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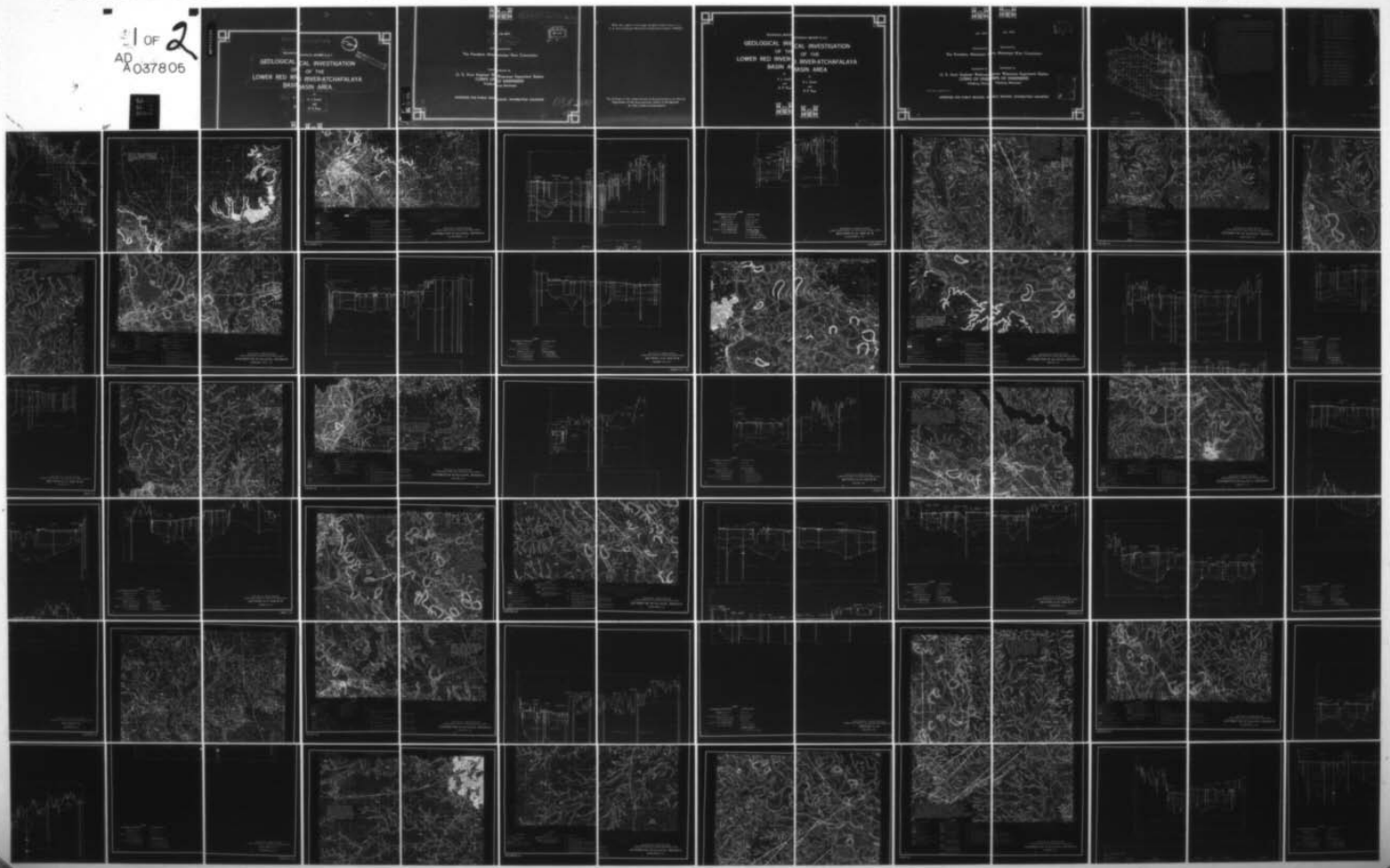
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GEOLOGICAL INVESTIGATION OF THE LOWER RED RIVER-ATCHAFALAYA BAS--ETC(U)  
JUL 74 F L SMITH, D P RUSS

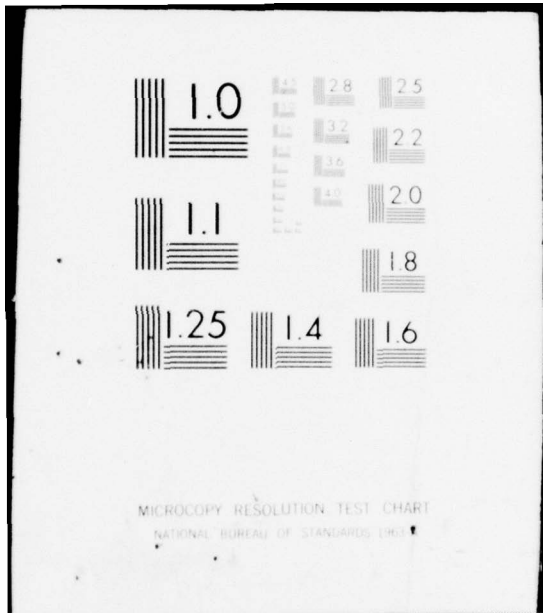
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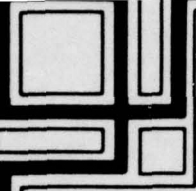
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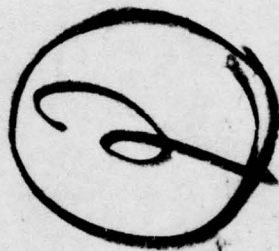


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PRODUCTIONS WILL BE IN BLACK AND WHITE



TECHNICAL REPORT S-74-5

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PERMIT FULLY LEGIBLE PRODUCTION

**TECHNICAL INVESTIGATION**  
**OF THE**  
**MISSISSIPPI RIVER-ATCHAFALAYA**  
**BASIN AREA**

by

F. L./Smith

and

D. P./Russ





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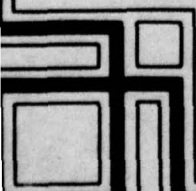
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July 1974

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TECHNICAL REPORT

**GEOLOGICAL INV**

**OF THE**

**LOWER RED RIVER-**

**BASIN AN**

by

F. L. Smith

and

D. P. Russ



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TECHNICAL REPORT S-74-5

# TECHNICAL INVESTIGATION OF THE RIVER-ATCHAFALAYA BASIN AREA

by

F. L. Smith

and

D. P. Russ



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APR 11 1971



July 1974

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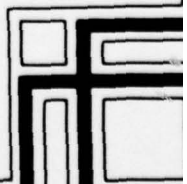
Corps of Engineers  
Vicksburg Experiment Station

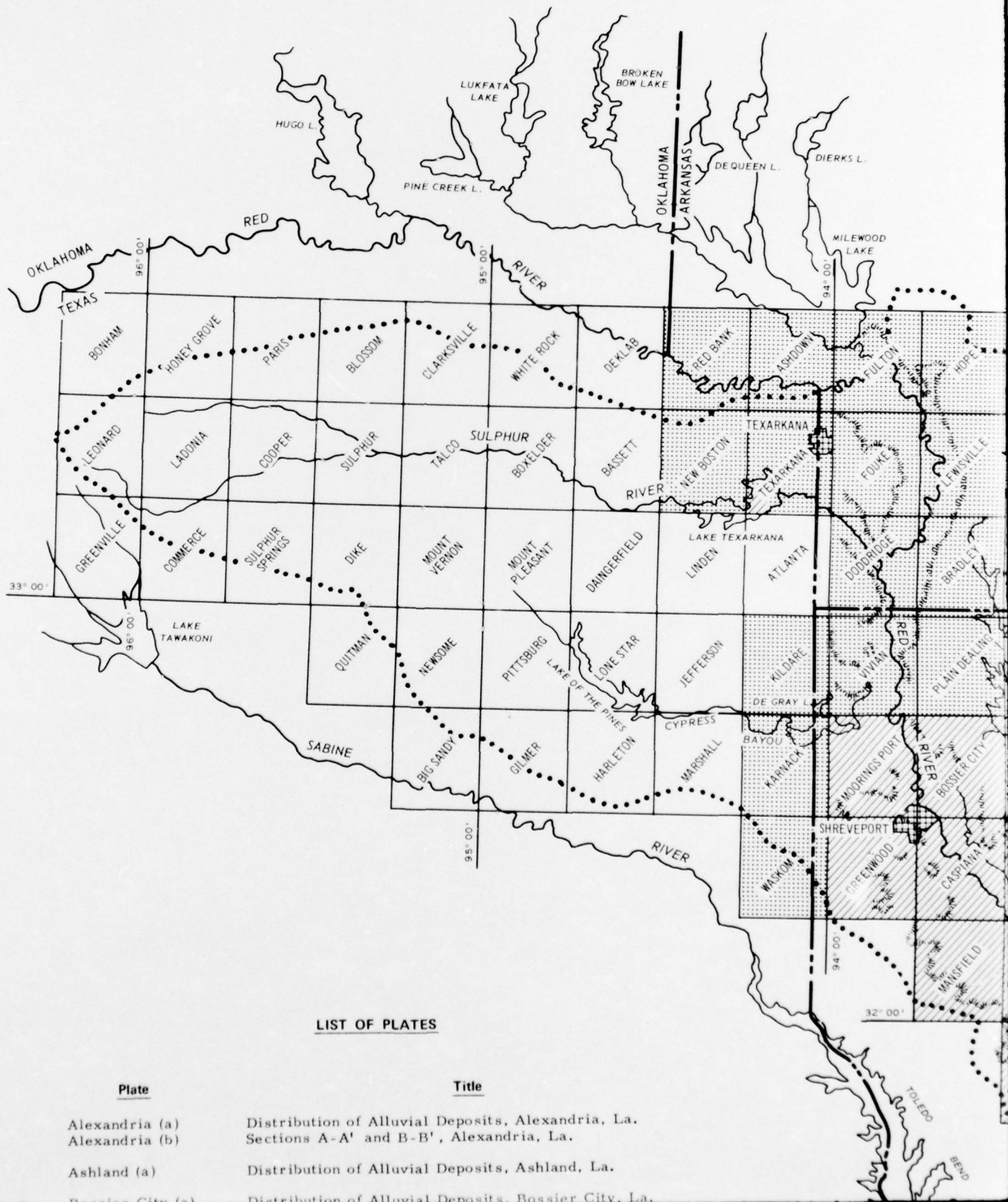
Vicksburg, Mississippi

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**LIST OF PLATES**

Plate	Title
Alexandria (a)	Distribution of Alluvial Deposits, Alexandria, La.
Alexandria (b)	Sections A-A' and B-B', Alexandria, La.
Ashland (a)	Distribution of Alluvial Deposits, Ashland, La.
Bossier City (a)	Distribution of Alluvial Deposits, Bossier City, La.

