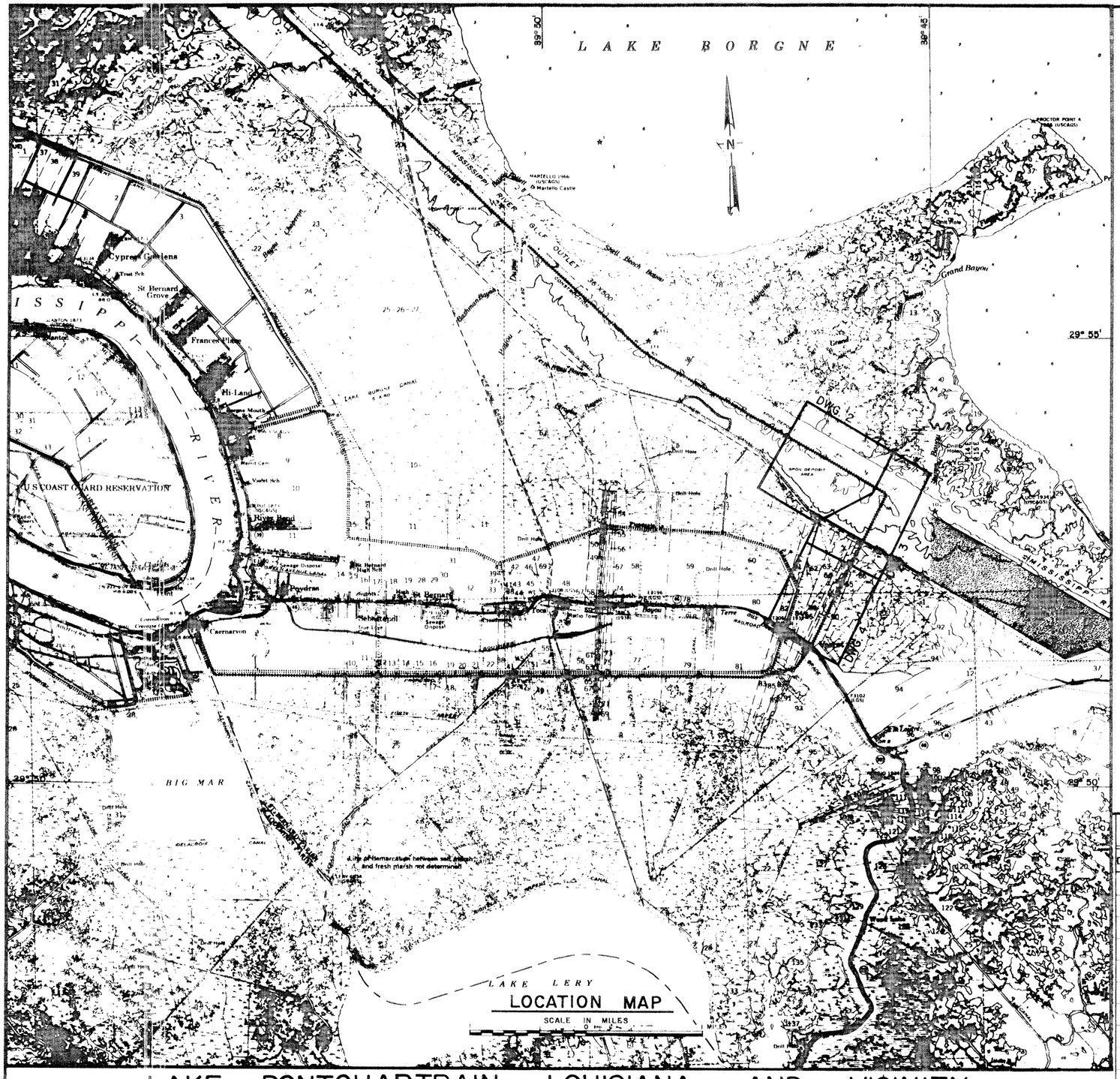
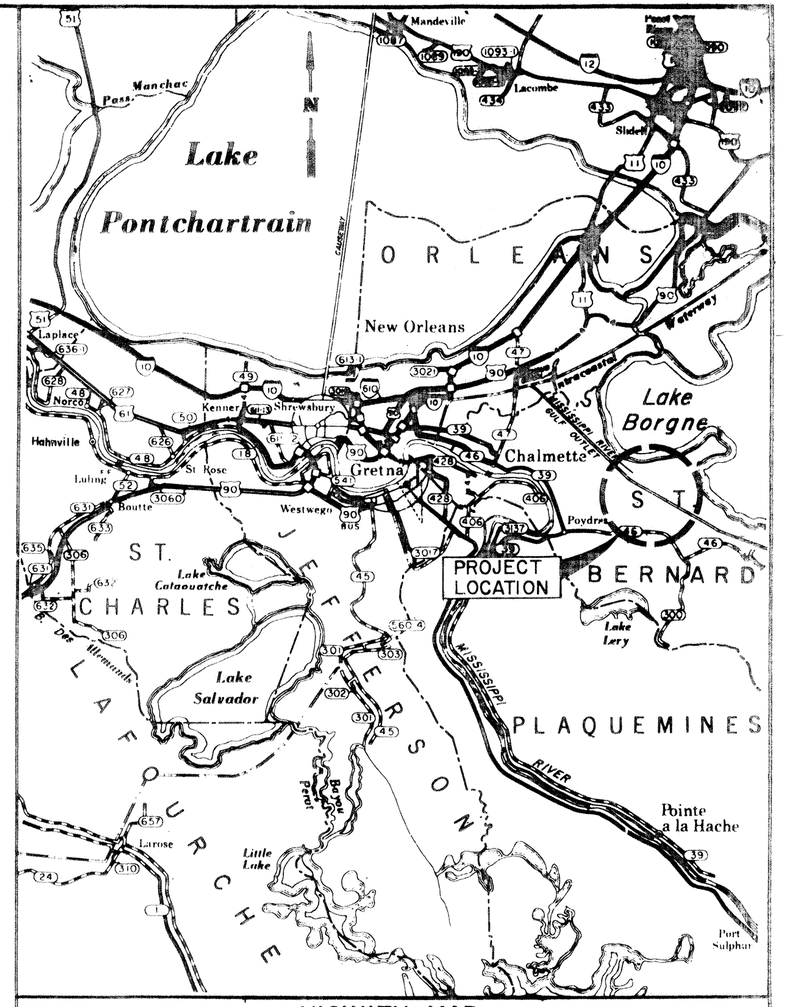




INDEX TO DRAWINGS

DWG.	DESCRIPTION
1	LOCATIONS MAP, VICINITY MAP, AND INDEX TO DWGS.
2	PLAN AND PROFILE
3	PLAN AND PROFILE
4	PLAN AND PROFILE
5	TYPICAL SECTIONS
6	TYPICAL SECTIONS
7	MISCELLANEOUS DETAILS
8	LEVEE ROAD INTERSECTION DETAIL
9	HYDROGRAPHS
10	SOIL BORINGS
11	SOIL BORINGS
12	SOIL BORING LEGEND

