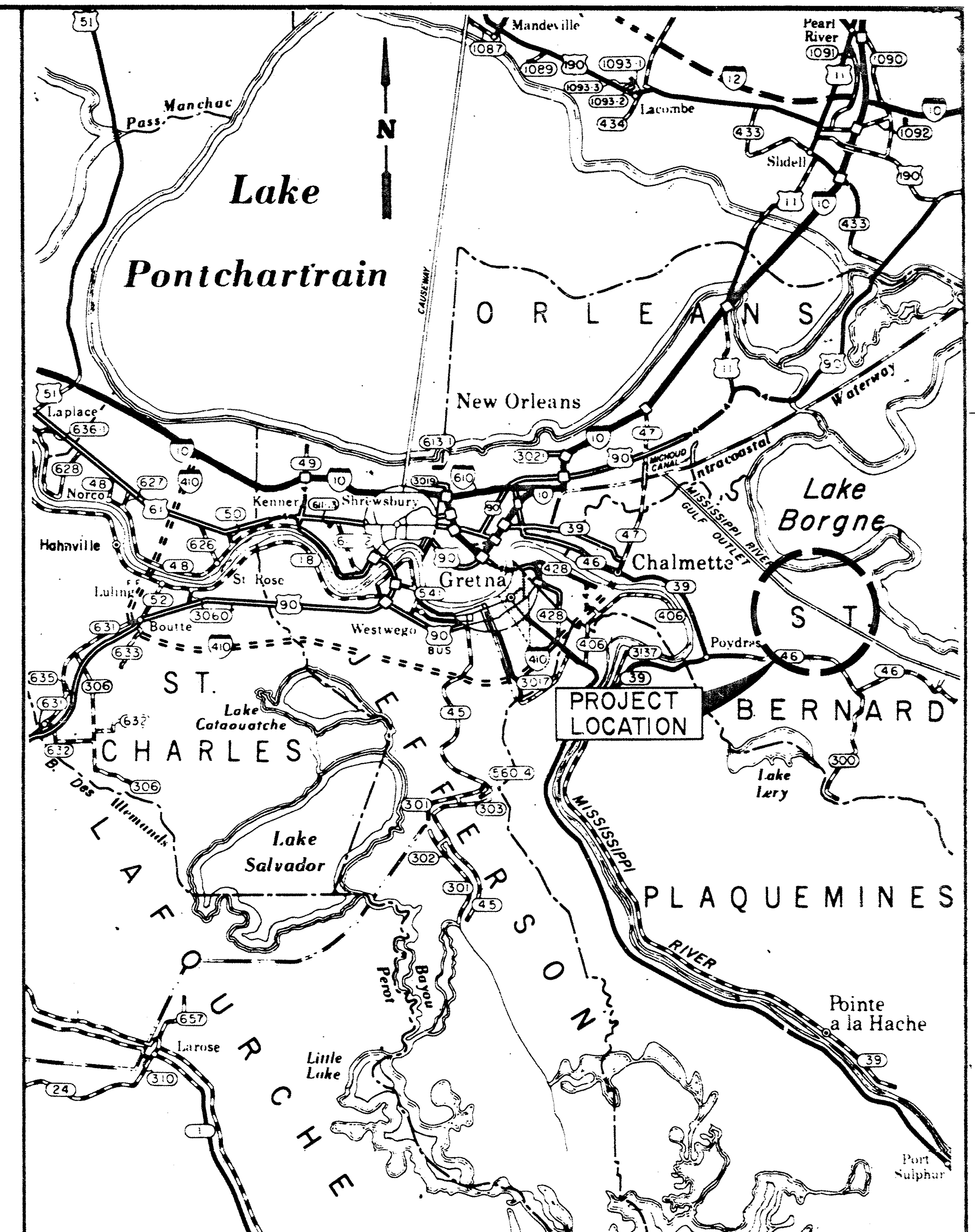


TABULATION OF BENCH MARKS		
B. M.	ELEVATION	LOCATION AND DESCRIPTION
P.B.M. 780+00	7.692' M.S.L.	MARK IS TOP OF BRASS CAP SET ON A BRASS ROD DRIVEN 90 FEET INTO THE GROUND ENCASED IN CONCRETE ON SOUTH BANK OF MISSISSIPPI RIVER-GULF OUTLET; APPROXIMATELY 173 FEET LANDSIDE OF STATION 780+00 MISSISSIPPI 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.



VICINITY MAP

SCALE IN MILES

5 0 5 10

INDEX TO DRAWINGS	
DWG.	DESCRIPTION
1	LOCATION MAP, VICINITY MAP, & INDEX TO DRAWINGS
2	PLAN AND PROFILE - STA 708+68 TO STA 781+00
3	PLAN AND PROFILE - STA.781+00 TO STA 847+83.62
4	PLAN AND PROFILE - STA.847+83.62 TO STA.945+87
5	DESIGN SECTIONS
6	ENDS OF PROJECT DETAILS
7	HYDROGRAPHS
8	SOIL BORINGS
9	SOIL BORING LEGEND

NOTE:
DRAWINGS IN THIS FOLIO HAVE BEEN REDUCED ONE HALF THE ORIGINAL SCALE

AS BUILT
CONTRACT 83C0175

REVISION	DATE	DESCRIPTION	BY

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

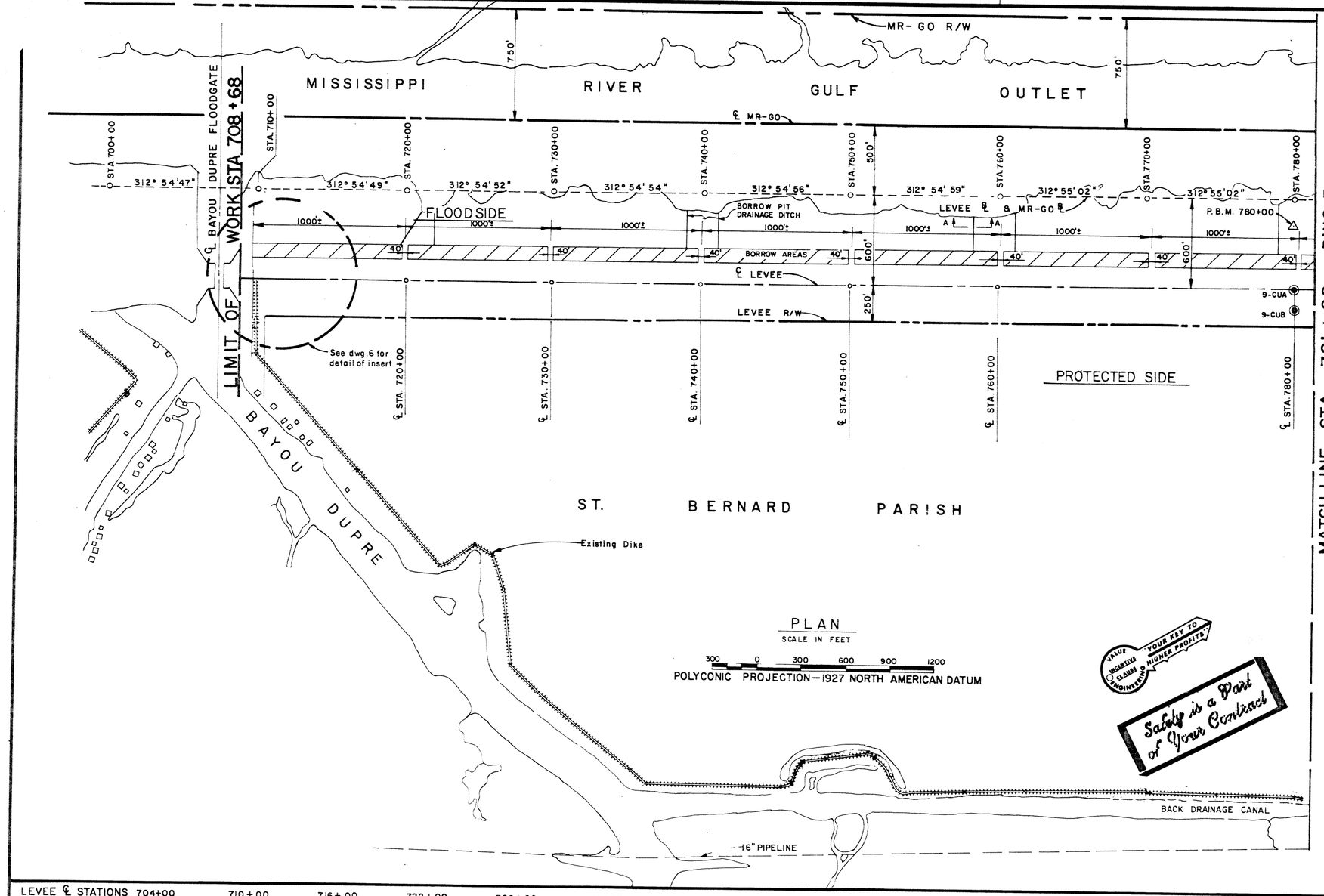
SUBMITTED: [signature] CHIEF, DESIGN BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION
APPROVED: [signature] COLONEL, CE, DISTRICT ENGINEER

