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GEOLOGY OF THE MISSISSIPPI RIVER DELTAIC PLAIN SOUTHEASTERN LOUISIANA

TECHNICAL REPORT NO. 3-483

July 1958

Conducted for

The President, Mississippi River Commission
Vicksburg, Mississippi

by

U. S. Army Engineer Waterways Experiment Station
CORPS OF ENGINEERS
Vicksburg, Mississippi

In Two Volumes

Volume 2

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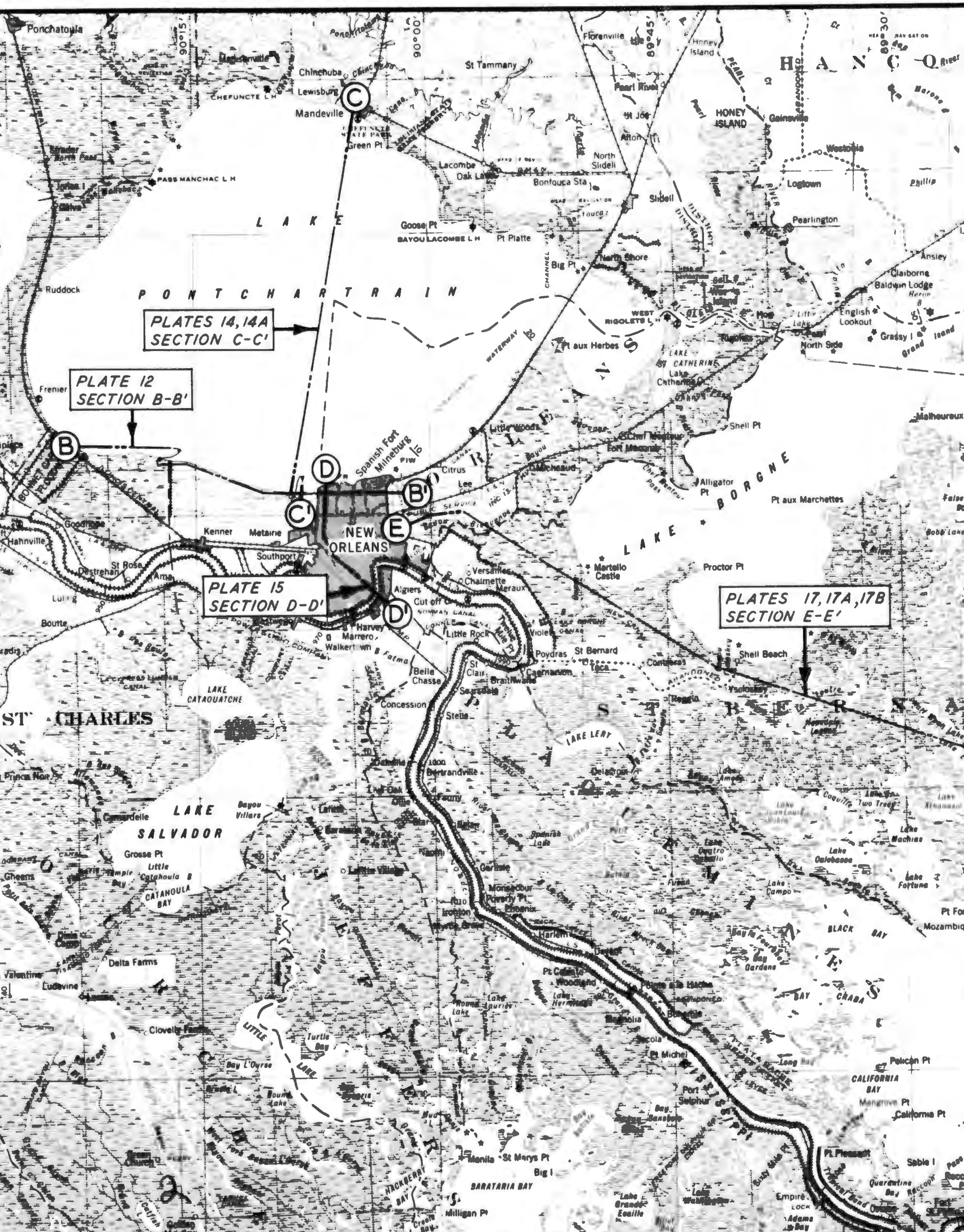
ST JOHN THE BAPTIST
LAC DES ALLEMANDS
LAKE VERRET
LAKE PALOURDE
LAKE DECADE
TERREBONNE
MISSISSIPPI
DONALDSONVILLE
PLAQUEMINE
THIBODAUX
MORGAN CITY
30°15'
30°00'
29°45'
29°30'
91°15'
91°00'
90°45'
90°30'
Sorrento
Gonzales
Burnside
Darrow
Lauderdale
Union
Central
Romeville
Convent
Gramercy
Lutcher
Garyville
Reserve
Edgard
Vacherie
Lagan
St James
Napoleonville
Paincourtville
Labadieville
Raceland
Lockport
Schriever
Houma
Gibson
Berwick
Patterson
Donner
Montegut
Theriot
Dulac
Bayou Du Large
Des Allemands
Mathews
Pierre Part
White Castle
Bayou Goula
Carville
St Gabriel
Crescent
Addis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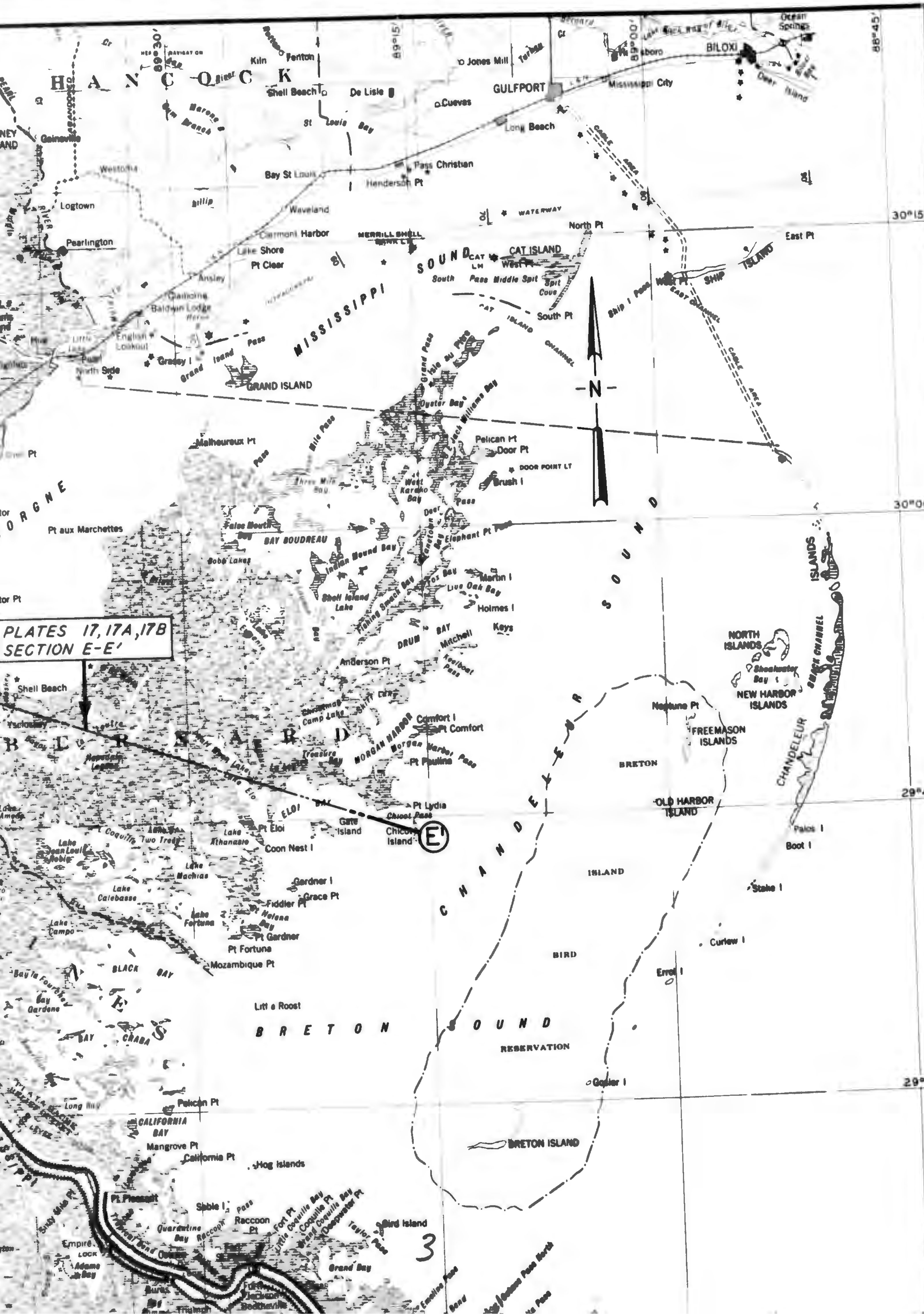
LAKE LERY
ST CHARLES
BLACK BAY
CALIFORNIA BAY
BARATARIA BAY
Ponchatoula
Mandeville
Lewisburg
Chinchuba
St Tammany
Lacombe
Slidell
North Slidell
Pearl River
Honey Island
Pearlington
Logtown
Westonia
Gainesville
Goose Pt
Pt Platte
Big Pt
North Shore
Ruddock
Frenier
Kenner
Metairie
Southport
Destrehan
St Rose
Ama
Hahnville
Luling
Boutte
Algiers
Harvey
Marrero
Westwego
Belle Chasse
Chalmette
Meraux
Violet
Poydras
St Bernard
Braithwaite
Caernarvon
Shell Beach
Yscloskey
Proctor Pt
Martello Castle
Alligator Pt
Shell Pt
Pt aux Marchettes
Citrus
Lee
Spanish Fort
Milneburg
Little Woods
Pt aux Herbes
Lake Catherine
English Lookout
Claiborne
Baldwin Lodge
Ansley
Grassy I
North Side
Little Rock
Concession
Stella
Delacroix
Dalcour
Bertrandville
Live Oak
Lafitte Village
Myrtle Grove
Delta Farms
Clovelly Farms
Valentine
Lockport
Grosse Pt
Cut off
Harlem
Pointe a la Hache
Magnolia
Pt Celeste
Woodland
Port Sulphur
Pt Michel
Empire
Manila
St Marys Pt
Big I
Milligan Pt
Pelican Pt
California Pt
Mangrove Pt
Sable I
Pt Pleasant
Mozambique
Malheureux
Lake Campo
Lake Fortuna
Lake Machias
Bay Gardene
Turtle Bay
Bay L'Ourse
Round Lake
Little Lake
Catahoula Bay
Temple Bay
Quarantine Bay
90°15'
90°00'
89°45'
89°30'



HANCOCK
Kiln
Fenton
Jones Mill
GULFPORT
BILOXI
Ocean Springs
Mississippi City
Deer Island
Shell Beach
De Lisle
St Louis Bay
Cuevas
Long Beach
Gainesville
Westonia
Bay St Louis
Pass Christian
Henderson Pt
Logtown
Waveland
Pearlington
Clermont Harbor
Lake Shore
Pt Clear
Ansley
Claiborne
Baldwin Lodge
English Lookout
North Side
Grassy I
Grand Island Pass
GRAND ISLAND
MISSISSIPPI SOUND
CAT ISLAND
North Pt
West Pt
South Pt
Spit Cove
Middle Spit
South Pass
Cat Island Channel
Ship I Pass
West Pt
SHIP ISLAND
East Pt
East Channel
WATERWAY
MERRILL SHELL BANK LT
30°15'
30°00'
29°45'
29°30'
89°30'
89°15'
89°00'
88°45'
N
Grand Pass
Isle au Pitre
Oyster Bay
Jack Williams Bay
Malheureux Pt
Pelican Pt
Door Pt
DOOR POINT LT
Brush I
Three Mile Bay
West Karako Bay
Pt aux Marchettes
False Mouth Bay
BAY BOUDREAU
Elephant Pt Pass
Bobs Lakes
Indian Mound Bay
Shell Island Lake
Fishing Smack Bay
Fox Bay
Martin I
Live Oak Bay
Holmes I
Keys
DRUM BAY
Mitchell
Keelboat Pass
Anderson Pt
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Comfort I
Pt Comfort
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Morgan Harbor Pass
Pt Paulina
Treasure Bay
Pt Lydia
Chicot Pass
Chicot Island
E'
Gate Island
Pt Eloi
ELOI BAY
Lake Athanasio
Coon Nest I
Two Tree
Lake Machias
Lake Calebasse
Lake Fortuna
Gardner I
Grace Pt
Fiddler Pt
Pt Gardner
Pt Fortuna
Mozambique Pt
BLACK BAY
Litt e Roost
BRETON SOUND
CHANDELEUR SOUND
NORTH ISLANDS
Shoalwater Bay
NEW HARBOR ISLANDS
Neptune Pt
FREEMASON ISLANDS
BRETON ISLAND BIRD RESERVATION
OLD HARBOR ISLAND
CHANDELEUR ISLANDS
Palos I
Boot I
Stake I
Curlew I
Errol I
Gosier I
BRETON ISLAND
Pelican Pt
Long Bay
CALIFORNIA BAY
Mangrove Pt
California Pt
Hog Islands
Pt Pleasant
Sable I
Raccoon Pt
Quarantine Bay
Fort Pt
Bird Island
Grand Bay
Empire
LOCK
Adams Bay
3


Westfield
Pierre Part
Glenwood
Napoleonville
St James
Lagan
LAC DES ALLEMANDS
Elm Hall
Woodlawn
LAKE VERRET
Oakley
Kraemer
Georgia
Labadieville
Roger
Des Allemands
ST
LAKE BOEUF
THIBODAUX
Acadia
Lafourche
Lockport
Schriever
Raceland
LAKE PALOURDE
MORGAN CITY
Greenwood
Berwick
PATTERSON
Minerva
Chackbay
Gibson
Donner
Ellsworth
Mathews
Mc Leod
Cocke
Greenwood
Crescent
HOUMA
Valentine
Mandalay
Ashland
Sunrise
29°45′
29°30′
29°15′
29°00′
T E R R E B O N N E
Little Bay
Bayou Du Large
Montegut
Pointe Barre
Hatters Island
South Pt
Shell Pt
Turn Pt
Fox Pt
North Pt
Mullet Cove
BAY
FOUR LEAGUE BAY
LAKE DECADE
Theriot
Boudreaux
Dulac
Lake Boudreaux
LAKE DECADE (Lost Lake)
LAKE MECHANT
Hogs Pt
LAKE FELICITY
LAKE BARRE
OLD LADY LAKE
CAILLOU LAKE
Cocodrie
OYSTER BAYOU
Pt Meshe
TERREBONNE BAY
TIMBALIER
Terrebonne Island
Pelican I
Caillou I
Pass La Poule
Pt Mast
Wine I
Isles Derniere
CAILLOU BAY
Grand Pass des Ilettes
LAKE PELTO
Racoon Pt
ISLES DERNIERE
TIMBALIER ISLAND
GULF OF ME
91°15′
91°00′
90°45′
90°30′

GEOLOGY OF THE MISSISSIPPI RIVER DELTAIC PLAIN SOUTHEASTERN LOUISIANA

STUDY AREA AND LOCATION OF DETAILED SECTIONS

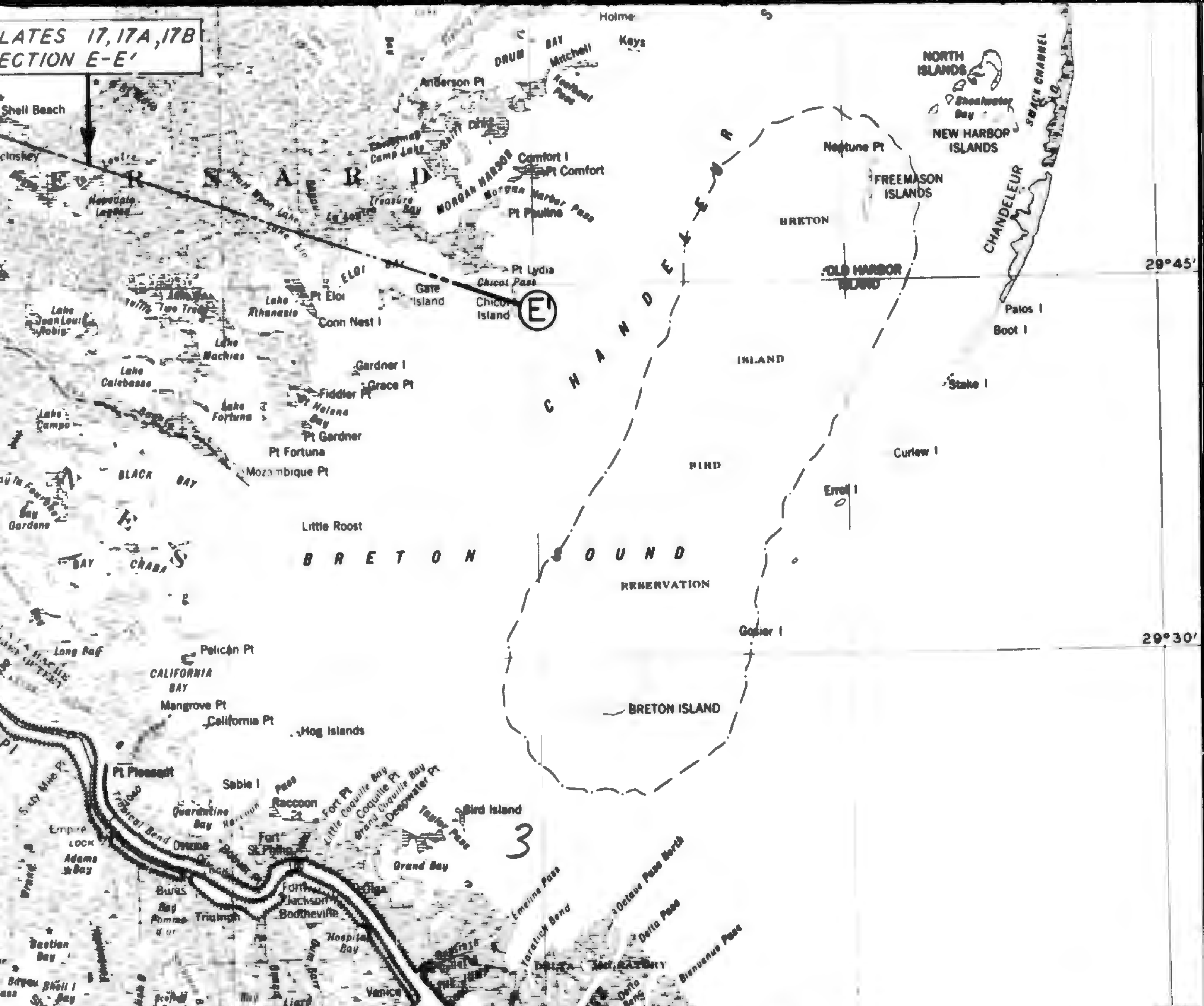
SCALE IN MILES

5 0 5 10 15 20

M E X I C O

90°30' 90°15' 90°45'

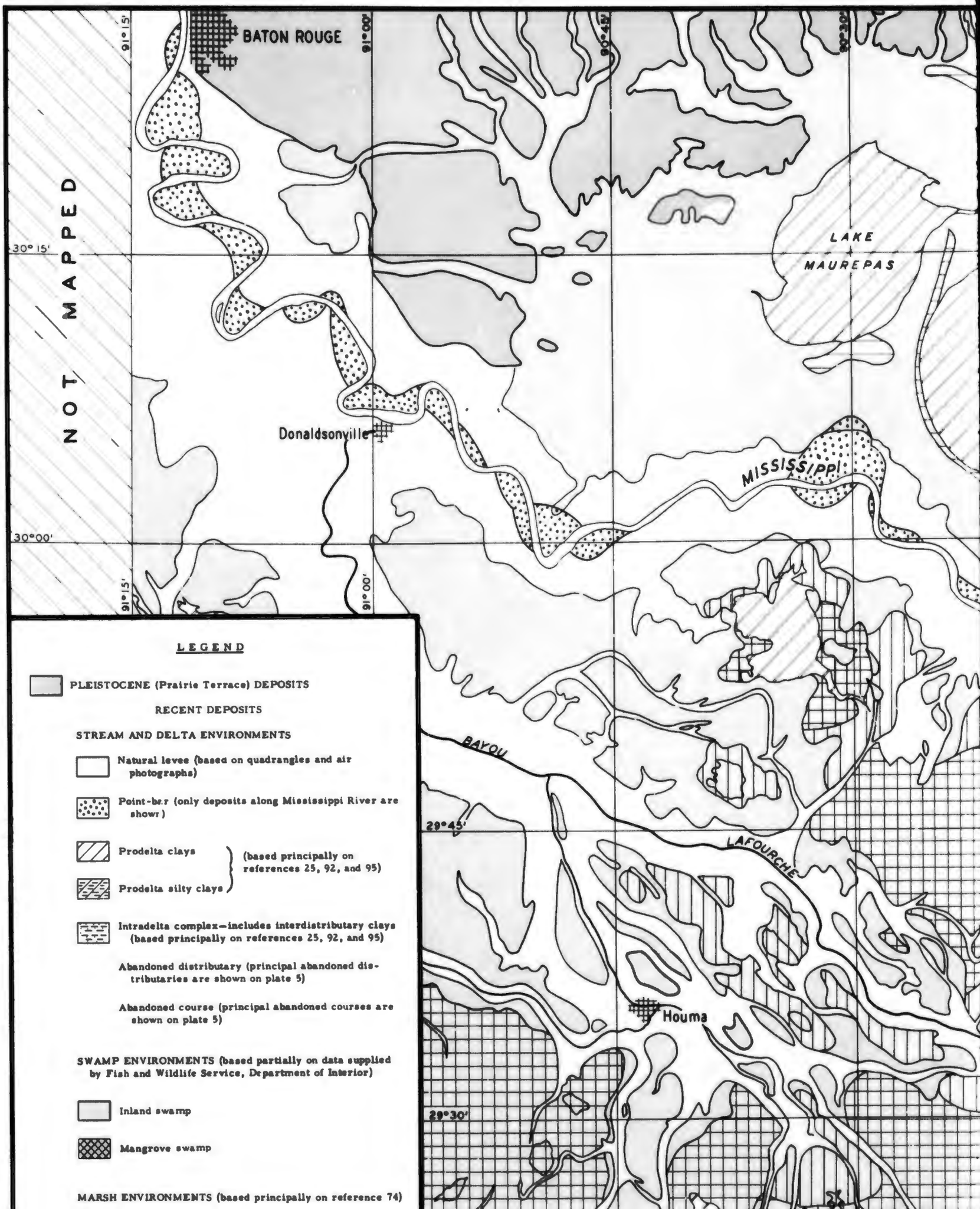
5

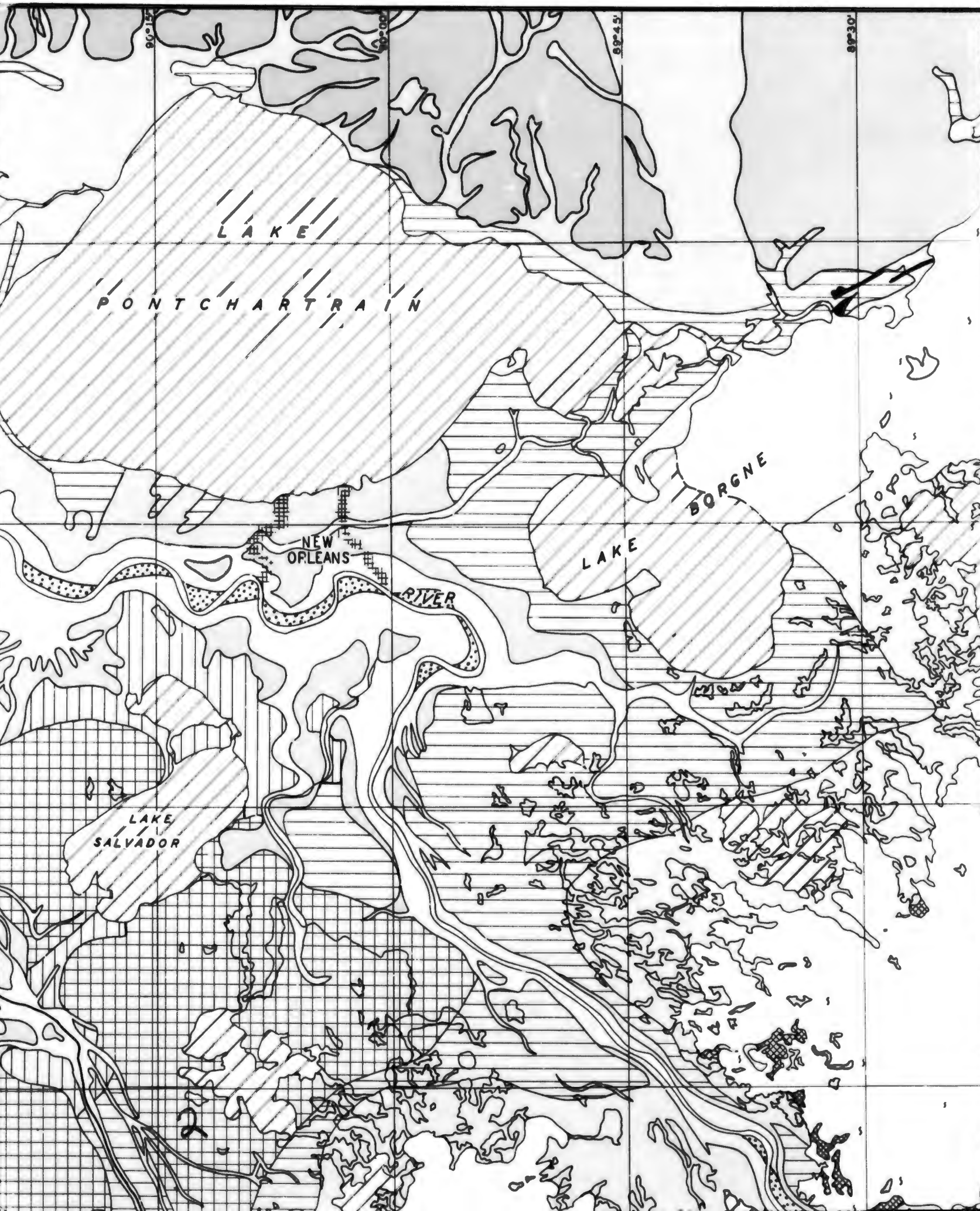


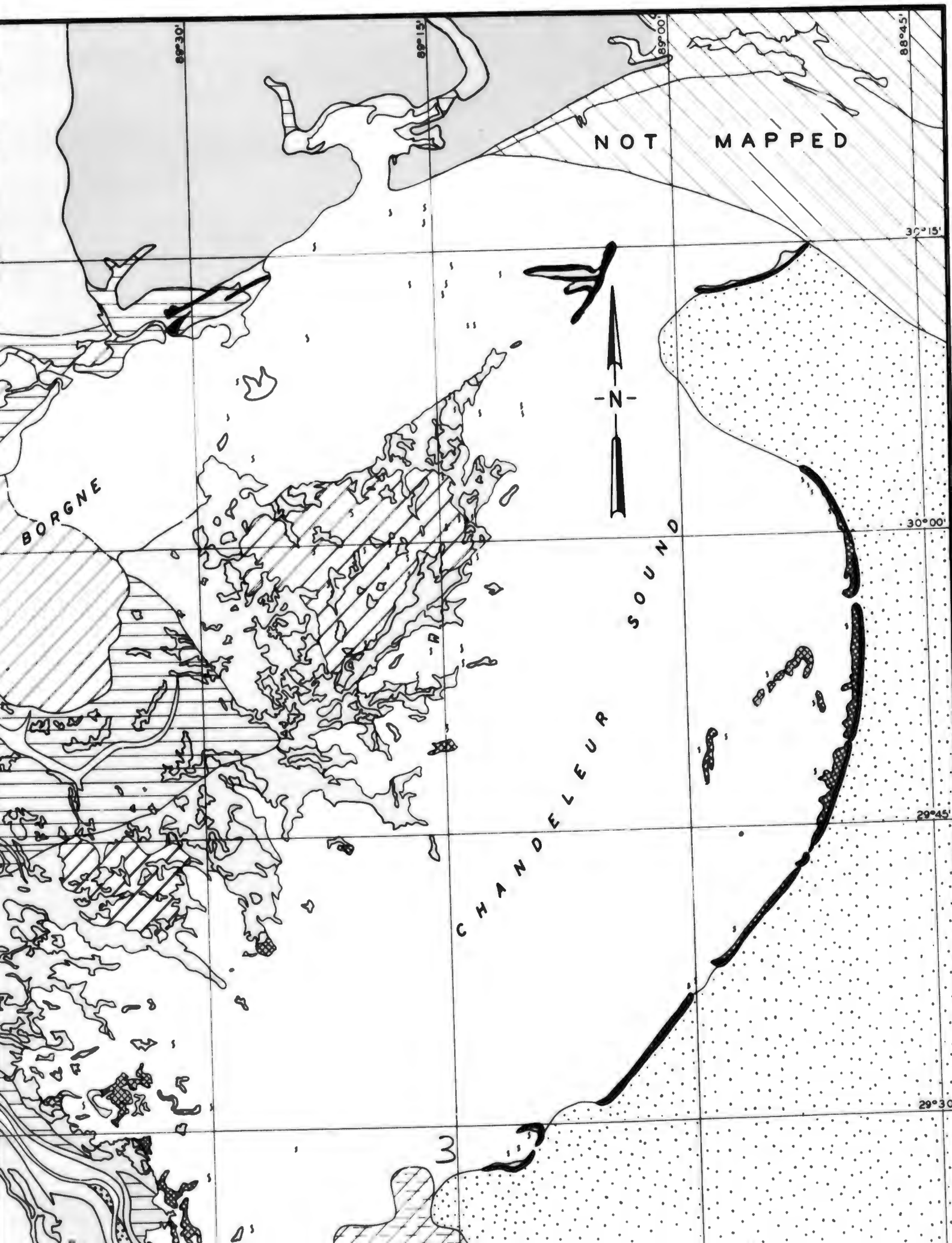
PLATES 17, 17A, 17B
SECTION E-E'
E'
BRETON SOUND
CHANDELEUR
CHANDELEUR ISLANDS
NORTH ISLANDS
NEW HARBOR ISLANDS
FREEMASON ISLANDS
BRETON ISLAND BIRD RESERVATION
OLD HARBOR ISLAND
BRETON ISLAND
Chicot Island
Gate Island
Conn Nest I
Pt Lydia
Chicot Pass
Pt Comfort
Comfort I
Pt Pauline
Neptune Pt
Palos I
Boot I
Stake I
Curlew I
Errol I
Gosier I
Little Roost
Gardner I
Grace Pt
Fiddler Pt
Pt Fortune
Mozambique Pt
BLACK BAY
Pelican Pt
CALIFORNIA BAY
Mangrove Pt
California Pt
Hog Islands
Pt Pleasant
Sable I
Raccoon Pt
Bird Island
Grand Bay
Empire
Buras
Triumph
Boothville
Venice
Sandy Pt
HEAD OF PASSES
PASS A LOUTRE
SOUTH PASS
SOUTHWEST PASS
WEST BAY
EAST BAY
GARDEN ISLAND BAY
Port Eads
Cockler Pt
Middle Ground
Raphael Pass
Dead Women Pass
Bienvenue Pass
Delta Pass
Emeline Pass
STATE PUBLIC HUNTING GROUNDS
GAME AND FISH PRESERVE
SOUTH PASS E JETTY LIGHTHOUSE
PILOT STATION
SOUTHWEST PASS LIGHTHOUSE
Burrwood
29°45'
29°30'
29°15'
29°00'
89°30'
89°15'
89°00'
88°45'
AIC PLAIN
ANA
ID
SECTIONS
15
20
3

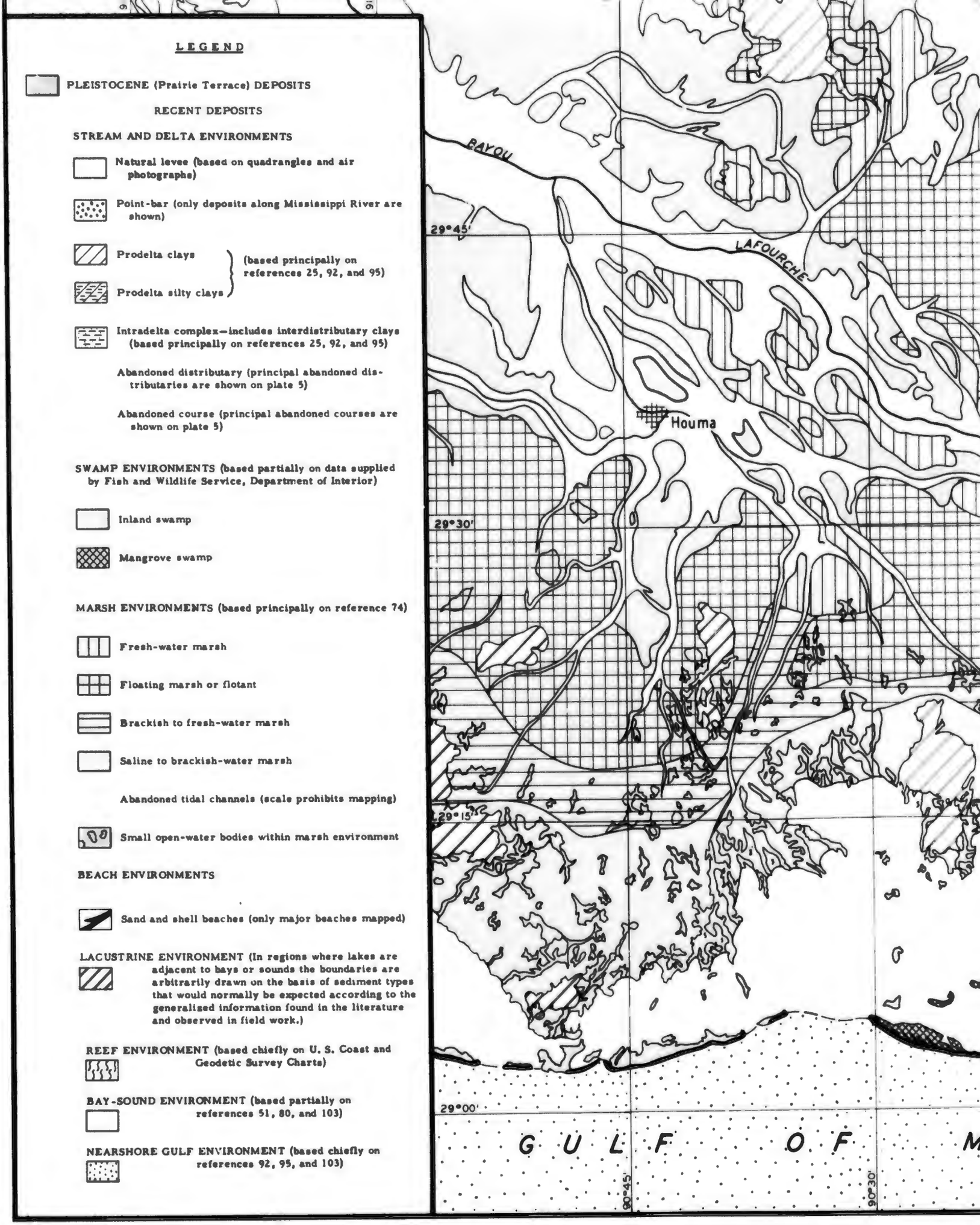
PLATE I

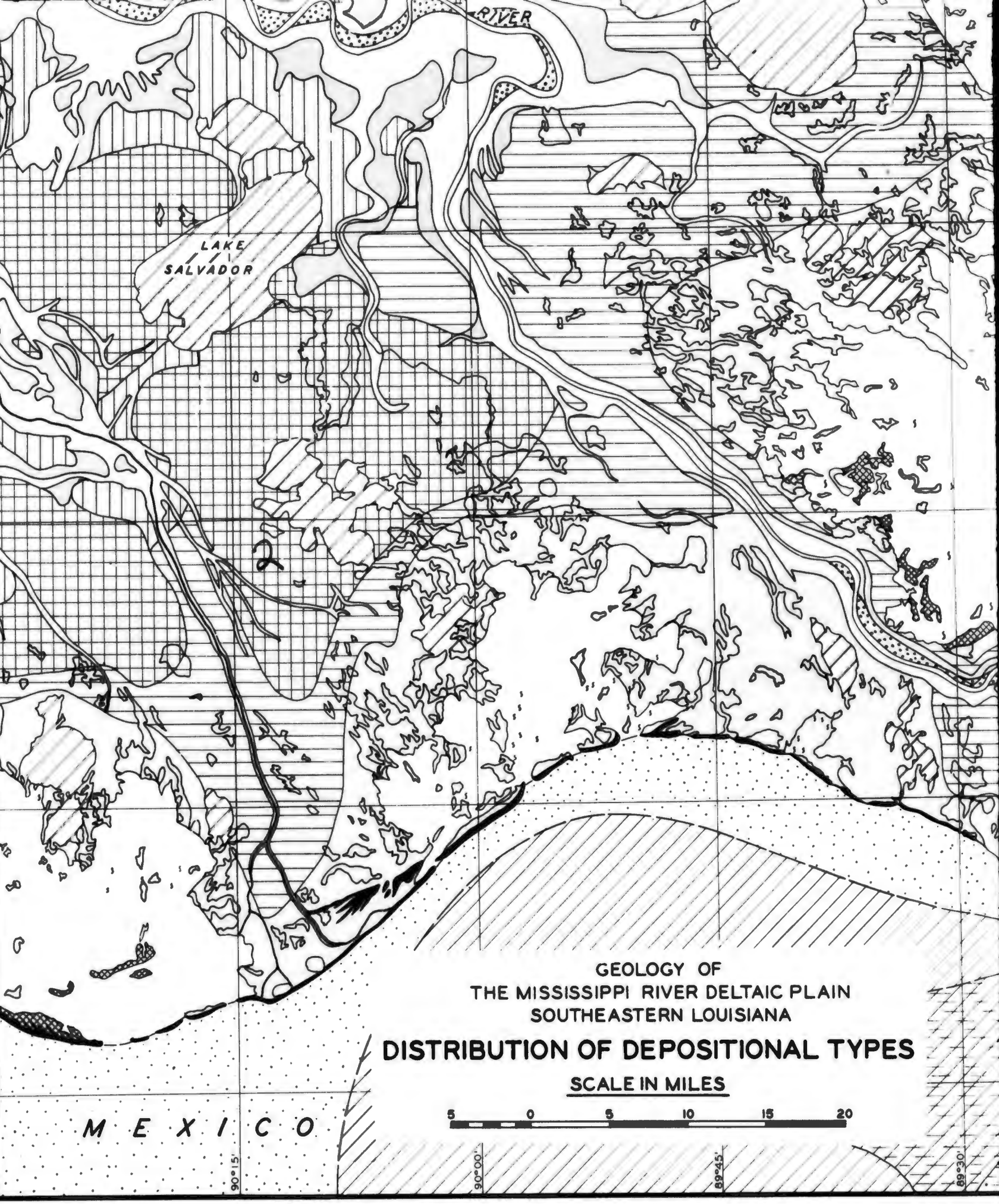
6


BATON ROUGE
91°15'
91°00'
90°45'
90°30'
30°15'
30°00'
29°45'
29°30'
NOT MAPPED
LAKE MAUREPAS
Donaldsonville
MISSISSIPPI
BAYOU LAFOURCHE
Houma
LEGEND
PLEISTOCENE (Prairie Terrace) DEPOSITS
RECENT DEPOSITS
STREAM AND DELTA ENVIRONMENTS
Natural levee (based on quadrangles and air photographs)
Point-bar (only deposits along Mississippi River are shown)
Prodelta clays
Prodelta silty clays
(based principally on references 25, 92, and 95)
Intradelta complex—includes interdistributary clays (based principally on references 25, 92, and 95)
Abandoned distributary (principal abandoned distributaries are shown on plate 5)
Abandoned course (principal abandoned courses are shown on plate 5)
SWAMP ENVIRONMENTS (based partially on data supplied by Fish and Wildlife Service, Department of Interior)
Inland swamp
Mangrove swamp
MARSH ENVIRONMENTS (based principally on reference 74)


90°15'
90°00'
89°45'
89°30'
LAKE
PONTCHARTRAIN
BORGNE
LAKE
NEW
ORLEANS
RIVER
LAKE
SALVADOR


89°30'
89°15'
89°00'
88°45'
NOT MAPPED
30°15'
30°00'
29°45'
29°30'
N
BORGNE
CHANDELEUR SOUND
3


LEGEND
PLEISTOCENE (Prairie Terrace) DEPOSITS
RECENT DEPOSITS
STREAM AND DELTA ENVIRONMENTS
Natural levee (based on quadrangles and air photographs)
Point-bar (only deposits along Mississippi River are shown)
Prodelta clays
Prodelta silty clays
(based principally on references 25, 92, and 95)
Intradelta complex—includes interdistributary clays (based principally on references 25, 92, and 95)
Abandoned distributary (principal abandoned distributaries are shown on plate 5)
Abandoned course (principal abandoned courses are shown on plate 5)
SWAMP ENVIRONMENTS (based partially on data supplied by Fish and Wildlife Service, Department of Interior)
Inland swamp
Mangrove swamp
MARSH ENVIRONMENTS (based principally on reference 74)
Fresh-water marsh
Floating marsh or flotant
Brackish to fresh-water marsh
Saline to brackish-water marsh
Abandoned tidal channels (scale prohibits mapping)
Small open-water bodies within marsh environment
BEACH ENVIRONMENTS
Sand and shell beaches (only major beaches mapped)
LACUSTRINE ENVIRONMENT (In regions where lakes are adjacent to bays or sounds the boundaries are arbitrarily drawn on the basis of sediment types that would normally be expected according to the generalized information found in the literature and observed in field work.)
REEF ENVIRONMENT (based chiefly on U. S. Coast and Geodetic Survey Charts)
BAY-SOUND ENVIRONMENT (based partially on references 51, 80, and 103)
NEARSHORE GULF ENVIRONMENT (based chiefly on references 92, 95, and 103)
BAYOU
LAFOURCHE
Houma
29°45'
29°30'
29°15'
29°00'
G U L F O F
90°45'
90°30'



GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

DISTRIBUTION OF DEPOSITIONAL TYPES

SCALE IN MILES

5 0 5 10 15 20

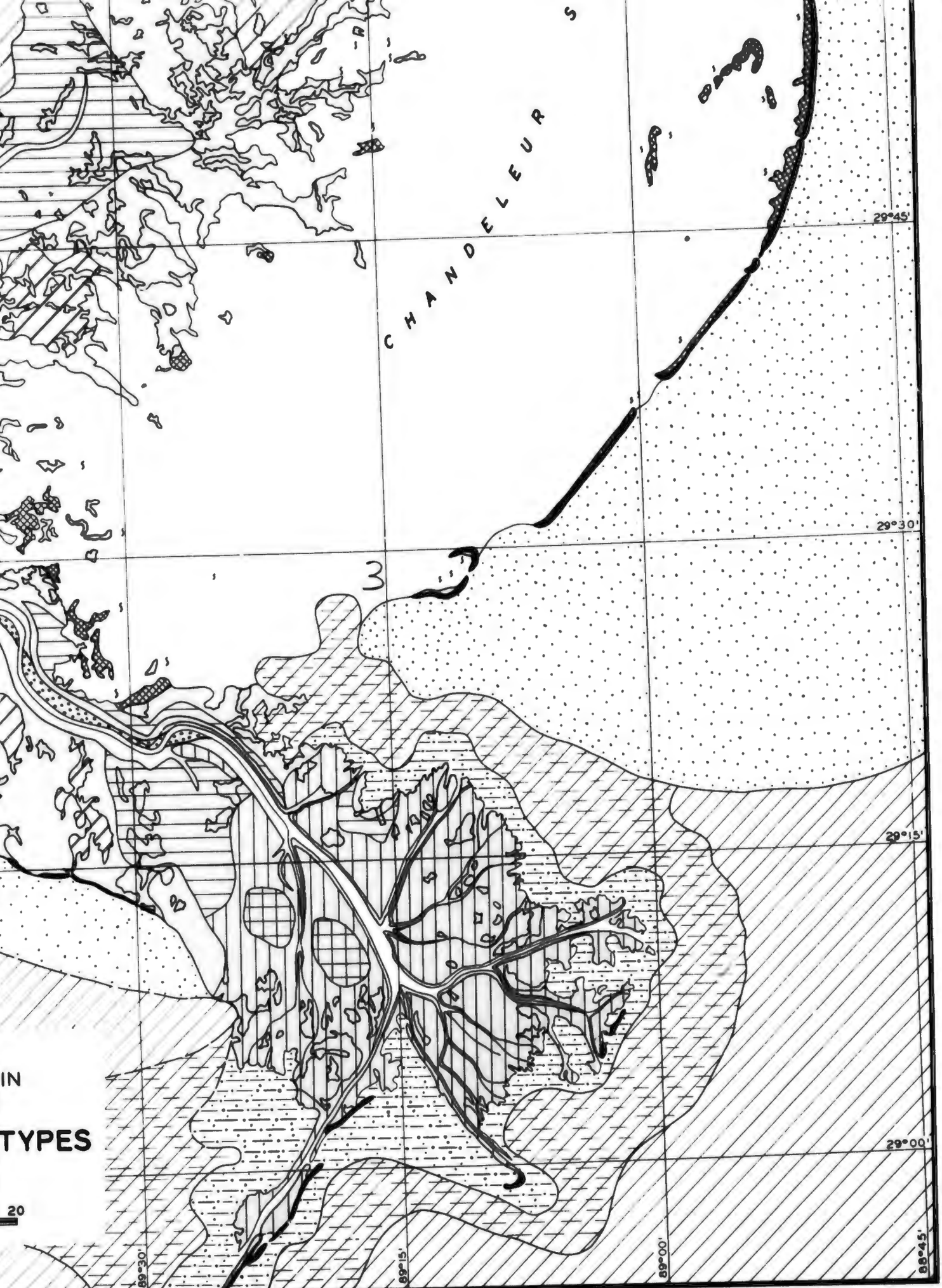
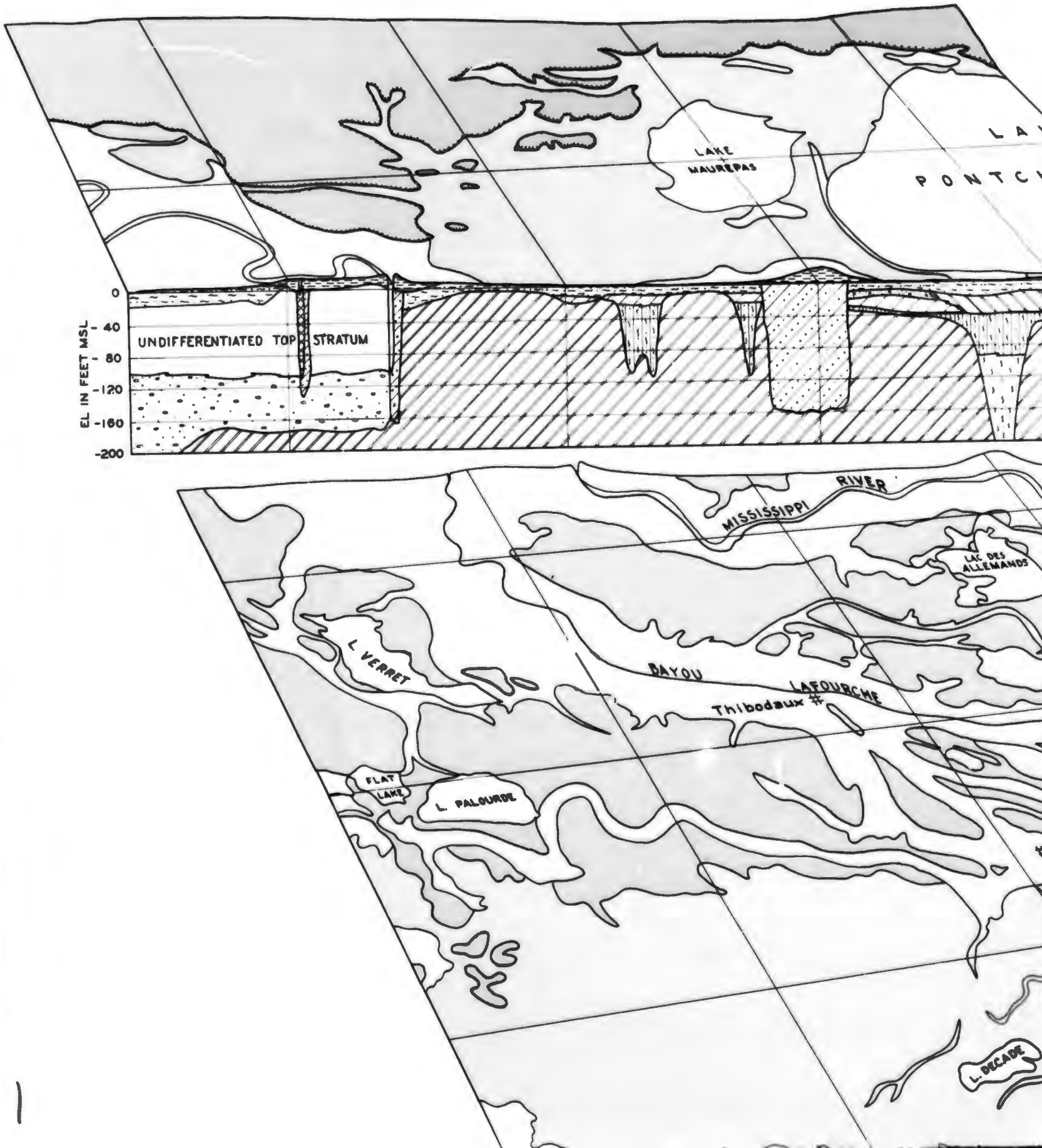
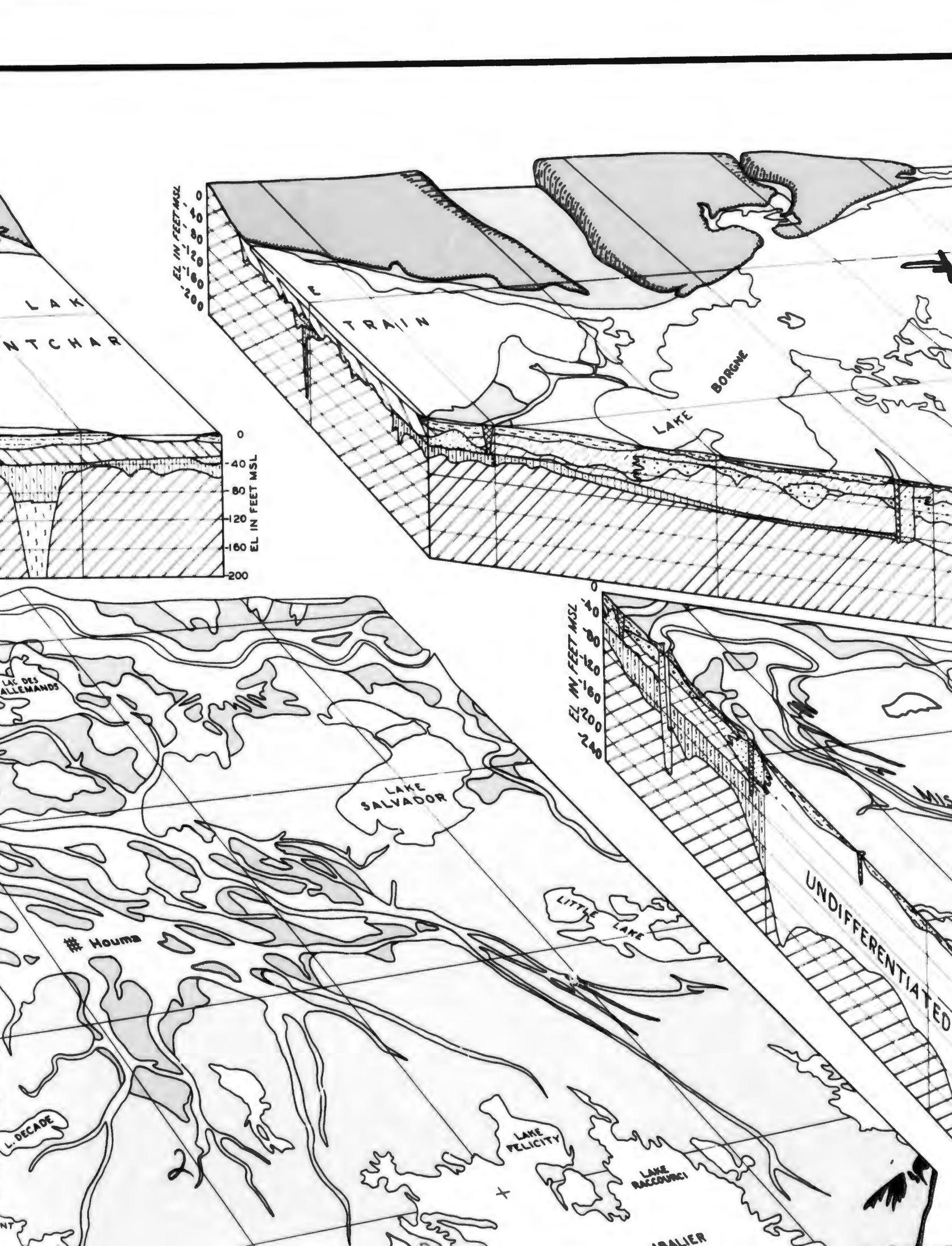

CHANDELEUR S
29°45'
29°30'
29°15'
29°00'
89°30'
89°15'
89°00'
88°45'
3
IN
TYPES
20

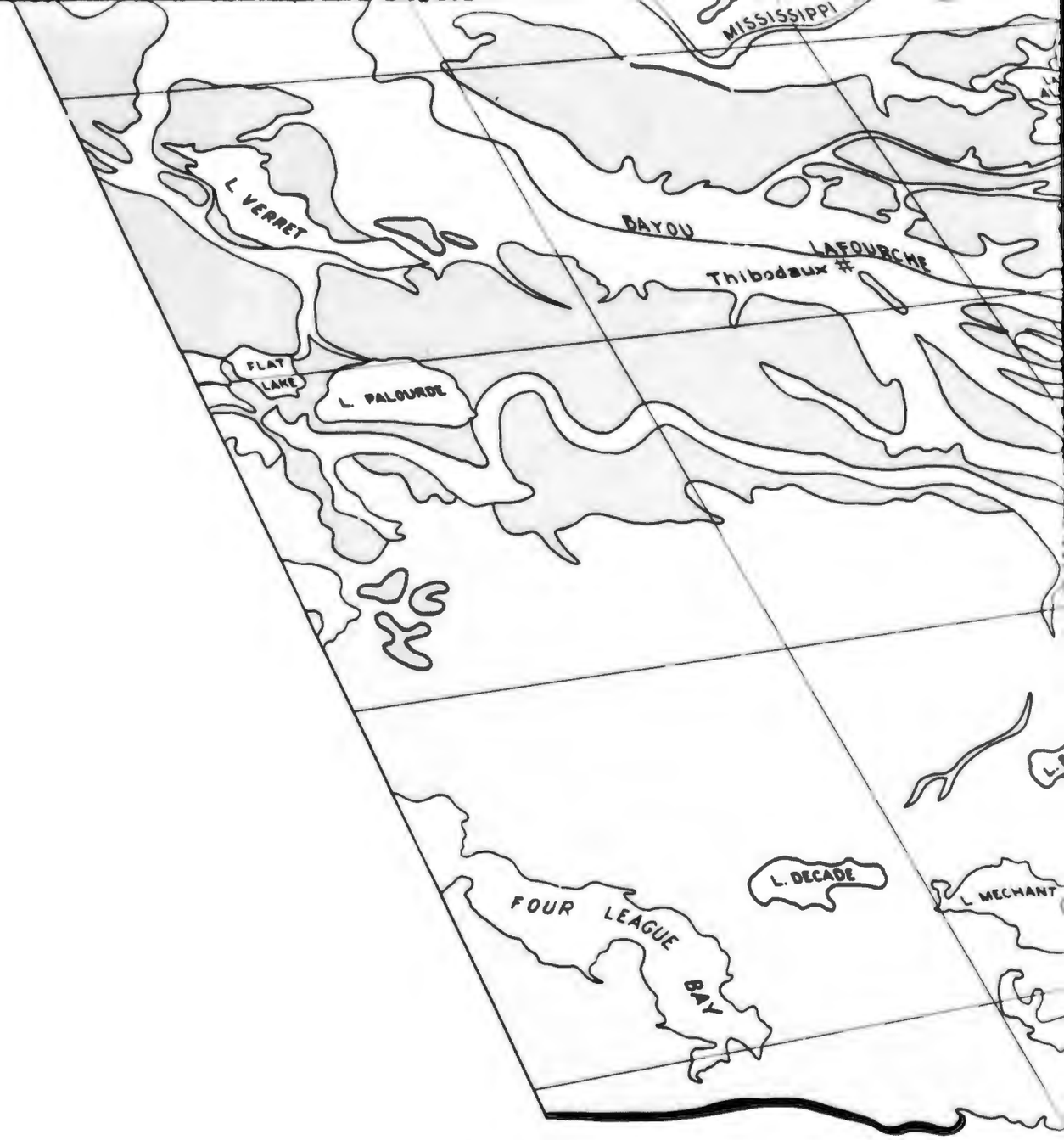
PLATE 2


LAKE
MAUREPAS
PONTC
0
- 40
- 80
-120
-160
-200
EL IN FEET MSL
UNDIFFERENTIATED TOP STRATUM
MISSISSIPPI RIVER
LAC DES ALLEMANDS
L VERRET
BAYOU LAFOURCHE
Thibodaux
FLAT LAKE
L. PALOURDE
L. DECADE


LAK
NTCHAR
0
-40
-80
-120
-160
-200
EL IN FEET MSL
EL IN FEET MSL
0
-40
-80
-120
-160
-200
TRAIN
BORGNE
LAKE
LAC DES
ALLEMANDS
LAKE
SALVADOR
Houma
LITTLE
LAKE
L. DECADE
LAKE
PELICITY
LAKE
RACCOURCI
EL IN FEET MSL
0
-40
-80
-120
-160
-200
-240
UNDIFFERENTIATED

CHANDELEUR SOUND
BRETON SOUND
MISSISSIPPI RIVER
BARATARIA BAY
UNDIFFERENTIATED RECENT DEPOSITS
0
-40
-80
-120
-160
-200
EL IN FEET MSL

3



CAI

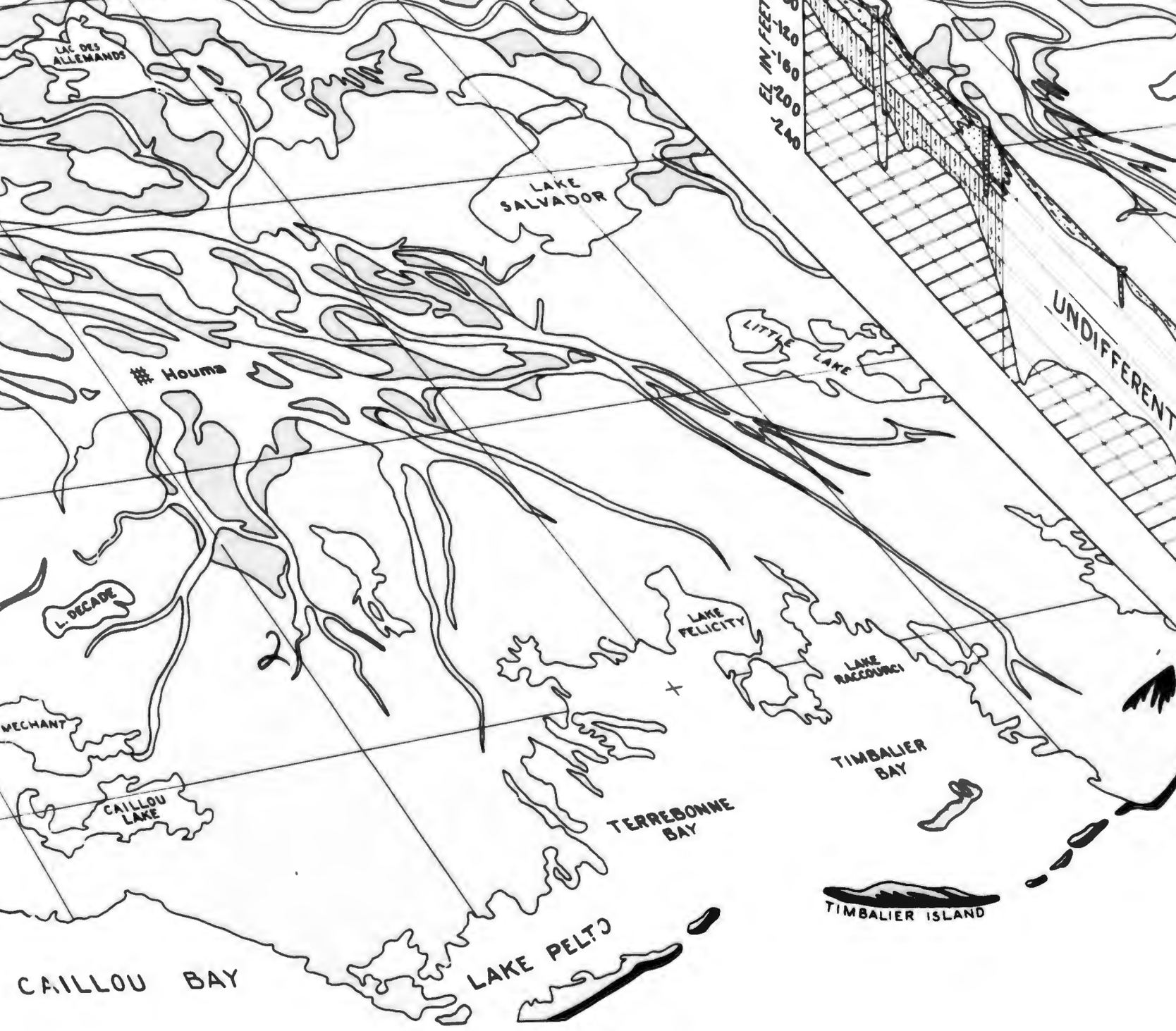
LEGEND

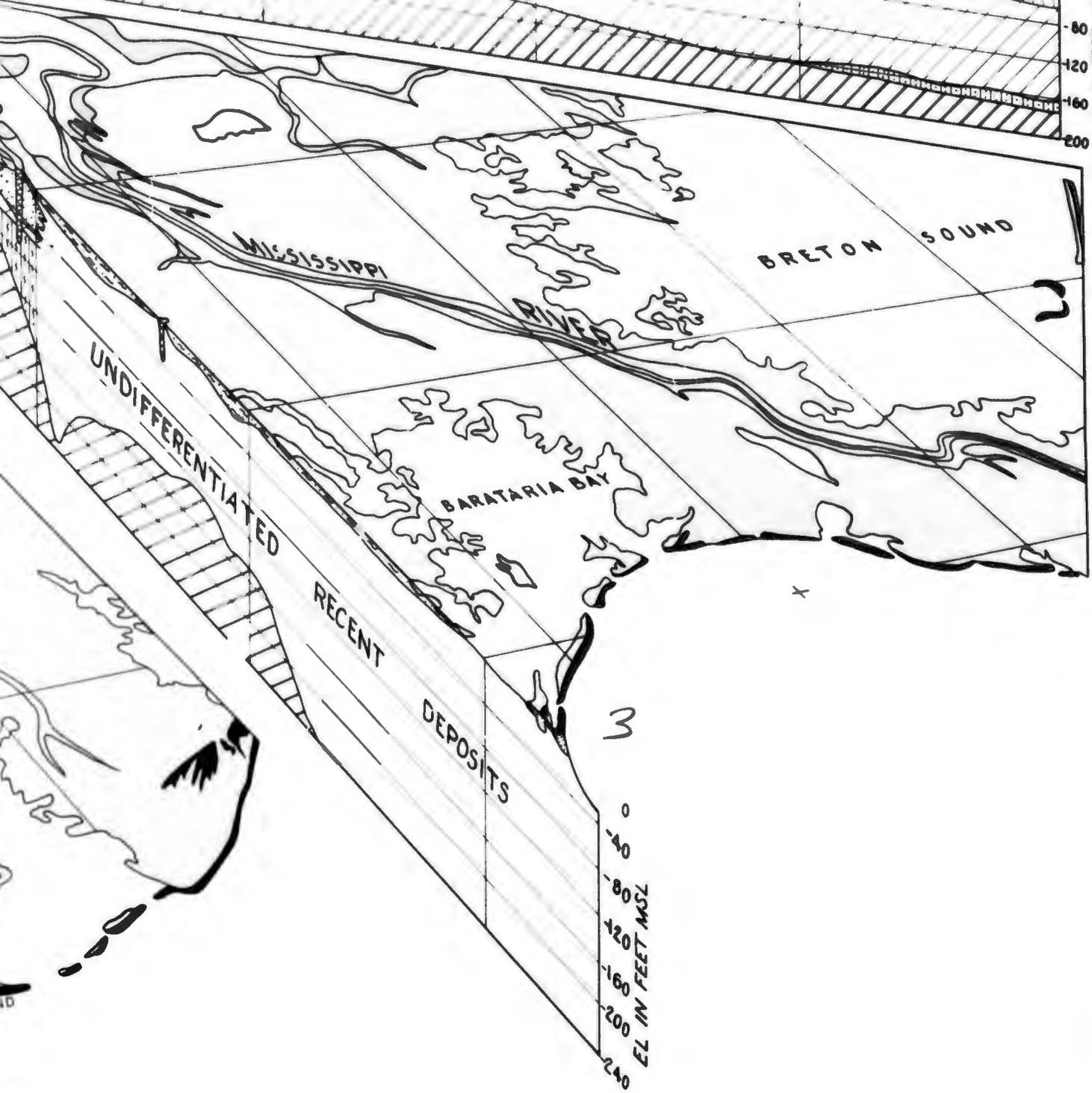
SURFACE

- PLEISTOCENE
- NATURAL LEVEE
- SWAMP
- MARSH
- BEACHES

SUBSURFACE

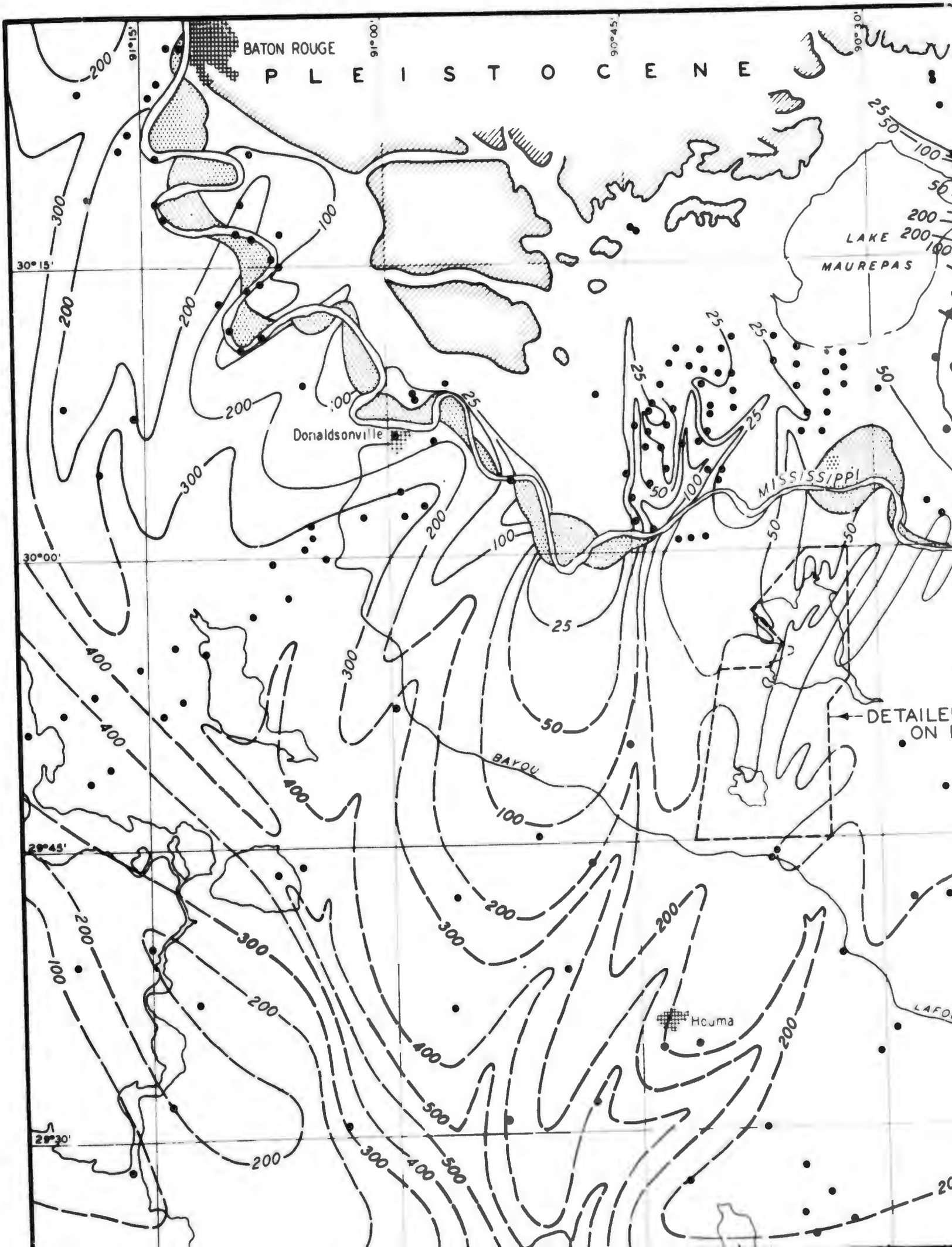
- NATURAL LEVEE
- POINT BAR
- INTRADELTA
- INTERDISTRIBUTARY
- PRODELTA
- MARSH - SWAMP
- LACUSTRINE
- ESTUARINE
- BAY-SOUND
- NEARSHORE GULF
- BEACHES
- SUBSTRATUM
- PLEISTOCENE
- ABANDONED COURSE

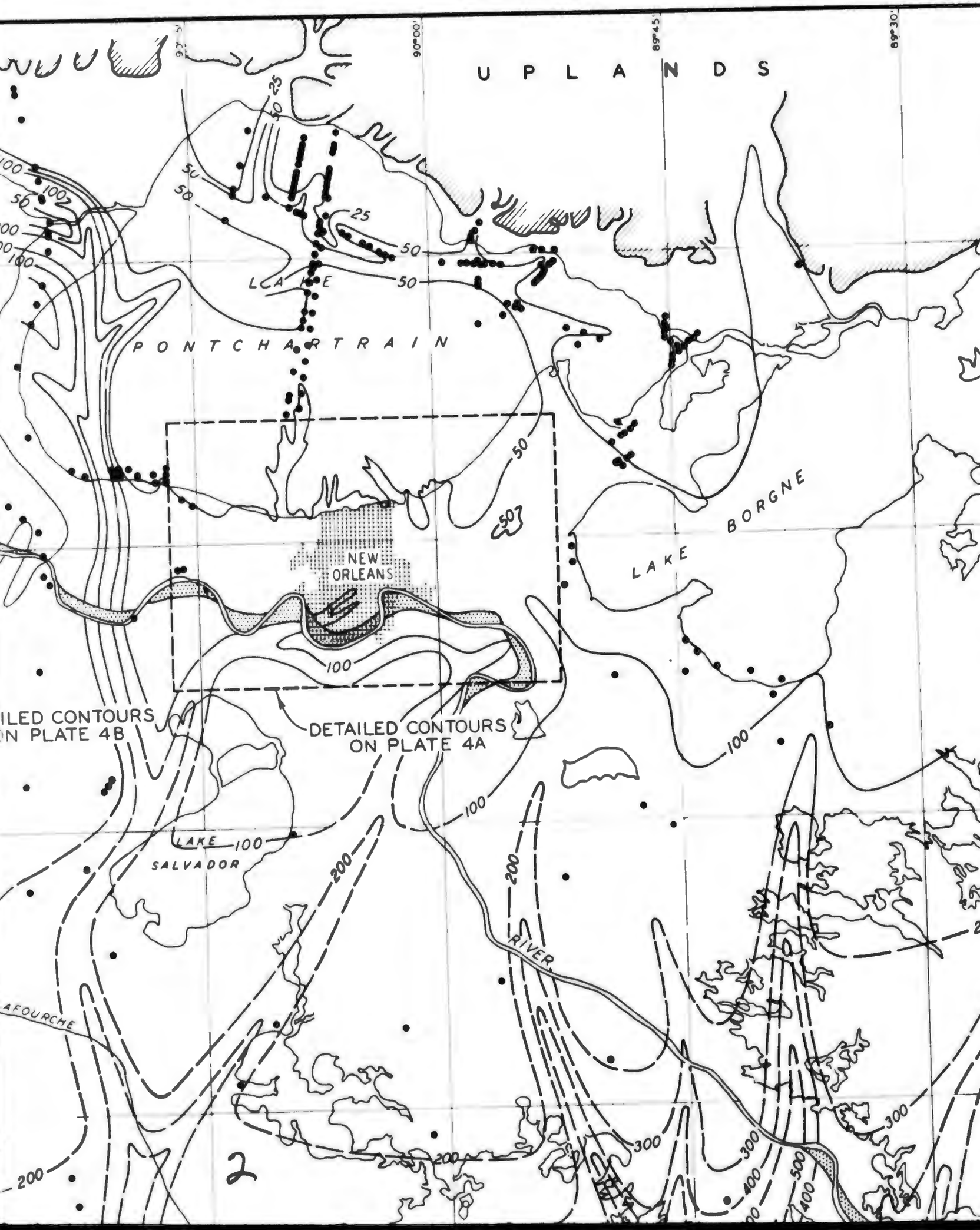

LAC DES ALLEMANDS
LAKE SALVADOR
LITTLE LAKE
Houma
L. DECADE
LAKE FELICITY
LAKE RACCOURCI
MECHANT
CAILLOU LAKE
TERREBONNE BAY
TIMBALIER BAY
TIMBALIER ISLAND
CAILLOU BAY
LAKE PELTO
UNDIFFERENT
EL IN FEET
-120
-160
-200
-240



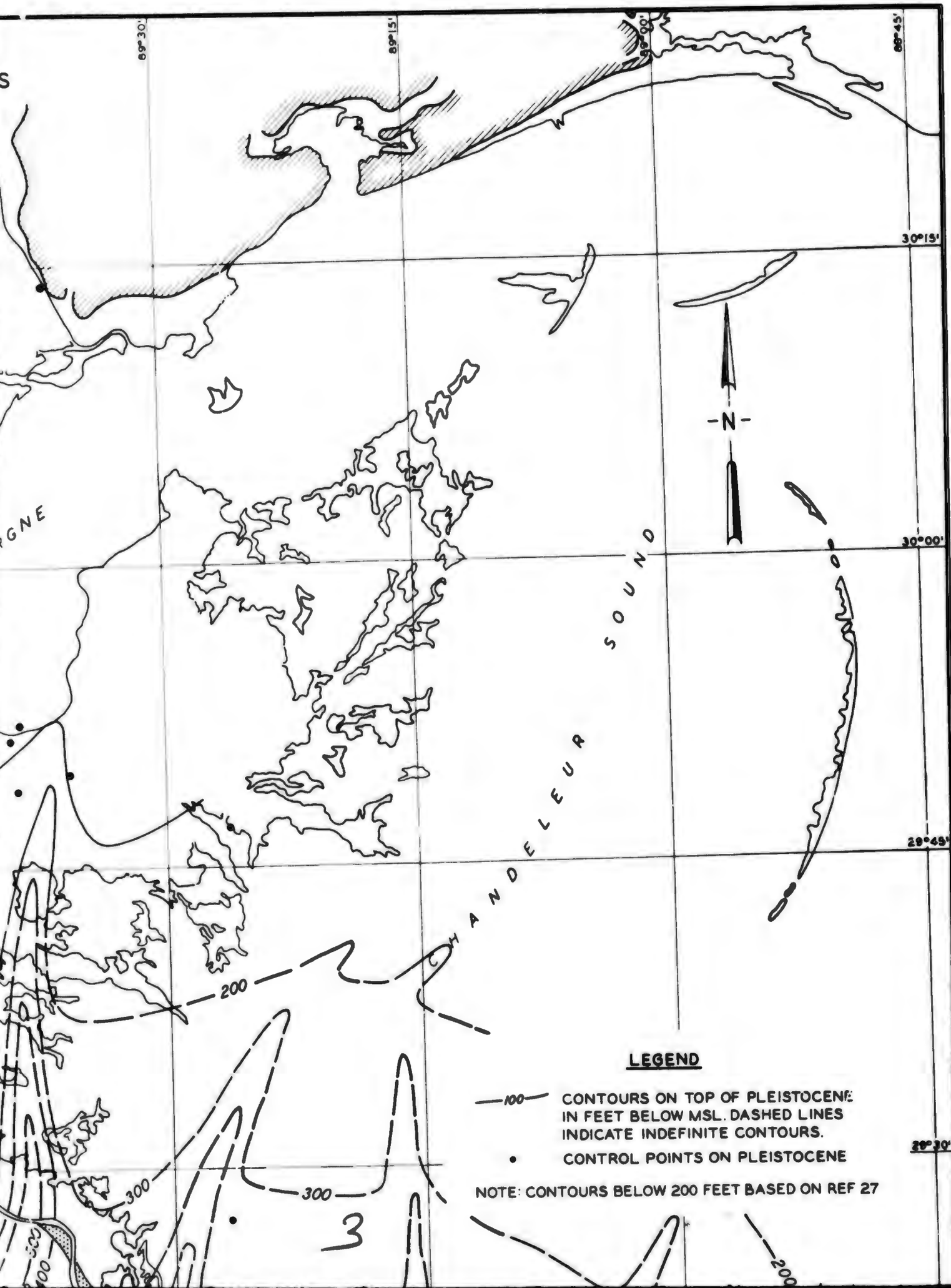
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

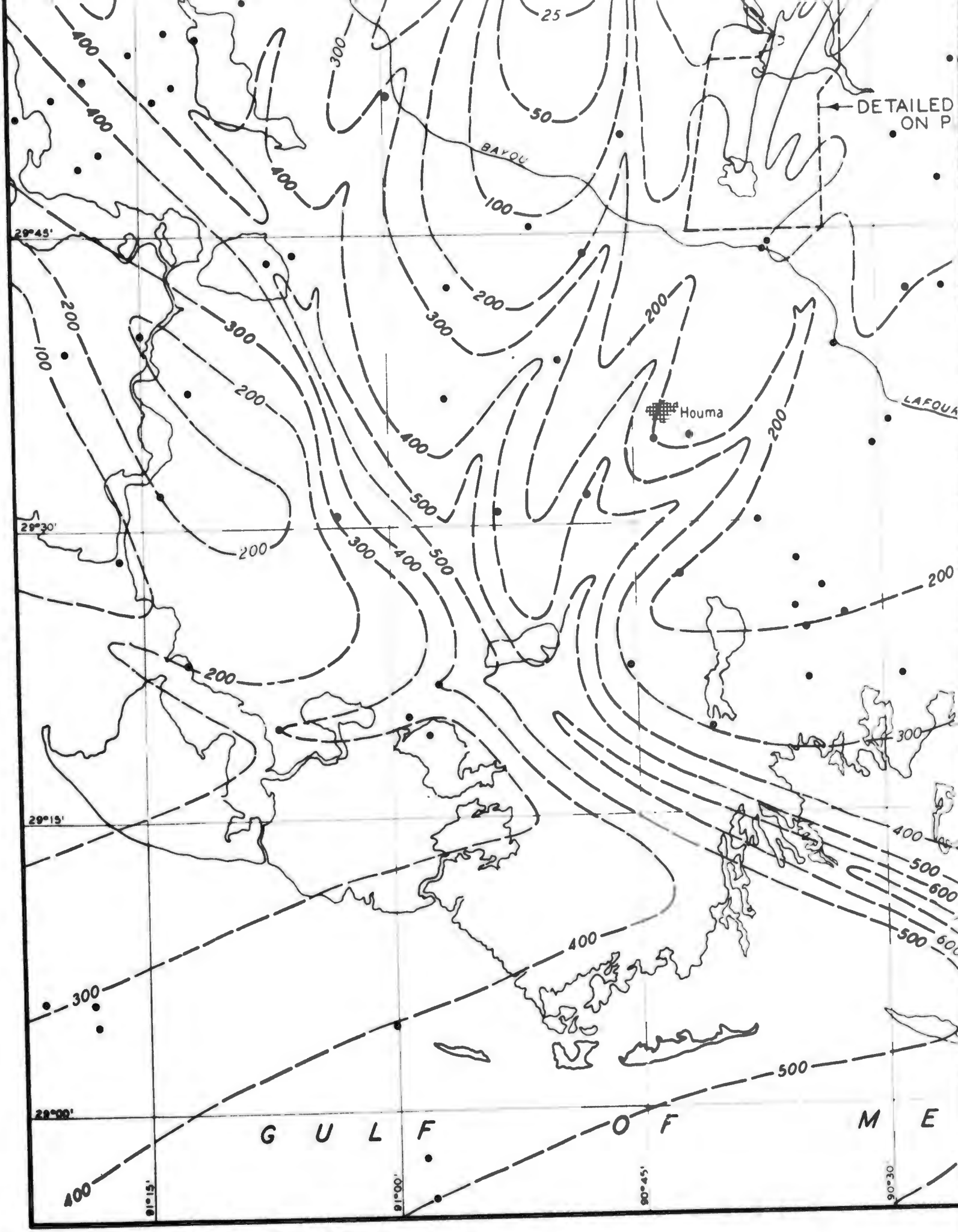
SURFACE-SUBSURFACE RELATIONSHIP


BATON ROUGE
PLEISTOCENE
91°15'
91°00'
90°45'
90°30'
30°15'
30°00'
29°45'
29°30'
LAKE MAUREPAS
Donaldsonville
MISSISSIPPI
BAYOU
Houma
DETAILE
ON
LAFO
25
50
100
200
300
400
500


UPLANDS
90°00'
89°45'
89°30'
LAKE
PONTCHARTRAIN
NEW
ORLEANS
LAKE
BORGNE
LAKE
SALVADOR
RIVER
AFOURCHE
DETAILED CONTOURS
ON PLATE 4A
ILED CONTOURS
N PLATE 4B
25
50
100
200
300
400
500