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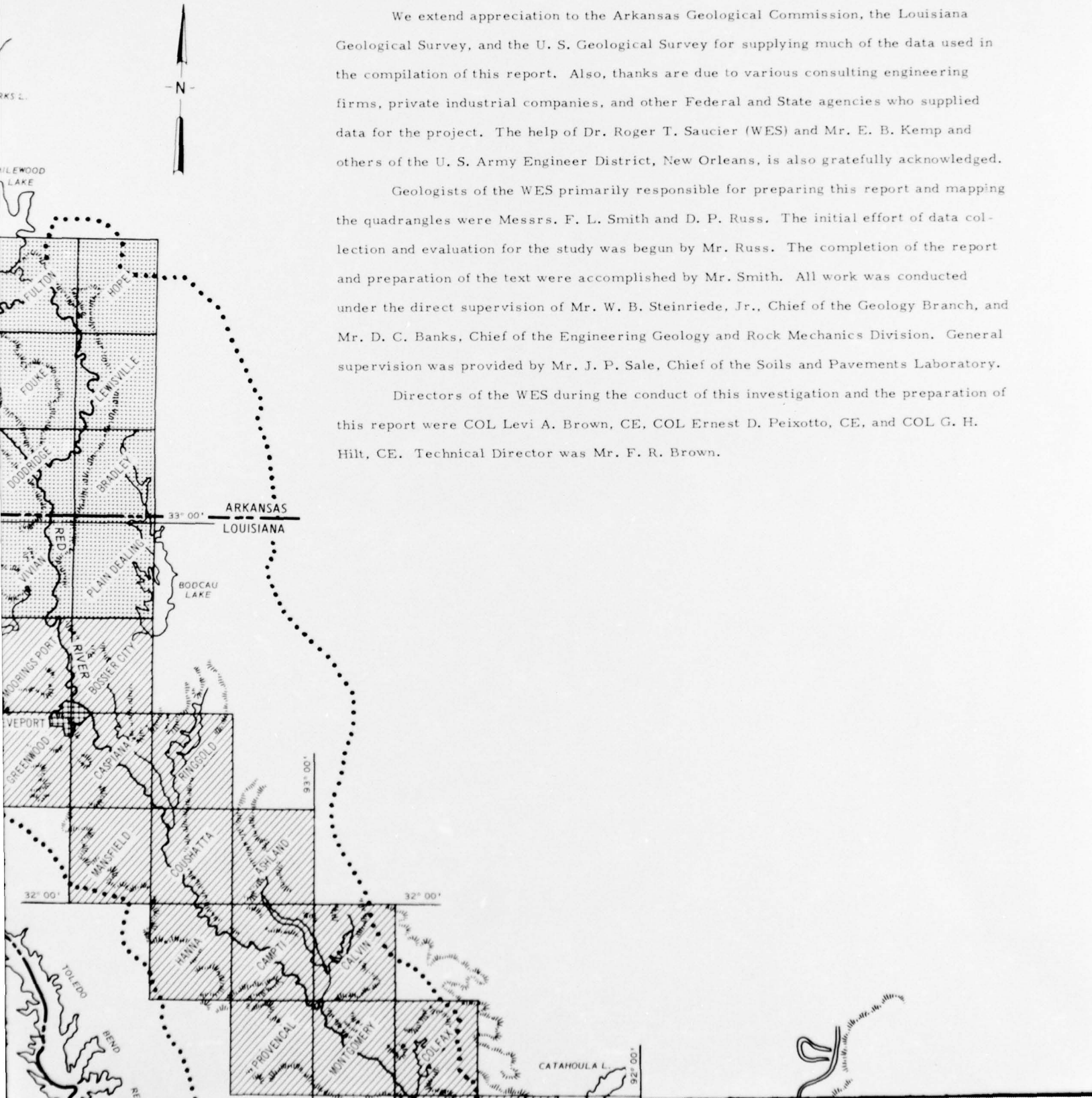
**FOREWORD**

The publication of this folio of maps was authorized in a letter from the Division Engineer, U. S. Army Engineer Division, Lower Mississippi Valley (LMVD), to the Director, U. S. Army Engineer Waterways Experiment Station (WES), dated 8 July 1970, subject: Status of Soils Division Projects for MRC and LMVD for FY 1970 and Request for Funds for Projects for FY 1971.

We extend appreciation to the Arkansas Geological Commission, the Louisiana Geological Survey, and the U. S. Geological Survey for supplying much of the data used in the compilation of this report. Also, thanks are due to various consulting engineering firms, private industrial companies, and other Federal and State agencies who supplied data for the project. The help of Dr. Roger T. Saucier (WES) and Mr. E. B. Kemp and others of the U. S. Army Engineer District, New Orleans, is also gratefully acknowledged.

Geologists of the WES primarily responsible for preparing this report and mapping the quadrangles were Messrs. F. L. Smith and D. P. Russ. The initial effort of data collection and evaluation for the study was begun by Mr. Russ. The completion of the report and preparation of the text were accomplished by Mr. Smith. All work was conducted under the direct supervision of Mr. W. B. Steinriede, Jr., Chief of the Geology Branch, and Mr. D. C. Banks, Chief of the Engineering Geology and Rock Mechanics Division. General supervision was provided by Mr. J. P. Sale, Chief of the Soils and Pavements Laboratory.

Directors of the WES during the conduct of this investigation and the preparation of this report were COL Levi A. Brown, CE, COL Ernest D. Peixotto, CE, and COL G. H. Hilt, CE. Technical Director was Mr. F. R. Brown.



<u>Plate</u>	<u>Title</u>
Alexandria (a) Alexandria (b)	Distribution of Alluvial Deposits, Alexandria, La. Sections A-A' and B-B', Alexandria, La.
Ashland (a)	Distribution of Alluvial Deposits, Ashland, La.
Bossier City (a) Bossier City (b)	Distribution of Alluvial Deposits, Bossier City, La. Sections A-A' and B-B', Bossier City, La.
Boyce (a) Boyce (b)	Distribution of Alluvial Deposits, Boyce, La. Sections A-A' and B-B', Boyce, La.
Calvin (a) Calvin (b)	Distribution of Alluvial Deposits, Calvin, La. Sections A-A' and B-B', Calvin, La.
Campti (a) Campti (b)	Distribution of Alluvial Deposits, Campti, La. Sections A-A' and B-B', Campti, La.
Caspiana (a) Caspiana (b) Caspiana (c)	Distribution of Alluvial Deposits, Caspiana, La. Sections A-A', B-B', and C-C', Caspiana, La.
Colfax (a) Colfax (b)	Distribution of Alluvial Deposits, Colfax, La. Section A-A', Colfax, La.
Coushatta (a) Coushatta (b)	Distribution of Alluvial Deposits, Coushatta, La. Section A-A', Coushatta, La.
Greenwood (a)	Distribution of Alluvial Deposits, Greenwood, La.
Hanna (a) Hanna (b)	Distribution of Alluvial Deposits, Hanna, La. Sections A-A' and B-B', Hanna, La.
Lecompte (a) Lecompte (b) Lecompte (c)	Distribution of Alluvial Deposits, Lecompte, La. Sections A-A', A'-A'', B-B', and C-C', Lecompte, La.
Mansfield (a) Mansfield (b)	Distribution of Alluvial Deposits, Mansfield, La. Section A-A', Mansfield, La.
Marksville (a) Marksville (b)	Distribution of Alluvial Deposits, Marksville, La. Sections A-A' and B-B', Marksville, La.
Montgomery (a) Montgomery (b)	Distribution of Alluvial Deposits, Montgomery, La. Sections A-A' and B-B', Montgomery, La.
Mooringsport (a) Mooringsport (b)	Distribution of Alluvial Deposits, Mooringsport, La. Sections A-A' and B-B', Mooringsport, La.
Moreauville (a) Moreauville (b)	Distribution of Alluvial Deposits, Moreauville, La. Sections A-A' and B-B', Moreauville, La.
Provencal (a) Provencal (b)	Distribution of Alluvial Deposits, Provencal, La. Sections A-A' and B-B', Provencal, La.
Ringgold (a) Ringgold (b)	Distribution of Alluvial Deposits, Ringgold, La. Section A-A', Ringgold, La.



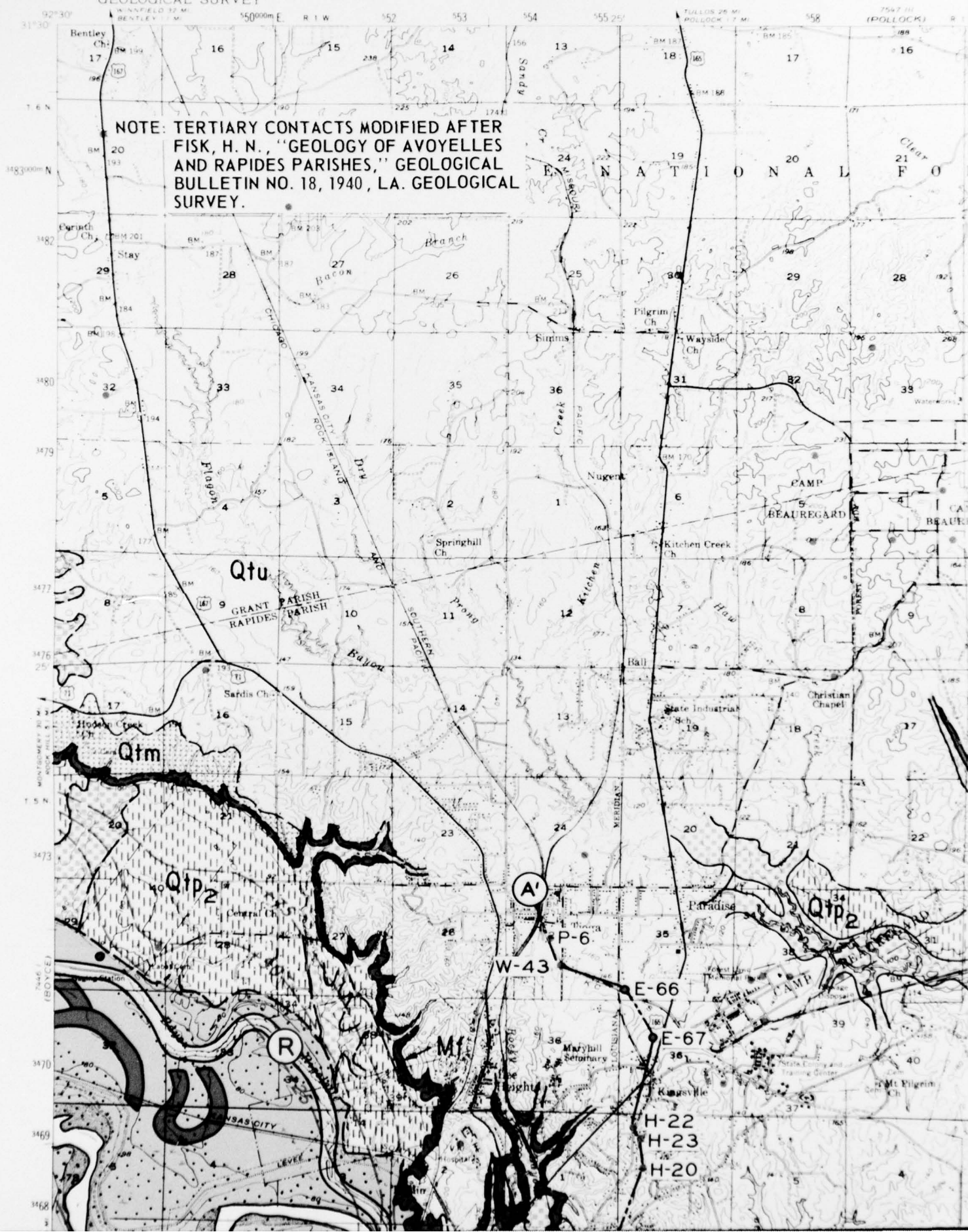
Fig. 1. Quadrangle coverage of

3



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

NOTE: TERTIARY CONTACTS MODIFIED AFTER  
FISK, H. N., "GEOLOGY OF AVOYELLES  
AND RAPIDES PARISHES," GEOLOGICAL  
BULLETIN NO. 18, 1940, LA. GEOLOGICAL  
SURVEY.