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
B/L STA. 708+68 TO B/L STA. 945+87
ST. BERNARD PARISH, LA.
LOCATION MAP, VICINITY MAP AND INDEX TO DRAWINGS

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO
R.W.W.	L.A.H.	R.P.L.	MAR. 1983	AS SHOWN	H-8-29520

SUBMITTED: [signature] ENGINEER — SPEC. NO DACW29-83-B-0053 — DWG 1 OF 9

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



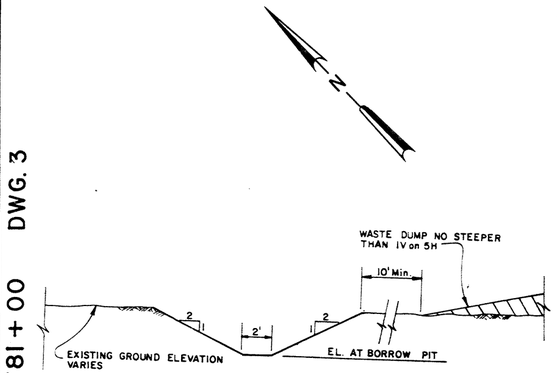
PLAN

SCALE IN FEET

300 0 300 600 900 1200

POLYCONIC PROJECTION—1927 NORTH AMERICAN DATUM

MATCH LINE STA. 781+00 DWG. 3



NOTES:

1. SLOPE DITCH 0.2% FROM BORROW PIT TO MR-GO.
2. EXCAVATED MATERIAL MAY BE PILED ON EITHER OR BOTH SIDES OF THE DITCH.
3. THIS SECTION APPLICABLE FOR ENTIRE JOB.

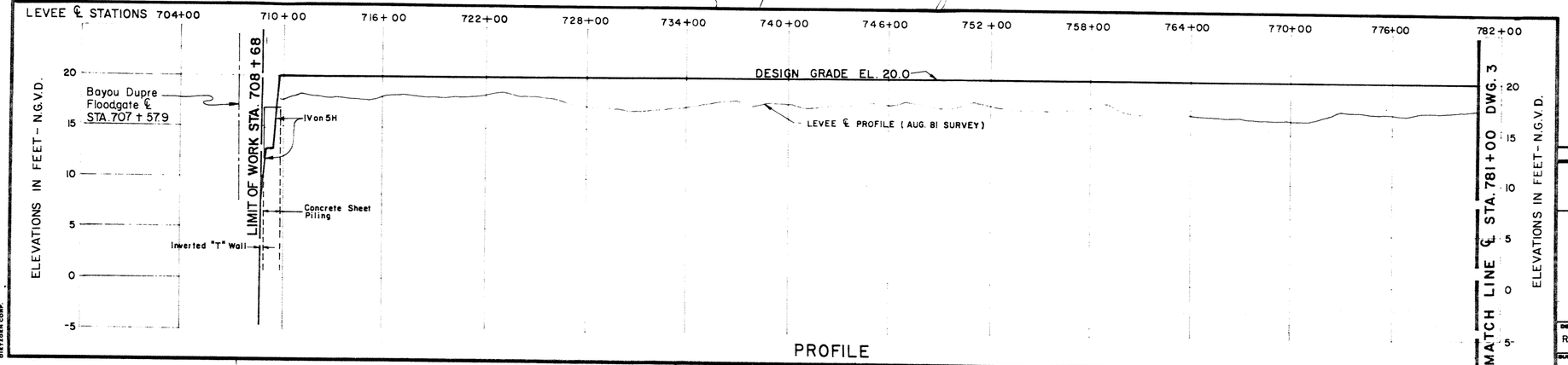
SECTION A-A
DRAINAGE DITCH

GENERAL NOTES:

1. ALL ELEVATIONS SHOWN ARE REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM (N.G.V.D.).
2. AZIMUTHS SHOWN ARE MEASURED IN A CLOCKWISE DIRECTION FROM THE SOUTH.
3. SEE DWG 1 FOR "BENCH MARK" DESCRIPTION.
4. THE 40-FOOT ACCESS STRIPS THAT TRAVERSE THE BORROW AREA ARE TO BE FIELD LOCATED BY THE CONTRACTING OFFICER (CO).
5. DITCHES FROM THE BORROW AREA TO THE MR-GO ARE TO BE FIELD LOCATED BY THE CO.
6. BORROW EXCAVATION SHALL START AT THE BACK SIDE OF THE BORROW AREA AND SHALL BE EXCAVATED IN SUCH A MANNER THAT NO AREA OF BORROW WILL BE BYPASSED OR ISOLATED. AFTER CONSTRUCTION IS COMPLETE, THE REMAINING BORROW WILL BE LEFT IN A UNIFORM ALIGNMENT THAT WILL BE EASILY ACCESSIBLE FOR FUTURE WORK. THE CONTRACTOR'S PLAN AND SEQUENCE OF BORROW EXCAVATION SHALL BE SUBMITTED TO THE CO FOR APPROVAL PRIOR TO ANY EXCAVATION.
7. FOR LIMITS OF AVAILABLE BORROW SEE DRAWING 5.
8. SETTLEMENT PLATE DETAILS ARE ON DRAWING 5.
9. LEVEE C/L STATIONING IS THE SAME AS THE MR-GO B/L STATIONING EXCEPT FOR THE CURVE SECTION SHOWN ON DRAWING 3.
10. DRAWING DIMENSIONS ARE AS SHOWN.