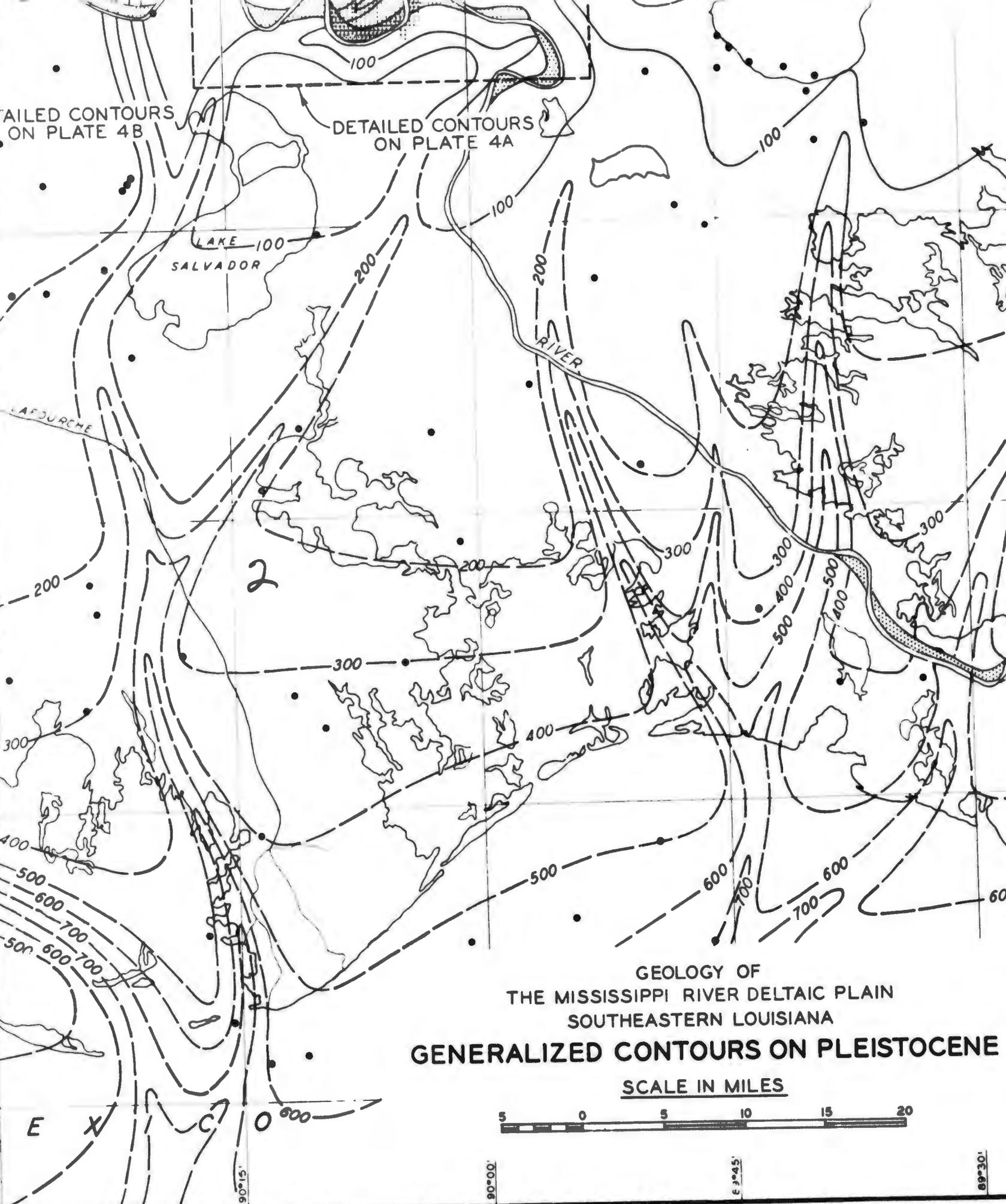
2


89°30'
89°15'
89°00'
88°45'
30°15'
30°00'
29°45'
29°30'
-N-
MANDELEUR SOUND
200
300
300
3
LEGEND
—100— CONTOURS ON TOP OF PLEISTOCENE IN FEET BELOW MSL. DASHED LINES INDICATE INDEFINITE CONTOURS.
• CONTROL POINTS ON PLEISTOCENE
NOTE: CONTOURS BELOW 200 FEET BASED ON REF 27


25
300
400
400
400
50
BAYOU
100
DETAILED
ON P
29°45'
200
100
200
300
200
200
300
Houma
LAFOUR
400
500
200
29°30'
200
300
400
500
200
200
300
29°15'
400
500
600
500
400
300
500
29°00'
G U L F O F M E
400
91°15'
91°00'
90°45'
90°30'

1

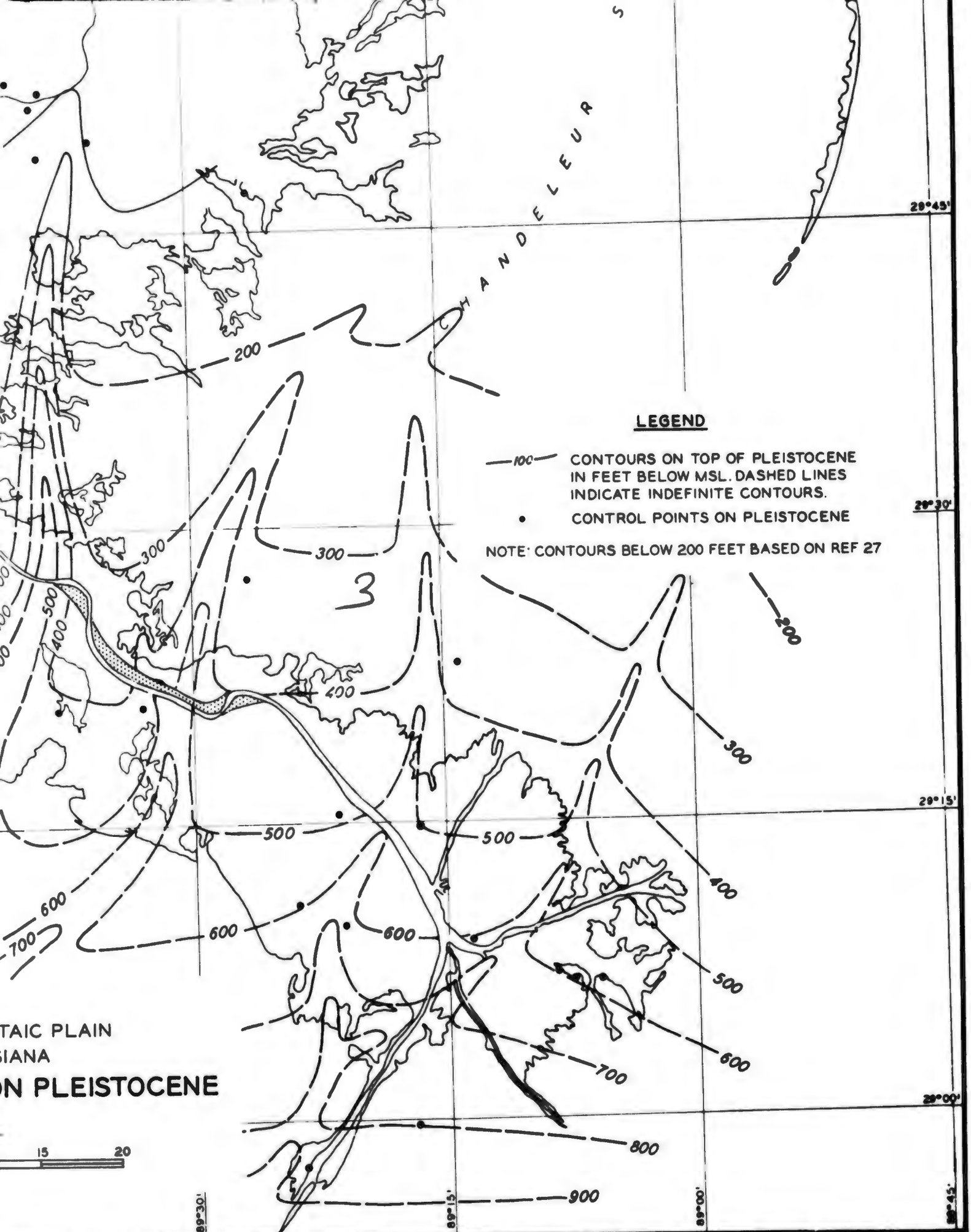
4



GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

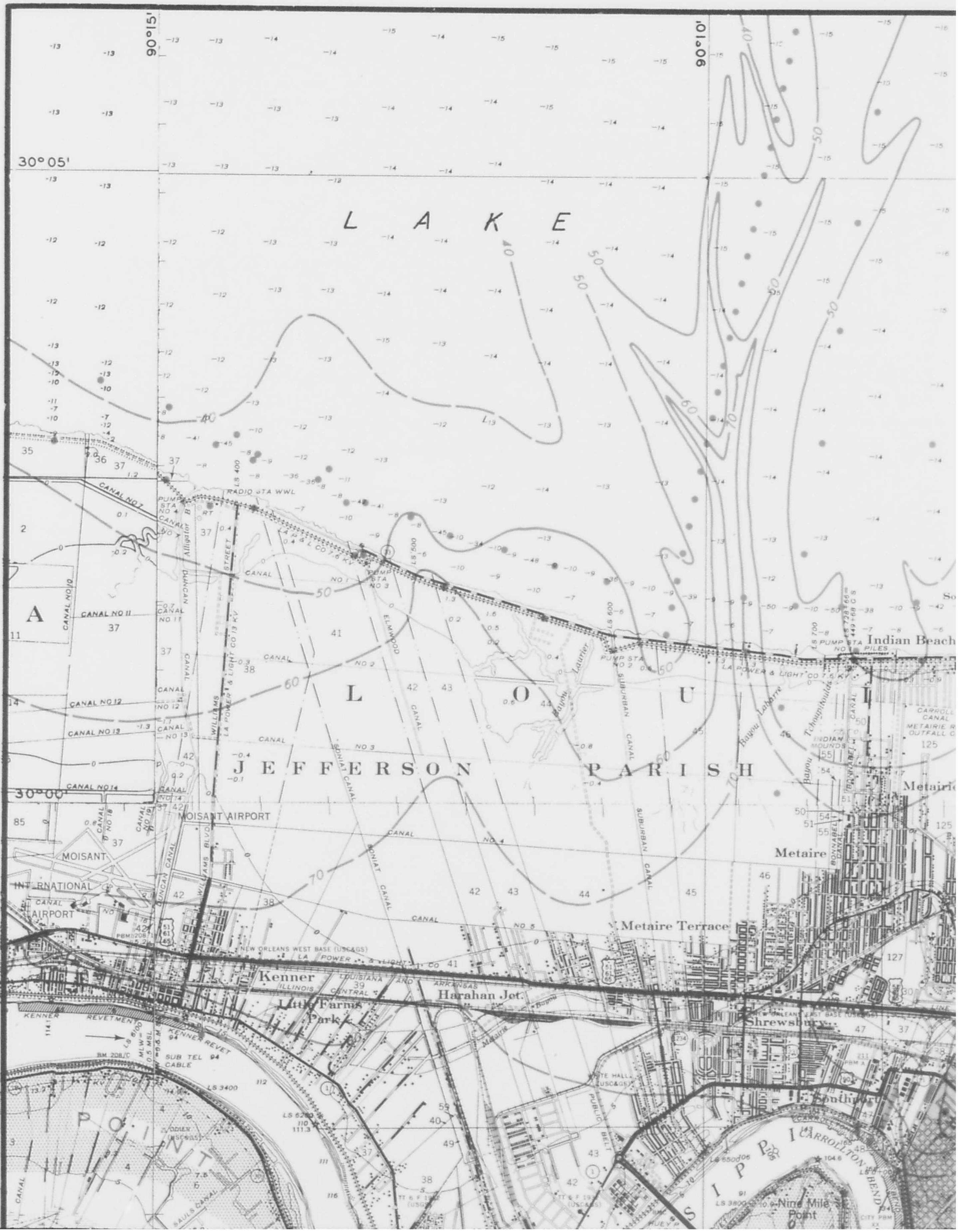
GENERALIZED CONTOURS ON PLEISTOCENE

SCALE IN MILES

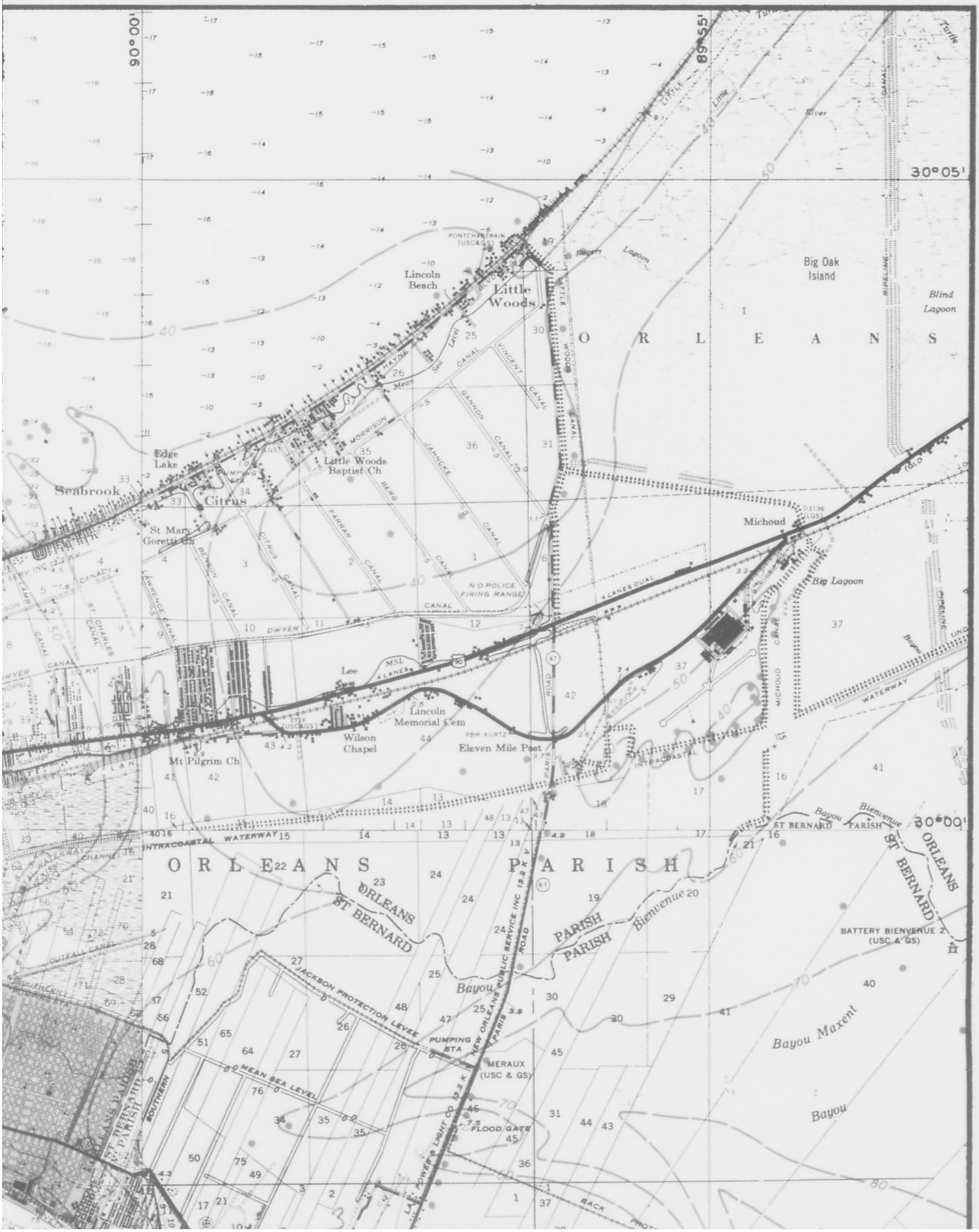


TAIC PLAIN
SIANA
ON PLEISTOCENE

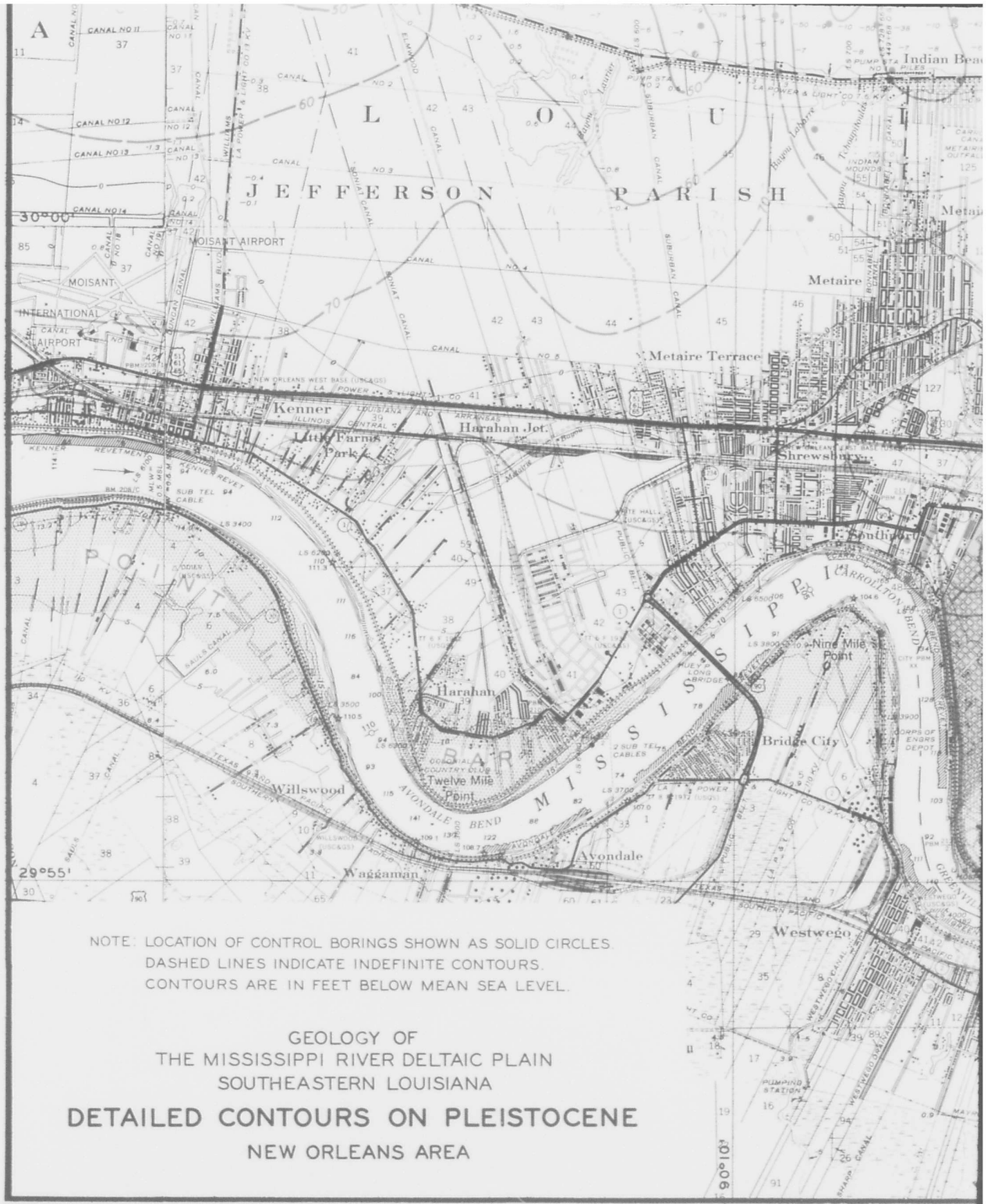
PLATE 4


90°15'
90°10'
30°05'
30°00'
LAKE
L O U
JEFFERSON PARISH
RADIO STA WWL
CANAL NO 7
CANAL NO 10
CANAL NO 11
CANAL NO 12
CANAL NO 13
CANAL NO 14
DUNCAN CANAL
WILLIAMS STREET
LA POWER & LIGHT CO 13 KV
LA P & L CO 7.6 KV
LA POWER & LIGHT CO 7.6 KV
ELMWOOD CANAL
SONIAT CANAL
SUBURBAN CANAL
Bayou Laurier
Bayou Labarre
Bayou Tchoupitoulas
PUMP STA NO 3
Indian Beach
INDIAN MOUNDS
CARROLLTON CANAL
METAIRIE RIDGE OUTFALL C
Metairie
Metaire
Metaire Terrace
MOISANT AIRPORT
MOISANT INTERNATIONAL AIRPORT
NEW ORLEANS WEST BASE (USC&GS)
LA POWER & LIGHT CO
Kenner
ILLINOIS CENTRAL
LOUISIANA AND ARKANSAS
Harahan Jct.
Little Farms Park
Shrewsbury
KENNER REVETMENT
SUB TEL CABLE
Nine Mile Point
CARROLLTON BEND


JEFFERSON PARISH
ORLEANS PARISH
90°05'
90°00'
PONTCHARTRAIN
NEW ORLEANS AIRPORT
Seabrook
Edge Lake
Citrus
St Mary Goretti Ch
Pontchartrain Beach
West End
Southern Yacht Club
West End Park
Beach
Milne Municipal Boys Home
Spanish Fort
ORLEANS PARISH
NEW ORLEANS
City Park
CITY PARK
Gentilly
Mt Pilgrim Ch
INTRACOASTAL WATERWAY
CEMETERY
RIVER
THIRD DISTRICT
REACH
Algiers
Arabi



90°00'
89°55'
30°05'
30°00'
PONTCHARTRAIN (USC&GS)
Lincoln Beach
Little Woods
Big Oak Island
Blind Lagoon
Rogers Lagoon
O R L E A N S
Edge Lake
Seabrook
Citrus
St Mary Goretti Ch
Little Woods Baptist Ch
Michoud
Big Lagoon
N O POLICE FIRING RANGE
DWYER
Lee
Lincoln Memorial Cem
Wilson Chapel
Eleven Mile Post
Mt Pilgrim Ch
INTRACOASTAL WATERWAY
ORLEANS PARISH
ST BERNARD PARISH
Bayou Bienvenue
BATTERY BIENVENUE 2 (USC & GS)
JACKSON PROTECTION LEVEE
PUMPING STA
MERAUX (USC & GS)
NEW ORLEANS PUBLIC SERVICE INC 13.2 KV
FLOOD GATE
MEAN SEA LEVEL
Bayou Maxent
Bayou



NOTE: LOCATION OF CONTROL BORINGS SHOWN AS SOLID CIRCLES.
DASHED LINES INDICATE INDEFINITE CONTOURS.
CONTOURS ARE IN FEET BELOW MEAN SEA LEVEL.

GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

DETAILED CONTOURS ON PLEISTOCENE

NEW ORLEANS AREA


West End
Southern Yacht Club
Westend Park
Indian Beach
Spanish Fort
Milne Municipal Boys Home
ORLEANS PARISH
NEW ORLEANS
Metairie
City Park
Gentilly
Dillard Univ.
JEFFERSON PARISH
ST BERNARD PARISH
Algiers
Arabi
Olive Branch Cem.
Elmwood
Gretna
Harvey
Marrero
Walkertown
Hope Haven Institute
Audubon Park
GOULDSBORO BEND
GREENVILLE BEND
THIRD DISTRICT
RIVER
Scale 1/62500
1 0 1 2 3 4 Miles

5

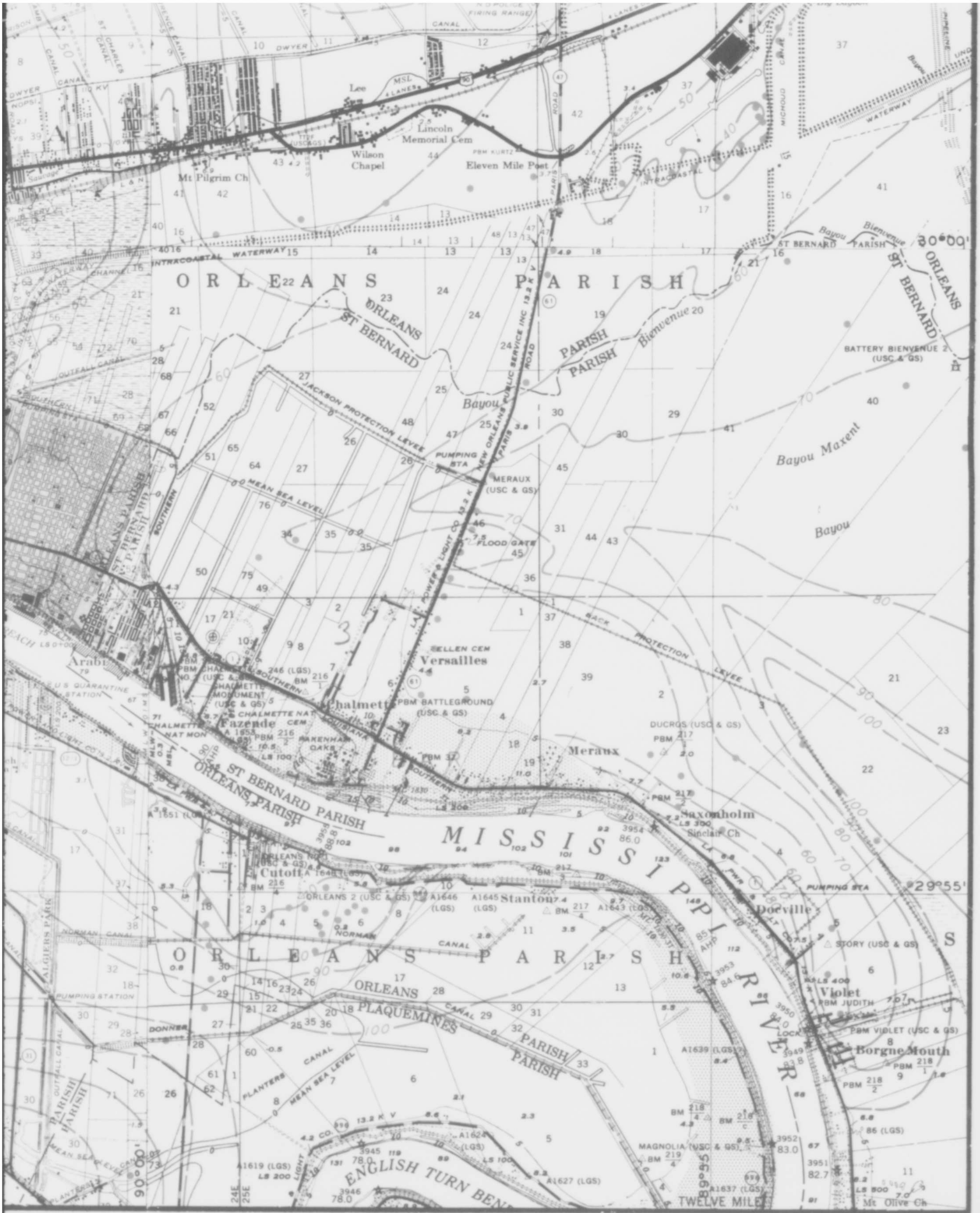
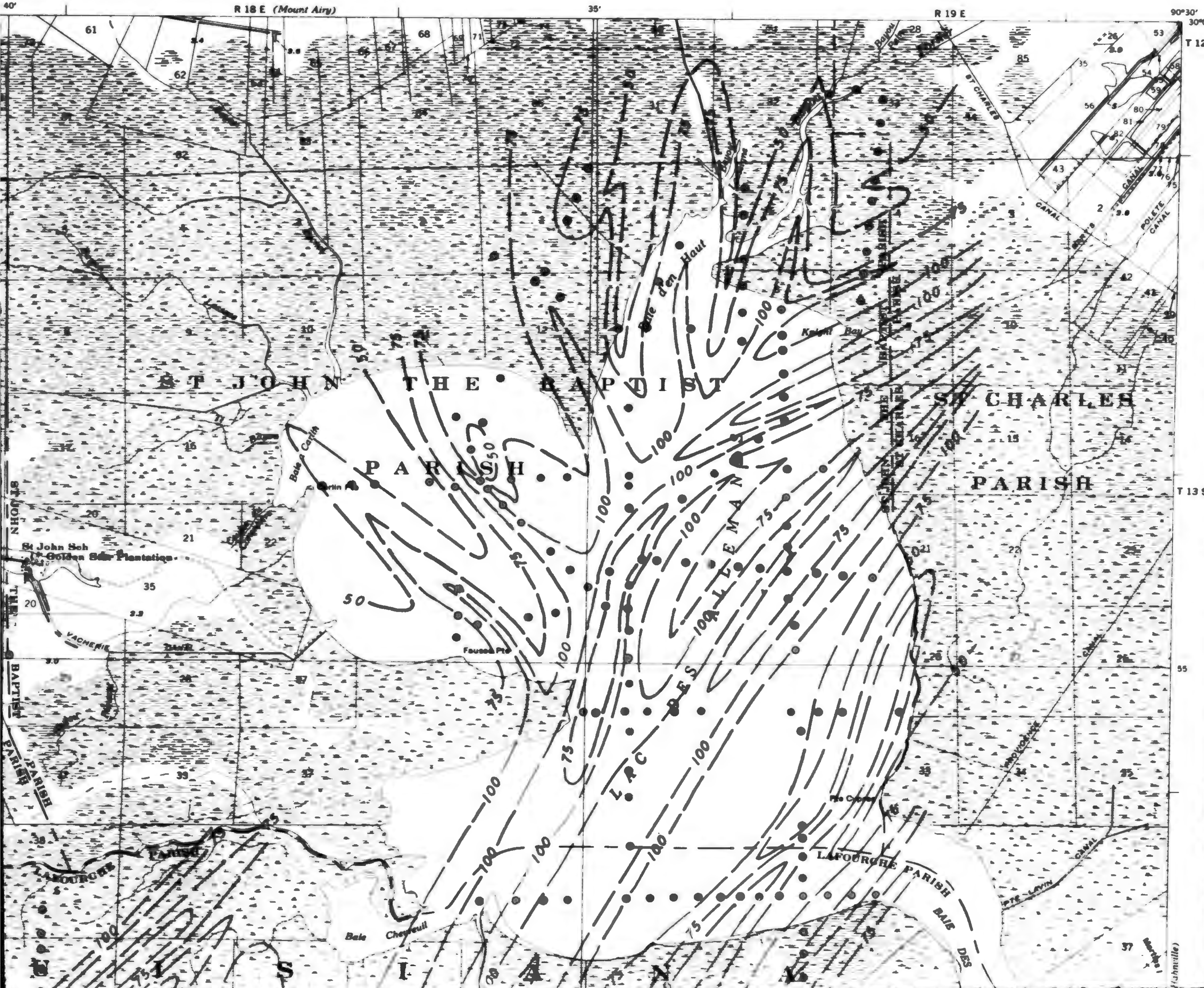

ORLEANS PARISH
ST BERNARD PARISH
MISSISSIPPI RIVER
ORLEANS PARISH
PLAQUEMINES PARISH
INTRACOASTAL WATERWAY
Lee
Lincoln Memorial Cem
Wilson Chapel
Mt Pilgrim Ch
Eleven Mile Post
Bayou Bienvenue
Bayou Maxent
Bayou
BATTERY BIENVENUE 2 (USC & GS)
JACKSON PROTECTION LEVEE
PUMPING STA
MERAUX (USC & GS)
MEAN SEA LEVEL
FLOOD GATE
BACK PROTECTION LEVEE
ELLEN CEM
Versailles
Arabi
Chalmette
CHALMETTE NAT CEM
CHALMETTE NAT MON
Fazende
PAKENHAM OAKS
PBM BATTLEGROUND (USC & GS)
Meraux
DUCROS (USC & GS)
Saxonholm
Sinclair Ch
Docville
STORY (USC & GS)
Violet
PBM JUDITH
PBM VIOLET (USC & GS)
Borgne Mouth
Cutoff
Stanton
ORLEANS 2 (USC & GS)
NORMAN CANAL
DONNER
PLANTERS CANAL
PUMPING STATION
ENGLISH TURN BEND
TWELVE MILE
MAGNOLIA (USC & GS)
Mt Olive Ch
30°00'
29°55'
90°00'
89°55'

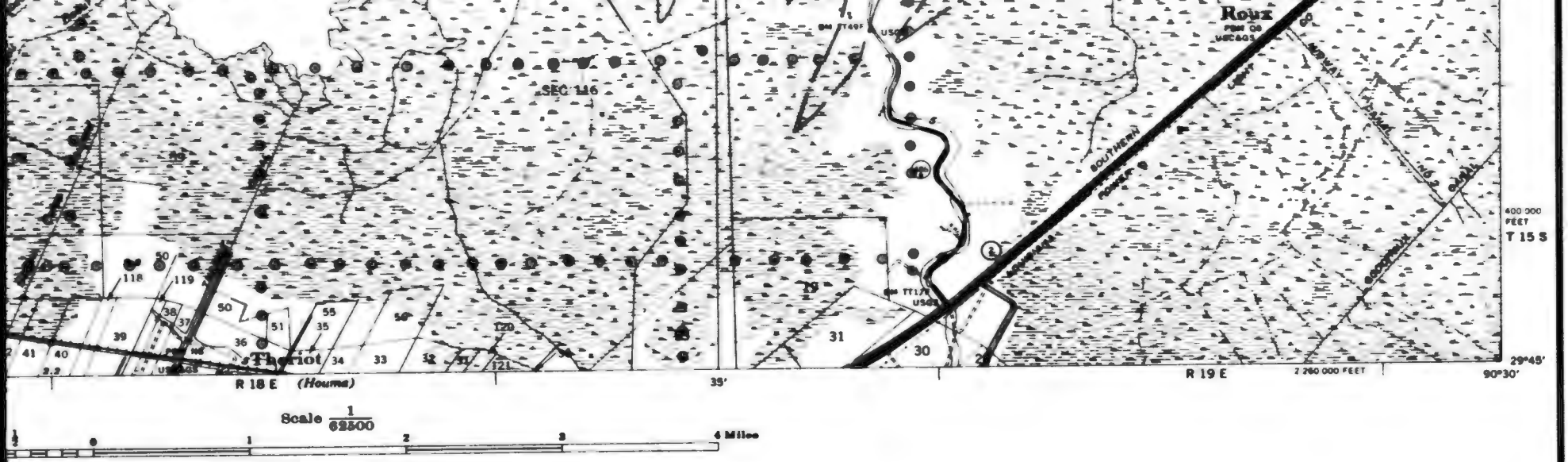
PLATE 4A

6



R 18 E (Mount Airy)
R 19 E
90°30'
30°00'
T 12 S
T 13 S
ST JOHN THE BAPTIST PARISH
ST CHARLES PARISH
LAFOURCHE PARISH
LAC DES ALLEMANDS
Baie d'en Haut
Knight Bay
Baie Cartin
Cartin Pte
Fausse Pte
Baie Chevreuil
St John Sch
Golden Star Plantation
VACHERIE
POLETE CANAL

L O U I S I A N A
L A F O U R C H E P A R I S H
LAKE BOEUF
Bayou Boeuf
Kraemer P O
St Lawrence Ch & Com
BAYOU BOEUF
Bayou
Bayou Boeuf
LOUISIANA POWER & LIGHT
SOUTHERN PACIFIC
Chackbay Sch
Chackbay Cem
Chacahoula
INDIAN MOUND
Bale Cheveuil
Roux
Theriot
DES DEUX CHENES
(Hahnville)
T 14 S
T 15 S
50'
400 000 FEET
SEC 37
SEC 38
100
75
50



W

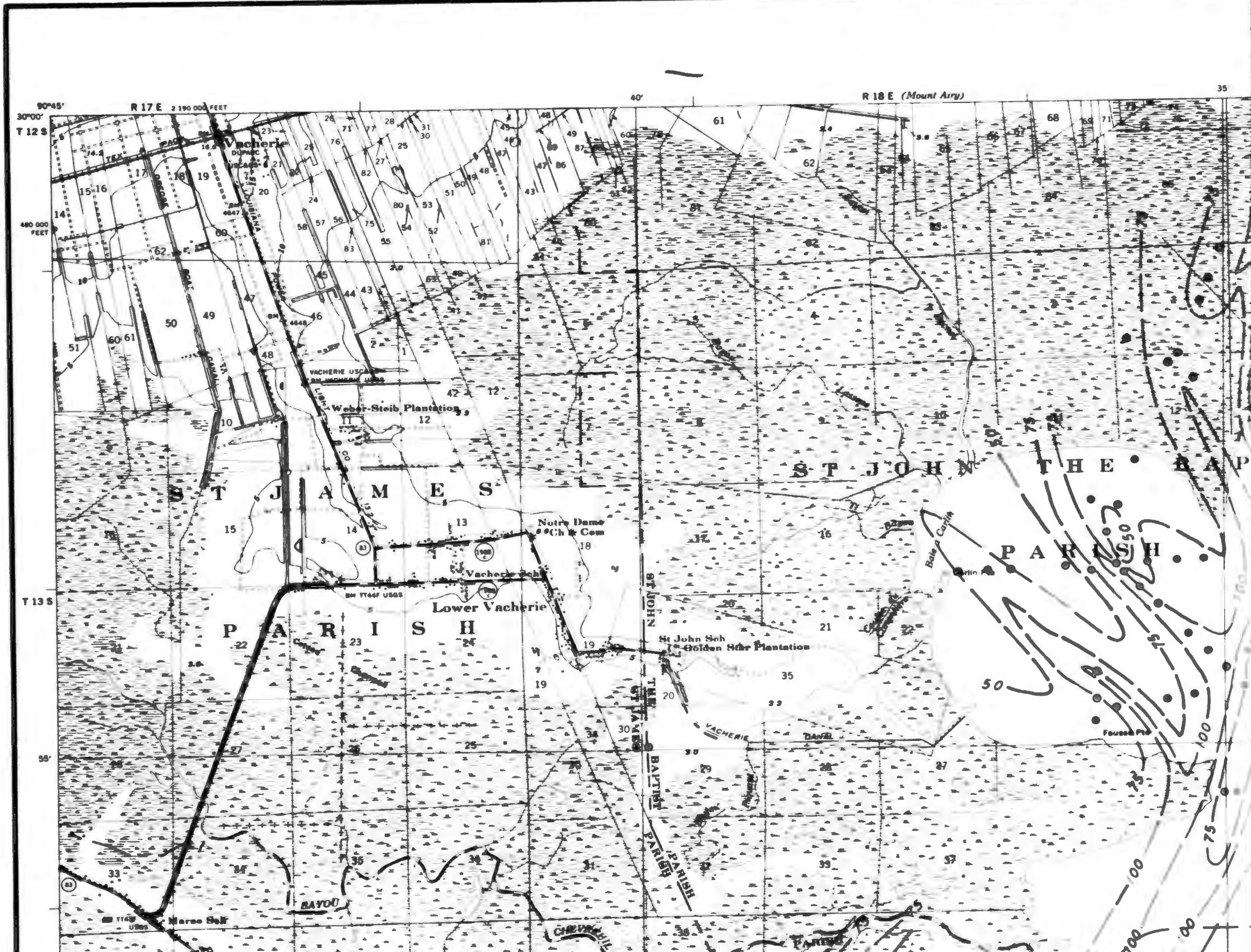
RCLES.

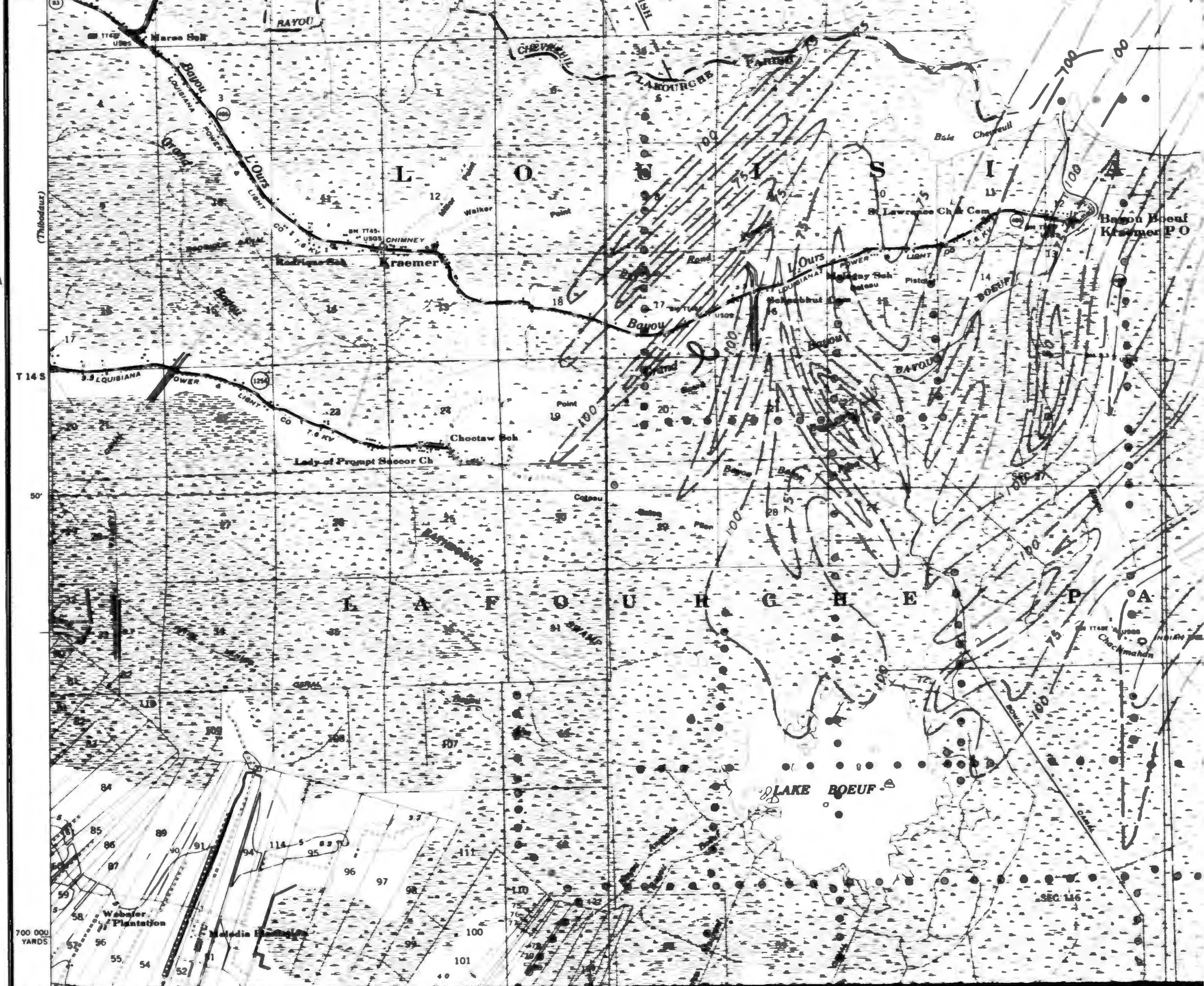
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

DETAILED CONTOURS ON PLEISTOCENE

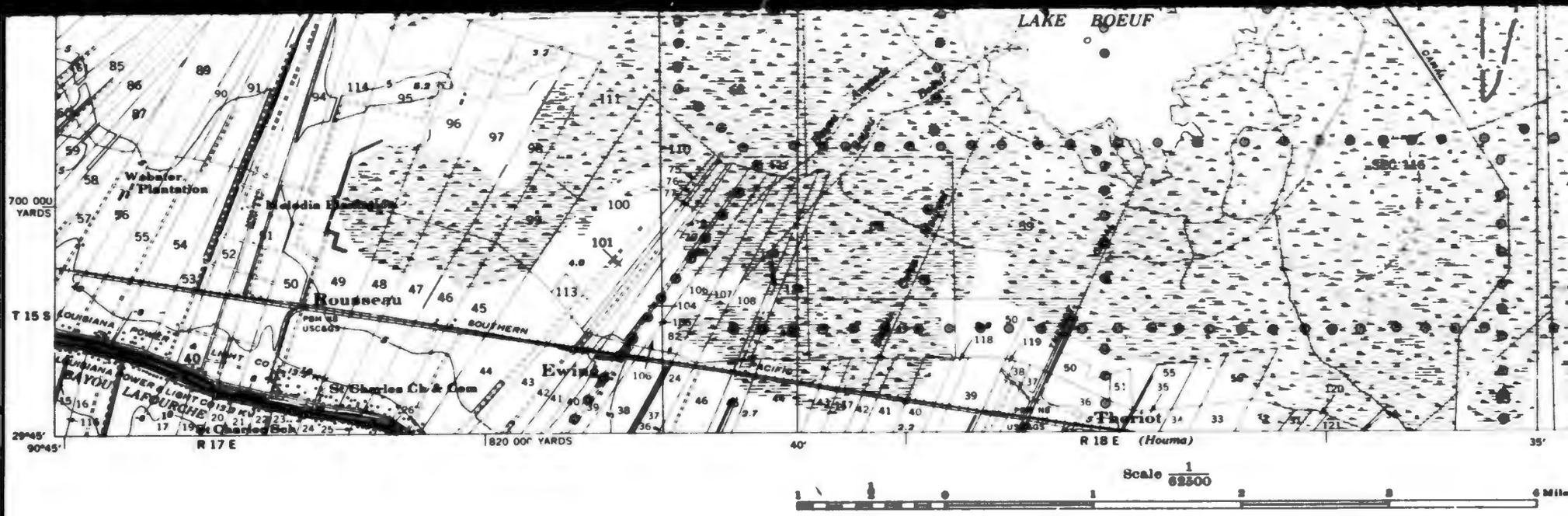
LAC DES ALLEMANDS AREA

4


ST JAMES PARISH
ST JOHN THE BAP
PARISH
ST JOHN THE BAPTIST PARISH
ST JAMES PARISH
Vacherie
Weber-Steib Plantation
Notre Dame Ch & Com
Vacherie Sch
Lower Vacherie
St John Sch
Golden Star Plantation
Marco Sch
Baie a Carlin
VACHERIE CANAL
BAYOU
R 17 E
R 18 E (Mount Airy)
T 12 S
T 13 S
90°45'
30°00'
40'
35'
55'
2 190 000 FEET
480 000 FEET
50
75
100

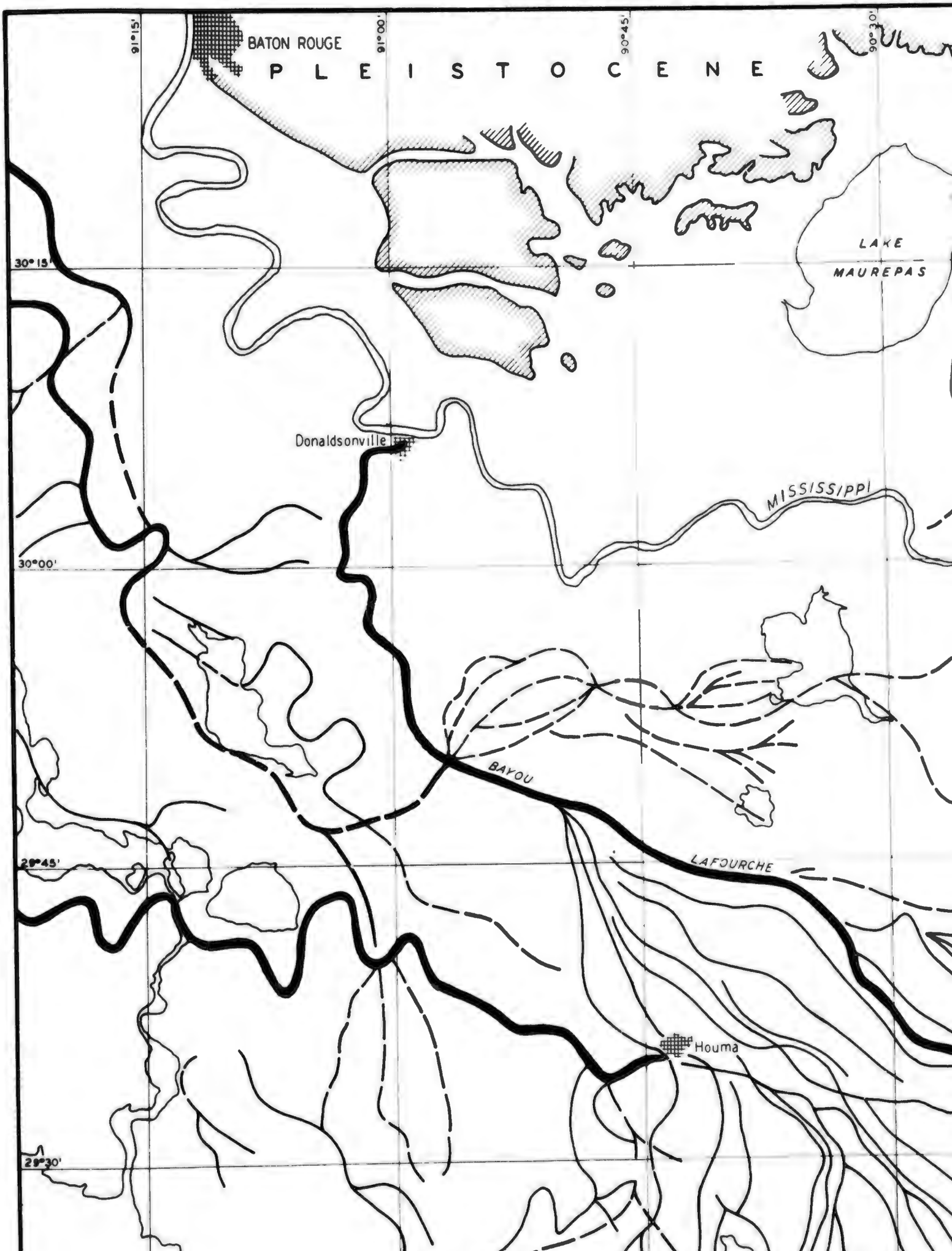


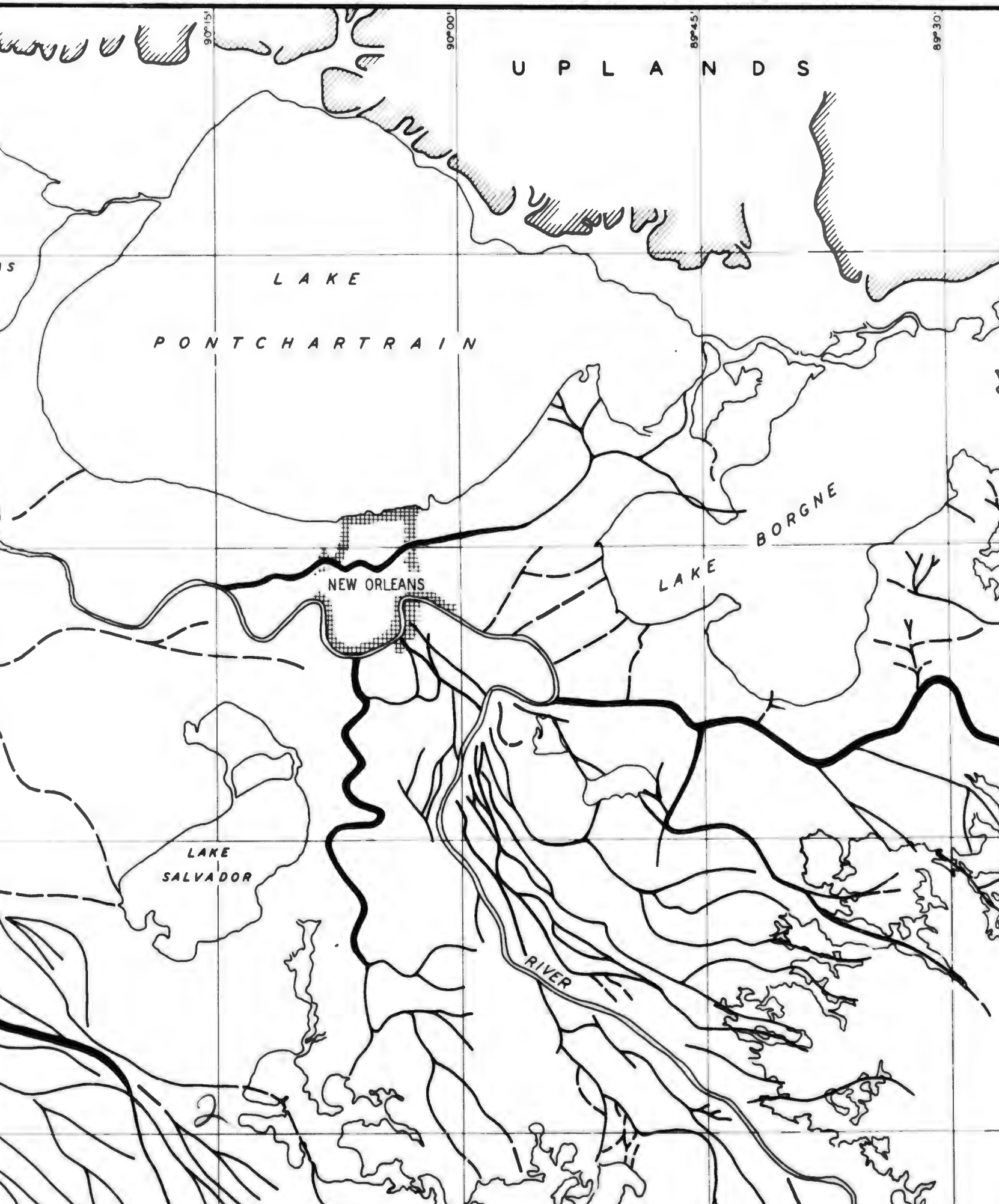
(Thibodaux)
T 14 S
50'
700 000 YARDS
L O U I S I A
L A F O U R C H E P A
Kraemer
Choctaw Sch
Lady of Prompt Succor Ch
St Lawrence Ch & Cem
Bayou Boeuf
Kraemer P O
Bayou L'Ours
Louisiana Power & Light Co
LAKE BOEUF
Webster Plantation
Lafourche Parish
Baie Cheveuil
Marse Sch
Rodrigue Sch
Walker
Point
Chackmaton
SEC 116
Bayou Chevreuil

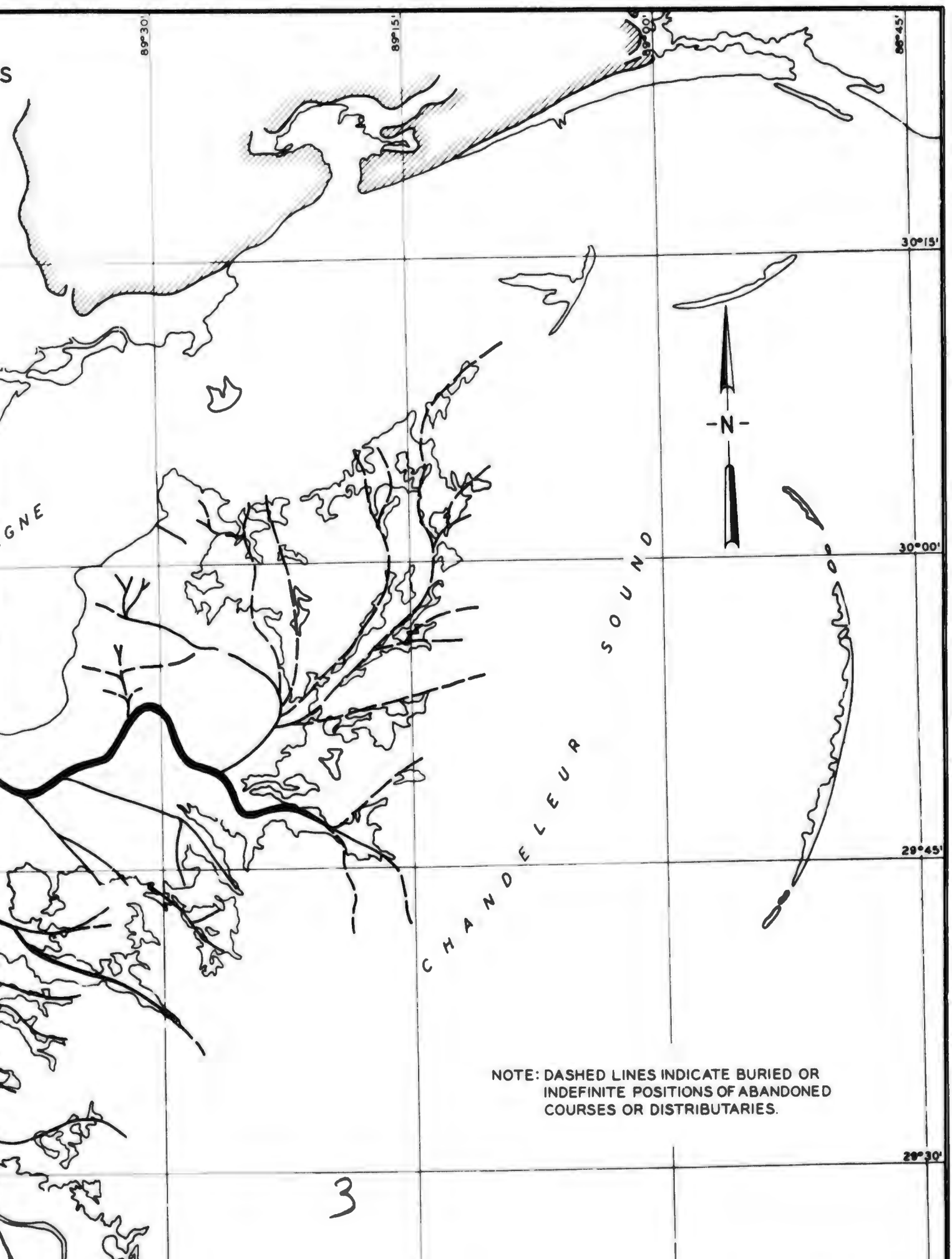


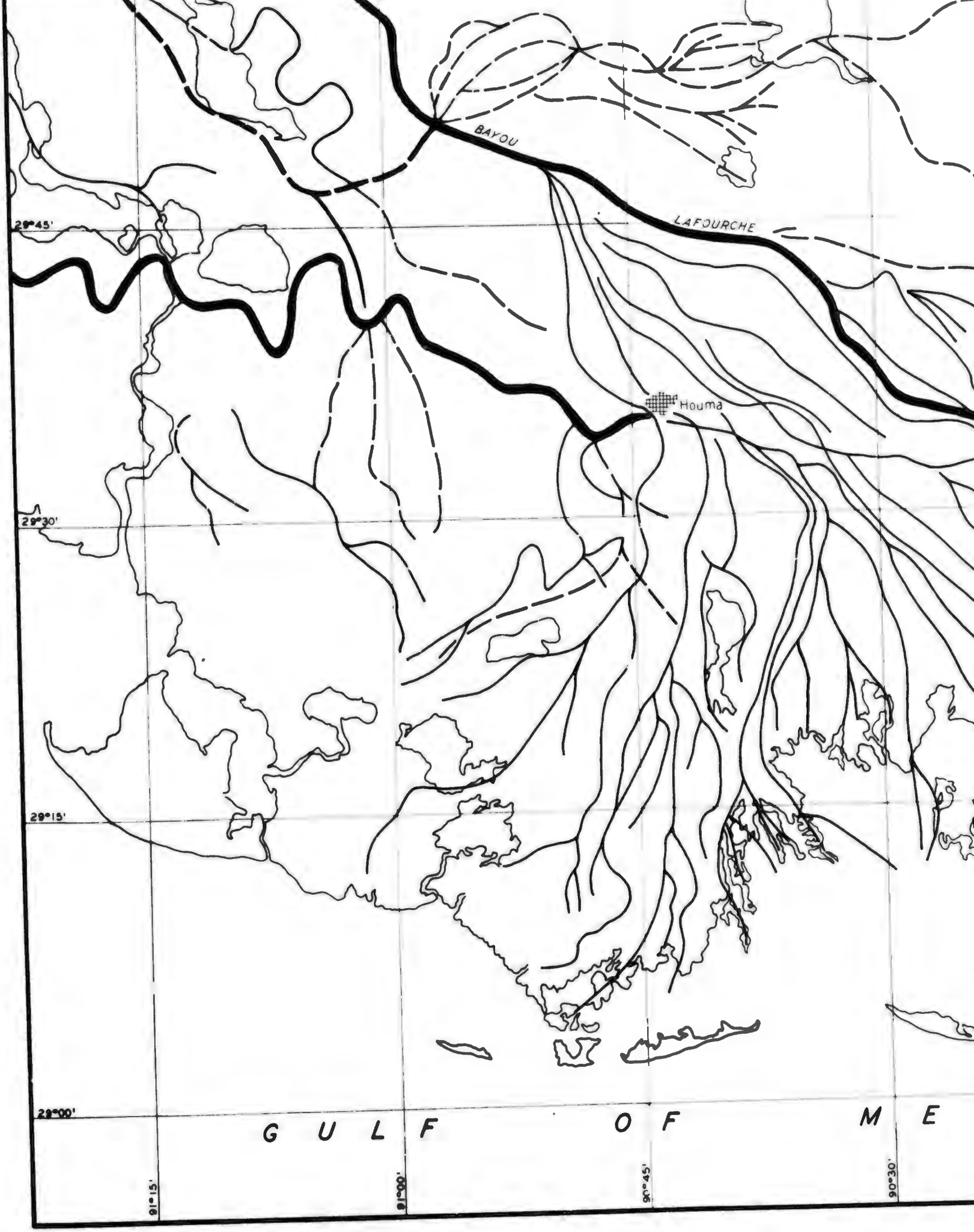
NOTE: LOCATION OF CONTROL BORINGS SHOWN AS SOLID CIRCLES
CONTOURS ARE IN FEET BELOW MEAN SEA LEVEL.
NO BORINGS REACHED DEPTH GREATER THAN 120 FEET.

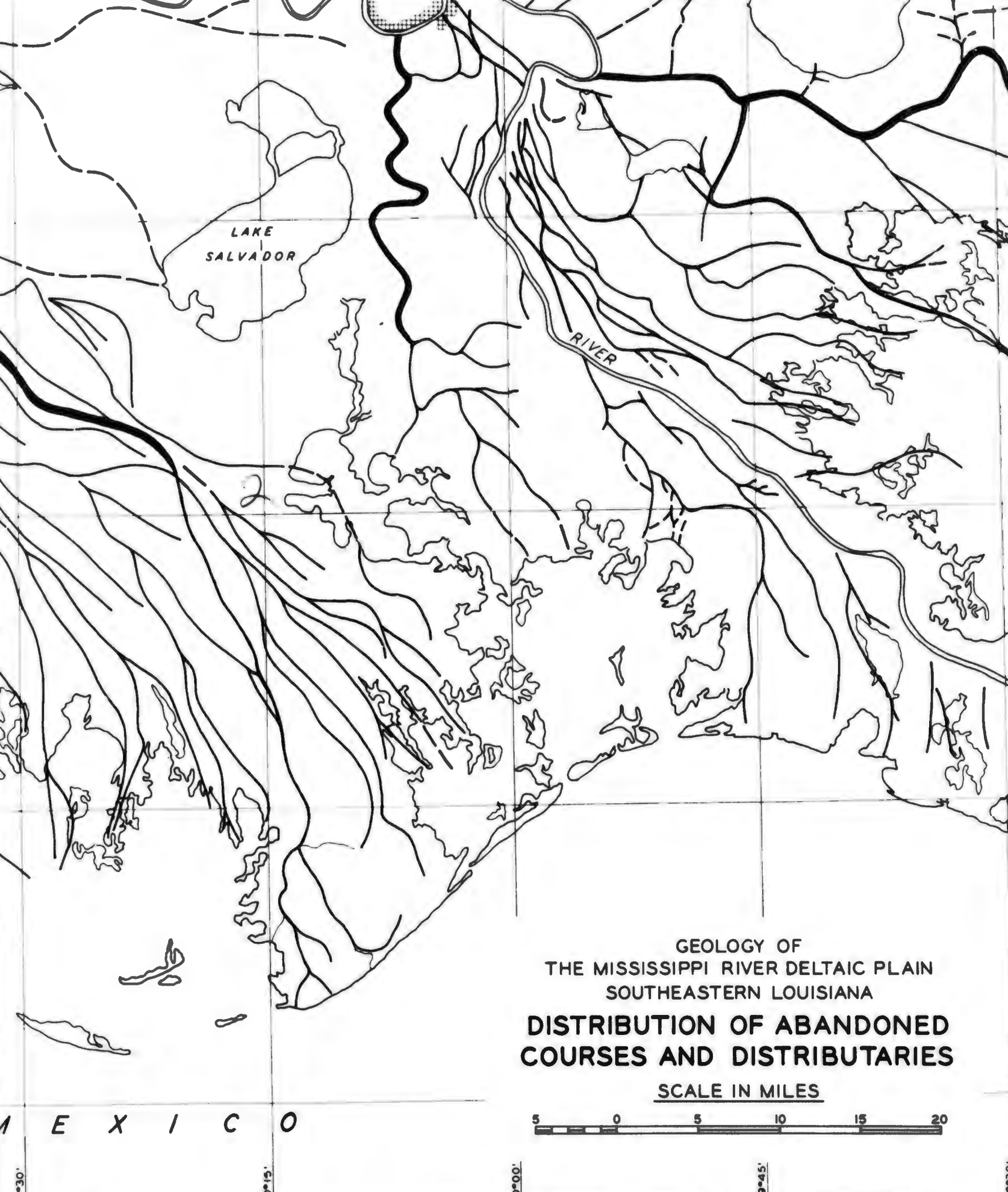
PLATE 4B


BATON ROUGE
PLEISTOCENE
91°15'
91°00'
90°45'
90°30'
30°15'
30°00'
29°45'
29°30'
LAKE
MAUREPAS
Donaldsonville
MISSISSIPPI
BAYOU
LAFOURCHE
Houma


90°15'
90°00'
89°45'
89°30'
UPLANDS
LAKE
PONTCHARTRAIN
LAKE
BORGNE
NEW ORLEANS
LAKE
SALVADOR
RIVER


89°30'
89°15'
89°00'
88°45'
30°15'
30°00'
29°45'
29°30'
-N-
CHANDELEUR SOUND
NOTE: DASHED LINES INDICATE BURIED OR INDEFINITE POSITIONS OF ABANDONED COURSES OR DISTRIBUTARIES.


BAYOU
LAFOURCHE
Houma
29°45'
29°30'
29°15'
29°00'
G U L F O F M E
91°15'
91°00'
90°45'
90°30'


LAKE
SALVADOR
RIVER
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA
DISTRIBUTION OF ABANDONED
COURSES AND DISTRIBUTARIES
SCALE IN MILES
5 0 5 10 15 20
M E X I C O
90°30'
90°15'
90°00'
89°45'

S

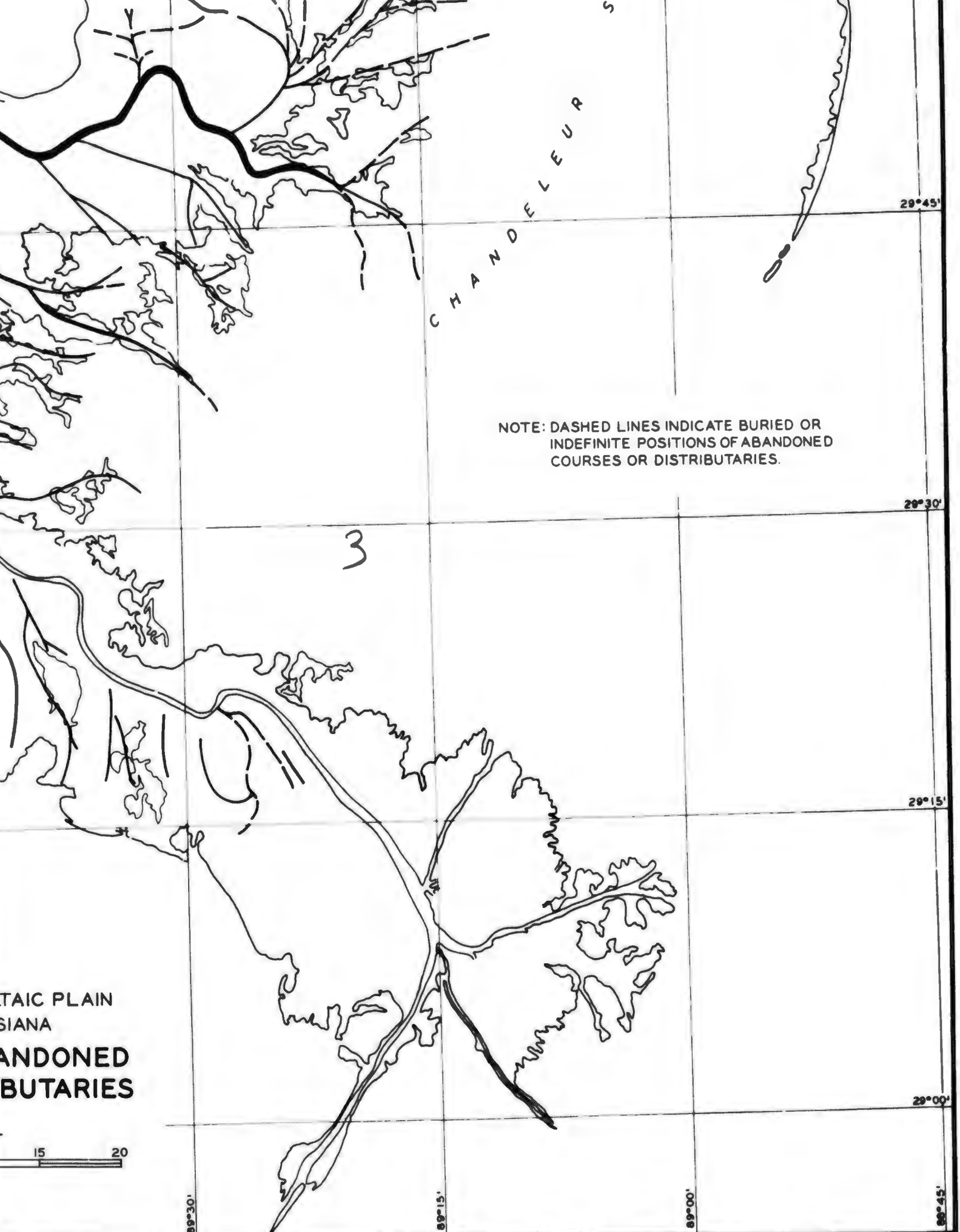
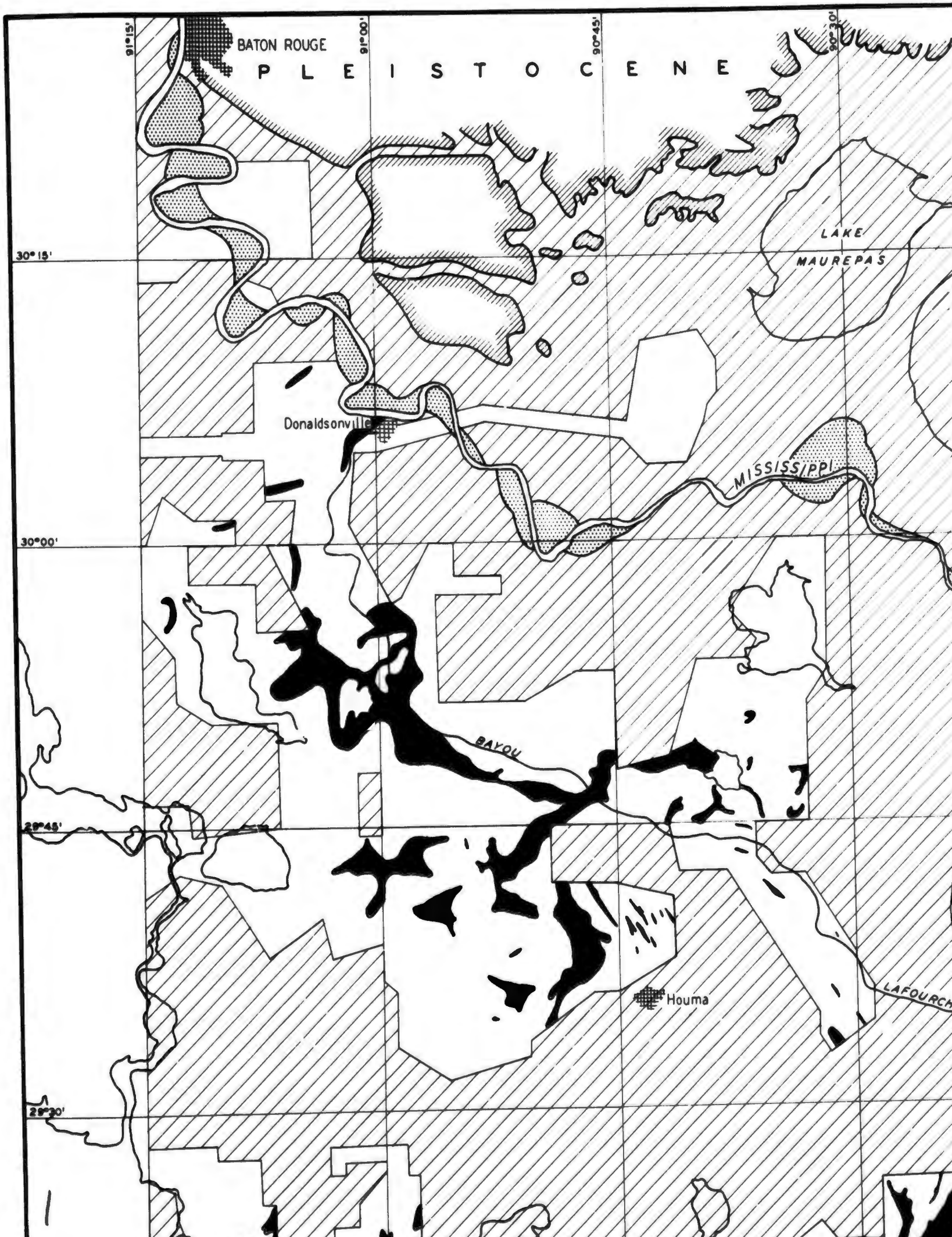
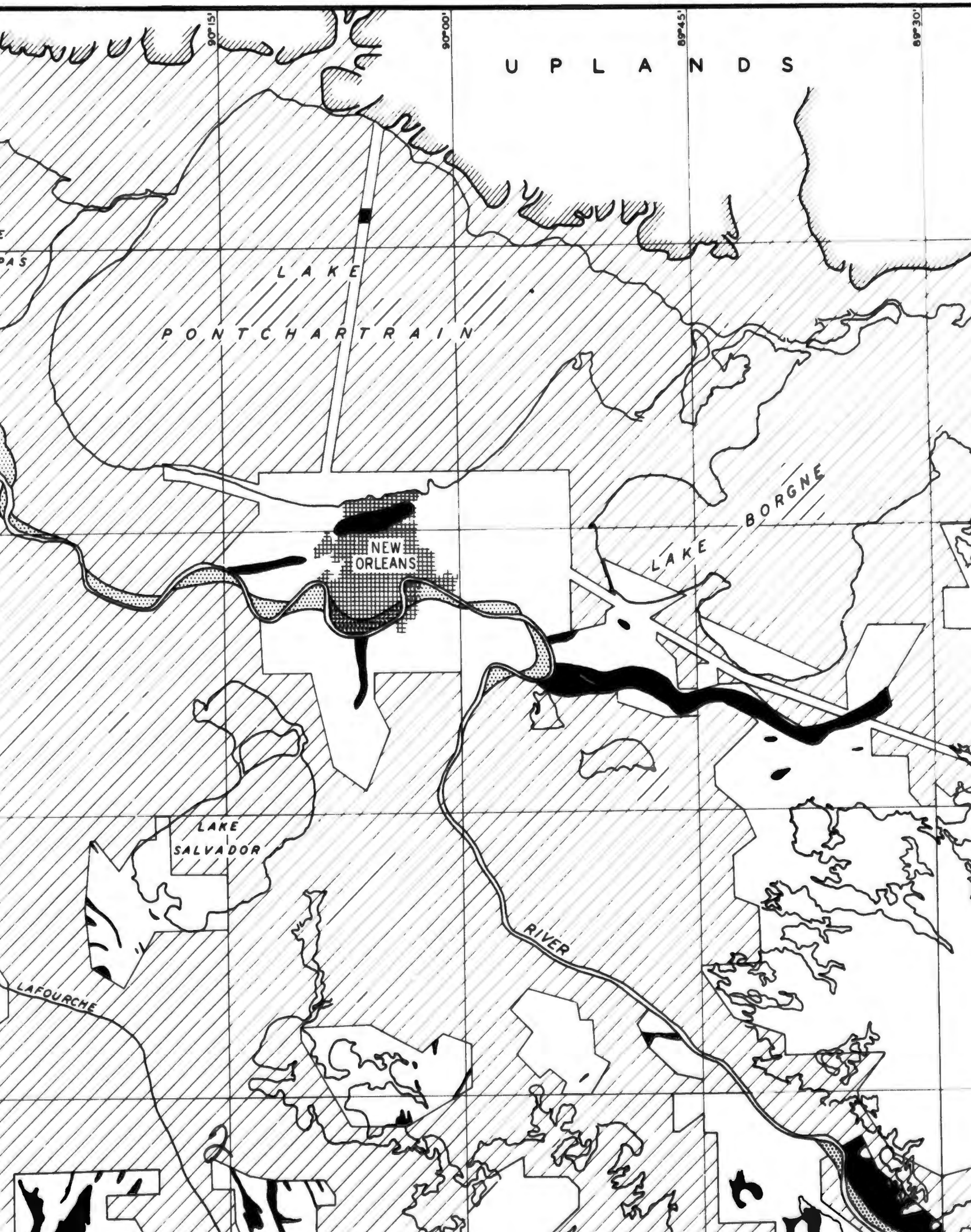
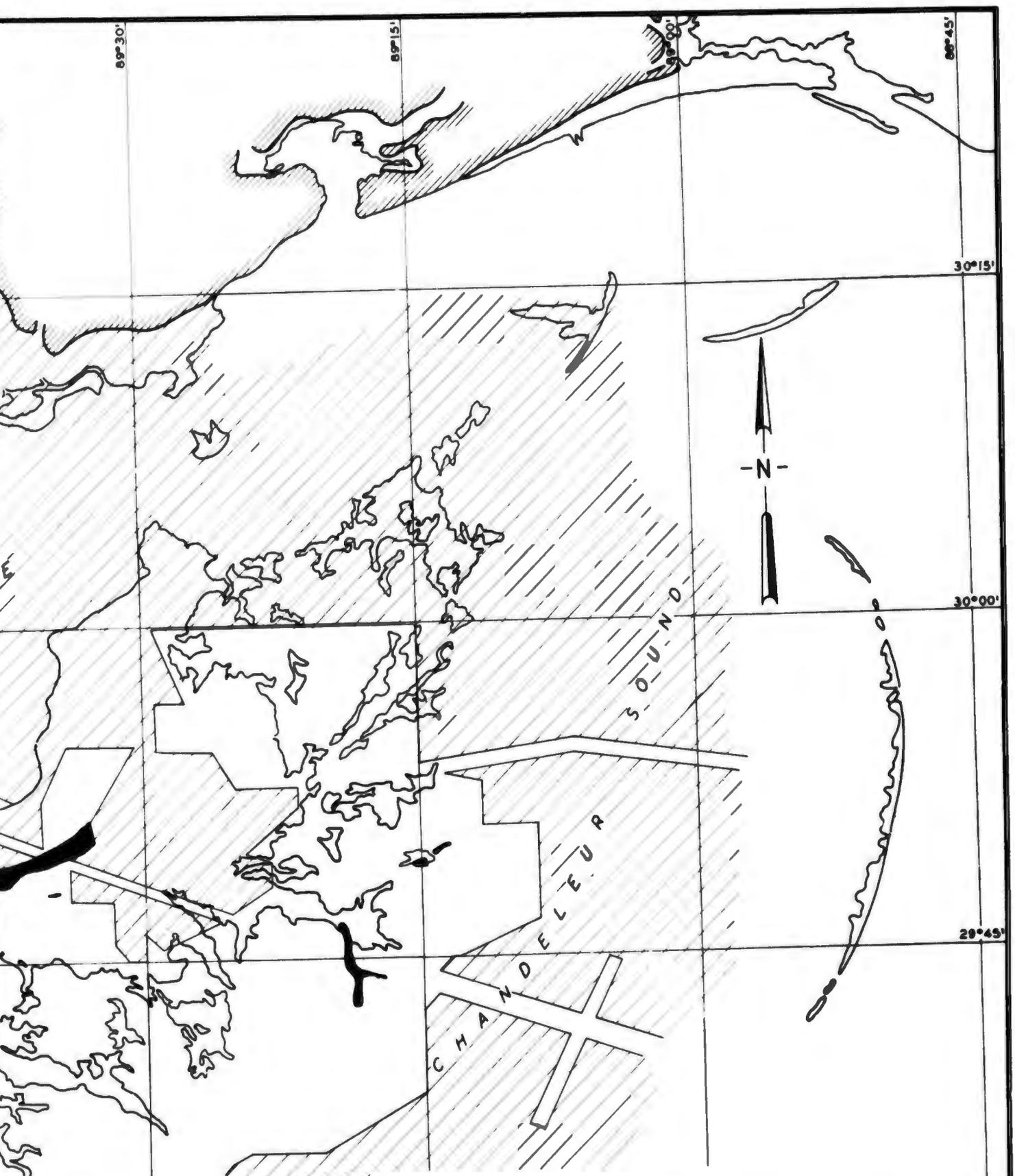

CHANDELEUR S
29°45'
29°30'
29°15'
29°00'
89°30'
89°15'
89°00'
88°45'
NOTE: DASHED LINES INDICATE BURIED OR INDEFINITE POSITIONS OF ABANDONED COURSES OR DISTRIBUTARIES.
3
TAIC PLAIN
SIANA
ANDONED
BUTARIES
15
20

PLATE 5


PLEISTOCENE
BATON ROUGE
91°15'
91°00'
90°45'
90°30'
30°15'
30°00'
29°45'
29°30'
LAKE
MAUREPAS
Donaldsonville
MISSISSIPPI
BAYOU
Houma
LAFOURCH

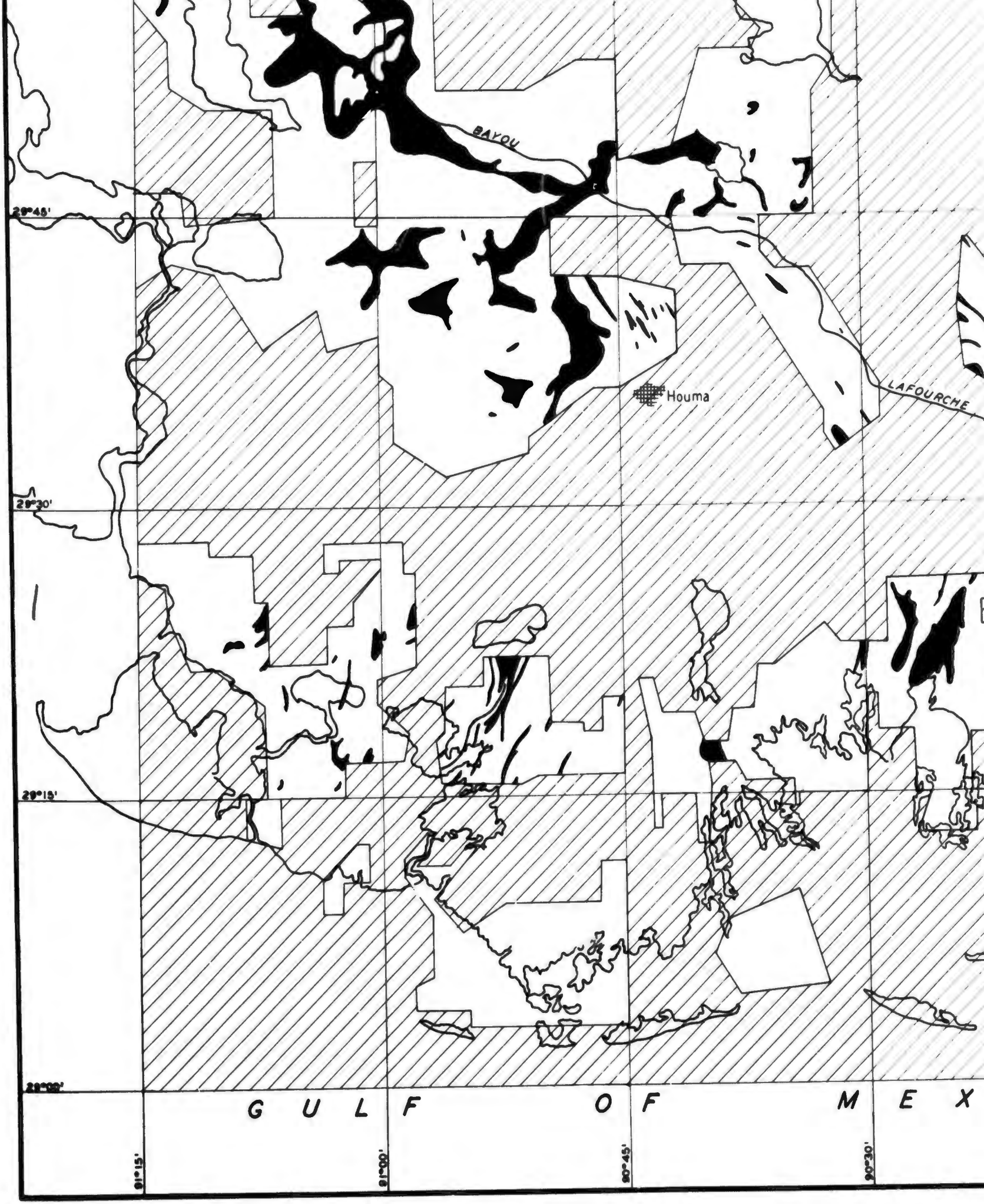

90°15'
90°00'
89°45'
89°30'
U P L A N D S
LAKE
PONTCHARTRAIN
LAKE BORGNE
NEW ORLEANS
LAKE SALVADOR
RIVER
LAFOURCHE

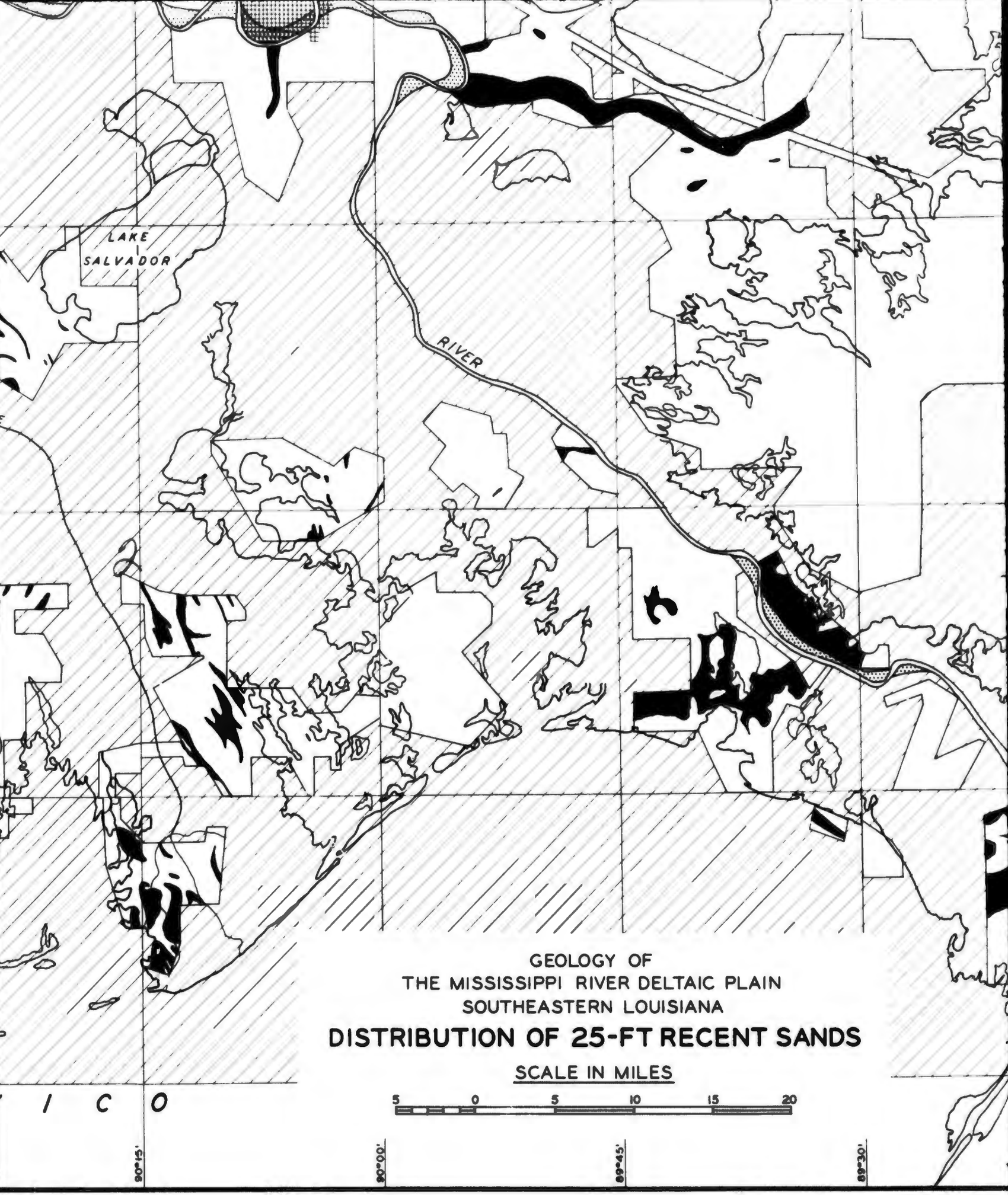


LEGEND

- AREAS OF NO CONTROL
- AREAS OF MISSISSIPPI RIVER POINT BAR DEPOSITION IN WHICH CLEAN SANDS OCCUR FROM 25 TO 75 FT BELOW SURFACE
- AREAS WHERE RECENT SANDS GREATER THAN 10 FT THICK ARE WITHIN 25 FT OF THE SURFACE