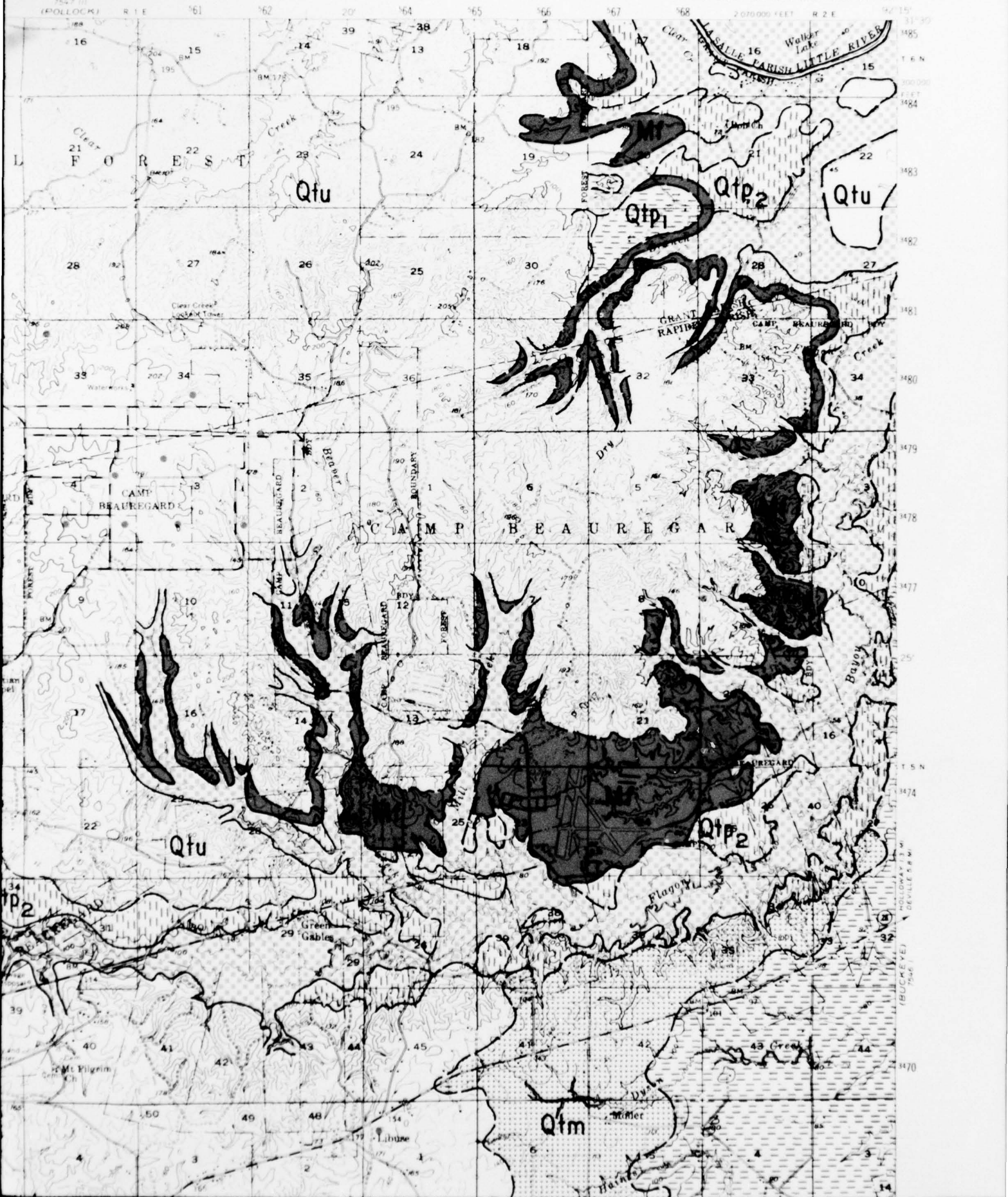


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ALEXANDRIA QUADRANGLE

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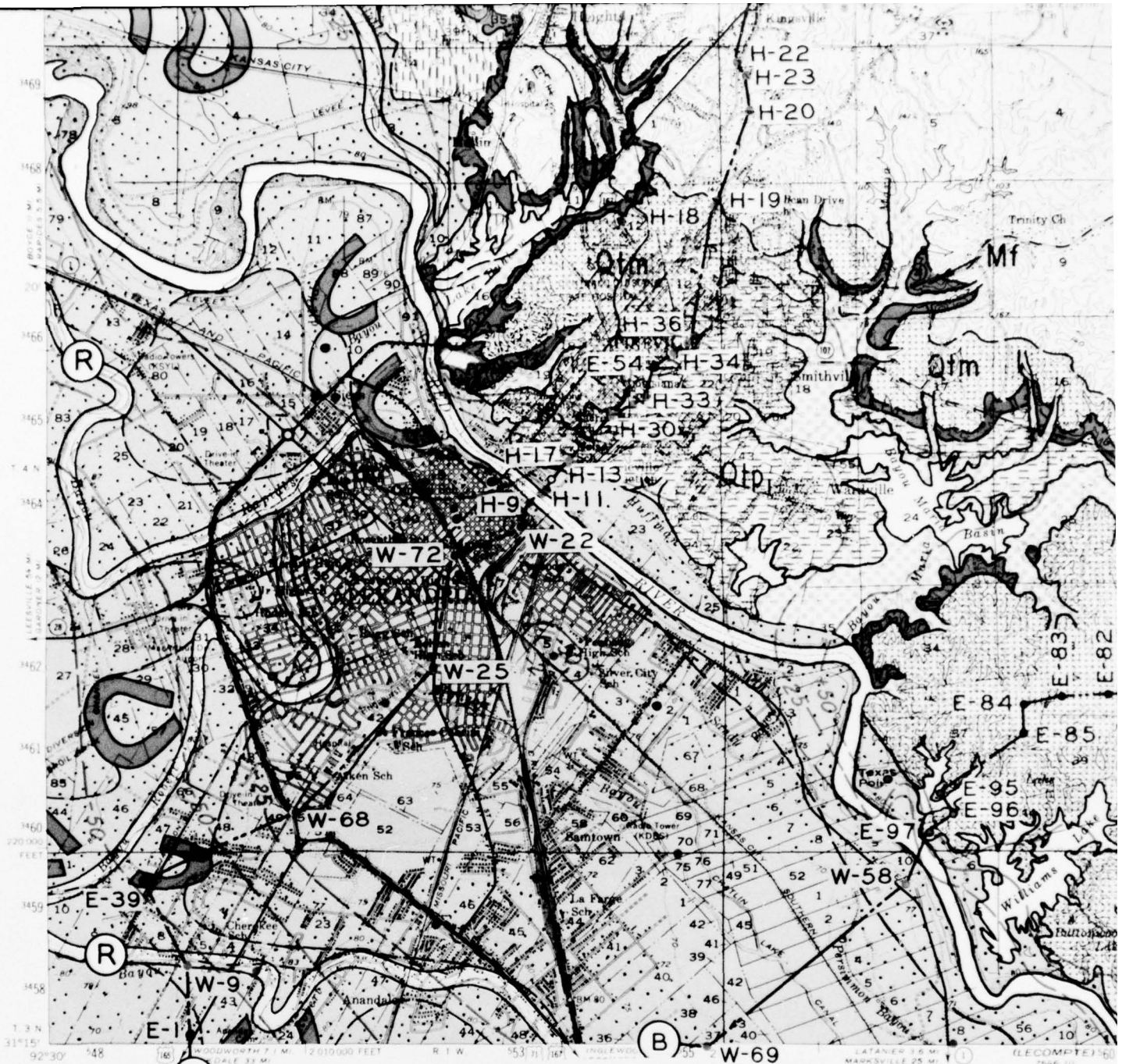
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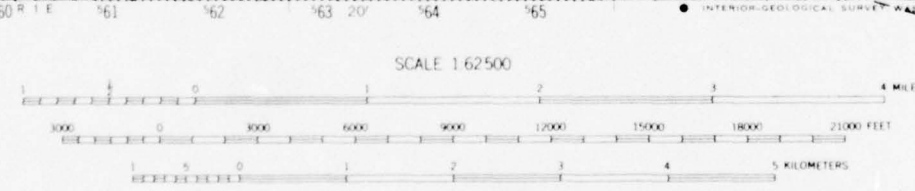
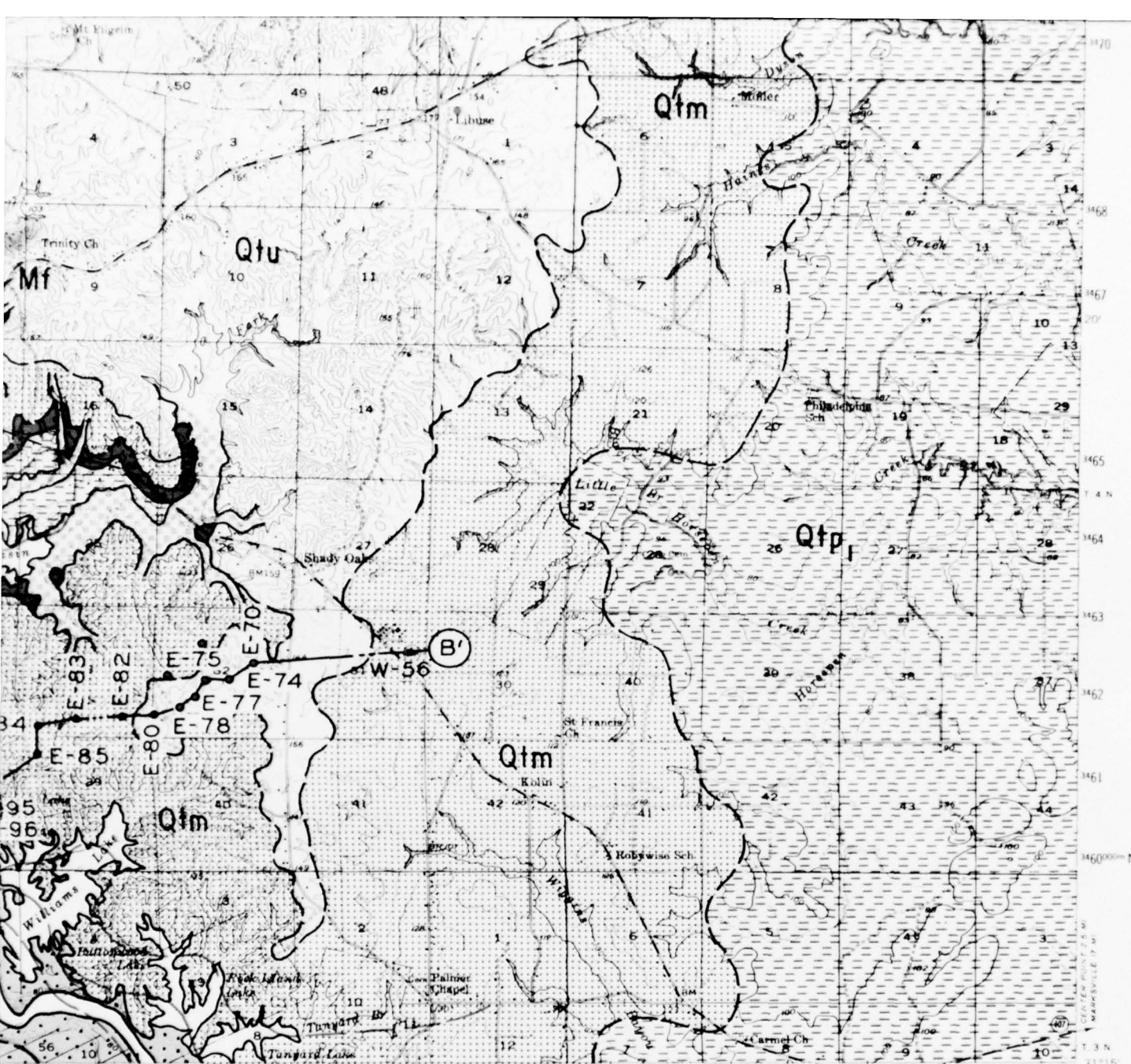
**QUATERNARY**