LEGEND

UNDISTURBED BORING ◉
SETTLEMENT PLATE X



PROFILE

REVISION	DATE	DESCRIPTION	BY

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

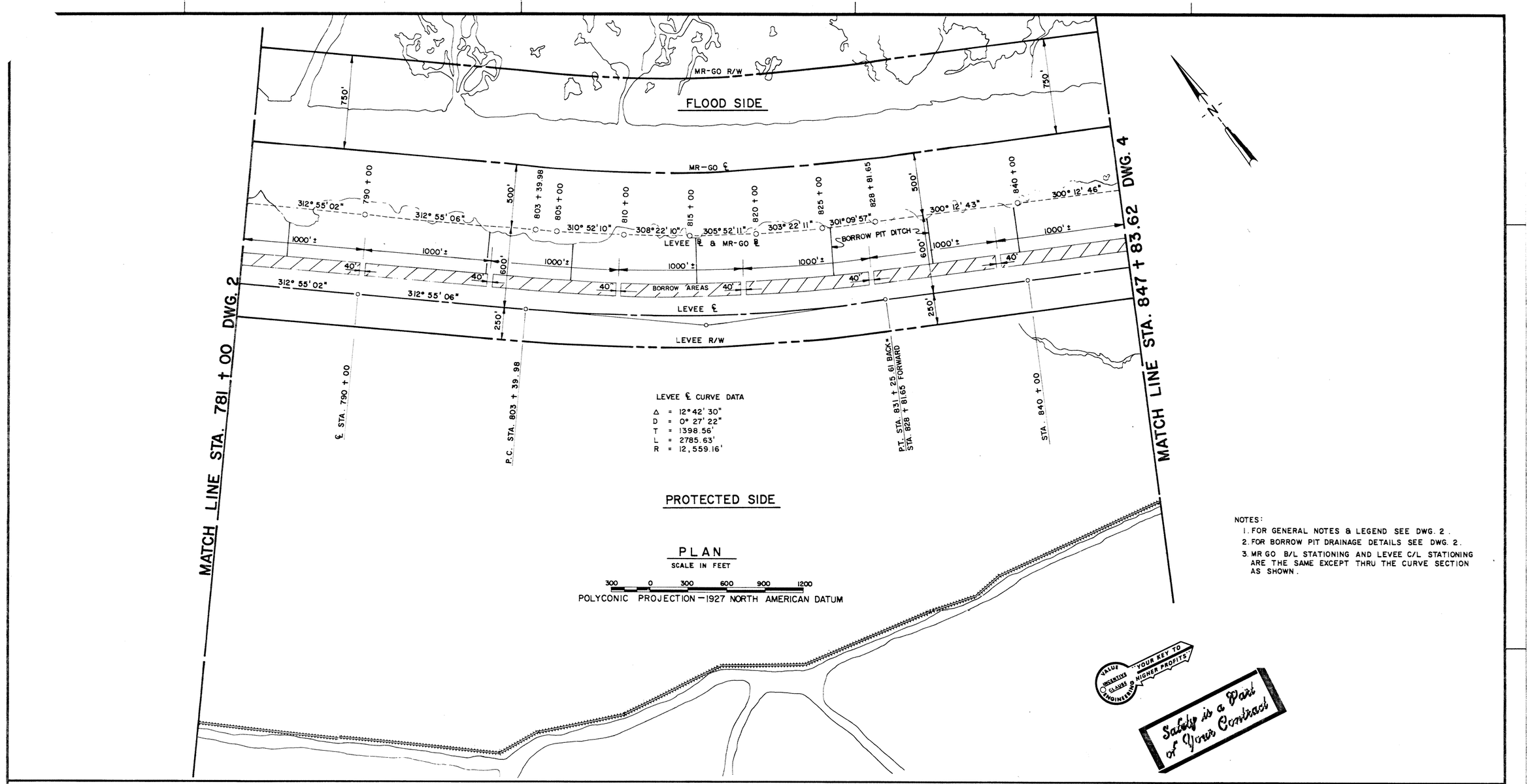
LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
STA. 708+68 TO STA. 945+87
ST. BERNARD PARISH, LA.

PLAN AND PROFILE
STA. 708+68 TO STA. 781+00

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
R.W.W.	V.L.W.	R.P.L.	MAR. 1983	AS SHOWN	H-8-29520

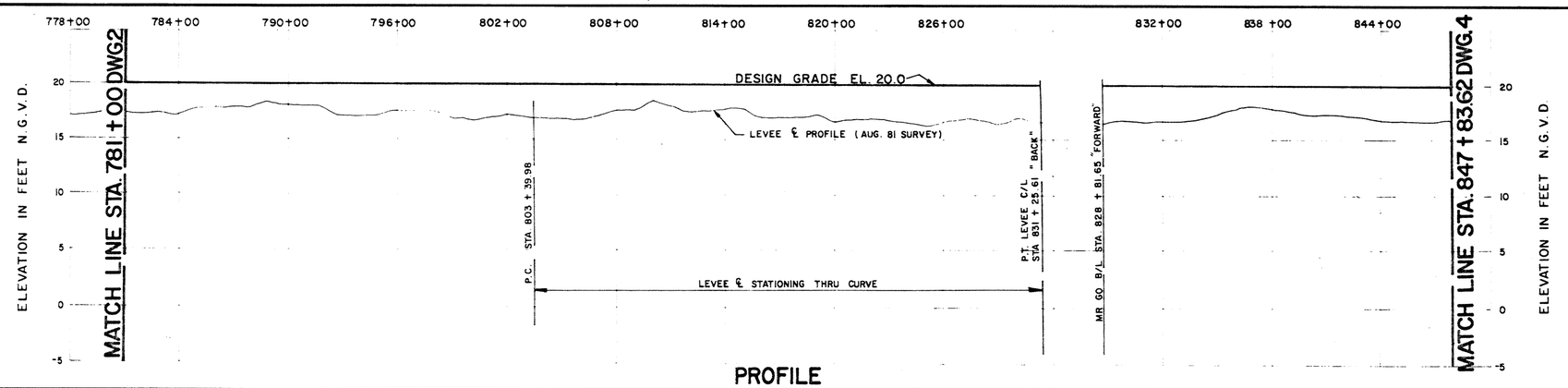
SUBMITTED: ..... CHIEF, ENGINEERING DIVISION
SPEC. NO. DACW29-83-B-0053
DWG. 2 OF 9

DIETZGEN CORP.



NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG. 2.
2. FOR BORROW PIT DRAINAGE DETAILS SEE DWG. 2.
3. MR GO B/L STATIONING AND LEVEE C/L STATIONING ARE THE SAME EXCEPT THRU THE CURVE SECTION AS SHOWN.



PROFILE

REVISION	DATE	DESCRIPTION	BY

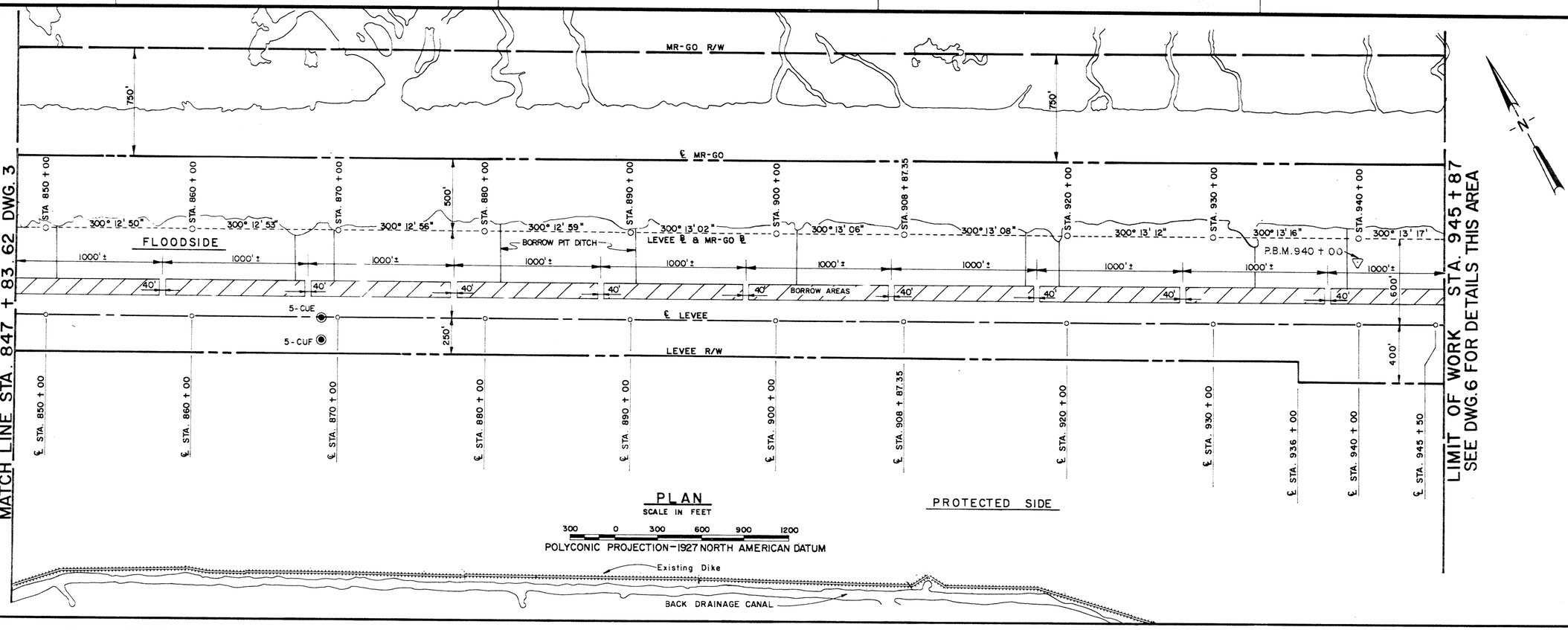
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
STA. 708 + 68 TO STA. 945 + 87
ST. BERNARD PARISH, LA