NOTE: BASED PRINCIPALLY ON LOGS OF APPROXIMATELY


BAYOU
Houma
LAFOURCHE
29°45'
29°30'
29°15'
29°00'
G U L F O F M E X
91°15'
91°00'
90°45'
90°30'


LAKE
SALVADOR
RIVER
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA
DISTRIBUTION OF 25-FT RECENT SANDS
SCALE IN MILES
5 0 5 10 15 20
90°15'
90°00'
89°45'
89°30'

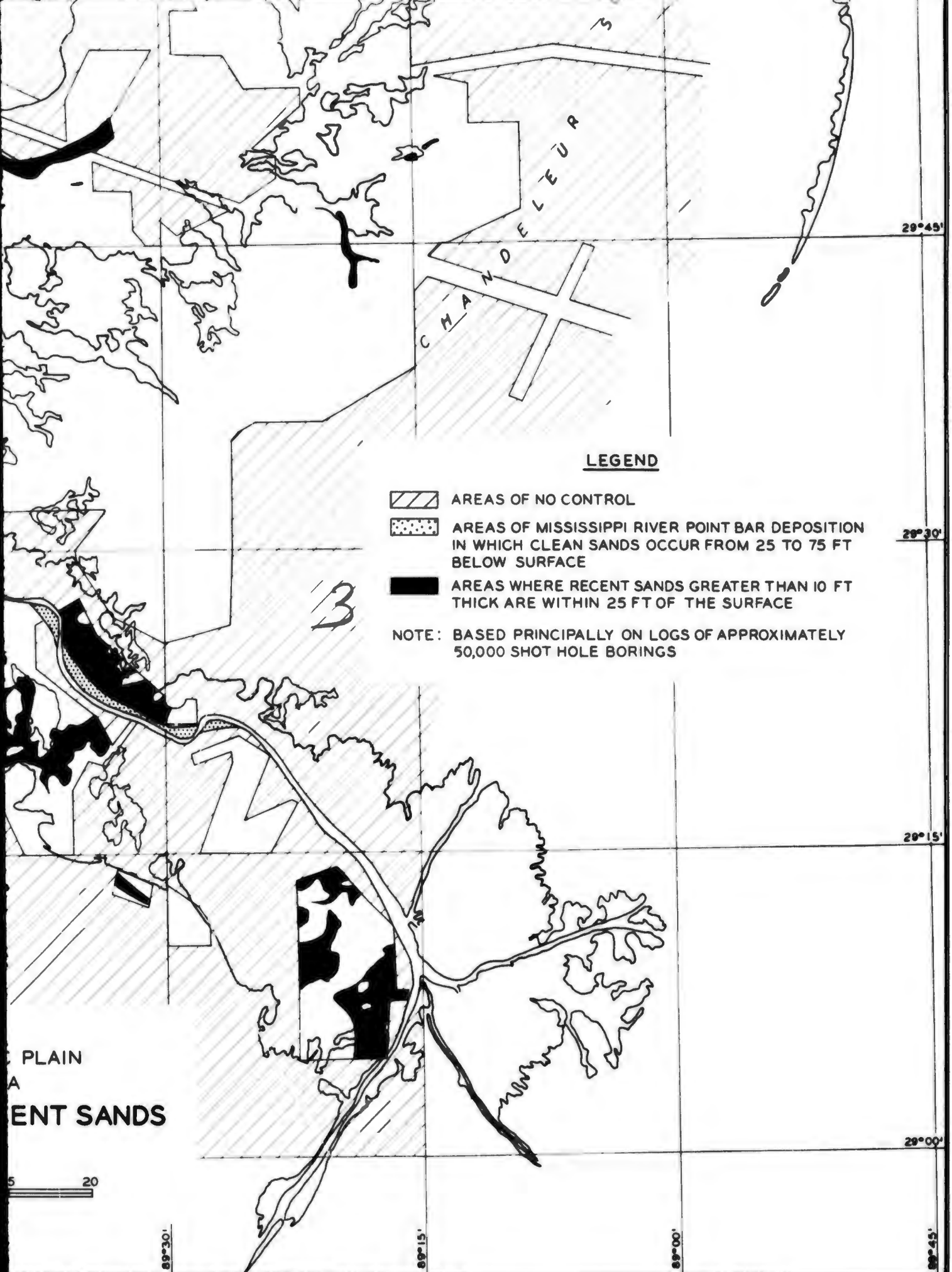
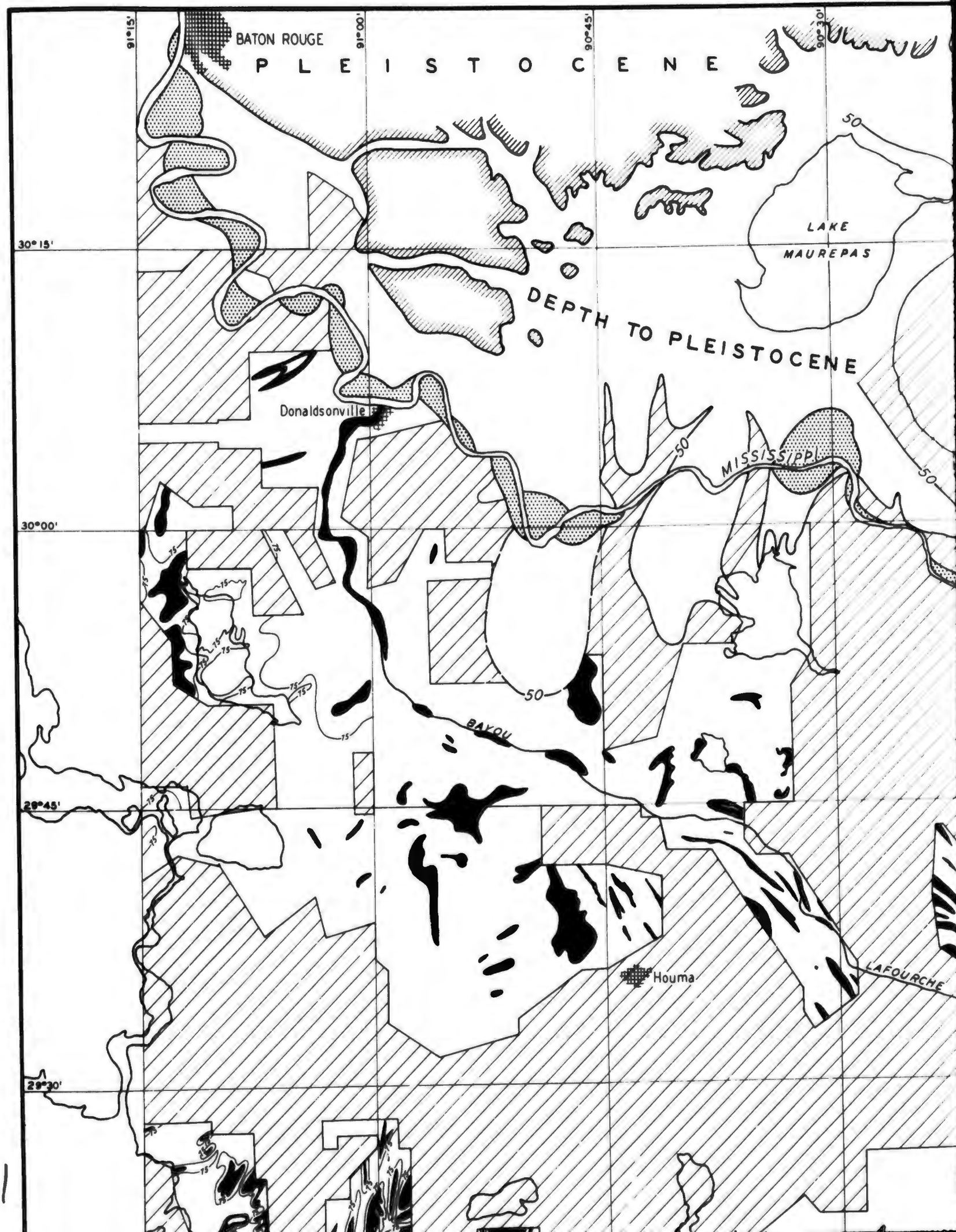
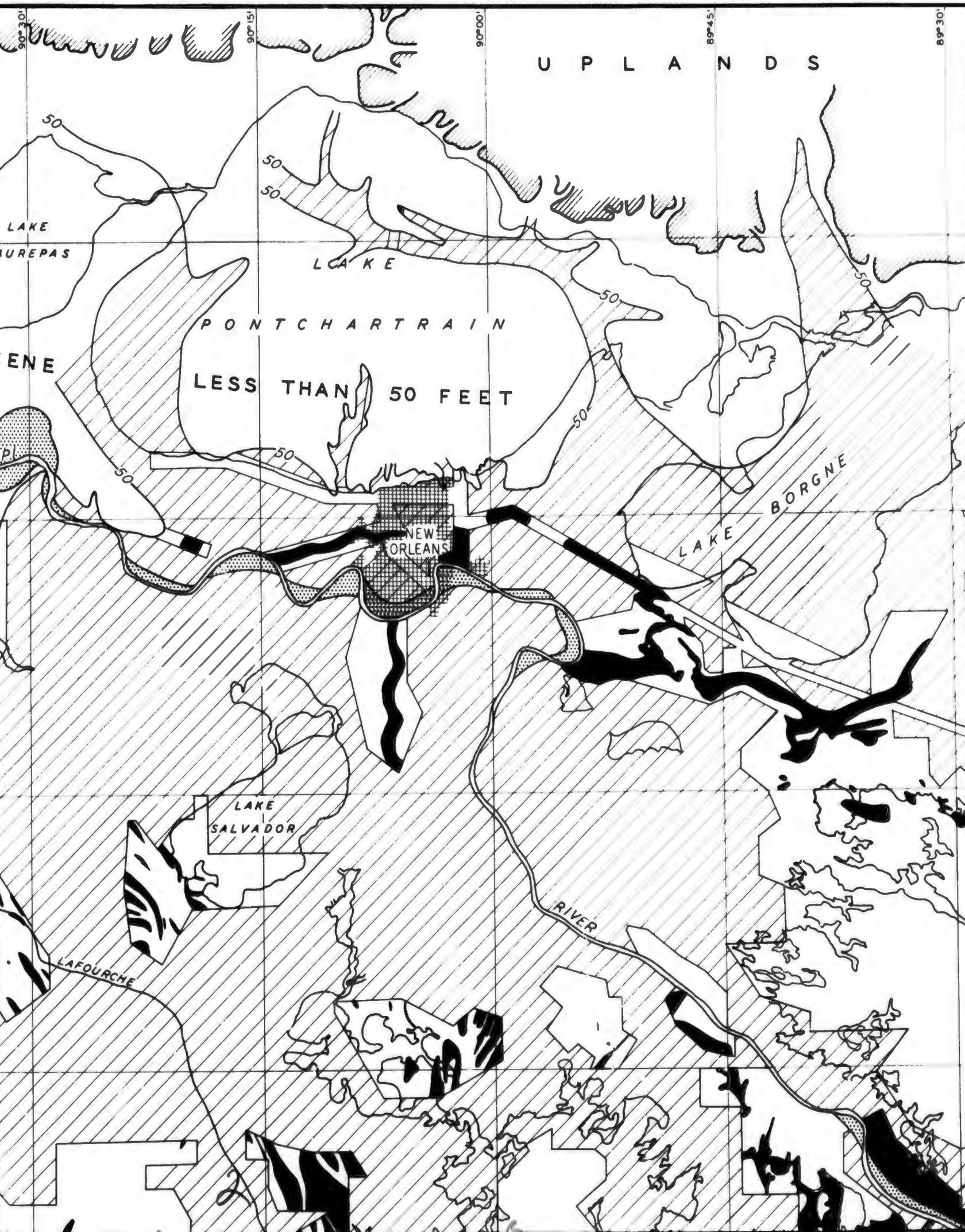
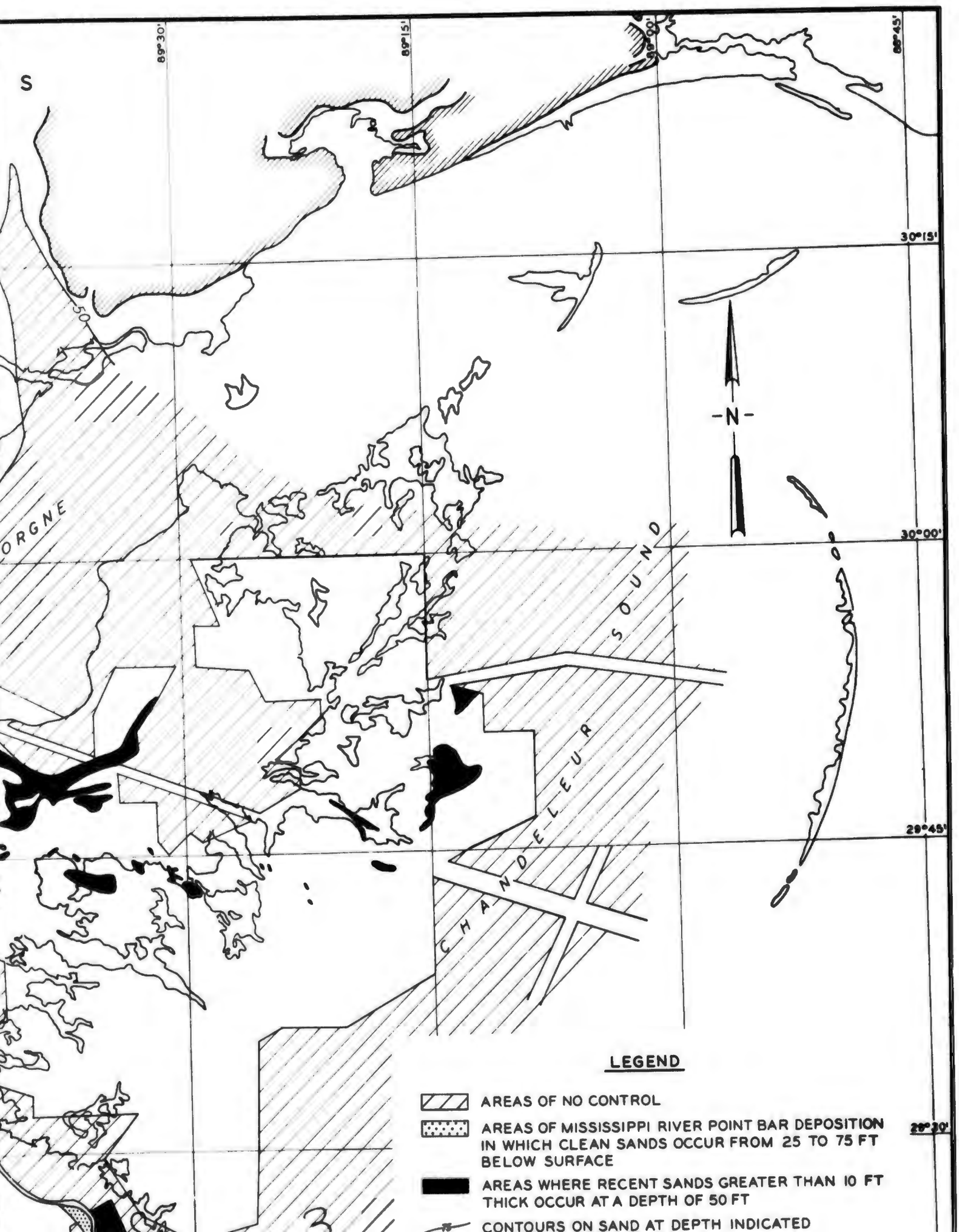
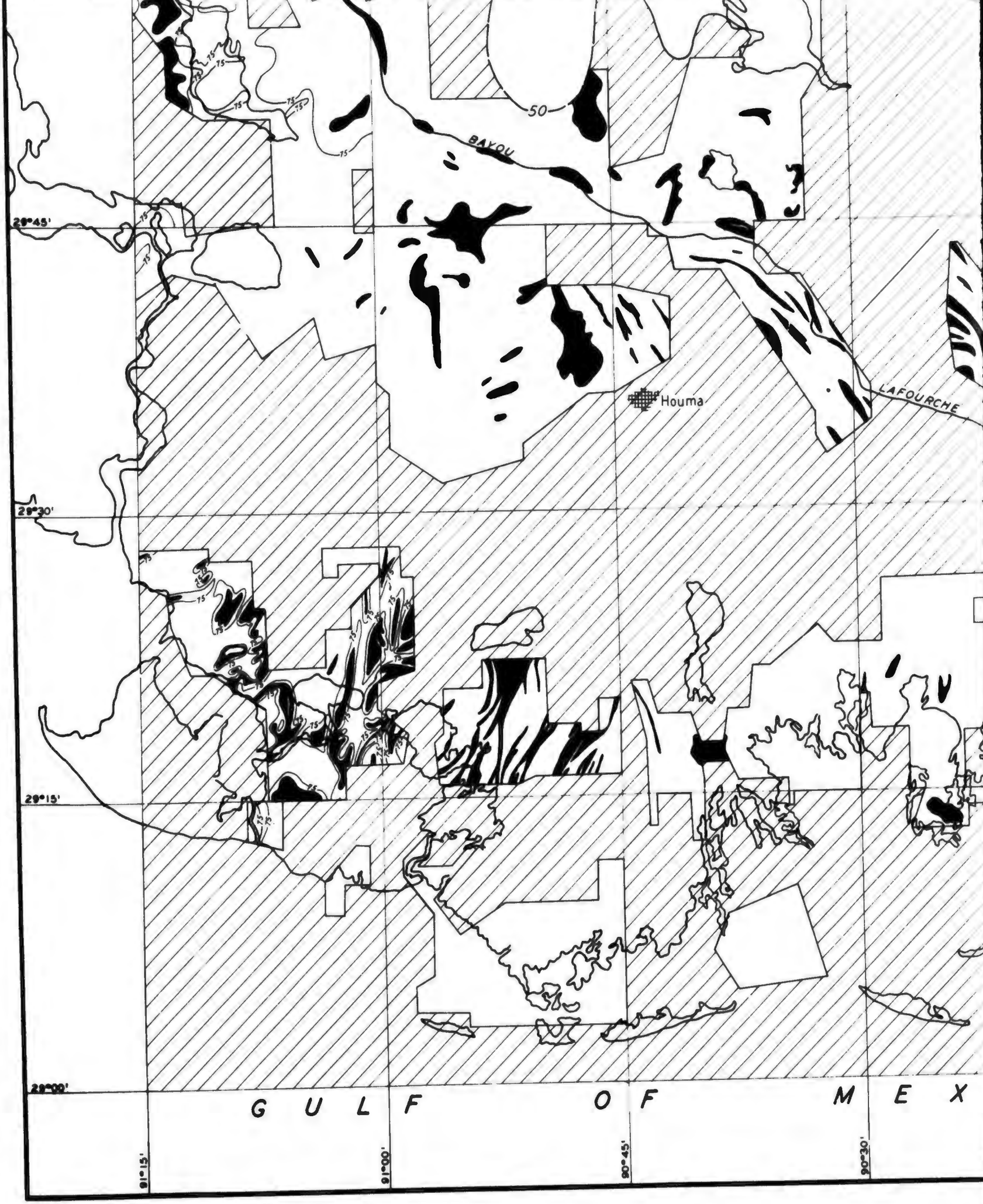

CHANDELEUR
29°45'
29°30'
29°15'
29°00'
89°30'
89°15'
89°00'
88°45'
LEGEND
AREAS OF NO CONTROL
AREAS OF MISSISSIPPI RIVER POINT BAR DEPOSITION IN WHICH CLEAN SANDS OCCUR FROM 25 TO 75 FT BELOW SURFACE
AREAS WHERE RECENT SANDS GREATER THAN 10 FT THICK ARE WITHIN 25 FT OF THE SURFACE
NOTE: BASED PRINCIPALLY ON LOGS OF APPROXIMATELY 50,000 SHOT HOLE BORINGS
PLAIN
A
ENT SANDS
5
20

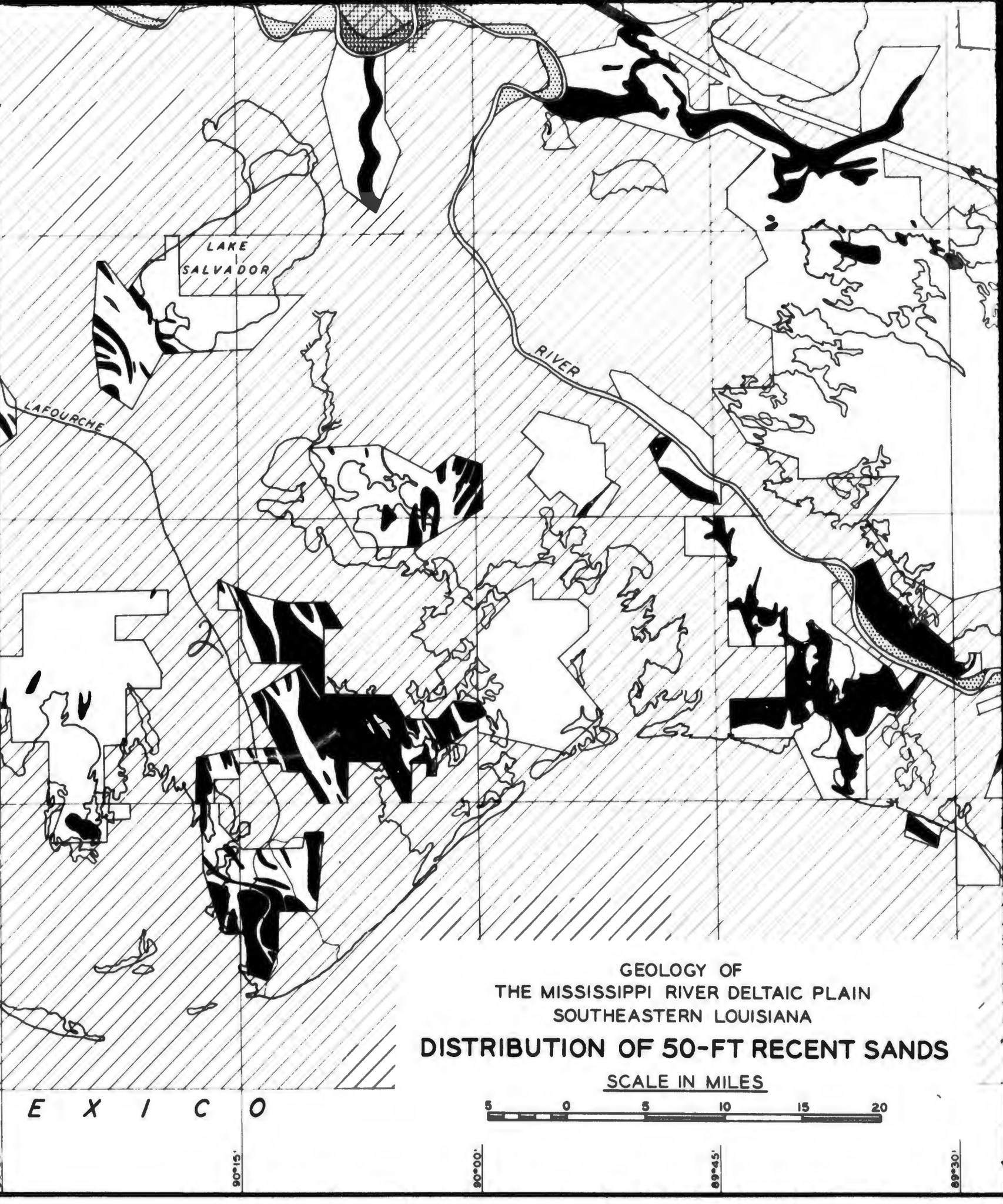
PLATE 6


BATON ROUGE
PLEISTOCENE
91°15'
91°00'
90°45'
90°30'
30°15'
30°00'
29°45'
29°30'
LAKE
MAUREPAS
DEPTH TO PLEISTOCENE
Donaldsonville
MISSISSIPPI
BAYOU
Houma
LAFOURCHE
50
75


90°30'
90°15'
90°00'
89°45'
89°30'
UPLANDS
50
LAKE
PONTCHARTRAIN
LESS THAN 50 FEET
NEW ORLEANS
LAKE BORGNE
LAKE SALVADOR
LAFOURCHE
RIVER


89°30'
89°15'
89°00'
88°45'
30°15'
30°00'
29°45'
29°30'
-N-
S
ORGNE
SOUND
CHANDELEUR
LEGEND
AREAS OF NO CONTROL
AREAS OF MISSISSIPPI RIVER POINT BAR DEPOSITION IN WHICH CLEAN SANDS OCCUR FROM 25 TO 75 FT BELOW SURFACE
AREAS WHERE RECENT SANDS GREATER THAN 10 FT THICK OCCUR AT A DEPTH OF 50 FT
CONTOURS ON SAND AT DEPTH INDICATED


50
75
BAYOU
Houma
LAFOURCHE
29°45'
29°30'
29°15'
29°00'
G U L F O F M E X
91°15'
91°00'
90°45'
90°30'



GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

DISTRIBUTION OF 50-FT RECENT SANDS

SCALE IN MILES

5 0 5 10 15 20

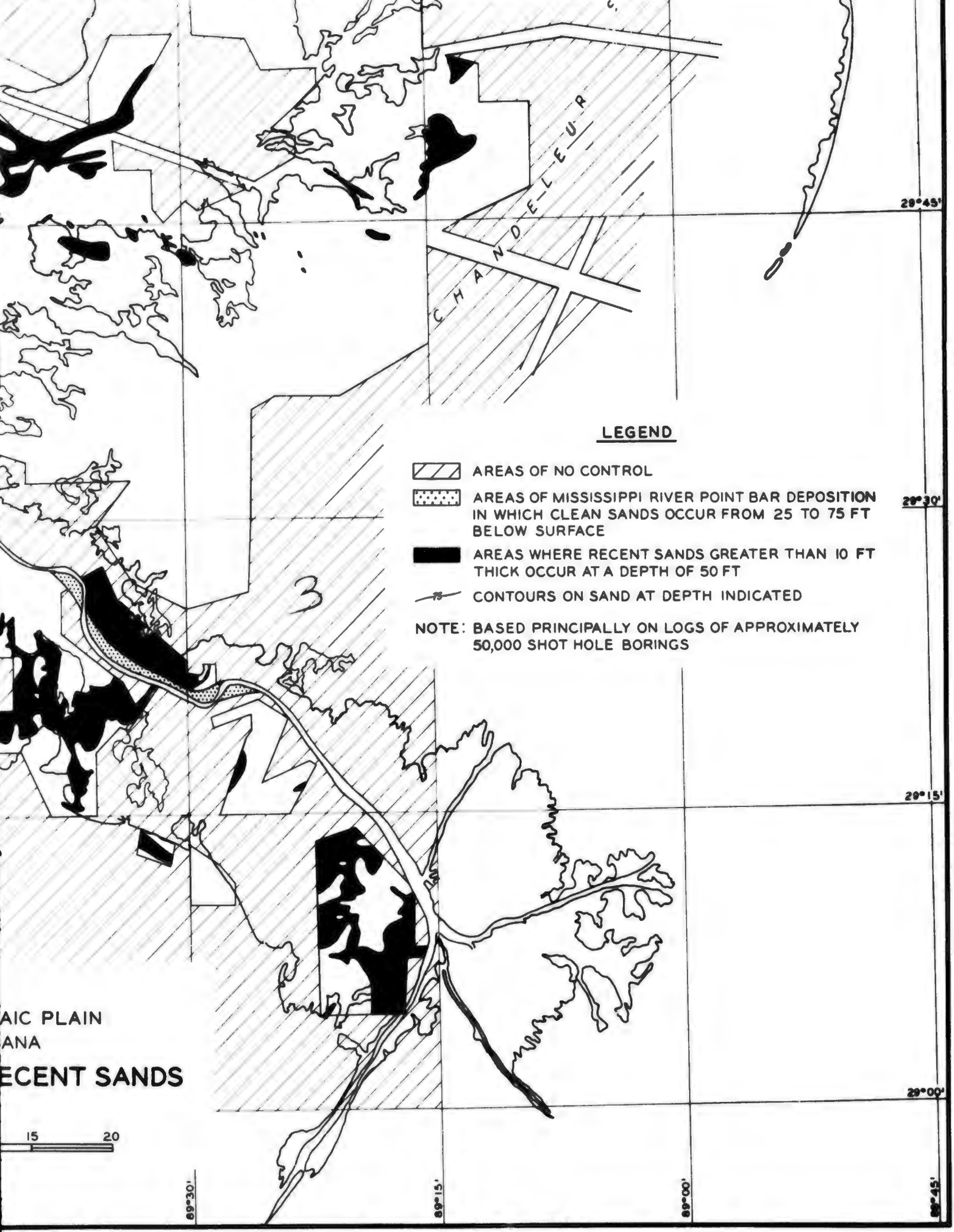
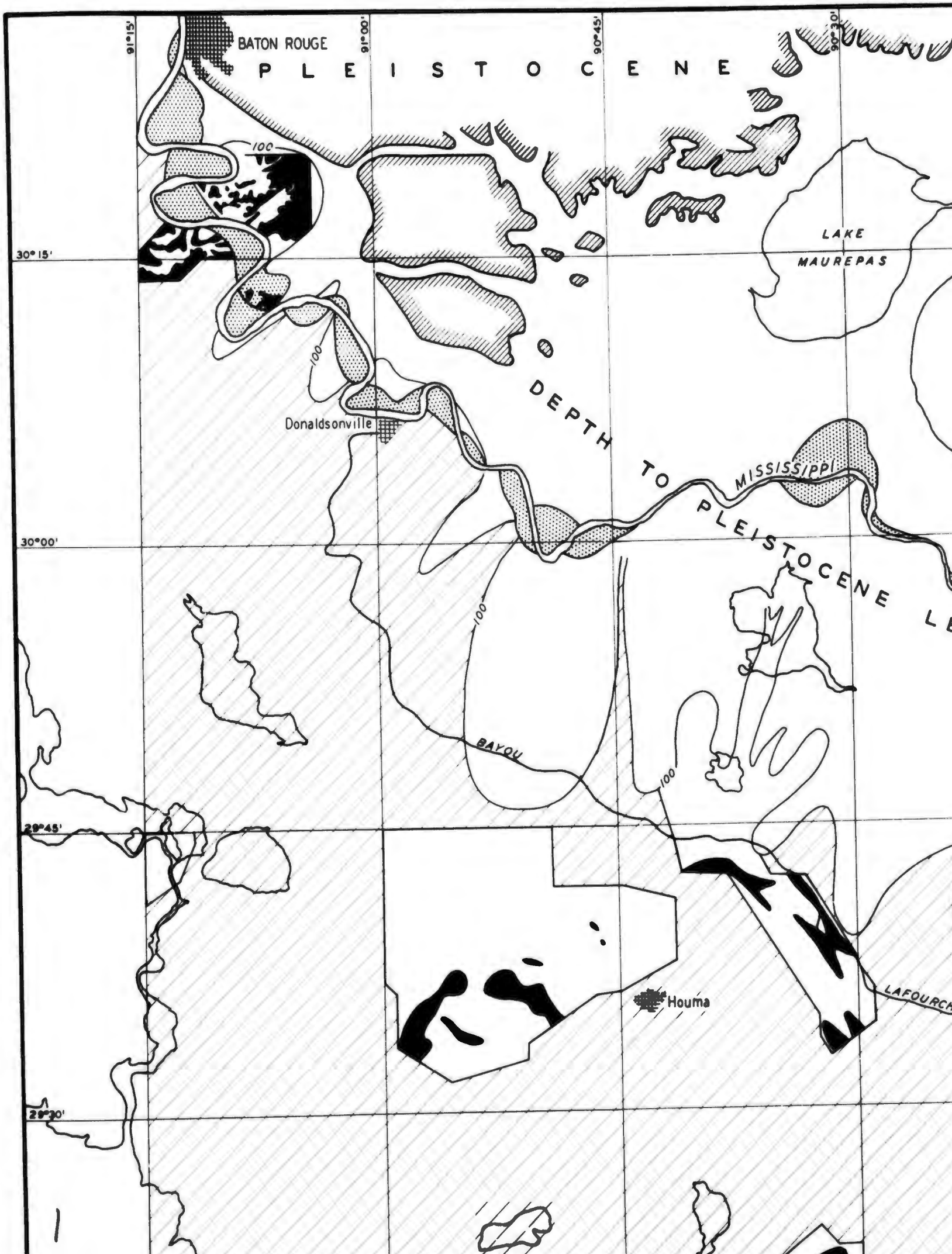
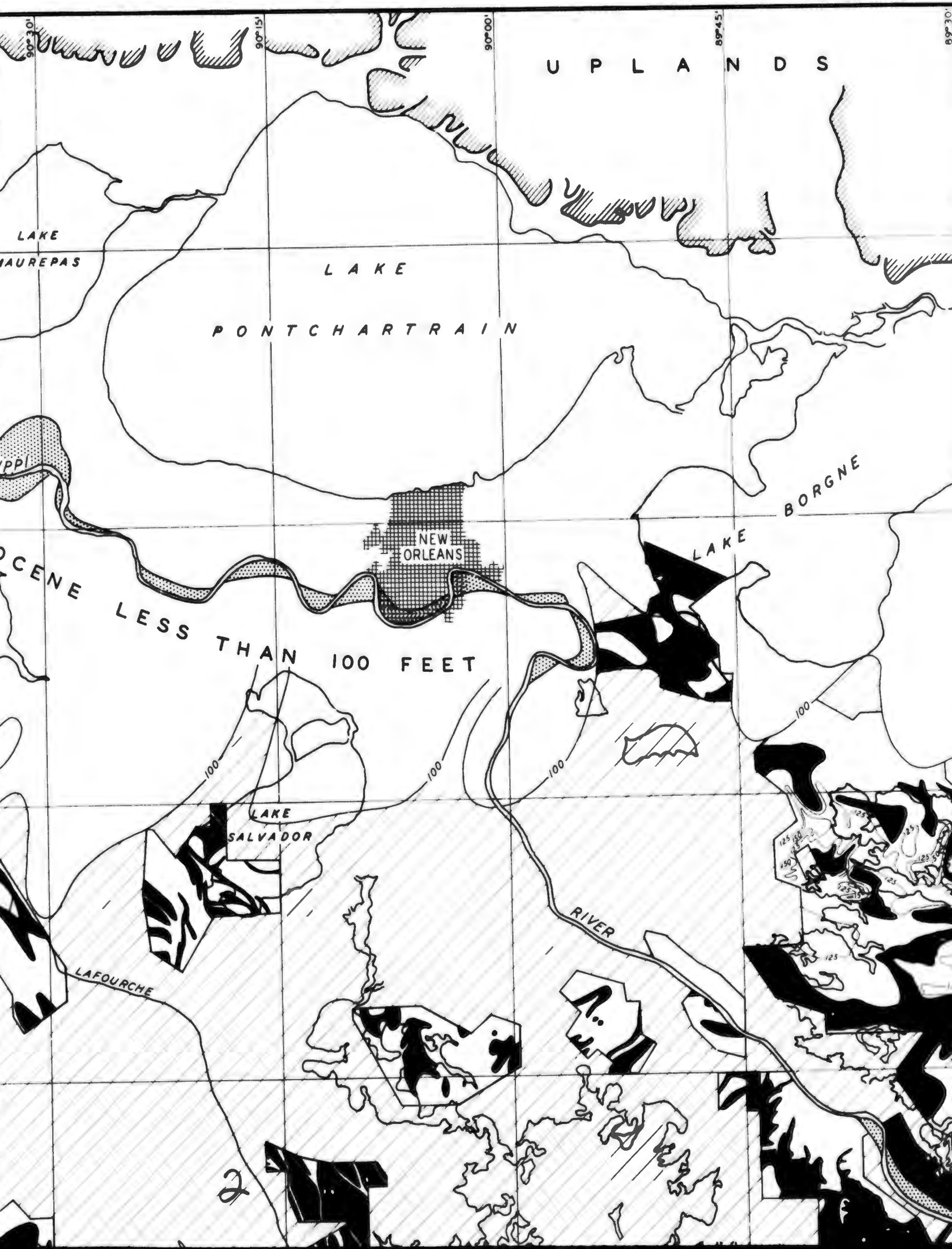
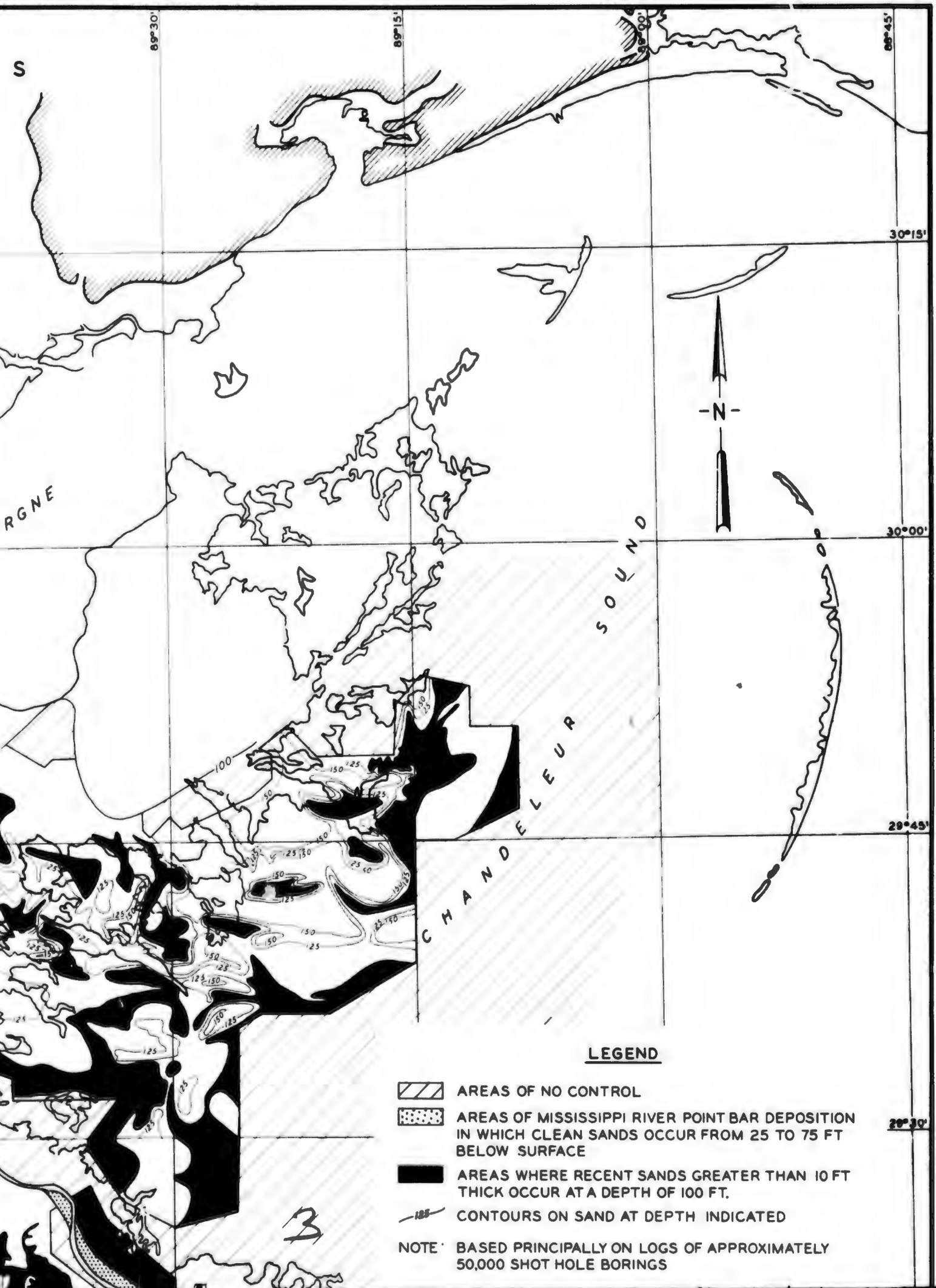
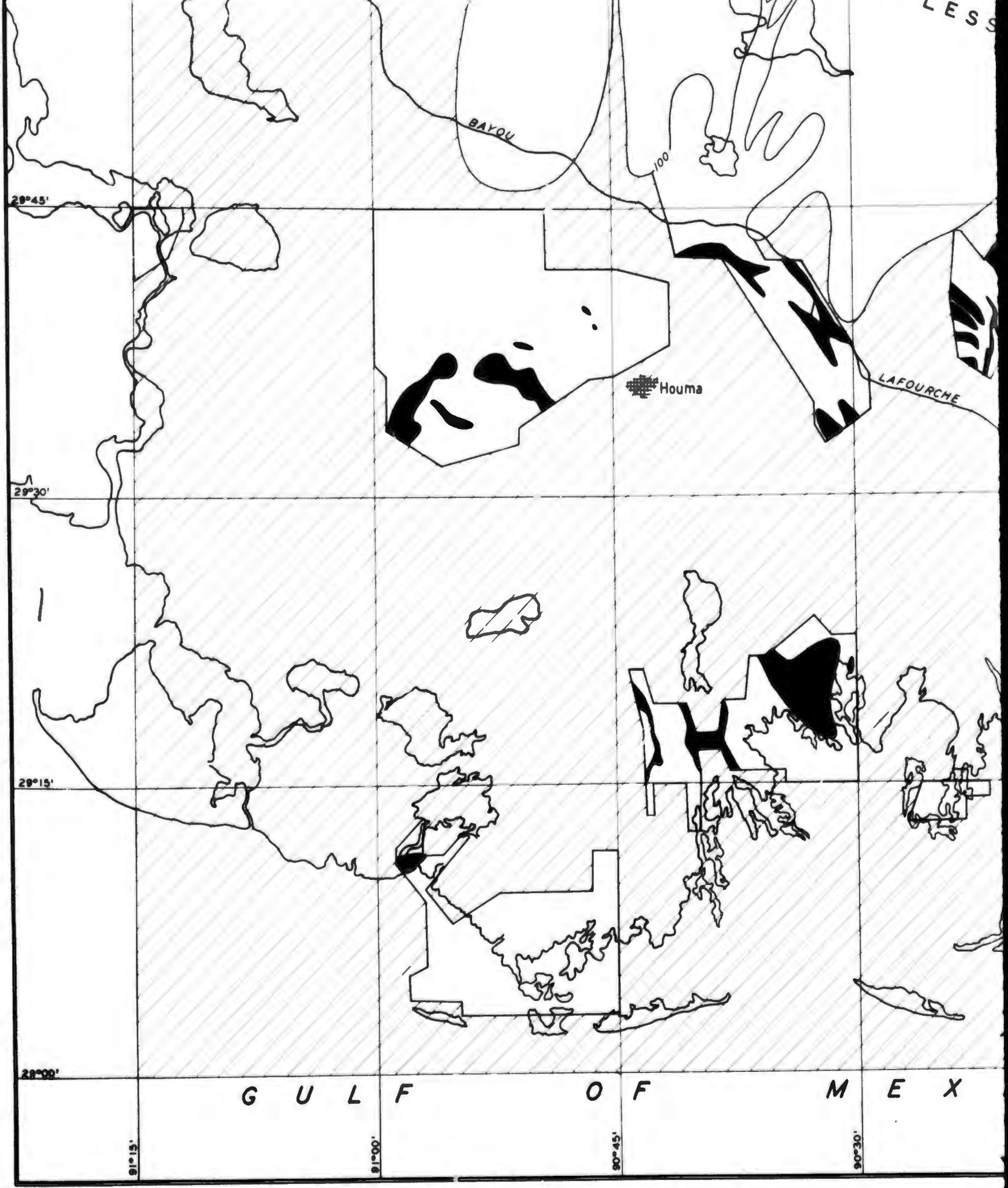

CHANDELEUR
29°45'
29°30'
29°15'
29°00'
89°30'
89°15'
89°00'
88°45'
LEGEND
AREAS OF NO CONTROL
AREAS OF MISSISSIPPI RIVER POINT BAR DEPOSITION IN WHICH CLEAN SANDS OCCUR FROM 25 TO 75 FT BELOW SURFACE
AREAS WHERE RECENT SANDS GREATER THAN 10 FT THICK OCCUR AT A DEPTH OF 50 FT
CONTOURS ON SAND AT DEPTH INDICATED
NOTE: BASED PRINCIPALLY ON LOGS OF APPROXIMATELY 50,000 SHOT HOLE BORINGS
AIC PLAIN
ANA
ECENT SANDS
15
20

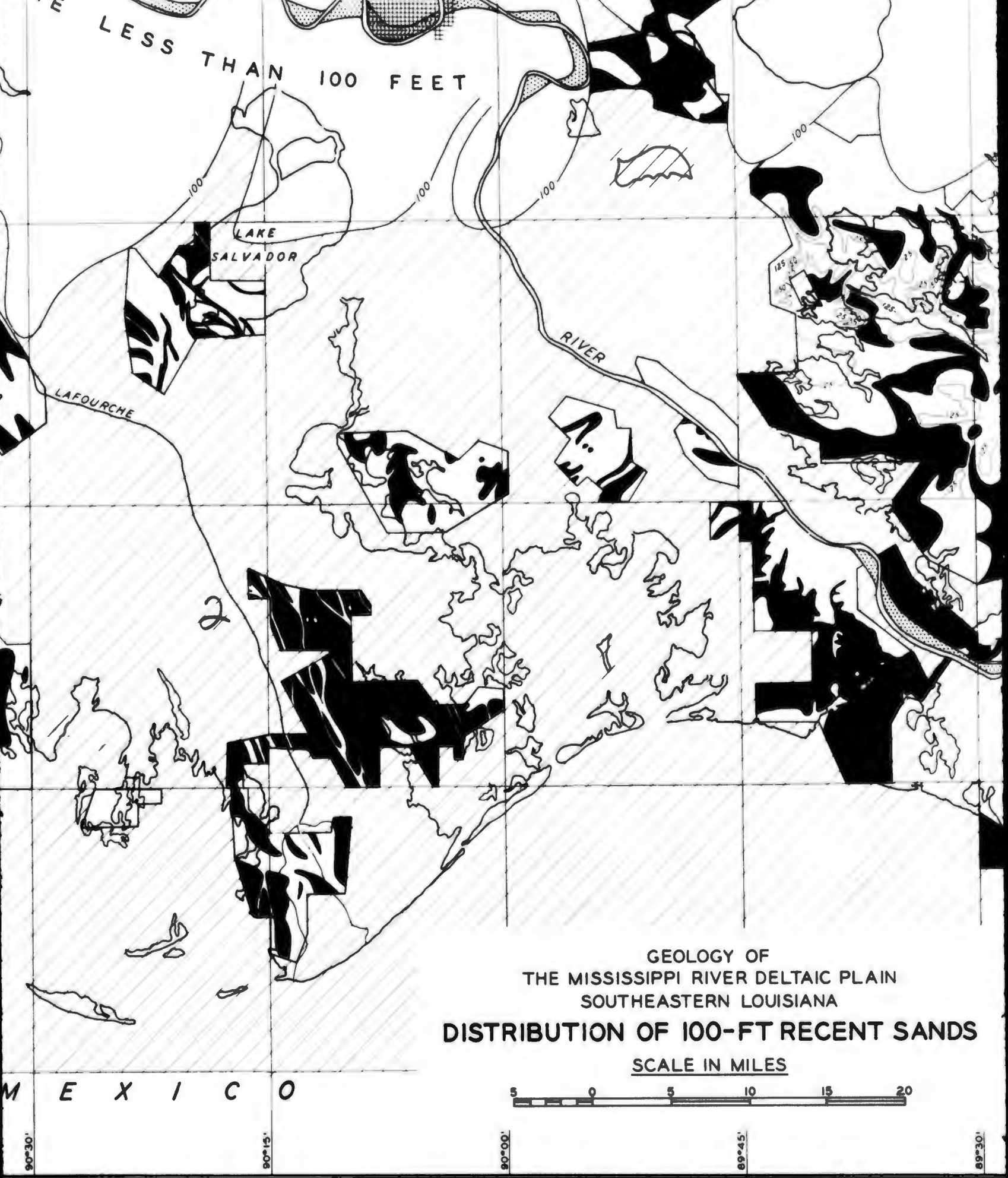
PLATE 6A


BATON ROUGE
PLEISTOCENE
91°15'
91°00'
90°45'
90°30'
30°15'
30°00'
29°45'
29°30'
100
LAKE
MAUREPAS
DEPTH TO PLEISTOCENE
Donaldsonville
MISSISSIPPI
BAYOU
Houma
LAFOURCH


90°30'
90°15'
90°00'
89°45'
89°30'
UPLANDS
LAKE
MAUREPAS
LAKE
PONTCHARTRAIN
MISSISSIPPI
NEW
ORLEANS
LAKE
BORGNE
HOLOCENE LESS THAN 100 FEET
100
LAKE
SALVADOR
RIVER
LAFOURCHE
125
150


89°30'
89°15'
89°00'
88°45'
30°15'
30°00'
29°45'
29°30'
S
RGNE
-N-
CHANDELEUR SOUND
100
50
125
150
LEGEND
AREAS OF NO CONTROL
AREAS OF MISSISSIPPI RIVER POINT BAR DEPOSITION IN WHICH CLEAN SANDS OCCUR FROM 25 TO 75 FT BELOW SURFACE
AREAS WHERE RECENT SANDS GREATER THAN 10 FT THICK OCCUR AT A DEPTH OF 100 FT.
CONTOURS ON SAND AT DEPTH INDICATED
NOTE: BASED PRINCIPALLY ON LOGS OF APPROXIMATELY 50,000 SHOT HOLE BORINGS


BAYOU
100
29°45'
Houma
LAFOURCHE
29°30'
29°15'
28°00'
GULF OF MEX
91°15'
91°00'
90°45'
90°30'



GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

DISTRIBUTION OF 100-FT RECENT SANDS

SCALE IN MILES

5 0 5 10 15 20

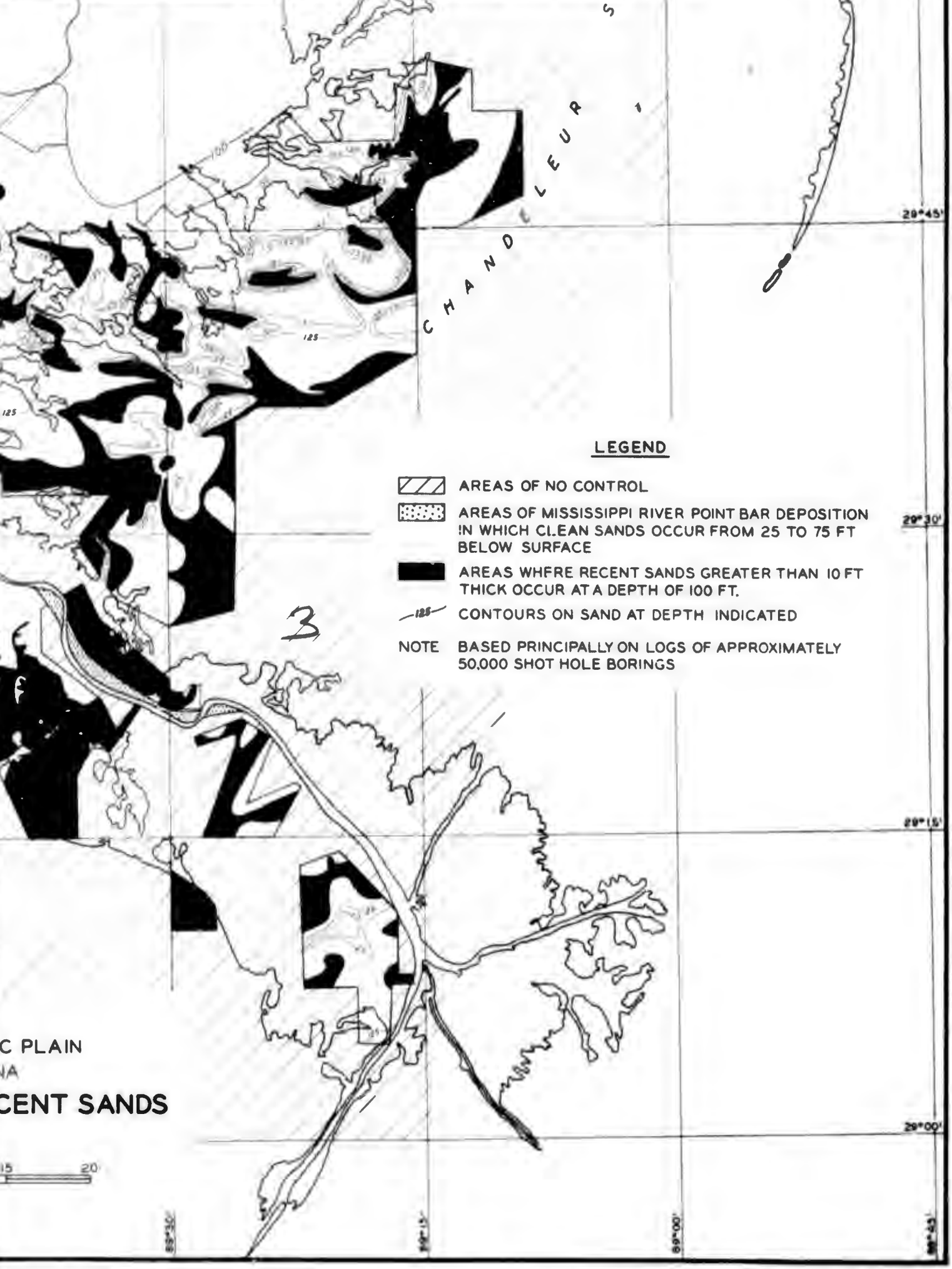
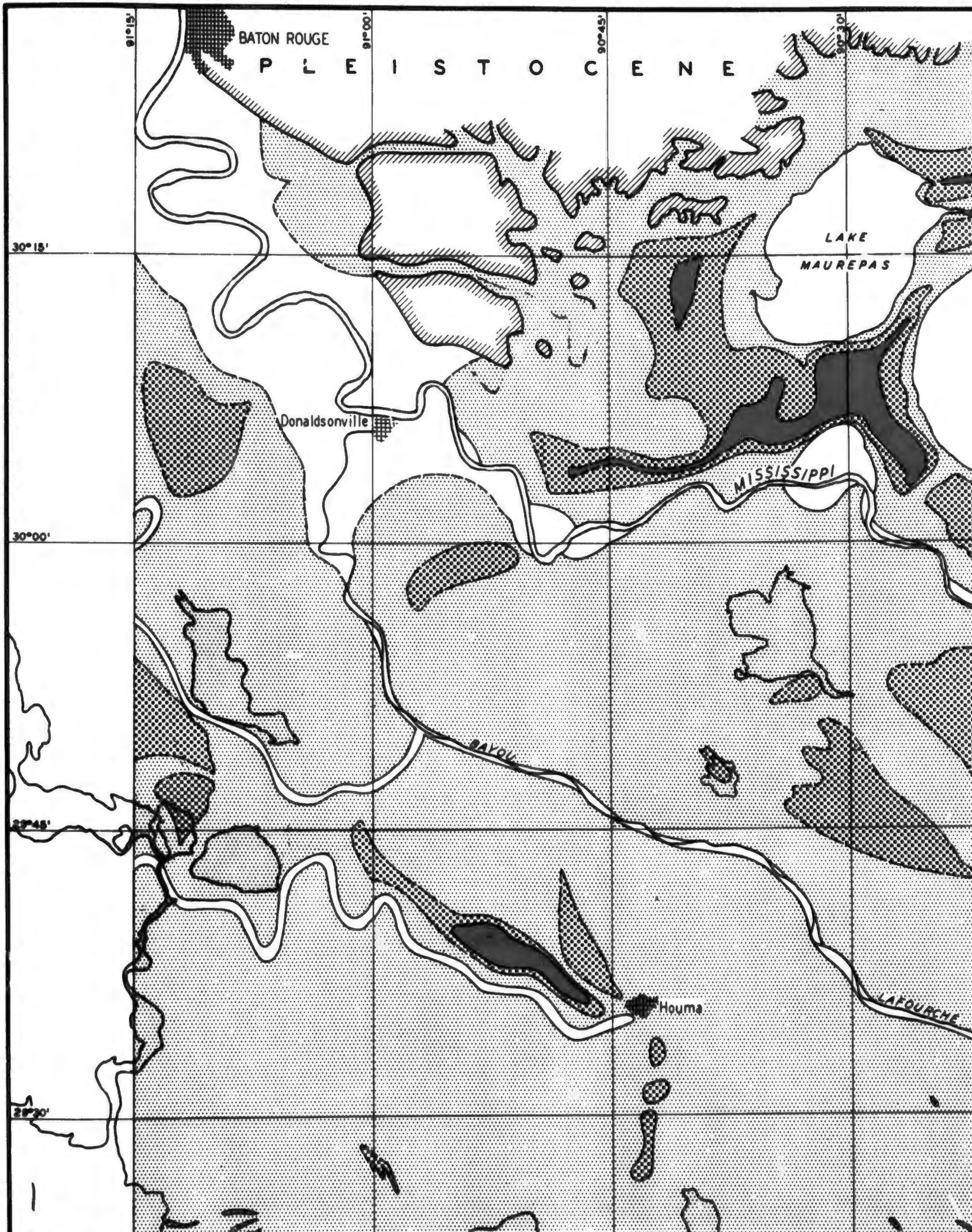
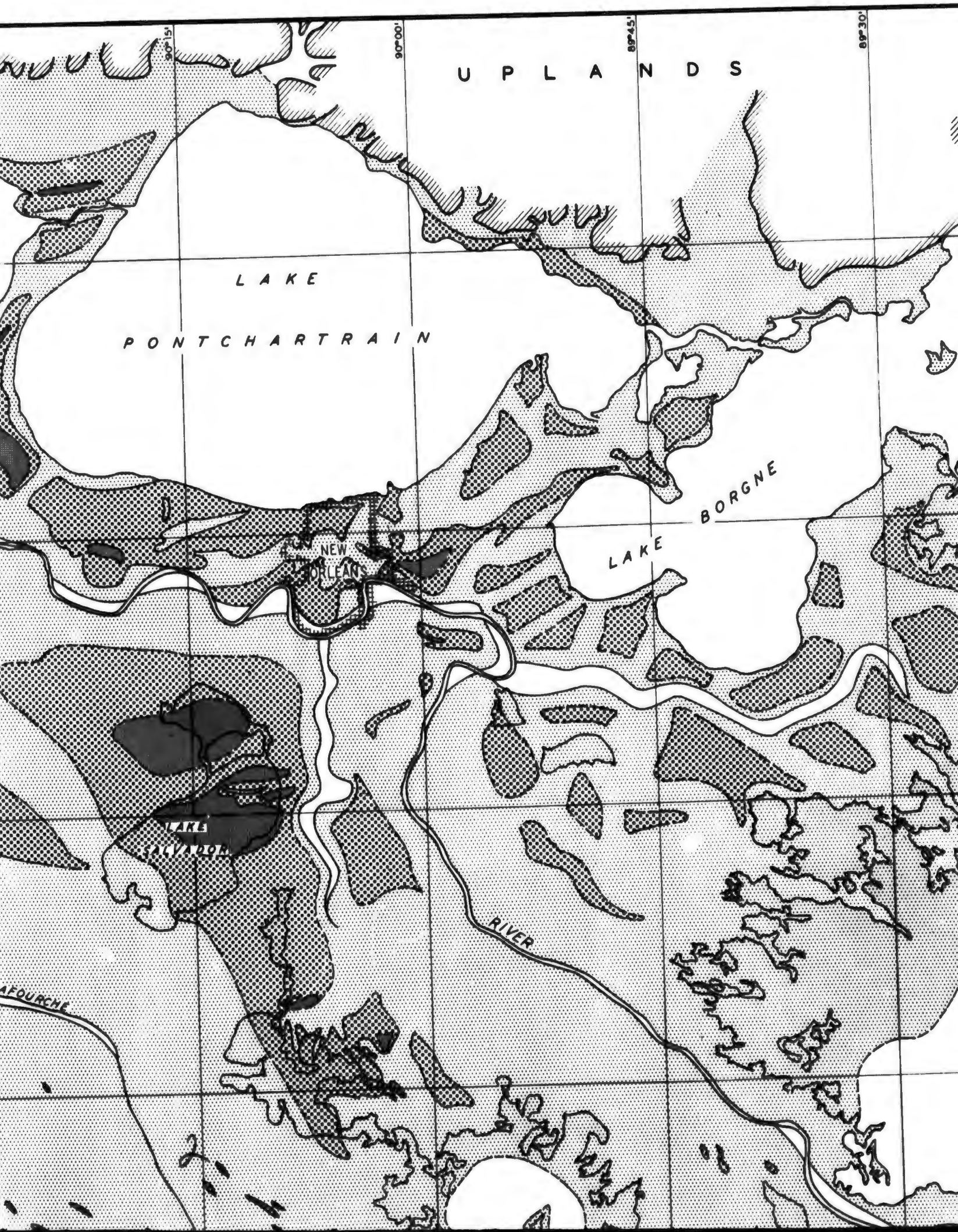
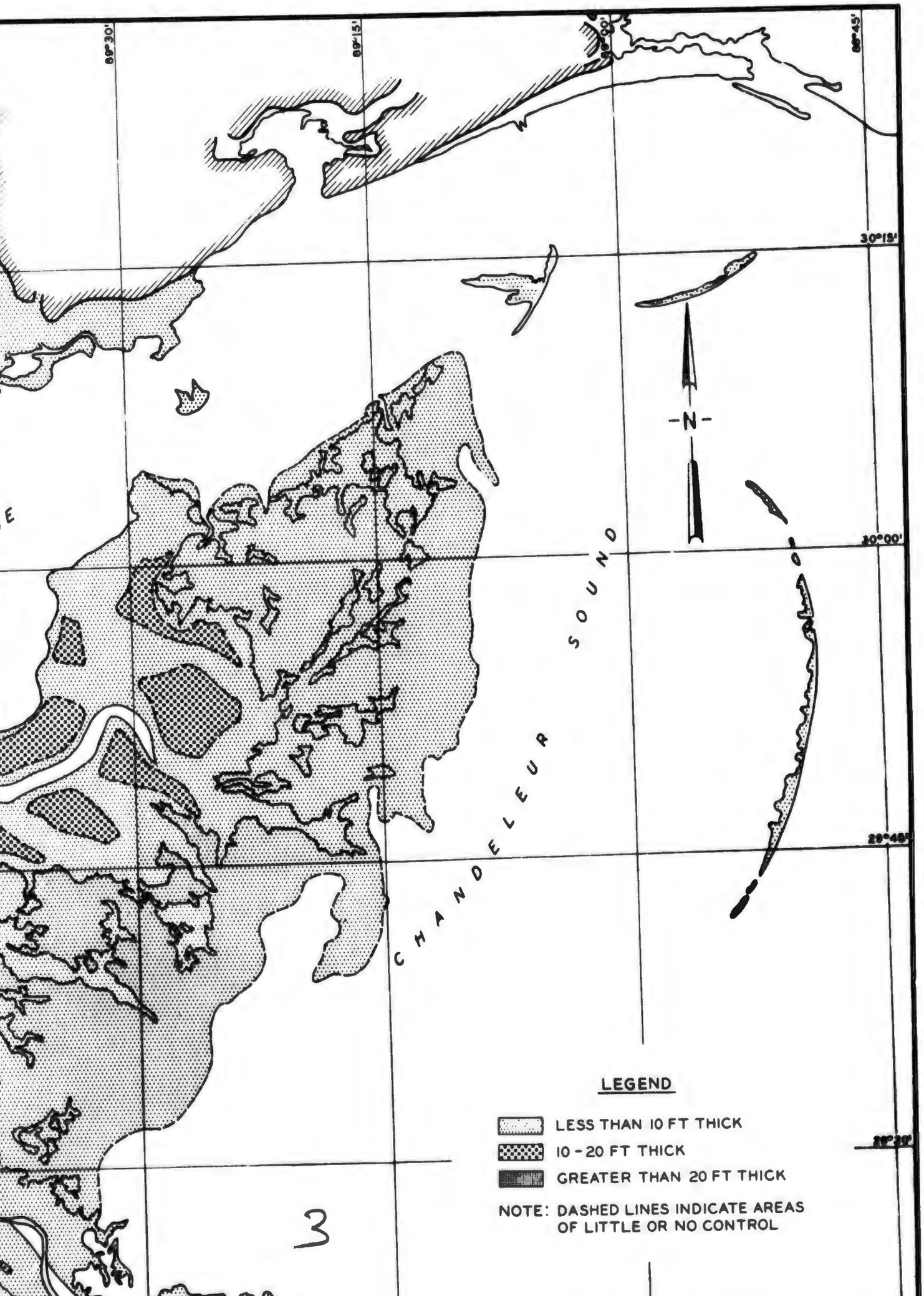

CHANDELEUR
29°45'
29°30'
29°15'
29°00'
125
100
LEGEND
AREAS OF NO CONTROL
AREAS OF MISSISSIPPI RIVER POINT BAR DEPOSITION IN WHICH CLEAN SANDS OCCUR FROM 25 TO 75 FT BELOW SURFACE
AREAS WHERE RECENT SANDS GREATER THAN 10 FT THICK OCCUR AT A DEPTH OF 100 FT.
125 CONTOURS ON SAND AT DEPTH INDICATED
NOTE BASED PRINCIPALLY ON LOGS OF APPROXIMATELY 50,000 SHOT HOLE BORINGS
3
C PLAIN
NA
CENT SANDS
15
20
89°30'
89°15'
89°00'
88°45'

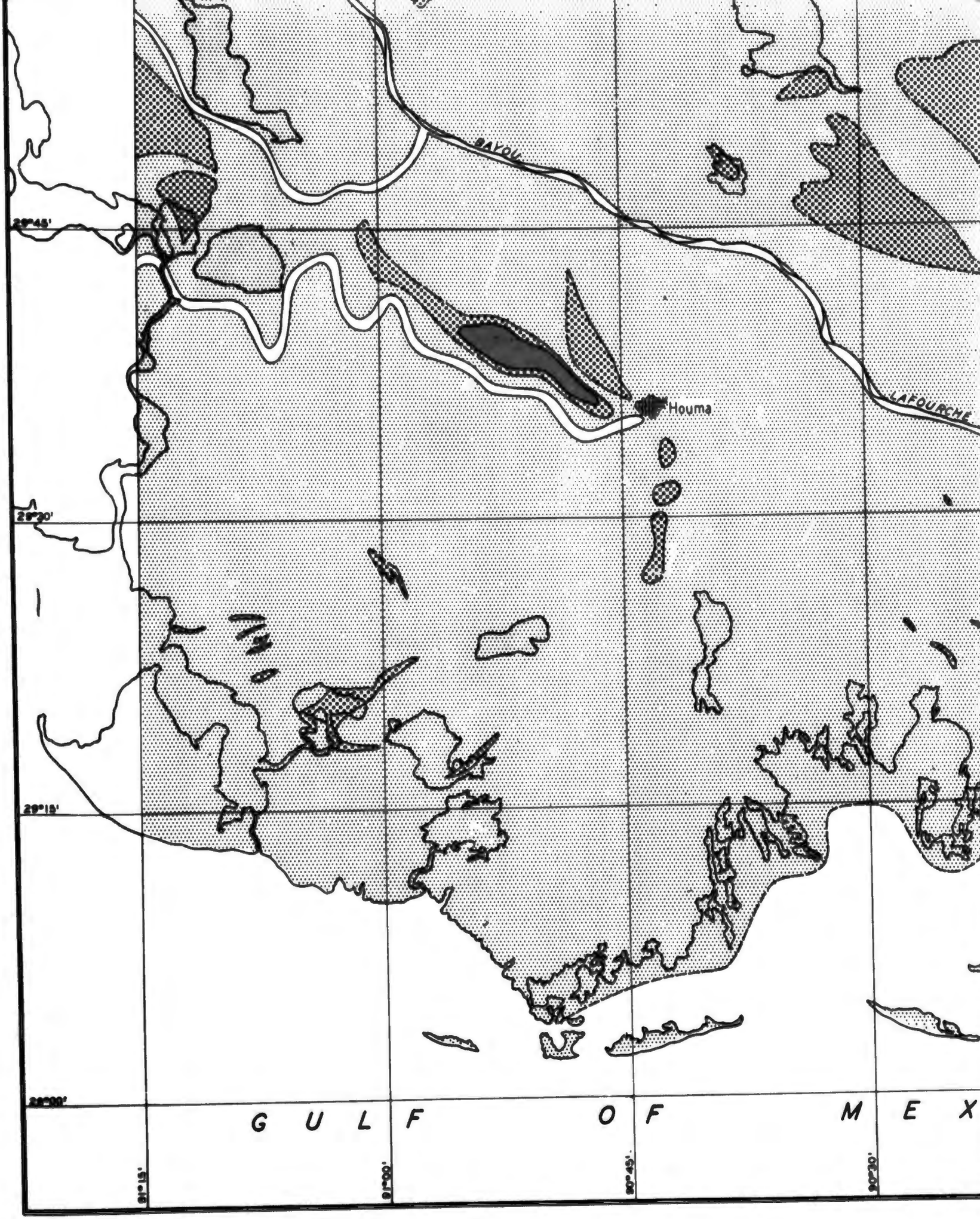
PLATE 6B

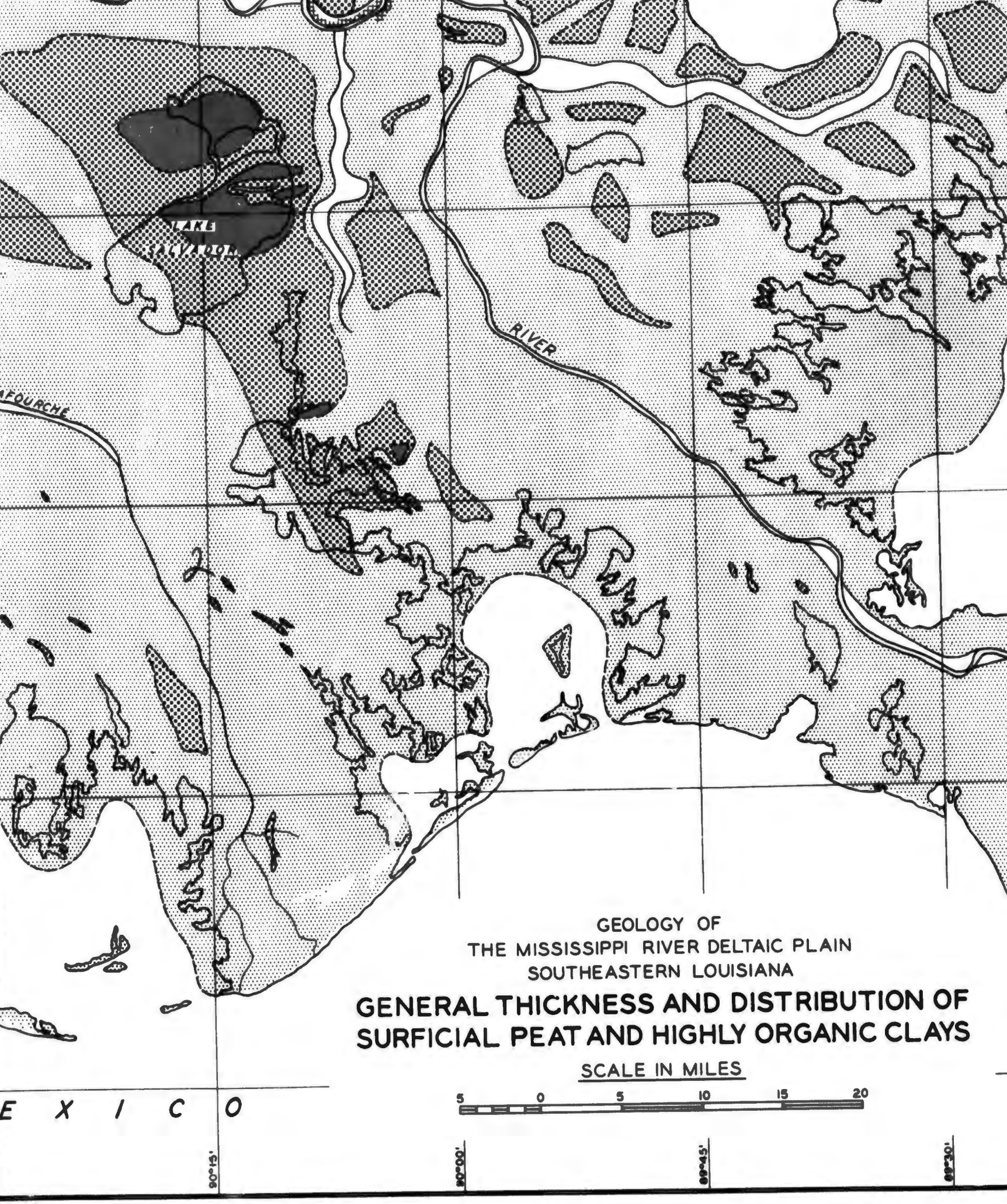

BATON ROUGE
PLEISTOCENE
91°15'
91°00'
90°45'
90°30'
30°15'
30°00'
29°45'
29°30'
LAKE
MAUREPAS
Donaldsonville
MISSISSIPPI
BAYOU
Houma
LAFOURCHE


90°15'
90°00'
89°45'
89°30'
UPLANDS
LAKE
PONTCHARTRAIN
LAKE
BORGNE
NEW
ORLEANS
LAKE
SALVADOR
RIVER
AFOURCHE


89°30'
89°15'
89°00'
88°45'
30°15'
30°00'
29°45'
29°30'
-N-
CHANDELEUR SOUND
LEGEND
LESS THAN 10 FT THICK
10 - 20 FT THICK
GREATER THAN 20 FT THICK
NOTE: DASHED LINES INDICATE AREAS OF LITTLE OR NO CONTROL

3


BAYOU
Houma
LAFOURCHE
29°45'
29°30'
29°15'
29°00'
G U L F O F M E X
91°15'
91°00'
90°45'
90°30'