- RECENT**
- NATURAL LEVEE
  - POINT BAR
  - BACKSWAMP
  - ABANDONED CHANNEL
  - ABANDONED COURSE
  - UNDIFFERENTIATED ALLUVIUM OF SMALL CREEKS
- PLEISTOCENE**
- PRAIRIE TERRACE-UPPER SURFACE
  - PRAIRIE TERRACE-LOWER SURFACE
  - MONTGOMERY TERRACE
  - UNDIFFERENTIATED TERRACE

**LEGEND**

- TERTIARY**
- MIOCENE**
- FLEMING FORMATION
  - RED RIVER
- INDEFINITE CONTACT
  - CONTACT
  - PROBABLE POSITION OF ABANDONED COURSE REWORKED BY SUBSEQUENT MEANDERING OF A STREAM
  - ELEVATION OF TOP OF TERTIARY SURFACE IN FEET MSL
  - CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
  - CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY
  - CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
  - CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY

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SCALE 1:62,500  
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 DATUM IS MEAN SEA LEVEL

ABANDONED  
 SUBSEQUENT  
 AM

TERTIARY

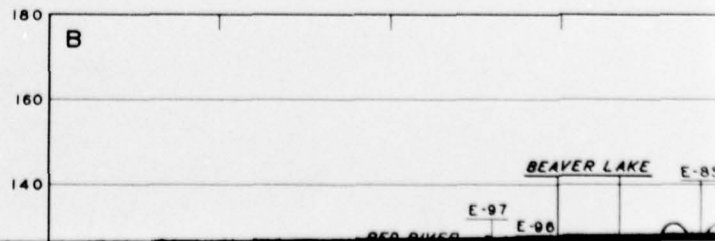
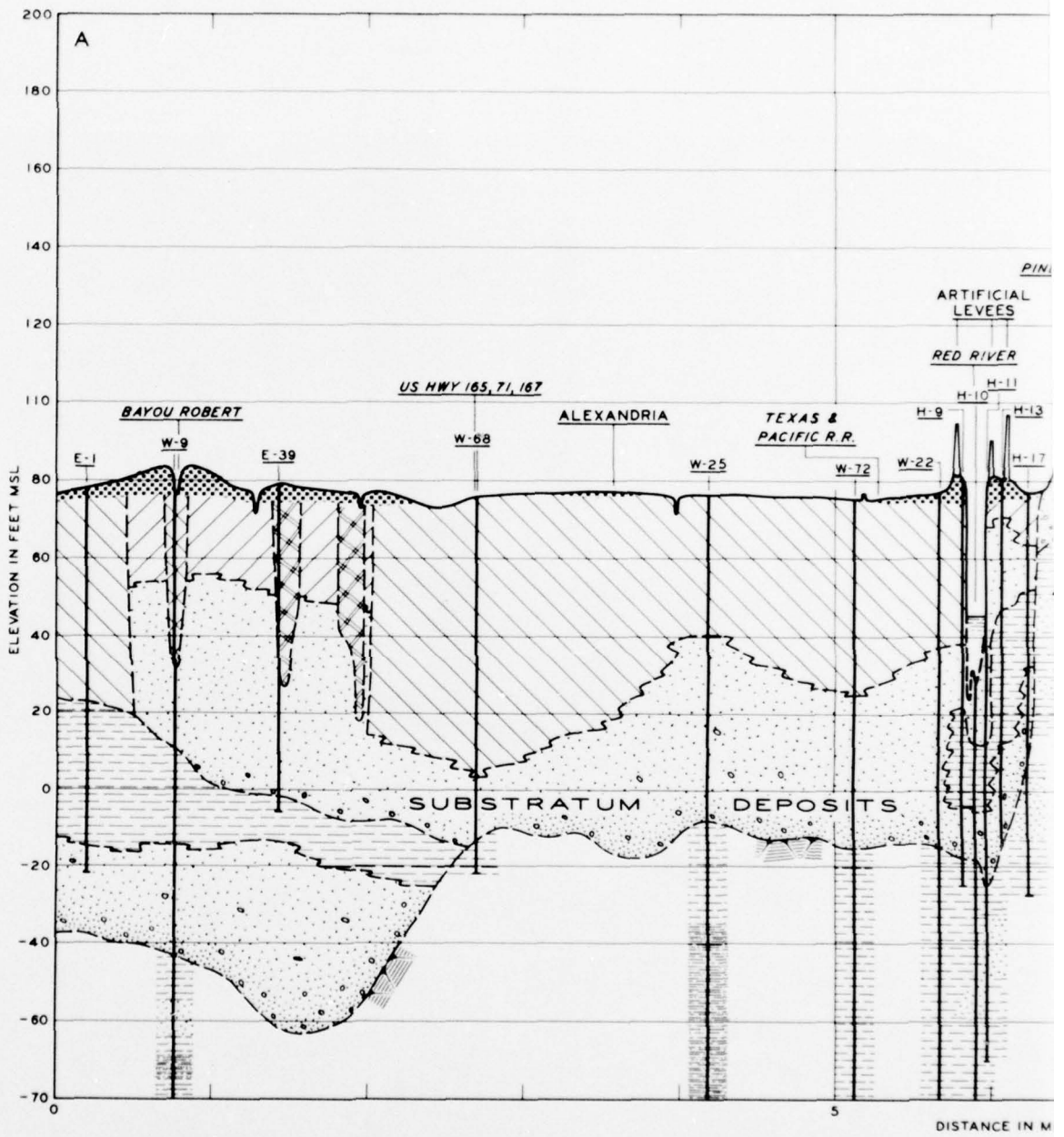
LOGGED BY SOILS SCIENTIST)  
 ED TERTIARY SURFACE

LOGGED BY SOILS SCIENTIST)  
 ED TERTIARY SURFACE

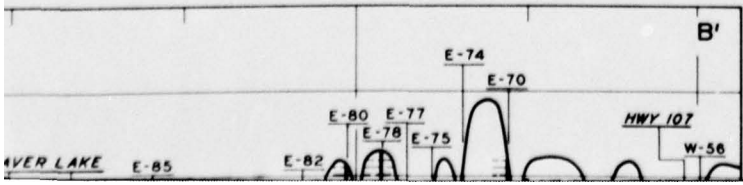
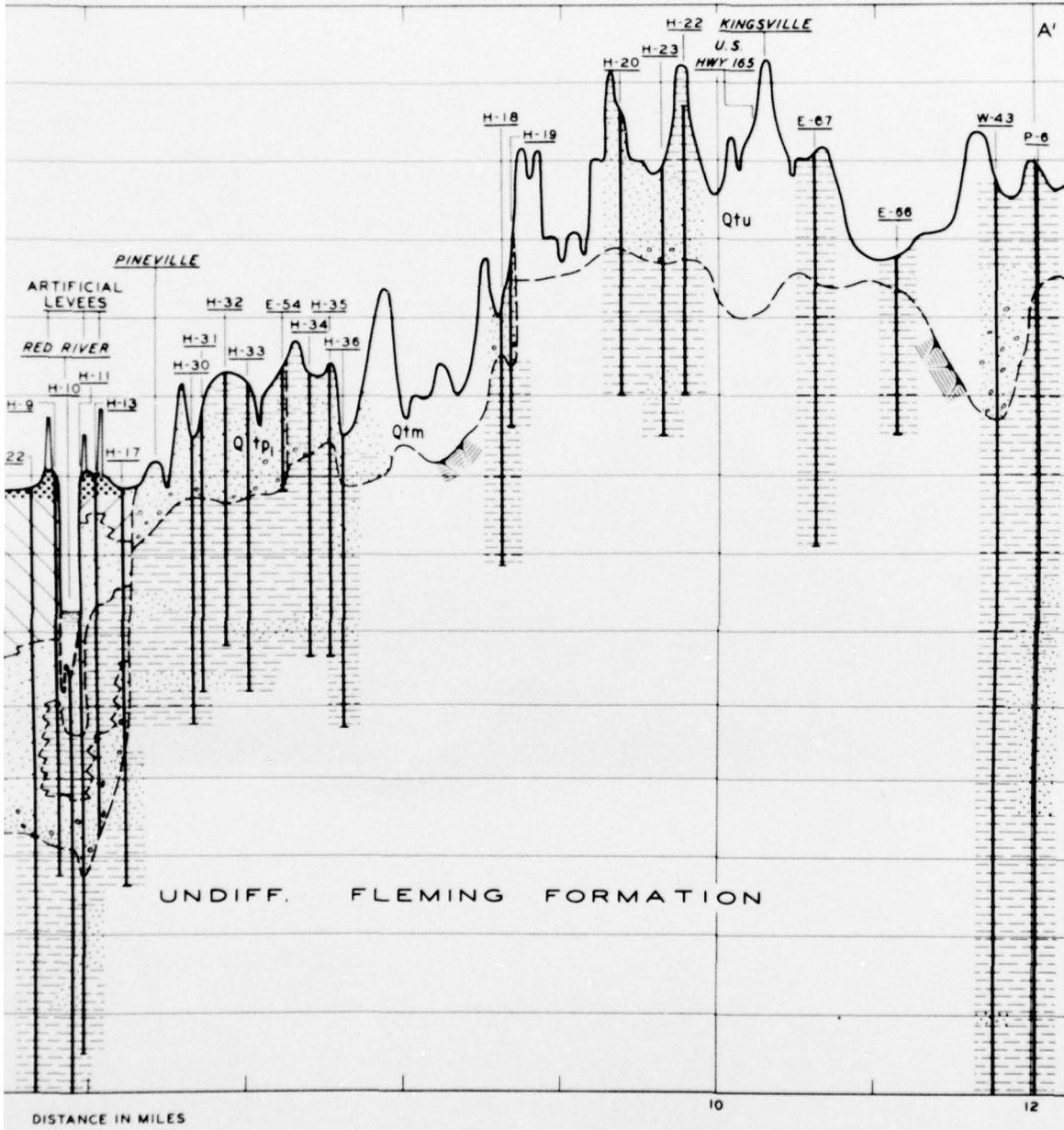
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 ED TERTIARY SURFACE

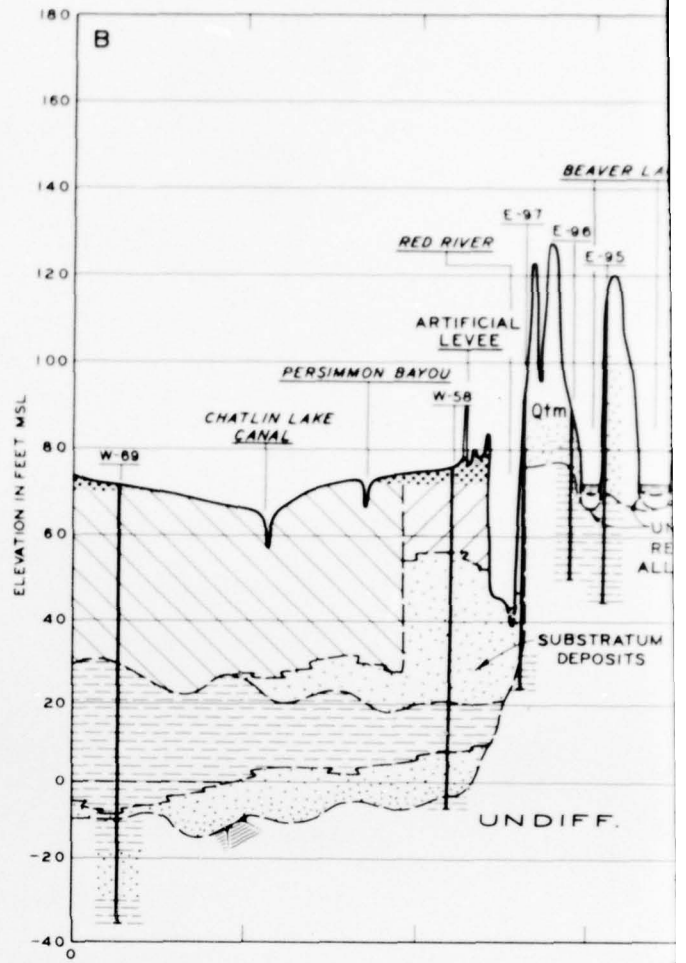
GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
**DISTRIBUTION OF ALLUVIAL DEPOSITS**  
 ALEXANDRIA, LA.