PLAN AND PROFILE
STA. 781 + 00 TO STA 847 + 83.62

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
R.W.W.	L.A.H.	R.P.L.	MAR. 1983	AS SHOWN	H-8-29520

SUBMITTED: ..... SPEC. NO. DACW29-83-B-0053 DWG. 3 OF 9

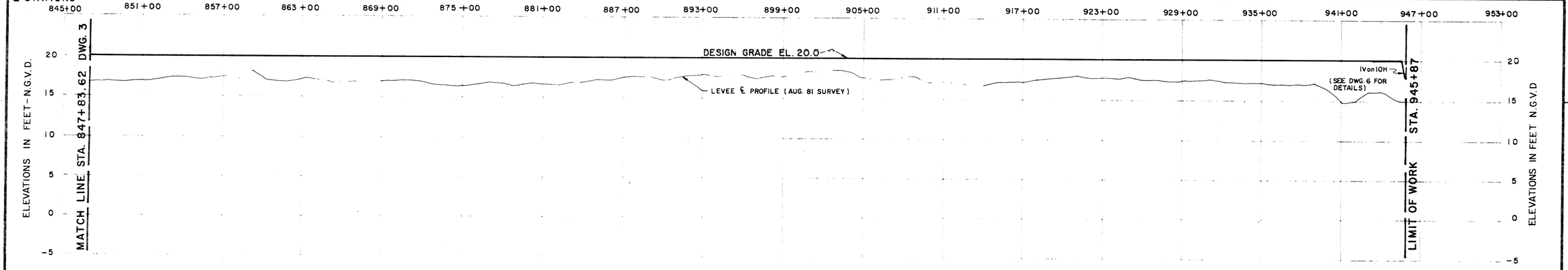


PLAN

SCALE IN FEET

300 0 300 600 900 1200

POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM



PROFILE

NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG. 2.
2. DETAILS OF BORROW PIT DITCHES ARE ON DWG. 2.
3. ALL DRAWING DIMENSIONS ARE AS SHOWN.
4. THERE IS AN ONGOING LEVEE CONTRACT THAT STARTS AT STA. 945+72. THE CONTRACTOR ON THIS PROJECT SHALL SCHEDULE HIS WORK IN SUCH MANNER THAT A CONFLICT WILL NOT DEVELOP WITH THE ONGOING CONTRACTOR.

REVISION	DATE	DESCRIPTION	BY

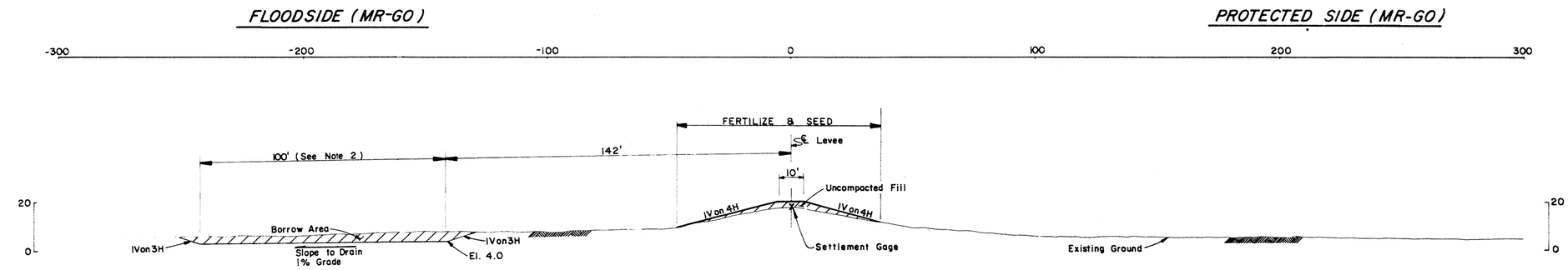
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
STA. 708 + 68 TO STA. 945 + 87
ST. BERNARD PARISH, LA

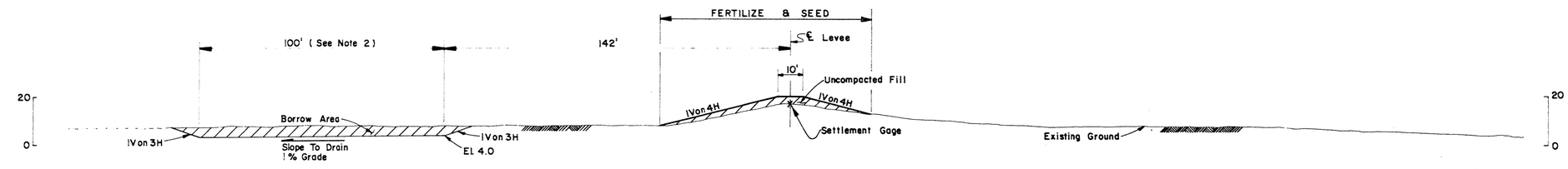
PLAN AND PROFILE
STA. 847 + 83.62 TO STA. 945+87

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
R.W.W.	L.A.H.	R.P.L.	MAR. 1983	AS SHOWN	H-8-29520
SUBMITTED:			SPEC. NO. DACW29-83-B-0053	DWG. 4 OF 9	

DIETGEN CORP.



TYPICAL SECTION WITH MINIMUM CROWN FILL
SECTION SHOWN STA. 745+00



TYPICAL SECTION WITH MAXIMUM CROWN FILL
SECTION SHOWN STA. 769+00

NOTES:

1. For general notes and legend, see dwg. 2.
2. It is anticipated that borrow within the limits shown will be adequate to provide adjacent borrow throughout the project. Should additional adjacent borrow be required due to unsuitable material or for any other unforeseen reasons, the floodside limit of the borrow area may be extended as required to obtain suitable borrow. Before the borrow limits are extended, for any reason, the Contractor shall submit an excavation plan to the COR for approval.
3. Plan views of sections shown are on dwg. 2
4. All drawing dimensions are as shown.

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 FOOT INTERVALS, IN WHICH CASE, THE SETTLEMENT MEASUREMENT RANGE SHALL BE TO A POINT 1/2 THE DISTANCE BETWEEN SETTLEMENT GAGES.

1/8" STEELPLATE
MINIMUM 2' X 2'