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

REVISION	DATE	DESCRIPTION	BY

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

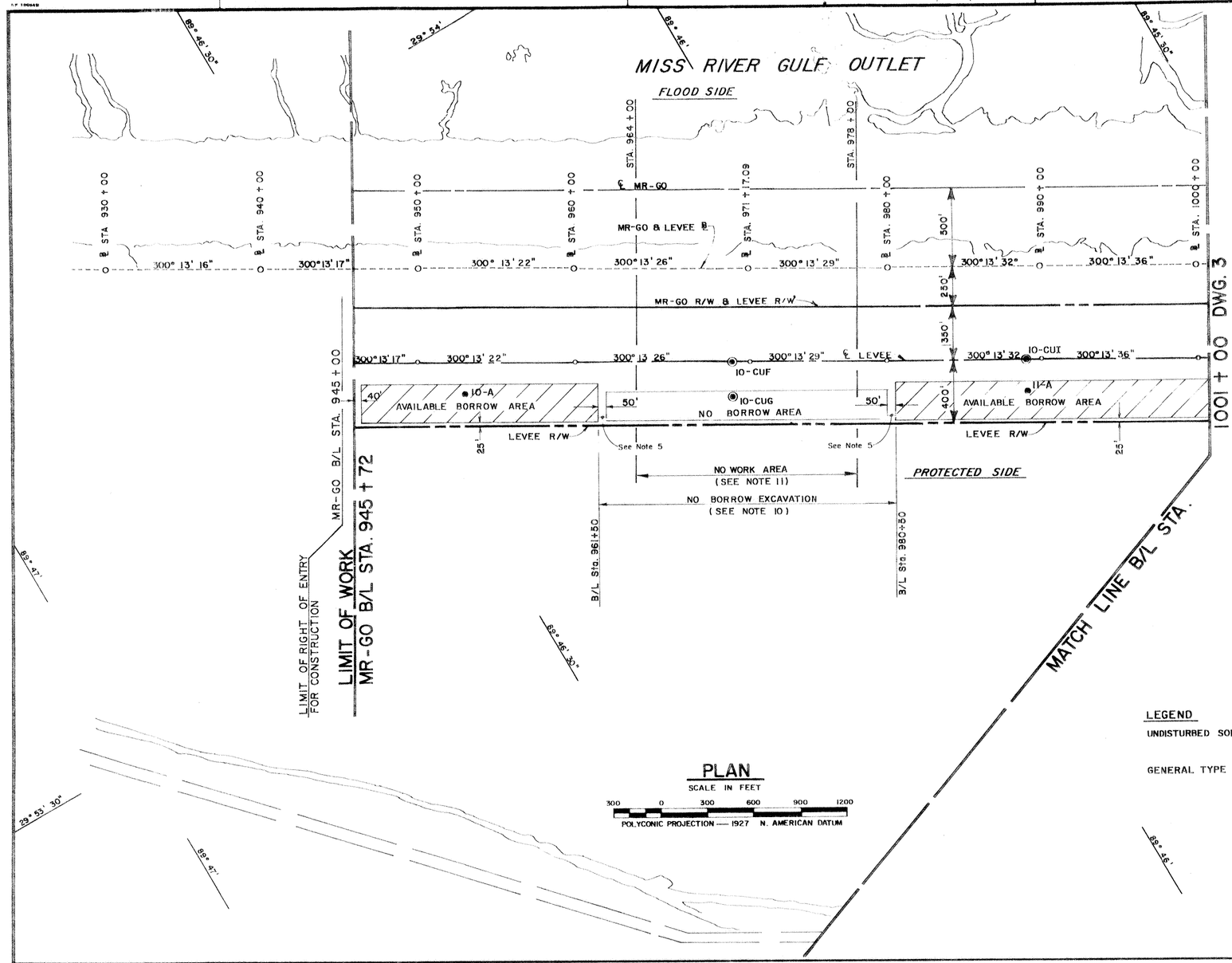
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

SUBMITTED: CHIEF DESIGN BRANCH
APPROVED: CHIEF ENGINEERING DIVISION
APPROVED: COL, C. E. DISTRICT ENGINEER

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
MR GO B/L STA. 945 + 72 TO LEVEE B/L STA. 1113 + 00
ST. BERNARD PARISH LA.
LOCATION MAP, VICINITY MAP AND INDEX TO DRAWINGS

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO.
R.V-G	L.A.H	R.P.L	SEPT. 1987		H-8-30257

SUBMITTED: CHIEF, ENGINEERING DIVISION
SPEC. NO. DACW29 87-B-0151
DWG. 1 OF 12



PLAN

SCALE IN FEET

300 0 300 600 900 1200

POLYCONIC PROJECTION — 1927 N. AMERICAN DATUM

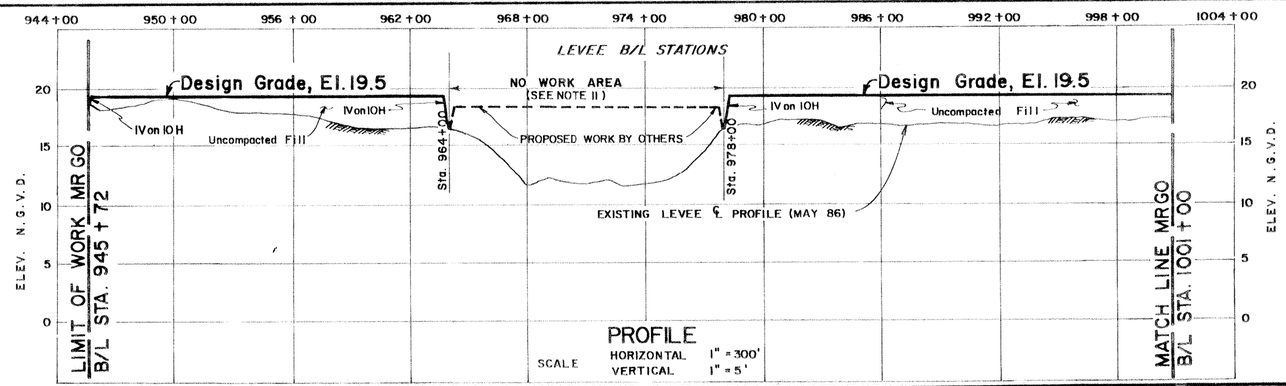
LEGEND

UNDISTURBED SOIL BORINGS ◉

GENERAL TYPE BORINGS ●

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 4 FOR "BENCH MARK" DESCRIPTION.
4. 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 ALINEMENT 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.
5. A CONTINOUS FLAT BOTTOMED DITCH ALONG THE BACK SIDE OF THE BORROW AREA AND OF THE NO BORROW EXCAVATION AREA SHALL BE PROVIDED WITH BOTTOM ELEVATION 2.0 FEET AND SIDE SLOPES OF 1V ON 3H.
6. A DRAINAGE DITCH SHALL BE PROVIDED FROM THE BORROW AREA TO THE EXISTING PIPELINE CANAL EXCAVATION AS SHOWN IN DWG.3, EXACT LOCATION TO BE FIELD DETERMINED BY THE CO.
7. FOR LIMITS OF AVAILABLE BORROW SEE DRAWINGS 5 AND 6.
8. SETTLEMENT PLATE DETAILS ARE ON DRAWING 8.
9. LEVEE C/L STATIONING IS THE SAME AS THE MR-GO B/L STATIONING FROM STA. 945+72 TO STA. 1005+49.16, AND THE SAME AS LEVEE B/L STATIONING FROM STA. 1004+62.21 TO STA. 1113+00.
10. NO BORROW EXCAVATION WILL BE PERMITTED FROM STA. 961+50 TO STA. 980+50, EXCEPT AS NOTED IN ABOVE NOTE 5.
11. NO LEVEE WORK WILL BE PERMITTED FROM STA. 964+00 TO STA. 978+00, EXCEPT AS REQUIRED TO TIE-IN TO THE PROPOSED WORK OR THE EXISTING LEVEE. SEE SC-26 OF THE SPECIFICATIONS FOR COORDINATION OF WORK IN THIS REACH.



PROFILE

SCALE HORIZONTAL 1" = 300'
VERTICAL 1" = 5'

REVISION	DATE	DESCRIPTION	BY

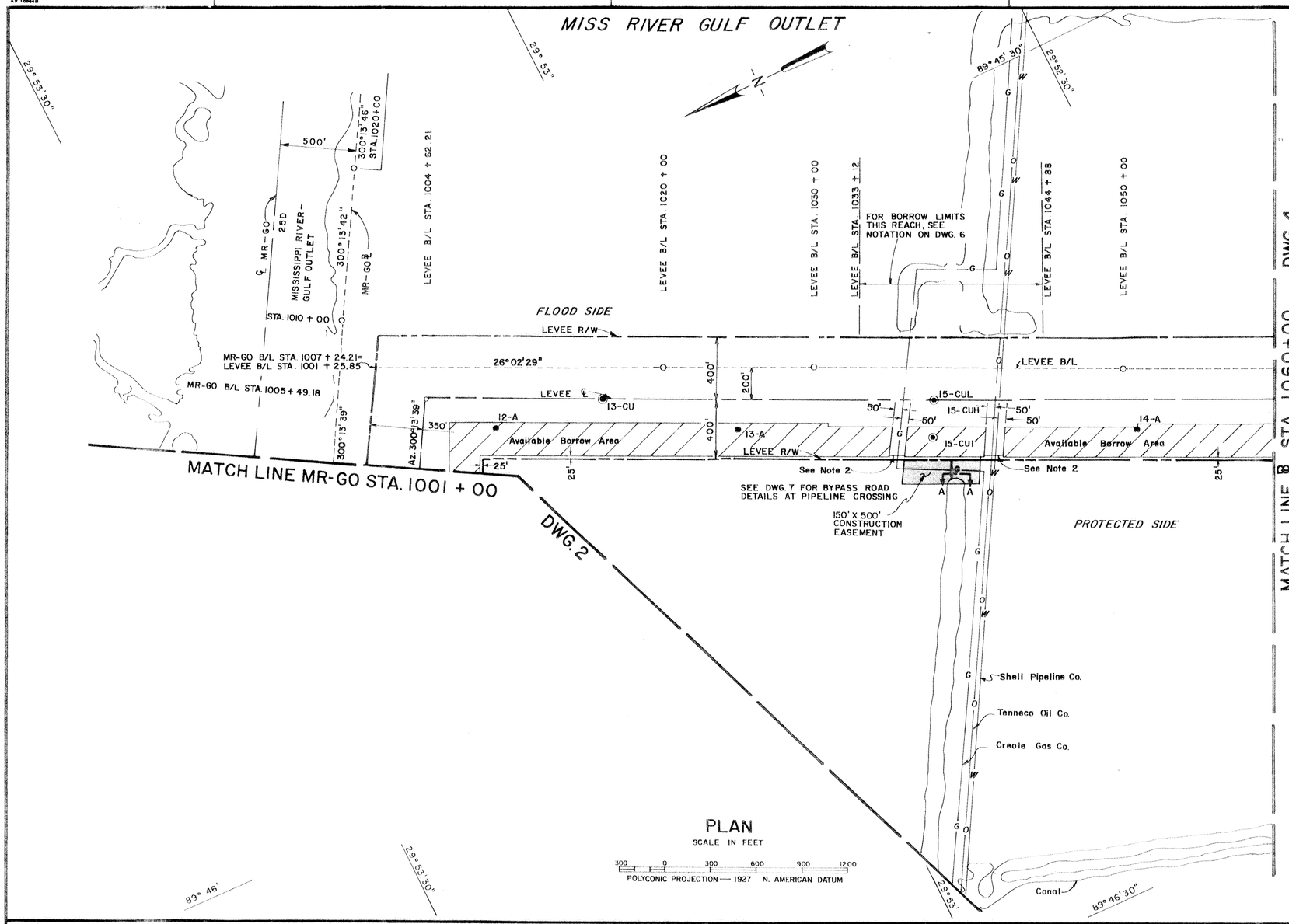
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
MR-GO B/L STA. 945 + 72 TO LEVEE B/L STA. 1113 + 00
ST BERNARD PARISH, LA.