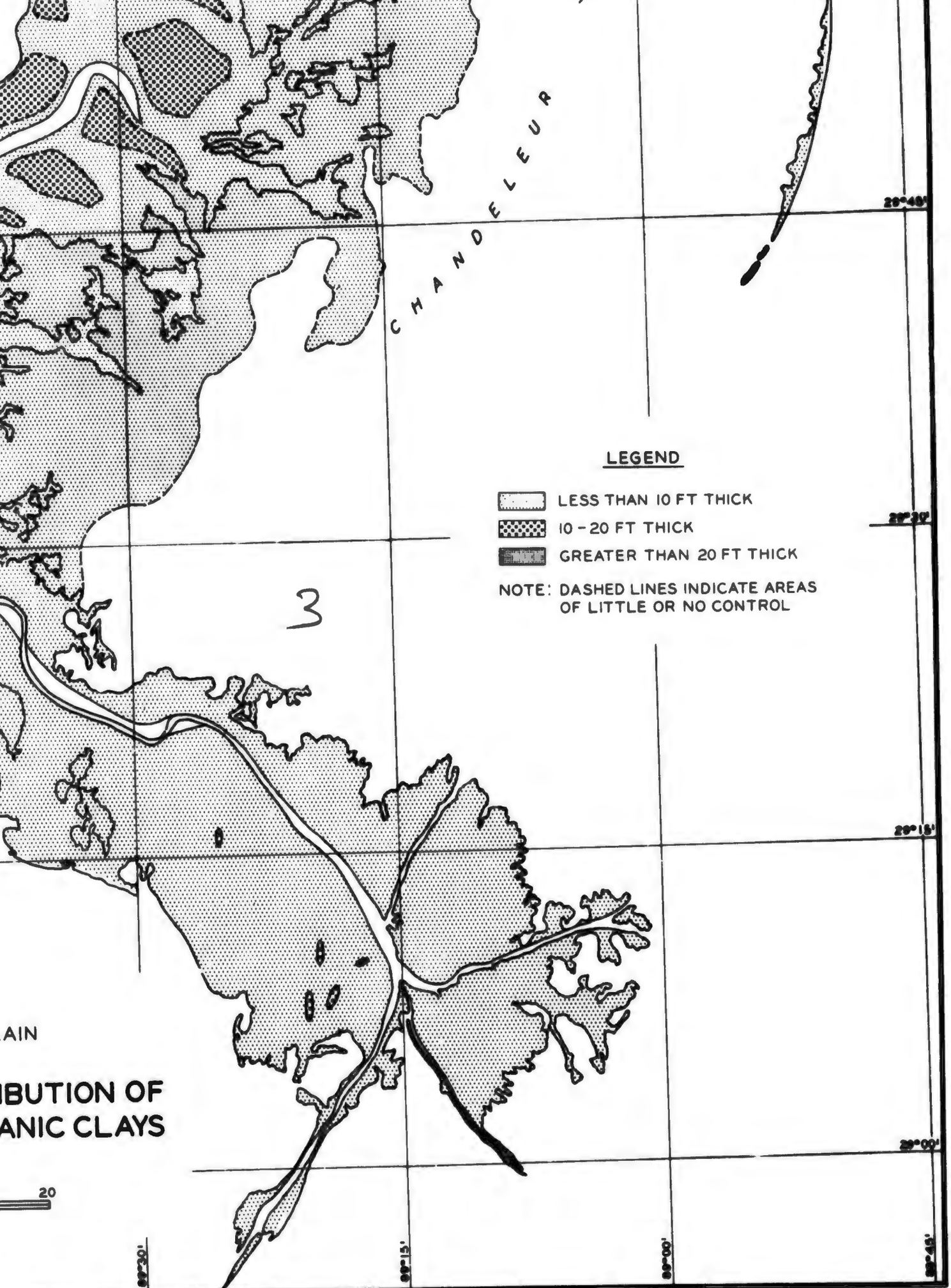


GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

GENERAL THICKNESS AND DISTRIBUTION OF SURFICIAL PEAT AND HIGHLY ORGANIC CLAYS

SCALE IN MILES

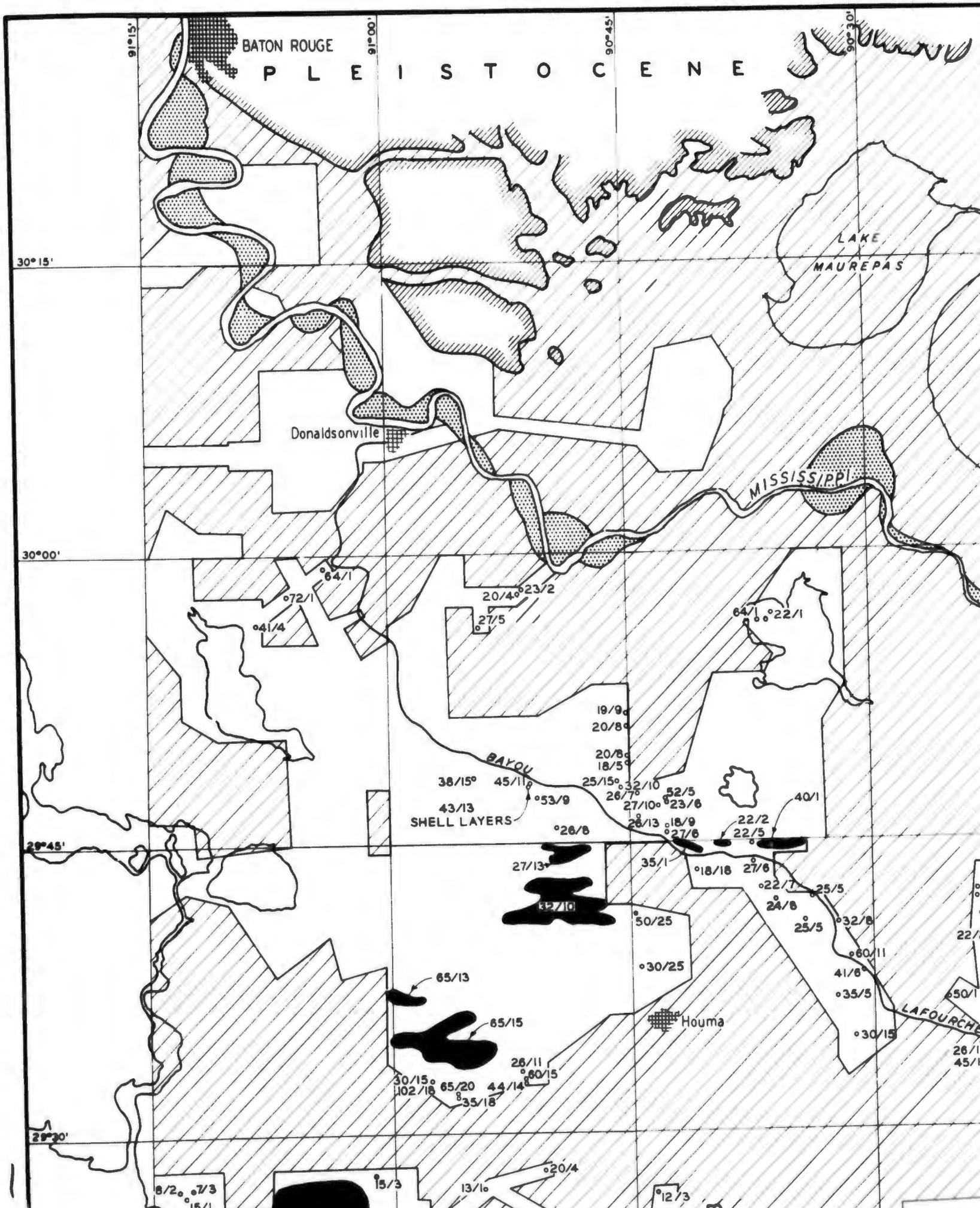
5 0 5 10 15 20

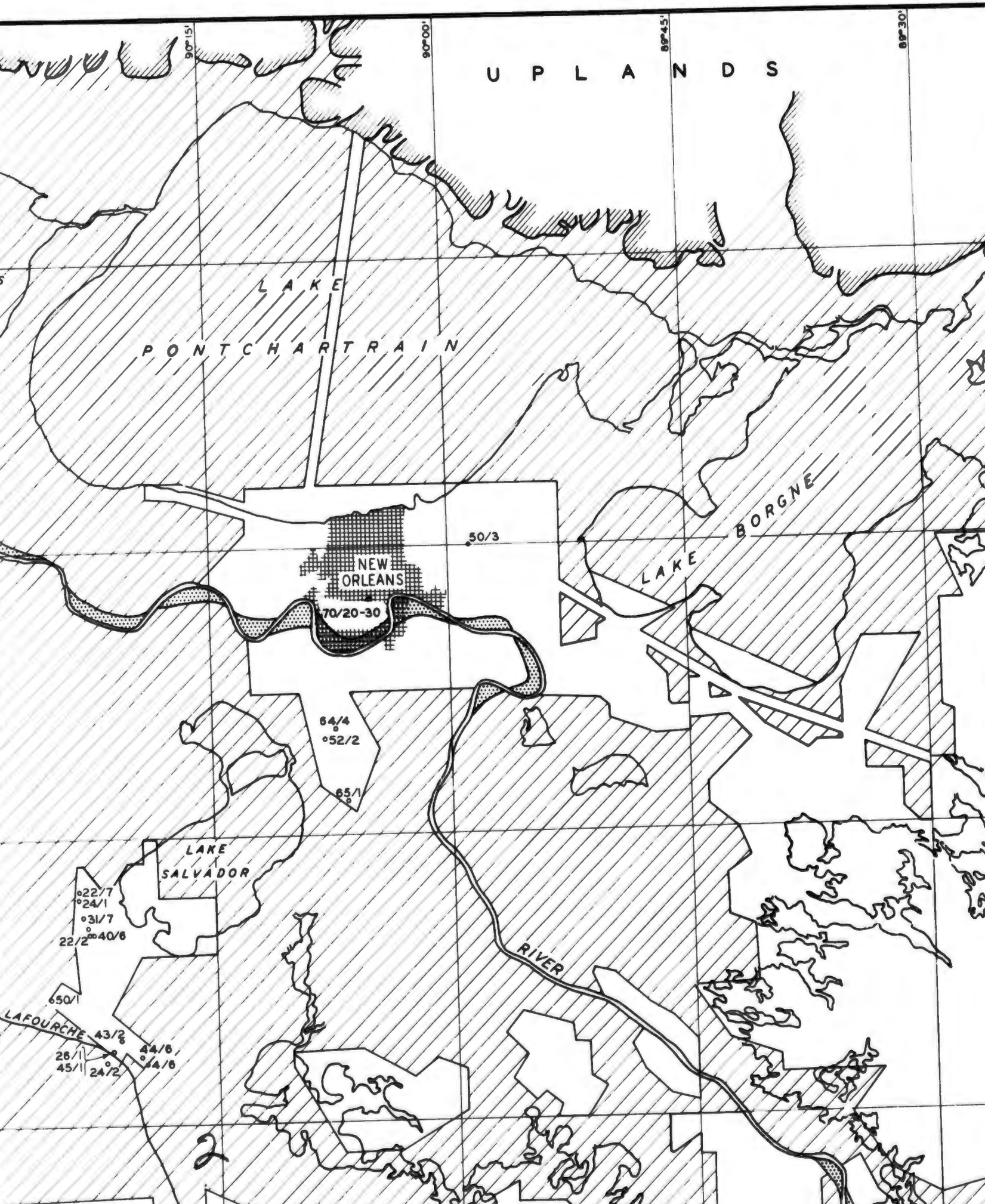


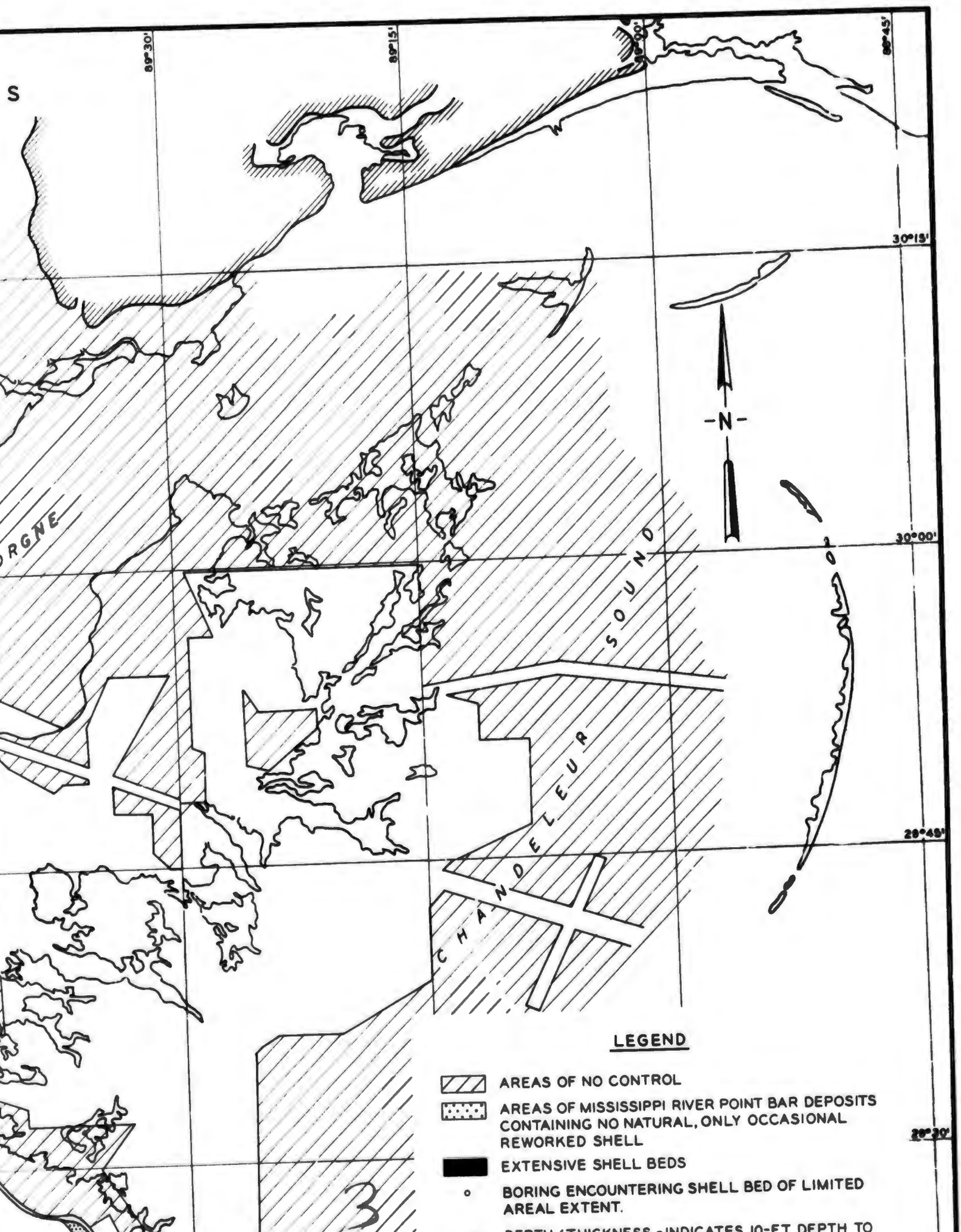
AIN

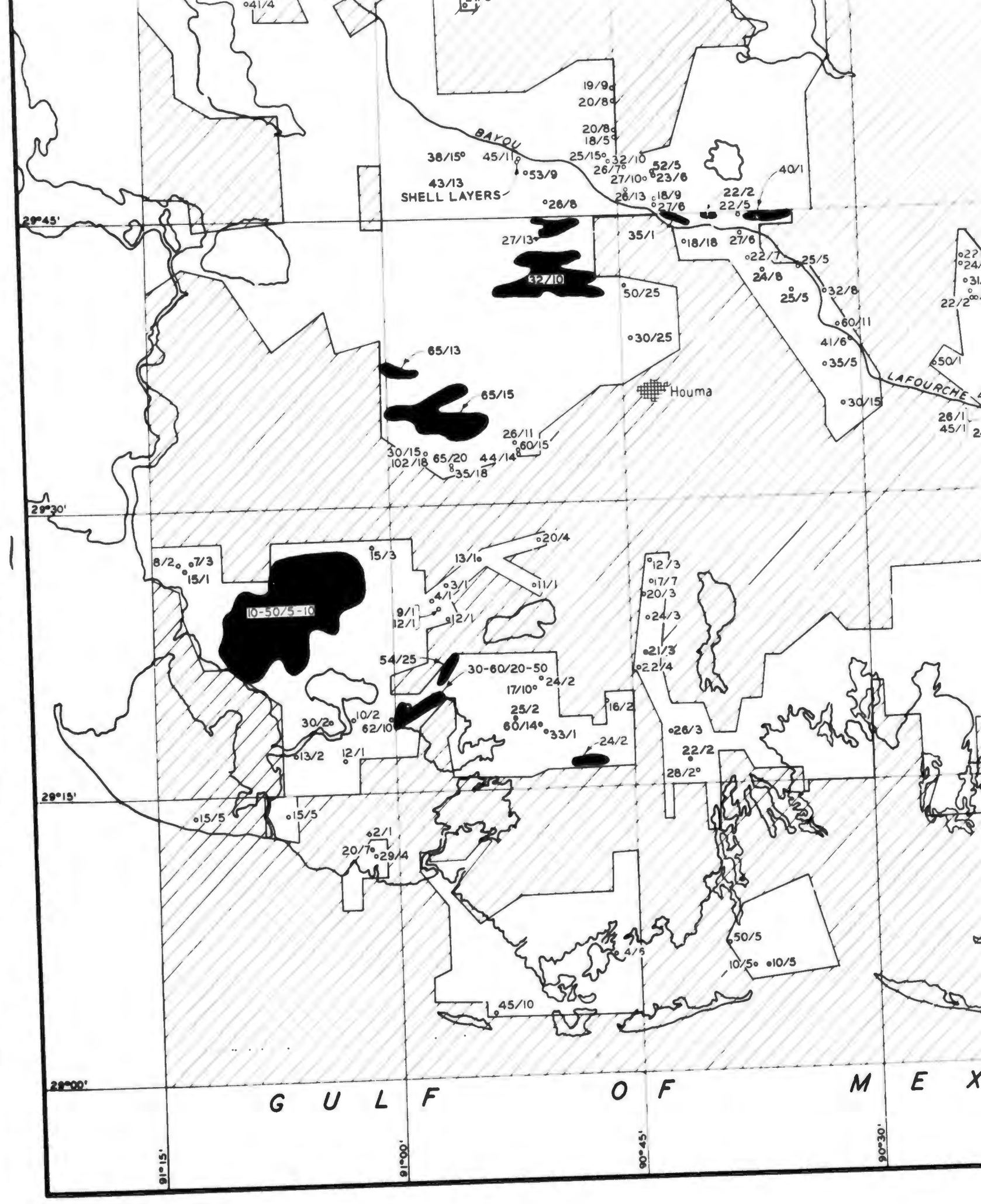
IBUTION OF
ANIC CLAYS

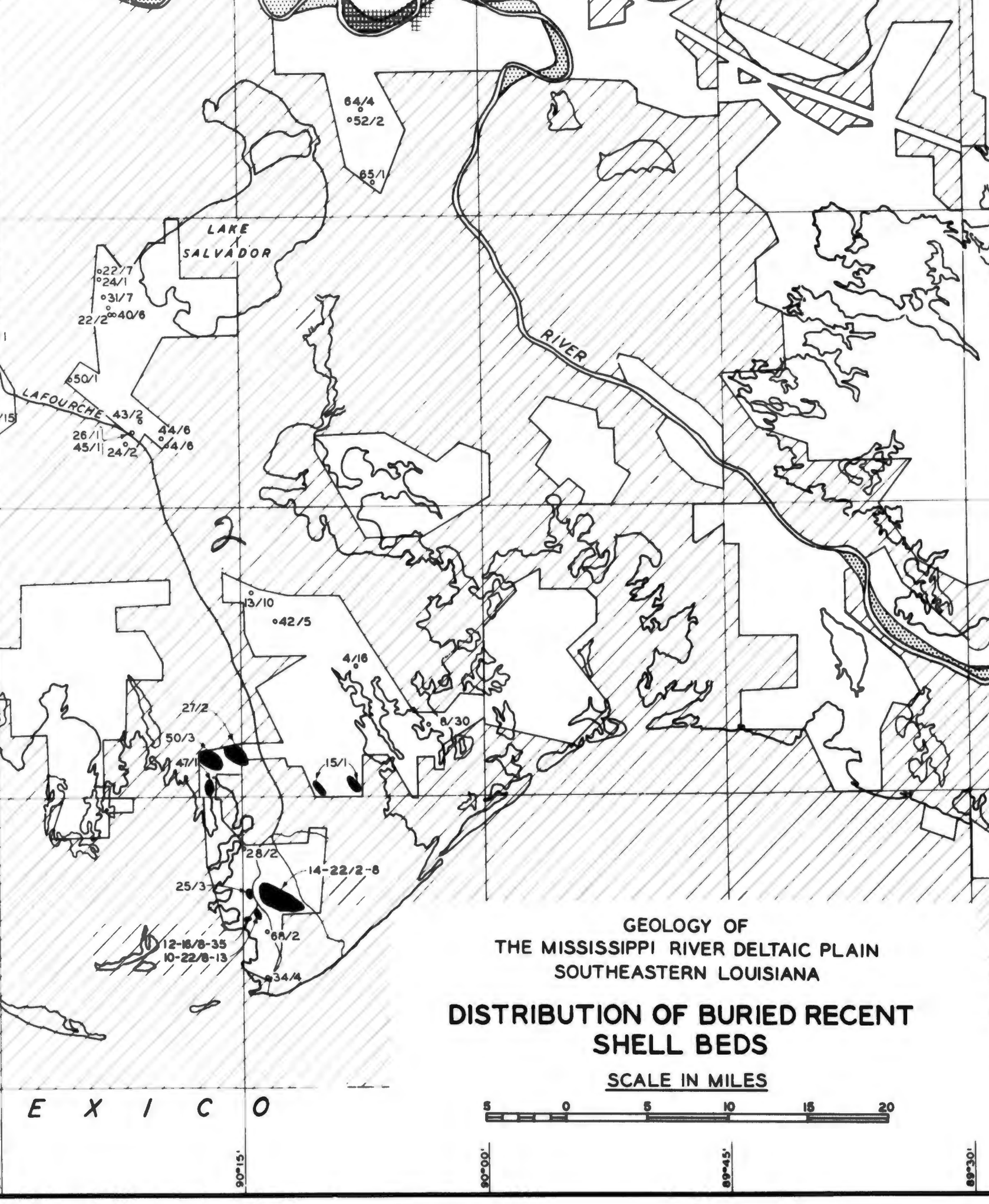
PLATE 7


BATON ROUGE
PLEISTOCENE
91°15'
91°00'
90°45'
90°30'
30°15'
30°00'
29°45'
29°30'
LAKE
MAUREPAS
Donaldsonville
MISSISSIPPI
BAYOU
LAFOURCHE
Houma
SHELL LAYERS
43/13
38/15°
45/11
°53/9
°64/1
°72/1
°41/4
20/4°
°23/2
27/5
64/1
°22/1
19/9
20/8
20/8
18/5
25/15°
°32/10
26/7°
52/5
27/10°
°23/6
28/13
°18/9
°27/6
°26/8
40/1
22/2
22/5
27/13
35/1
°18/18
27/6
°22/1
25/5
24/8
25/5
°32/8
50/25
°30/25
65/13
65/15
°60/11
41/8
°35/5
°30/15
28/11
°60/15
30/15°
102/18
65/20
44/14
35/18
8/2°
°7/3
15/3
13/10
°20/4
°12/3


90°15'
90°00'
89°45'
89°30'
UPLANDS
LAKE
PONTCHARTRAIN
LAKE BORGNE
NEW ORLEANS
50/3
70/20-30
64/4
52/2
65/1
LAKE SALVADOR
22/7
24/1
31/7
22/2
40/6
50/1
LAFOURCHE
43/2
26/1
45/1
24/2
44/6
44/6
RIVER
2


89°30'
89°15'
89°00'
89°45'
30°15'
30°00'
29°45'
29°30'
S
ORGNE
-N-
CHANDELEUR SOUND
LEGEND
AREAS OF NO CONTROL
AREAS OF MISSISSIPPI RIVER POINT BAR DEPOSITS CONTAINING NO NATURAL, ONLY OCCASIONAL REWORKED SHELL
EXTENSIVE SHELL BEDS
BORING ENCOUNTERING SHELL BED OF LIMITED AREAL EXTENT.
BORING ENCOUNTERING SHELL BED OF LIMITED AREAL EXTENT.
DEPTH/THICKNESS - INDICATES 10-FT DEPTH TO


BAYOU
SHELL LAYERS
Houma
LAFOURCHE
10-50/5-10
30-60/20-50
29°45'
29°30'
29°15'
29°00'
91°15'
91°00'
90°45'
90°30'
G U L F O F M E X



GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

DISTRIBUTION OF BURIED RECENT SHELL BEDS

SCALE IN MILES

5

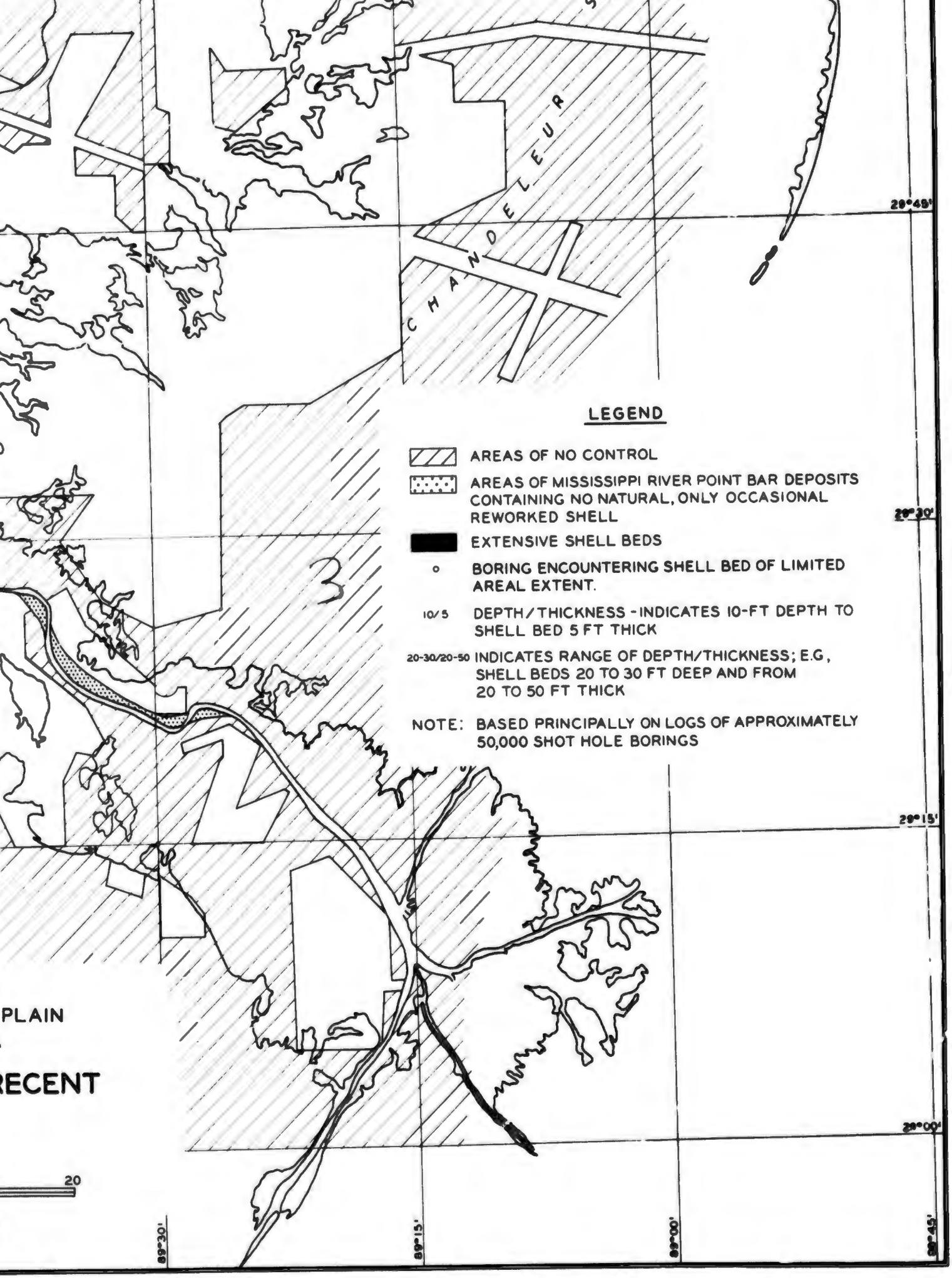
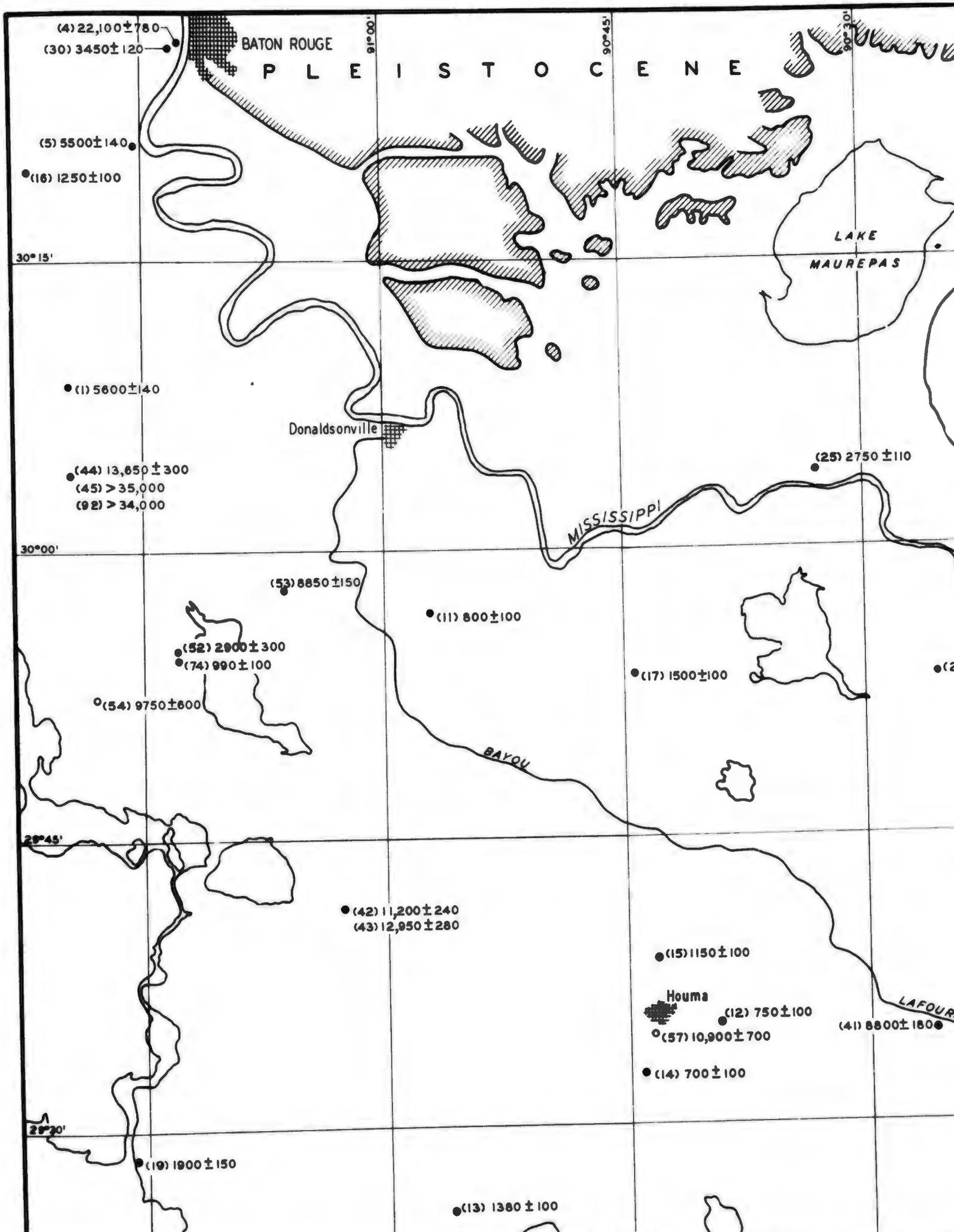
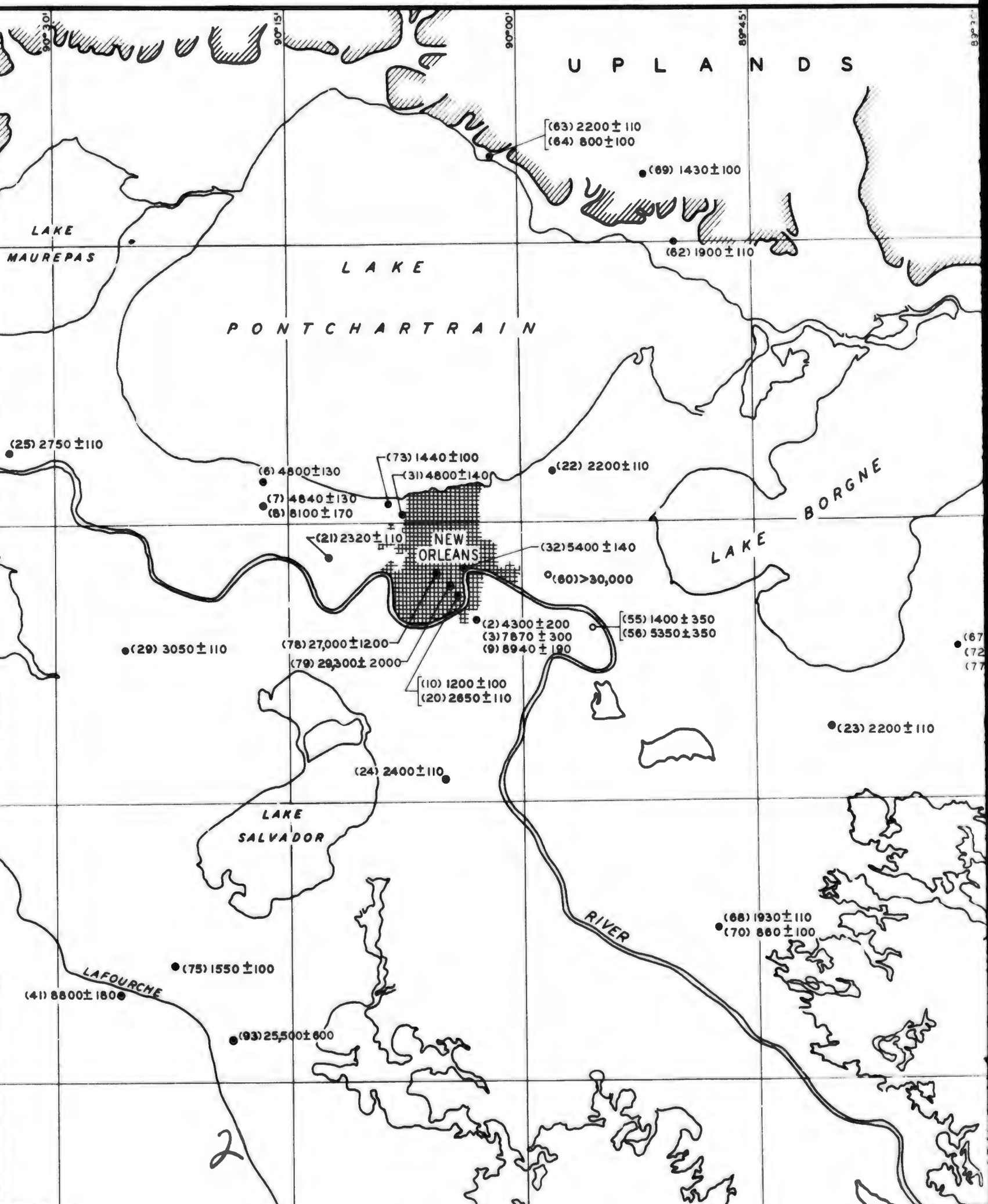
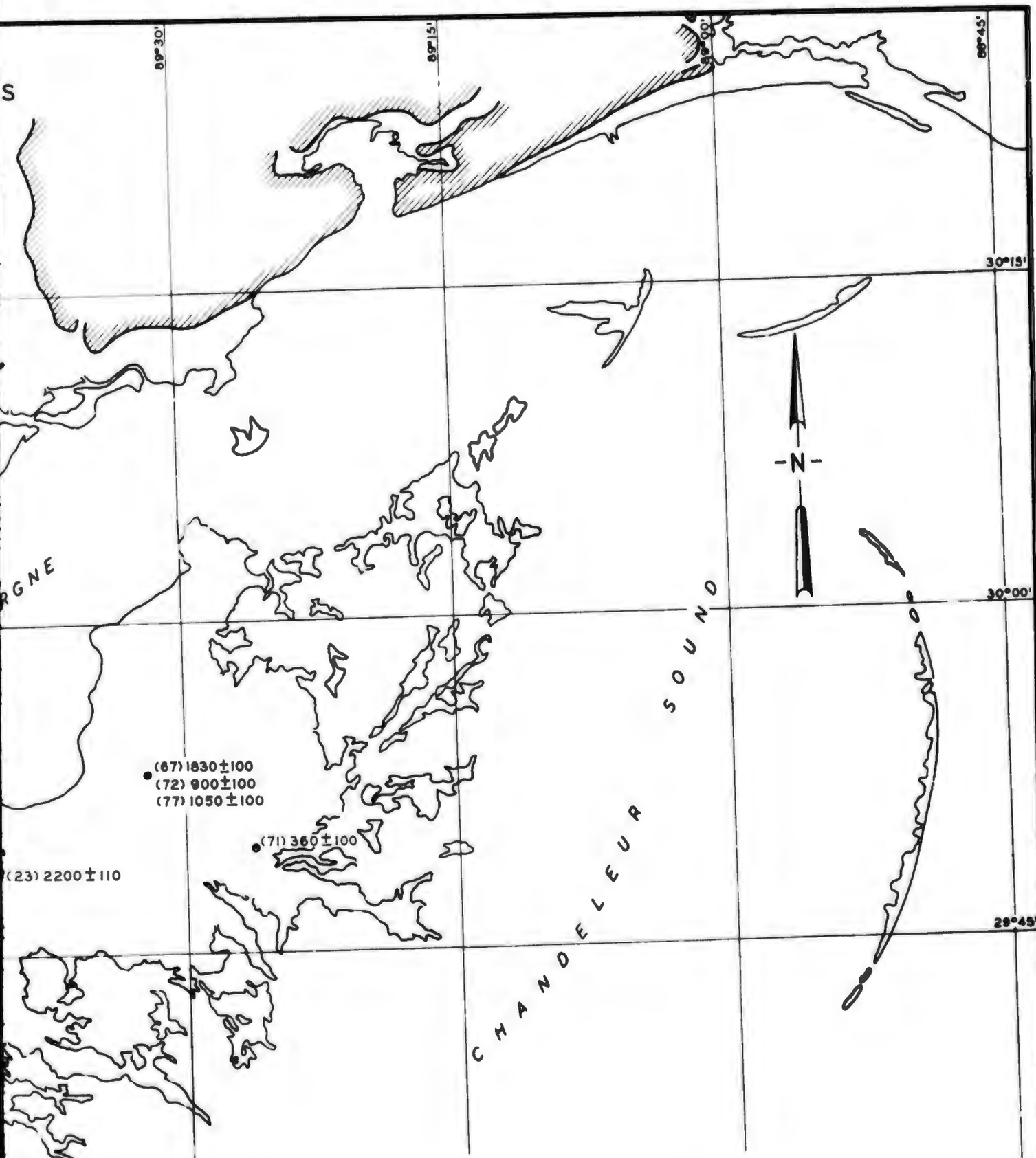

CHANDELEUR
29°45'
29°30'
29°15'
29°00'
89°30'
89°15'
89°00'
88°45'
LEGEND
AREAS OF NO CONTROL
AREAS OF MISSISSIPPI RIVER POINT BAR DEPOSITS CONTAINING NO NATURAL, ONLY OCCASIONAL REWORKED SHELL
EXTENSIVE SHELL BEDS
o BORING ENCOUNTERING SHELL BED OF LIMITED AREAL EXTENT.
10/5 DEPTH/THICKNESS - INDICATES 10-FT DEPTH TO SHELL BED 5 FT THICK
20-30/20-50 INDICATES RANGE OF DEPTH/THICKNESS; E.G., SHELL BEDS 20 TO 30 FT DEEP AND FROM 20 TO 50 FT THICK
NOTE: BASED PRINCIPALLY ON LOGS OF APPROXIMATELY 50,000 SHOT HOLE BORINGS
PLAIN
RECENT
20

PLATE 8


(4) 22,100±780
(30) 3450±120
BATON ROUGE
PLEISTOCENE
91°00'
90°45'
90°30'
(5) 5500±140
(16) 1250±100
LAKE
MAUREPAS
30°15'
(1) 5600±140
Donaldsonville
(44) 13,650±300
(45) >35,000
(92) >34,000
(25) 2750±110
MISSISSIPPI
30°00'
(53) 8850±150
(11) 800±100
(52) 2900±300
(74) 990±100
(17) 1500±100
(54) 9750±600
BAYOU
29°45'
(42) 11,200±240
(43) 12,950±280
(15) 1150±100
Houma
(12) 750±100
(41) 8800±180
(57) 10,900±700
(14) 700±100
29°30'
(19) 1900±150
(13) 1380±100

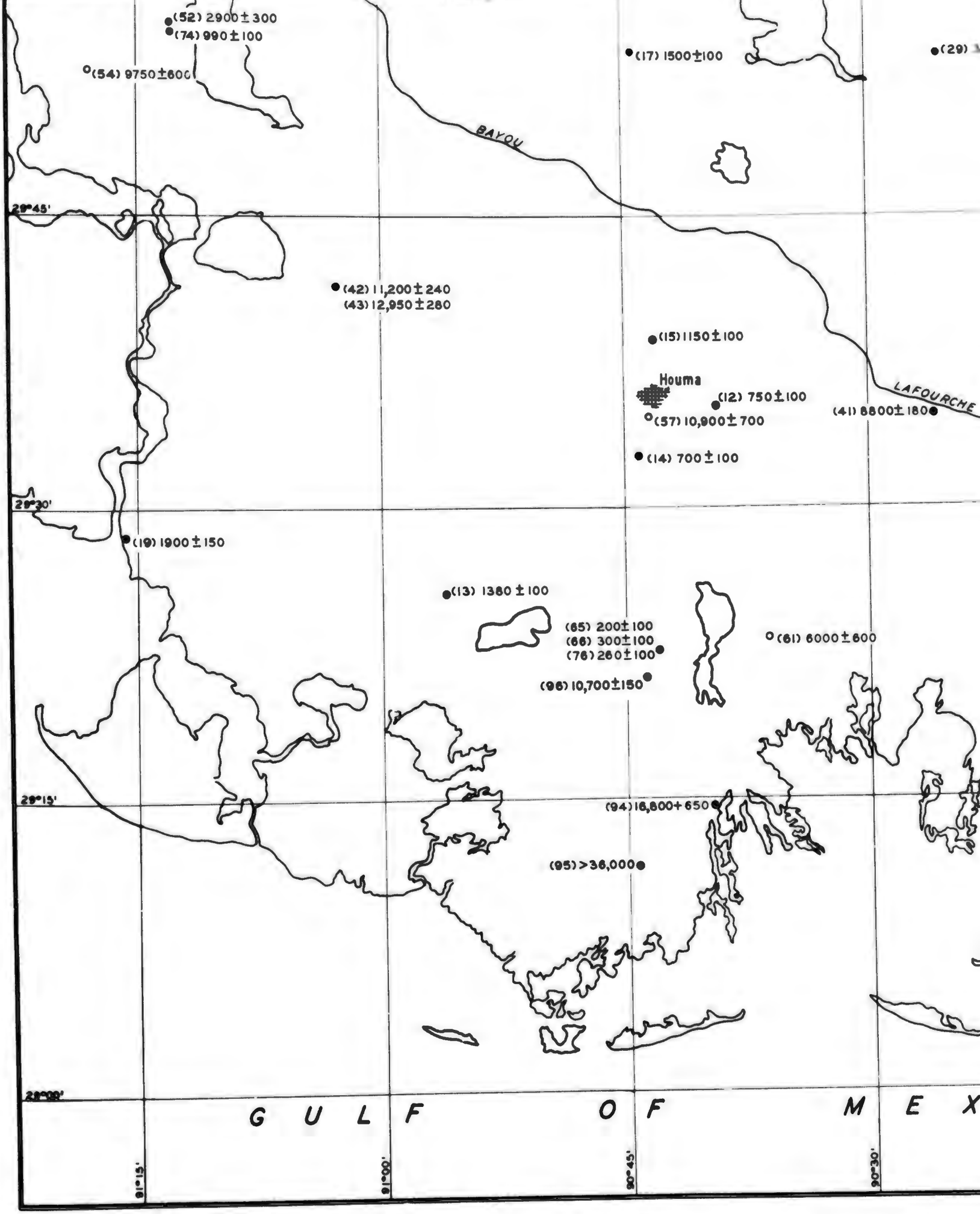

90°30'
90°15'
90°00'
89°45'
UPLANDS
(63) 2200 ± 110
(64) 800 ± 100
(69) 1430 ± 100
LAKE
MAUREPAS
(62) 1900 ± 110
LAKE
PONTCHARTRAIN
(25) 2750 ± 110
(73) 1440 ± 100
(6) 4800 ± 130
(31) 4800 ± 140
(22) 2200 ± 110
(7) 4840 ± 130
(8) 8100 ± 170
BORGNE
LAKE
(21) 2320 ± 110
NEW
ORLEANS
(32) 5400 ± 140
(60) >30,000
(55) 1400 ± 350
(56) 5350 ± 350
(2) 4300 ± 200
(3) 7870 ± 300
(9) 8940 ± 190
(29) 3050 ± 110
(78) 27,000 ± 1200
(79) 29,300 ± 2000
(10) 1200 ± 100
(20) 2650 ± 110
(23) 2200 ± 110
(24) 2400 ± 110
LAKE
SALVADOR
RIVER
(68) 1930 ± 110
(70) 880 ± 100
(75) 1550 ± 100
LAFOURCHE
(41) 8800 ± 180
(93) 25,500 ± 600
2

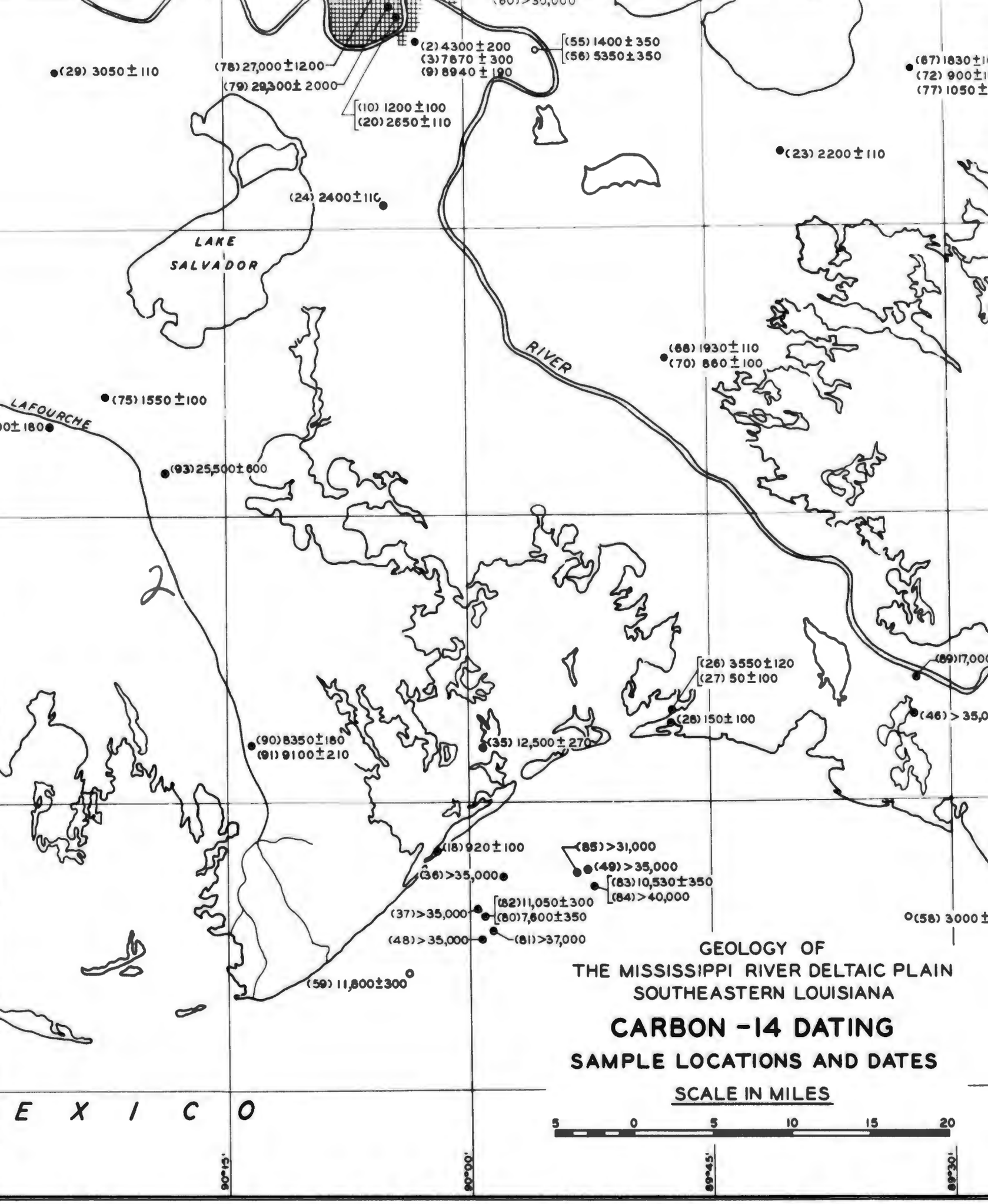


LEGEND

- • SAMPLE LOCATIONS
  SAMPLE NUMBER SHOWN IN PARENTHESIS
- o APPROXIMATE SAMPLE LOCATIONS
- 360±100 INDICATES AGE OF SAMPLE IN YEARS AND MAXIMUM ERROR IN DATING. SEE PLATE 9A FOR SAMPLE DEPTHS AND OTHER DATA.

3


(52) 2900±300
(74) 990±100
(54) 9750±600
(17) 1500±100
(29)
BAYOU
29°45'
(42) 11,200±240
(43) 12,950±280
(15) 1150±100
Houma
(12) 750±100
(57) 10,900±700
LAFOURCHE
(41) 8800±180
(14) 700±100
29°30'
(19) 1900±150
(13) 1380±100
(65) 200±100
(66) 300±100
(76) 260±100
(61) 6000±600
(96) 10,700±150
29°15'
(94) 16,800±650
(95) >36,000
29°00'
G U L F O F M E X
91°15'
91°00'
90°45'
90°30'


(29) 3050 ± 110
(78) 27,000 ± 1200
(79) 29,300 ± 2000
(2) 4300 ± 200
(3) 7870 ± 300
(9) 8940 ± 190
(55) 1400 ± 350
(56) 5350 ± 350
(10) 1200 ± 100
(20) 2650 ± 110
(23) 2200 ± 110
(24) 2400 ± 110
LAKE SALVADOR
RIVER
(68) 1930 ± 110
(70) 860 ± 100
(75) 1550 ± 100
LAFOURCHE
(93) 25,500 ± 600
(26) 3550 ± 120
(27) 50 ± 100
(28) 150 ± 100
(90) 8350 ± 180
(91) 9100 ± 210
(35) 12,500 ± 270
(18) 920 ± 100
(85) > 31,000
(49) > 35,000
(36) > 35,000
(83) 10,530 ± 350
(84) > 40,000
(82) 11,050 ± 300
(37) > 35,000
(80) 7,600 ± 350
(48) > 35,000
(81) > 37,000
(59) 11,800 ± 300
(58) 3000 ±
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA
CARBON - 14 DATING
SAMPLE LOCATIONS AND DATES
SCALE IN MILES
5 0 5 10 15 20
E X I C O
89°15'
89°00'
88°45'
88°30'

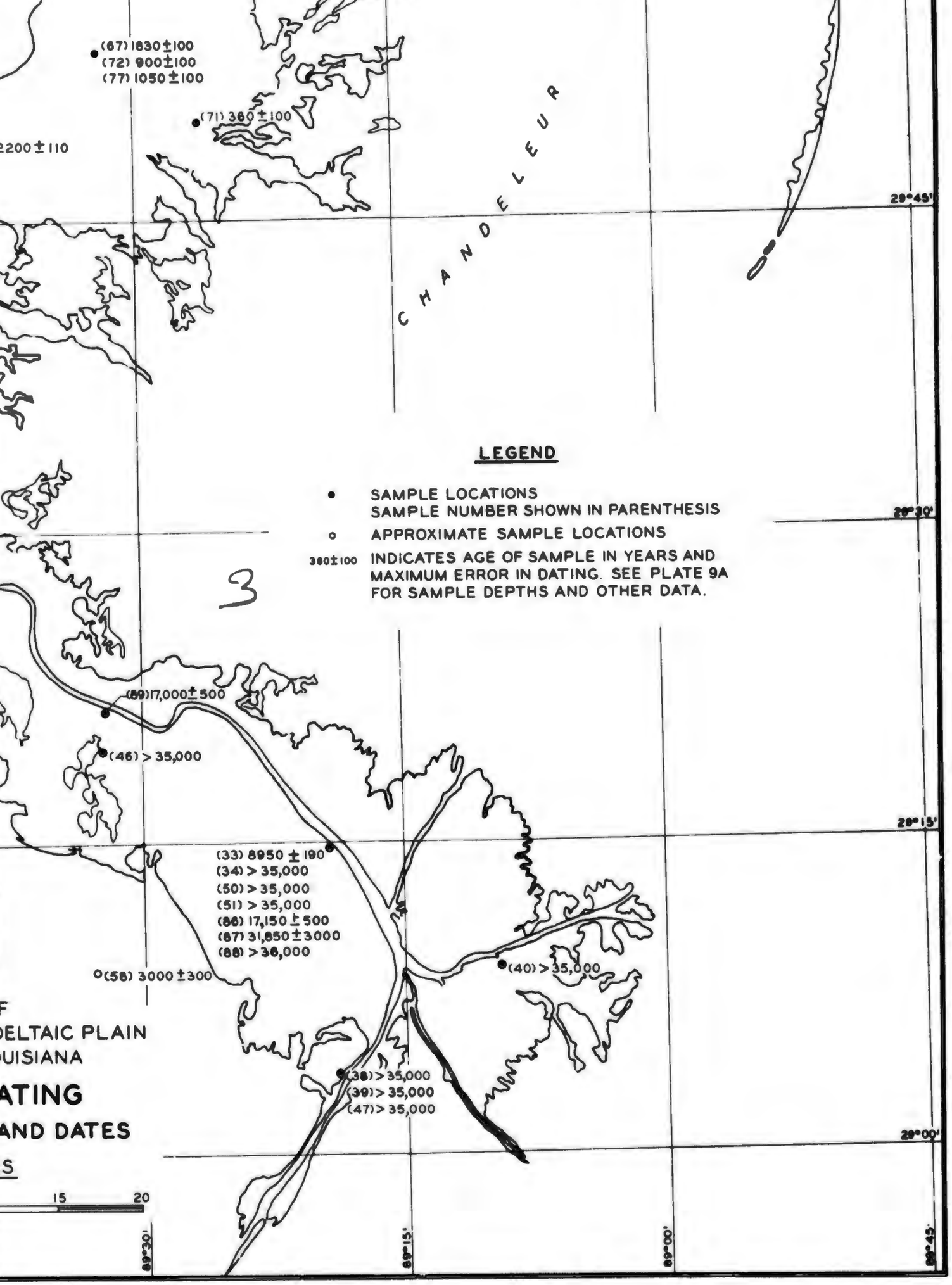

(67) 1830 ± 100
(72) 900 ± 100
(77) 1050 ± 100
(71) 360 ± 100
2200 ± 110
CHANDELEUR
29°45'
LEGEND
SAMPLE LOCATIONS
SAMPLE NUMBER SHOWN IN PARENTHESIS
APPROXIMATE SAMPLE LOCATIONS
360±100 INDICATES AGE OF SAMPLE IN YEARS AND MAXIMUM ERROR IN DATING. SEE PLATE 9A FOR SAMPLE DEPTHS AND OTHER DATA.
29°30'
3
(89) 17,000 ± 500
(46) > 35,000
29°15'
(33) 8950 ± 190
(34) > 35,000
(50) > 35,000
(51) > 35,000
(86) 17,150 ± 500
(87) 31,850 ± 3000
(88) > 36,000
(58) 3000 ± 300
(40) > 35,000
F
DELTAIC PLAIN
OUISIANA
ATING
AND DATES
S
(36) > 35,000
(39) > 35,000
(47) > 35,000
29°00'
15
20
89°30'
89°15'
89°00'
89°45'

PLATE 9

Sample No.	Location	Depth in ft msl	Geological interpretation	Age	Source
1	Bayou Sorrel Lock (north gate); SW1/4SW1/4, sec. 2, T11S, R11E, Iberville Ph., La.	-23	Sample of shells (Rangias) from a 5-ft sandy beach deposit.	5,600 ± 140	1
2	1100 ft east of northwest corner of sec. 36, T13S, R24E, Miss. River batture, Gretna area Jefferson Ph., La.	-60	Shells from possible bay-sound deposit laid down during early stages in the development of the Mississippi deltaic plain.	4,300 ± 200	1
3	1100 ft east of northwest corner of sec. 36, T13S, R24E, Miss. River batture, Gretna area Jefferson Ph., La.	-90	Shells from a gray clay layer, 8 ft thick, deposited on the Gulf floor. Their age and environment of deposition suggests that they accumulated during post-glacial time when sea level was rising and was within 20 ft of its present level.	7,870 ± 300	1
4	Port Allen lock site area, 3500 ft east and 100 ft north of the southwest corner of sec. 69, T7S, R12E, West Baton Rouge Ph., La.	-103	Wood deposited in alluvial sands and gravels of a tributary valley above the level of the Miss. River in the main trench at an early stage in valley alluviation.	22,100 ± 780	2
5	Addis area, 1500 ft south and 1400 ft east of northwest corner of sec. 31, T8S, R12E, West Baton Rouge Ph., La.	-10	Sample Rangia shells from a 25-ft layer of soft gray clay, a brackish water bay deposit. According to information from this and other samples in the area, the Rangia shells were buried in a northwestern seg- of the Lake Pontchartrain embayment during the earliest stages of present flood plain development.	5,500 ± 140	2
6	Jefferson Parish Protection Levee, SE1/4NE1/4, sec. 3, T12S, R9E, Jefferson Ph., La.	-49	Marine shells laid down in a gray clay on the floor of Lake Pontchartrain embayment during early stages in the development of the Mississippi deltaic plain.	4,800 ± 130	2
7	Kenner area, Jefferson Parish Protection Levee, NE1/2NE1/4, sec. 10, T12S, R9E, Jefferson Ph., La.	-50	Shell sample from the same fossiliferous gray clay encountered at -49 in boring No. 6. See above.	4,840 ± 130	2
8	Kenner area, Jefferson Parish Protection Levee, NE1/2NE1/4, sec. 10, T12S, R9E, Jefferson Ph., La.	-65	Rangia shells taken from an interbedded gray clay and gray sandy silt, a brackish-water estuary deposit, filling a tributary valley. Burial occurred during post-glacial time when sea level was rising and was within 50 ft of its present level.	8,100 ± 170	2
9	1100 ft east of northwest corner of sec. 36, T13S, R24E, Miss. River batture, Gretna area Jefferson Ph., La.	-95	Brackish-water shells deposited in a gray clay filling a tributary valley to main Mississippi trench when sea level had risen to within 90 ft of its present stand.	8,940 ± 190	2
10	Building excavation for the Civic Center, Loyola and Howard Streets, New Orleans.	-10	Roots of cypress stump buried in natural levee of Miss. River. The tree grew on deposits overlying peat beds that were dated 2650 (see sample 20).	1,200 ± 100	3
11	3 mi due east of Napoleonville, Madewood Quadrangle, in center sec. 38, T13S, R15E.	-4 to -5	Wood sample from marsh deposits buried by natural levee of Bayou Lafourche.	800 ± 100	3
12	2000 ft east and 500 ft south of the northwest corner sec. 3, T17S, R17E, Houma area.	-2	Peat from a bed of gray clay underlying natural levee of Bayou Terrebonne.	750 ± 100	3
13	Center NW1/4 sec. 9, T19S, R15E, Lake Penchant area.	-6	Shell fragments of Rangia cuneata from a fine-grained, clayey sand buried by relict bay deposits.	1,380 ± 100	3
14	4 mi south of Houma, 2500 ft south and 2500 ft west of the northeast corner sec. 17, T18S, R17E.	-6 to -12	Wood sample from marsh deposit buried by natural levee of Bayou du Large.	700 ± 100	3
15	3500 ft east and 1200 ft south of the northwest corner sec. 88, T16S, R17E, Houma area.	-12 to -14	Wood and peat from fine-grained gray sand underlying natural levee of Bayou Little Coteau.	1,150 ± 100	3
16	NW1/4NE1/4 sec. 54, T8S,	-4	Wood fragments from organic-rich, gray clay underlying natural levee of	1,250 ± 100	3

Sample No.	Location	Depth in ft msl	Geological Interpretation	Age	Source
26	On the beach ridge in center sec. 1, T21S, R26E, Lake Washington area.	-6 to -7	Wood fragments from fine-grained, greenish-gray sand deposited on the shore line of the Teche delta.	3,550 ± 120	3
27	On the beach ridge in center sec. 1, T21S, R26E, Lake Washington area.	-6 to -7	Shells of Thais haemastoma floridana from spoil bank of canal cutting through the same beach ridge in which sample 26 was taken. The radiocarbon age indicates that the sample is derived from modern material and does not date the beach ridge.	50 ± 100	3
28	NE1/4NW1/4 sec. 12, T21S, R26E, Lake Washington area.	-6 to -7	Shells of Mulinia lateralis from spoil bank of canal cutting the beach ridge adjacent to the one from which sample 26 was taken. The radiocarbon age indicates that the sample is derived from modern material and does not date the beach ridge.	150 ± 100	3
29	SW1/4SW1/4 sec. 3, T14S, R20E, Paradis area.	-24 to -25	Shells of Mulinia lateralis from a gray clay underlying a natural levee of Bayou Petit.	3,050 ± 110	3
30	1800 ft north of the southeast corner sec. 70, T7S, R12E, Port Allen lock site.	-65	Wood sample from fine-grained gray sand filling an abandoned Lafourche-Miss. channel. The age of the sample correlates with dates obtained for the Teche stage, indicating that this sample may have been reworked.	3,450 ± 120	3
31	8000 ft south of the north line and 10 ft west of the east line of sec. 122, T12S, R11E, New Orleans area.	-20 to -25	Marine shells from a white, medium-grained beach sand formed on a shore line flanking the Maringouin delta.	4,800 ± 140	3
32	Intersection of Dumaine Street and an artificial levee in New Orleans.	-48 to -51	Marine shells from fine-grained gray sand deposited when sea level was a few feet below its present elevation.	5,400 ± 140	3
33	NE1/4NE1/4 sec. 18, T21S, R31E, Venice area.	-216 to -236	Marine shells from fine-grained gray sand deposited when sea level was about 110 ft below its present elevation; bit cuttings.	8,950 ± 190	3
34	NE1/4NE1/4 sec. 18, T21S, R31E, Venice area.	-310 to -316	Marine shells from fine-grained gray sand laid down when sea level was about 240 ft below its present elevation; bit cuttings. The age of this sample is anomalous.	>35,000	3
35	Humble Oil and Refining Company well No. H-1. La. State lease 799, lat. 29°17'.0 N, long. 89°59'.5 W.	-117 to -147	Wood from a gray clay laid down when sea level was about 70 ft below its present elevation; bit cuttings. The age of this sample is anomalous.	12,500 ± 270	3
36	Humble Oil and Refining Company core test 1, hole 2, La. State lease 797, lat. 29°11'25" N, long. 89°53'00" W.	-227	Peat sample from a black, organic-rich clay laid down when sea level was about 140 ft below its present elevation. The age of this sample is anomalous.	>35,000	3
37	Humble Oil and Refining Company core test 1, La. State lease 799, lat. 29°09' N, long. 88°59' W.	-218 to -222	Wood from gray silty clay deposited when sea level was about 135 ft below its present elevation; bit cuttings. The age of this sample is anomalous.	>35,000	3
38	NW1/4NW1/4 sec. 28, T23S, R31E, Buras Levee District, Scott Bay.	-571 to -572	Marine shell fragments from gray clay deposited when sea level was more than 300 ft below its present elevation.	>35,000	3
39	NW1/4NW1/4 sec. 28, T23S, R31E, Buras Levee District, Scott Bay.	-572 to -573	Marine shell fragments from core of gray clay in the same well as sample 38.	>35,000	3
40	Humble Oil and Refining Company well No. 8, La. State lease 2090, center sec. 33, T23S, R33E, Southeast Pass area.	-512 to -527	Fragments of Oculina diffusa from shell bed formed when sea level was about 210 ft below its present elevation. The cuttings from which this sample was obtained may have been contaminated with material from older deposits; bit cuttings.	>35,000	3
41	In center sec. 51, T17S, R21E, Delta Farms area.	-90 to -100	Marine shell from gray sand deposited when sea level was about 75 ft below its present elevation; bit cuttings.	8,800 ± 180	3

Sample No.	
49	La. Sta 29°12'
50 & 51	NE1/4 R31E,
52	Lat. 29 91°13'
53	Lat. 29
54	Lat. 29 (locati
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56	Lat. 29 (locati
57	Lat. 29 (locati
58	Lat. 2 (locati
59	Lat. 2 (locati
60	Lat. 2 (locati
61	Lat. 2 (locat

Sample No.	
62	SW1/ R13E,
63 & 64	Covin 30°19
65 & 66	Lat. long.
67	Lat. long.
68	Lat. long.
69	Lat. long.
70	Lat. long.
71	Lat. long.
72	Lat. long.
73	Lat. long
74	Lat. long
75	Lat.

Sample No.	Location	Depth in ft msl	Geological interpretation	Age	Source
49	La. State lease 797, lat. 29°12' N, long. 89°52'50" W.	-307 to -322	Wood sample from fine- to medium-grained sand; bit cuttings.	>35,000	3
50 & 51	NE1/4NE1/4 sec. 18, T21S, R31E, Venice area.	-416 to -436	Marine shells from a gray clay; bit cuttings.	>35,000 >35,000	3 3
52	Lat. 29°53'30" N, long. 91°13'30" W.	-25	Wood from gray silty clay top stratum deposits.	2,900 ± 300	4
53	Lat. 29°55' N, long. 91°7' W.	-75	Shells from clay top stratum deposit.	8,850 ± 150	4
54	Lat. 29°52' N, long. 91°18' W (location approximate).	-120 to -135	Wood from top stratum deposits.	9,750 ± 600	5
55	Lat. 29°53' N, long. 89°54' W (location approximate).	-13	Shells from marsh deposits underlying Miss. River natural levee.	1,400 ± 350	5
56	Lat. 29°53' N, long. 89°54' W (location approximate).	-68	Shells from bay-sound environment in New Orleans area.	5,350 ± 350	5
57	Lat. 29°35' N, long. 90°43' W (location approximate).	-80 to -120	Wood from deltaic plain facies; bit cuttings.	10,900 ± 700	5
58	Lat. 29°08' N, long. 89°32' W (location approximate).	-70	Wood from delta complex of present Miss. River.	3,000 ± 300	5
59	Lat. 29°05' N, long. 90°04' W (location approximate).	-110 to -170	Organic matter from prodelta clays of Timbalier Island; bit cuttings.	11,800 ± 300	5
60	Lat. 29°55' N, long. 89°58' W (location approximate).	-80	Pleistocene shells.	>30,000	5
61	Lat. 29°23' N, long. 90°36' W (location approximate).	-35 to -45	Wood from intradelta deposits in Houma area.	6,000 ± 600	5

Sample No.	Location	Depth of Sample	Archaeological Interpretation	Age	Source
62	SW1/4NE1/4, sec. 14, T9S, R13E.	2 to 3 ft below the top of midden	Rangia shells (Tchefuncte period).	1,900 ± 110	6
63 & 64	Covington Quadrangle, lat. 30°19'40" N, long. 90°01'30" W.	2 to 5 ft below the surface	(Tchefuncte period). Organic and inorganic carbon were submitted separately to radiocarbon assay. The age from organic portion (sample 63) is considered to be more valid because the inorganic carbonate sample (sample 64) apparently contained intrusive material of younger age.	2,200 ± 110 800 ± 100	6 6
65 & 66	Lat. 29°22'38" N, long. 90°43'05" W.	1 ft above sea level	Rangia shells (Plaquemines period).	200 ± 100 300 ± 100	6 6
67	Lat. 29°53'18" N, long. 89°32'00" W.	2 to 3 ft below sea level	Rangia shells (Marksville period).	1,830 ± 100	6
68	Lat. 29°37'58" N, long. 89°47'13" W.	2-1/2 ft below sea level	Rangia shells (Troyville period).	1,930 ± 110	6
69	Lat. 30°18'40" N, long. 89°47'13" W.	2 to 3 ft below the surface of the midden	Rangia shells (Tchefuncte period).	1,430 ± 100	6
70	Lat. 29°37'58" N, long. 89°47'13" W.	Surface of shell midden	Bones (Troyville period). Only the organic portion was used in radiocarbon assay.	860 ± 100	6
71	Lat. 29°49'48" N, long. 89°29'54" W.	Surface of shell midden	Bones (Plaquemines period). Only the organic portion was used in radiocarbon assay.	360 ± 100	6
72	Lat. 29°53'18" N, long. 89°32'00" W.	1 ft below sea level	Bones (Marksville period, but possibly contaminated). Only the organic portion was used in radiocarbon assay.	900 ± 100	6
73	Lat. 30°01'00" N, long. 90°08'45" W.	Sea level	Charcoal sample (Troyville period) in shell mound.	1,440 ± 100	6
			Charcoal sample (Troyville horizon).	990 ± 100	6

7	Kenner area, Jefferson Parish Protection Levee, NE1/2NE1/4, sec. 10, T12S, R9E, Jefferson Ph., La.	-50	Shell sample from the same fossiliferous gray clay encountered at -49 in boring No. 6. See above.	4,840 ± 130	2
8	Kenner area, Jefferson Parish Protection Levee, NE1/2NE1/4, sec. 10, T12S, R9E, Jefferson Ph., La.	-65	Rangia shells taken from an interbedded gray clay and gray sandy silt, a brackish-water estuary deposit, filling a tributary valley. Burial occurred during post-glacial time when sea level was rising and was within 50 ft of its present level.	8,100 ± 170	2
9	1100 ft east of northwest corner of sec. 36, T13S, R24E, Miss. River batture, Gretna area Jefferson Ph., La.	-95	Brackish-water shells deposited in a gray clay filling a tributary valley to main Mississippi trench when sea level had risen to within 90 ft of its present stand.	8,940 ± 190	2
10	Building excavation for the Civic Center, Loyola and Howard Streets, New Orleans.	-10	Roots of cypress stump buried in natural levee of Miss. River. The tree grew on deposits overlying peat beds that were dated 2650 (see sample 20).	1,200 ± 100	3
11	3 mi due east of Napoleonville, Madewood Quadrangle, in center sec. 38, T13S, R15E.	-4 to -5	Wood sample from marsh deposits buried by natural levee of Bayou Lafourche.	800 ± 100	3
12	2000 ft east and 500 ft south of the northwest corner sec. 3, T17S, R17E, Houma area.	-2	Peat from a bed of gray clay underlying natural levee of Bayou Terrebonne.	750 ± 100	3
13	Center NW1/4 sec. 9, T19S, R15E, Lake Penchant area.	-6	Shell fragments of Rangia cuneata from a fine-grained, clayey sand buried by relict bay deposits.	1,380 ± 100	3
14	4 mi south of Houma, 2500 ft south and 2500 ft west of the northeast corner sec. 17, T18S, R17E.	-6 to -12	Wood sample from marsh deposit buried by natural levee of Bayou du Large.	700 ± 100	3
15	3500 ft east and 1200 ft south of the northwest corner sec. 88, T16S, R17E, Houma area.	-12 to -14	Wood and peat from fine-grained gray sand underlying natural levee of Bayou Little Coteau.	1,150 ± 100	3
16	NW1/4NE1/4 sec. 54, T8S, R11E.	-4	Wood fragments from organic-rich, gray clay underlying natural levee of Bayou Grosse Tete.	1,250 ± 100	3
17	SE1/4SE1/4 sec. 33, T13S, R17E, Kraemer area.	-11 to -18	Wood and peat from fine-grained gray sand buried by natural levee of Bayou L'Ourse.	1,500 ± 100	3
18	SW1/4 sec. 26, T22S, R24E, Grand Isle area.	-30 to -32	Marine shells from delta front deposits of gray sandy clay.	920 ± 100	3
19	NW1/4SW1/4 sec. 29, T18S, R12E.	-10 to -11	Shells of Crassostrea virginica from a gray, clayey sand buried by relict bay deposits.	1,900 ± 150	3
20	Building excavation for the Civic Center, Loyola and Howard Streets, New Orleans.	-11	Peat in swamp deposits now buried by natural levee of Miss. River. The deposit probably accumulated in lowland adjacent to Bayou Metairie (see sample 10).	2,650 ± 110	3
21	West line of sec. 41, T12S, R10E, 1200 ft south of the Yazoo and Miss. Valley Railroad.	-2	Peat from a layer of clay buried by a natural levee of Bayou Metairie.	2,320 ± 110	3
22	SW1/4SW1/4 sec. 34, T12S, R12E, Little Woods area.	1	Shells of Rangia cuneata from fine-grained gray sand buried by a relict lake deposit.	2,200 ± 110	3
23	SW1/4SW1/4 sec. 23, T14S, R16E, Hopedale area.	-10 to -12	Wood sample from fine-grained sand underlying natural levee of Bayou La Loutre.	2,200 ± 110	3
24	2200 ft south of the north line and 1560 ft east of the west line of sec. 37, T15S, R24E, Crown Point area.	-10 to -12	Wood fragments from fine-grained gray sand buried by a natural levee of Bayou Barataria.	2,400 ± 110	3
25	Southwest corner sec. 47, T11S, R6E, near Reserve.	4	Wood sample from organic-rich, gray clay underlying natural levee of Miss. River.	2,750 ± 110	3

	Orleans.		few feet below its present elevation.			No.
33	NE1/4NE1/4 sec. 18, T21S, R31E, Venice area.	-216 to -236	Marine shells from fine-grained gray sand deposited when sea level was about 110 ft below its present elevation; bit cuttings.	8,950 ± 190	3	62
34	NE1/4NE1/4 sec. 18, T21S, R31E, Venice area.	-310 to -316	Marine shells from fine-grained gray sand laid down when sea level was about 240 ft below its present elevation; bit cuttings. The age of this sample is anomalous.	>35,000	3	63 & 64
35	Humble Oil and Refining Company well No. H-1, La. State lease 799, lat. 29°17'.0 N, long. 89°59'.5 W.	-117 to -147	Wood from a gray clay laid down when sea level was about 70 ft below its present elevation; bit cuttings. The age of this sample is anomalous	12,500 ± 270	3	65 & 66
36	Humble Oil and Refining Company core test 1, hole 2, La. State lease 797, lat. 29°11'25" N, long. 89°53'00" W.	-227	Peat sample from a black, organic-rich clay laid down when sea level was about 140 ft below its present elevation. The age of this sample is anomalous.	>35,000	3	67
37	Humble Oil and Refining Company core test 1, La. State lease 799, lat. 29°09' N, long. 88°59' W.	-218 to -222	Wood from gray silty clay deposited when sea level was about 135 ft below its present elevation; bit cuttings. The age of this sample is anomalous.	>35,000	3	68
38	NW1/4NW1/4 sec. 28, T23S, R31E, Buras Levee District, Scott Bay.	-571 to -572	Marine shell fragments from gray clay deposited when sea level was more than 300 ft below its present elevation.	>35,000	3	69
39	NW1/4NW1/4 sec. 28, T23S, R31E, Buras Levee District, Scott Bay.	-572 to -573	Marine shell fragments from core of gray clay in the same well as sample 38.	>35,000	3	70
40	Humble Oil and Refining Company well No. 8, La. State lease 2090, center sec. 33, T23S, R33E, Southeast Pass area.	-512 to -527	Fragments of Oculina diffusa from shell bed formed when sea level was about 210 ft below its present elevation. The cuttings from which this sample was obtained may have been contaminated with material from older deposits; bit cuttings.	>35,000	3	71
41	In center sec. 51, T17S, R21E, Delta Farms area.	-90 to -100	Marine shell from gray sand deposited when sea level was about 75 ft below its present elevation; bit cuttings.	8,800 ± 180	3	72
42	1000 ft east and 500 ft north of the southwest corner sec. 22, T16S, R14E, Gibson area.	-386 to -391	Wood sample from fine- to coarse-grained gray sand with gravel deposited when sea level was about 165 ft below its present elevation; bit cuttings.	11,200 ± 240	3	73
43	1000 ft east and 500 ft north of the southwest corner sec. 22, T16S, R14E, Gibson area.	-386 to -391	Wood sample from bed of sand and gravel deposited when sea level was about 400 ft below its present elevation. This sample may have been contaminated by cuttings from a higher elevation in the boring; bit cuttings.	12,950 ± 280	3	74
44	Humble Oil and Refining Company well No. 1, La. State lease 2258, center NW1/4 sec. 35, T12S, R11E, Bayou Pigeon area.	-210 to -240	Wood sample from bed of lignitic sand and gravel deposited when sea level was about 225 ft below its present elevation; bit cuttings.	13,650 ± 300	3	75
45	Humble Oil and Refining Company well No. 1, La. State lease 2258, center NW1/4 sec. 35, T12S, R11E, Bayou Pigeon area.	-270 to -300	Wood fragments from bed of lignitic sand and gravel deposited when sea level was about 380 ft below its present elevation; bit cuttings.	>35,000	3	76
46	3000 ft due south of the northeast corner sec. 38, T20S, R28E, Empire area.	-315 to -335	Marine shells from fine- to medium-grained sand deposited when sea level was about 130 ft below its present elevation. The sample may have been contaminated with reworked shells from older deposits; bit cuttings.	>35,000	3	77
47	NW1/4NW1/4 sec. 28, T23S, R31E, Buras Levee District, Scott Bay.	-615 to -870	Marine shell fragments from sand and gravel bed; bit cuttings.	>35,000	3	
48	La. State lease 803, lat. 29°08'30" N, long. 89°57'50" W.	-417 to -432	Wood sample from a bed of fine- to coarse-grained sand with gravel; bit cuttings.	>35,000	3	

62	SW1 4N R13E.
63 & 64	Covington 30°19'4
65 & 66	Lat. 29°2 long. 90°4
67	Lat. 29°5 long. 89°
68	Lat. 29°3 long. 89°4
69	Lat. 30°1 long. 89°4
70	Lat. 29°3 long. 89°4
71	Lat. 29°4 long. 89°2
72	Lat. 29°5 long. 89°
73	Lat. 30°0 long. 90°0
74	Lat. 29°5 long. 91°1
75	Lat. 29°3 long. 90°2
76	Lat. 29°22 long. 90°4
77	Lat. 29°5 long. 89°3

Sources:

1. Letter from H
2. Letter from H
3. Brannon, et al
4. Fisk, et al, Ge Waterways Ex
5. Fisk and McF
6. Brannon, et al

No.	Location	Sample	Archaeological Interpretation	Age	Source
62	SW1/4NE1/4, sec. 14, T9S, R13E.	2 to 3 ft below the top of midden	Rangia shells (Tchefuncte period).	1,900 ± 110	6
63 & 64	Covington Quadrangle, lat. 30°19'40" N, long. 90°01'30" W.	2 to 5 ft below the surface	(Tchefuncte period). Organic and inorganic carbon were submitted separately to radiocarbon assay. The age from organic portion (sample 63) is considered to be more valid because the inorganic carbonate sample (sample 64) apparently contained intrusive material of younger age.	2,200 ± 110 800 ± 100	6 6
65 & 66	Lat. 29°22'38" N, long. 90°43'05" W.	1 ft above sea level	Rangia shells (Plaquemines period).	200 ± 100 300 ± 100	6 6
67	Lat. 29°53'18" N, long. 89°32'00" W.	2 to 3 ft below sea level	Rangia shells (Marksville period).	1,830 ± 100	6
68	Lat. 29°37'58" N, long. 89°47'13" W.	2-1/2 ft below sea level	Rangia shells (Troyville period).	1,930 ± 110	6
69	Lat. 30°18'40" N, long. 89°47'13" W.	2 to 3 ft below the surface of the midden	Rangia shells (Tchefuncte period).	1,430 ± 100	6
70	Lat. 29°37'58" N, long. 89°47'13" W.	Surface of shell midden	Bones (Troyville period). Only the organic portion was used in radiocarbon assay.	860 ± 100	6
71	Lat. 29°49'48" N, long. 89°29'54" W.	Surface of shell midden	Bones (Plaquemines period). Only the organic portion was used in radiocarbon assay.	360 ± 100	6
72	Lat. 29°53'18" N, long. 89°32'00" W.	1 ft below sea level	Bones (Marksville period, but possibly contaminated). Only the organic portion was used in radiocarbon assay.	900 ± 100	6
73	Lat. 30°01'00" N, long. 90°08'45" W.	Sea level	Charcoal sample (Troyville period) in shell mound.	1,440 ± 100	6
74	Lat. 29°54'32" N, long. 91°13'00" W.	1 ft above sea level	Charcoal sample (Troyville horison).	990 ± 100	6
75	Lat. 29°36'20" N, long. 90°22'25" W.	3 ft above sea level	Rangia shells (Coles Creek period) from earth and shell mound.	1,550 ± 100	6
76	Lat. 29°22'38" N, long. 90°43'05" W.	3-1/2 ft above sea level	Charcoal sample (Plaquemines period).	260 ± 100	6
77	Lat. 29°53'18" N, long. 89°32'00" W.	Sea level	Bone sample (Marksville period but possibly contaminated with younger material). Only the organic portion was used in radiocarbon assay.	1,050 ± 100	6

Sources:

1. Letter from H. N. Fisk to Mississippi River Commission, dated 15 March 1956.
2. Letter from H. N. Fisk to Mississippi River Commission, dated 12 November 1956.
3. Brannon, et al, "Humble Oil Company Radiocarbon Dates II," Science, vol 125, No. 3254, May 1957.
4. Fisk, et al, Geological Investigation of the Atchafalaya Basin and the Problem of Mississippi River Diversion, Waterways Experiment Station, 1952.
5. Fisk and McFarlan, "Late Quaternary Deltaic Deposits of the Mississippi River," GSA Special Paper 62, 1955.
6. Brannon, et al, "Humble Oil Company Radiocarbon Dates I," Science, vol 125, No. 3239, January 1957.

GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

CARBON-14 DATING

PERTINENT DATA
SAMPLES 1-77

PLATE 9A

Sample No.	Location	Depth in ft msl	Description	Age
78	Intersection of S. Roman Street and New Basin Canal, Orleans Parish, La.	-121	Marine shells from a core of interbedded gray sand and gray, silty clay.	27,000 ± 1200
79	Intersection of St. Charles and Calliope Streets, Orleans Parish, La.	-147	Marine shells from a core of gray, clayey sand.	29,300 ± 2000
80	Humble Oil and Refining Company core test 1, La. State lease 799, lat. 29°09'0" N, long. 89°59'0" W, Grand Isle block 16, offshore from Jefferson Parish, La.	-177	Marine shells from a core of gray, silty clay.	7,600 ± 350
81	Humble Oil and Refining Company core test 1, La. State lease 804, lat. 29°08'5" N, long. 89°58'9" W, Grand Isle block 16, offshore from Jefferson Parish, La.	-218	Wood from a core of gray, silty clay.	>37,000
82	Humble Oil and Refining Company core test 1, La. State lease 799, lat. 29°09'0" N, long. 89°59'0" W, Grand Isle block 16, offshore from Jefferson Parish, La.	-215	Marine shells from a core of gray, clayey sand.	11,050 ± 300
83	Humble Oil and Refining Company well No. E-6, La. State lease 797, lat. 29°10'45" N, long. 89°52'30" W, Grand Isle block 18, offshore from Jefferson Parish, La.	-233 to -243	Marine shells from bit cuttings of gray, silty clay.	10,530 ± 350
84	Humble Oil and Refining Company well No. E-6, La. State lease 797, lat. 29°10'45" N, long. 89°52'30" W, Grand Isle block 18, offshore from Jefferson Parish, La.	-313 to -323	Wood from bit cuttings of sand and gravel.	>40,000
85	Humble Oil and Refining Company core test 1, hole 2, La. State lease 797, lat. 29°11'25" N, long. 89°53'00" W, Grand Isle block 18, offshore from Jefferson Parish, La.	-370	Wood from a core of sand and gravel.	>31,000
86	NE1/4NE1/4, sec. 18, T21S, R31E, Venice area, Plaquemines Parish, La.	-260 to -280	Wood from bit cuttings of gray, silty clay.	17,150 ± 500
87	NE1/4NE1/4, sec. 18, T21S, R31E, Venice area, Plaquemines Parish, La.	-360 to -380	Marine shells from bit cuttings.	31,850 ± 3000

Sample No.	Location	Depth in ft msl	Description	Age
88	NE1/4NE1/4. sec. 18, T21S, R31E, Venice area, Plaquemines Parish, La.	-485 to -490	Shells of brackish water and marine fauna from bit cuttings of gray sand.	>36,000
89	2100 ft southeast of the northwest line, 2000 ft southwest of the northeast line, sec. 53, T20S, R29E, Buras area, Plaquemines Parish, La.	-400 to -420	Wood from bit cuttings of sand and gravel.	17,000 ± 500
90	200 ft south and 1100 ft west of the northeast corner, sec. 4, T21S, R22E, Bay Laurier area, Lafourche Parish La.	-220 to -240	Marine shells from bit cuttings of sand and gravel.	8,350 ± 180
91	200 ft south and 1100 ft west of the northeast corner, sec. 4, T21S, R22E, Bay Laurier area, Lafourche Parish, La.	-320 to -340	Marine shells from bit cuttings of sand and gravel.	9,100 ± 210
92	Humble Oil and Refining Company well No. 1, La. State lease 2258, center NW1/4, sec. 35, T12S, R11E, Bayou Pigeon area.	-240 to -270	Rounded and angular fragments of black wood from bit cuttings of sand and gravel.	>34,000
93	900 ft south of the north line, 2000 ft west of the east line, sec. 37, T18S, R21E, Larose area, Lafourche Parish, La.	-260 to -380	Brown fibrous fragments of wood from bit cuttings of sand and gravel.	25,500 ± 600
94	100 ft south of the north line, 100 ft west of the east line, sec. 84, T21S, R18E, Cocodrie area, Terrebonne Parish, La.	-200 to -220	Finely divided black wood fragments from bit cuttings of sand and gravel.	16,800 ± 650
95	Humble Oil and Refining Company well No. T-1, Louisiana Land and Exploration Co., NE1/4NE1/4, sec. 4, T22S, R17E, Bay Saint Elaine area, Terrebonne Parish, La.	-325 to -340	Brown, angular fragments of wood from bit cuttings of sand and gravel.	>36,000
96	NW1/4NE1/4, sec. 9, T20S, R17E, Dulac area, Terrebonne Parish, La.	-140 to -160	Black, organic-rich silty peat from bit cuttings of dark gray, silty clay.	10,700 ± 150

Source:

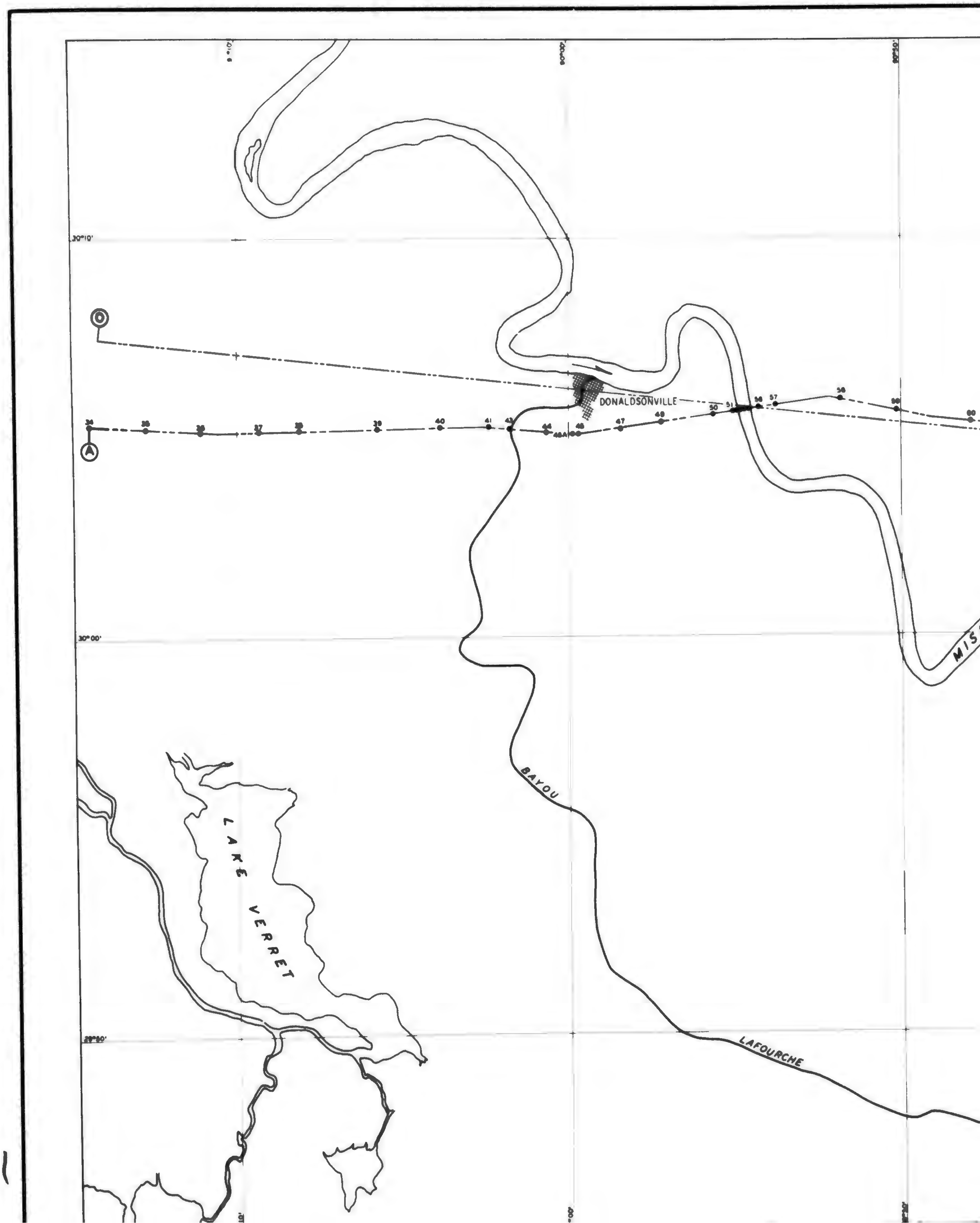
Broecker, W. S., and Kulp, J. L., "Lamont Natural Radiocarbon Measurements IV," Science, vol 126, No. 3287, December 1957.

GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

CARBON -14 DATING

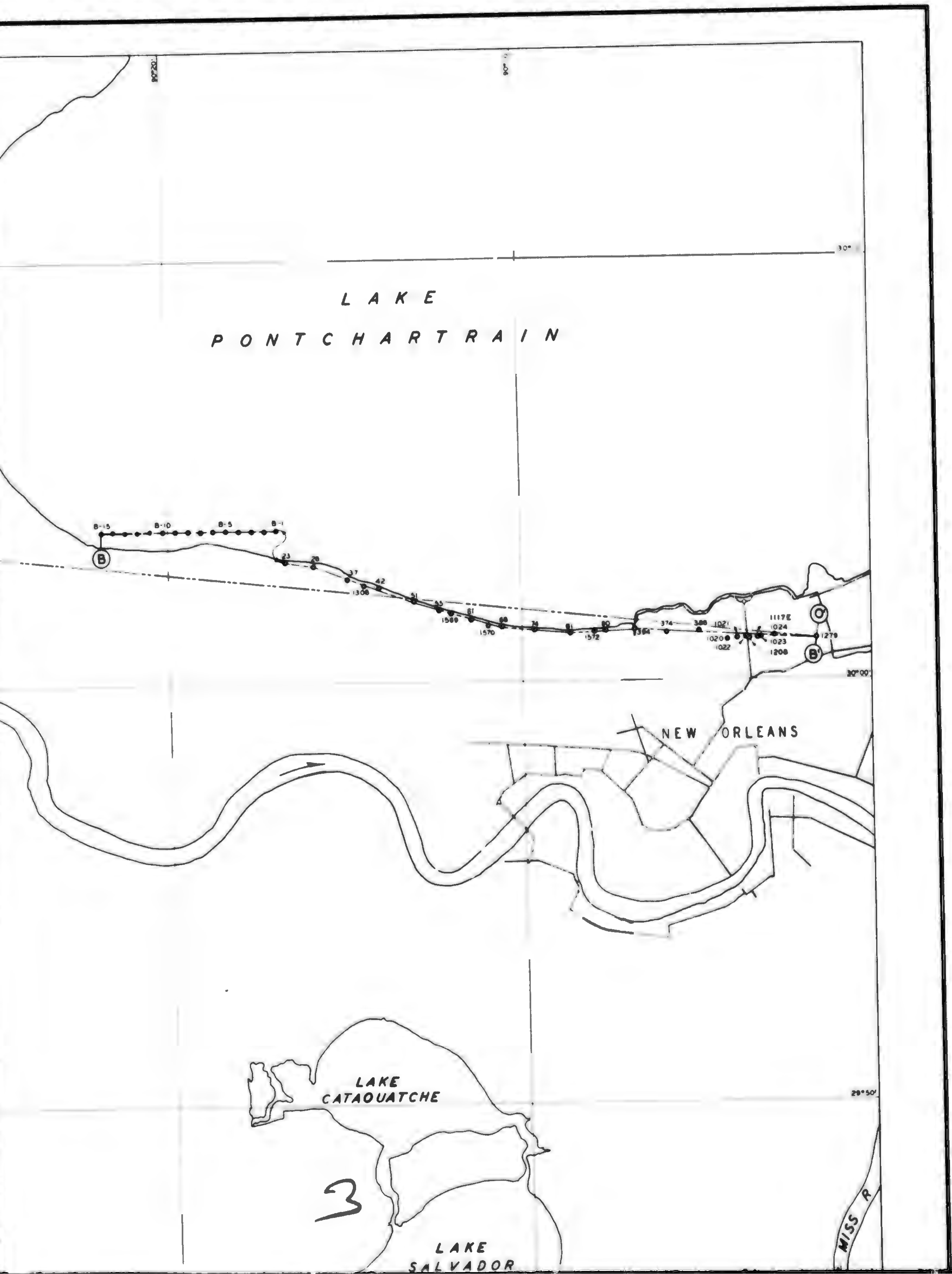
PERTINENT DATA
SAMPLES 78-96

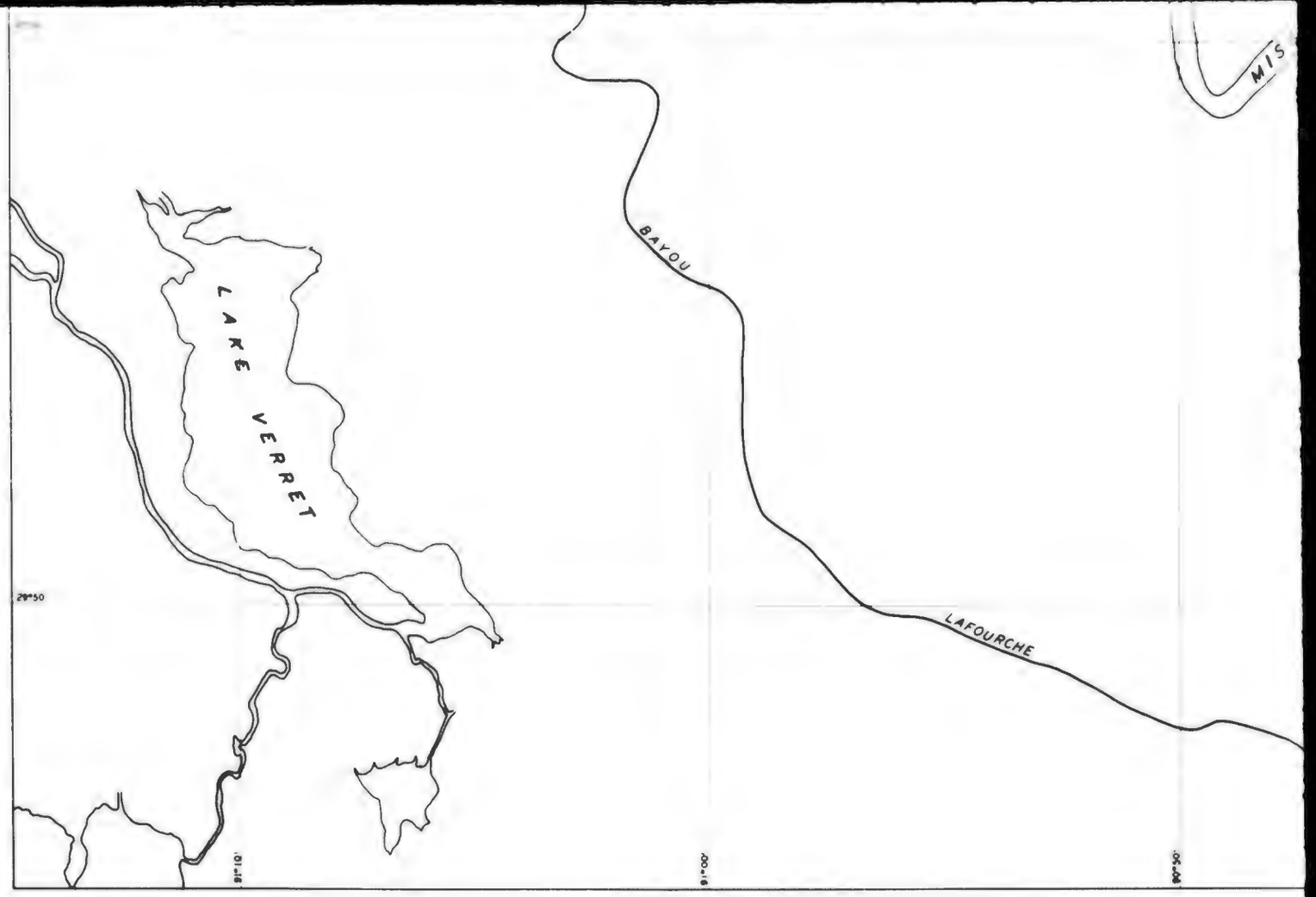
PLATE 9B

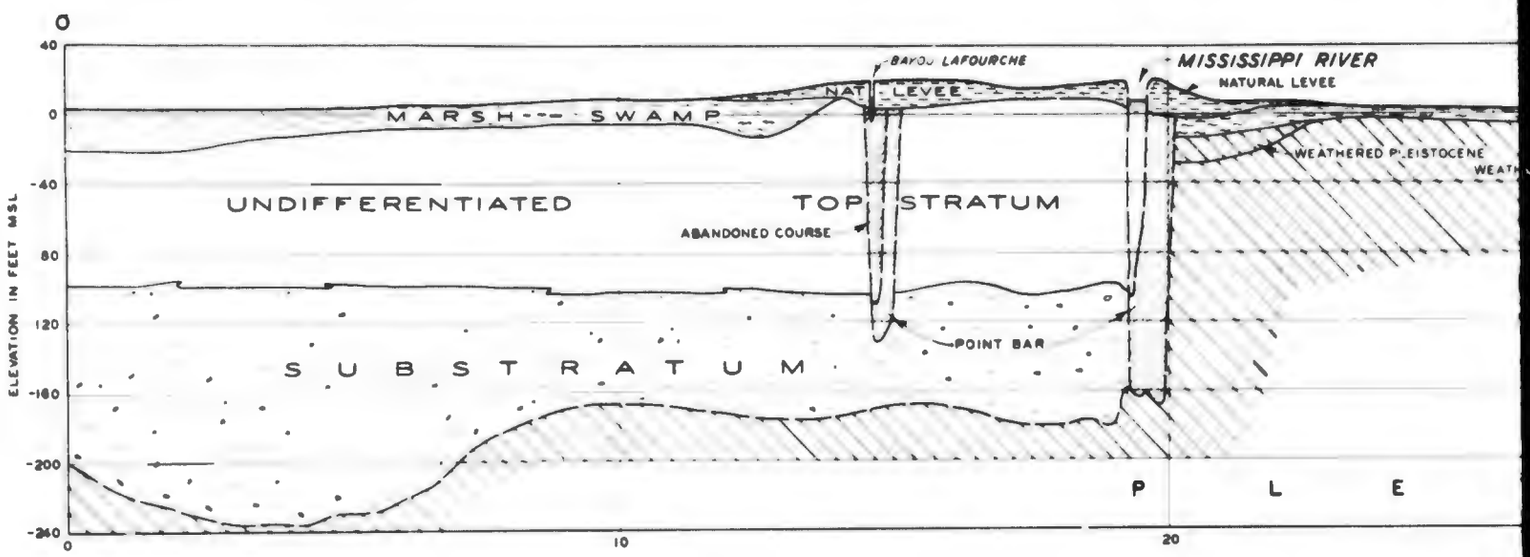


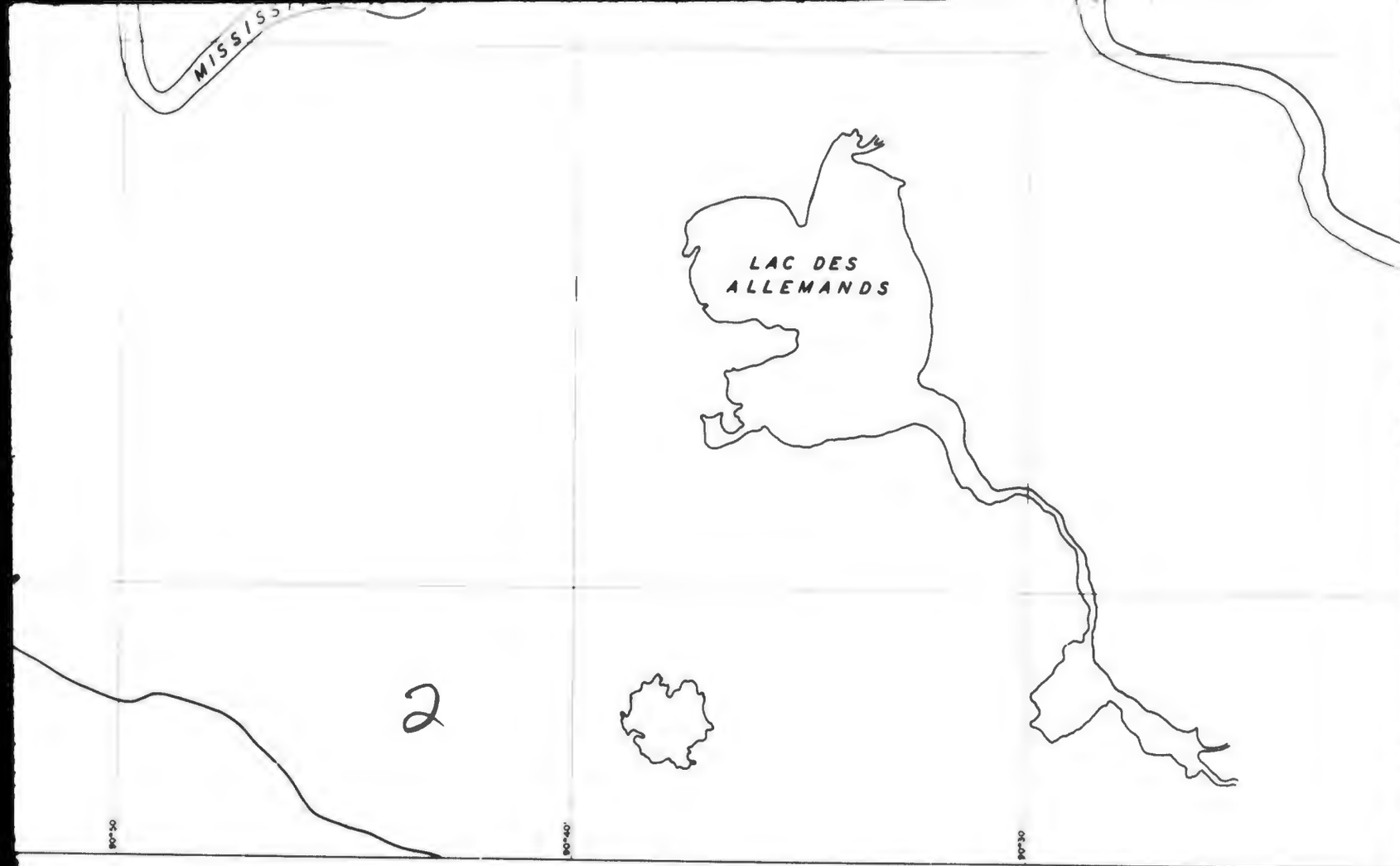
30°10'
30°00'
29°50'
DONALDSONVILLE
BAYOU
LAFOURCHE
LAKE VERRET

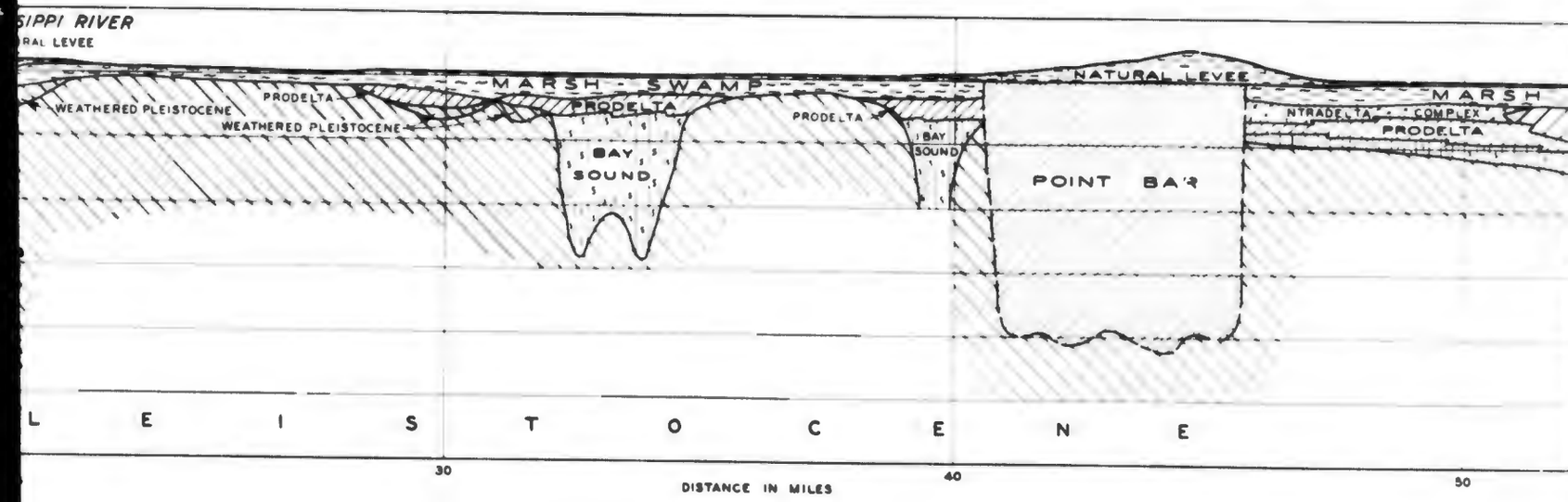

LAKE
MAUREPAS
-N-
GENERALIZED SECTION O-O'
A
B
B-15
B-16
RIVER
MISSISSIPPI
LAC DES
ALLEMANDS

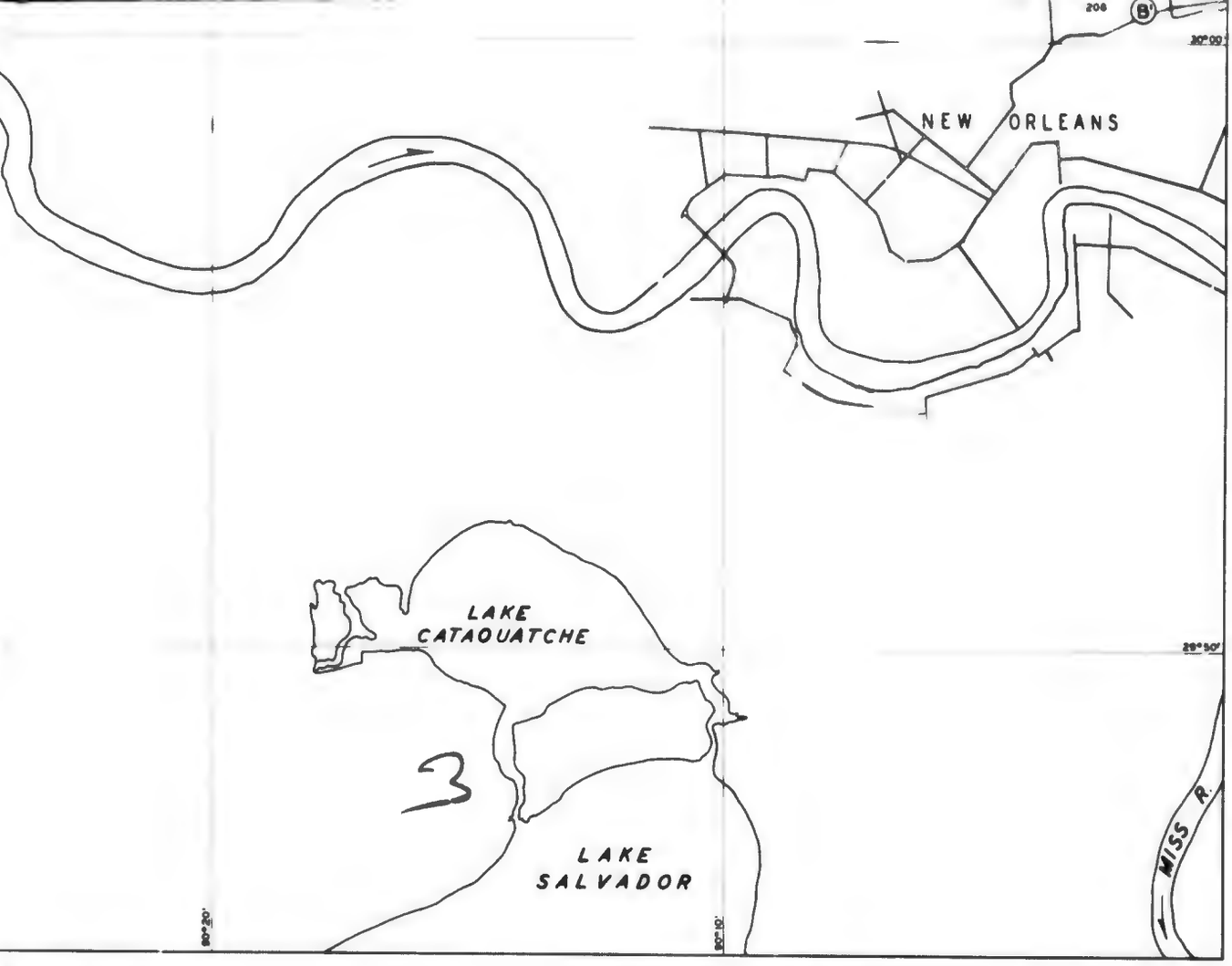

LAKE
PONTCHARTRAIN
B-15
B-10
B-5
B-1
B
B'
C'
30°
30°00'
NEW ORLEANS
LAKE
CATAOUATCHE
29°50'
LAKE
SALVADOR
MISS R
3

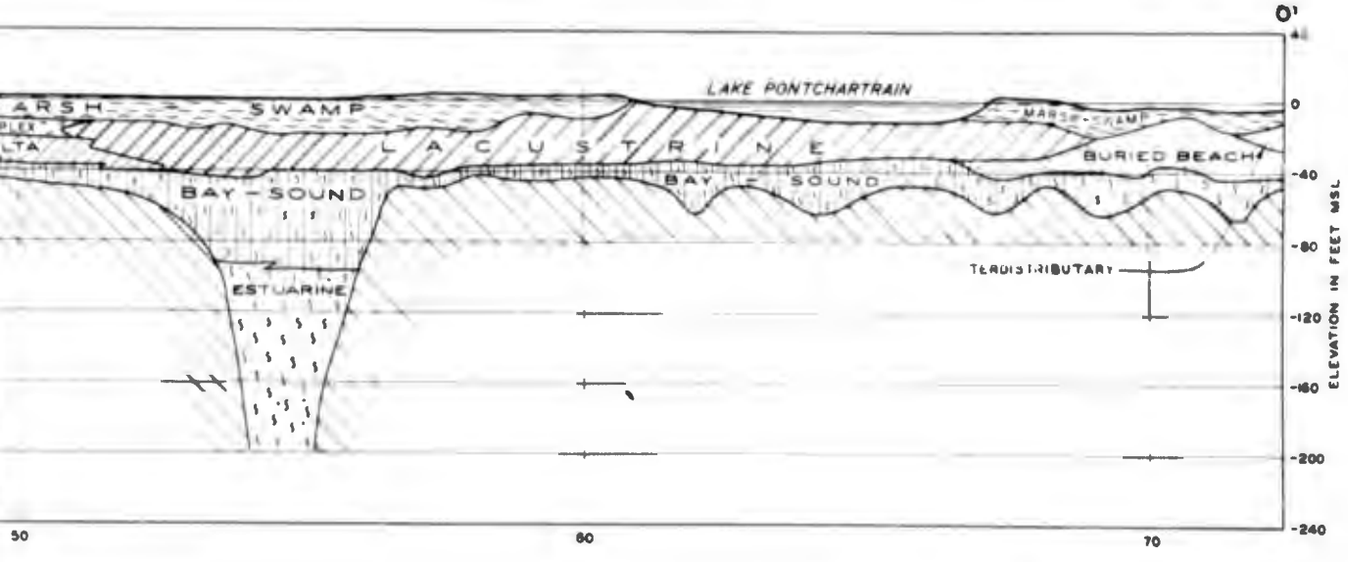

LAKE VERRET
BAYOU
LAFOURCHE
MIS
29°50
91°10'
91°00'
90°50'


0
40
0
-40
80
120
-160
-200
-240
ELEVATION IN FEET M.S.L.
BAYOU LAFOURCHE
MISSISSIPPI RIVER
NATURAL LEVEE
NAT. LEVEE
MARSH --- SWAMP
WEATHERED PLEISTOCENE
UNDIFFERENTIATED
TOP STRATUM
ABANDONED COURSE
POINT BAR
S U B S T R A T U M
P L E
0
10
20


LAC DES
ALLEMANDS
2
SCALE
2 1 0 2 4 6 8 10 MILES


SIPPI RIVER
RAL LEVEE
MARSH - SWAMP
NATURAL LEVEE
MARSH
WEATHERED PLEISTOCENE
PRODELTA
WEATHERED PLEISTOCENE
PRODELTA
PRODELTA
BAY
SOUND
BAY
SOUND
POINT BAR
NTRADELTA
COMPLEX
PRODELTA
L E I S T O C E N E
30
40
50
DISTANCE IN MILES

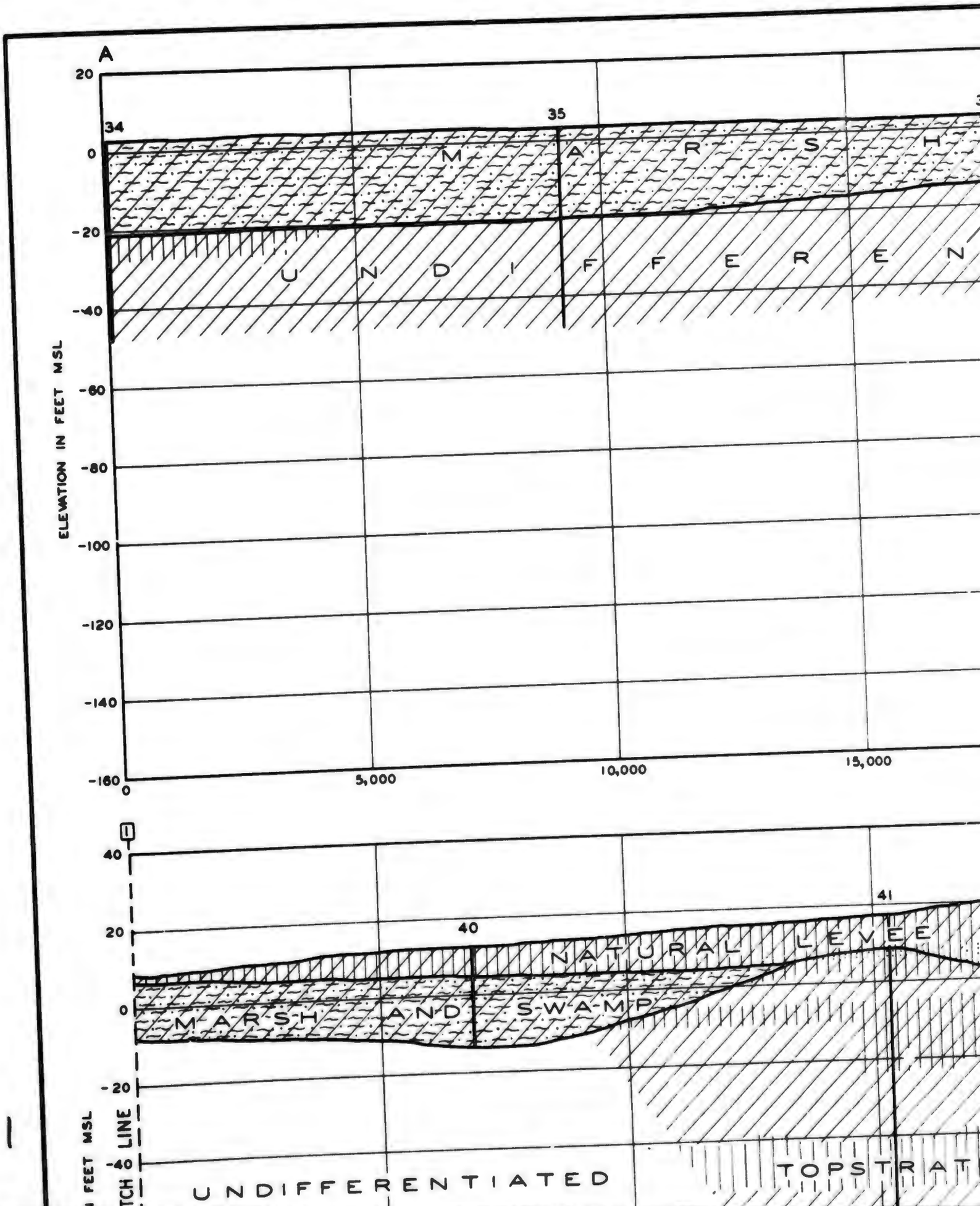


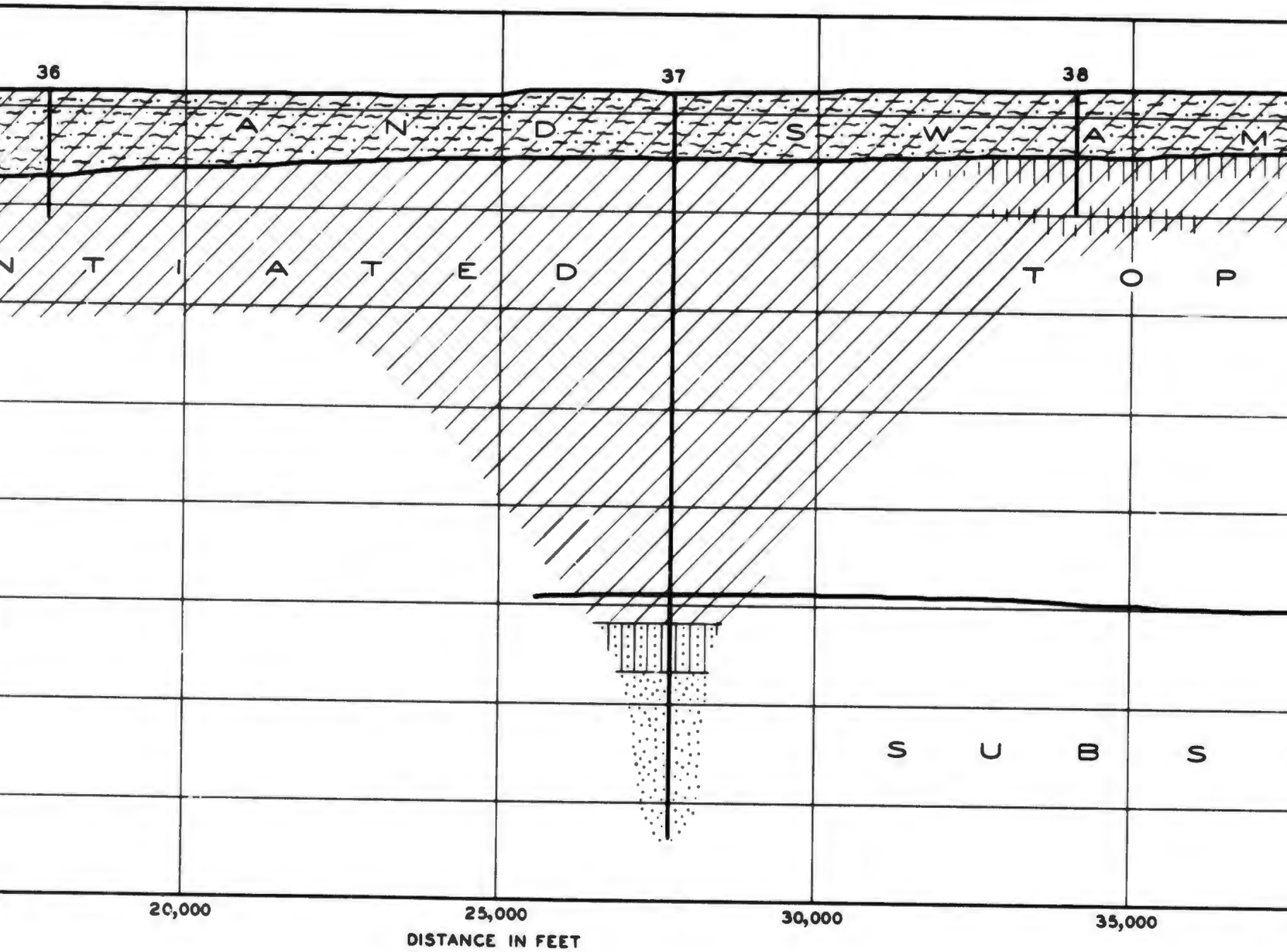


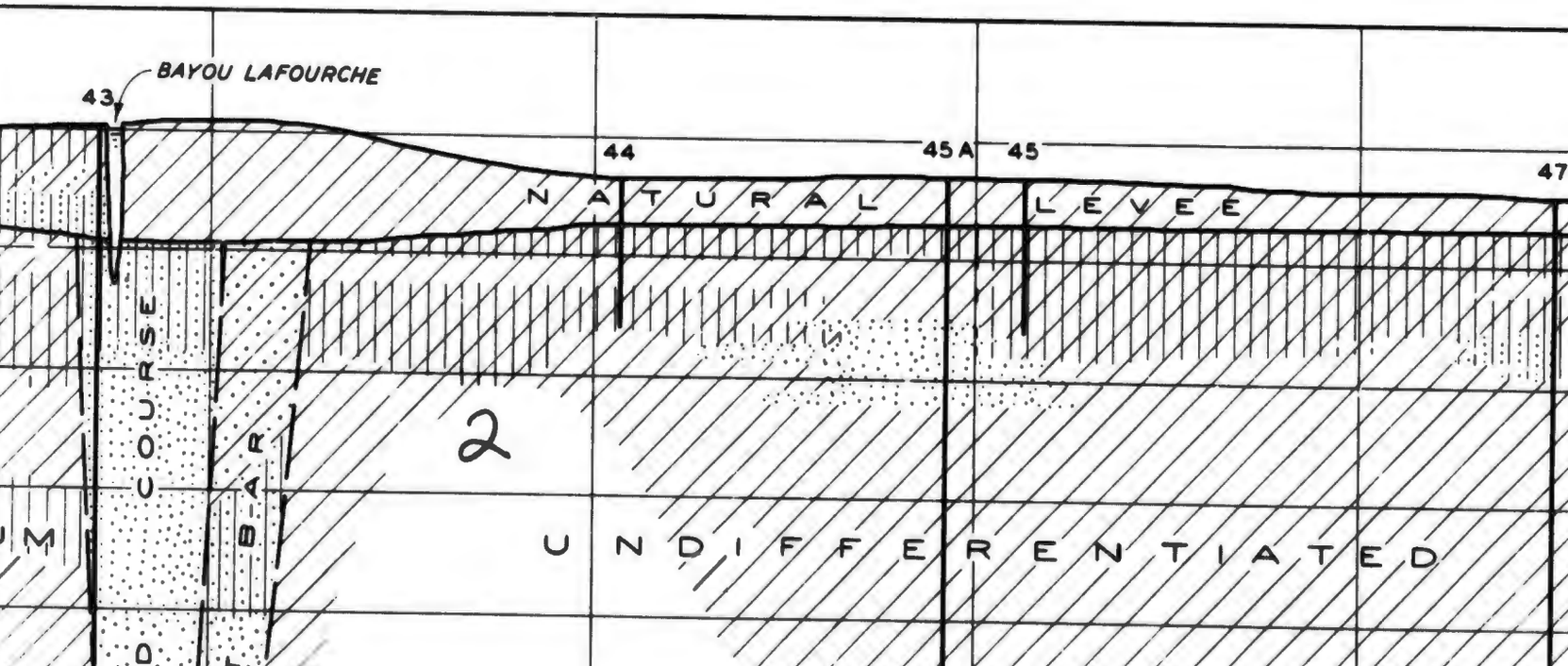
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

LOCATION MAP

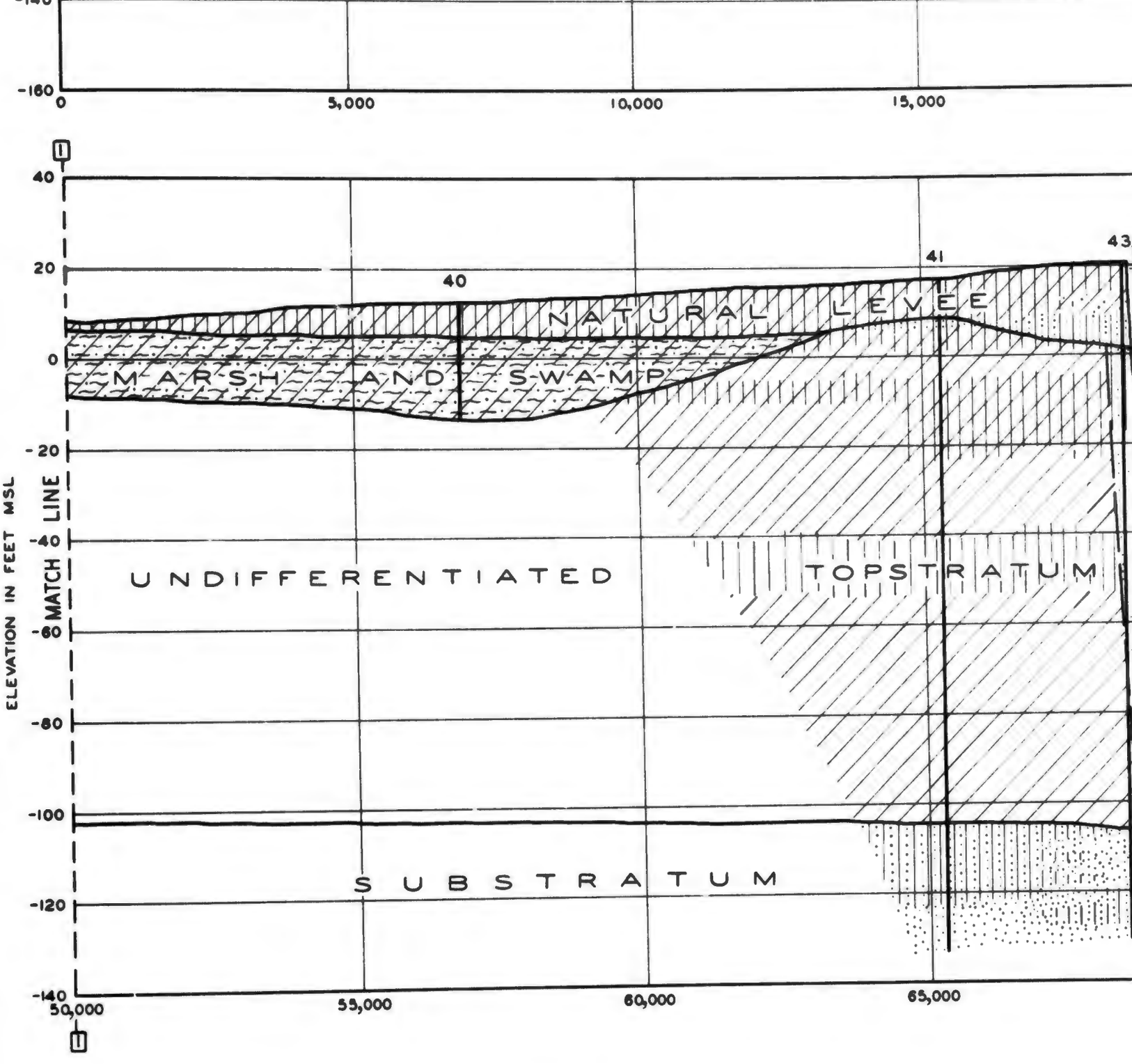
DONALDSONVILLE-NEW ORLEANS BORINGS
AND GENERALIZED SECTION O-O'


A
20
0
-20
-40
-60
-80
-100
-120
-140
-160
ELEVATION IN FEET MSL
34
35
MARSH
UNDIFFERENTIATED
0
5,000
10,000
15,000
B
40
20
0
-20
-40
40
41
NATURAL LEVEE
MARSH AND SWAMP
UNDIFFERENTIATED
TOPSTRAT
LINE


36
37
38
A N D S W A M
N T I A T E D
T O P
S U B S
20,000
25,000
30,000
35,000
DISTANCE IN FEET

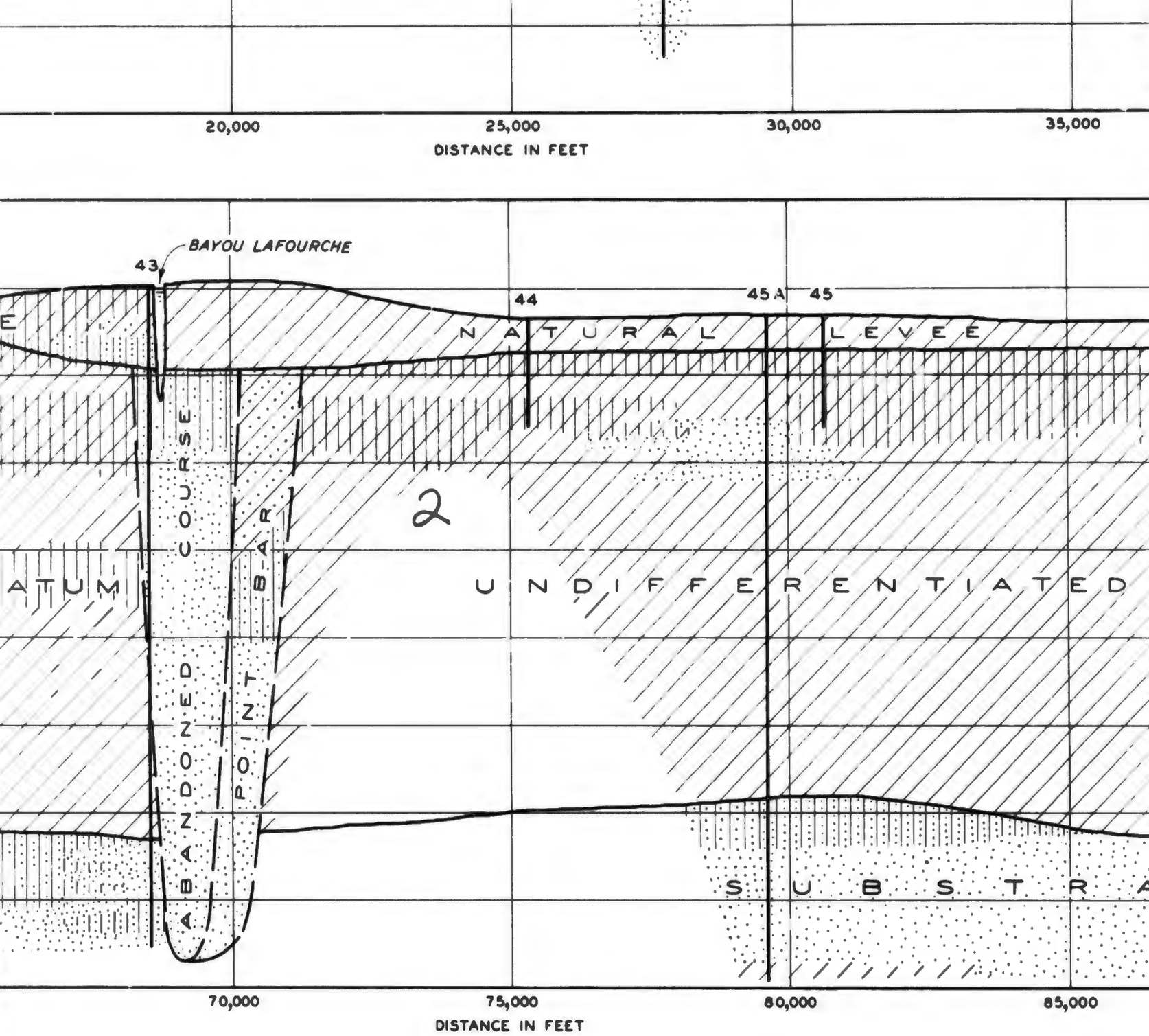

BAYOU LAFOURCHE
43
44
45A
45
47
N A T U R A L
L E V E E
2
U N D I F F E R E N T I A T E D

38
39
A M P
T O P S T R A T U M
B S T R A T U M
20
0
-20
-40
-60
-80
-100
-120
-140
-160
MATCH 6 LINE
ELEVATION IN FEET MSL
35,000
40,000
45,000
50,000
40
20
0
-20
-40
-60
-80
47
49
I A T E D
T O P S T R A T U M
3
MATCH 6 LINE
ELEVATION IN FEET MSL



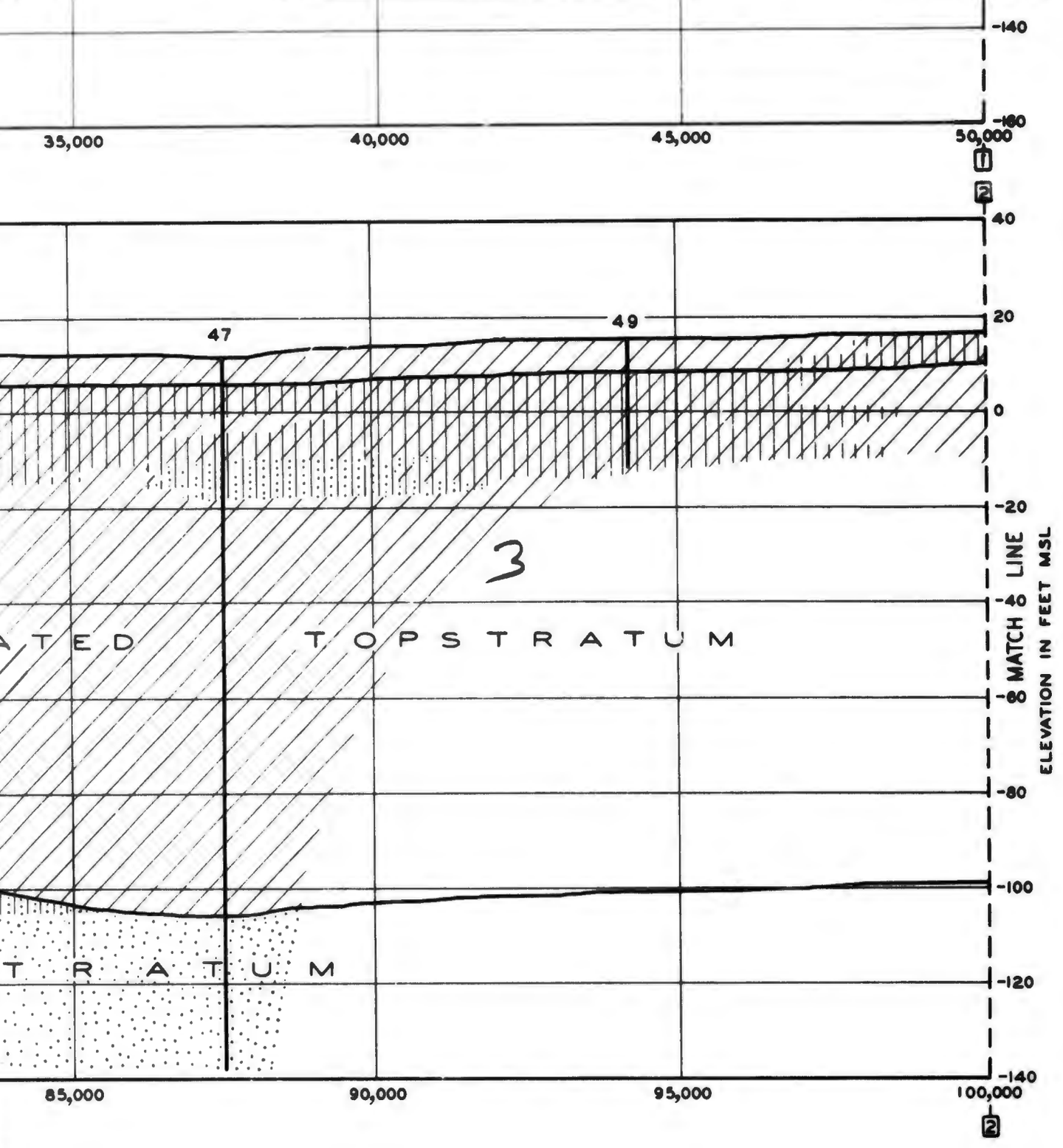
LEGEND

- PEAT, HUMUS, AND OTHER ORGANIC MATTER
- HIGHLY ORGANIC CLAY
- CLAY
- CLAYEY SILT, SILTY CLAY
- SAND
- SILTY SAND, SANDY SILT
- SILT
- SANDY CLAY, CLAYEY SAND



Y SILT

YEY SAND



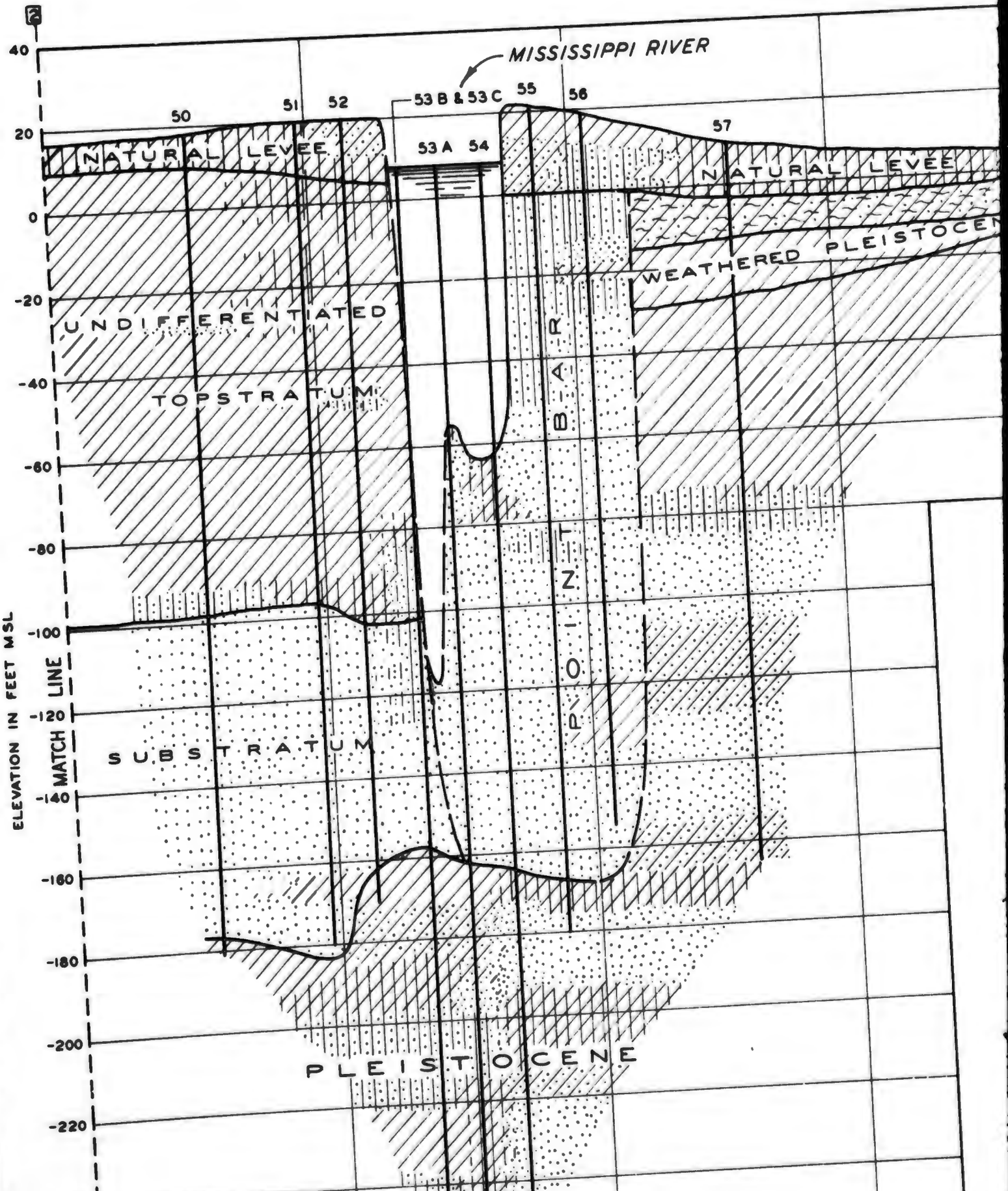
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

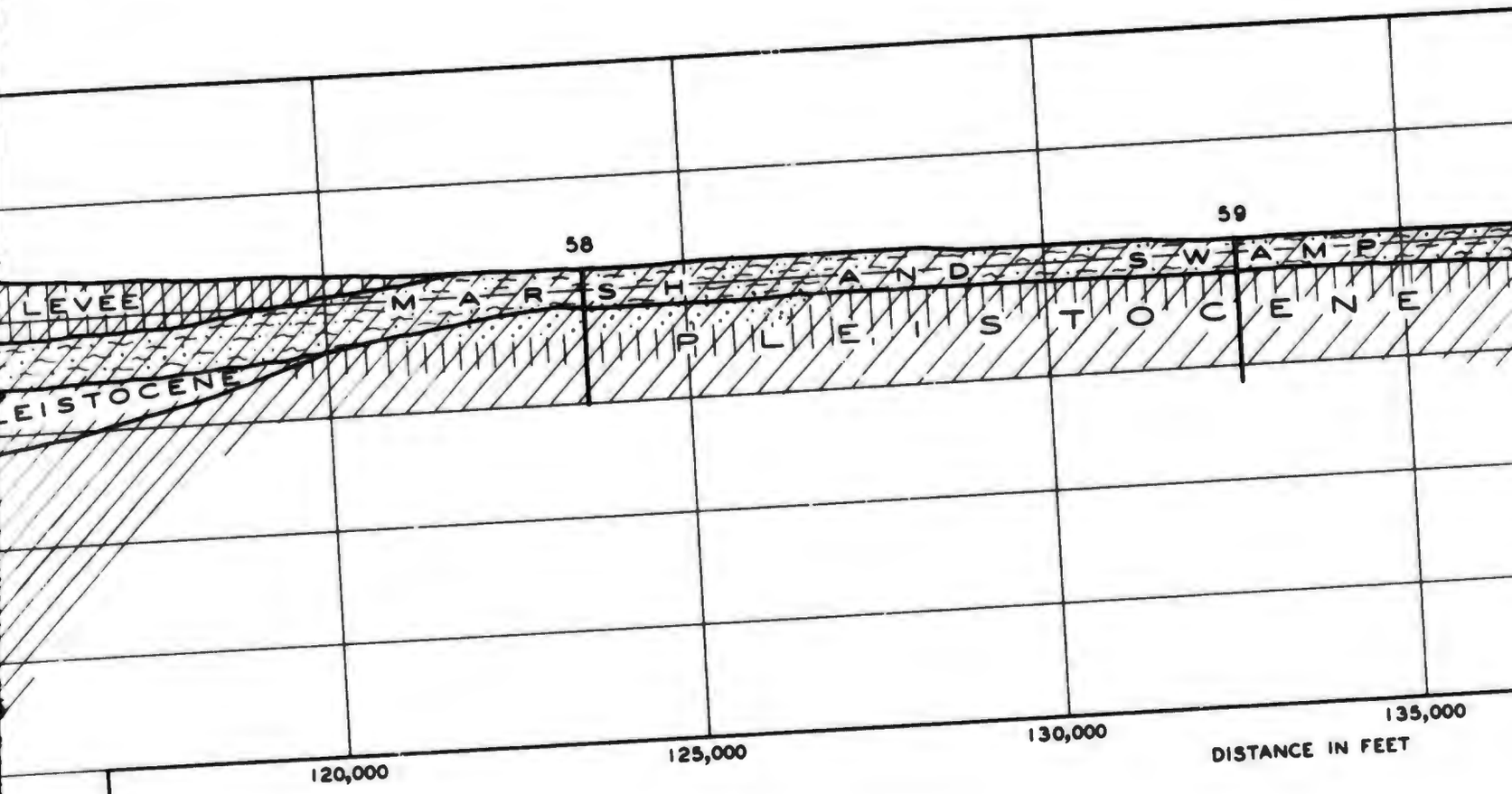
SECTION A-A'

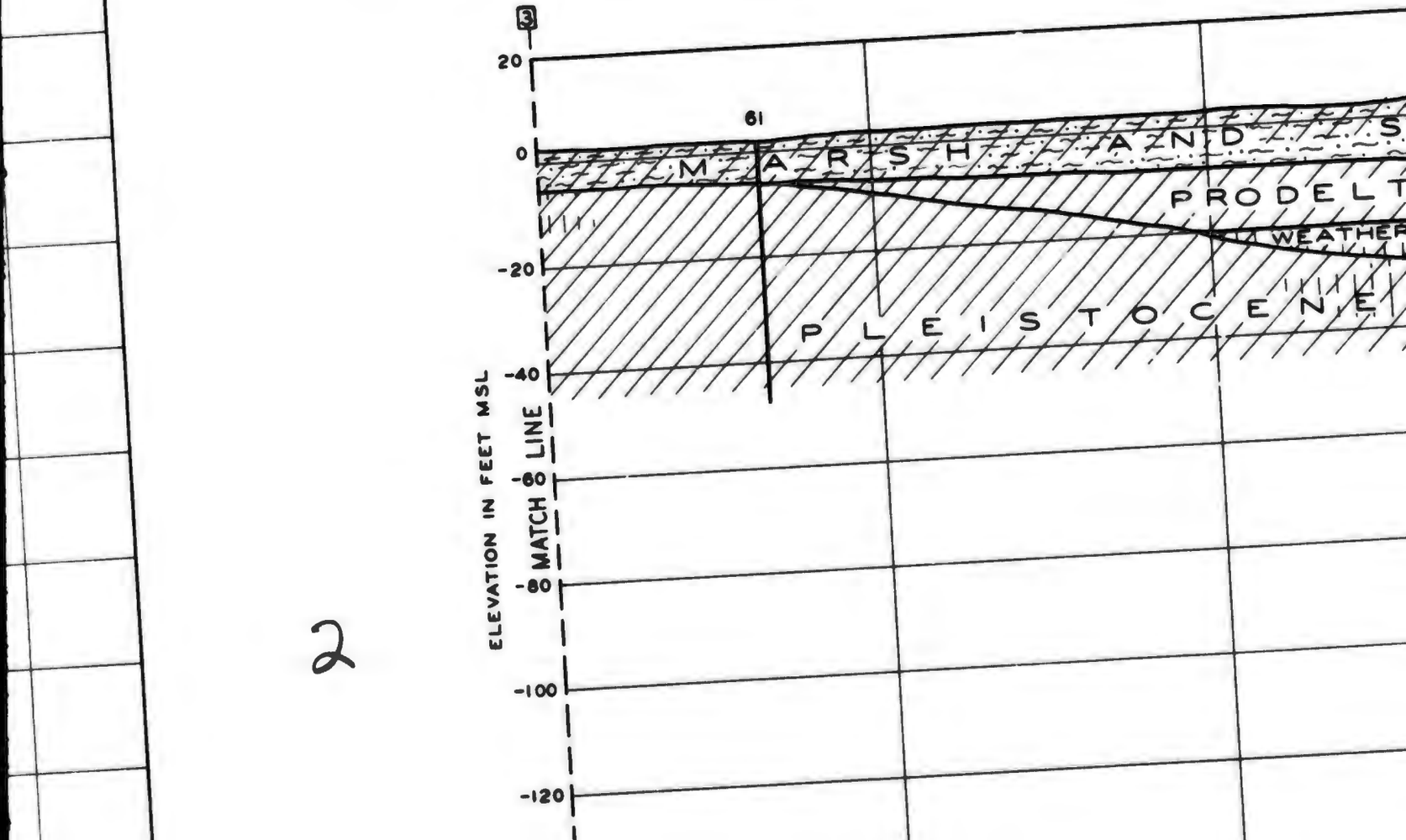
LOWER GRAND RIVER TO GRAMERCY

SHEET 1 OF 2

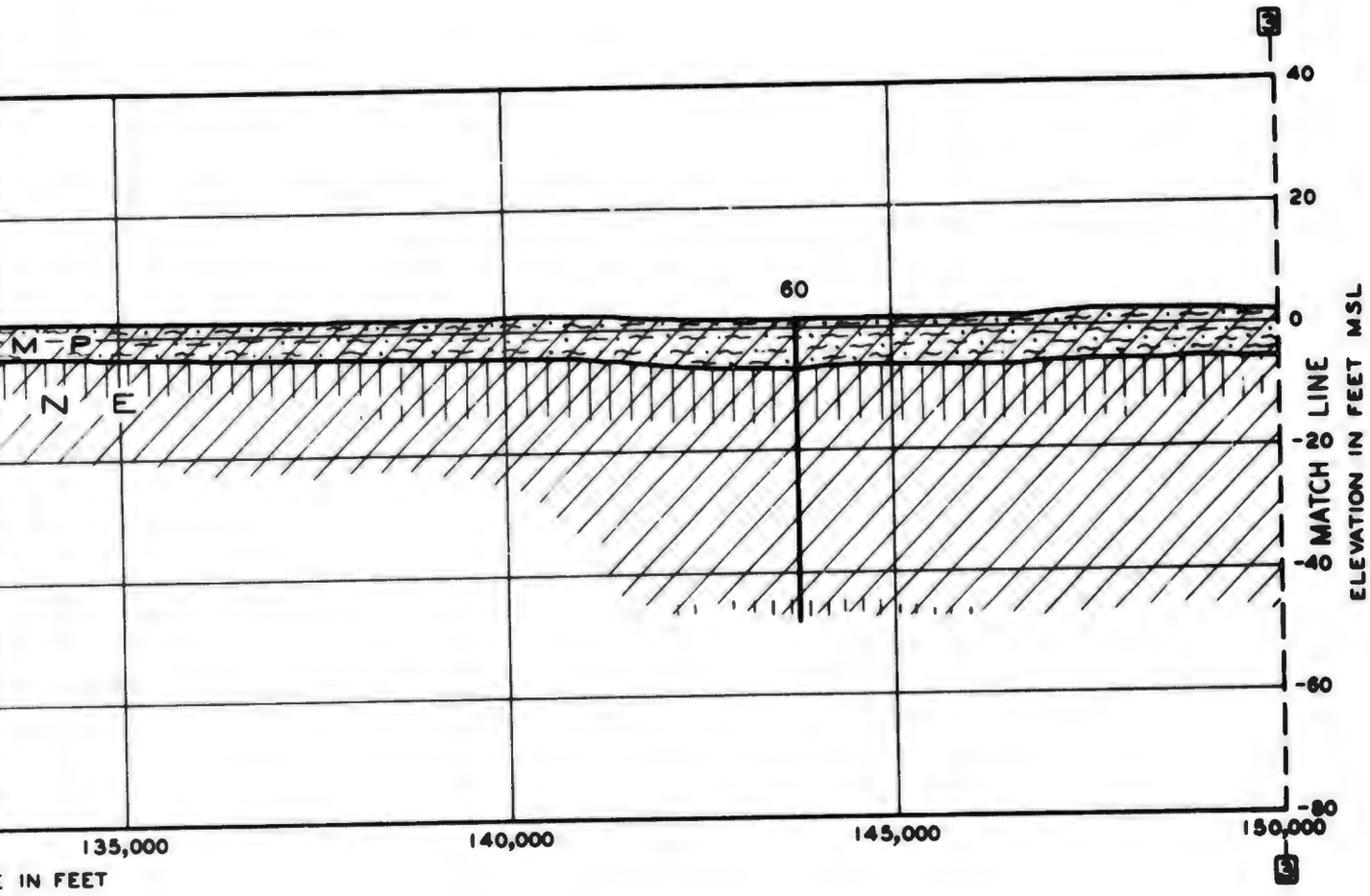
PLATE II

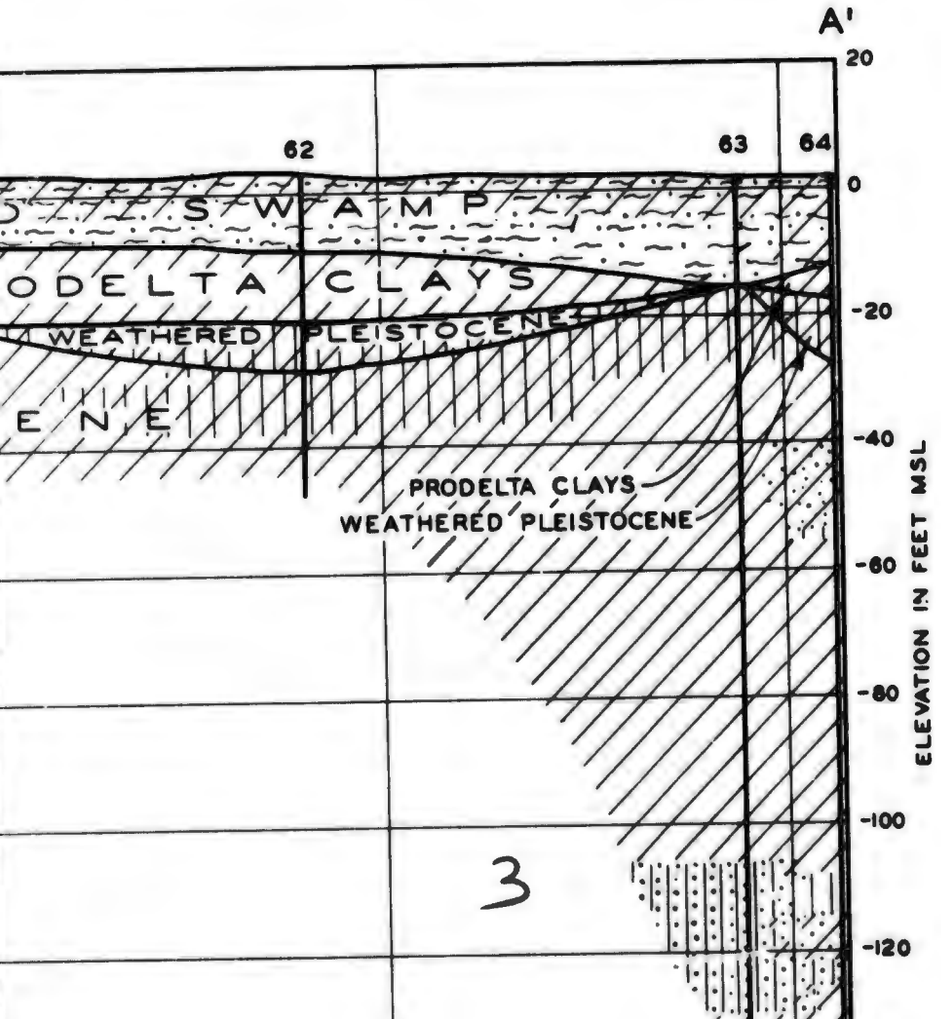

MISSISSIPPI RIVER
50
51
52
53 B & 53 C
55
56
57
53 A
54
NATURAL LEVEE
NATURAL LEVEE
WEATHERED PLEISTOCEN
UNDIFFERENTIATED
TOPSTRATUM
BARRIER
POINT
SUBSTRATUM
PLEISTOCENE
MATCH LINE
ELEVATION IN FEET MSL
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220

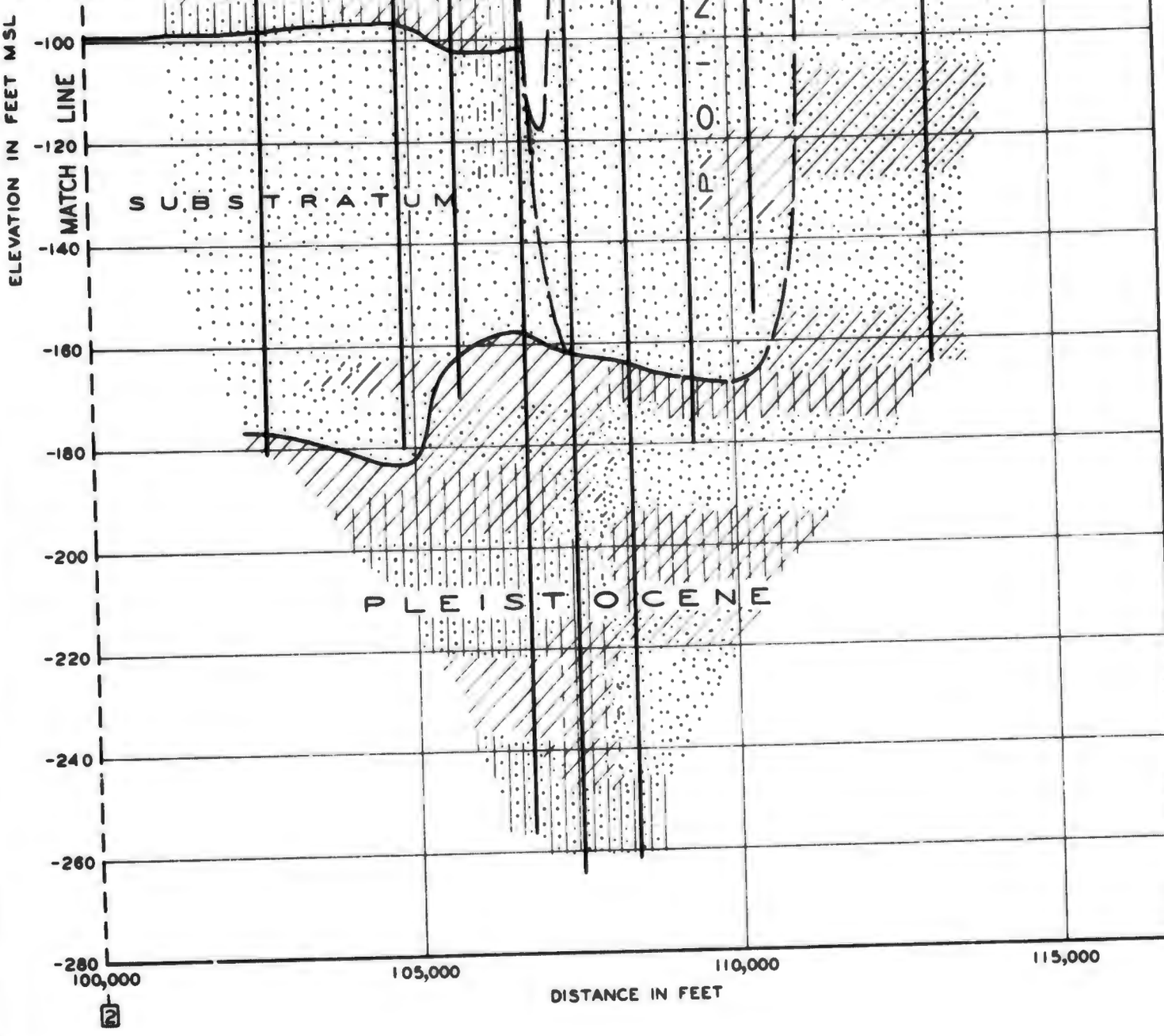

58
59
LEVEE
MARSH AND SWAMP
PLEISTOCENE
LEISTOCENE
120,000
125,000
130,000
135,000
DISTANCE IN FEET


3
20
0
-20
-40
-60
-80
-100
-120
61
MARSH AND S
PRODELT
WEATHER
PLEISTOCENE
ELEVATION IN FEET MSL
MATCH LINE

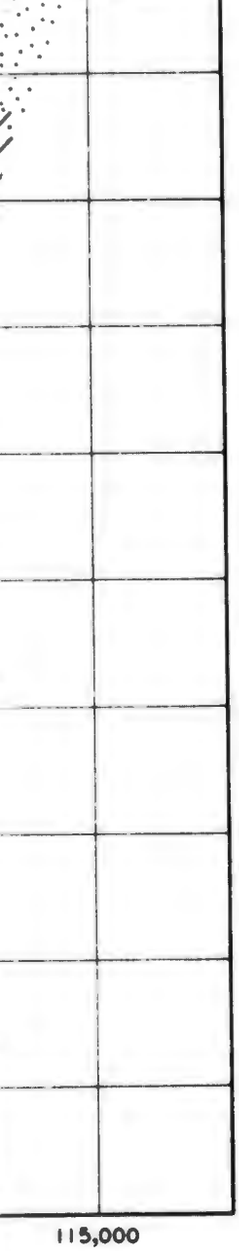
2


60
M-P
N E
40
20
0
-20
-40
-60
-80
MATCH 2 LINE
ELEVATION IN FEET MSL
135,000
140,000
145,000
150,000
IN FEET

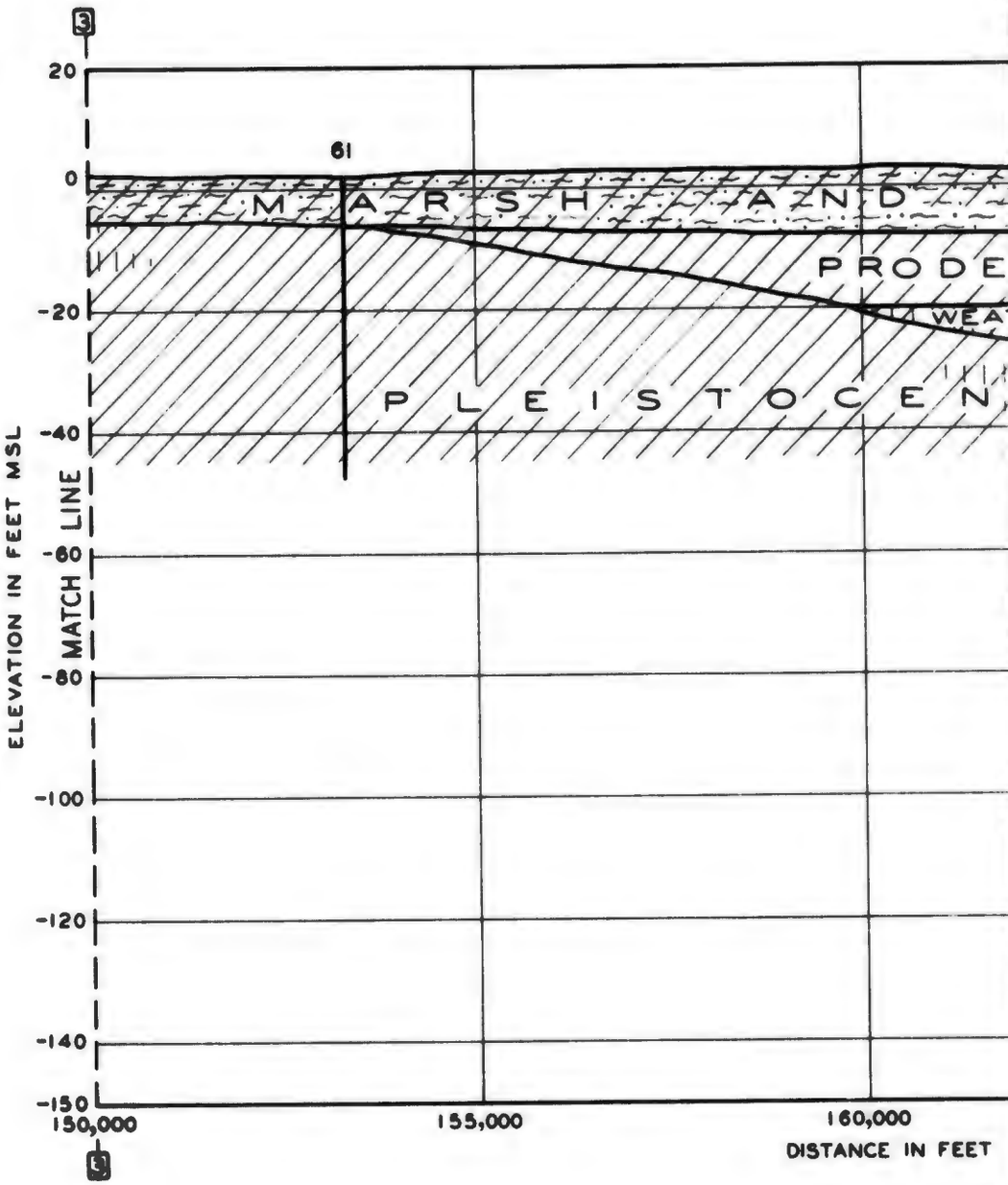

A'
62
63
64
S W A M P
ODELTA CLAYS
WEATHERED PLEISTOCENE
E N E
PRODELTA CLAYS
WEATHERED PLEISTOCENE
20
0
-20
-40
-60
-80
-100
-120
ELEVATION IN FEET MSL
3



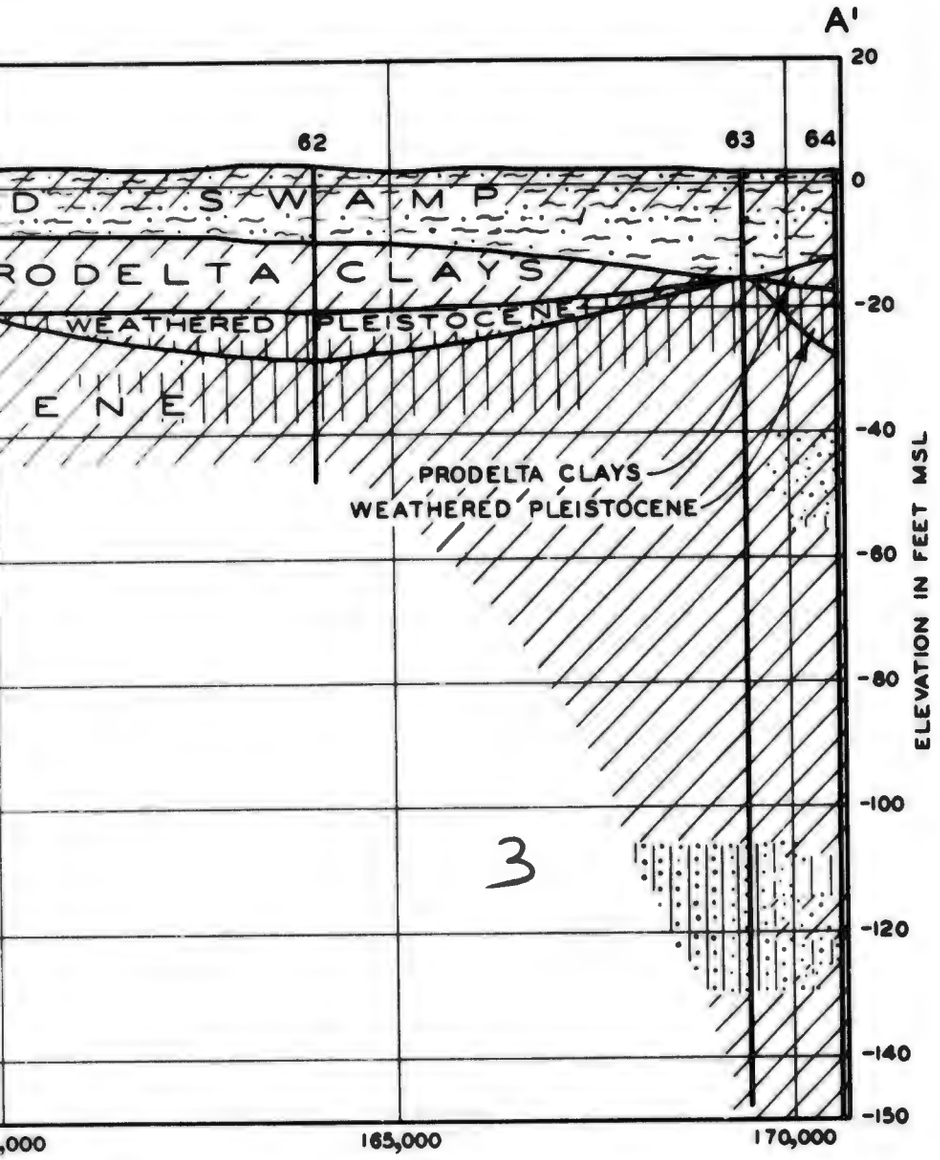
NOTE: SEE PLATE 11 FOR SOILS LEGEND.