4



2





**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

TOPSTRATUM		NATURAL LEVEE
		POINT BAR
		BACKSWAMP
		ABANDONED CHANNEL
		ABANDONED COURSE
SUBSTRATUM		UNDIFFERENTIATED SAND AND GRAVEL
		TERTIARY SURFACE

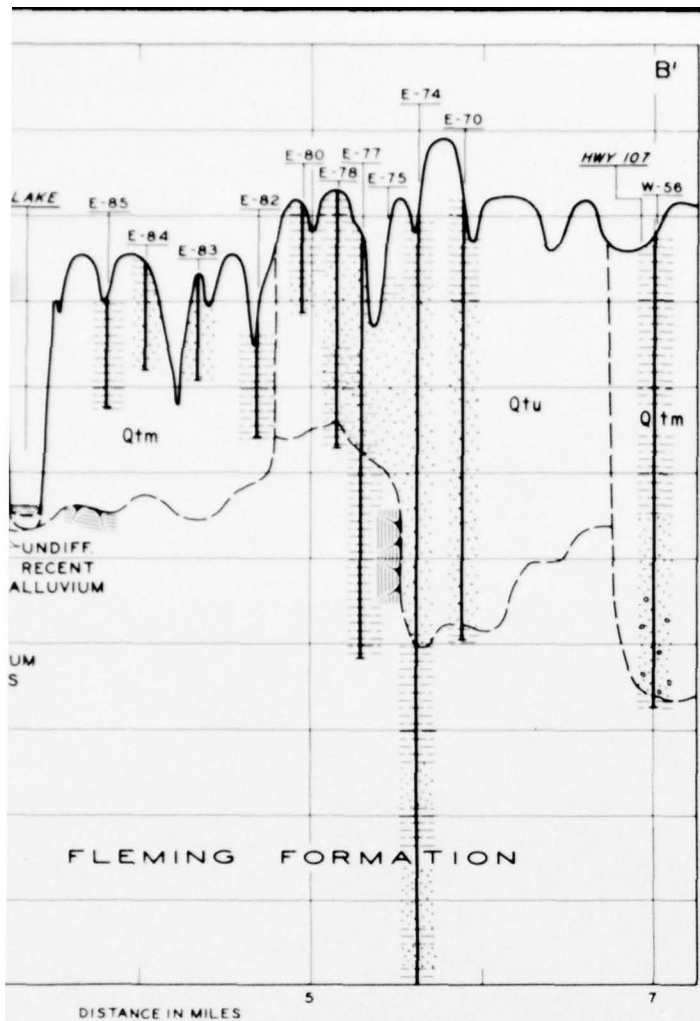
**LITHOLOGIC TYPES**

	SAND
	CLAY AND SILT
	SANDY CLAY
	SHALE
	SAND AND GRAVEL

**MAPPING SYMBOLS**

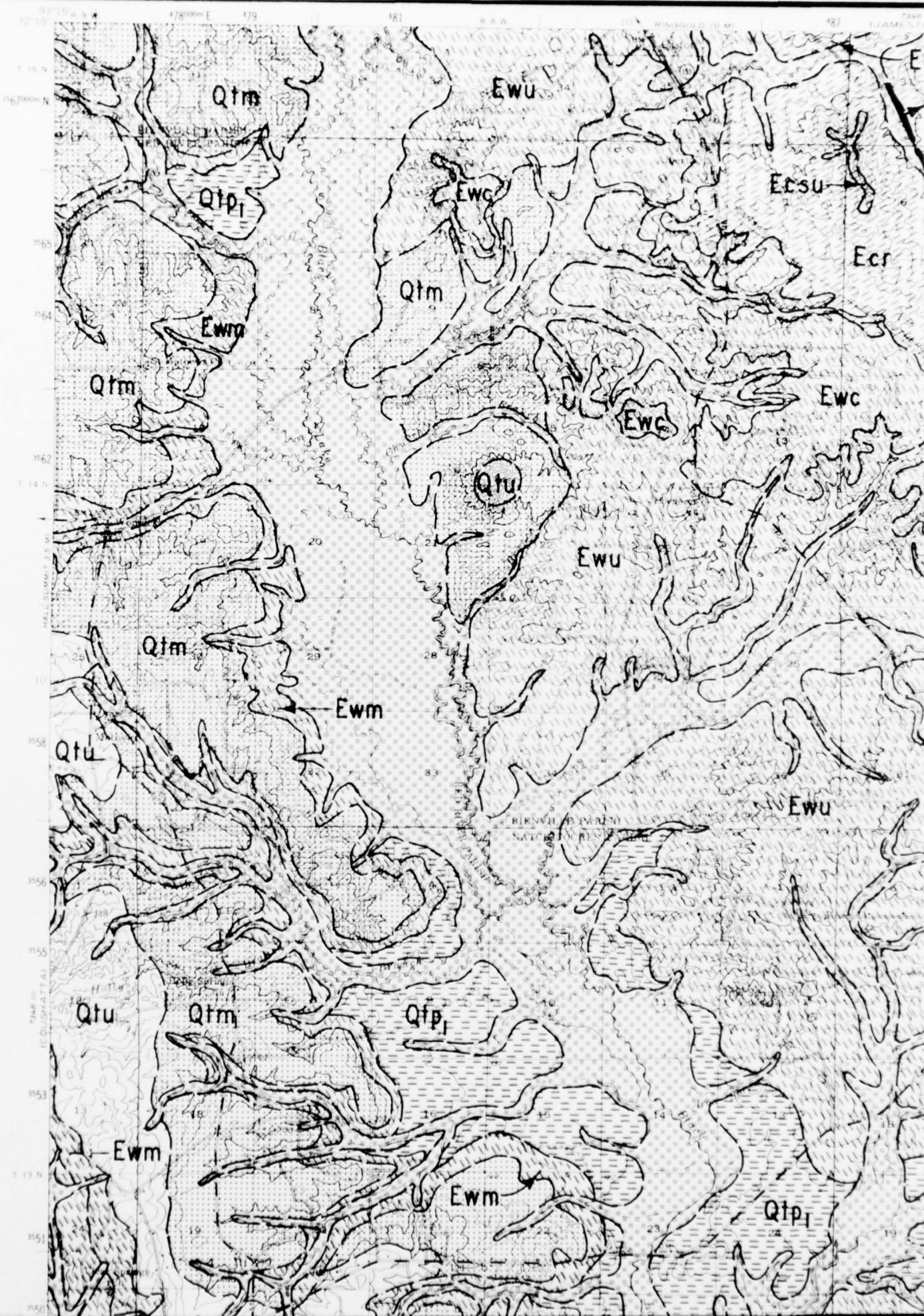
	PRAIRIE TERRACE- UPPER SURFACE
	MONTGOMERY TERRACE
	UNDIFFERENTIATED TERRACE

3

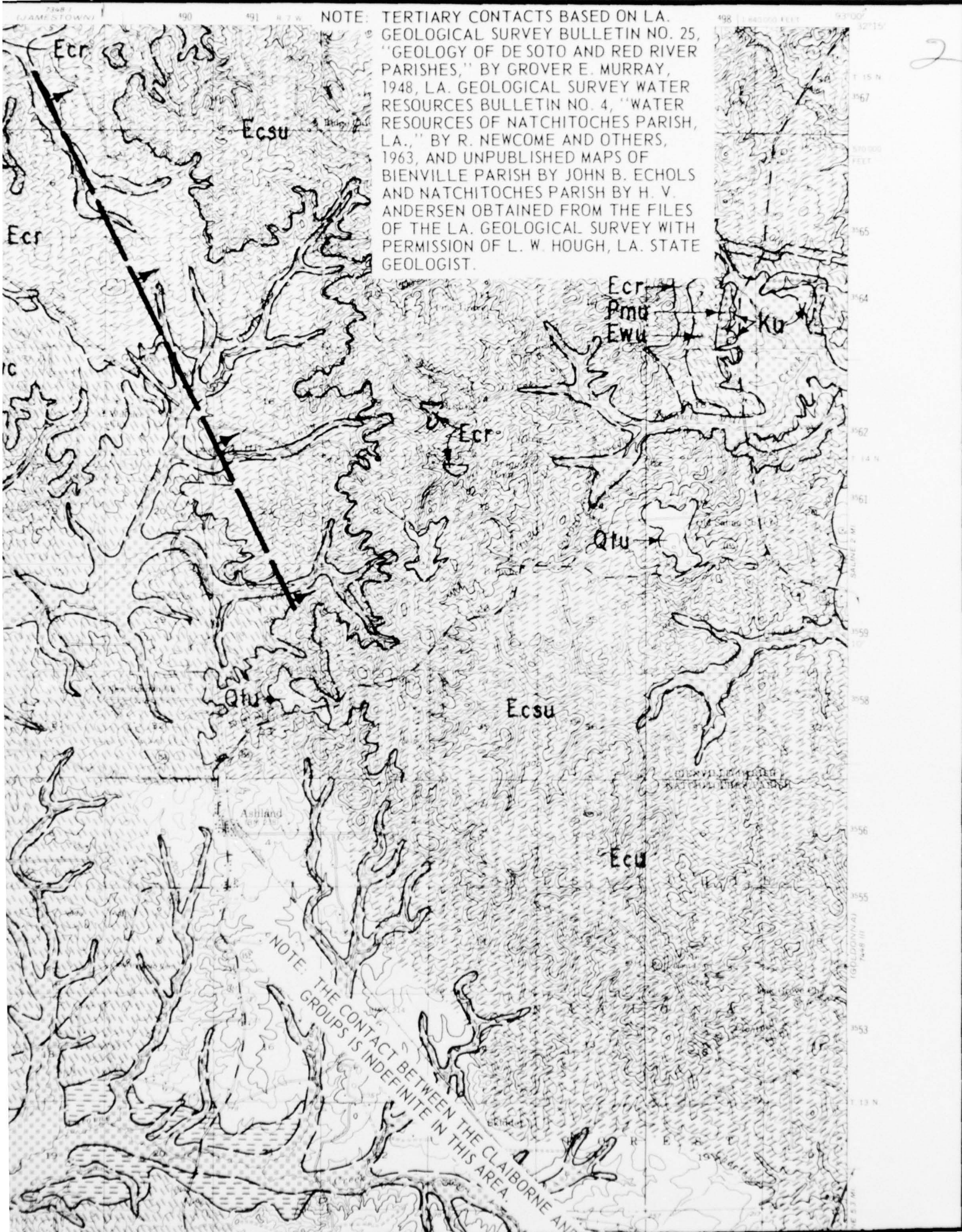


GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 SECTIONS A-A' AND B-B'  
 ALEXANDRIA, LA.