PLAN AND PROFILE
MR-GO B/L STA. 945 + 72 TO STA. 1001 + 00

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO.
R.V.-G.	L. A. H.	R. P. L.	SEPT. 1987	AS SHOWN	H-8-30257
SUBMITTED			SPEC. NO. DACW29-87-B-0151	SHEET 2 OF 12	

DIETGEN CORP

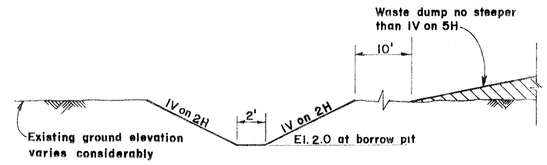


PLAN

SCALE IN FEET

300 0 300 600 900 1200

POLYCONIC PROJECTION — 1927 N. AMERICAN DATUM



SECTION A-A

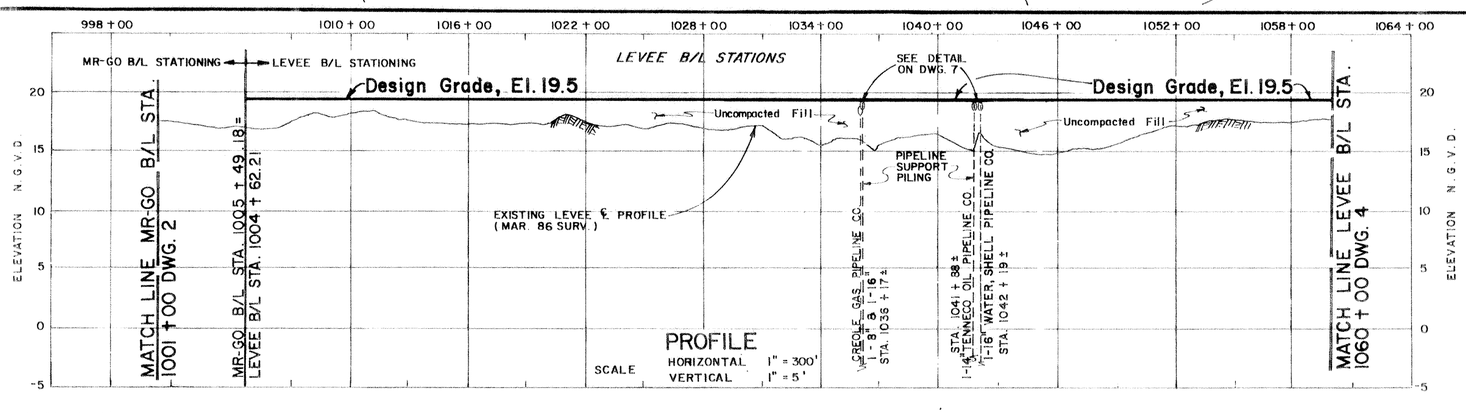
OUTLET DRAINAGE DITCH

NOTES:

1. Slope ditch 0.2% from borrow pit to existing pipeline canal excavation.
2. Excavated material may be piled on either or both sides of the ditch.

NOTES:

1. For General Notes and Legend, see Dwg. 2.
2. A continous flat bottom ditch along the back of the borrow area shall be provided with bottom El. 2.0 feet and side slopes of IV on 3H.
3. See SC-24 of the Specifications for work accomplished around utilities. See Dwg. 7 for pipeline crossing details.



PROFILE

SCALE HORIZONTAL 1" = 300'
VERTICAL 1" = 5'

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
MR-GO B/L STA. 945 + 72 TO LEVEE B/L STA. 1113 + 00
ST. BERNARD PARISH, LA.

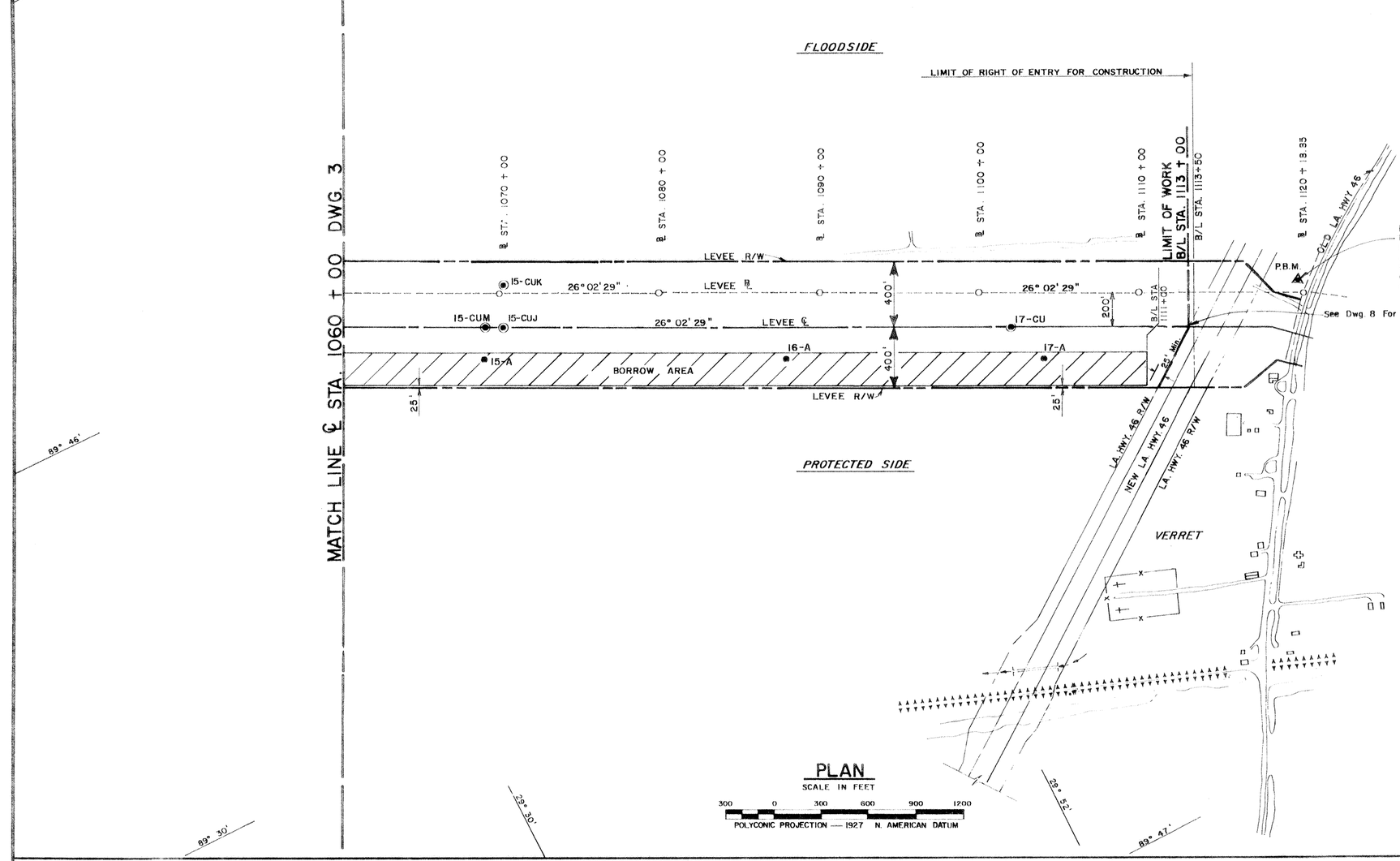
PLAN AND PROFILE
MR GO B/L STA. 1001 + 00 TO LEVEE B/L 1060 + 00

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
R.V.-G.	V.W.	R.P.L.	SEPT. 1987	AS SHOWN	H-8-30257

SUBMITTED: Ronald P. Lee — CHIEF, ENGINEERING DIVISION
CONTRACT NO. DACW29 87-B-0151
DWG. 3 OF 12

DIETGEN CORP.