115,000

2


3
20
0
-20
-40
-60
-80
-100
-120
-140
-150
61
MARSH AND
PRODE
WEA
PLEISTOCEN
MATCH LINE
ELEVATION IN FEET MSL
150,000
155,000
160,000
DISTANCE IN FEET
5

5



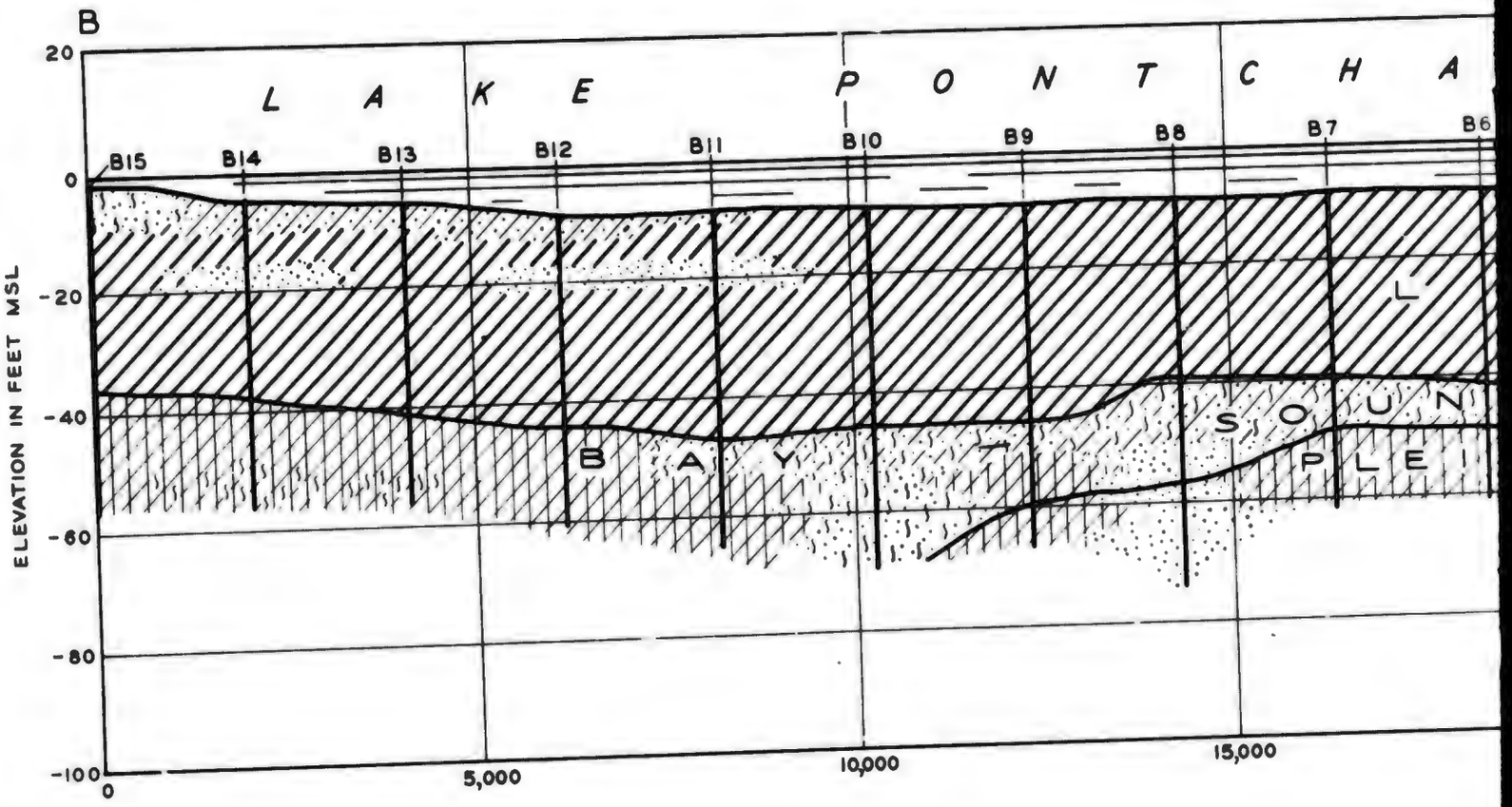
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

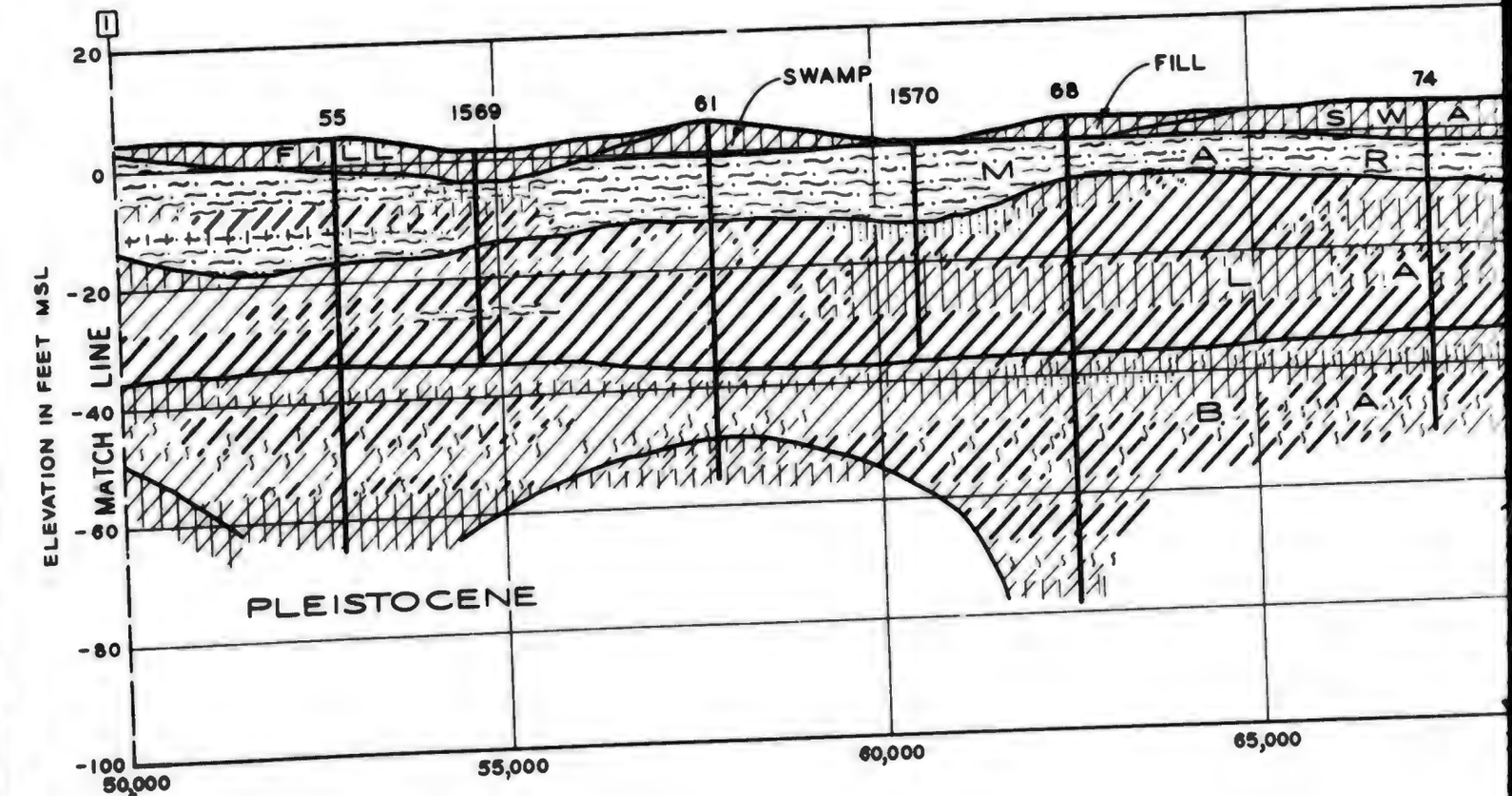
SECTION A-A'

LOWER GRAND RIVER TO GRAMERCY

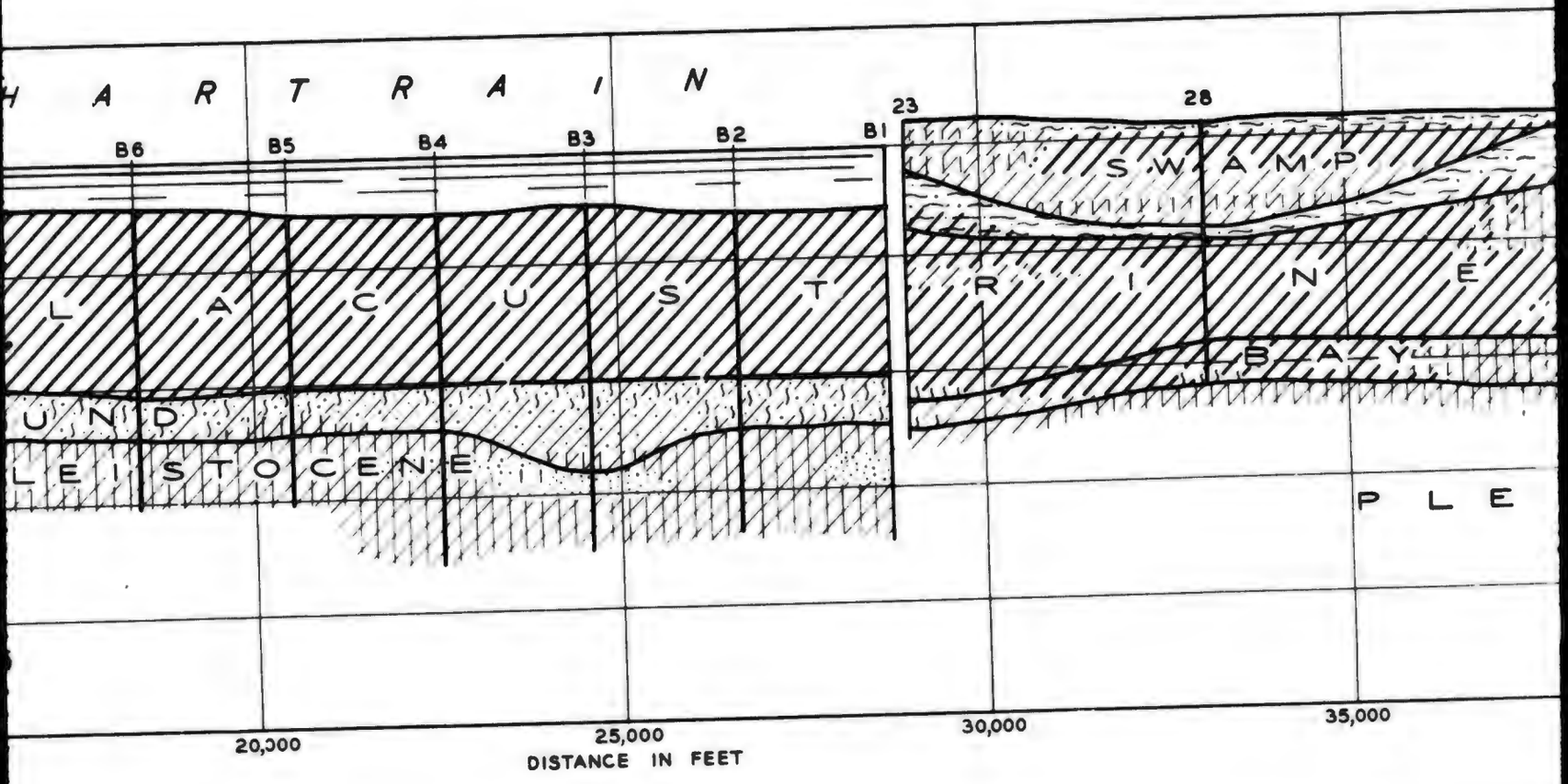
SHEET 2 OF 2

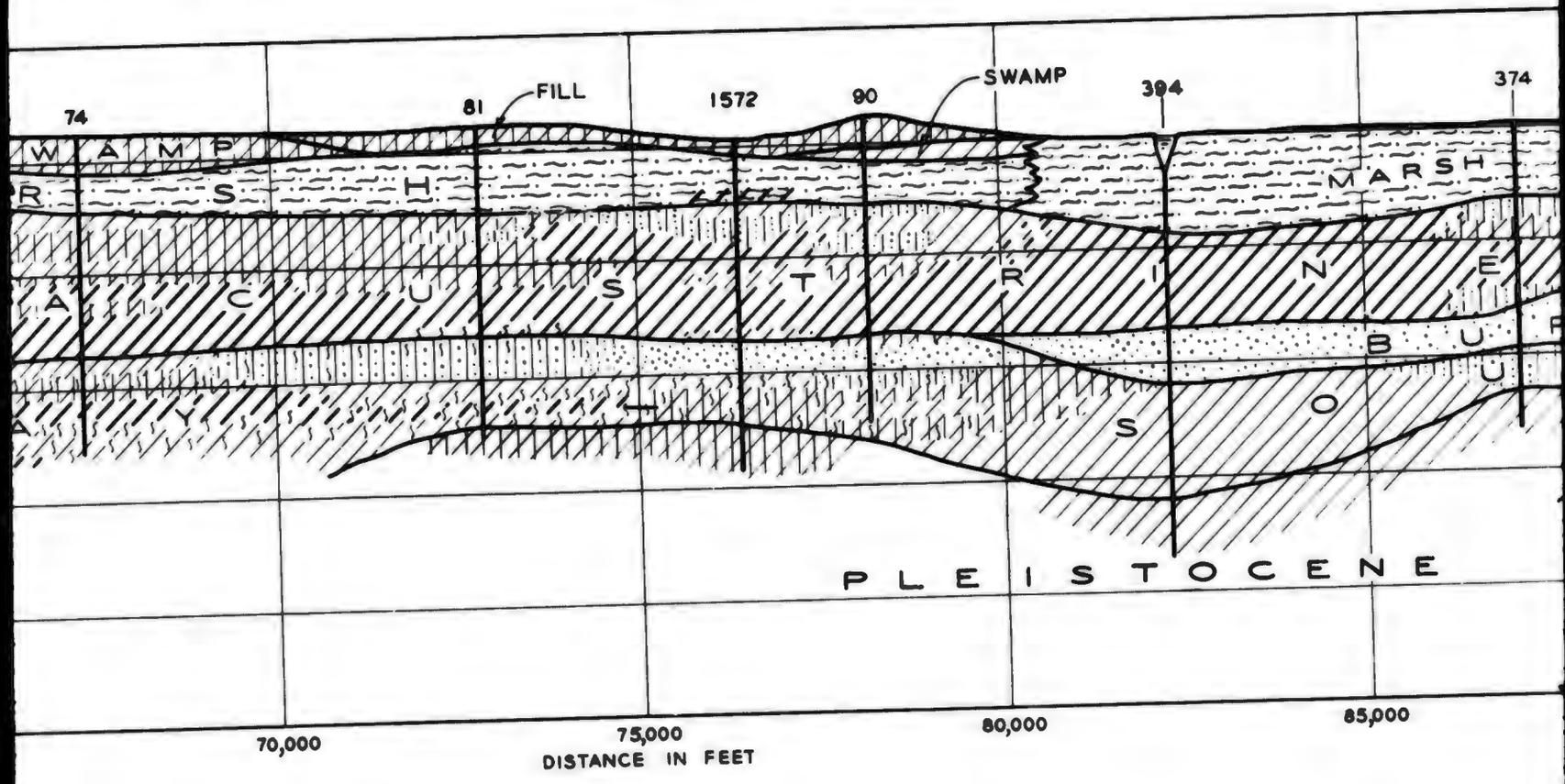
PLATE IIA


B
LAKE PONTCHA
B15
B14
B13
B12
B11
B10
B9
B8
B7
B6
ELEVATION IN FEET MSL
20
0
-20
-40
-60
-80
-100
0
5,000
10,000
15,000
L
SOUN
BAY
PLEI

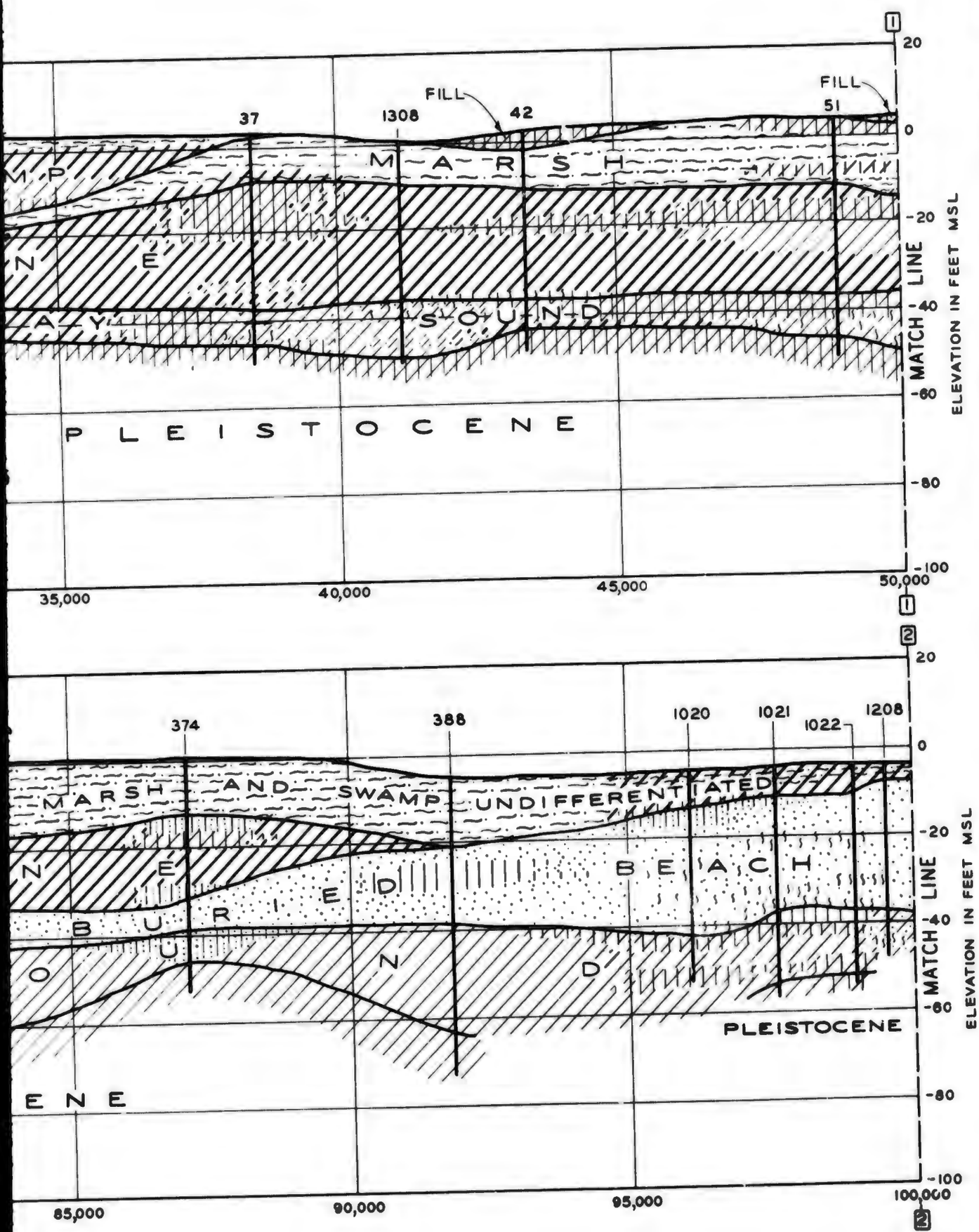

1
20
55
1569
61
SWAMP
1570
68
FILL
74
SWA
FILL
MARSH
LA
BA
ELEVATION IN FEET MSL
0
-20
-40
-60
-80
-100
MATCH LINE
PLEISTOCENE
50,000
55,000
60,000
65,000

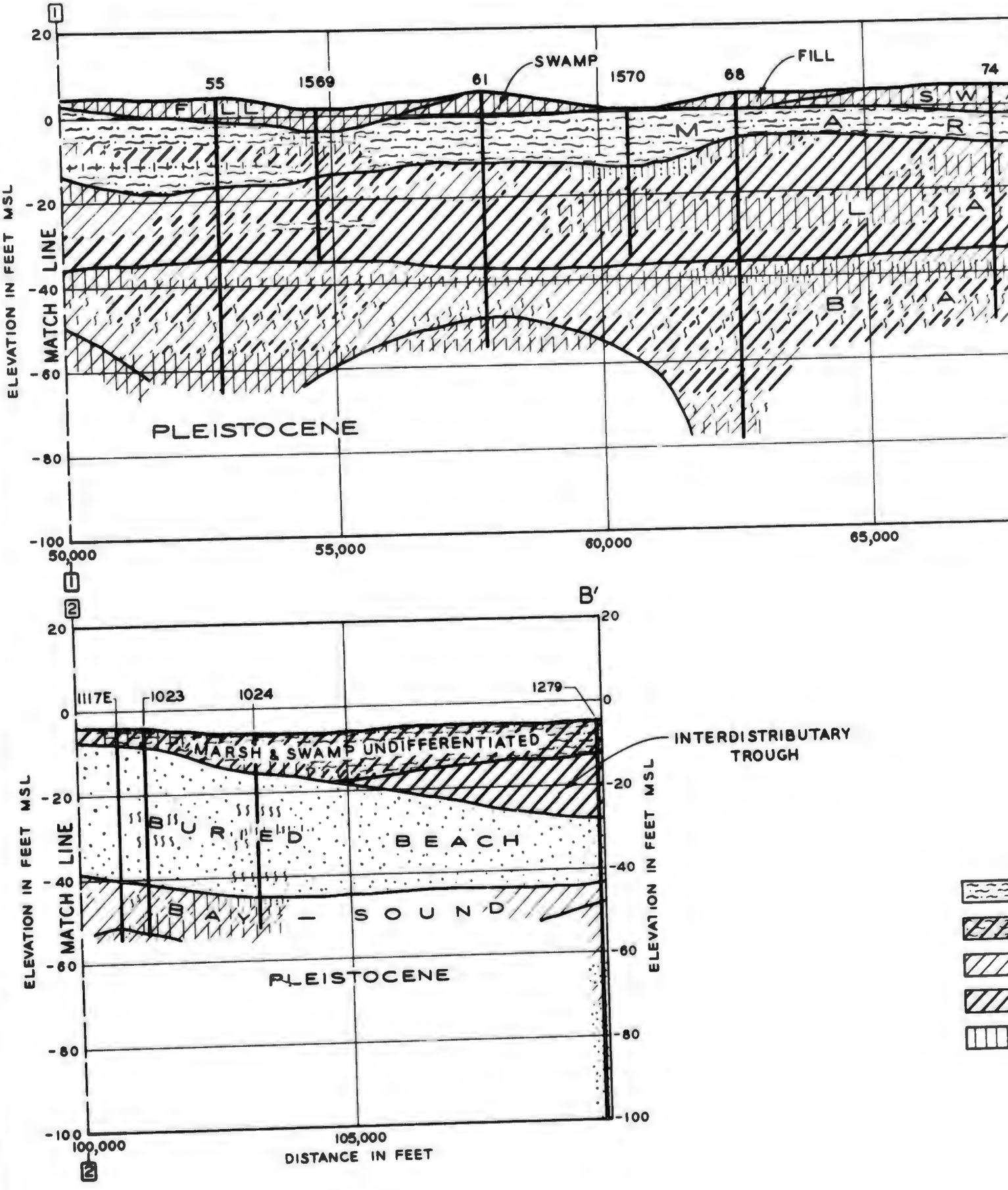

1
2
B'
20
20


H A R T R A I N
B6
B5
B4
B3
B2
B1
23
28
S W A M P
L A C U S T
R I N E
B A Y
U N D
LE I STOCENE
P L E
20,000
25,000
30,000
35,000
DISTANCE IN FEET

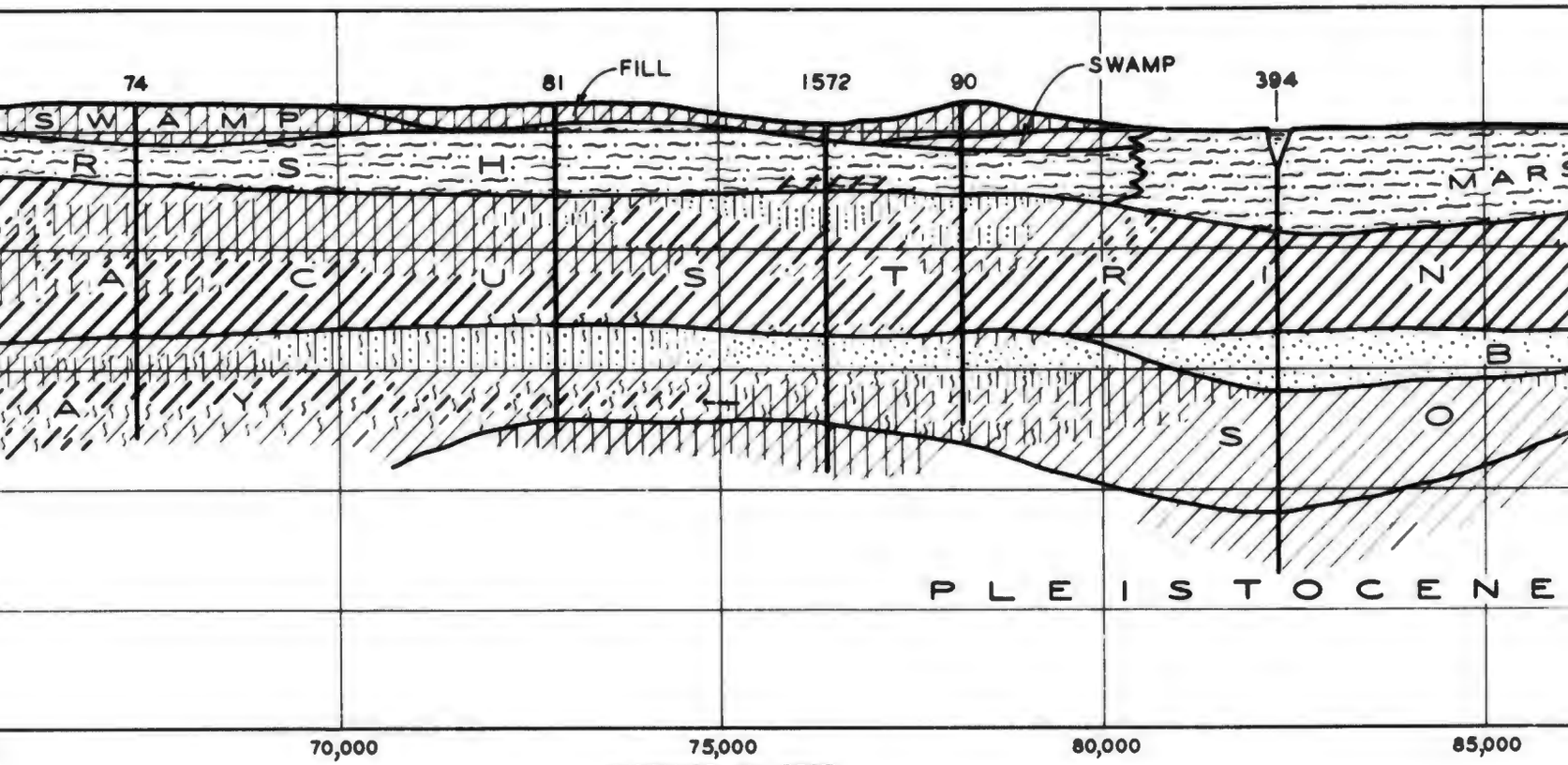

74
81
FILL
1572
90
SWAMP
394
374
W A M P
S H
MARSH
A C U S T R I N E
B U
S O
PLEISTOCENE
70,000
75,000
80,000
85,000
DISTANCE IN FEET

2


1
20
FILL
FILL
37
1308
42
51
0
M A R S H
-20
-40
-60
-80
-100
MATCH LINE
ELEVATION IN FEET MSL
P L E I S T O C E N E
35,000
40,000
45,000
50,000
1
2
20
374
388
1020
1021
1022
1208
0
MARSH AND SWAMP
UNDIFFERENTIATED
-20
-40
-60
-80
-100
MATCH LINE
ELEVATION IN FEET MSL
B E A C H
PLEISTOCENE
85,000
90,000
95,000
100,000
2


1
2
20
0
-20
-40
-60
-80
-100
ELEVATION IN FEET MSL
MATCH LINE
55
1569
61
SWAMP
1570
68
FILL
74
FILL
MARSH
SWAMP
ALLUVIAL
BASIN
PLEISTOCENE
50,000
55,000
60,000
65,000
B'
1117E
1023
1024
1279
MARSH & SWAMP UNDIFFERENTIATED
INTERDISTRIBUTARY TROUGH
BURIED BEACH
BAY — SOUND
PLEISTOCENE
100,000
105,000
DISTANCE IN FEET

DISTANCE IN FEET

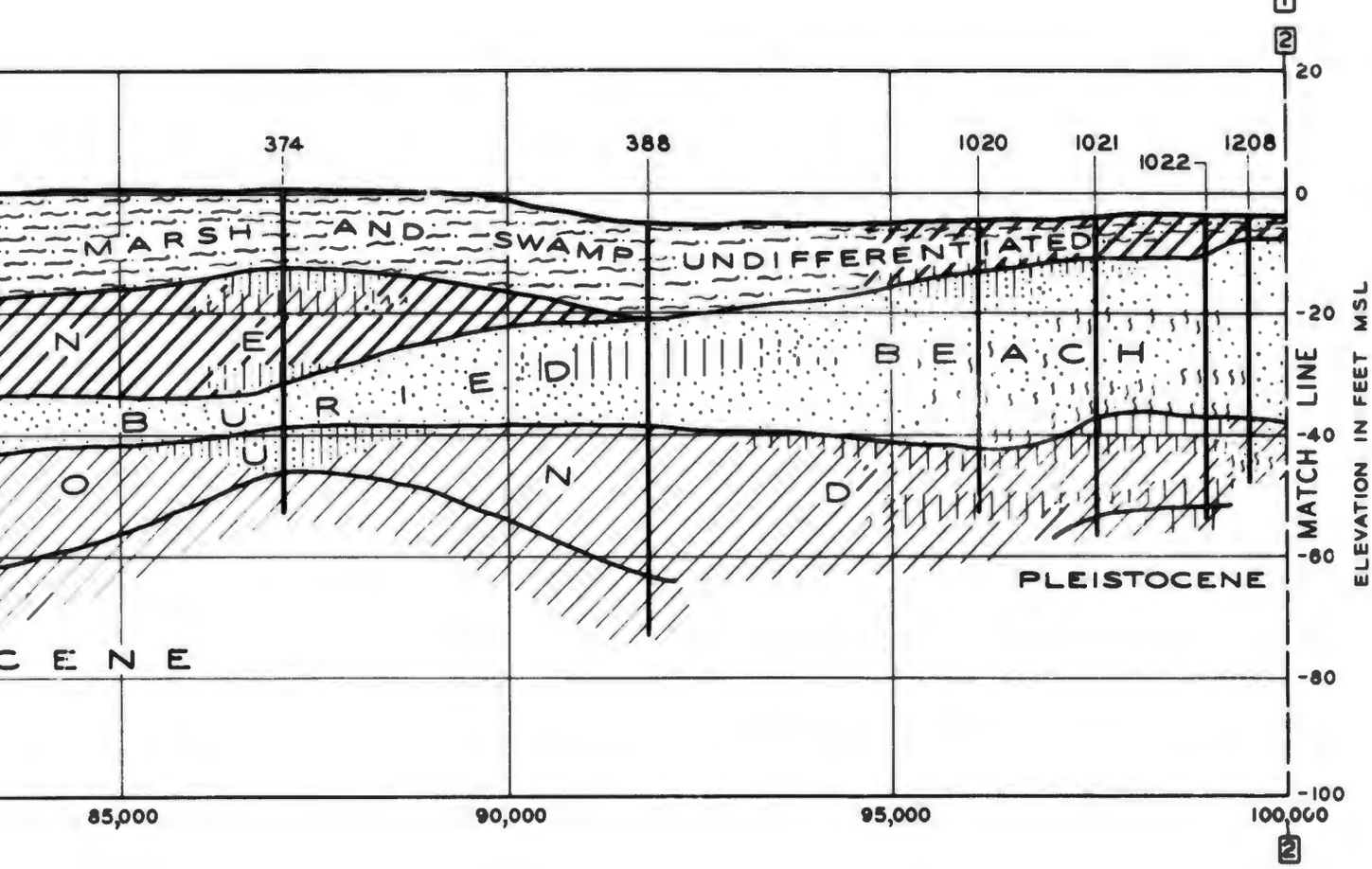


2

LEGEND

- PEAT, HUMUS, AND OTHER ORGANIC MATTER
- HIGHLY ORGANIC CLAY
- LEAN CLAY
- FAT CLAY
- SILT
- SAND
- CLAYEY SILT, SILTY CLAY
- SANDY CLAY, CLAYEY SAND
- SILTY SAND, SANDY SILT
- SHELL

5



3

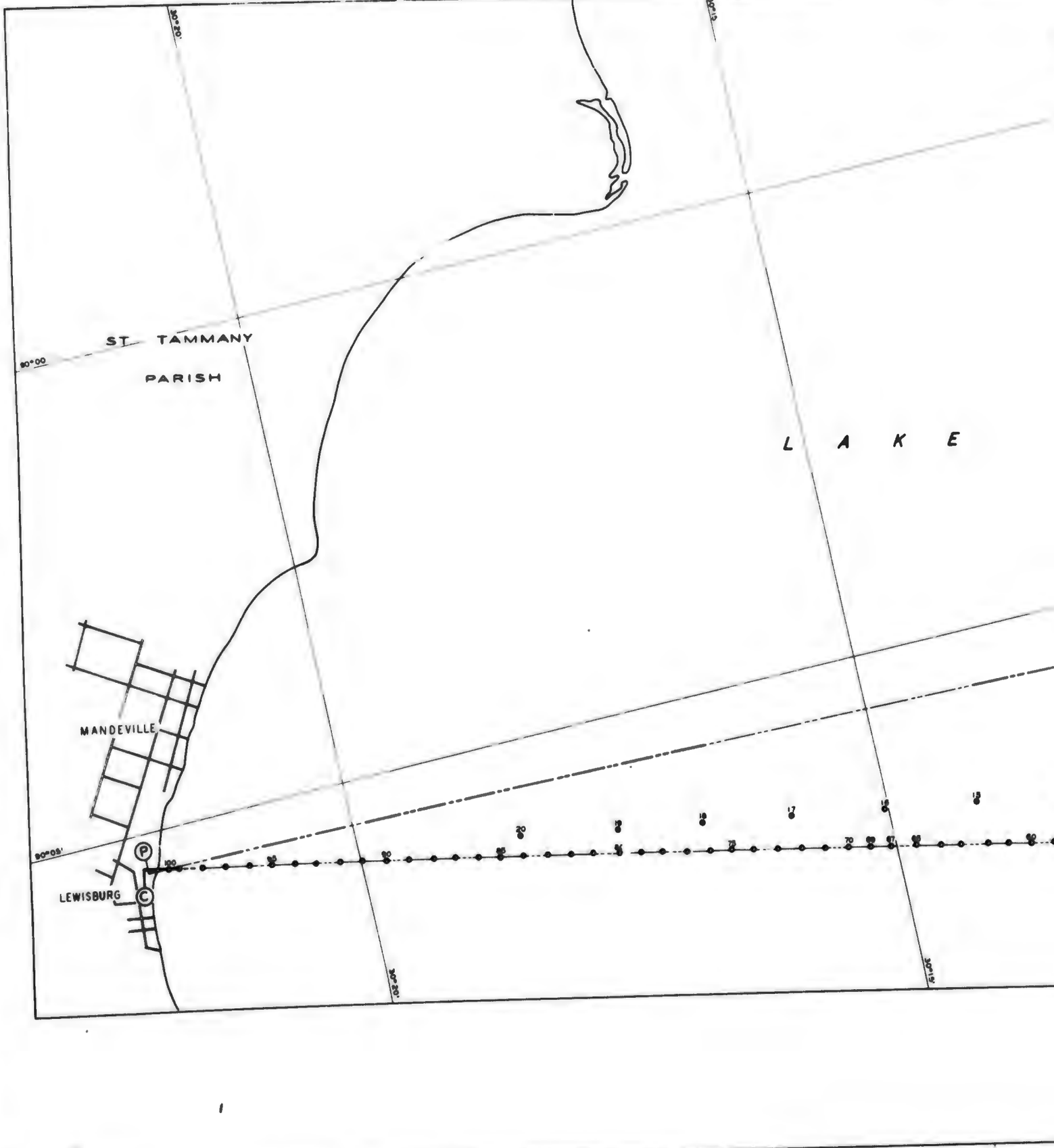
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

SECTION B-B'

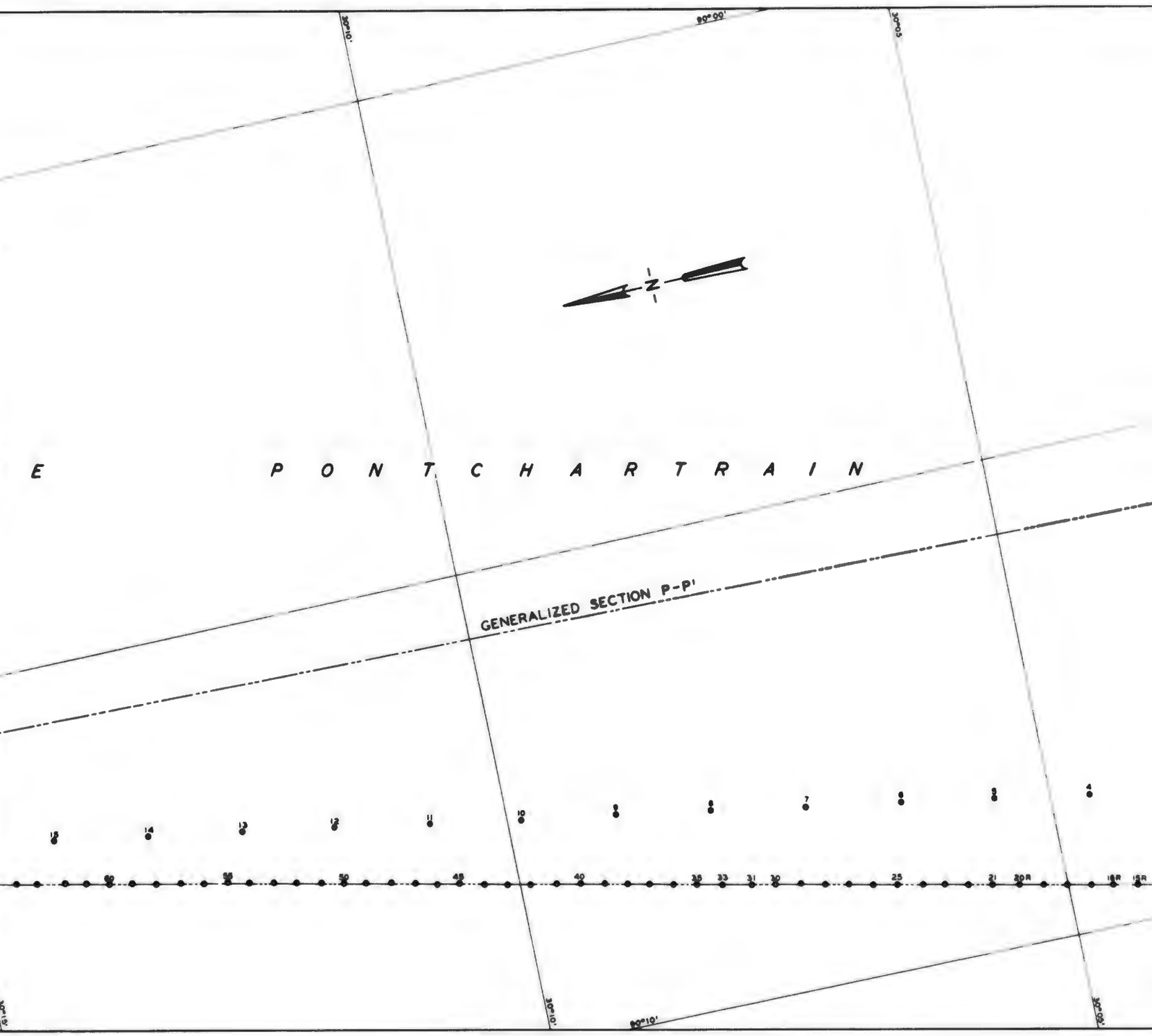
LA BRANCHE TO NEW ORLEANS

PLATE 12

6


ST TAMMANY
PARISH
L A K E
MANDEVILLE
LEWISBURG
P
C
90°00
90°05'
30°20'
30°15'

P
40
0
L A K E
LACUSTRINE
BURIED BEACH
WEATHERED



2

P O N T C H A R T R A I N L A C U S T R I N E

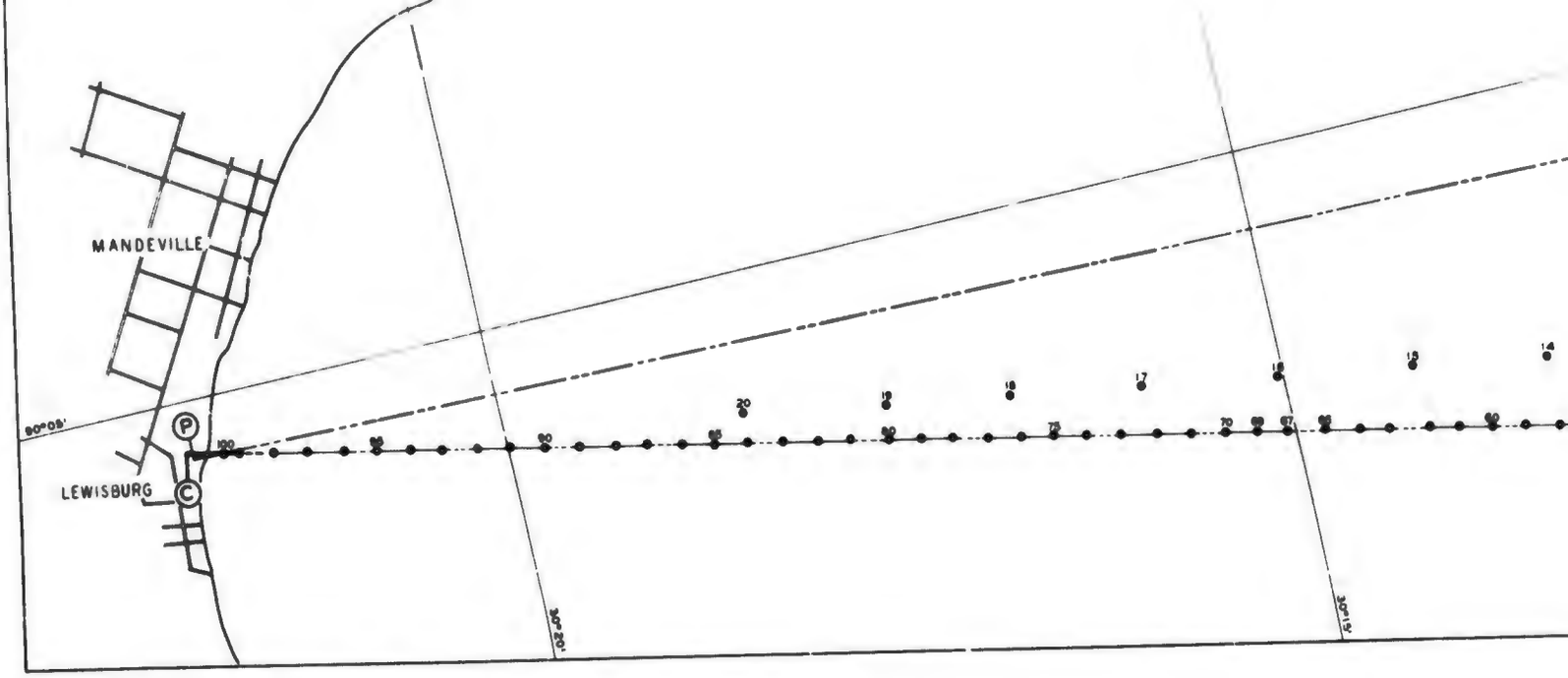
WEATHERED PLEISTOCENE

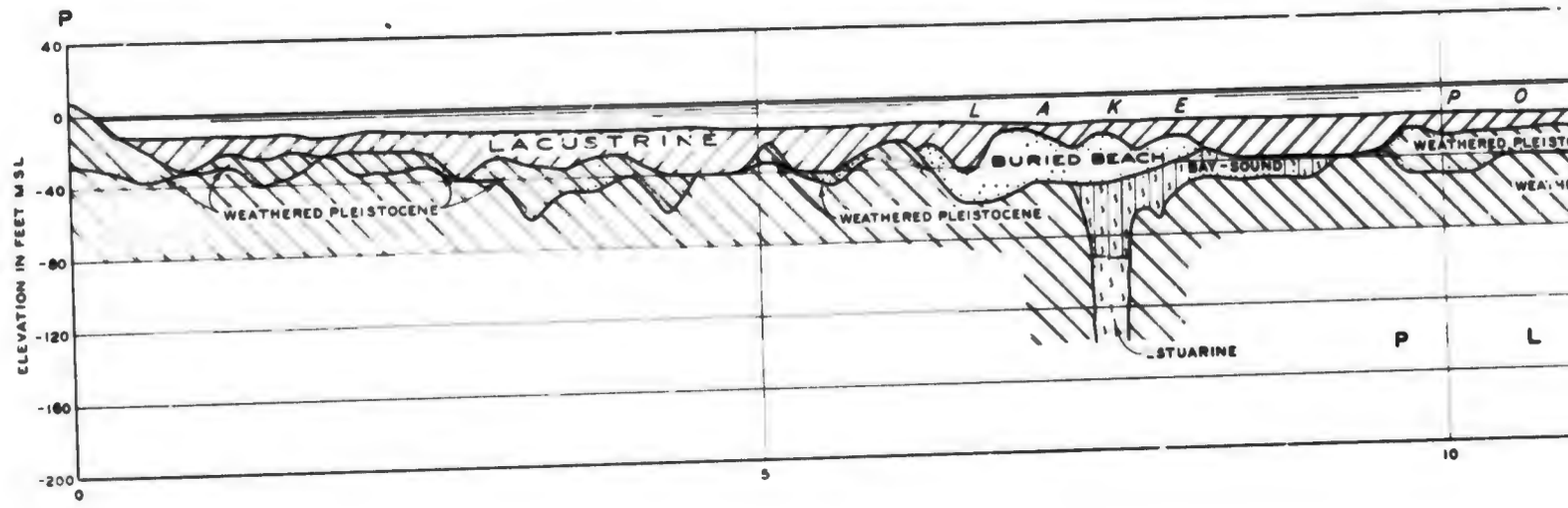
BAY-SOUND

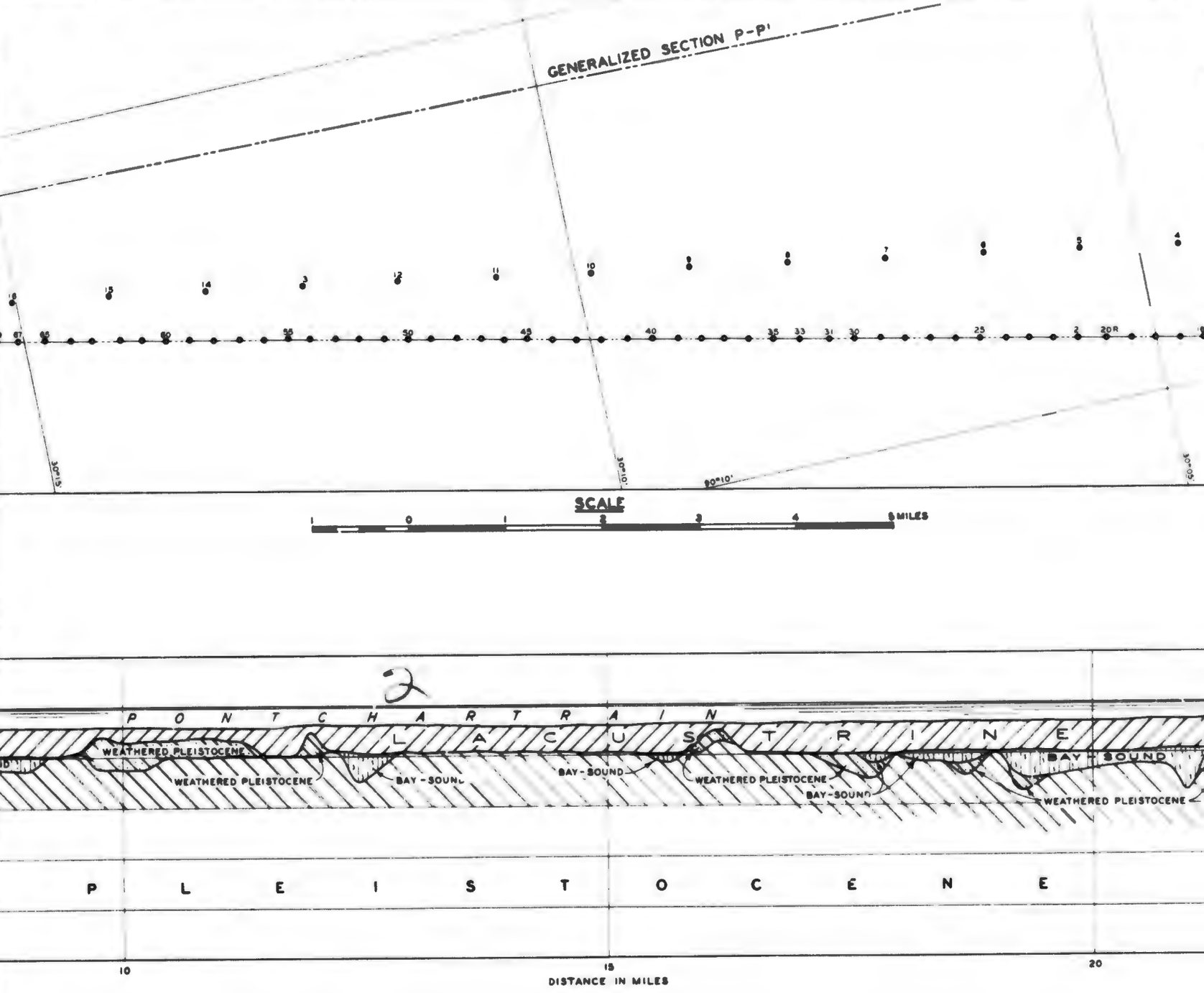
BAY SOUND


NAVIGATION CANAL
MISSISSIPPI RIVER
ST JOHN
CITY PARK
NEW ORLEANS
ORLEANS PARISH
JEFFERSON PARISH
MISS. R.
D
D'
C
C'
P
P'

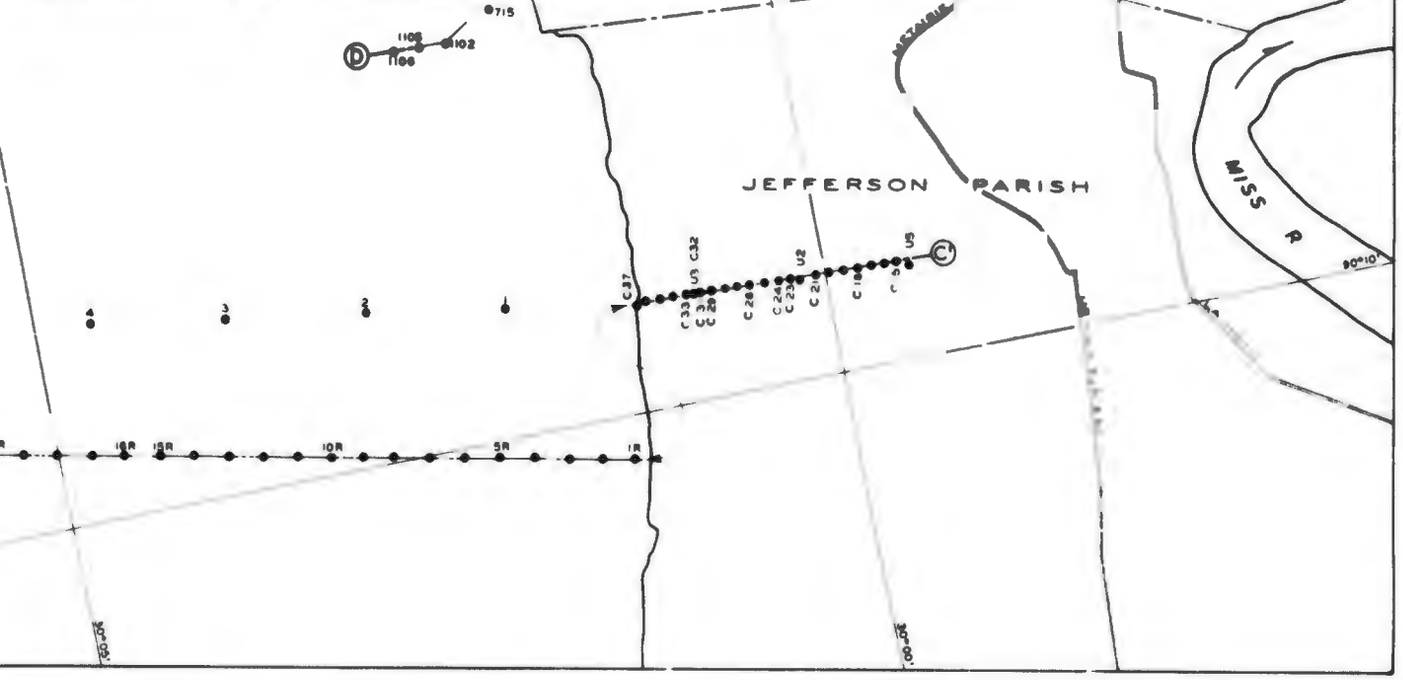

P'
FILL
FILL
PRODELTA
ABANDONED DISTRIBUTARY
MARSH - SWAMP
MARSH - SWAMP
BURIED BEACH
INTRADELTA COMPLEX
PRODELTA
BAY - SOUND
SOUND
40
0
-40
FEET MSL

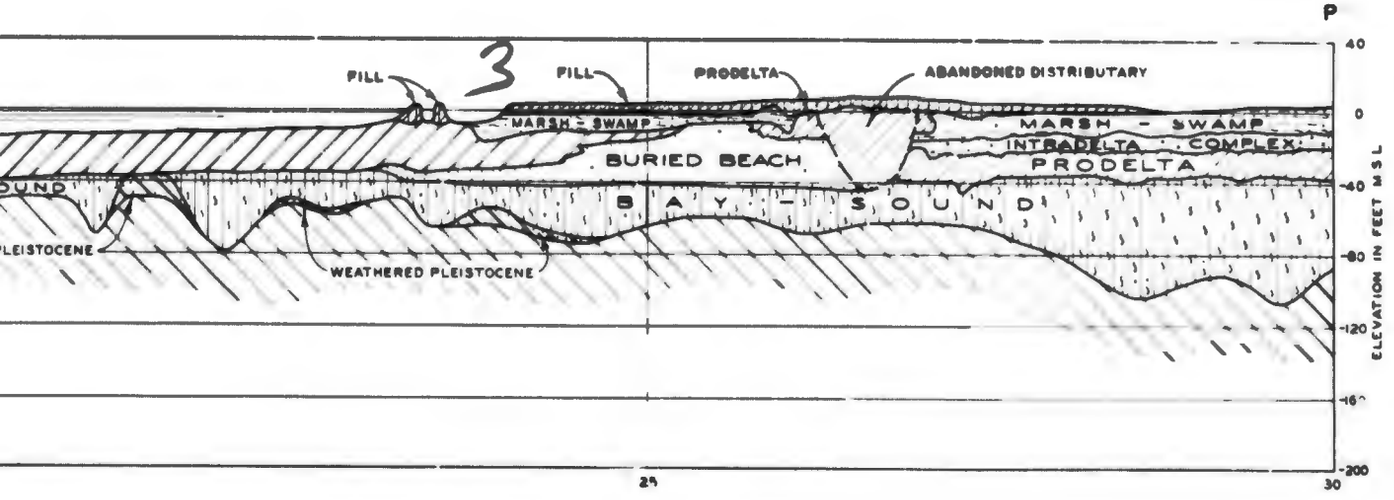

MANDEVILLE
LEWISBURG
P
C
90°05'
30°20'
30°15'


P
40
0
-40
-80
-120
-160
-200
0
5
10
ELEVATION IN FEET MSL
L A K E
LACUSTRINE
BURIED BEACH
BAY-SOUND
WEATHERED PLEISTOCENE
WEATHERED PLEISTOCENE
WEATHERED PLEISTOCENE
ESTUARINE


GENERALIZED SECTION P-P'
SCALE
1 0 1 2 3 4 5 MILES

2
PONTCHARTRAIN
LACUSTRINE
WEATHERED PLEISTOCENE
BAY-SOUND
PLEISTOCENE
10
15
20
DISTANCE IN MILES



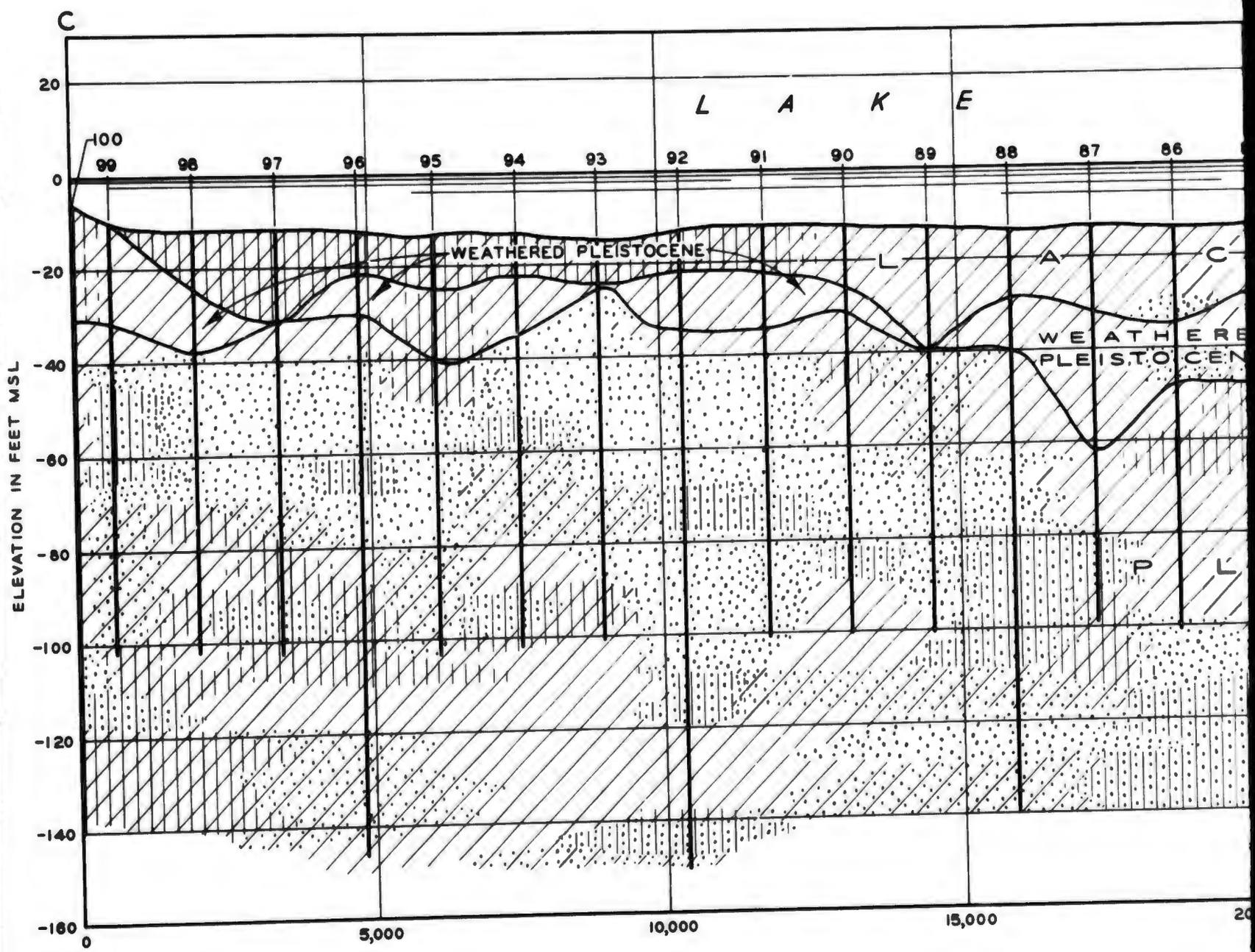


GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

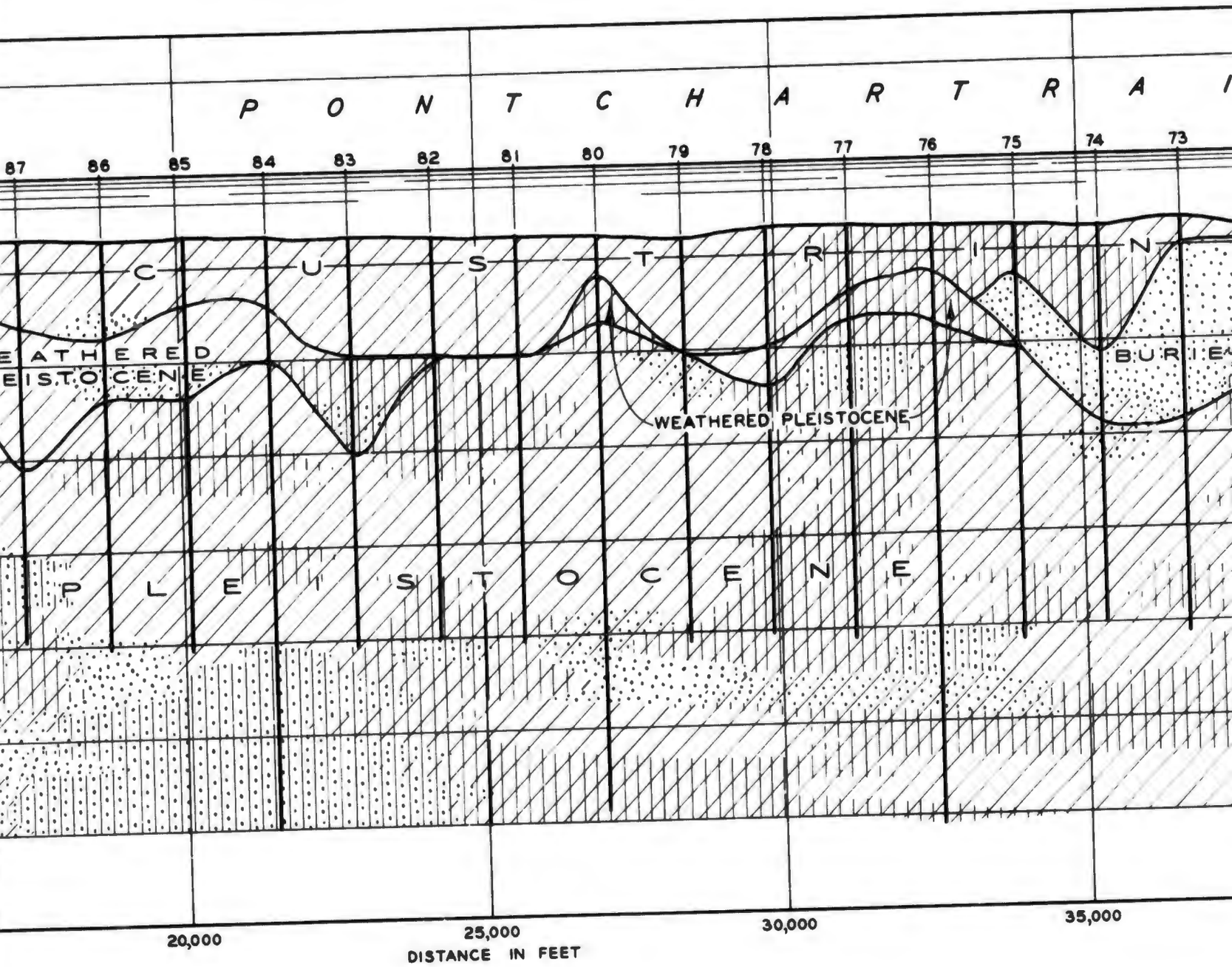
LOCATION MAP

PONTCHARTRAIN-NEW ORLEANS BORINGS AND GENERALIZED SECTION P-P'

PLATE 13

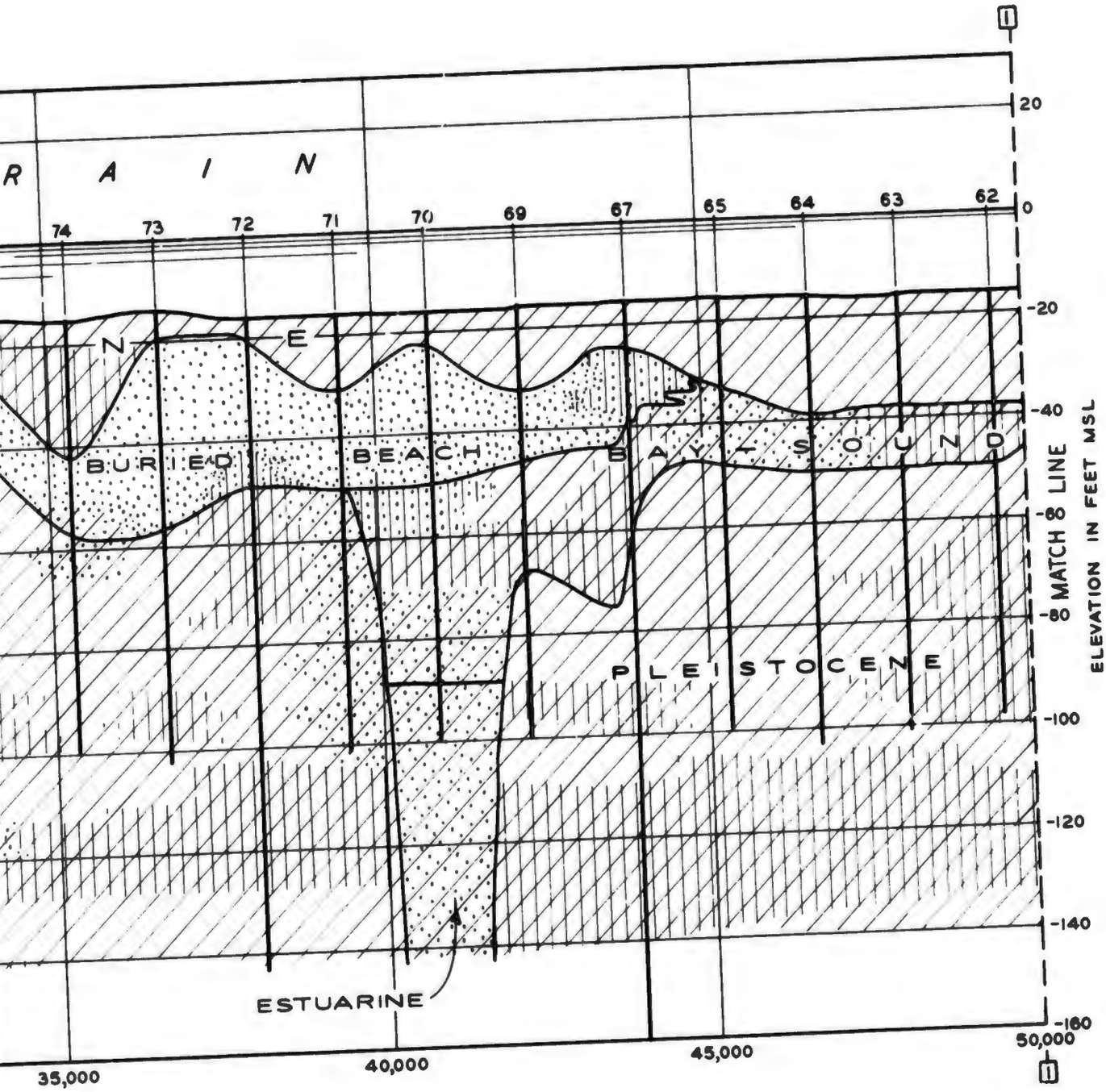

C
20
0
-20
-40
-60
-80
-100
-120
-140
-160
ELEVATION IN FEET MSL
L A K E
100
99
98
97
96
95
94
93
92
91
90
89
88
87
86
WEATHERED PLEISTOCENE
L
A
C
WE ATHERE
PLEISTOCEN
P
L
0
5,000
10,000
15,000

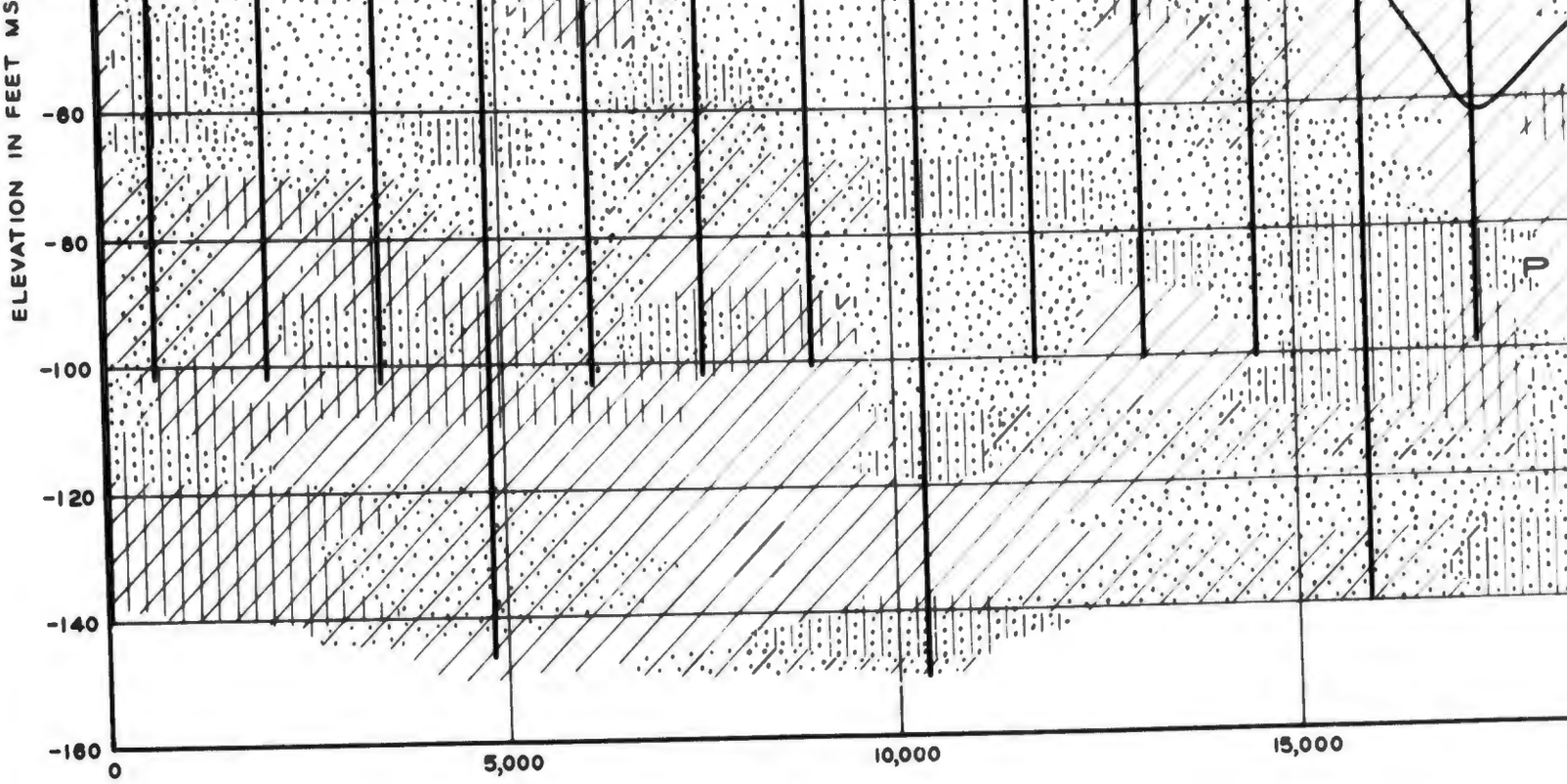
LEGEND



2

EY SILT SILTY CLAY

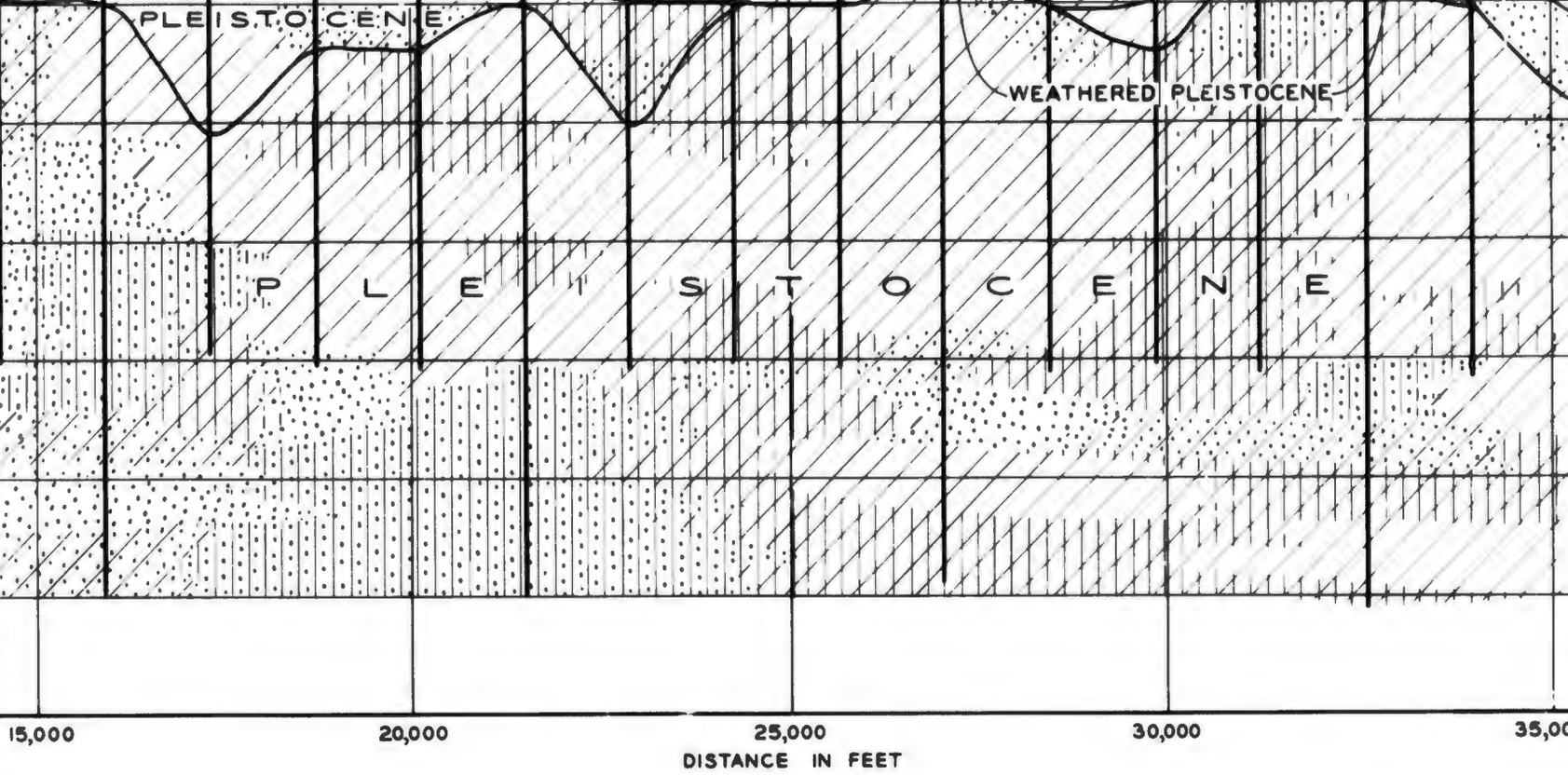

R A I N
74
73
72
71
70
69
67
65
64
63
62
20
0
-20
-40
-80
-100
-120
-140
-160
N E
BURIED BEACH
BAY SOUND
PLEISTOCENE
ESTUARINE
MATCH LINE
ELEVATION IN FEET MSL
35,000
40,000
45,000
50,000



1

LEGEND

- FILL
- PEAT, HUMUS, AND OTHER ORGANIC MATTER
- SAND
- CLAY
- SHELL
- CLAYEY SILT,
- SANDY CLAY,
- SILTY SAND
- SILT



2

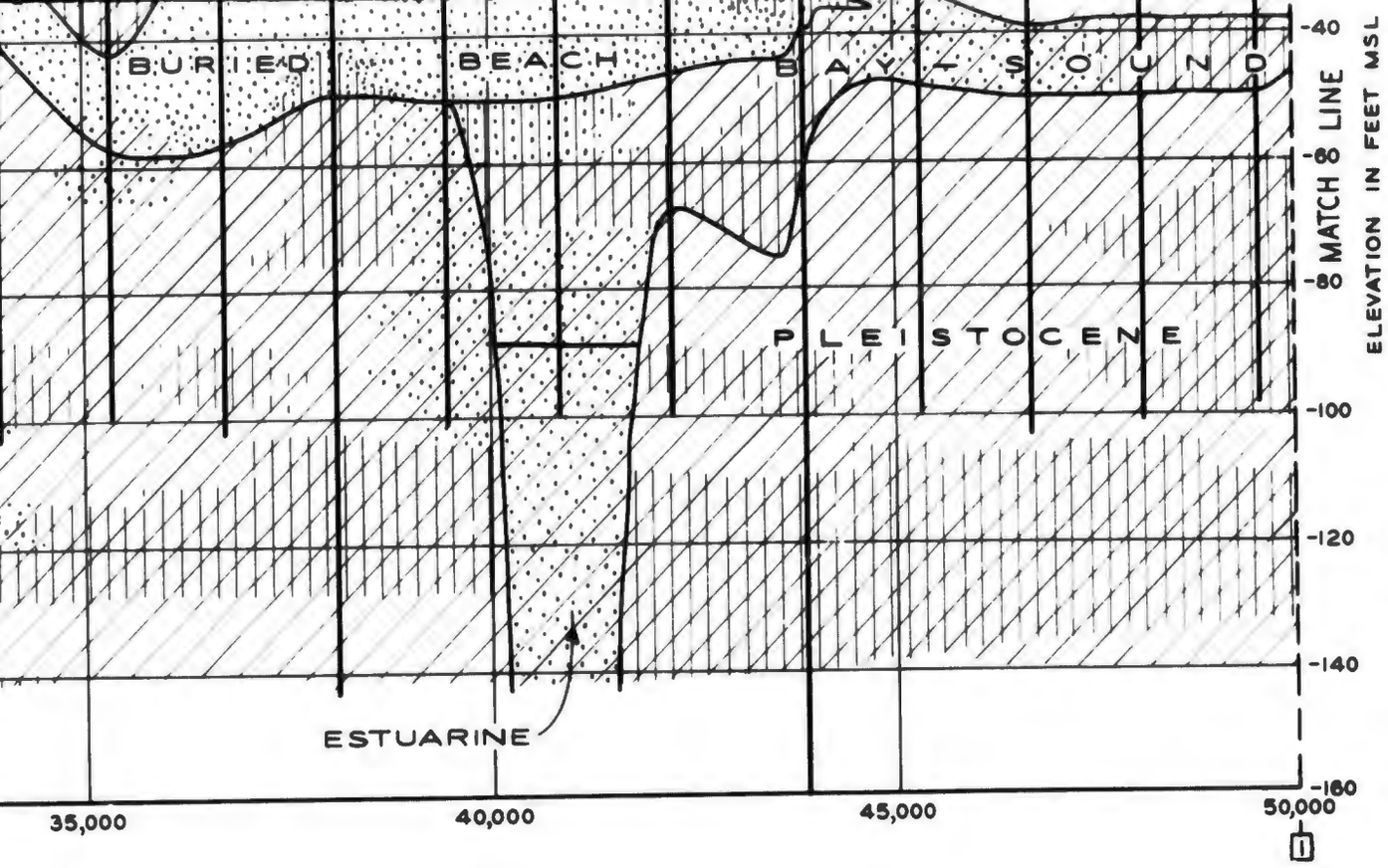
CLAYEY SILT, SILTY CLAY

SANDY CLAY, CLAYEY SAND

SILTY SAND

SILT

5



3

GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

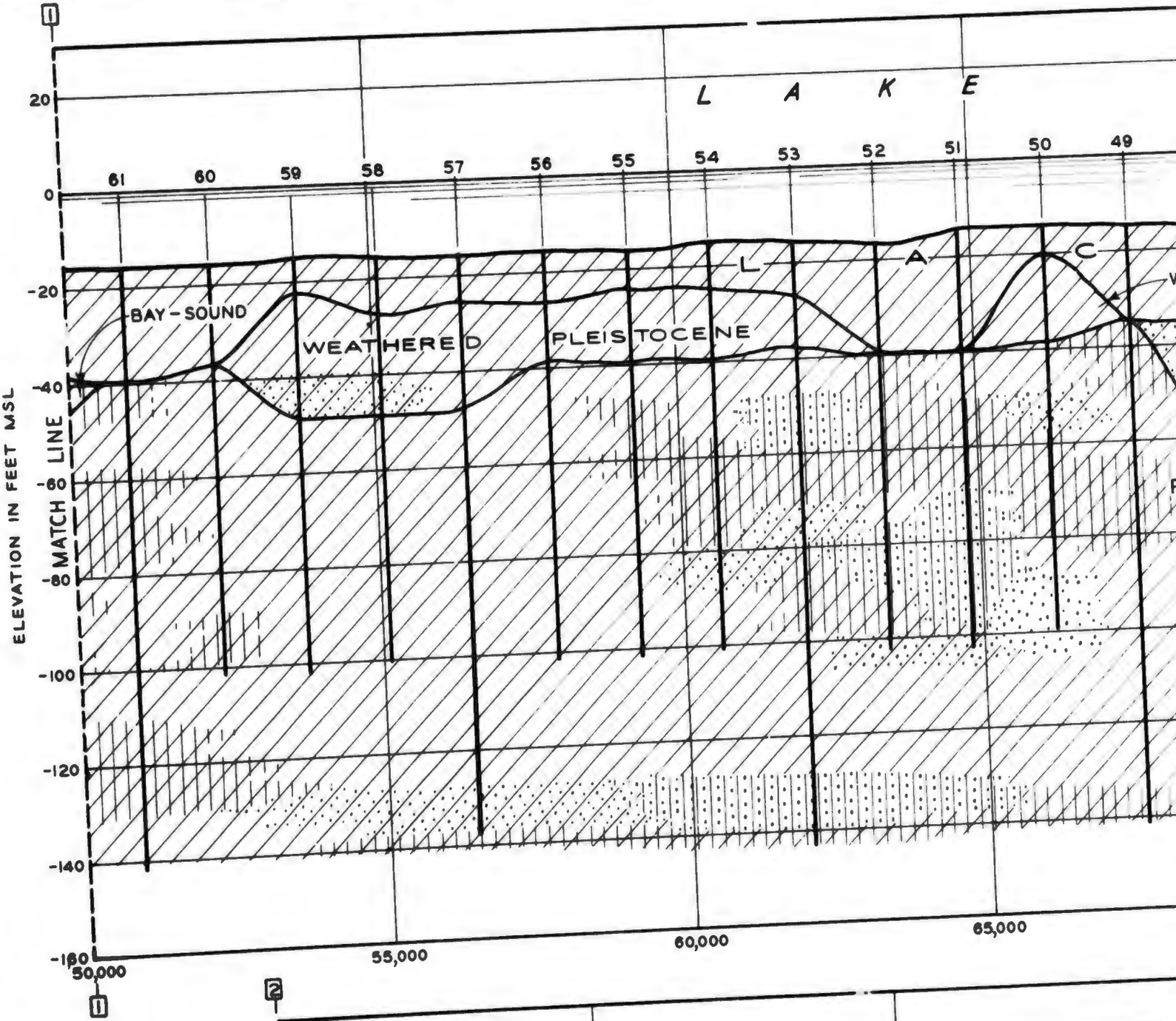
SECTION C-C'