REVISION	DATE	DESCRIPTION	BY

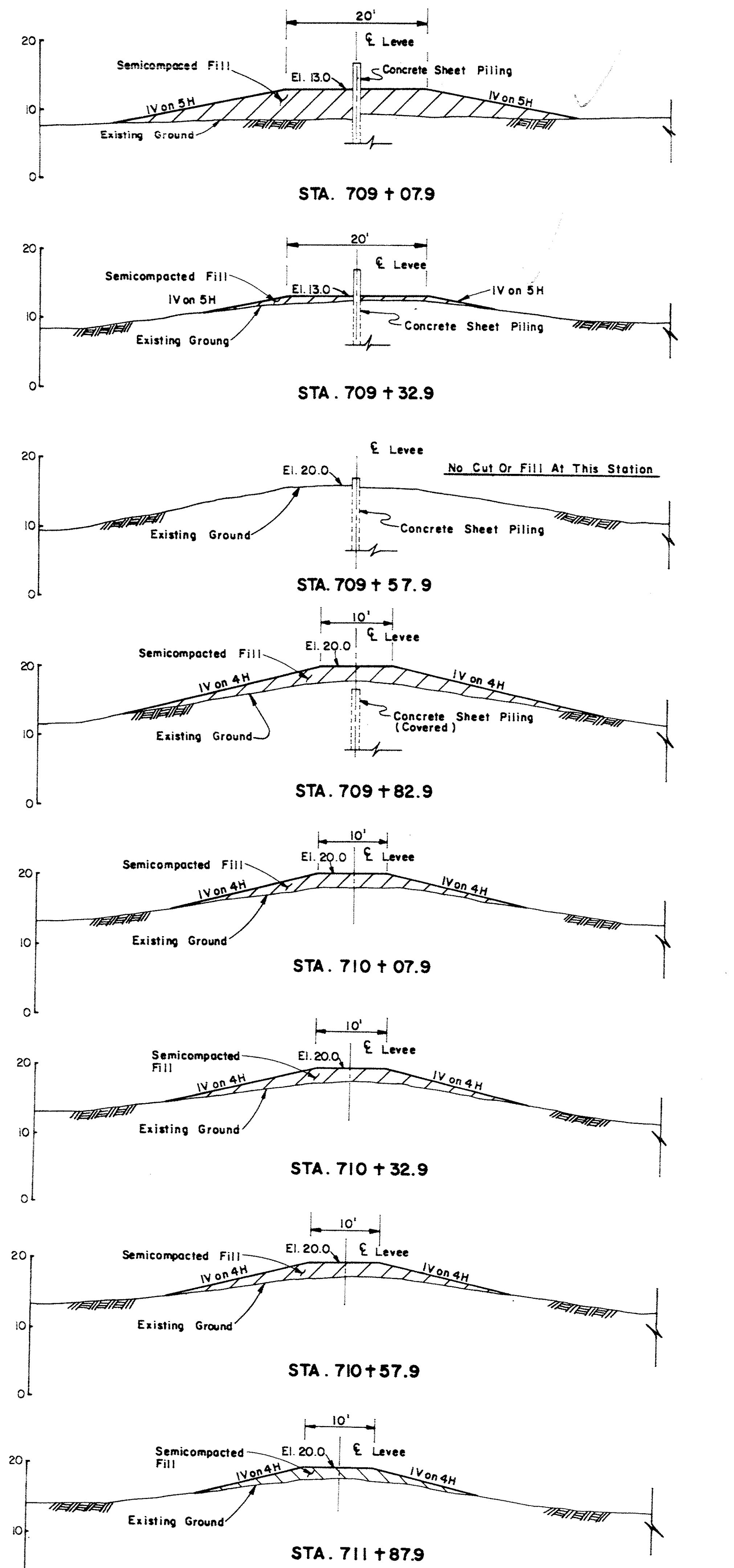
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
STA. 708 + 68 TO STA 945 + 87
ST. BERNARD PARISH, LA.

TYPICAL DESIGN SECTIONS

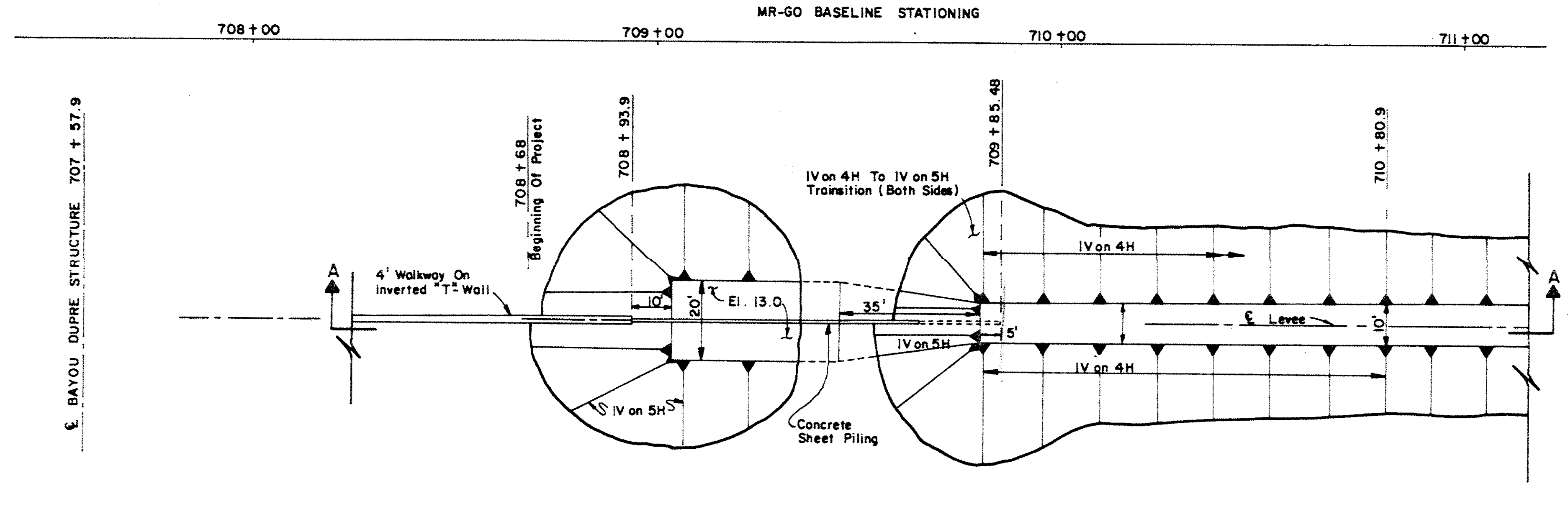
DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
R.W.W.	L.A.H.	R.P.L.	MAR. 1983	AS SHOWN	H-8-29520
SUBMITTED: Ronald P. Lee			SPEC. NO. DACW29-83-B-0053	DWG. 5 OF 9	

ELEVATION N.G.V.D.



ABOVE LEVEE CROSS SECTIONS TAKEN AT STATIONS INDICATED

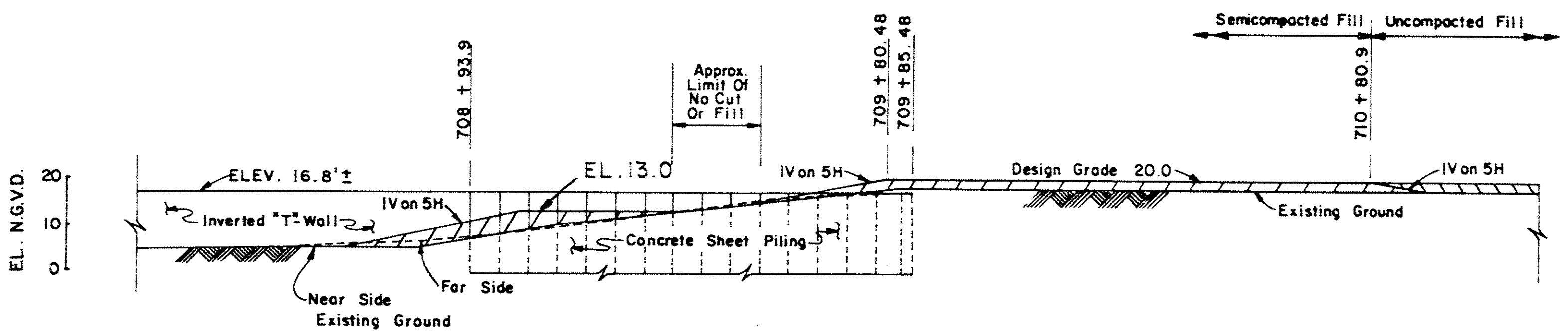
SCALE 1" = 10'



PLAN VIEW

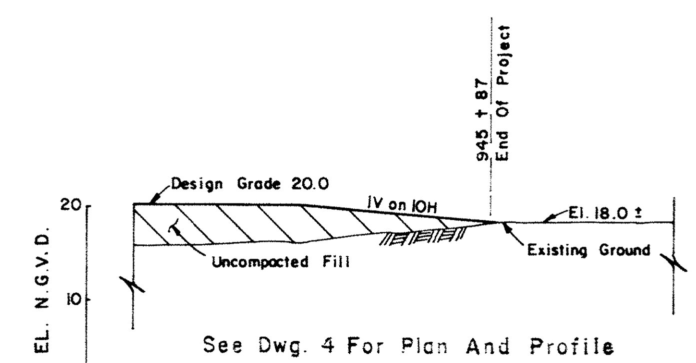
DETAIL OF HURRICANE PROTECTION LEVEE
TIE-IN TO BAYOU DUPRE FLOOD CONTROL
STRUCTURE