MISS RIVER GULF OUTLET

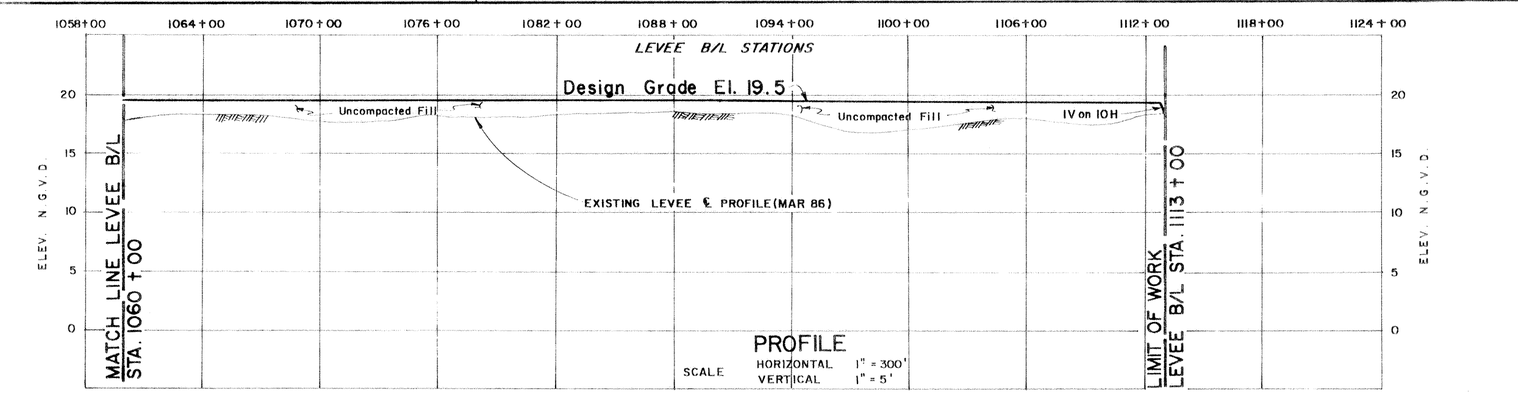


PLAN

SCALE IN FEET

300 0 300 600 900 1200

POLYCONIC PROJECTION — 1927 N. AMERICAN DATUM



PROFILE

SCALE HORIZONTAL 1" = 300'
VERTICAL 1" = 5'

NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE DWG. 2.
2. A CONTINOUS FLAT BOTTOMED DITCH ALONG THE BACK OF THE BORROW AREA SHALL BE PROVIDED WITH BOTTOM ELEVATION 2.0 FEET AND SIDE SLOPES OF IV ON 3H.
3. ACCESS TO THE WORK SITE IS AVAILABLE VIA HWY. 46.

REVISION	DATE	DESCRIPTION	BY

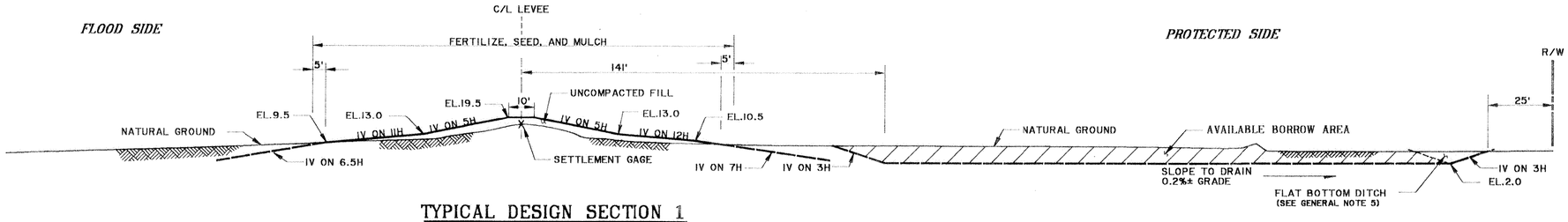
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
MR-GO B/L STA. 945 + 72 TO LEVEE B/L STA. 1113 + 00
ST BERNARD PARISH, LA.

PLAN AND PROFILE
LEVEE B/L STA. 1060 + 00 TO STA. 1113 + 00

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO
R.V.-G.	L.A.H.	R.P.L.	SEPT. 1987	AS SHOWN	H-8-30257
SUBMITTED		SPEC. NO.		DWG	4 OF 12
		DACW29 87-B-0151			

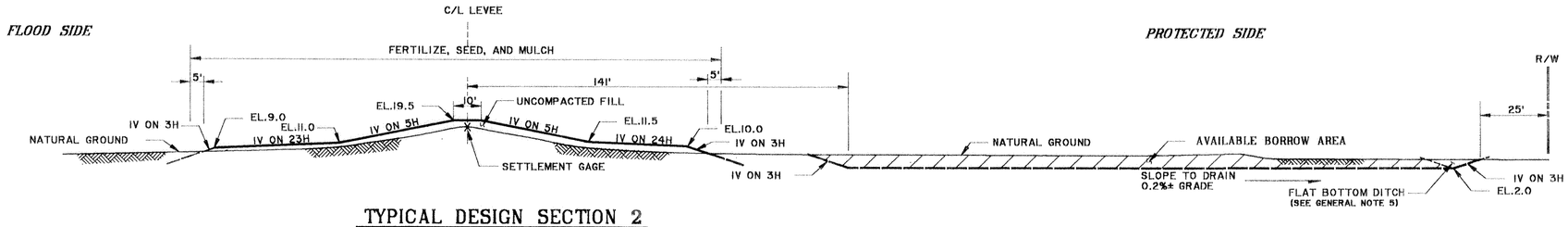
DIETGEN CORP.



TYPICAL DESIGN SECTION 1

STA. 945+72 TO STA. 963+50
(STA.964+00 TO STA.980+00 NO WORK EXCEPT AS NOTED)
STA. 980+50 TO STA. 1002+00

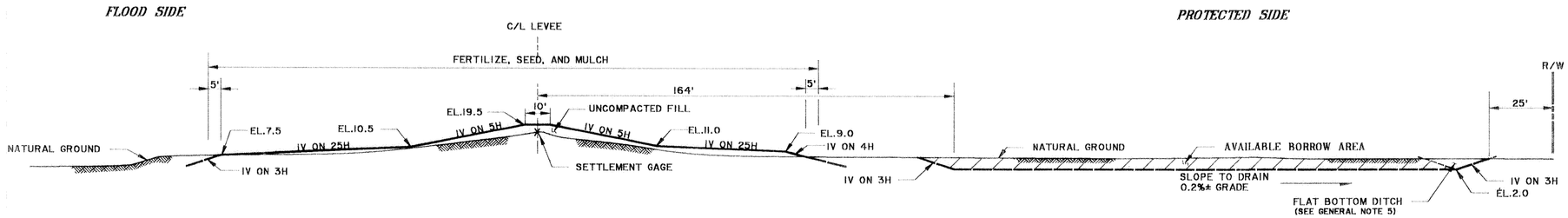
NATURAL GROUND AT STA.981+00
SMOOTH TRANSITION BETWEEN:
STA.963+50 AND STA. 964+00
STA.980+00 AND STA. 980+50
STA.1002+00 AND STA.1002+50
(N T TO SCALE)



TYPICAL DESIGN SECTION 2

STA. 1002+50 TO STA. 1030+50

NATURAL GROUND AT STA.1029+00
SMOOTH TRANSITION BETWEEN:
STA.1030+50 AND STA.1031+00
(NOT TO SCALE)



TYPICAL DESIGN SECTION 3

STA. 1031+00 TO STA. 1033+12

NATURAL GROUND AT STA.1032+00
SMOOTH TRANSITION BETWEEN:
STA.1033+12 AND STA.1033+62
(NOT TO SCALE)

NOTES:

1. FOR GENERAL NOTES SEE DWG. 2 .
2. PLAN VIEW OF SECTIONS SHOWN ARE ON DWGS. 283.

REVISION	DATE	DESCRIPTION	BY
⚠	10-20-87	CHANGED TITLE BLOCK TO READ DWG. 5 OF 12 , AMEND. 1	R.V-G.

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

LAKE PONTCHARTRAIN,LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
MRGO B/L STA.945+72 TO LEVEE B/L STA.1113+00
ST. BERNARD PARISH, LA.