4



NOTE: TERTIARY CONTACTS BASED ON LA. GEOLOGICAL SURVEY BULLETIN NO. 25, "GEOLOGY OF DE SOTO AND RED RIVER PARISHES," BY GROVER E. MURRAY, 1948, LA. GEOLOGICAL SURVEY WATER RESOURCES BULLETIN NO. 4, "WATER RESOURCES OF NATCHITOCHE PARISH, LA.," BY R. NEWCOME AND OTHERS, 1963, AND UNPUBLISHED MAPS OF BIENVILLE PARISH BY JOHN B. ECHOLS AND NATCHITOCHE PARISH BY H. V. ANDERSEN OBTAINED FROM THE FILES OF THE LA. GEOLOGICAL SURVEY WITH PERMISSION OF L. W. HOUGH, LA. STATE GEOLOGIST.



NOTE: THE CONTACT BETWEEN THE CLAIBORNE AND [unclear] GROUPS IS INDEFINITE IN THIS AREA.

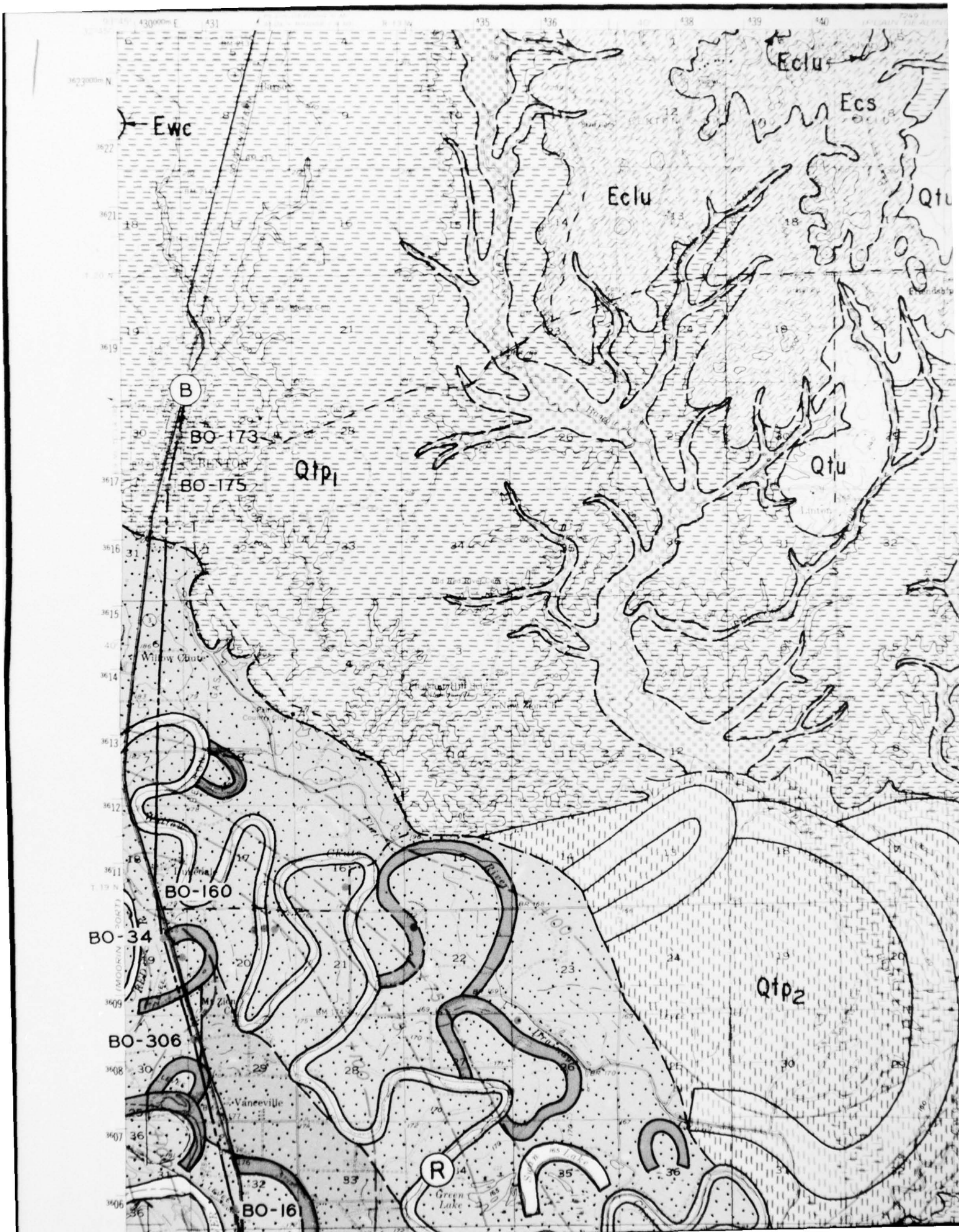


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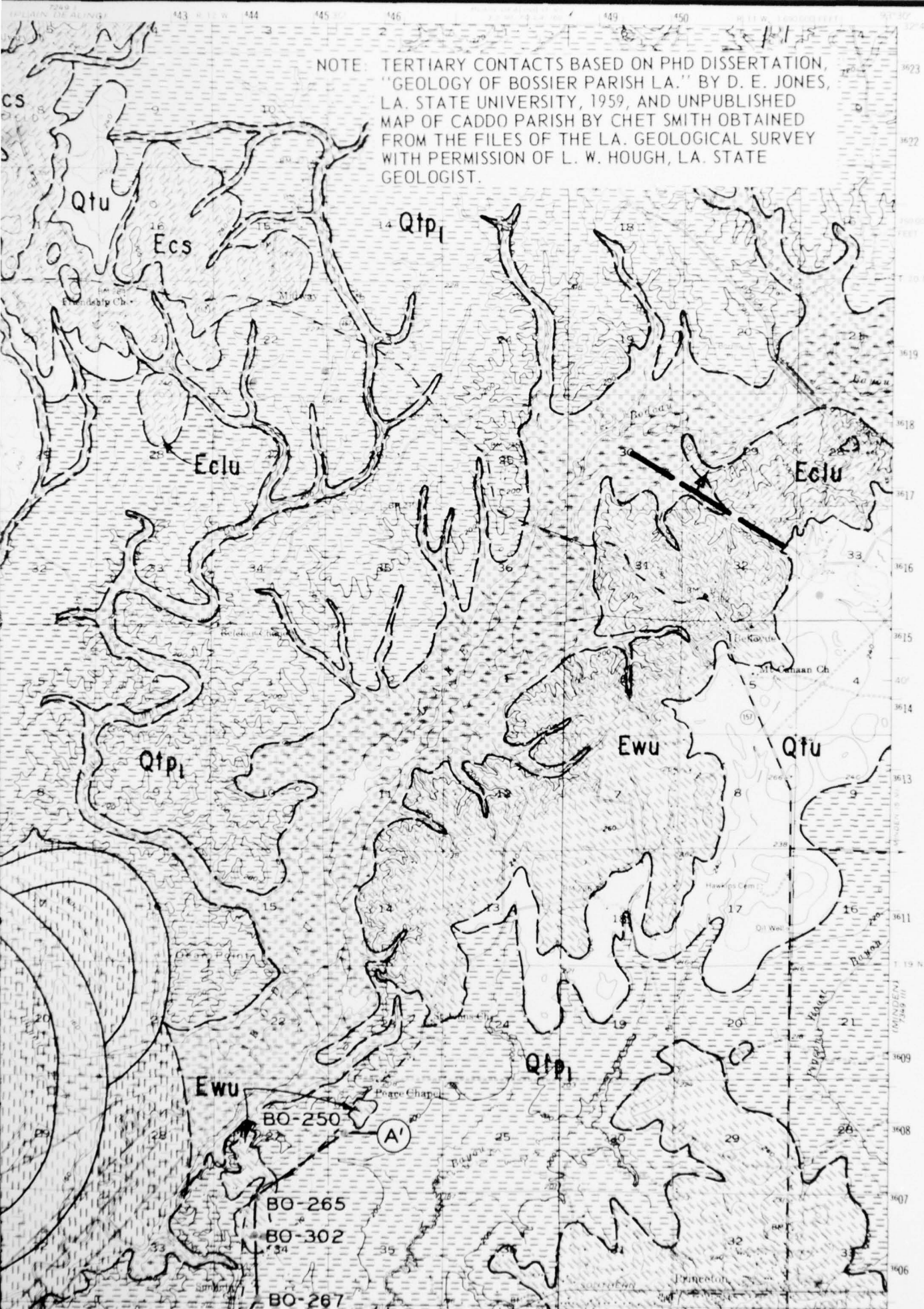


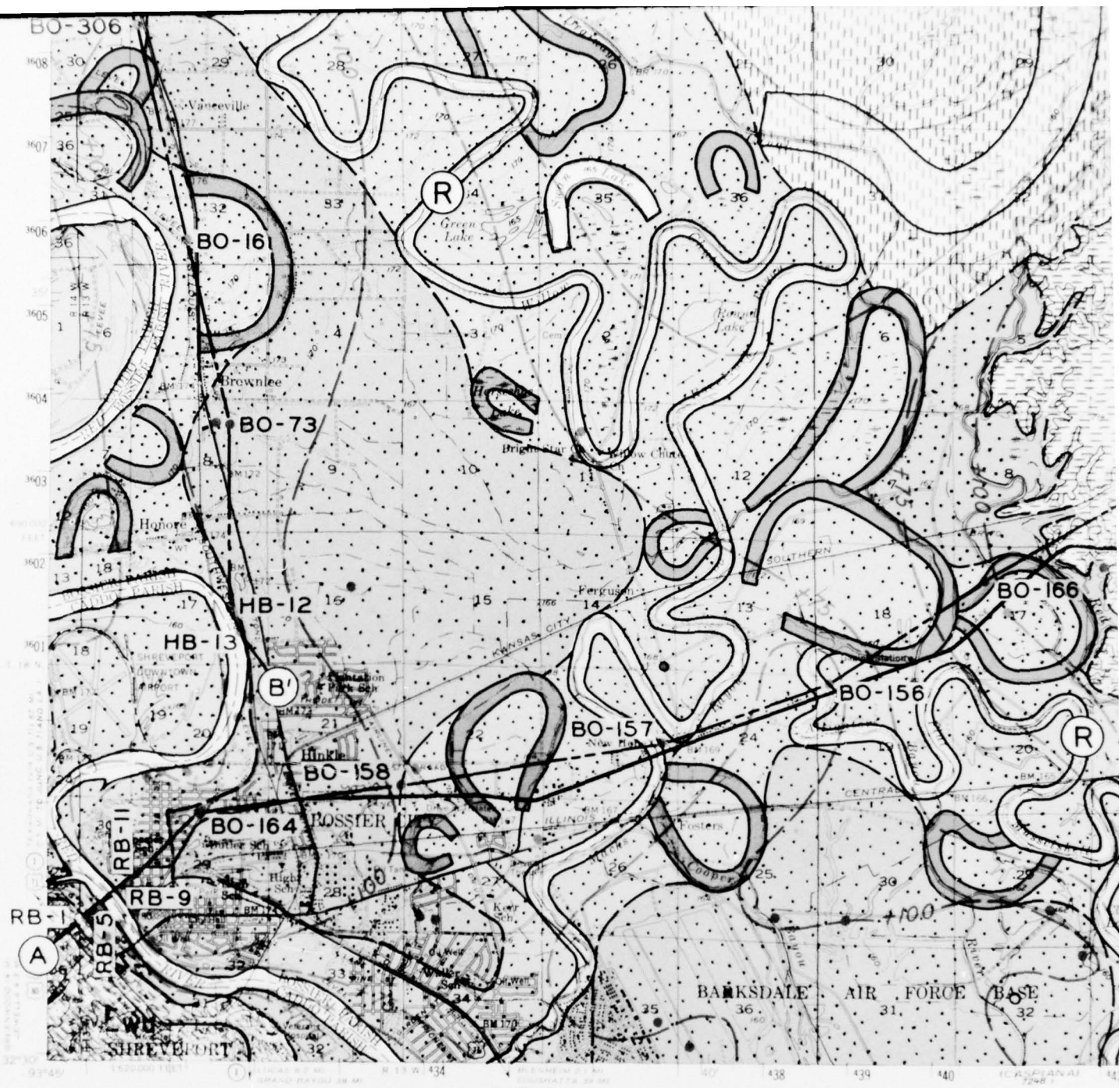
GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 DISTRIBUTION OF ALLUVIAL DEPOSITS  
 ASHLAND, LA.