SCALE 1" = 20'



SECTION A-A

SCALE 1" = 20'



SECTION AT LEVEE C/L
DETAIL OF LOWER END OF PROJECT

NOTES:
1. For General Notes and Legend, See Dwg. 2 .
2. Scale As Shown

Safety is a Part of Your Contract

VALUE INCENTIVE CLAUSE ENGINEERING "YOUR KEY TO HIGHER PROFITS"

REVISION	DATE	DESCRIPTION	BY

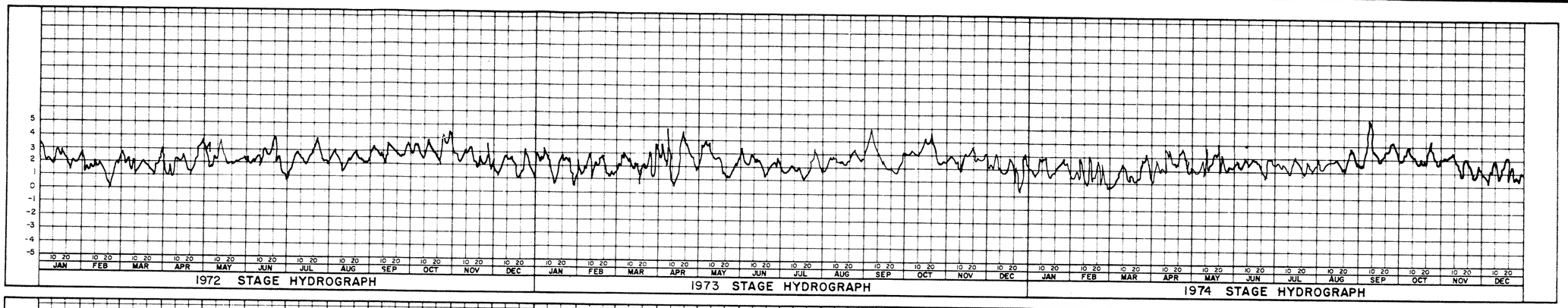
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
STA. 708 + 68 TO STA. 945 + 87
ST. BERNARD PARISH, LA.

ENDS OF PROJECT DETAILS

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
R.W.W.	L.A.H.	R.P.L.	MAR. 1983	AS SHOWN	H-8-29520
SUBMITTED: [illegible]			SPEC. NO. DACW29-83-B-0053	DWG. 6 OF 9	

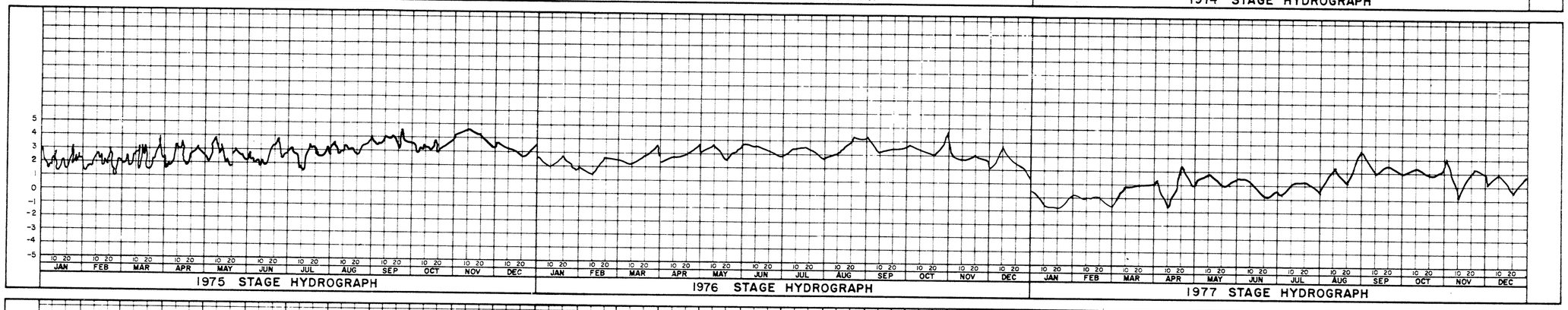
GAGE READINGS IN FEET



1972 STAGE HYDROGRAPH

1973 STAGE HYDROGRAPH

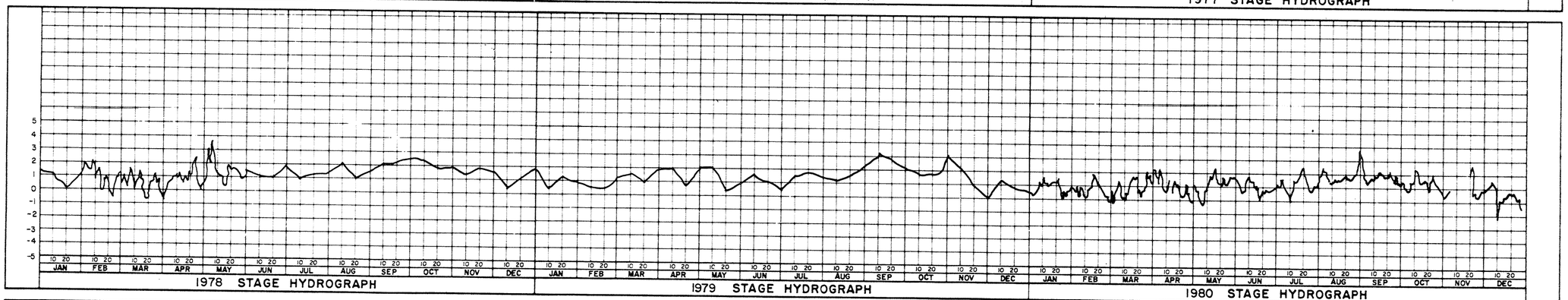
1974 STAGE HYDROGRAPH



1975 STAGE HYDROGRAPH

1976 STAGE HYDROGRAPH

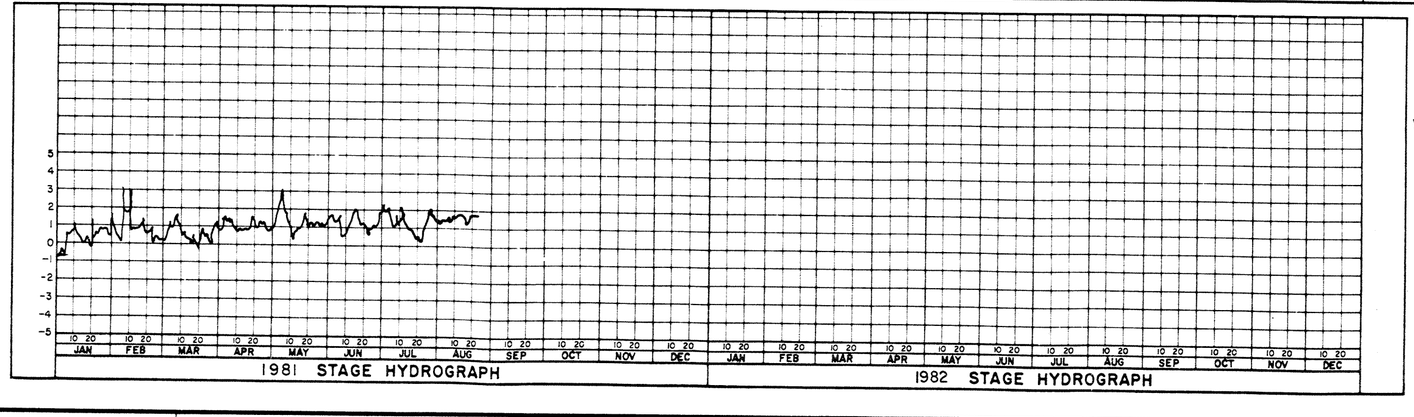
1977 STAGE HYDROGRAPH



1978 STAGE HYDROGRAPH

1979 STAGE HYDROGRAPH

1980 STAGE HYDROGRAPH



1981 STAGE HYDROGRAPH

1982 STAGE HYDROGRAPH

INTRACOASTAL WATERWAY NEAR PARIS ROAD BRIDGE, NEW ORLEANS, LA.
PRIOR TO 1 JAN. 77, GAGE ZERO IS M.L.G. AFTER 1 JAN. 77, GAGE ZERO IS N.G.V.D.