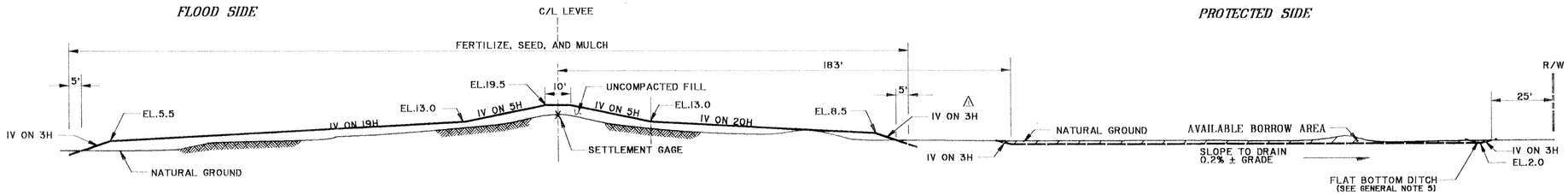
TYPICAL DESIGN AND BORROW SECTIONS

DESIGNED BY: R.V-G.	DATE: SEPT. 1987	SCALE: AS SHOWN	FILE NO. H-8-30257
DRAWN BY: L.A.H.			
CHECKED BY: R.P.L.	SPEC.NO. DACW29-87-B-0151		DWG. 5 OF 12
SUBMITTED: Ronald P. Lee			

Computer Aided Design Drafting

ACT PAR NOD.CHALMETTE.AREA.PLAN-I
ACT DRA I

⚠

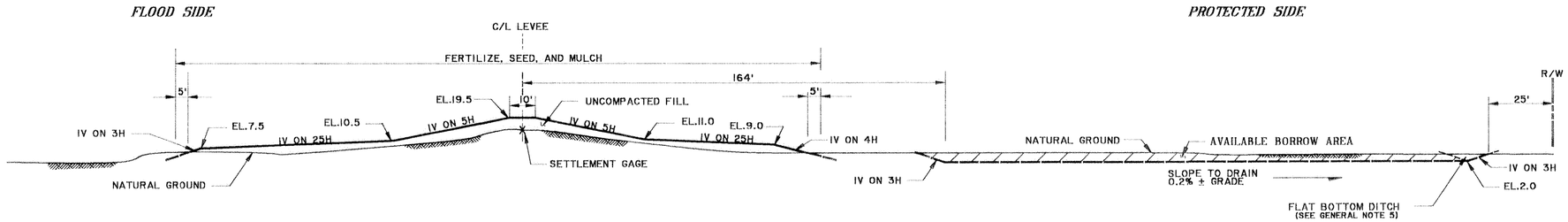


TYPICAL DESIGN SECTION 4

STA. 1033+62 TO STA. 1044+70

NATURAL GROUND AT STA.1041+00
SMOOTH TRANSITION BETWEEN:
STA.1044+70 AND STA.1045+20
(NOT TO SCALE)

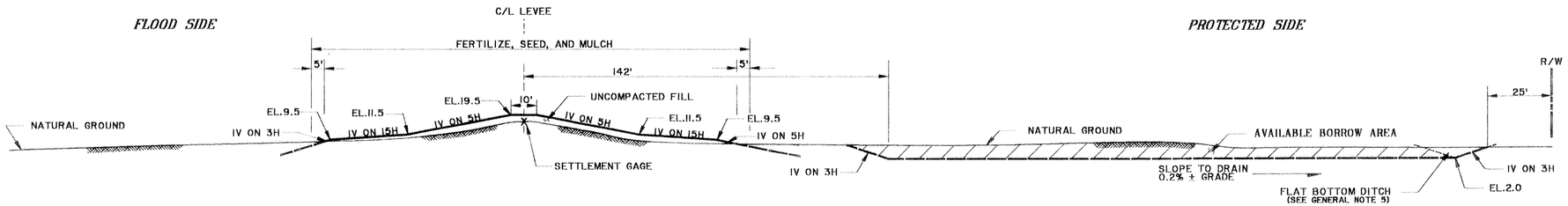
NOTE:
NO BORROW OPERATIONS WILL BE PERMITTED WITHIN 50' FEET ON EITHER SIDE OF THE PIPELINES.



TYPICAL DESIGN SECTION 5

STA. 1045+20 TO STA. 1050+50

NATURAL GROUND AT STA.1046+00
SMOOTH TRANSITION BETWEEN:
STA.1050+50 AND STA.1051+00
(NOT TO SCALE)



TYPICAL DESIGN SECTION 6

STA.1051+00 TO STA.1113+00

NATURAL GROUND AT STA.1098+00
(NOT TO SCALE)

NOTES:
1. FOR GENERAL NOTES SEE DWG. 2 .
2. PLAN VIEW OF SECTIONS SHOWN ARE ON DWGS. 384 .

REVISION	DATE	DESCRIPTION	BY
⚠	10-20-87	CHANGED TITLE BLOCK TO READ DWG. 6 OF 12. REVISED TO SHOW PROTECTED SIDE TOE SLOPE. AMEND. 1	R.V-G

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

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
MRGO B/L STA.945+72 TO LEVEE B/L STA.1113+00
ST. BERNARD PARISH, LA.

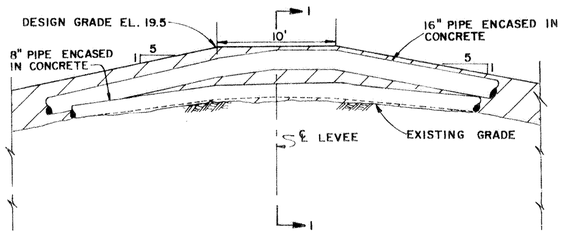
TYPICAL DESIGN AND BORROW SECTION

DESIGNED BY: R.V-G.
DRAWN BY: L.A.H.
CHECKED BY: R.P.L.
SUBMITTED: Ronald P. Lee
DATE: SEPT. 1987
SCALE: AS SHOWN
SPEC. NO. DACW29-87-B-0151
FILE NO. H-8-30257
DWG. 6 OF 12

Computer Aided Design Drafting

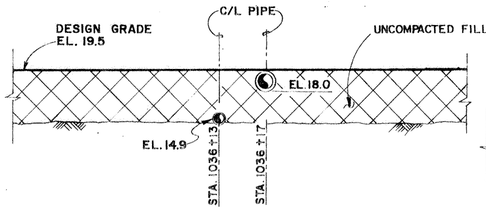
ACT PAR NO. CHALMETTE.AREA.PLAN-2
ACT DRAW 1

⚠



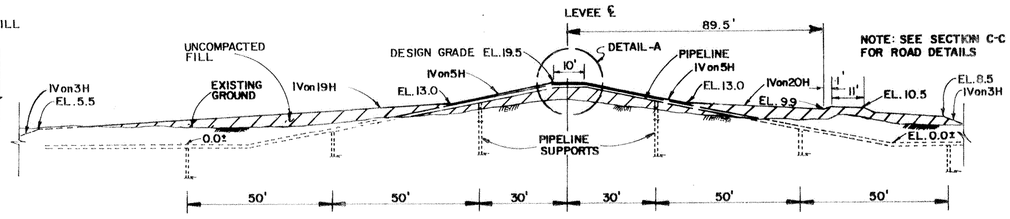
DETAIL - A

NOT TO SCALE



SECTION 1-1

NOT TO SCALE

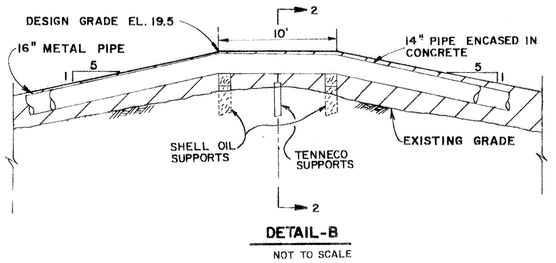


SECTION A-A

CREOLE GAS COMPANY PIPELINE CROSSING (2 LINES)