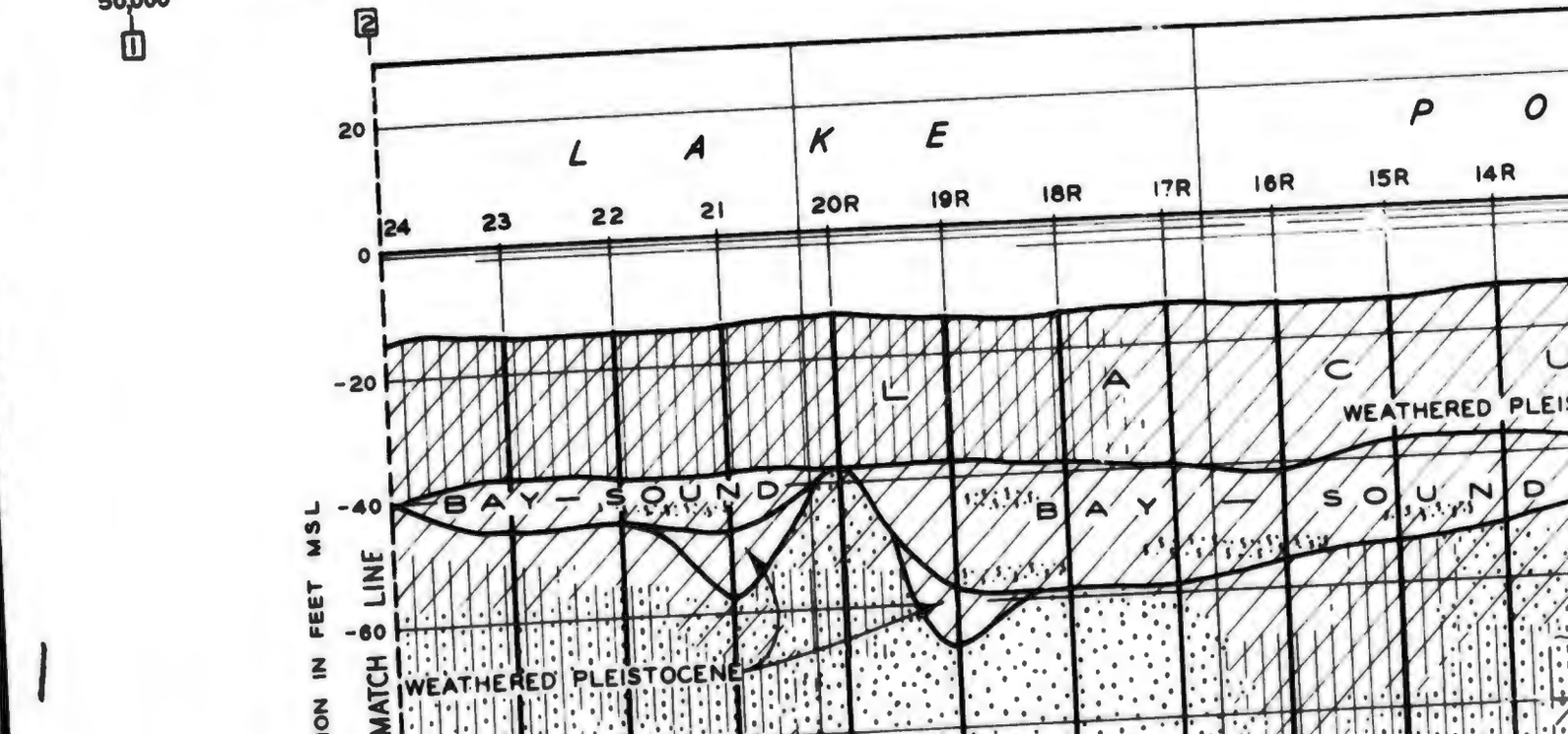
LAKE PONTCHARTRAIN

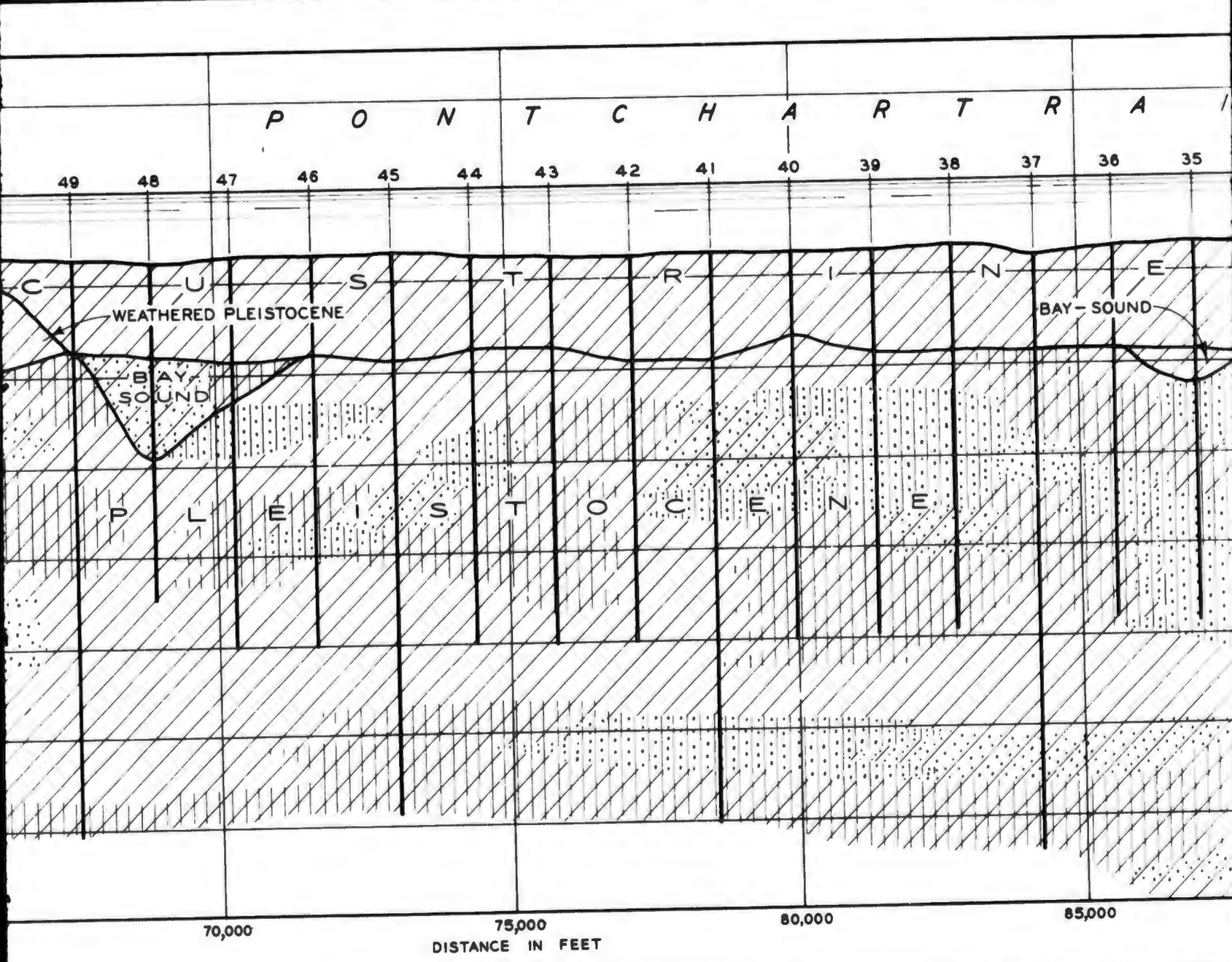
SHEET 1 OF 2

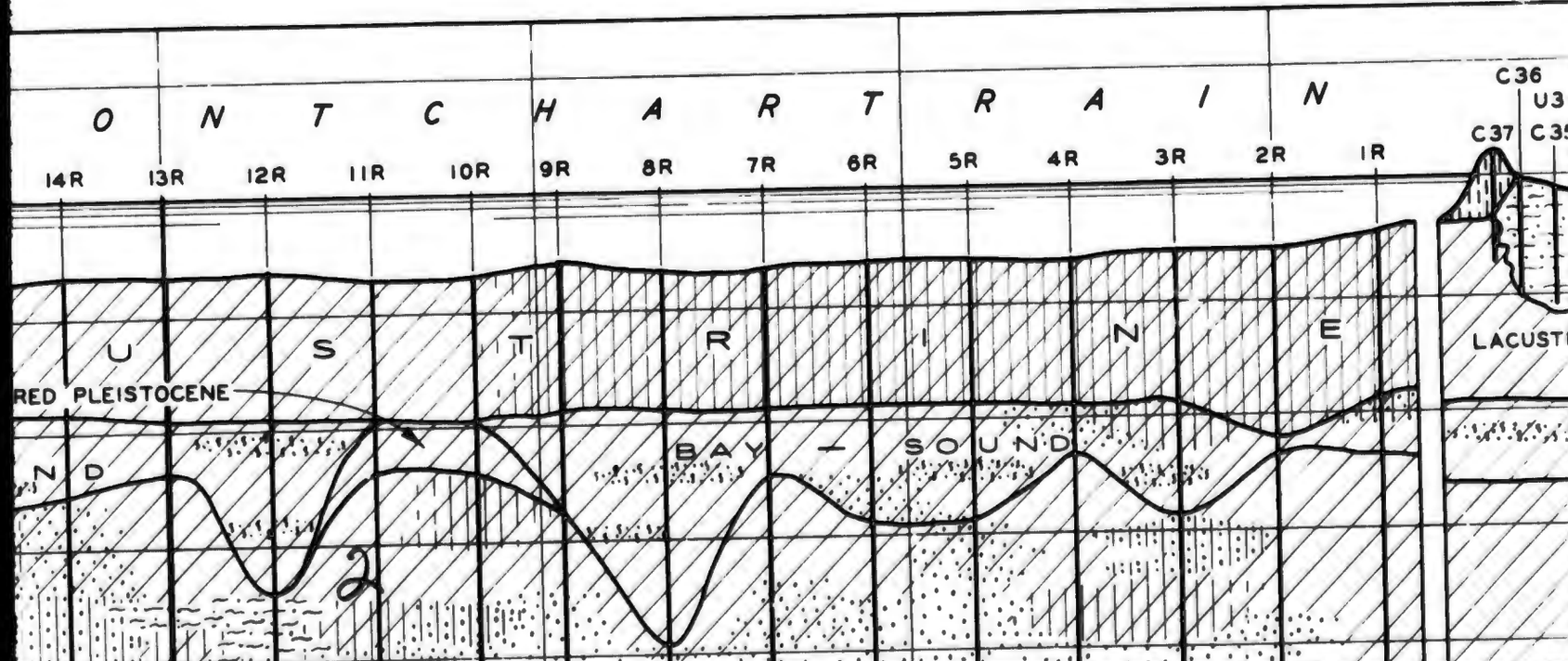
PLATE 14

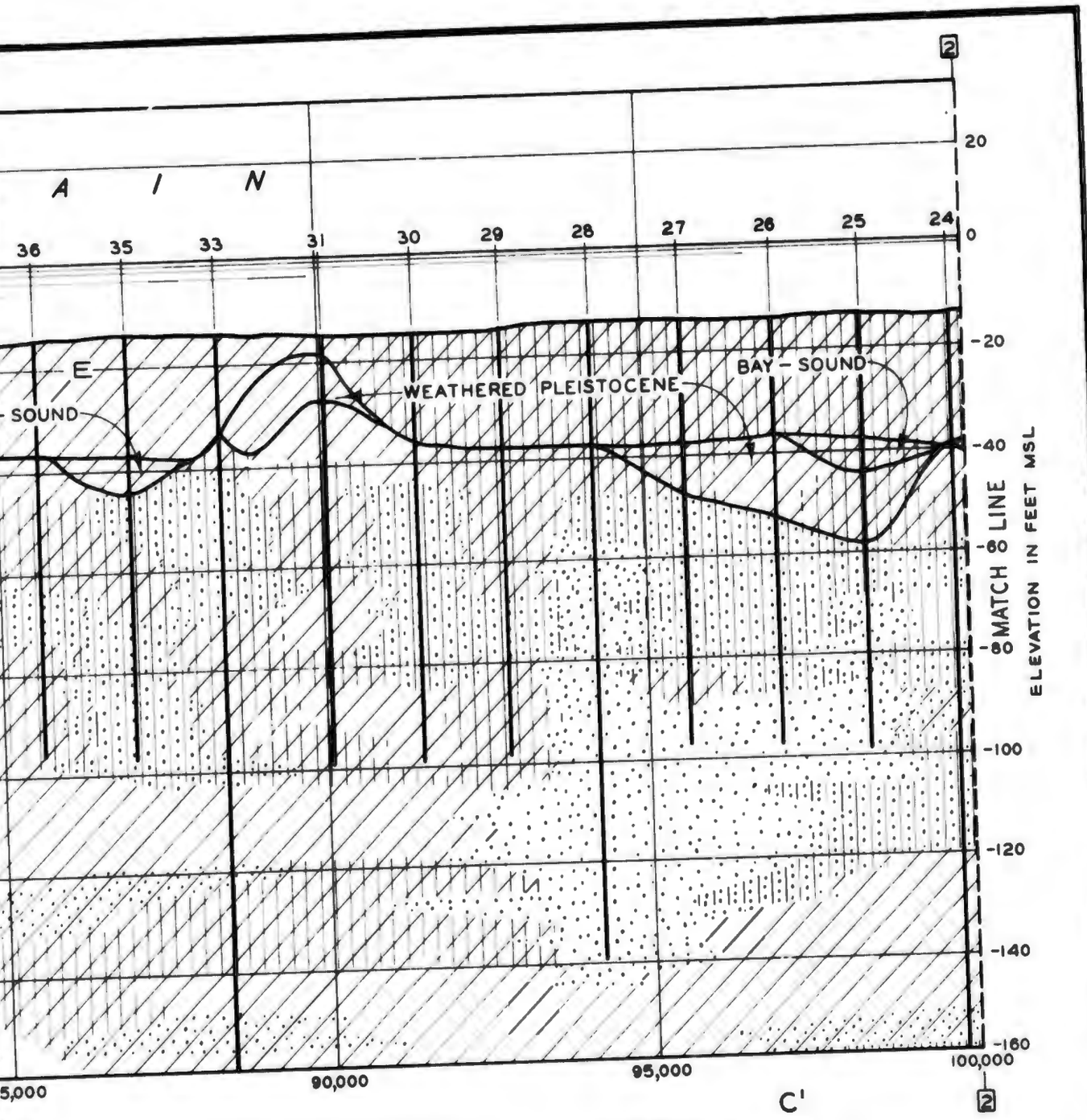
6

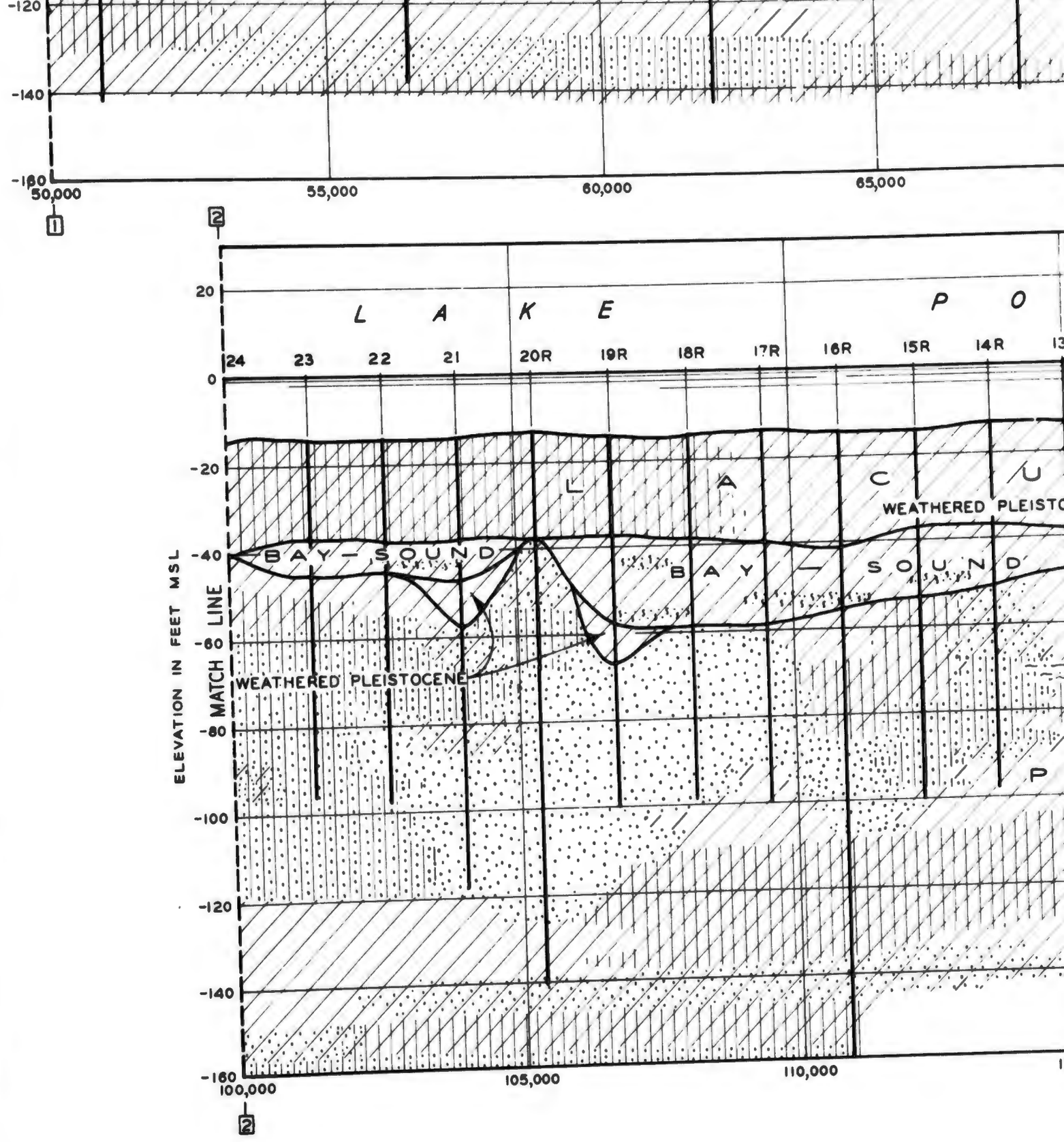

1
20
0
-20
-40
-60
-80
-100
-120
-140
-160
61
60
59
58
57
56
55
54
53
52
51
50
49
L A K E
L A C
BAY - SOUND
WEATHERED PLEISTOCENE
MATCH LINE
ELEVATION IN FEET MSL
50,000
55,000
60,000
65,000


2
20
0
-20
-40
-60
24
23
22
21
20R
19R
18R
17R
16R
15R
14R
L A K E
P O
L A
C
BAY - SOUND
BAY - SOUND
WEATHERED PLEIS
WEATHERED PLEISTOCENE
MATCH LINE
ELEVATION IN FEET MSL

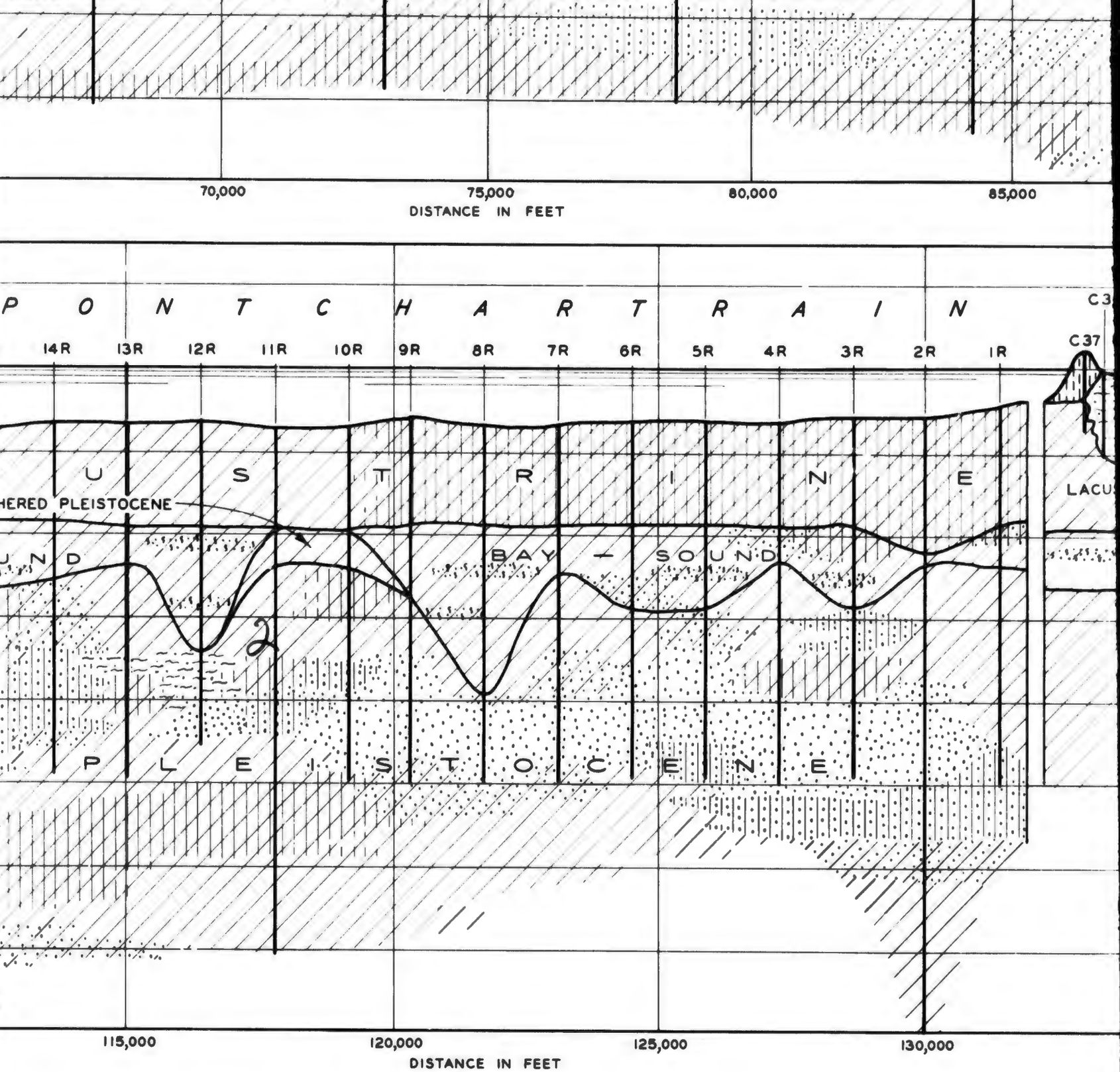

PONTCHARTRAIN
49 48 47 46 45 44 43 42 41 40 39 38 37 36 35
CAUSTRINE
WEATHERED PLEISTOCENE
BAY-SOUND
BAY-SOUND
PLEISTOCENE
70,000
75,000
80,000
85,000
DISTANCE IN FEET


ONTCHARTRAIN
14R 13R 12R 11R 10R 9R 8R 7R 6R 5R 4R 3R 2R 1R
C36
C37
U
S
T
R
I
N
E
RED PLEISTOCENE
BAY - SOUND
LACUST

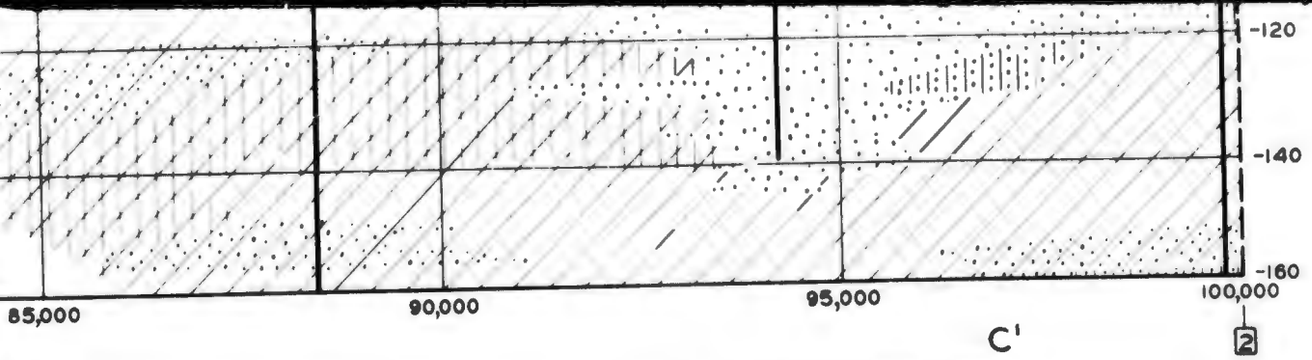

A I N
36
35
33
31
30
29
28
27
26
25
24
20
0
-20
-40
-60
-80
-100
-120
-140
-160
E
SOUND
WEATHERED PLEISTOCENE
BAY – SOUND
MATCH LINE
ELEVATION IN FEET MSL
90,000
95,000
100,000
C'
C36
U3-C32
C31
C37
C35
C33
C34
C29
C27
C25
C28
C26
C24
U2
C21
C19
C17
C15
C20
C18
C16
U5
MARSH
SWAMP
PRODELTA
LACUSTRINE
BURIED BEACH
BAY – SOUND
3
ELEVATION IN FEET MSL



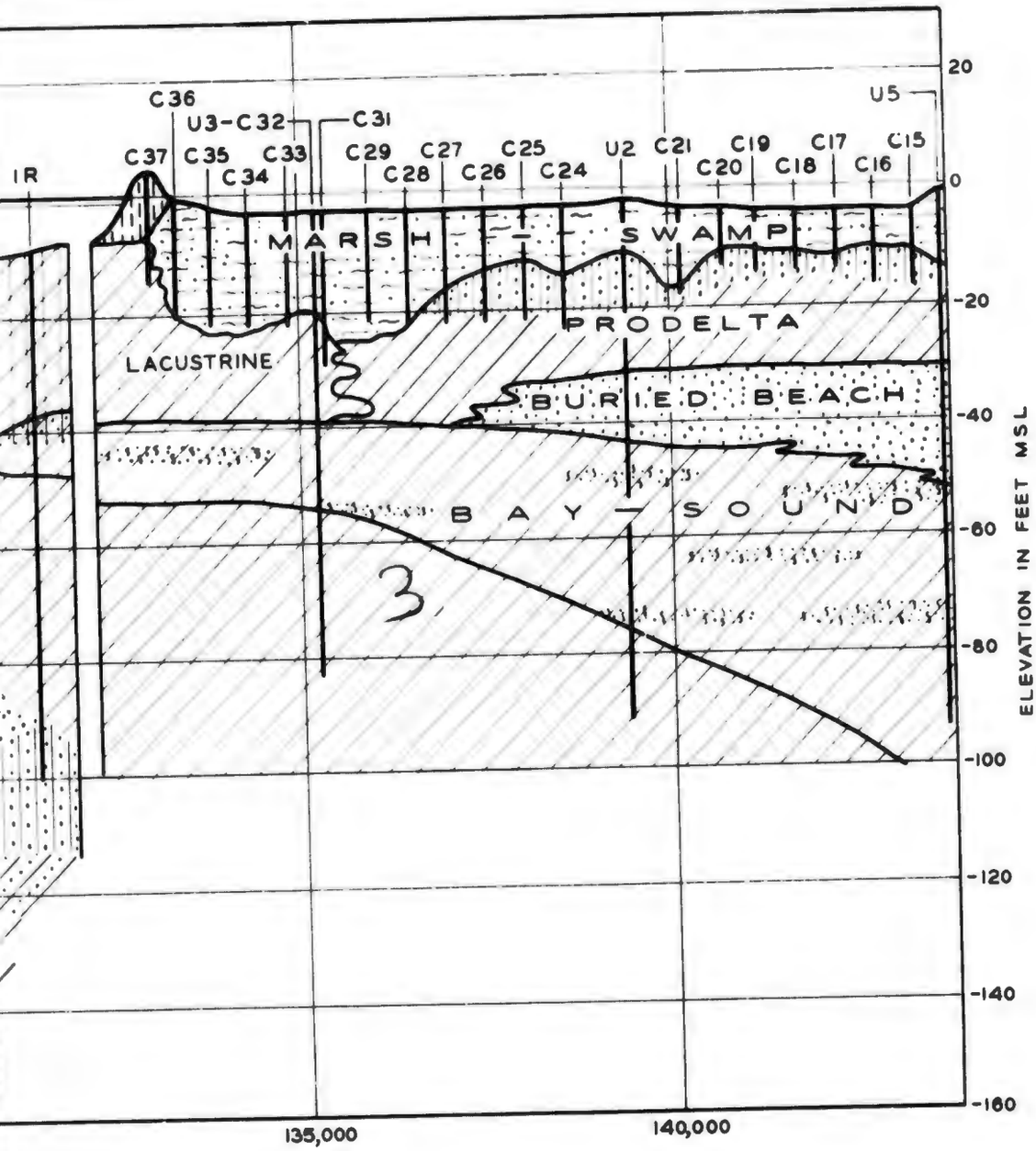
NOTE: SEE PLATE 14 FOR SOILS LEGEND


70,000
75,000
80,000
85,000
DISTANCE IN FEET
P O N T C H A R T R A I N
C3
14R 13R 12R 11R 10R 9R 8R 7R 6R 5R 4R 3R 2R 1R
C37
U S T R I N E
HERED PLEISTOCENE
U N D
BAY - SOUND
LACU
P L E I S T O C E N E
115,000
120,000
125,000
130,000
DISTANCE IN FEET

5



C'



GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

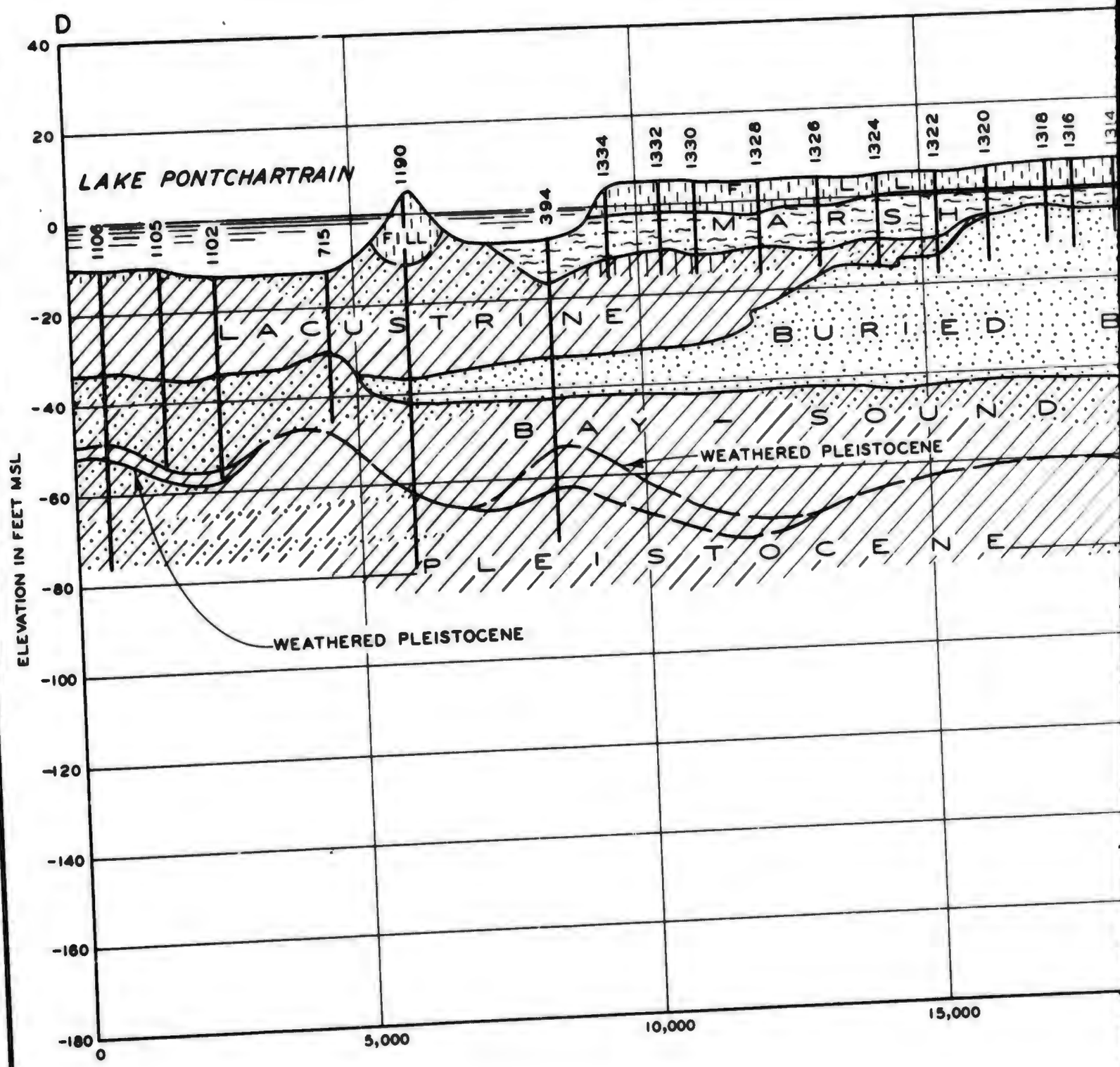
SECTION C-C'

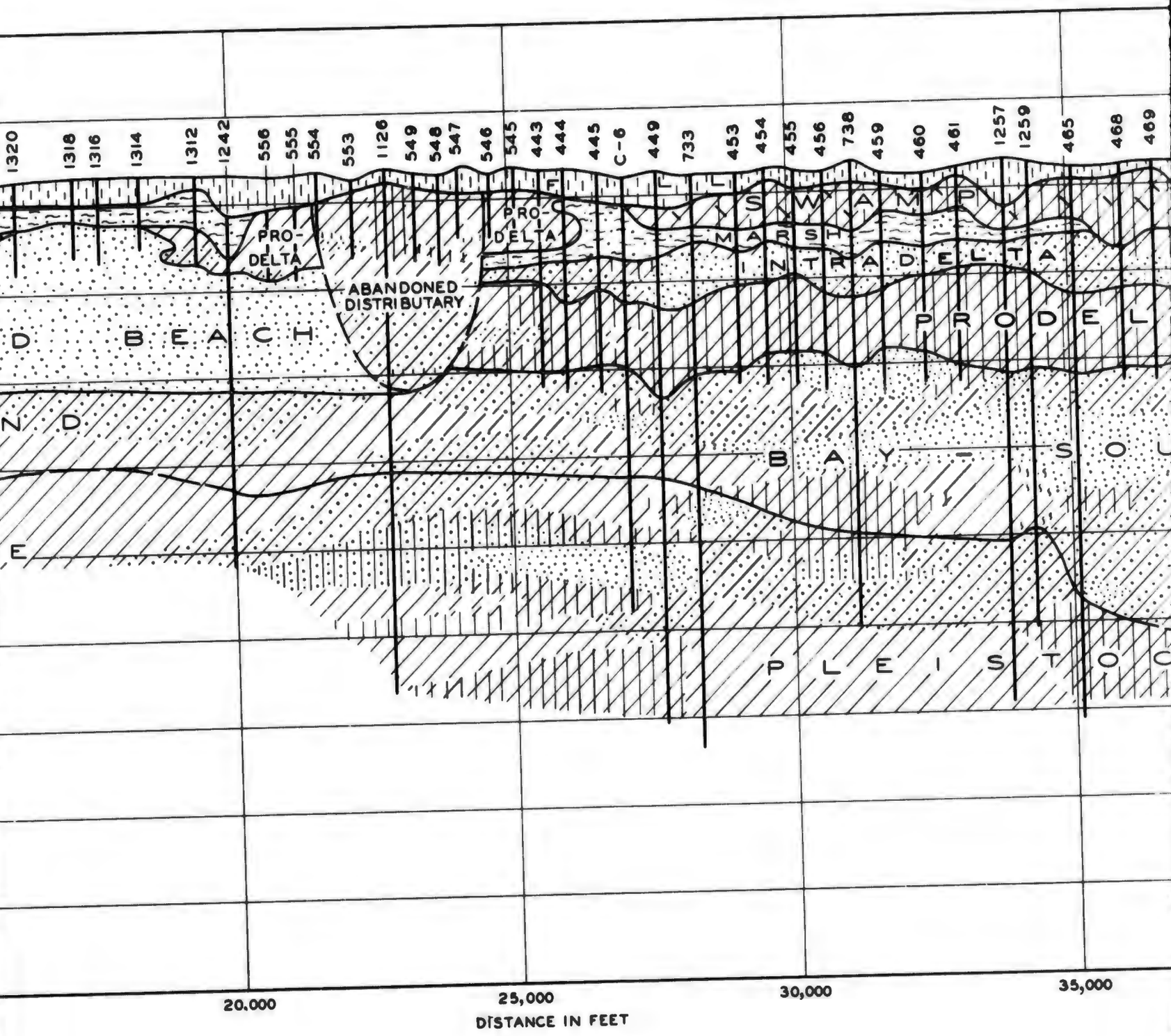
LAKE PONTCHARTRAIN

SHEET 2 OF 2

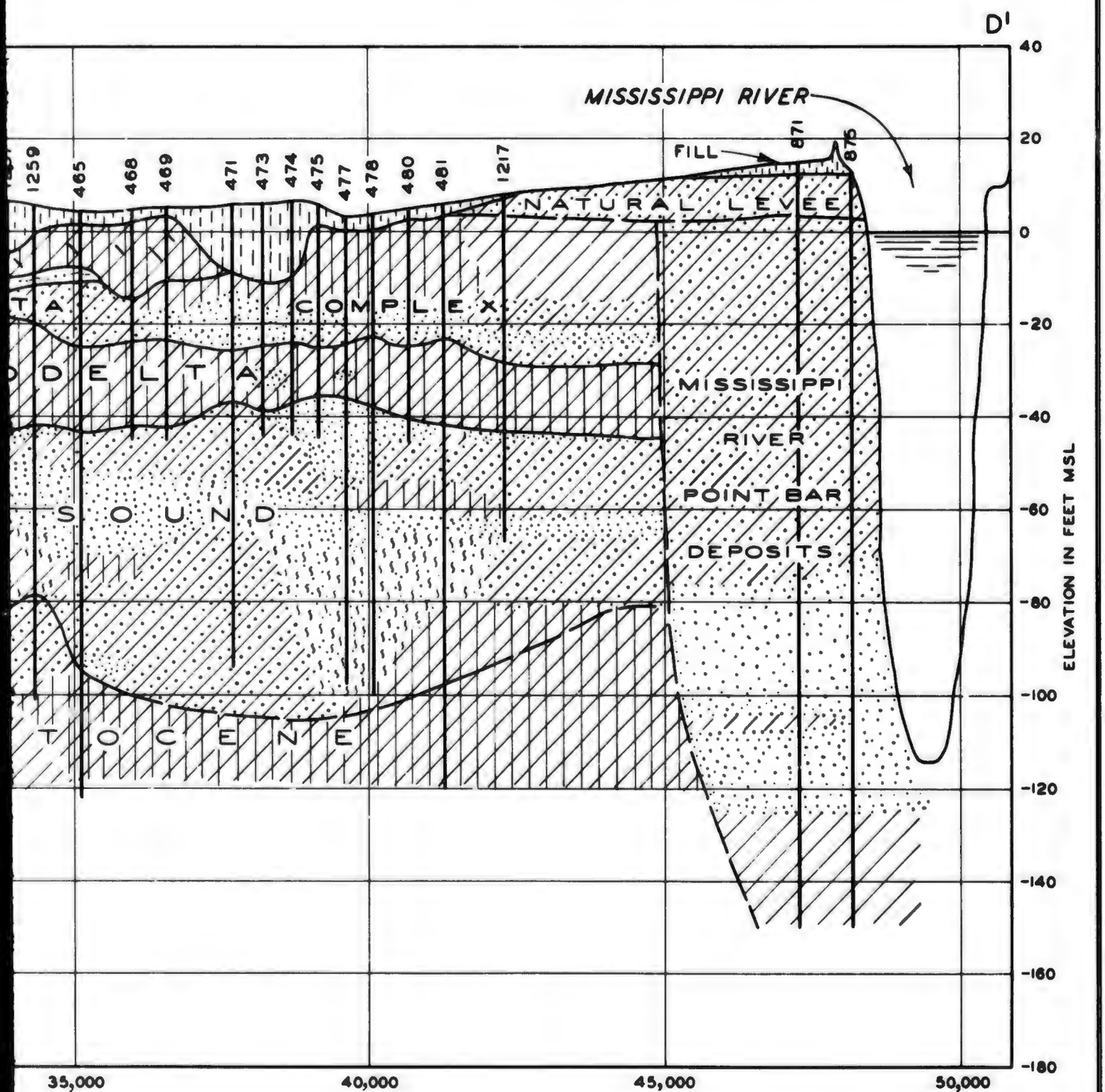
PLATE 14A

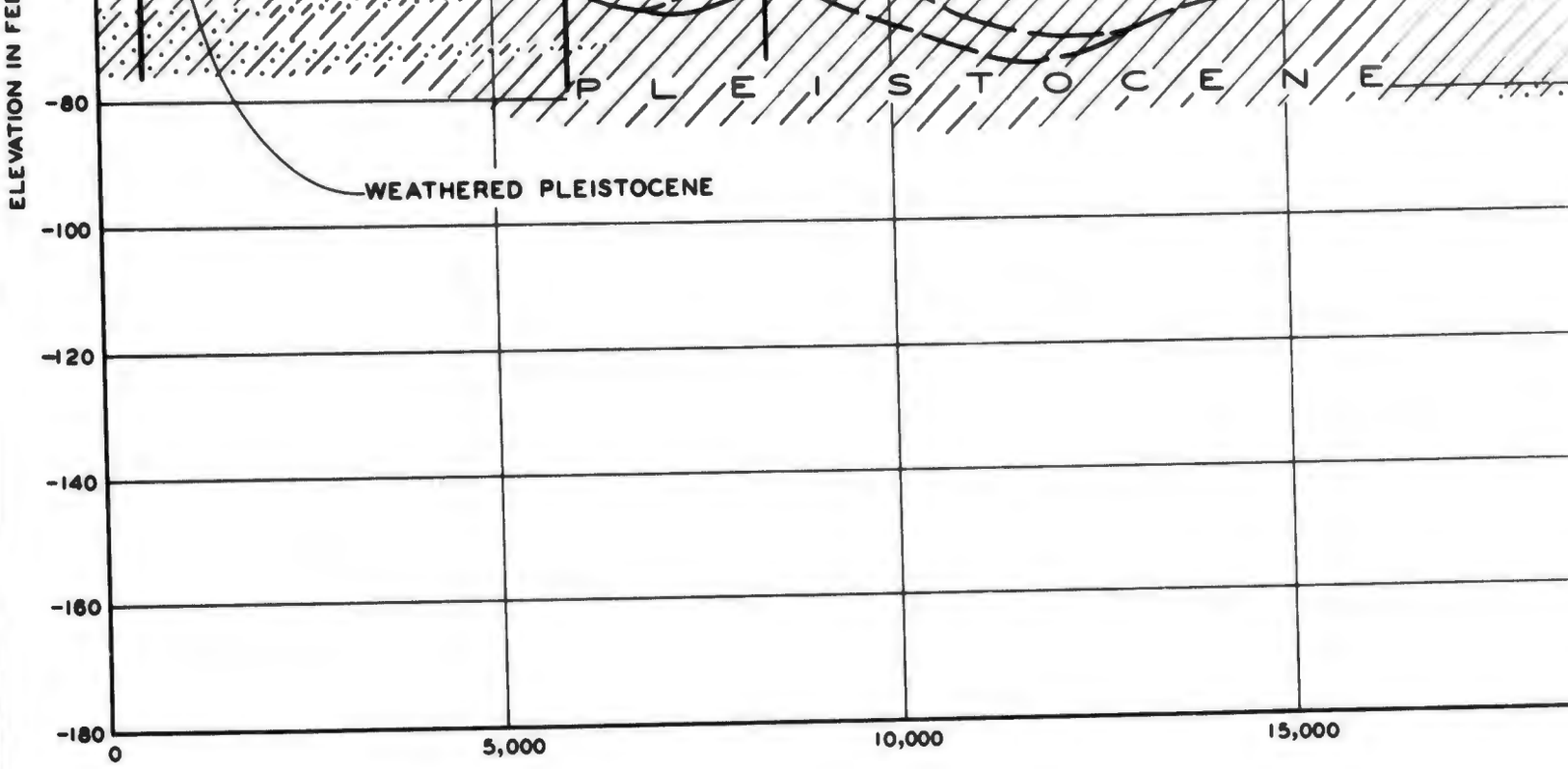
6


D
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
ELEVATION IN FEET MSL
0
5,000
10,000
15,000
LAKE PONTCHARTRAIN
1190
394
1334
1332
1330
1328
1326
1324
1322
1320
1318
1316
1314
1108
1105
1102
715
FILL
MARSH
LACUSTRINE
BURIED
BAY
SOUND
PLEISTOCENE
WEATHERED PLEISTOCENE
WEATHERED PLEISTOCENE


1320
1318
1316
1314
1312
1242
556
555
554
553
1126
549
548
547
546
545
443
444
445
C-6
449
733
453
454
455
456
738
459
460
461
1257
1259
465
468
469
PRO-DELTA
PRO-DELTA
ABANDONED DISTRIBUTARY
SWAMP
MARSH
INTRADELTA
PRODELTA
BAY
PLEISTO
20,000
25,000
30,000
35,000
DISTANCE IN FEET

2


D'
MISSISSIPPI RIVER
FILL
871
876
1259
465
468
469
471
473
474
475
477
478
480
481
1217
NATURAL LEVEE
DELTA COMPLEX
MISSISSIPPI
RIVER
POINT BAR
DEPOSITS
SOUND
TOCENTE
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
ELEVATION IN FEET MSL
35,000
40,000
45,000
50,000

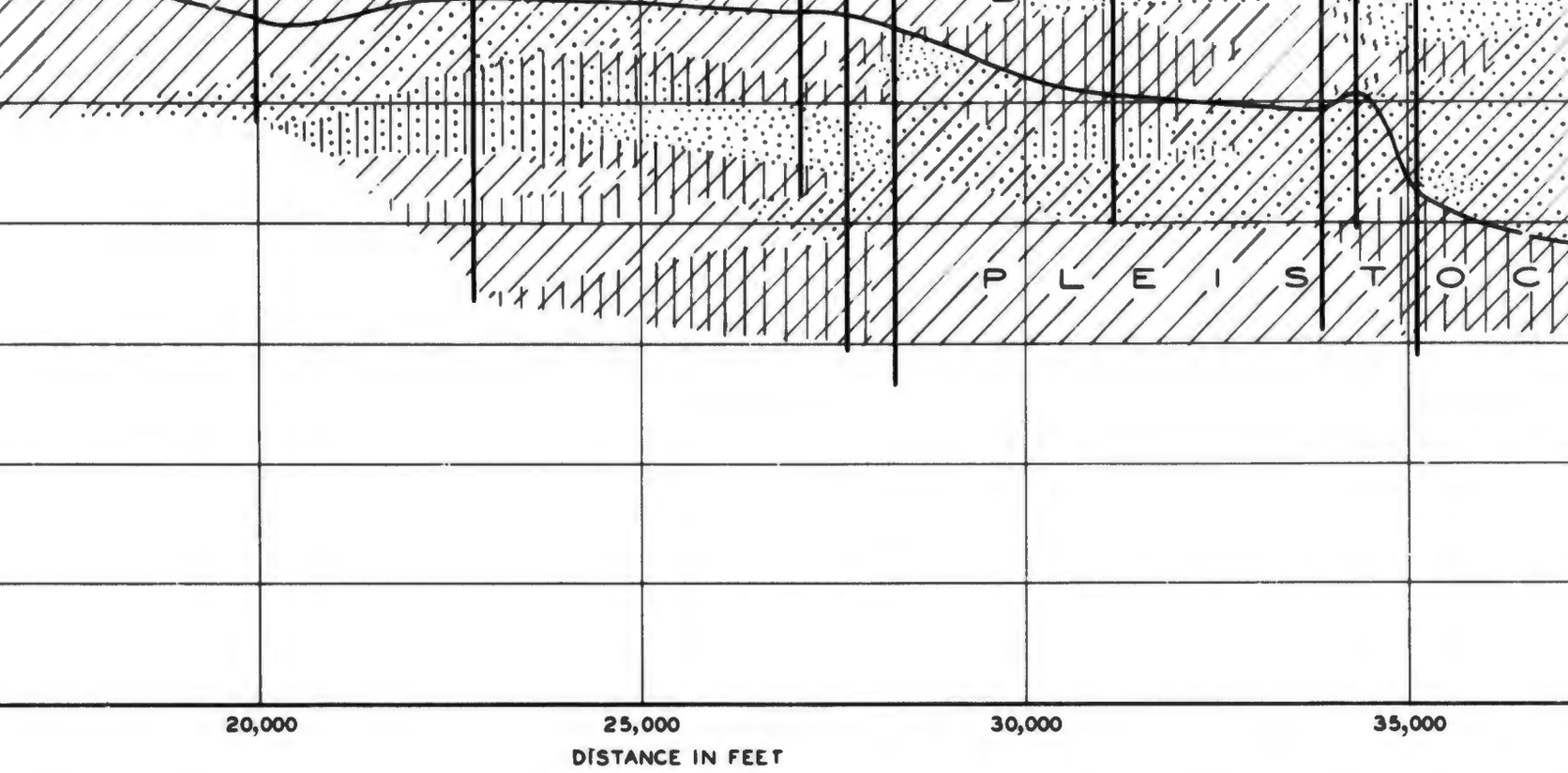


1

LEGEND

- FILL
- PEAT, HUMUS AND OTHER ORGANIC MATTER
- SAND
- CLAY
- CLAYEY SILT, SILTY CLAY
- SANDY CLAY,
- SILT
- SILTY SAND,
- SHELL
- LOGS

4



2

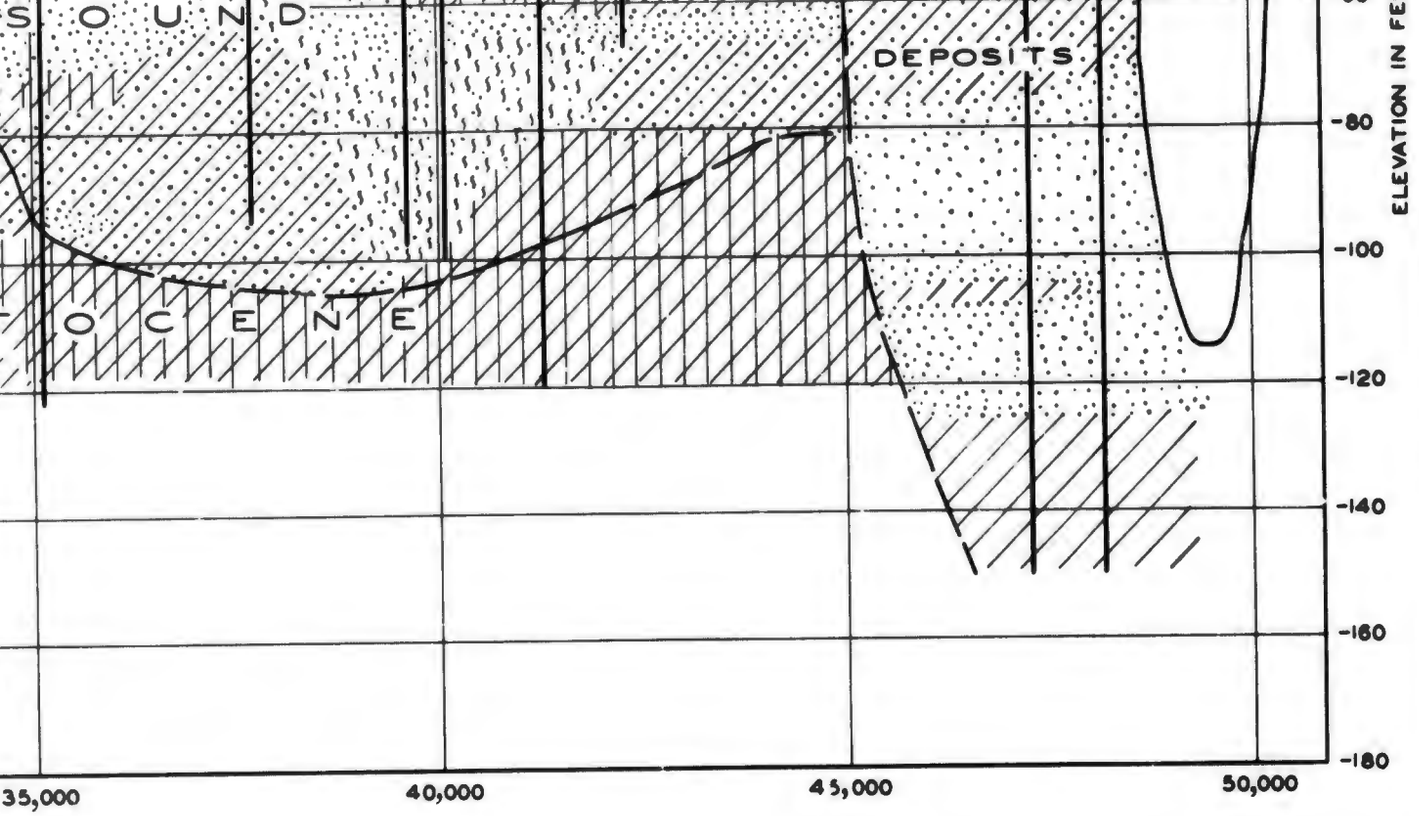
DY CLAY, CLAYEY SAND

Y SAND, SANDY SILT

LL

S

5



3

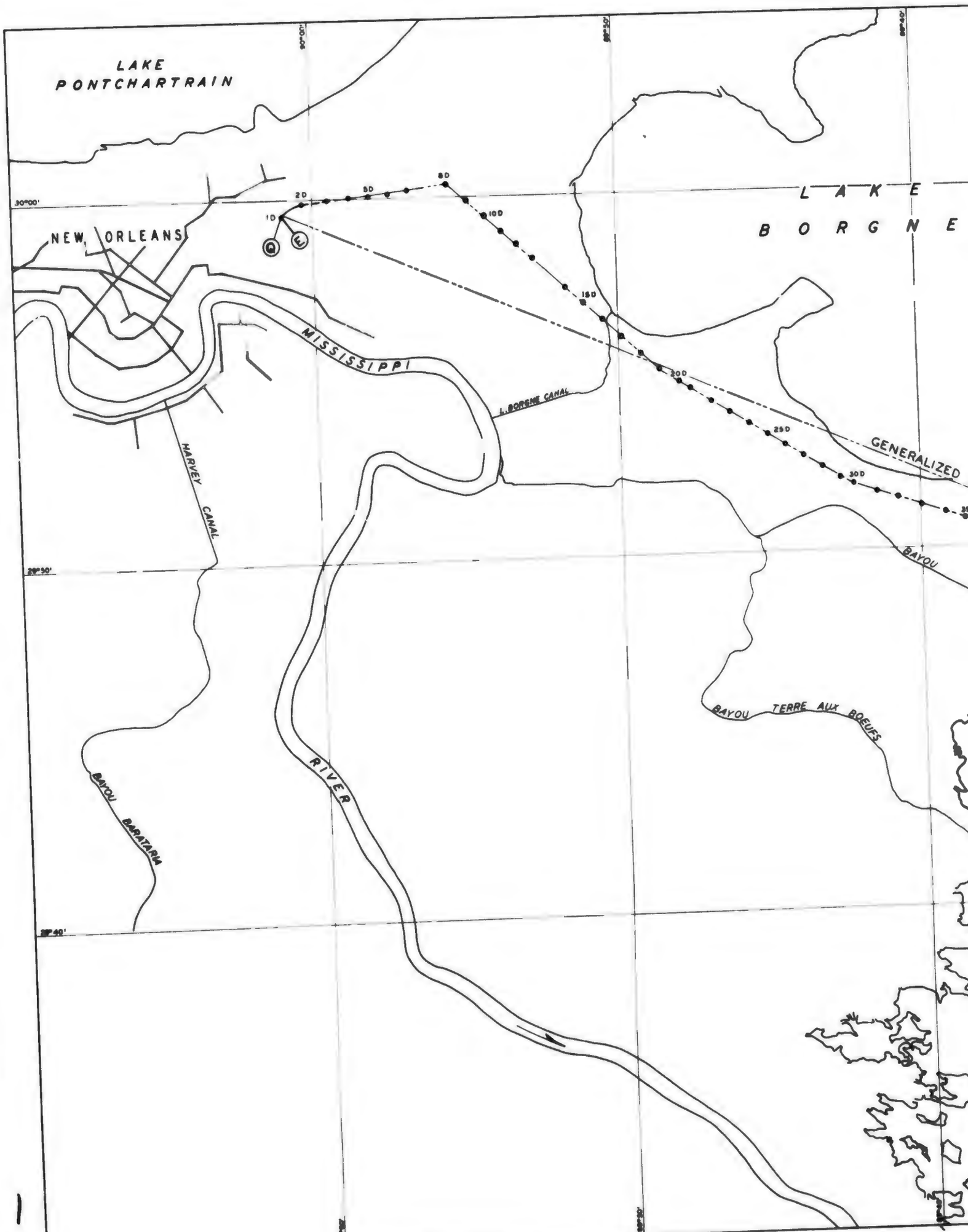
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

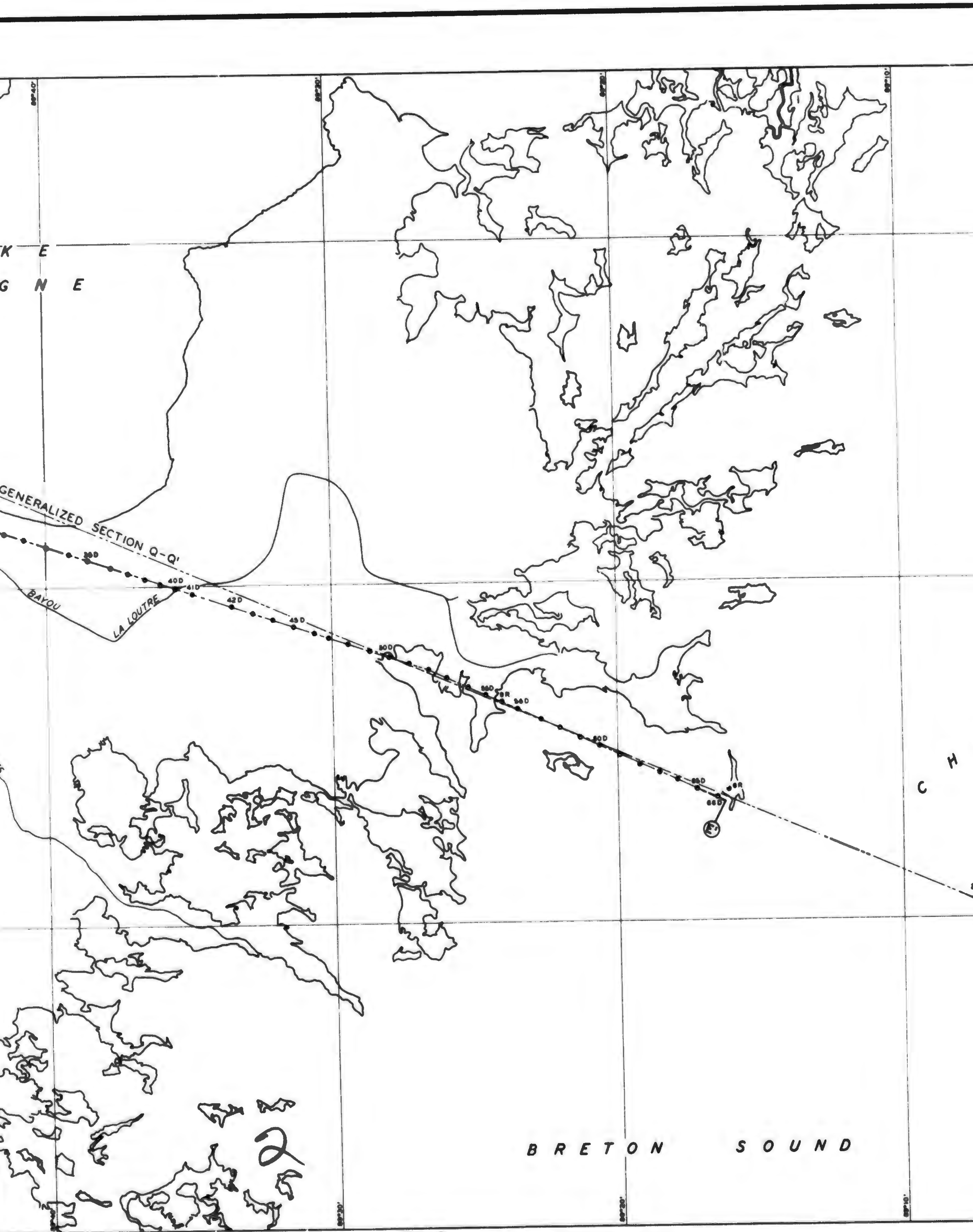
SECTION D-D'

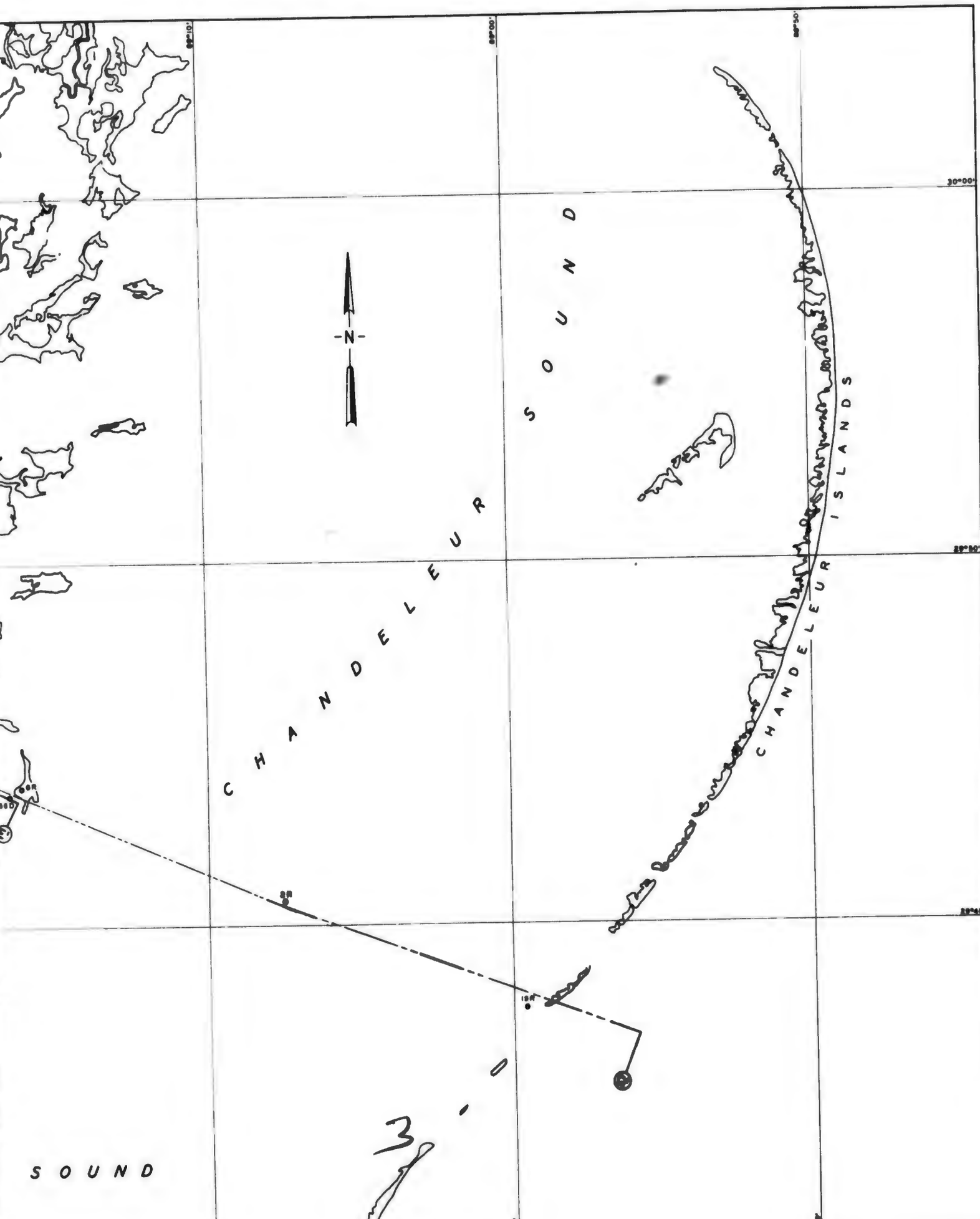
NEW ORLEANS

PLATE 15

6


LAKE
PONTCHARTRAIN
30°00'
NEW ORLEANS
1D
2D
5D
8D
10D
15D
20D
25D
30D
L A K E
B O R G N E
MISSISSIPPI
L. BORGNE CANAL
HARVEY CANAL
GENERALIZED
BAYOU
29°50'
BAYOU TERRE AUX BOEUFS
RIVER
BAYOU BARATARIA
29°40'

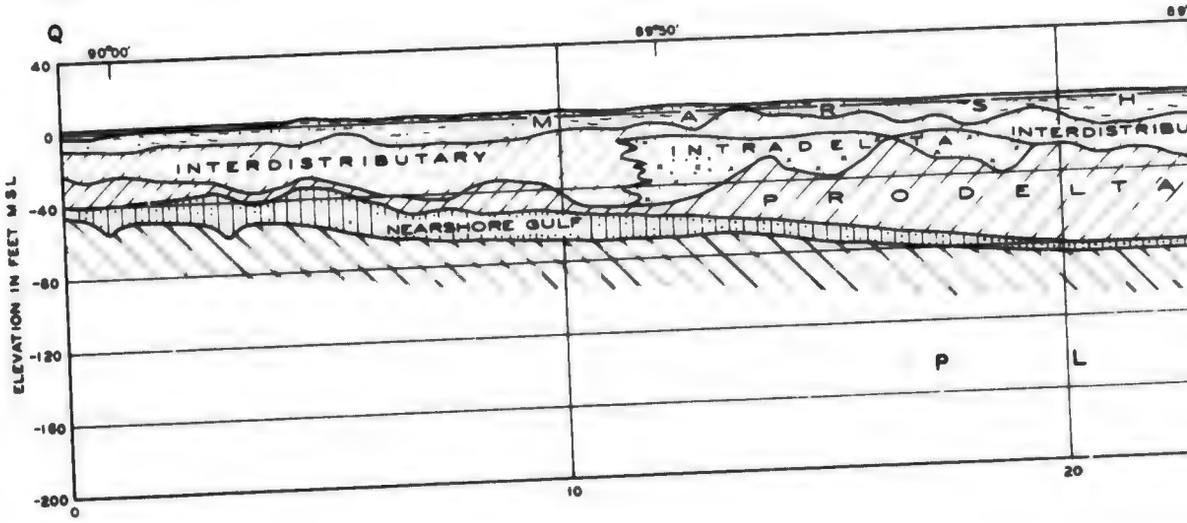

K E
G N E
GENERALIZED SECTION Q-Q'
BAYOU
LA LOUTRE
40D
41D
42D
43D
50D
C H
BRETON SOUND
2

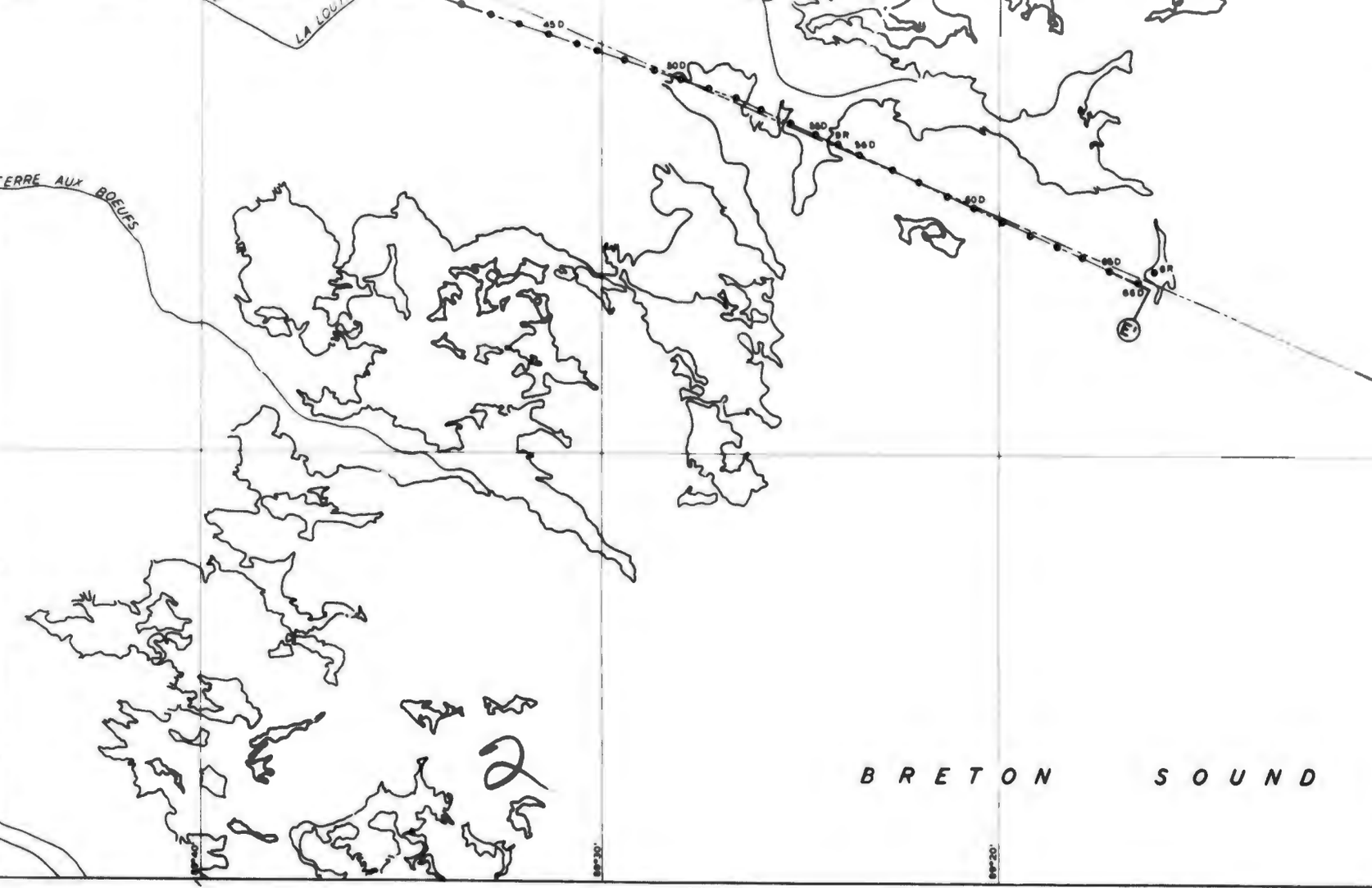

89°10'
89°00'
88°50'
30°00'
29°50'
29°40'
-N-
CHANDELEUR SOUND
CHANDELEUR ISLANDS
SOUND
3

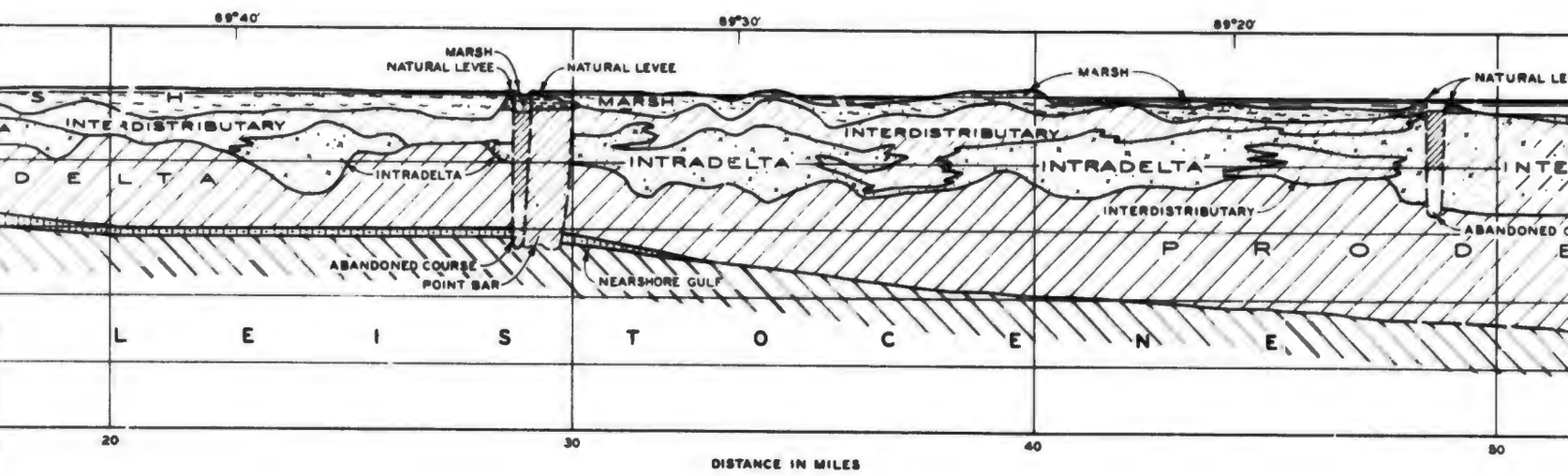
BAYOU BARATARIA

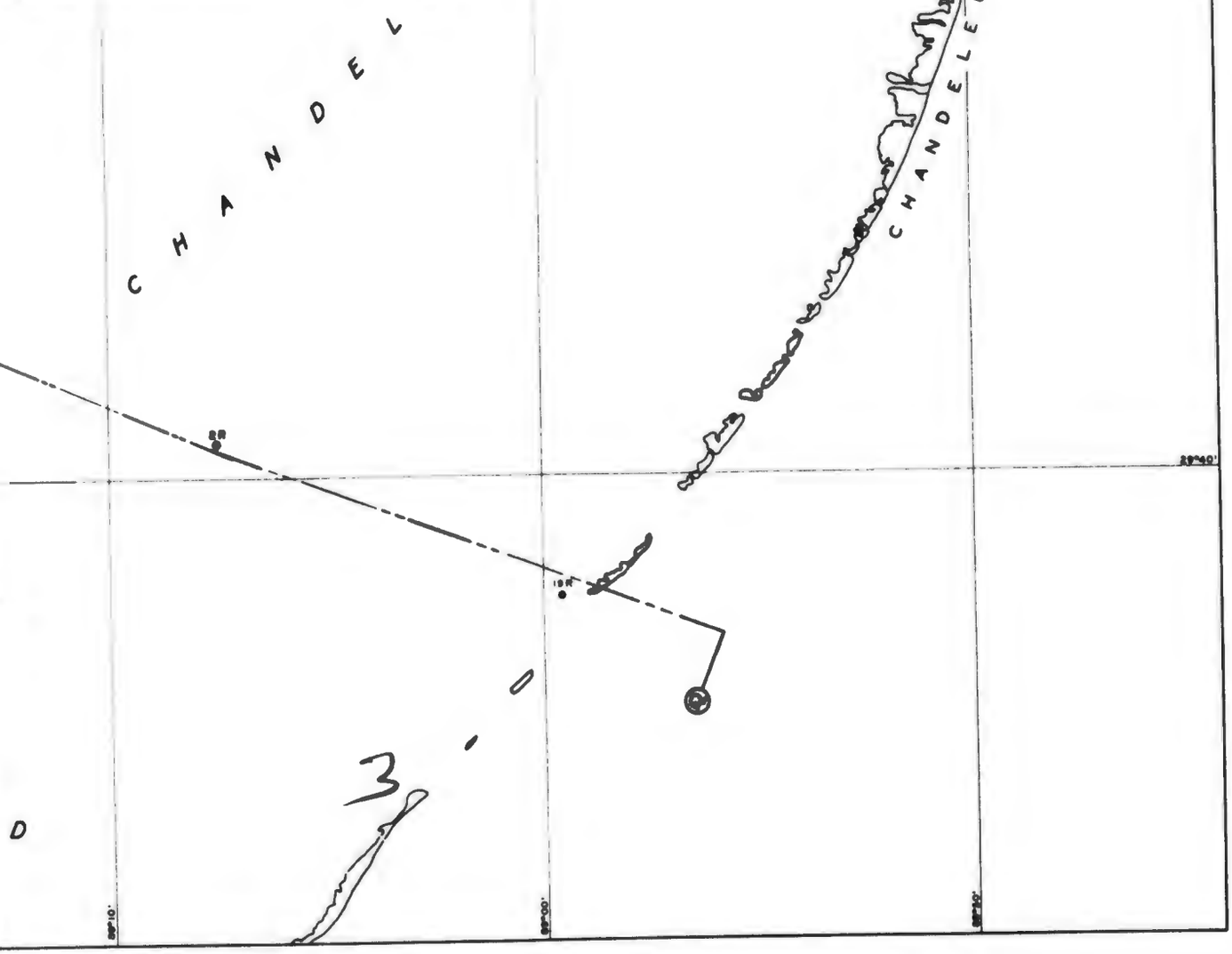
RIVER

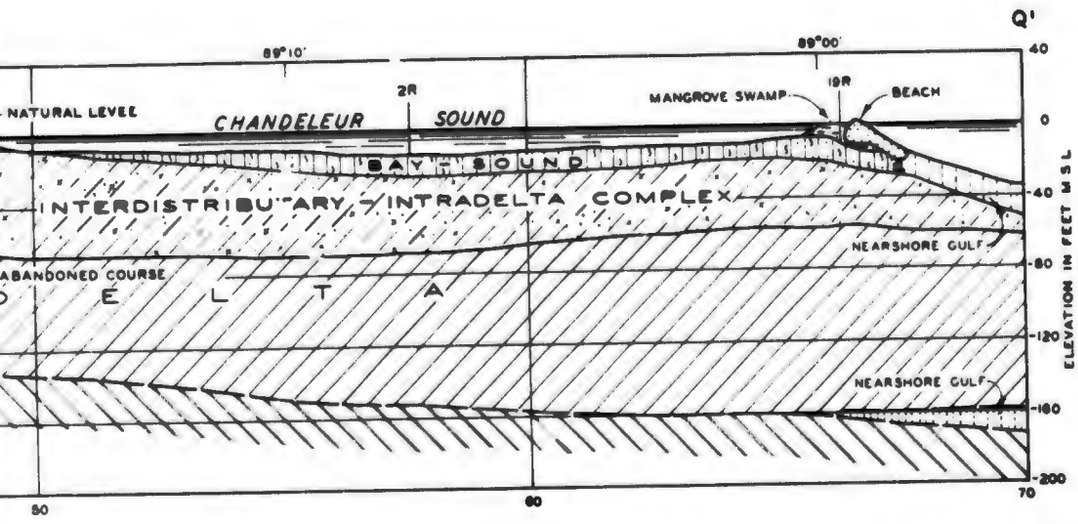
BAYOU TERRE AUX BOEUFS




LA LOUISIANE
TERRE AUX BOEUFS
BRETON SOUND
SCALE
0 2 4 6 8 10 MILES


89°40'
89°30'
89°20'
MARSH
NATURAL LEVEE
NATURAL LEVEE
MARSH
MARSH
NATURAL LE
INTERDISTRIBUTARY
INTERDISTRIBUTARY
INTRADELTA
INTRADELTA
INTRADELTA
INTERDISTRIBUTARY
ABANDONED COURSE
POINT BAR
NEARSHORE GULF
P R O D
L E I S T O C E N E
20
30
40
50
DISTANCE IN MILES



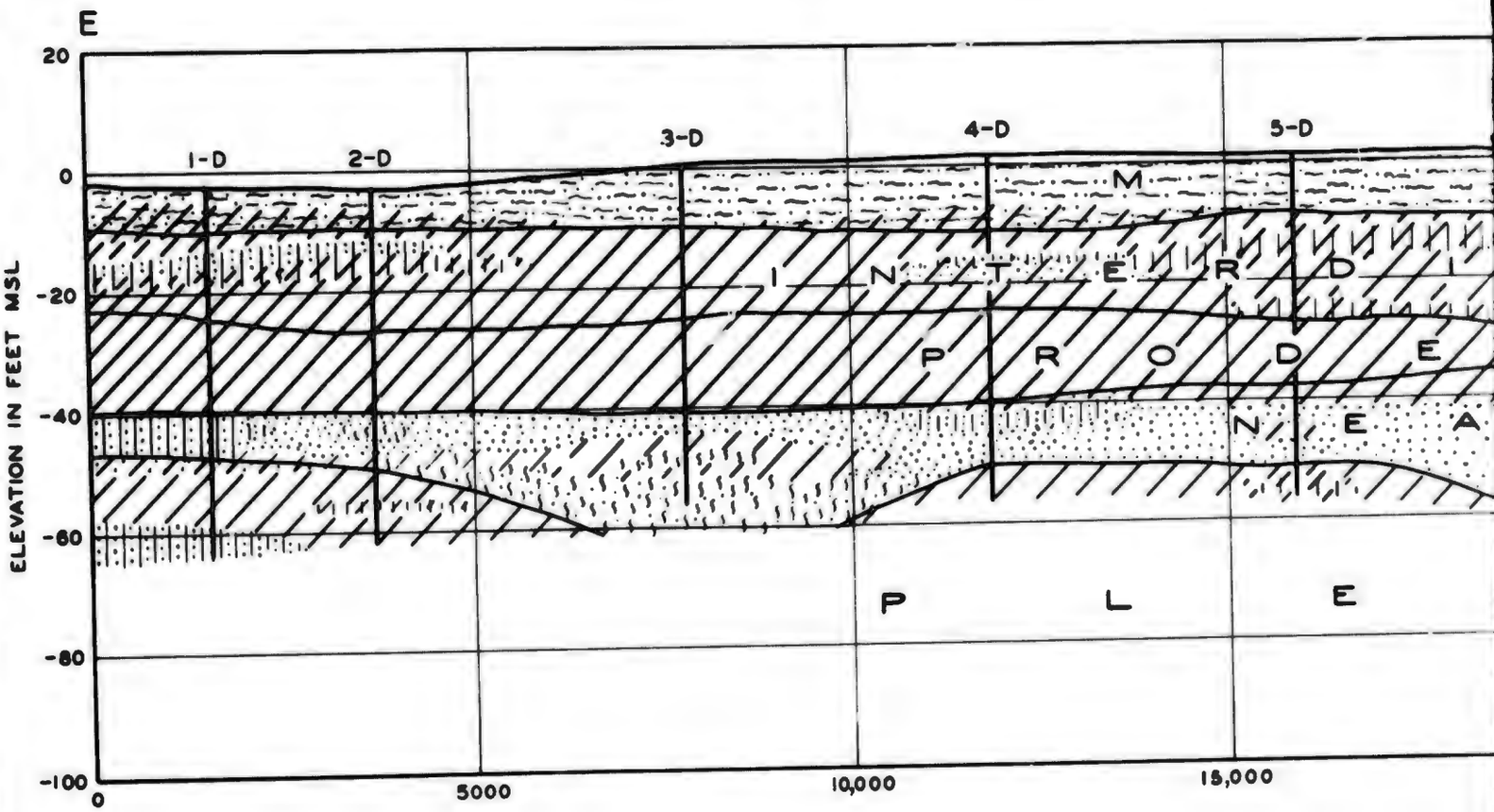


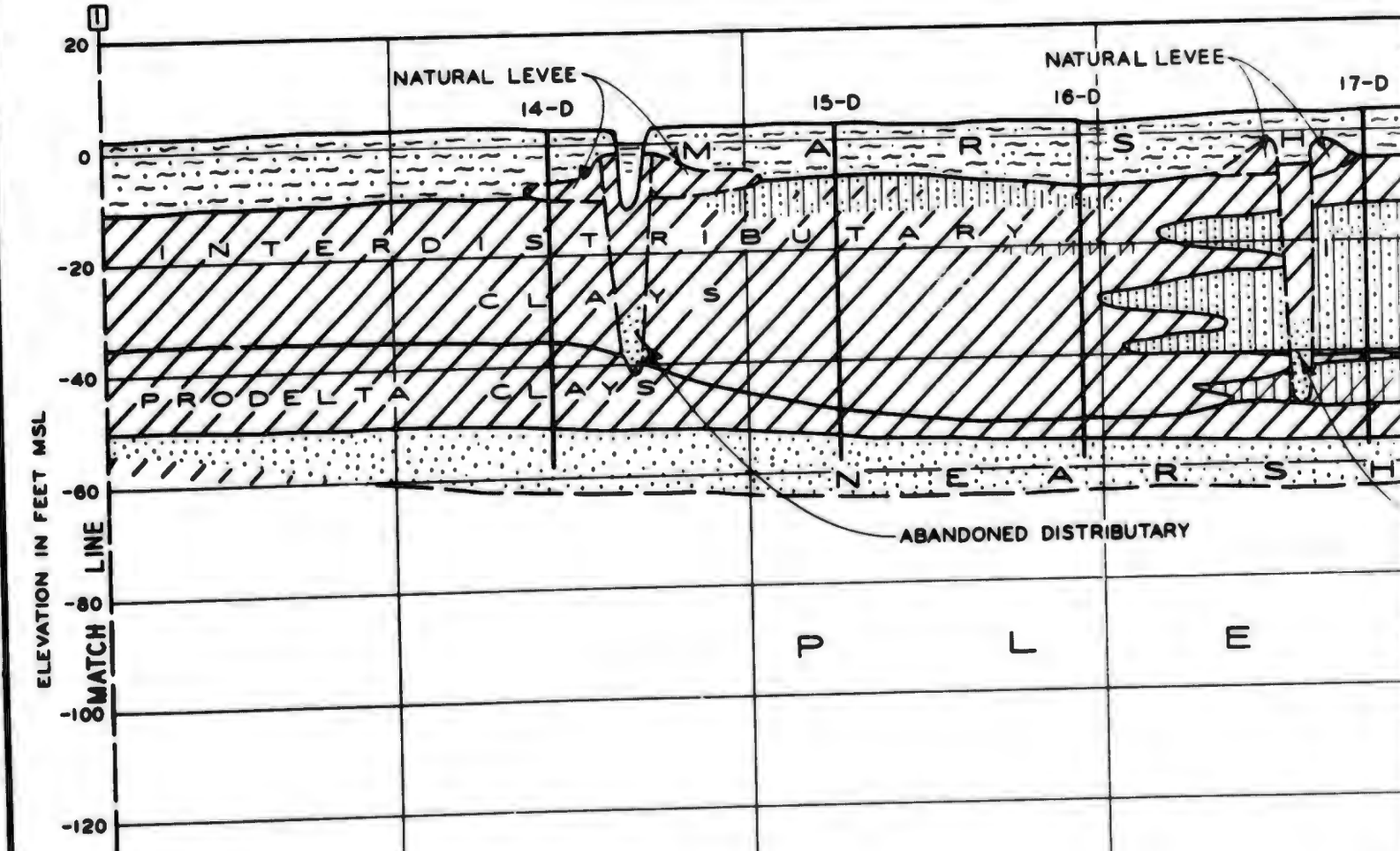
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