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
SECOND ENLARGEMENT
STA. 708 + 68 TO STA. 945 + 87
ST. BERNARD PARISH, LA.

STAGE HYDROGRAPHS

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO
R.W.W	V.L.W	R.P.L.	MAR. 1983	AS SHOWN	H-8-29520

SUBMITTED Ronald P. Lee
SPEC NO DACW29-83-B-0053
DWG 7 OF 9

GAGE READINGS IN FEET

BOR. 5-CUE

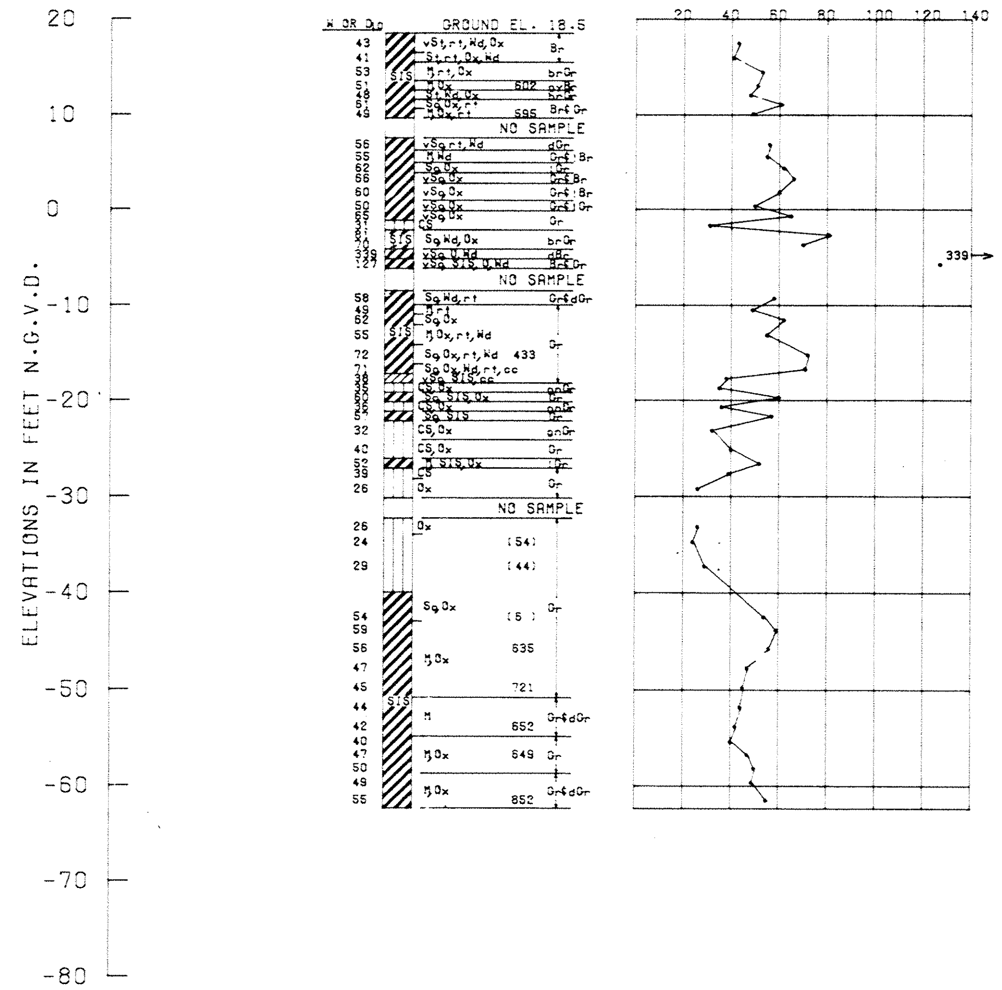
STA. 869+00

C.L. LEVEE

11-16 SEP. 81

WATER CONTENT

% WATER, DRY WEIGHT



BOR. 5-CUF

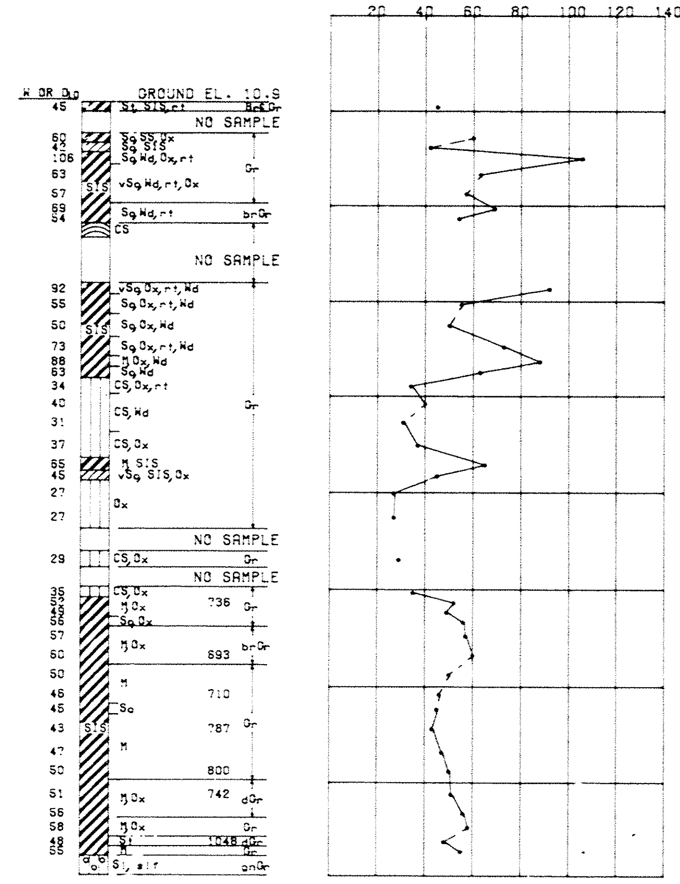
STA. 869+00

150 FT. L.S. OF LEV. C/L

18-22 SEP. 81

WATER CONTENT

% WATER, DRY WEIGHT



BOR. 9-CUA

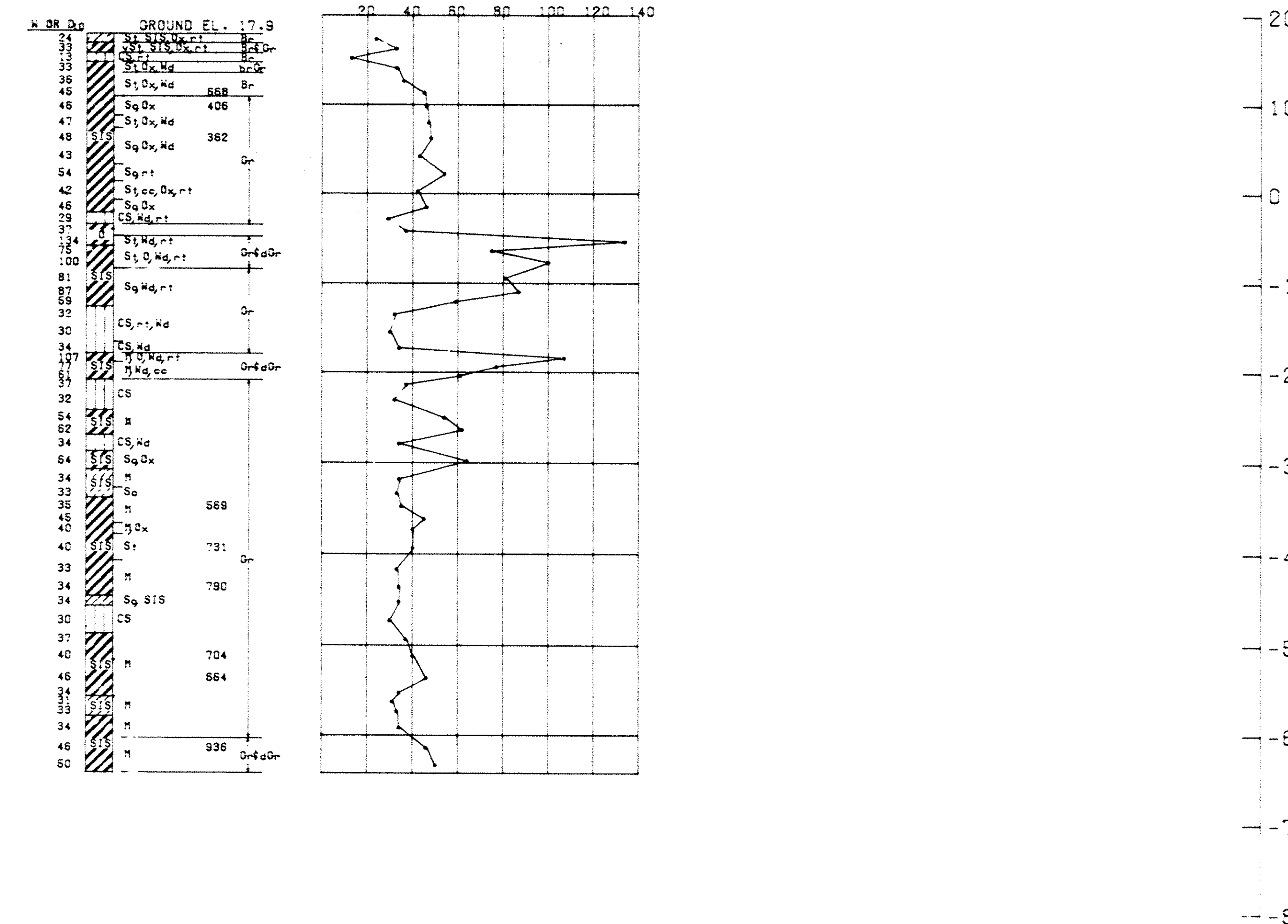
STA. 780+00

ON C/L LEVEE

25-28 SEP. 81

WATER CONTENT

% WATER, DRY WEIGHT



BOR. 9-CUB

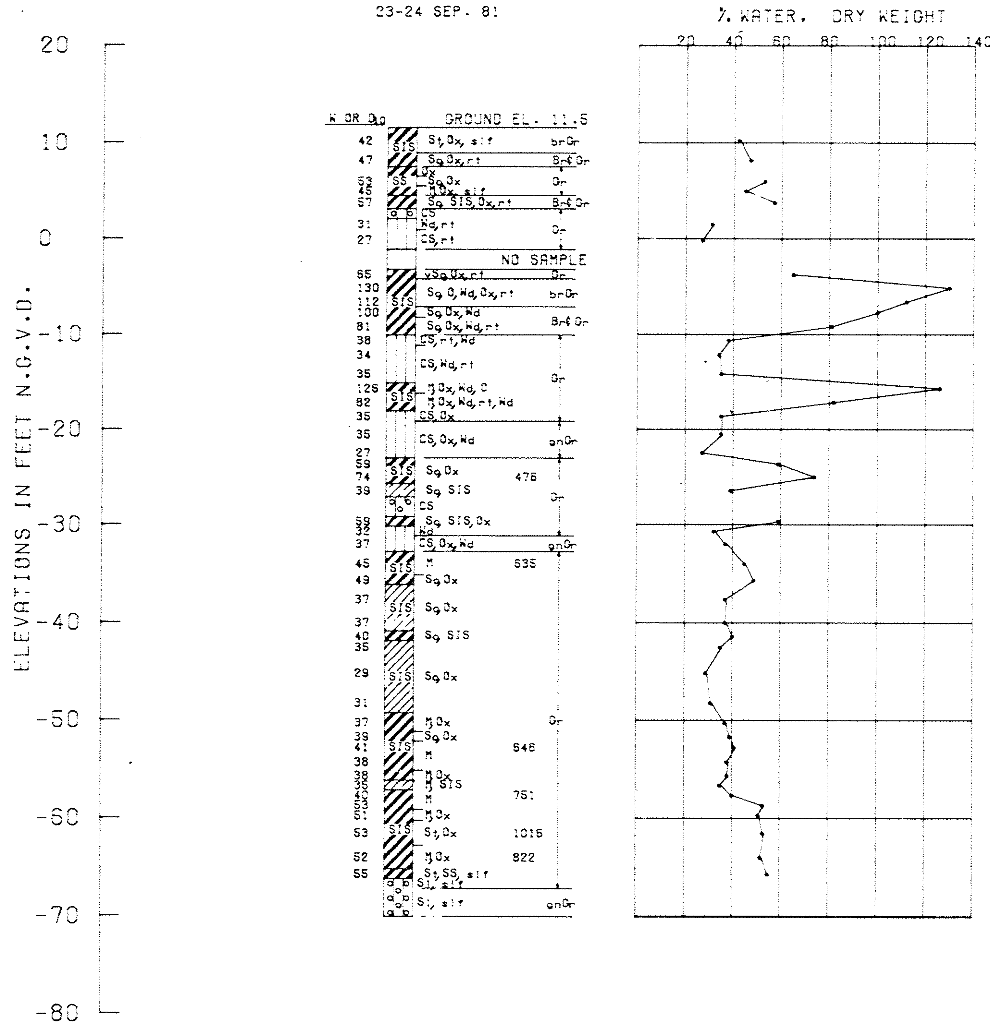
STA. 780+00

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

23-24 SEP. 81

WATER CONTENT

% WATER, DRY WEIGHT



NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE DWG. 2
2. FOR SOIL BORING LEGEND SEE DWG. 9.
3. UNDISTURBED SAMPLES WERE TAKEN WITH A 5 INCH DIMETER STEEL TUBE PISTON TYPE 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
SECOND ENLARGEMENT
STA. 708 + 68 TO STA. 945 + 87
ST. BERNARD PARISH, LA

SOIL BORINGS

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
R.W.W.	E.M.M.	R.P.L.	MAR. 1983	AS SHOWN	H-8-29520
SUBMITTED: Engineer			SPEC. NO. DACW29-83-B-0053		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

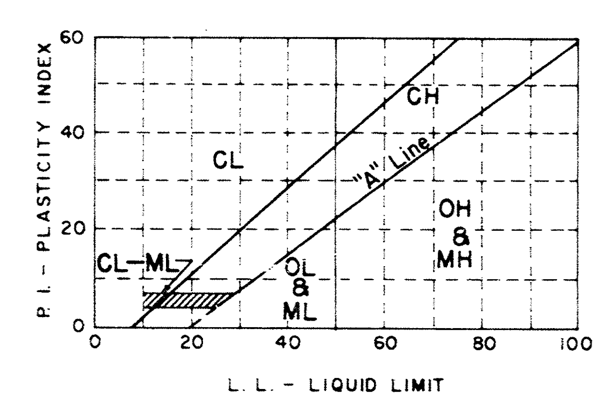
DESCRIPTIVE SYMBOLS

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 mm*

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

Are liquid and plastic limits, respectively

SYMBOLS TO LEFT OF BORING

▽ Ground-water surface and date observed

Ⓒ Denotes location of consolidation test**

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

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

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

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

FW Denotes free water encountered in boring or sample

FIGURES TO RIGHT OF BORING

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

In parenthesis are driving resistances in blows per foot determined with a standard split spoon sampler (1⅜" I. D., 2" O. D.) and a 140 lb. driving hammer with a 30" drop

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

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

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

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

TYPICAL NOTES:

While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and, if encountered, such variations will not be considered as differing materially within the purview of 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
SECOND ENLARGEMENT
STA. 708 + 68 TO STA. 945 + 87
ST. BERNARD PARISH, LA

SOIL BORING LEGEND

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
R.W.W.	E.M.M.	R.P.L.	MAR. 1983	AS SHOWN	H-8-29520
SUBMITTED: [illegible] ENGINEER			SPEC. NO. DACW29-83-B-0053		DWG. 9 OF 9