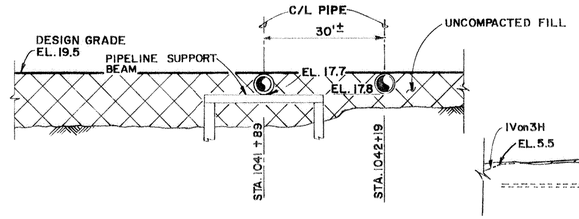
NOT TO SCALE

CREOLE GAS CO. PIPELINE



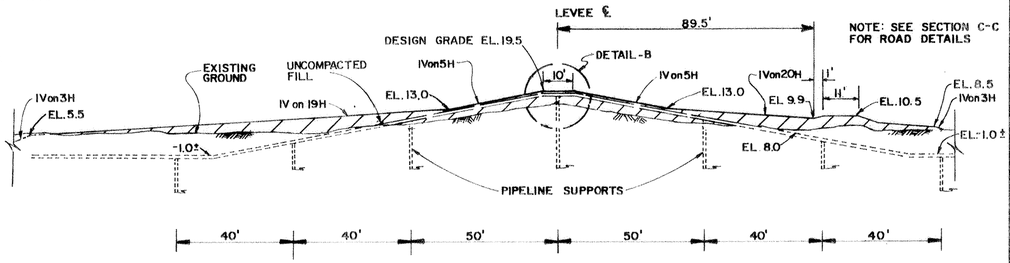
DETAIL-B

NOT TO SCALE



SECTION 2-2

NOT TO SCALE

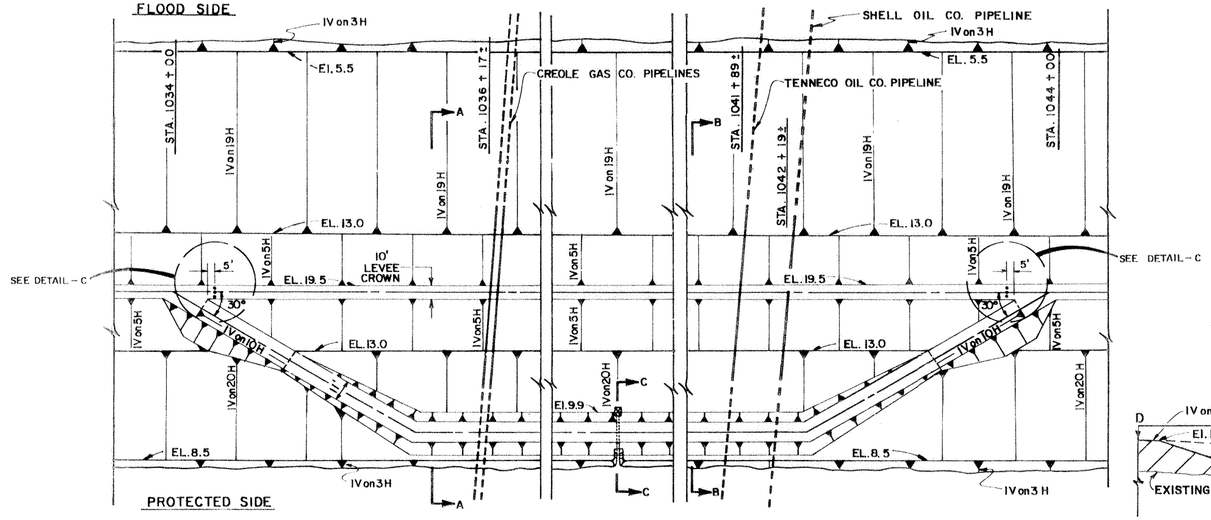


SECTION B-B

TENNECO AND SHELL OIL COMPANY PIPELINE CROSSINGS

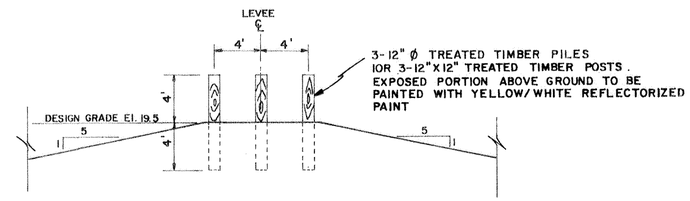
NOT TO SCALE

TENNECO AND SHELL OIL CO. PIPELINE



PLAN OF BYPASS ROAD AT PIPELINE CROSSING

NOT TO SCALE

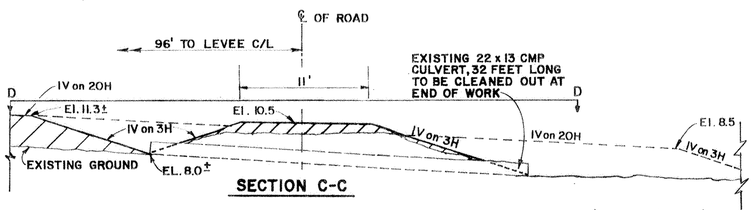


NOTE: LOCATION OF BARRICADES AS SHOWN OR AS DIRECTED BY THE C.O.

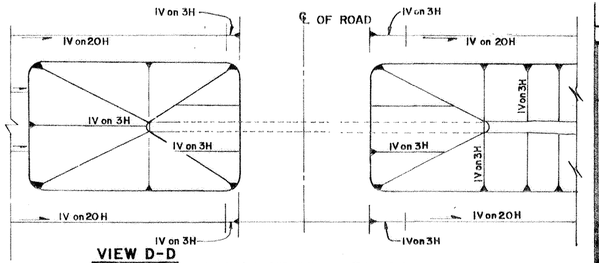
TYPICAL BARRICADE

DETAIL - C

NOT TO SCALE



SECTION C-C



VIEW D-D

CULVERT AT STA. 1039+00

REVISION	DATE	DESCRIPTION	BY

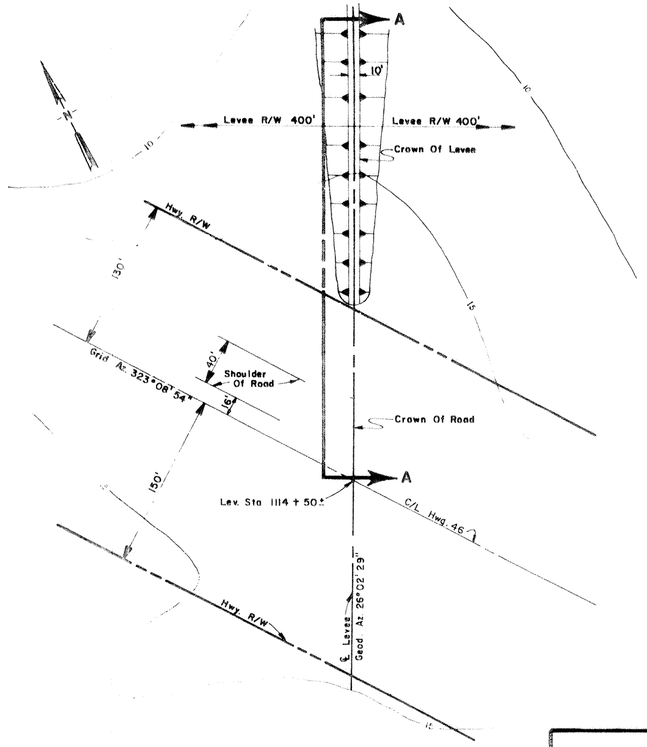
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
MR-GO B/L STA. 945+72 TO LEVEE B/L STA. 1113+00
ST. BERNARD PARISH, LA.

MISCELLANEOUS DETAILS

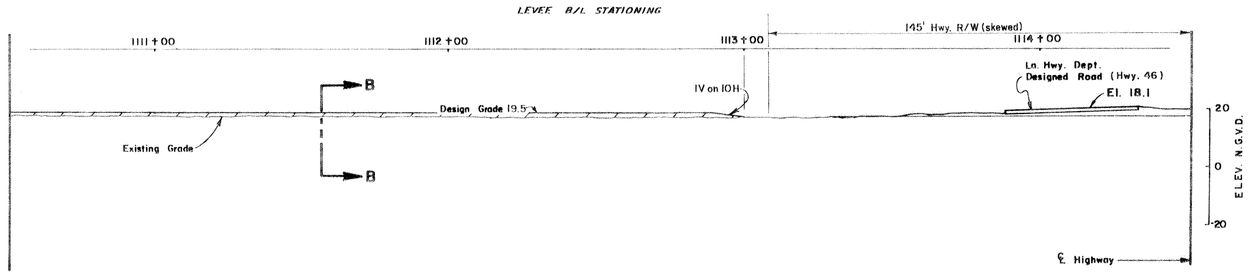
DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO.
R.V-G.	L.A.H.	R.P.L.	SEPT. 1987	AS SHOWN	H-8-30257
SUBMITTED			SPEC. NO.		
			DACW29 87-B-0151	DWG. 7 OF 12	

DIETGEN CORP.



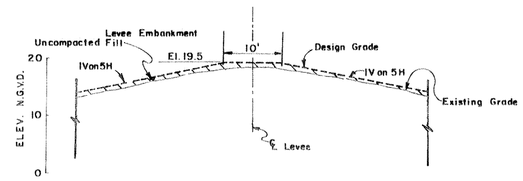
PLAN OF INTERSECTION

SCALE 1" = 50'



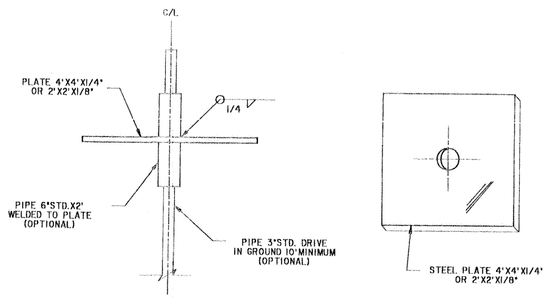
SECTION A-A

SCALE 1" = 20'



SECTION B-B

SCALE 1" = 10'