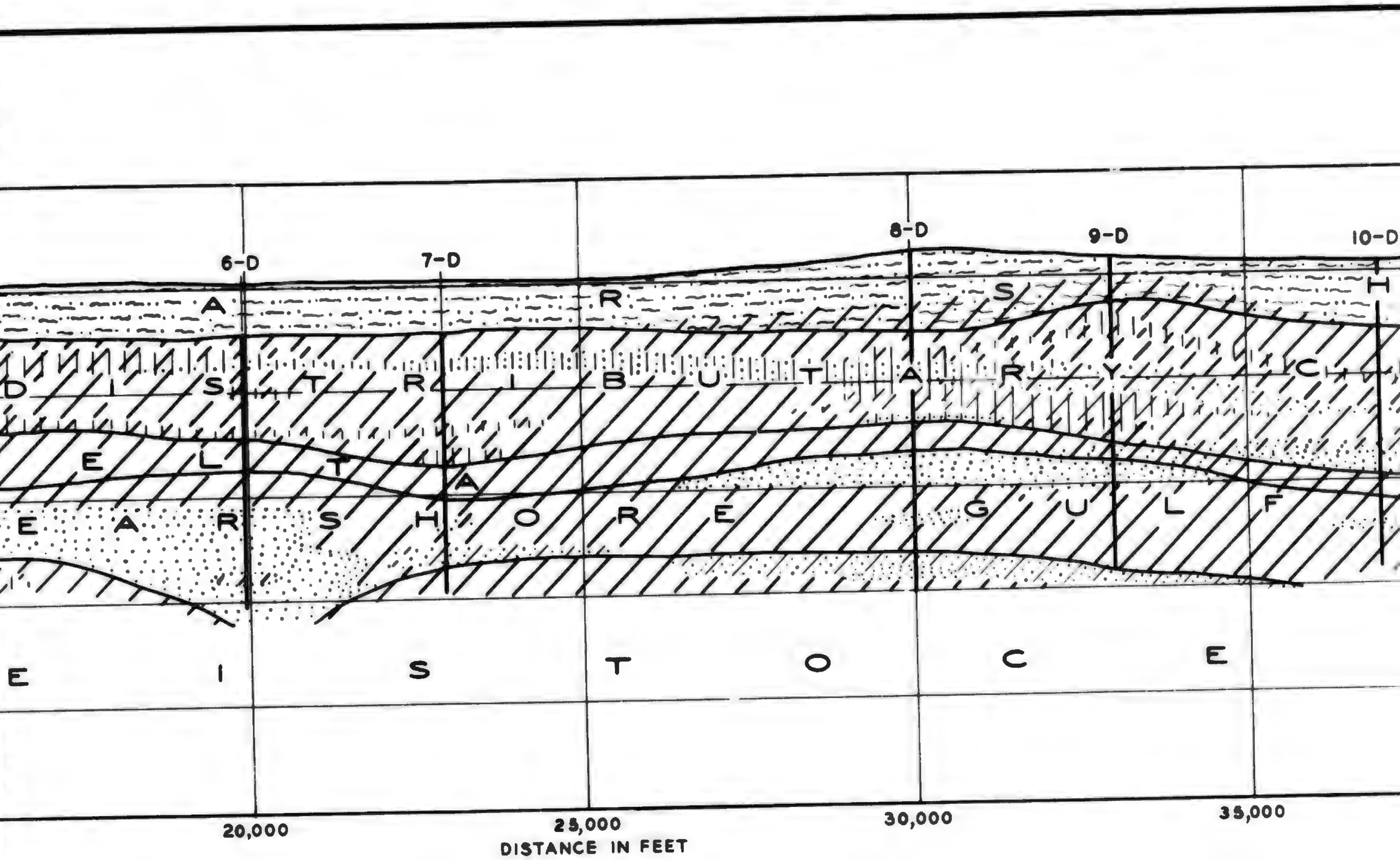
LOCATION MAP

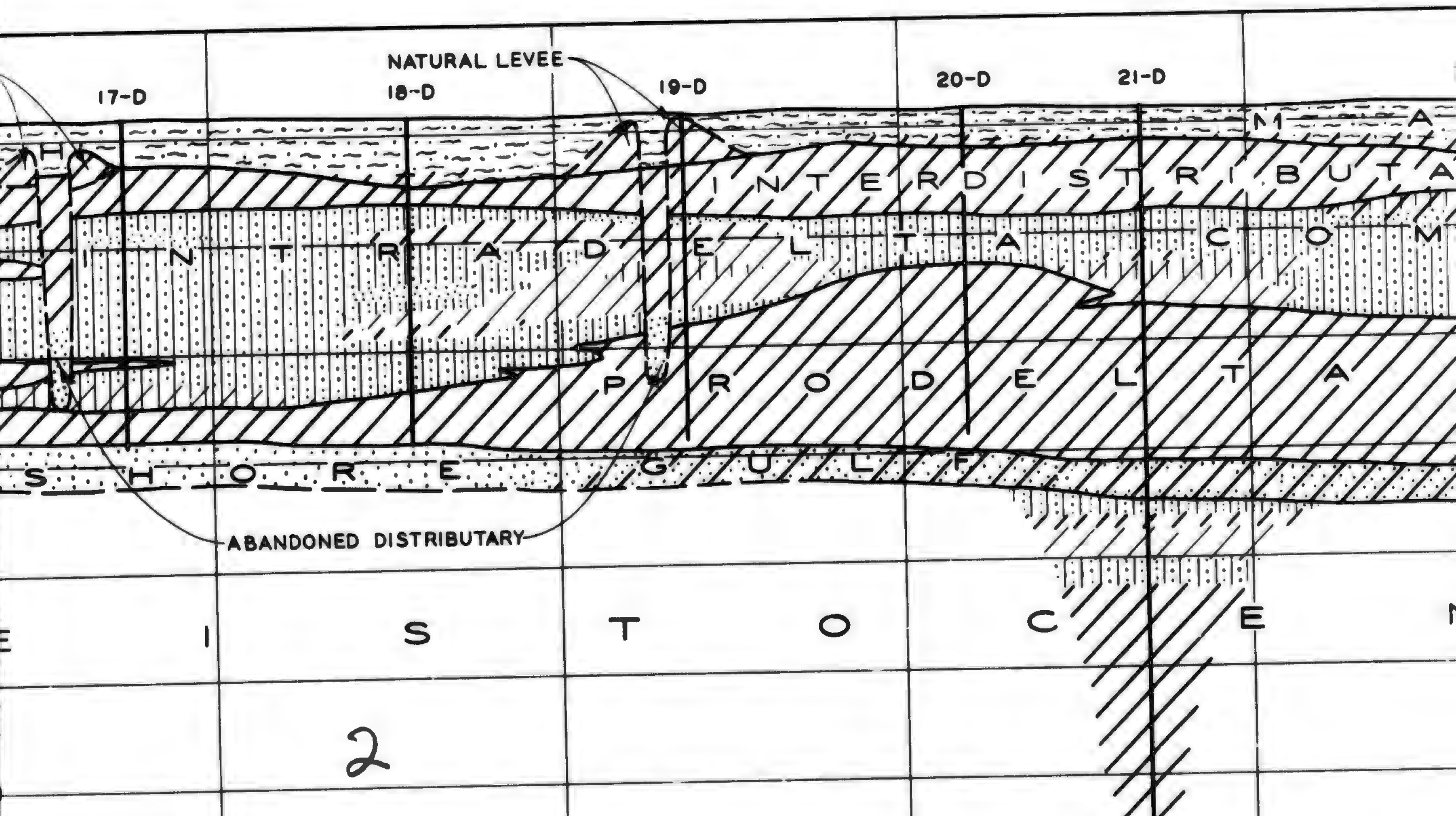
NEW ORLEANS-CHANDELEUR ISLANDS BORINGS AND GENERALIZED SECTION Q-Q'

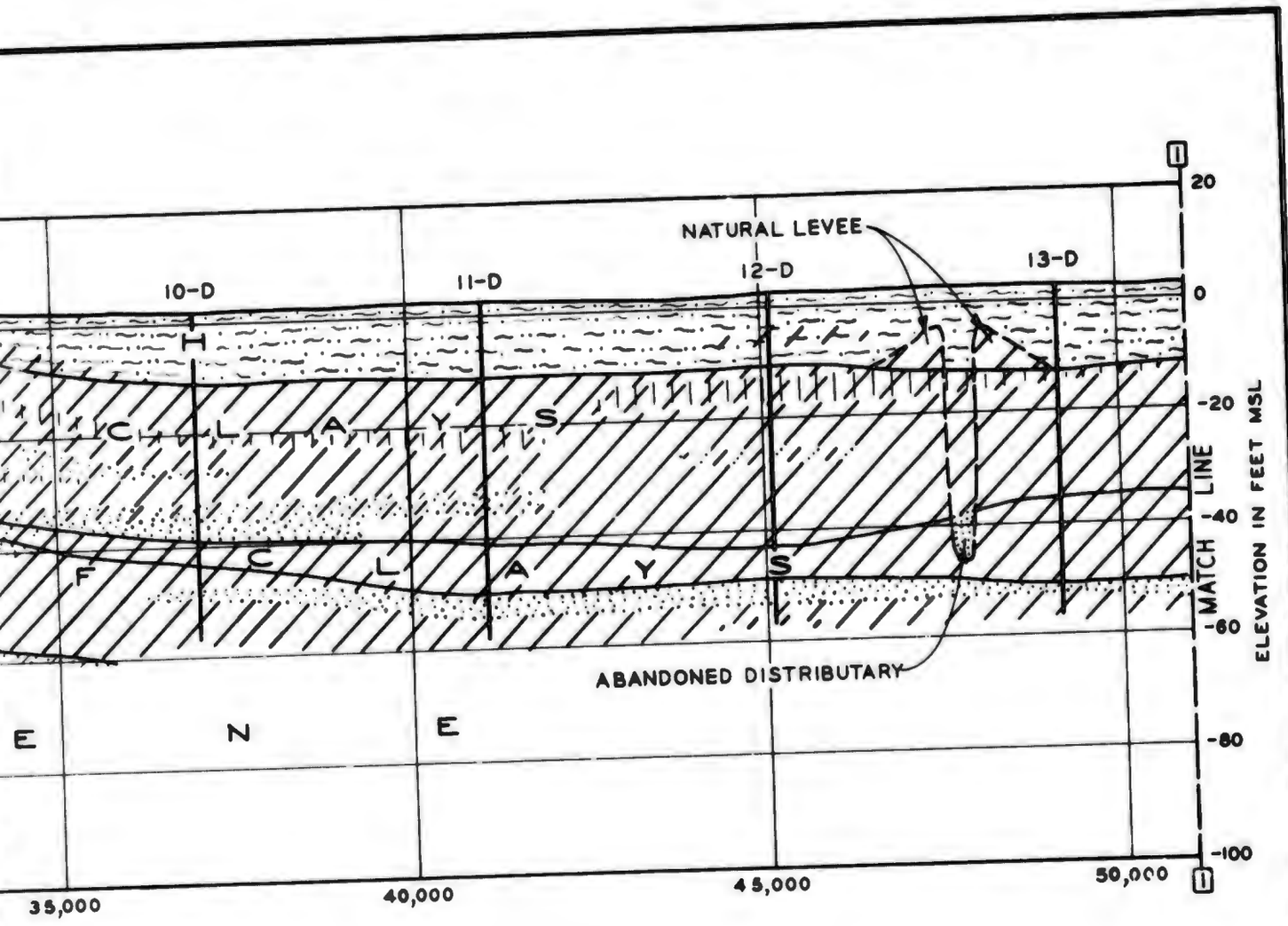
PLATE 16

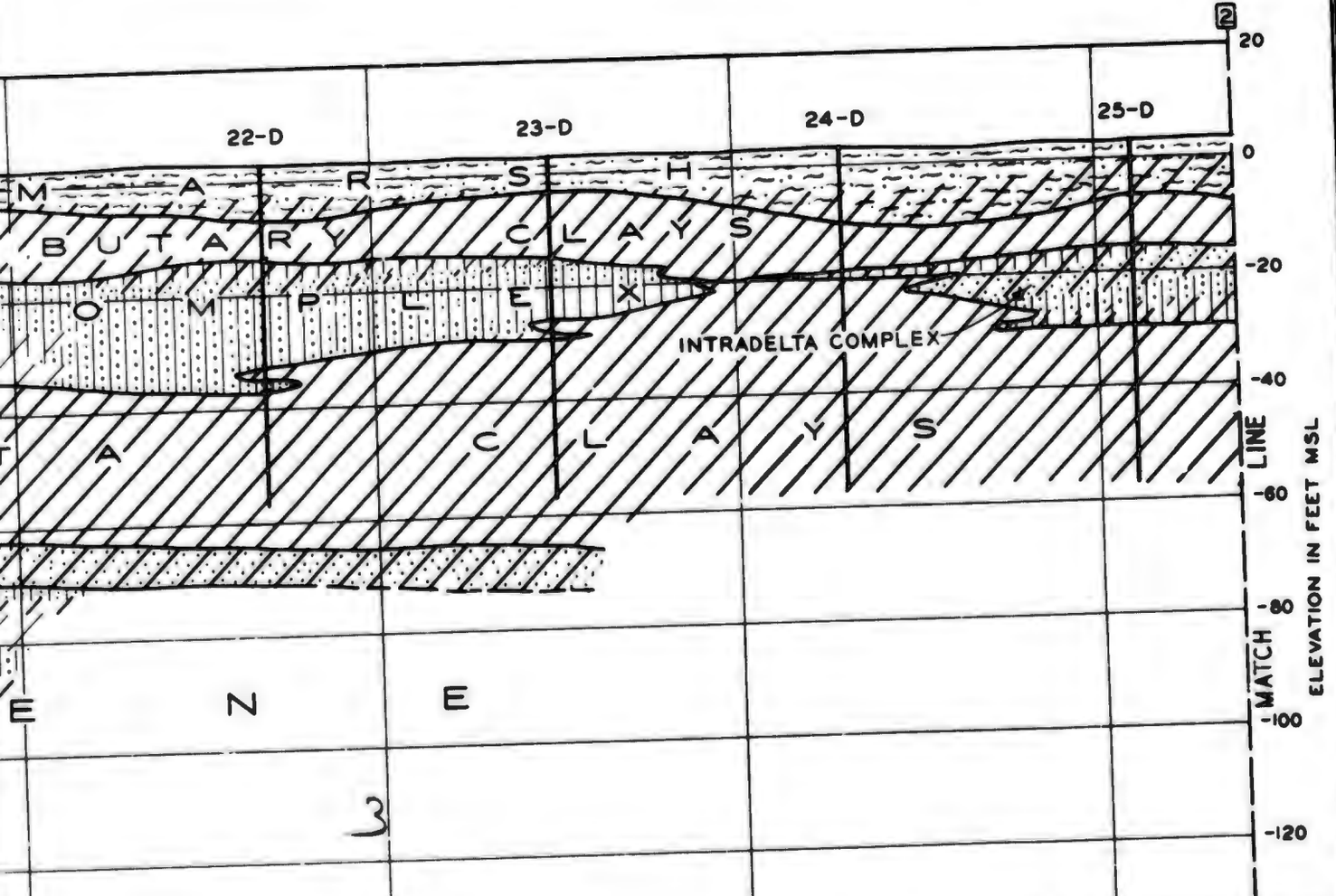

E
20
0
-20
-40
-60
-80
-100
ELEVATION IN FEET MSL
1-D
2-D
3-D
4-D
5-D
M
I N T E R D I
P R O D E
N E A
P L E
0
5000
10,000
15,000

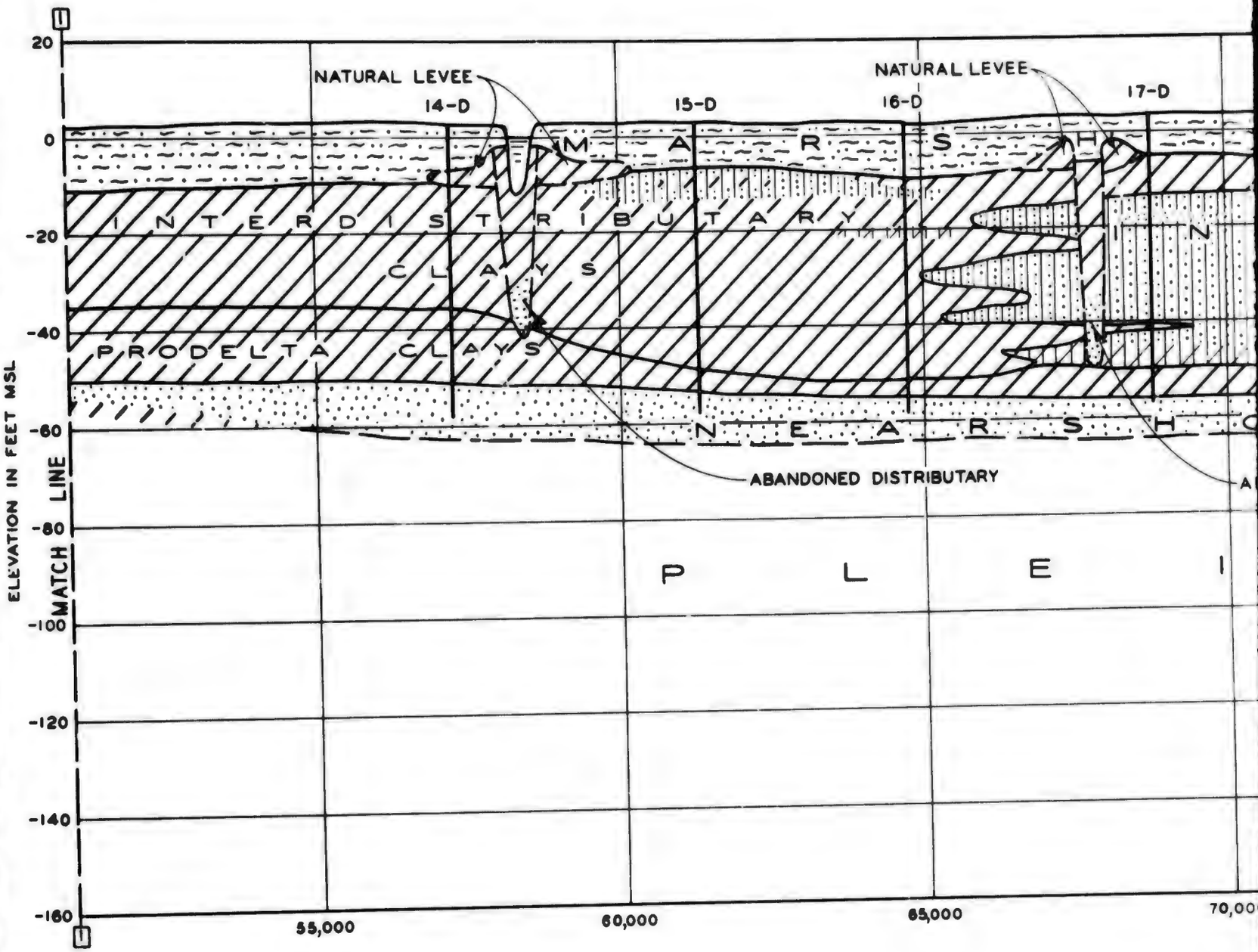

I
20
0
-20
-40
-60
-80
-100
-120
ELEVATION IN FEET MSL
MATCH LINE
NATURAL LEVEE
14-D
15-D
16-D
NATURAL LEVEE
17-D
M A R S H
I N T E R D I S T R I B U T A R Y
C L A Y S
PRODELTA CLAYS
N E A R S H
ABANDONED DISTRIBUTARY
P L E


6-D
7-D
8-D
9-D
10-D
20,000
25,000
30,000
35,000
DISTANCE IN FEET


NATURAL LEVEE
17-D
18-D
19-D
20-D
21-D
ABANDONED DISTRIBUTARY

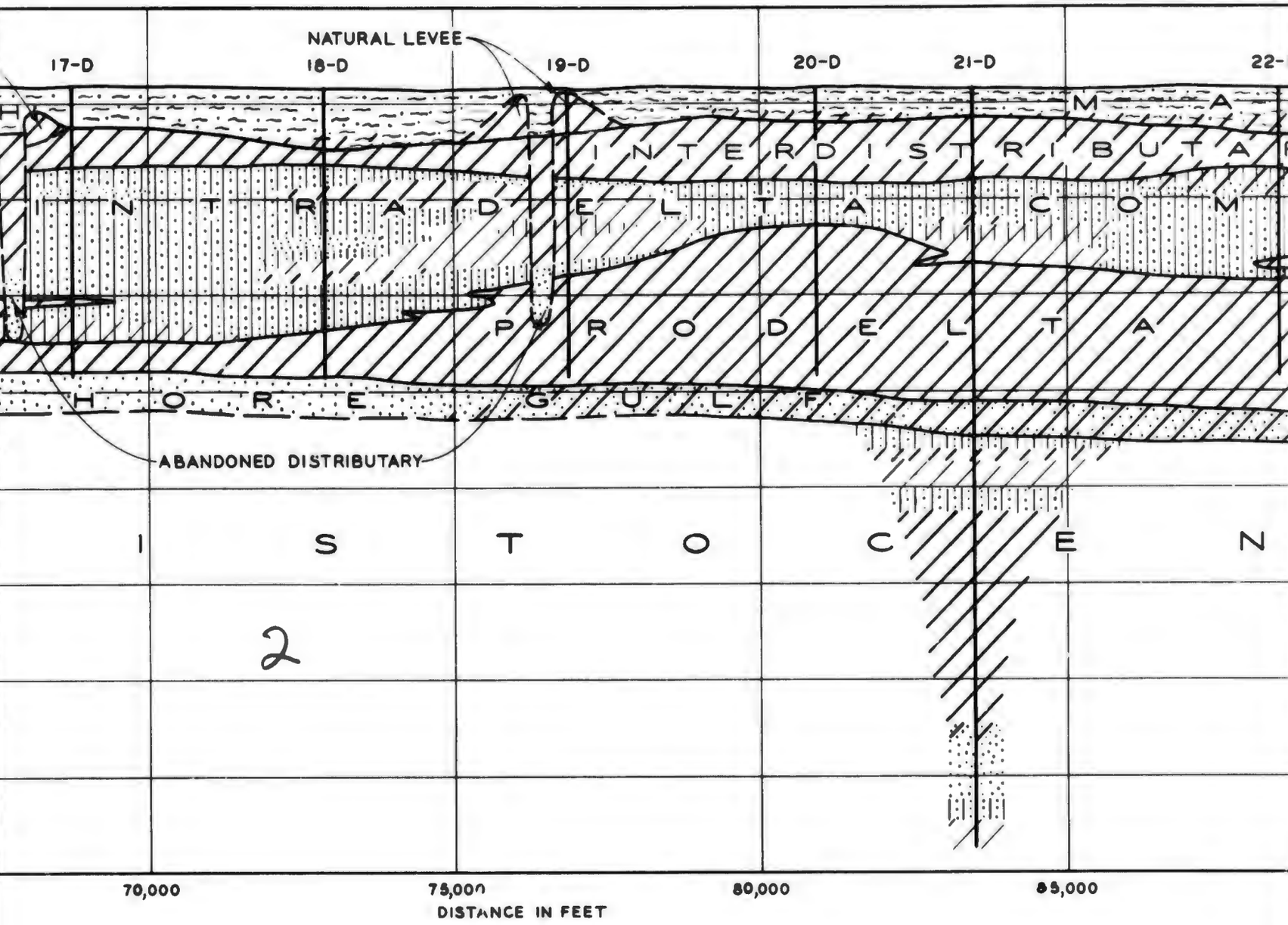

NATURAL LEVEE
10-D
11-D
12-D
13-D
H
C L A Y S
F C L A Y S
ABANDONED DISTRIBUTARY
E N E
35,000
40,000
45,000
50,000
20
0
-20
-40
-60
-80
-100
MATCH LINE
ELEVATION IN FEET MSL


22-D
23-D
24-D
25-D
M A R S H
B U T A R Y C L A Y S
O M P L E X
INTRADELTA COMPLEX
C L A Y S
E N E
20
0
-20
-40
-60
-80
-100
-120
MATCH LINE
ELEVATION IN FEET MSL



LEGEND

- PEAT, HUMUS, AND OTHER ORGANIC MATTER
- HIGHLY ORGANIC CLAY
- LEAN CLAY
- FAT CLAY
- SILT
- SAND
- CLAYEY SILT, SILTY CLAY
- SANDY CLAY, CLAYEY SAND
- SILTY SAND, SANDY SILT
- SHELL

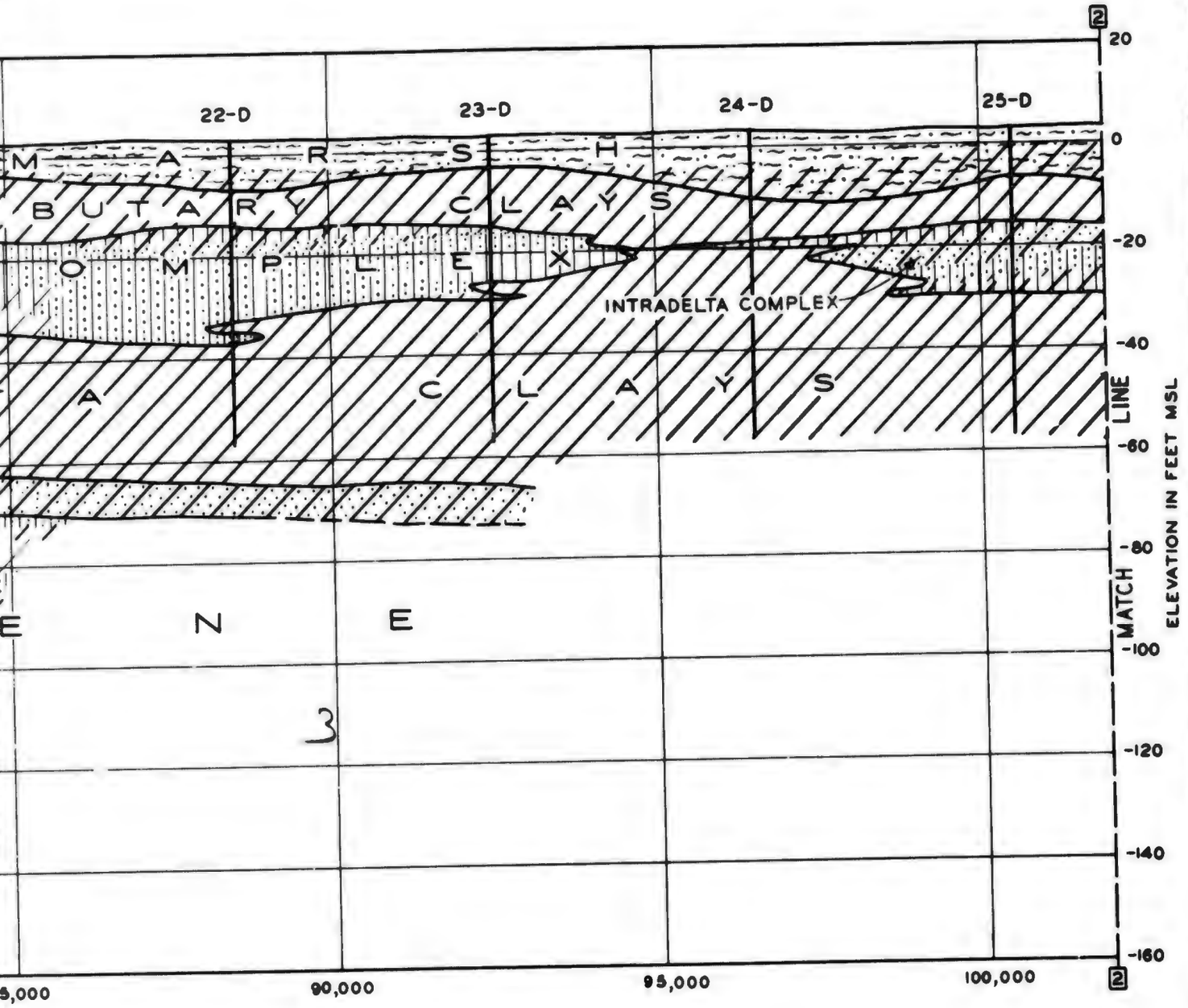


SILTY CLAY

CLAYEY SAND

ANDY SILT

5



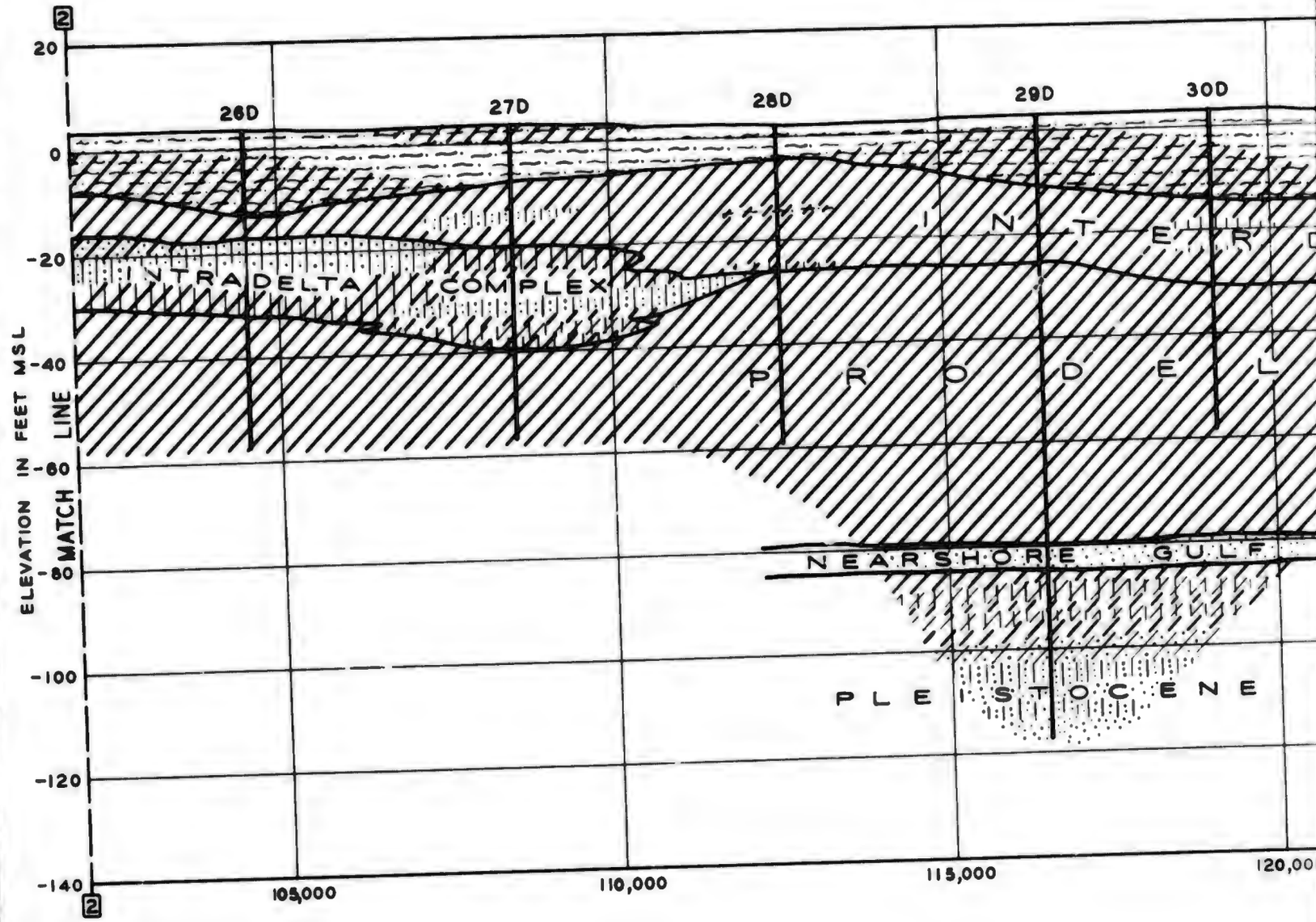
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

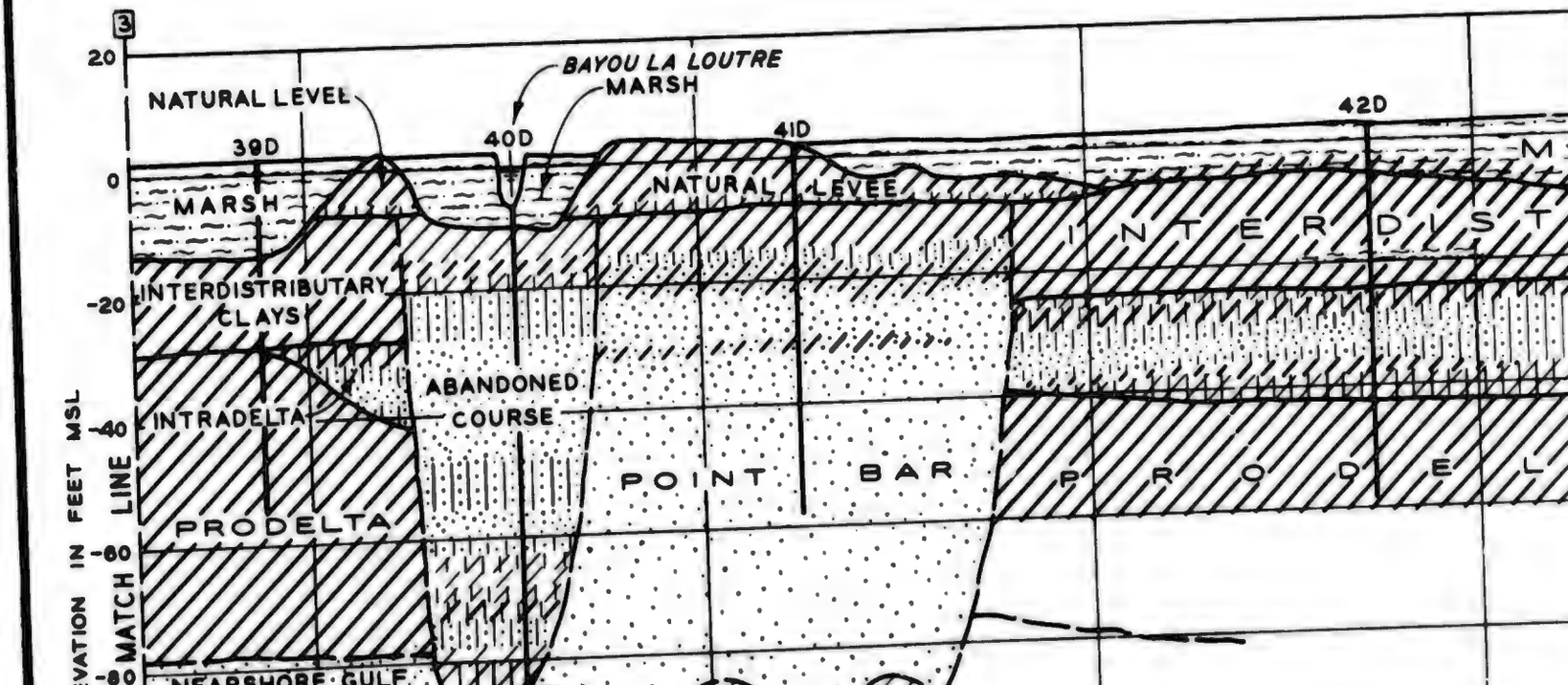
SECTION E-E'

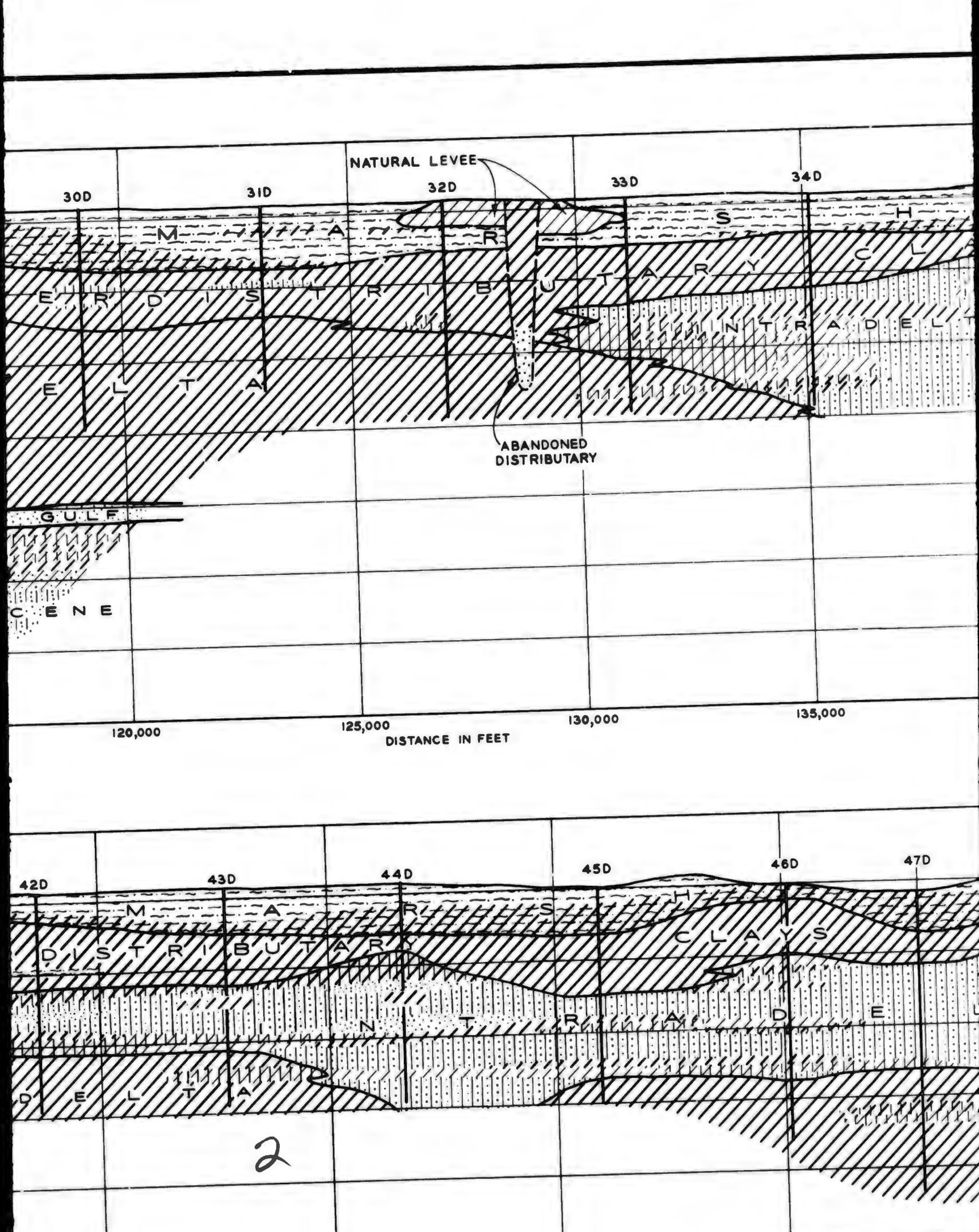
NEW ORLEANS TO CHANDELEUR SOUND

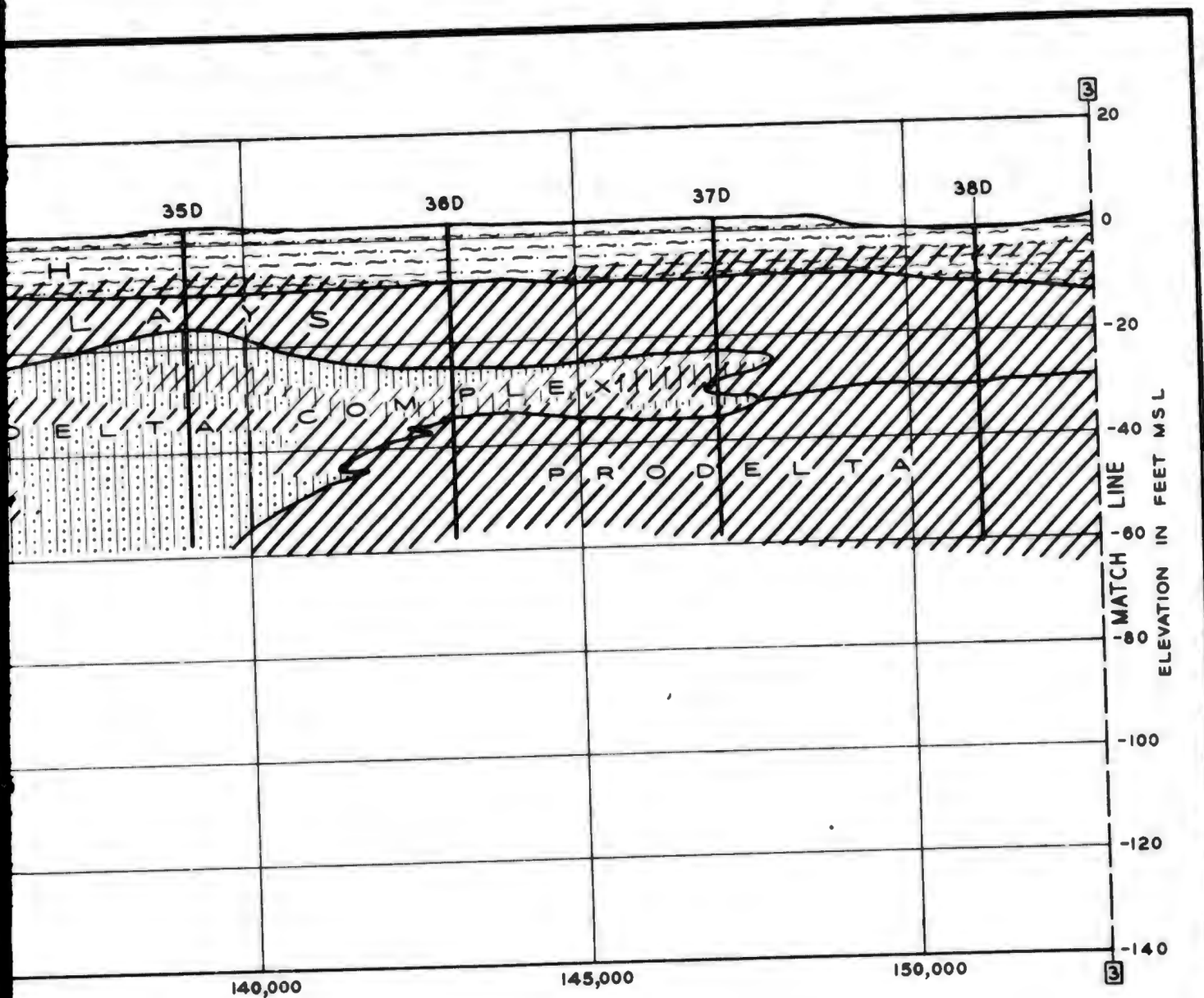
SHEET 1 OF 3

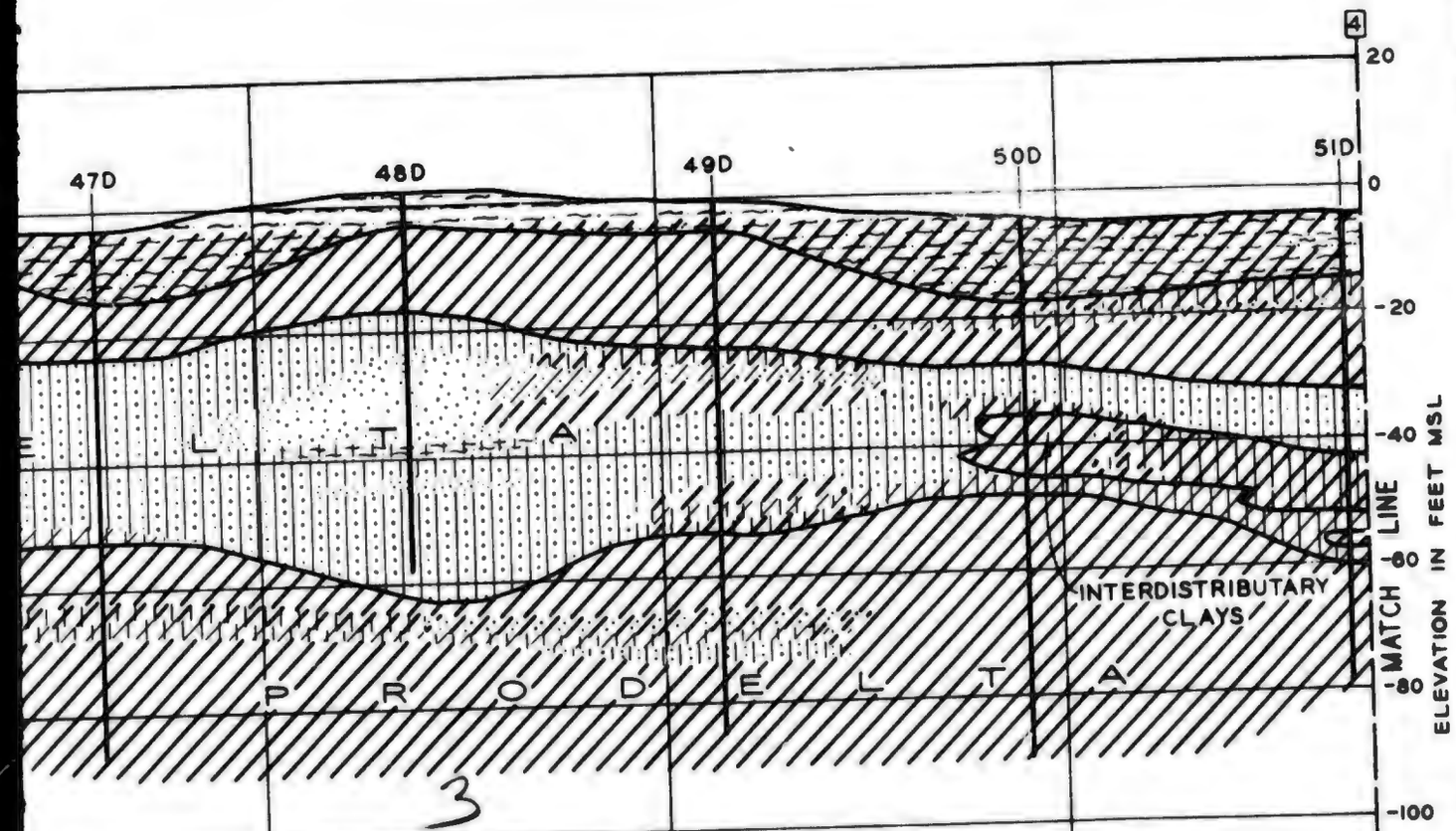
PLATE 17

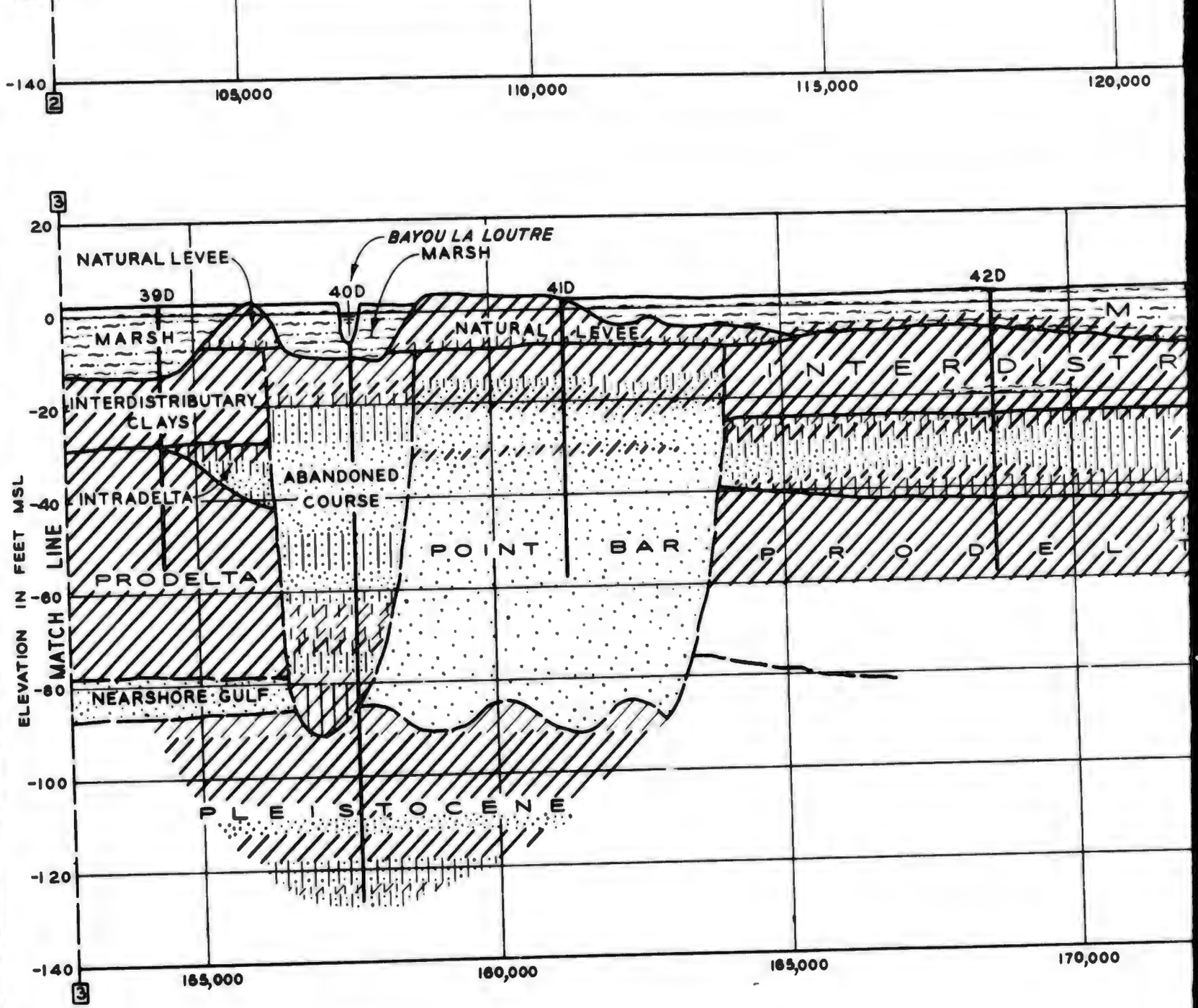

2
20
0
-20
-40
-60
-80
-100
-120
-140
ELEVATION IN FEET MSL
MATCH LINE
26D
27D
28D
29D
30D
INTRADELTA COMPLEX
INTERDISTRIBUTARY
PRODELTA
NEARSHORE GULF
PLEISTOCENE
105,000
110,000
115,000
120,00
2


3
20
0
-20
-40
-60
-80
ELEVATION IN FEET MSL
MATCH LINE
NATURAL LEVEE
BAYOU LA LOUTRE MARSH
39D
40D
41D
42D
MARSH
NATURAL LEVEE
INTERDISTRIBUTARY CLAYS
ABANDONED COURSE
INTRADELTA
POINT BAR
PRODELTA
NEARSHORE GULF

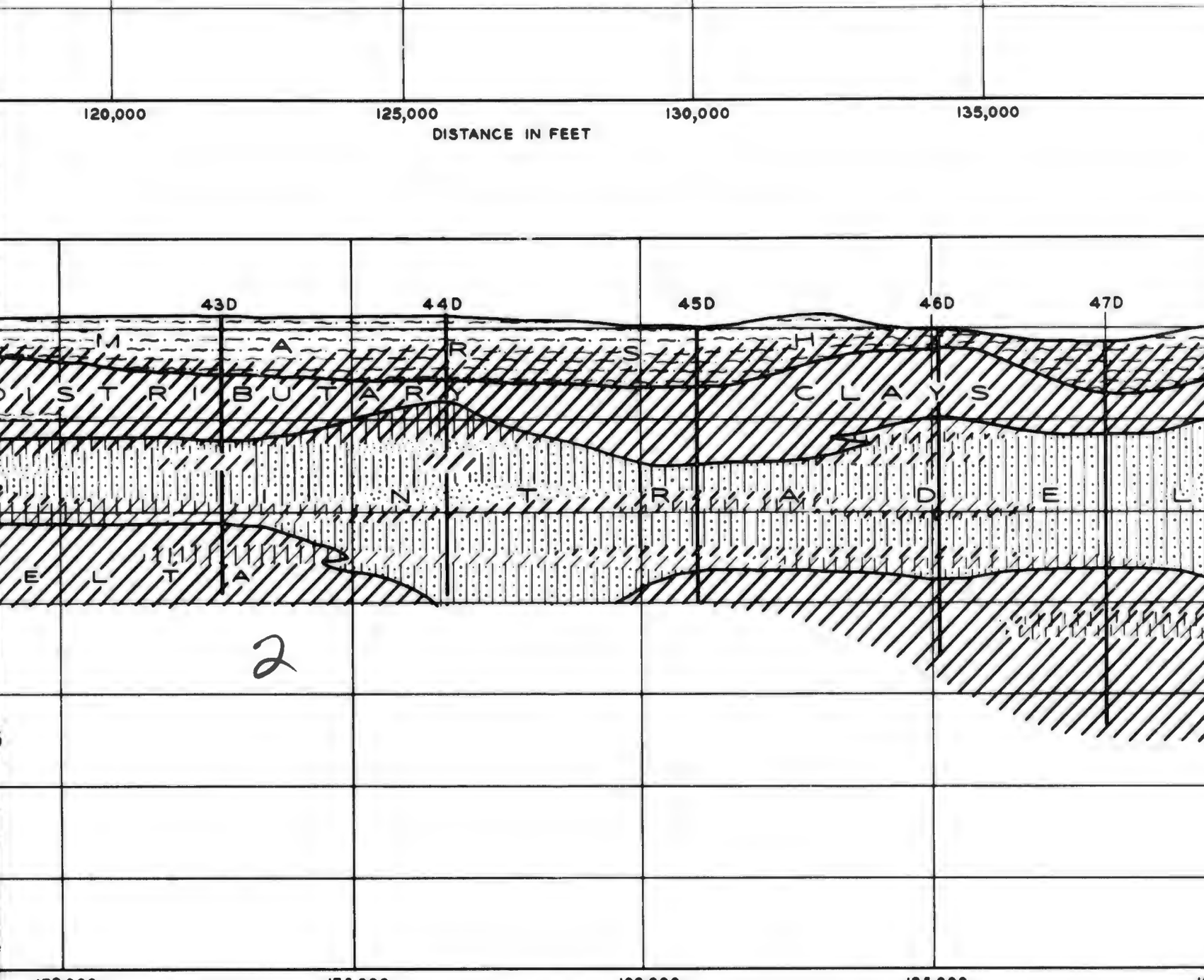

NATURAL LEVEE
30D
31D
32D
33D
34D
M A R S H
E R D I S T R I B U T A R Y C L A Y
E L T A
N T R A D E L T
ABANDONED DISTRIBUTARY
GULF
C E N E
120,000
125,000
130,000
135,000
DISTANCE IN FEET
42D
43D
44D
45D
46D
47D
M A R S H
D I S T R I B U T A R Y C L A Y S
D E L T A
I N T R A D E L
2

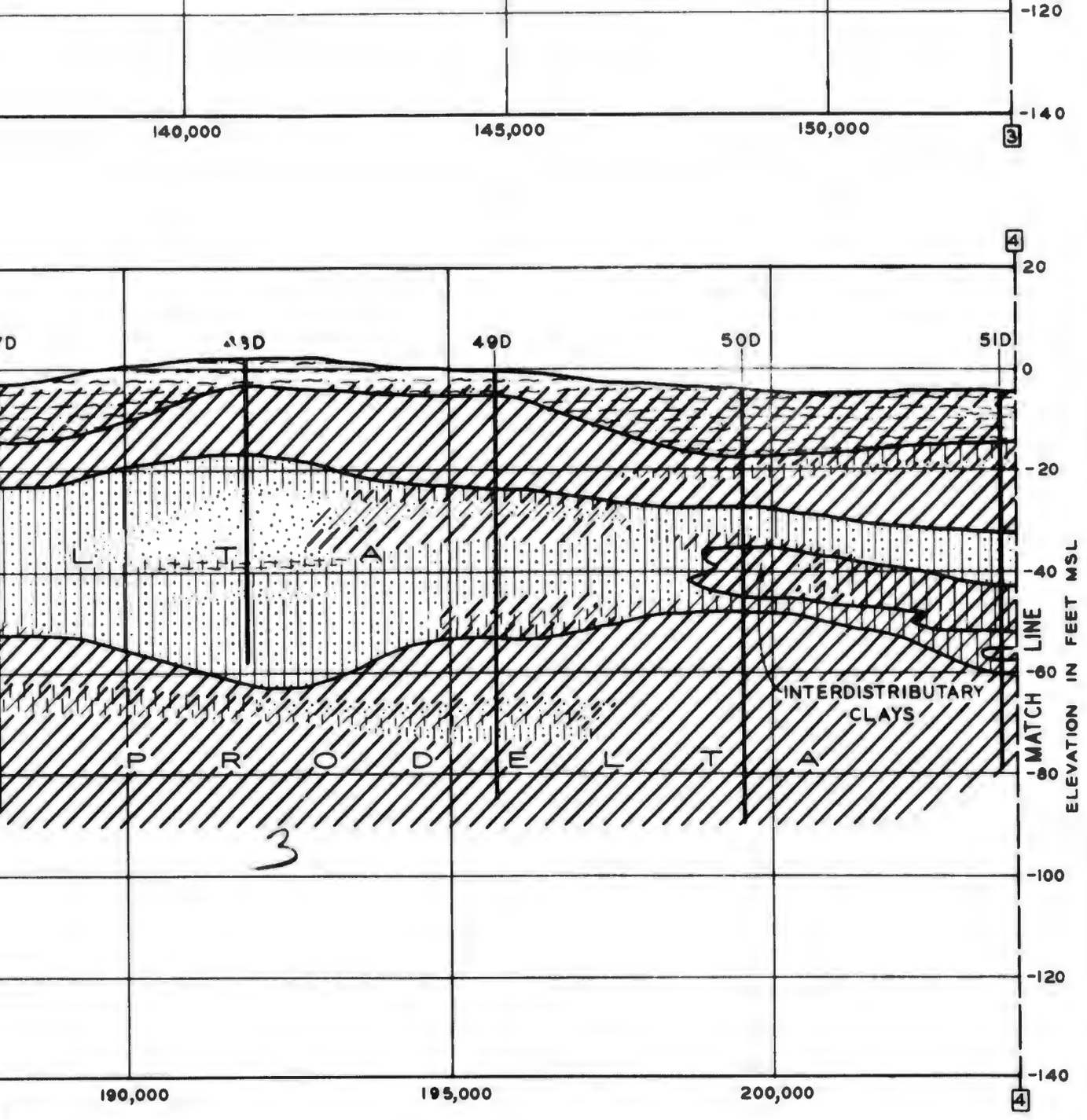

3
20
0
-20
-40
-60
-80
-100
-120
-140
35D
36D
37D
38D
HOLOCENE
LAYS
DELTA COMPLEX
PRODELTA
MATCH LINE
ELEVATION IN FEET MSL
140,000
145,000
150,000
3


4
20
0
-20
-40
-60
-80
-100
47D
48D
49D
50D
51D
LAFITTE
INTERDISTRIBUTARY CLAYS
PRODELTA
MATCH LINE
ELEVATION IN FEET MSL



NOTE: SEE PLATE 17 FOR SOILS LEGEND.


120,000
125,000
130,000
135,000
DISTANCE IN FEET
43D
44D
45D
46D
47D
MARSHY
DISTRIBUTARY
CLAYS
INTERDELTA
2
170,000
175,000
180,000
185,000
DISTANCE IN FEET



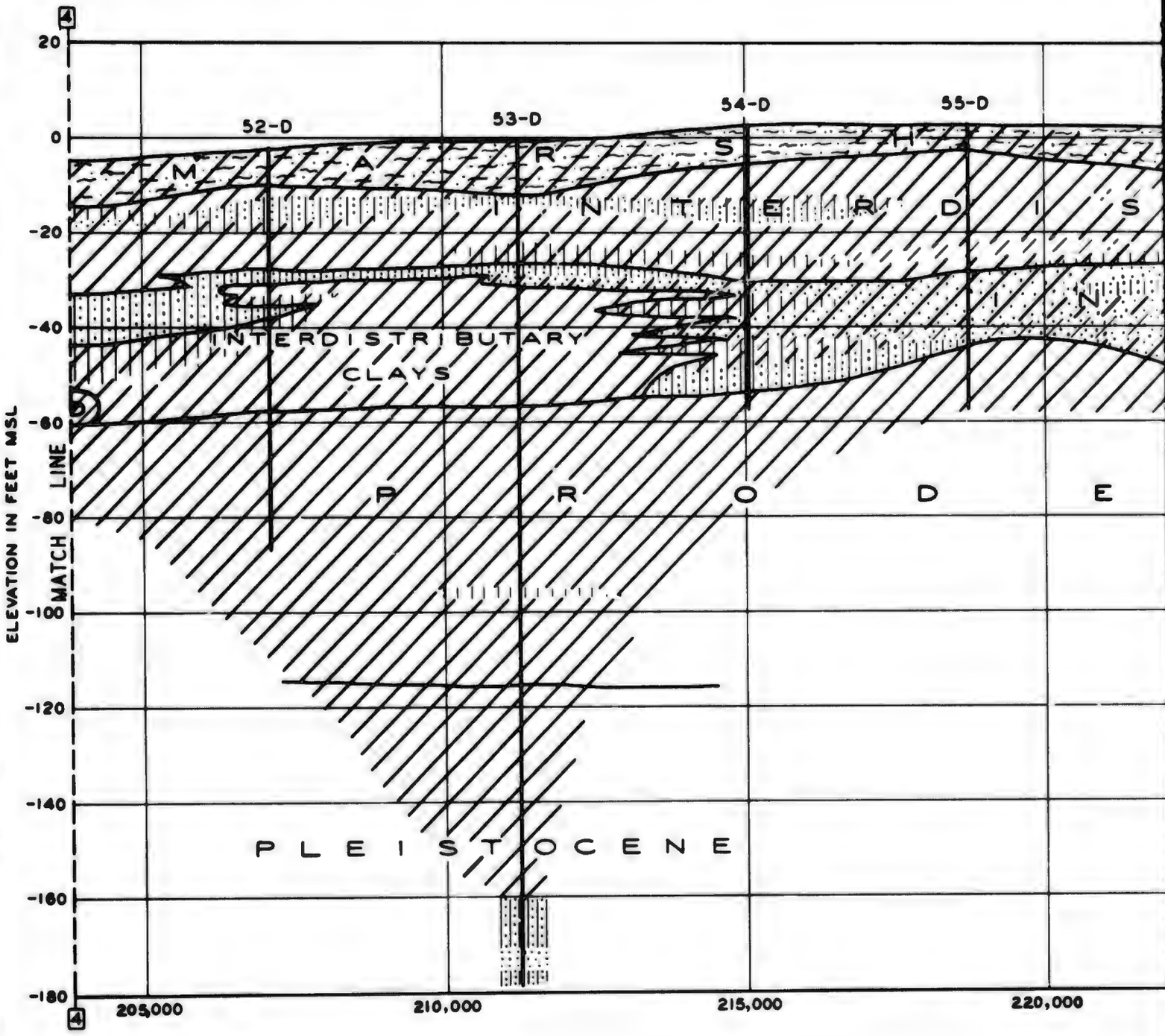
GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

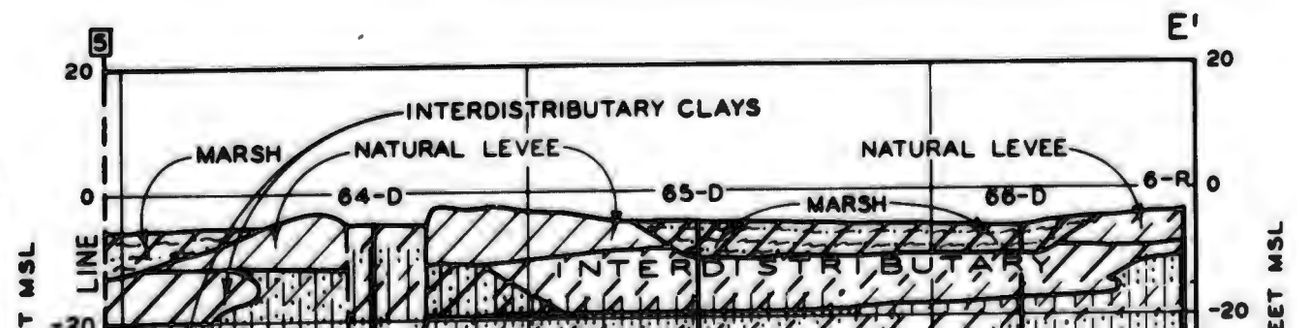
SECTION E-E'

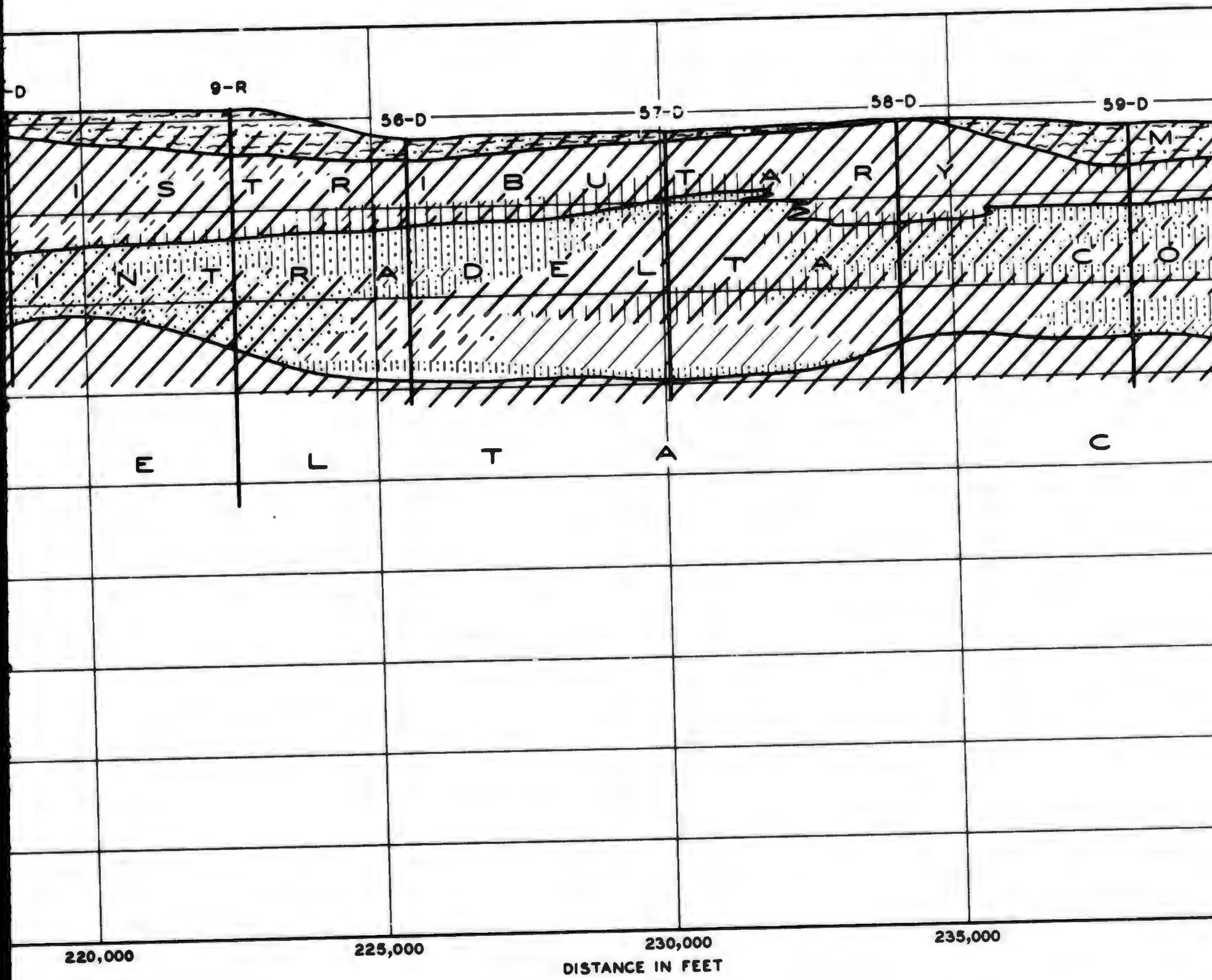
NEW ORLEANS TO CHANDELEUR SOUND

SHEET 2 OF 3

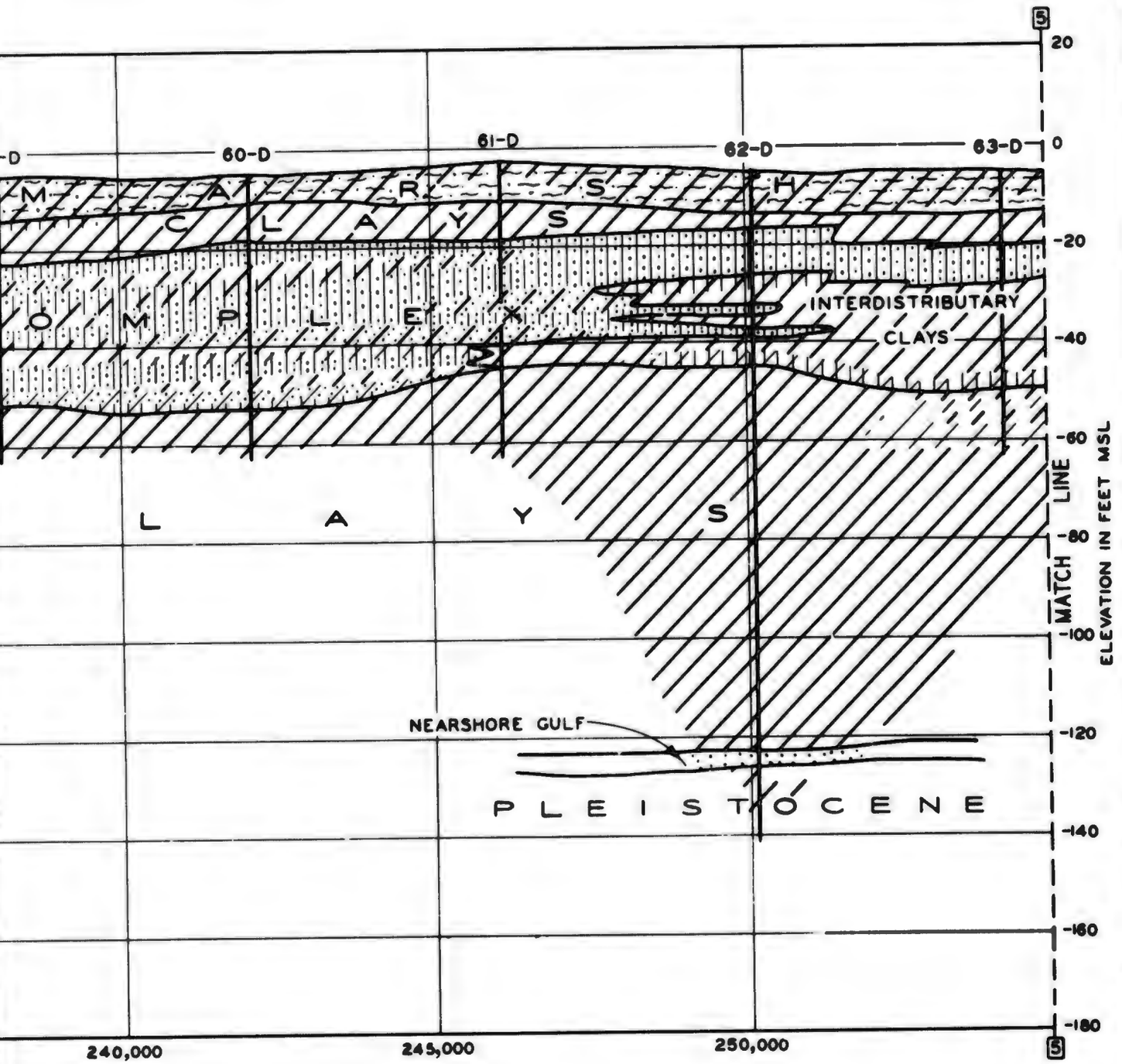
PLATE 17A

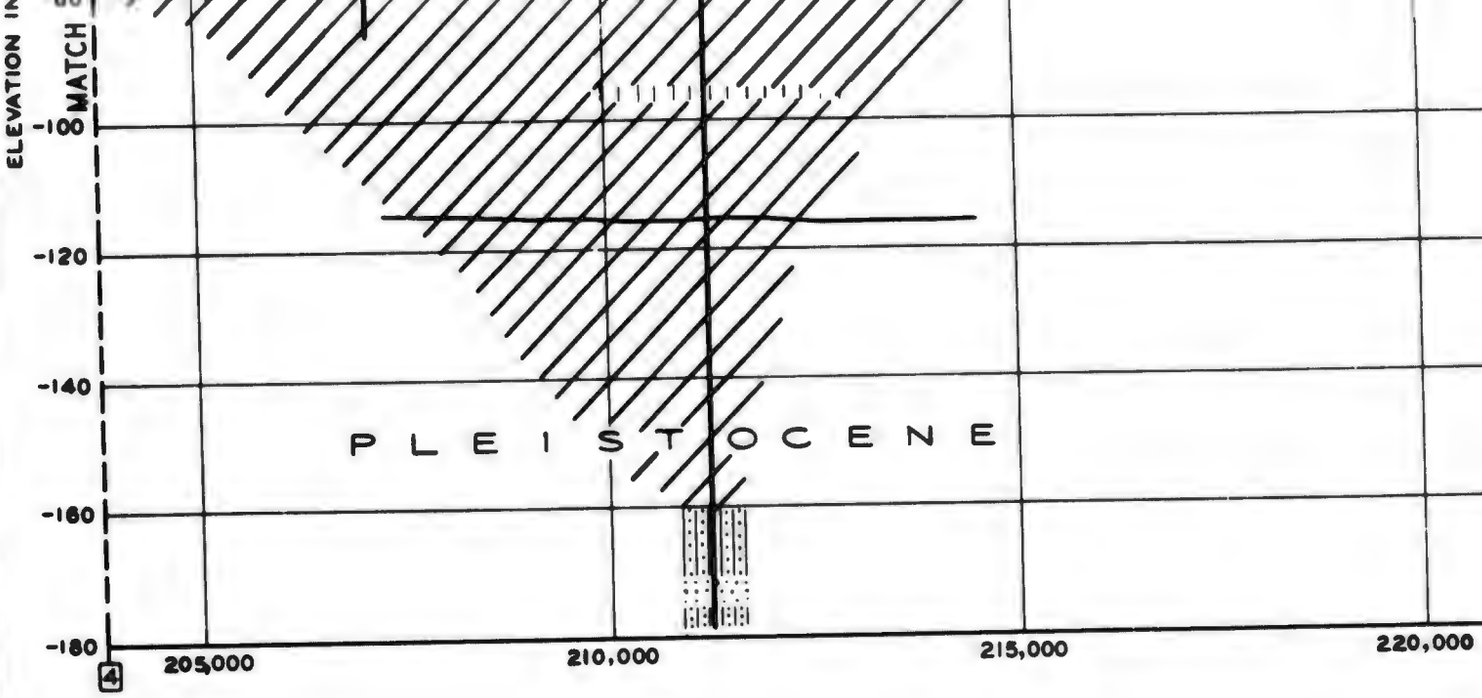

4
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
52-D
53-D
54-D
55-D
MARSH
INTERDISTRIBUTARY
CLAYS
PRODELTA
PLEISTOCENE
ELEVATION IN FEET MSL
MATCH LINE
205,000
210,000
215,000
220,000
4

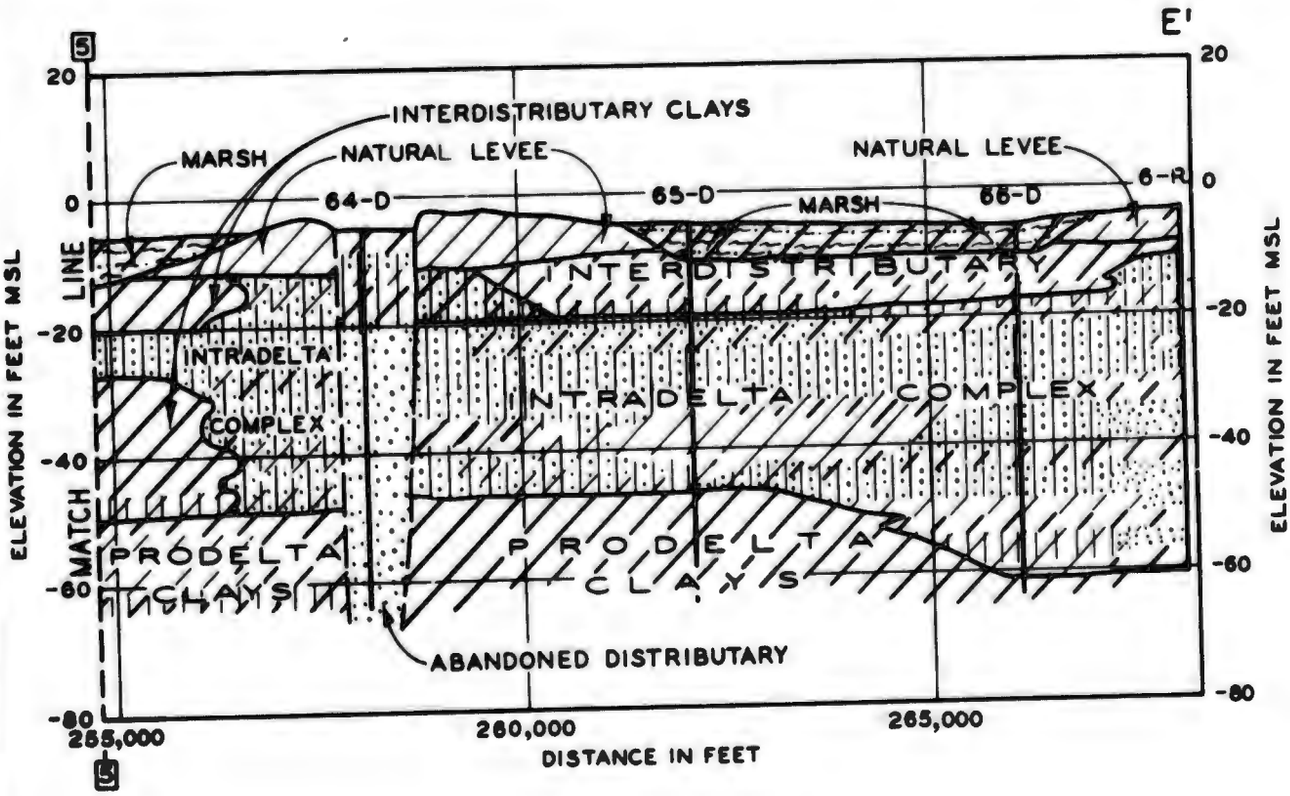

E'
5
20
0
-20
INTERDISTRIBUTARY CLAYS
MARSH
NATURAL LEVEE
NATURAL LEVEE
64-D
65-D
MARSH
66-D
6-R
INTERDISTRIBUTARY
LINE
FEET MSL

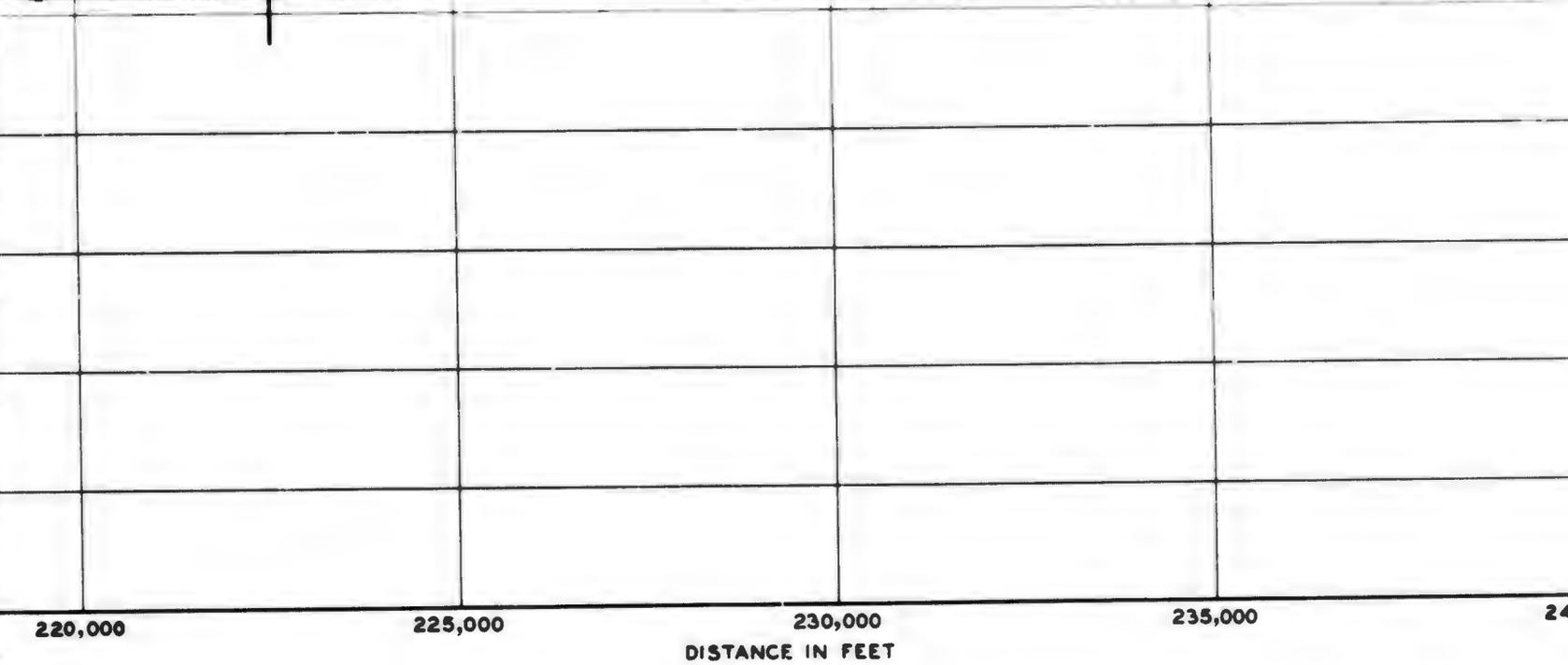

-D
9-R
56-D
57-D
58-D
59-D
M
I S T R I B U T A R Y
I N T R A D E L T A I C O
E L T A C
220,000
225,000
230,000
235,000
DISTANCE IN FEET

2


5
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
ELEVATION IN FEET MSL
MATCH LINE
-D
60-D
61-D
62-D
63-D
MARSH
CLAYS
COMPLEX
INTERDISTRIBUTARY
CLAYS
LAYS
NEARSHORE GULF
PLEISTOCENE
240,000
245,000
250,000
5

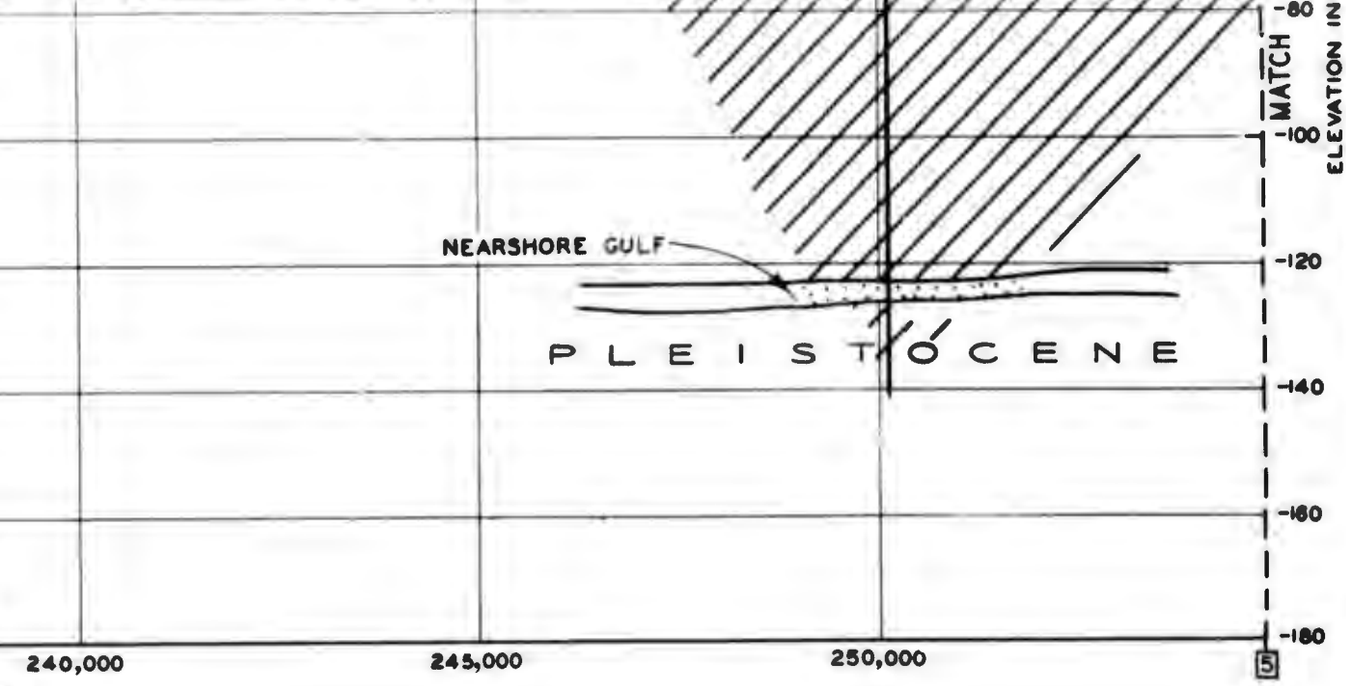

ELEVATION IN
MATCH LINE
-100
-120
-140
-160
-180
PLEISTOCENE
4
205,000
210,000
215,000
220,000


E'
5
20
0
-20
-40
-60
-80
INTERDISTRIBUTARY CLAYS
MARSH
NATURAL LEVEE
NATURAL LEVEE
64-D
65-D
MARSH
66-D
6-R
INTERDISTRIBUTARY
MATCH LINE
INTRADELTA COMPLEX
INTRADELTA COMPLEX
PRODELTA CLAYS
PRODELTA CLAYS
ABANDONED DISTRIBUTARY
ELEVATION IN FEET MSL
ELEVATION IN FEET MSL
255,000
260,000
265,000
DISTANCE IN FEET
5



2

NOTE: SEE PLATE 17 FOR SOILS LEGEND.



3.

GEOLOGY OF
THE MISSISSIPPI RIVER DELTAIC PLAIN
SOUTHEASTERN LOUISIANA

SECTION E-E'

NEW ORLEANS TO CHANDELEUR SOUND

SHEET 3 OF 3

PLATE 17B

6

30792