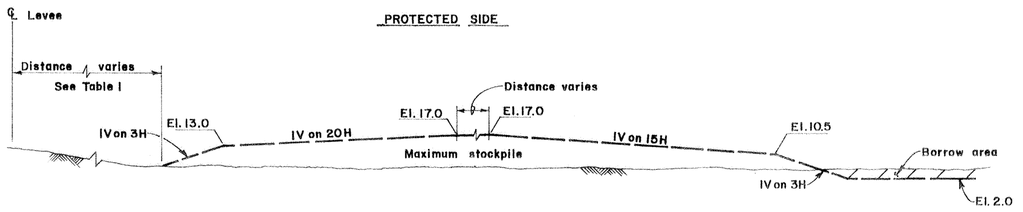


TYPICAL GAGE DETAIL

NOT TO SCALE

SETTLEMENT MEASUREMENT GAGES

SHOULD THE CONTRACTOR DESIRE PAYMENT FOR PLACING ADDITIONAL FILL DUE TO FOUNDATION SETTLEMENT DURING CONSTRUCTION, HE SHALL FURNISH AND INSTALL SETTLEMENT GAGES AT LOCATIONS SHOWN ON THE DESIGN SECTION AND AS SPECIFIED IN THE CONTRACT SPECIFICATIONS. THE SETTLEMENT MEASUREMENT RANGE FOR EACH SETTLEMENT GAGE SHALL BE FOR A DISTANCE OF 150 FEET IN EACH DIRECTION FROM EACH SETTLEMENT GAGE MEASURED ALONG THE CENTERLINE OF THE LEVEE SECTION ,EXCEPT WHERE SETTLEMENT GAGES ARE PLACED AT LESS THAN 300 FOOT INTERVALS, IN WHICH CASE, THE SETTLEMENT MEASUREMENT RANGE SHALL BE TO A POINT 1/2 THE DISTANCE BETWEEN SETTLEMENT GAGES. RISER PIPES ARE PERMITTED ON SETTLEMENT GAGES. LOCATION OF SETTLEMENT GAGES MAY BE MOVED HORIZONTALLY ON THE EXISTING LEVEE CROWN AT CONTRACTOR'S OPTION WITH THE APPROVAL OF THE CONTRACTING OFFICER.



MAXIMUM STOCKPILE SECTION

NOT TO SCALE

TABLE I	
TYPICAL SECTION	DIST. FROM C/L OF LEVEE
1	90'
2	90'
3	110'
4	140'
5	110'
6	90'

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
MR-GO B/L STA. 945 + 72 TO LEVEE B/L STA. 1113 + 00
ST. BERNARD PARISH, LA.

LEVEE-ROAD INTERSECTION DETAIL

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO.
R.V.-G.	L. A. H.	R. P. L.	SEPT. 1987	AS SHOWN	H-8-30257
SUBMITTED			SPEC. NO.		SHEET 8 OF 12
			DACW29 87-B-0151		

DIETSGEN CORP

GAGE READINGS IN FEET N.G.V.D.

NOTE:
INTRACOASTAL WATERWAY NEAR PARIS ROAD BRIDGE, NEW ORLEANS, LA.
GAGE ZERO, N.G.V.D.
STATION 76040

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

CHALMETTE AREA PLAN CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
MR GO B/L STA. 945 + 72 TO LEVEE B/L STA. 1113 + 00
ST. BERNARD PARISH, LA.

STAGE HYDROGRAPHS

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
R. V. G.	L. A. H.	R. P. L.	SEPT. 1987	AS SHOWN	H-8-30257

SUBMITTED: _____ SPEC. NO. DACW29-87-B-0151 SHT. 9 OF 12

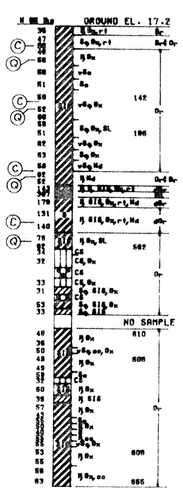
SAFETY IS A PART OF YOUR CONTRACT

BOR. 10-CUI

STA. 988+00

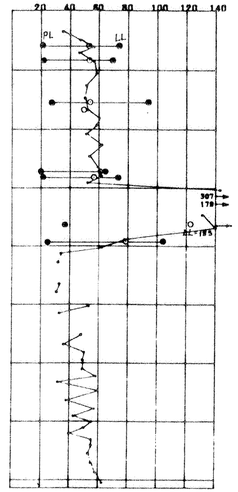
C/L LEVEE

4-6 DEC 85



WATER CONTENT

% WATER, DRY WEIGHT

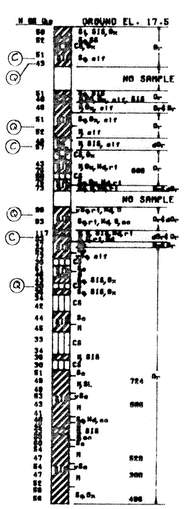


BOR. 13-CU

STA. 1018+00

C/L LEVEE

6-15 NOV '85



WATER CONTENT

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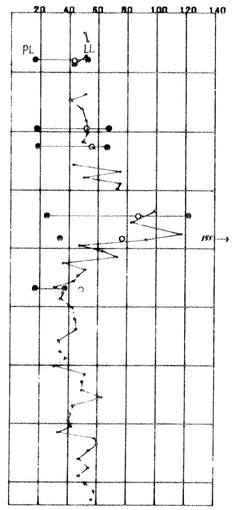
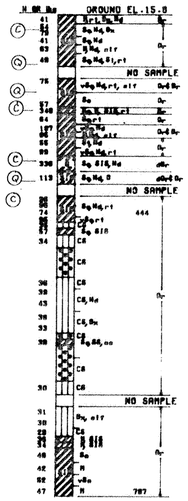


BOR. 15-CUL

STA. 1037+50

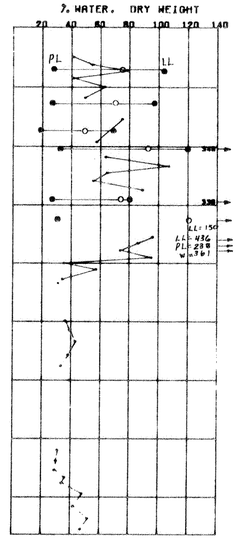
C/L LEVEE

16-20 NOV '85



WATER CONTENT

% WATER, DRY WEIGHT

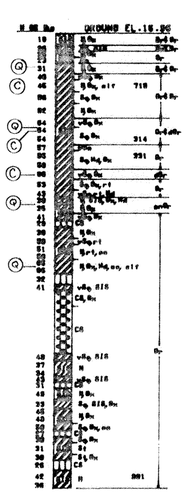


BOR. 15-CUM

STA. 1068+00

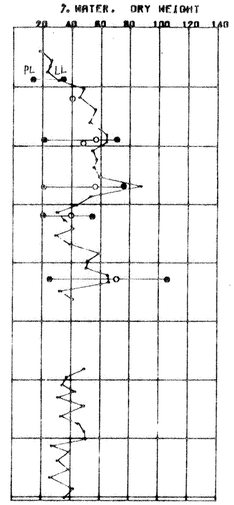
C/L RF LEVEE

20-NOV. 85



WATER CONTENT

% WATER, DRY WEIGHT



ELEVATIONS IN FEET N.G.V.D.

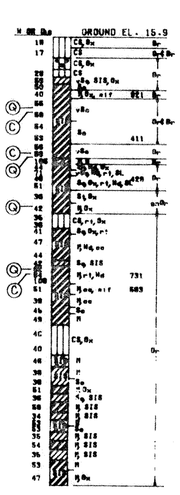
20 10 0 -10 -20 -30 -40 -50 -60 -70 -80

BOR. 17-CU

STA. 1102+00

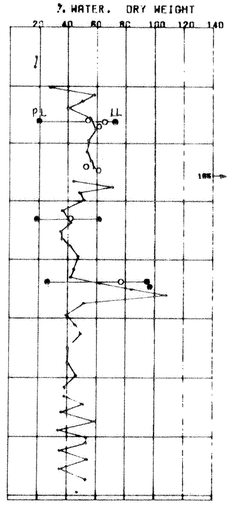
C/L LEVEE

17-20 NOV '85



WATER CONTENT

% WATER, DRY WEIGHT



ELEVATIONS IN FEET N.G.V.D.

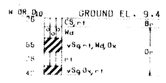
20 10 0 -10 -20 -30 -40 -50 -60 -70

BOR. 10-A

STA. 953+00

200 FT. P.S. C/L LEV.

14 MAY 87

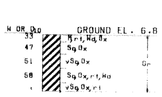


BOR. 11-A

STA. 989+00

200 FT. P.S. C/L LEV.

14 MAY 87

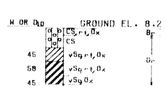


BOR. 12-A

STA. 1009+00

200 FT. P.S. C/L LEV.

15 MAY 87

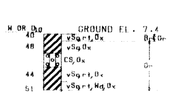


BOR. 13-A

STA. 1025+00

200 FT. P.S. C/L LEV.

15 MAY 87

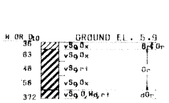


BOR. 14-A

STA. 1051+00

200 FT. P.S. C/L LEV.

15 MAY 87

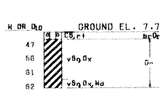


BOR. 15-A

STA. 1069+00

200 FT. P.S. C/L LEV

15 MAY 87



BOR. 16-A

STA. 1088+00

200 FT. P.S. C/L LEV

15 MAY 87

BOR. 17-A

STA. 1104+00

200 FT. P.S. C/L LEV.

15 MAY 87

REVISION	DATE	DESCRIPTION	BY

U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
SECOND ENLARGEMENT
MR-GO B/L STA. 945+72 TO LEVEE B/L STA.1113+00
ST. BERNARD PARISH, LA.

SOIL BORINGS

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO.
R.V.-G.	P.M.	R.P.L.	SEPT. 1987	AS SHOWN	H-8-30257
SUBMITTED			SPEC NO.		
Ronald P. Lee			DACW29-87-B-0151	DWG. 10 OF 12	

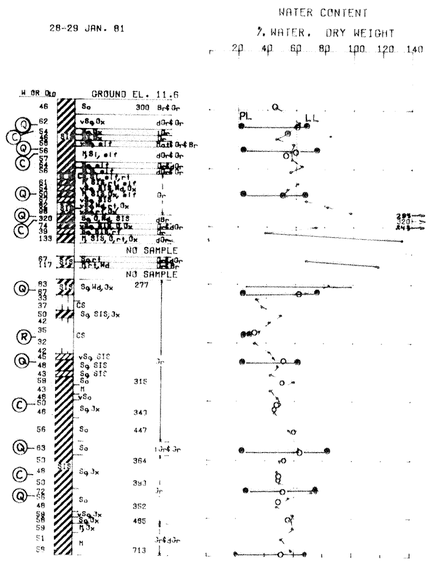
VALUE ENGINEERING ... YOUR KEY TO ... HIGHER PROFITS

BOR. 10-CUF

B/L STA. 970+00

ON LEVEE C/L

28-29 JAN. 81

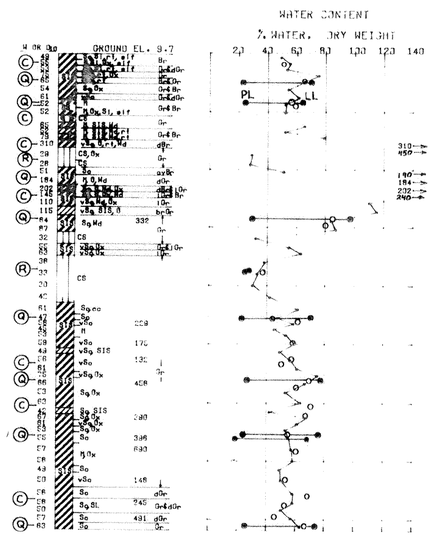


BOR. 10-CUG

STA. 970+00

220 FT. ON PROTECTION SIDE

27 JAN. 81

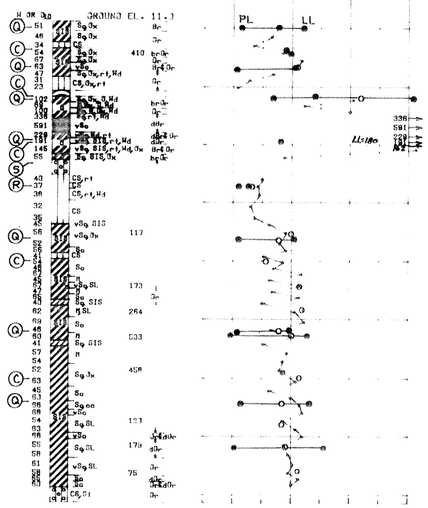


BOR. 15-CUH

B/L STA. 1038+00

ON LEVEE C/L

22-23 JAN 81

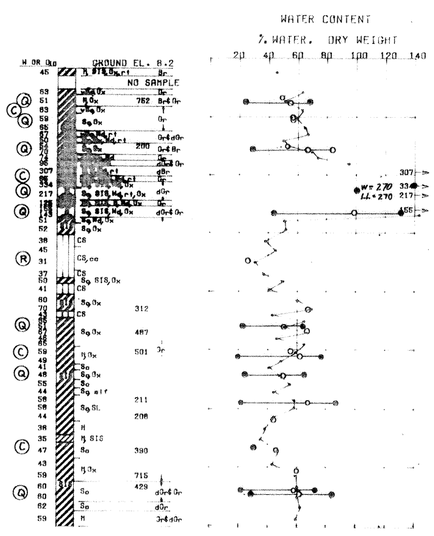


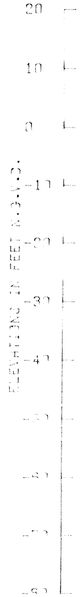
BOR. 15-CUI

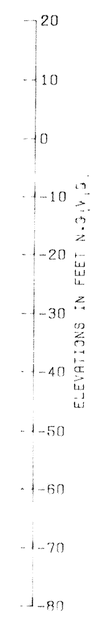
B/L STA. 1038+00

250 FT. PROTECTED SIDE

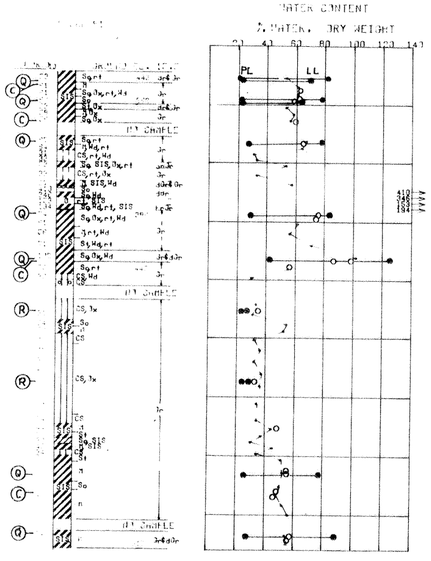
16 JAN. 81







BOR. 15-CUJ

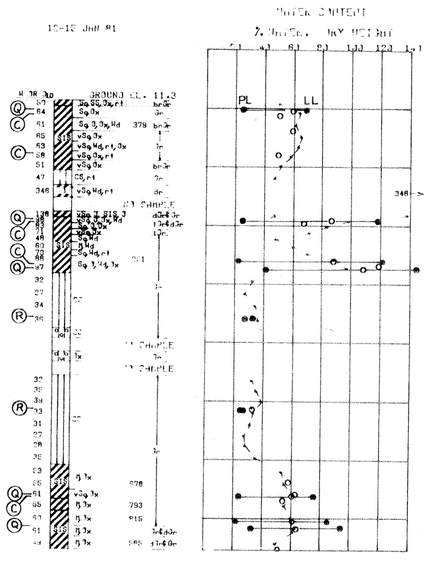


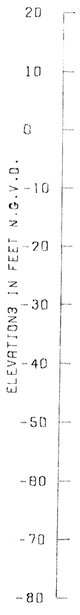
BOR. 15-CUK

B/L STA. 1038+00

250 FT. PROTECTED SIDE

15-16 JAN 81





UNDISTURBED TYPE BORING

NOTES

1. FOR GENERAL NOTES AND LEGEND SEE DWG. 2 .
2. FOR SOIL BORING LEGEND SEE DWG. 10 .
3. UNDISTURBED SAMPLES WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.

U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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HURRICANE PROTECTION LEVEE
ENLARGEMENT
MR-GO B/L STA. 945 + 72 TO LEVEE B/L STA. 1113 + 00
ST BERNARD PARISH, LA.

SOIL BORINGS

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO.
R.V-G	L. A. H.	R. P. L.	SEPT. 1987	AS SHOWN	H-8-30257
SUBMITTED			SPEC. NO.		
Ronald P. Lee			DACW29-87-B-0151	DWG. 11 OF 12	

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

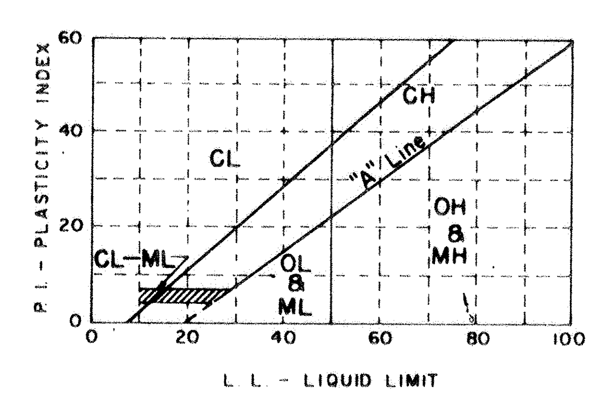
DESCRIPTIVE SYMBOLS

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 ($1\frac{3}{8}$" 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 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 44 of the contract.

Ground-water elevations shown on the boring logs represents ground-water surfaces encountered in such borings on the dates shown. Absence of water surface data on certain borings indicates that no ground water data are available from the boring but does not necessarily mean that ground water will not be encountered at the locations or within the vertical reaches of such 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
MR-GO B/L STA. 945 + 72 TO LEVEE B/L STA. 1113 + 00
ST. BERNARD PARISH, LA.

SOIL BORING LEGEND

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE	FILE NO.
R. V-G.	L. A. H.	R. P. L.	SEPT. 1987	AS SHOWN	H-8-30257
SUBMITTED: Ronald P. Lee, ENGINEER			SPEC. NO. DACW29-87-B-0151		DWG 12 OF 12