4



NOTE: TERTIARY CONTACTS BASED ON PHD DISSERTATION, "GEOLOGY OF BOSSIER PARISH LA." BY D. E. JONES, LA. STATE UNIVERSITY, 1959, AND UNPUBLISHED MAP OF CADDO PARISH BY CHET SMITH OBTAINED FROM THE FILES OF THE LA. GEOLOGICAL SURVEY WITH PERMISSION OF L. W. HOUGH, LA. STATE GEOLOGIST.





QUATERNARY

LEGEND

TERTIARY

RECENT

- NATURAL LEVEE
- POINT BAR
- BACKSWAMP
- ABANDONED CHANNEL
- ABANDONED COURSE
- UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS

PLEISTOCENE

- PRAIRIE TERRACE-UPPER SURFACE
- PRAIRIE TERRACE-LOWER SURFACE
- ABANDONED CHANNEL
- MONTGOMERY TERRACE
- UNDIFFERENTIATED TERRACE

EOCENE

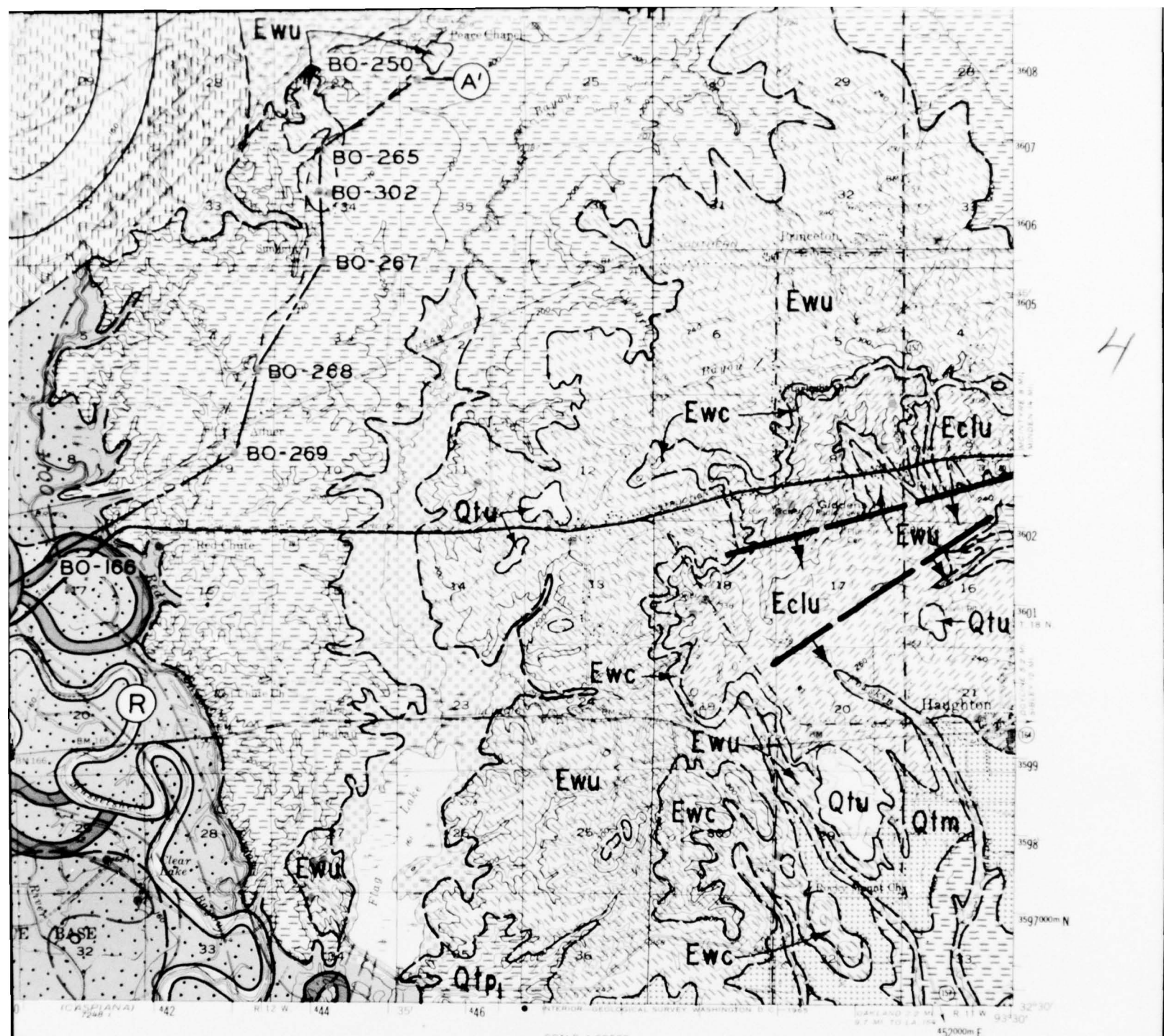
- LOWER CLAIBORNE GROUP UNDIFFERENTIATED
  - SPARTA FORMATION
- EOCENE-PALEOCENE
- WILCOX GROUP UNDIFFERENTIATED
  - CARRIZO FORMATION

(R) RED RIVER

--- INDEFINITE CONTACT  
 --- CONTACT

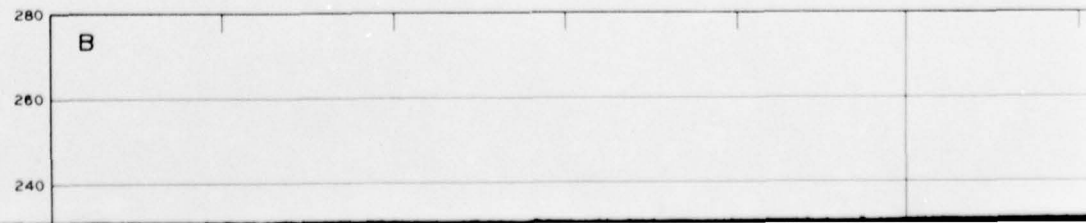
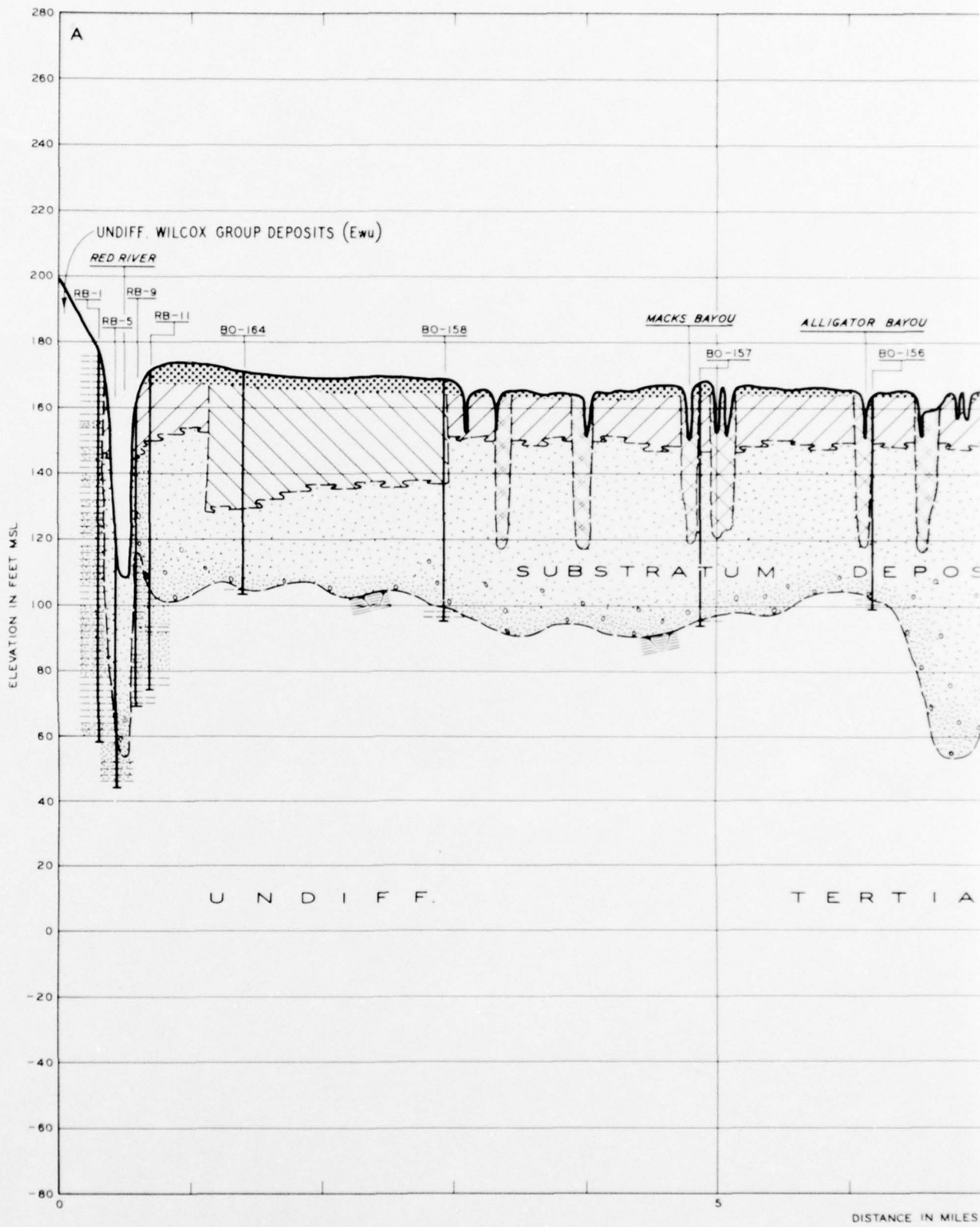
— ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL

- CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY

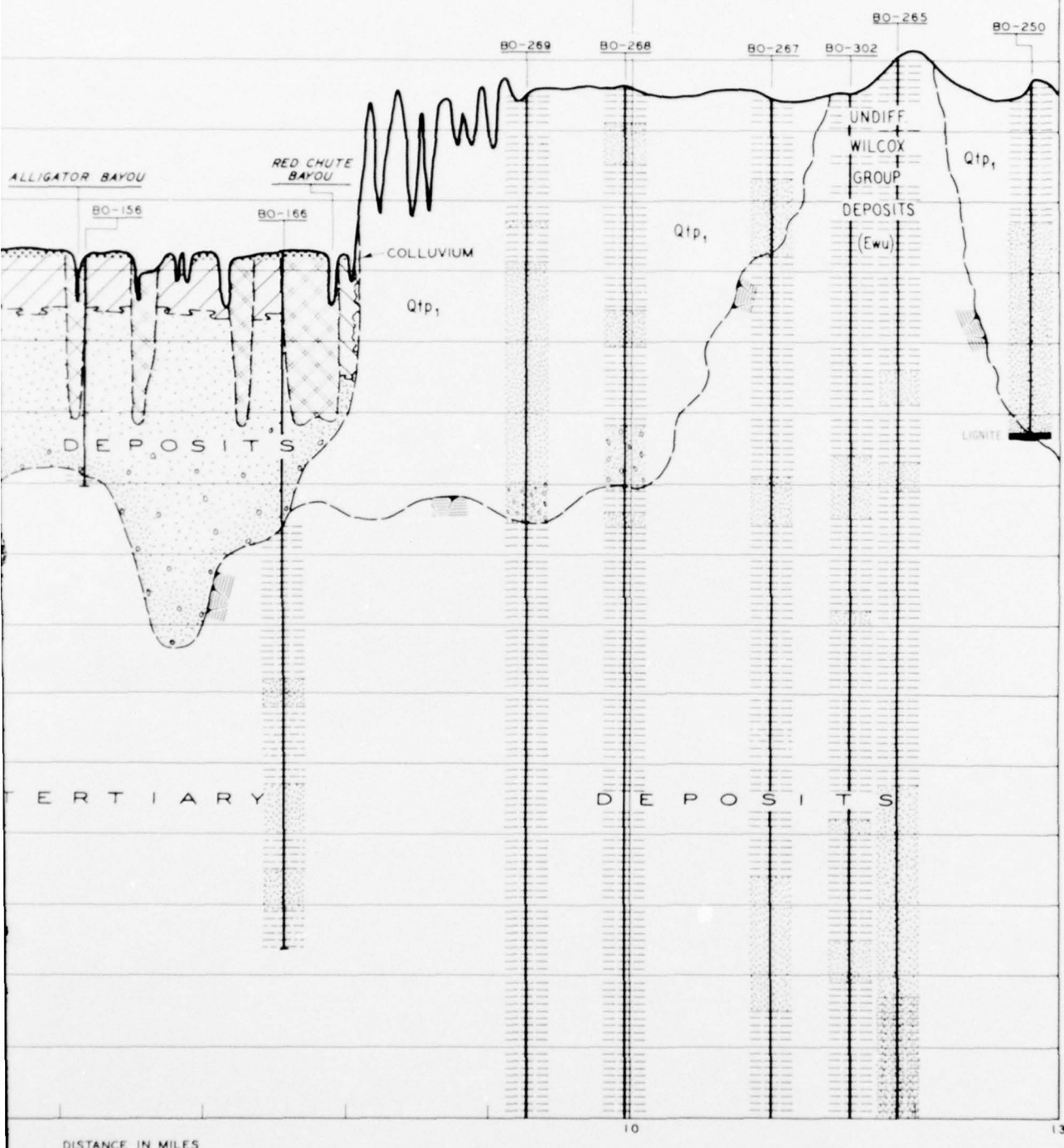


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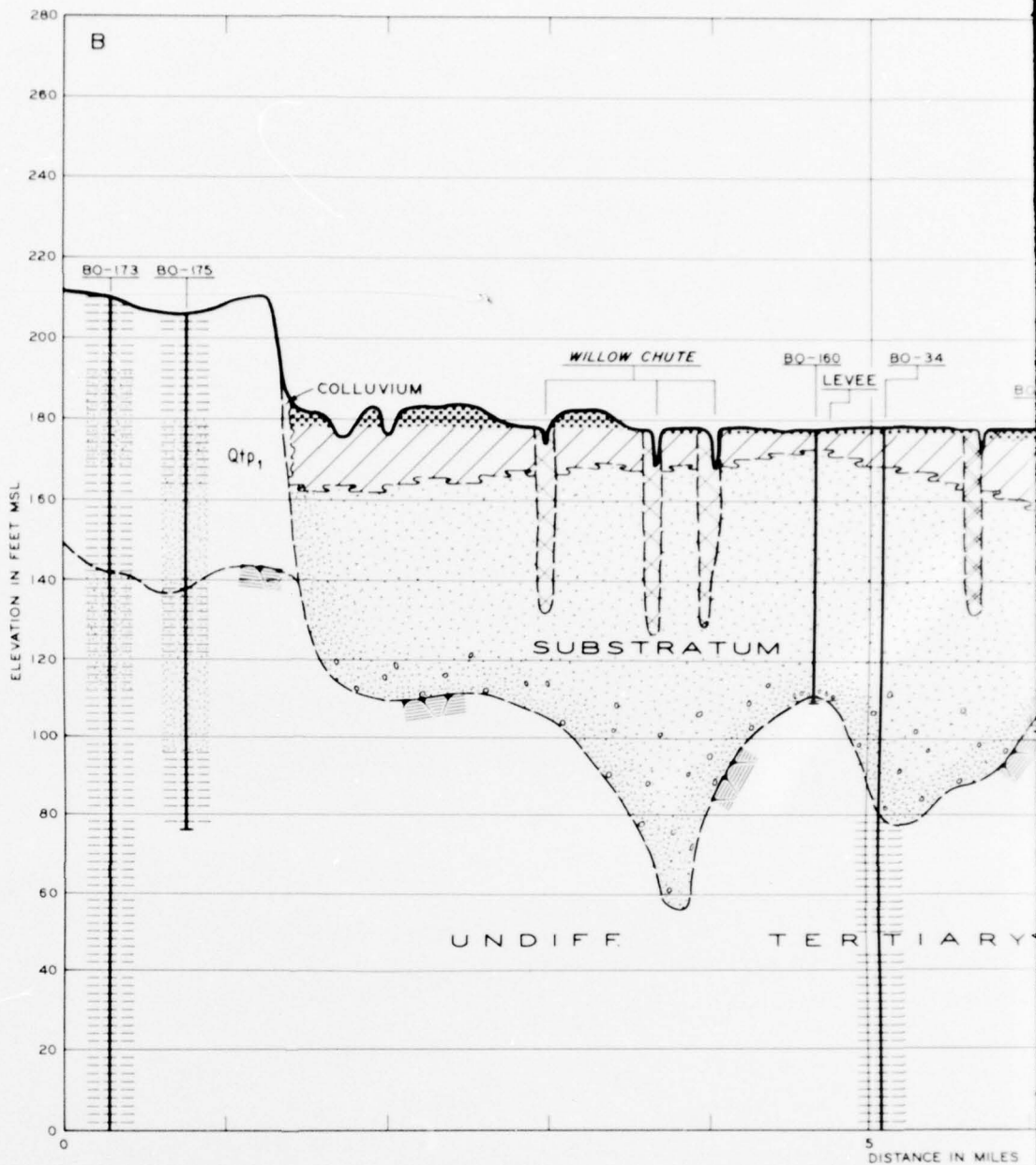
**GEOLOGICAL INVESTIGATION**  
**LOWER RED RIVER-ATCHAFALAYA BASIN AREA**  
**DISTRIBUTION OF ALLUVIAL DEPOSITS**  
**BOSSIER CITY, LA.**



A'



B'



**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

**LITHOLOGIC TYPES**

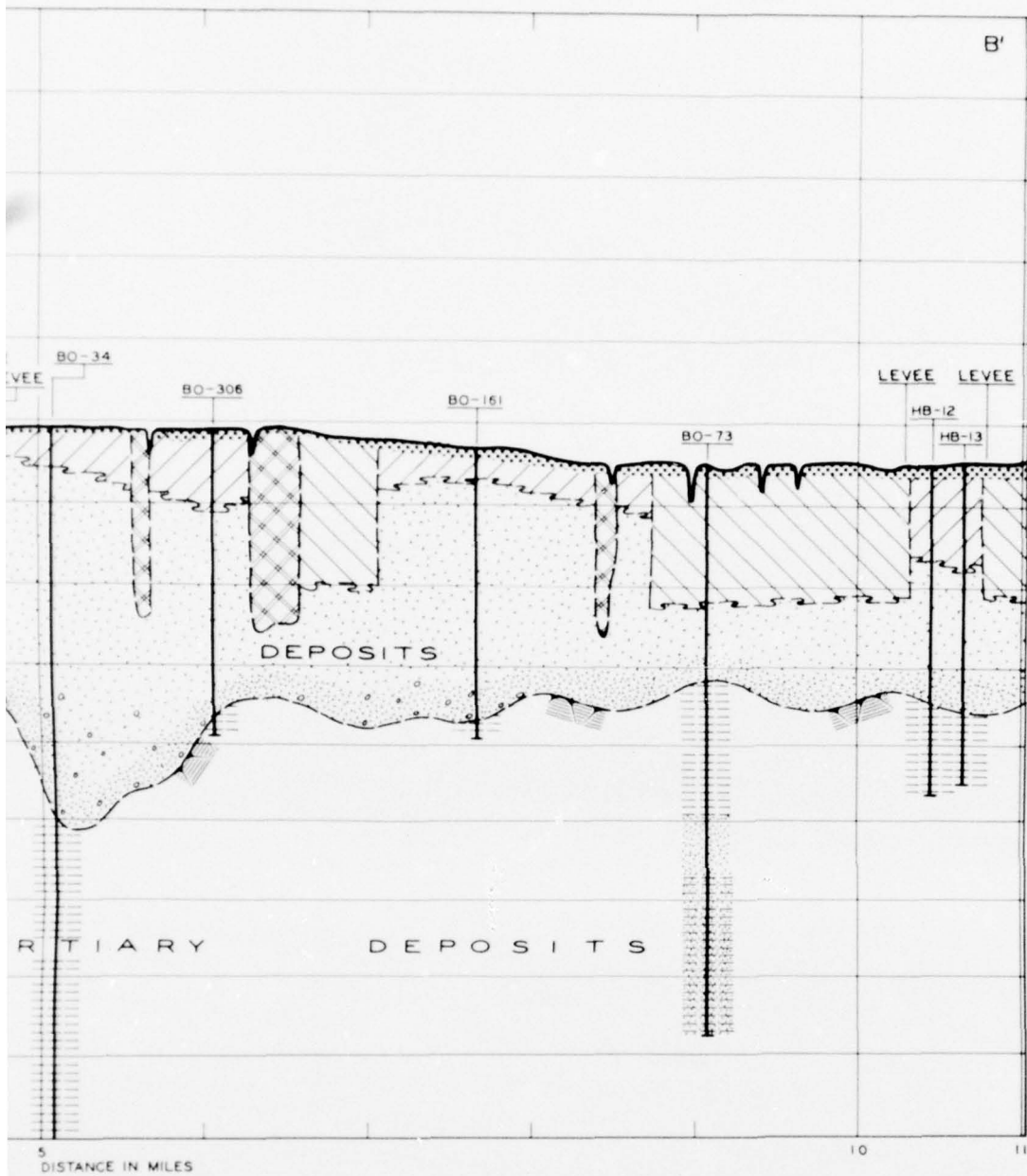
- TOPSTRATUM**
- NATURAL LEVEE
  - POINT BAR
  - BACKSWAMP
  - ABANDONED CHANNEL
  - ABANDONED COURSE
- SUBSTRATUM**
- UNDIFFERENTIATED SAND AND GRAVEL
  - TERTIARY SURFACE

- SAND
- CLAY AND SILT
- SHALE

**MAPPING SYMBOLS**

- PRAIRIE TERRACE-UPPER SURFACE
- UNDIFFERENTIATED WILCOX GROUP DEPOSITS

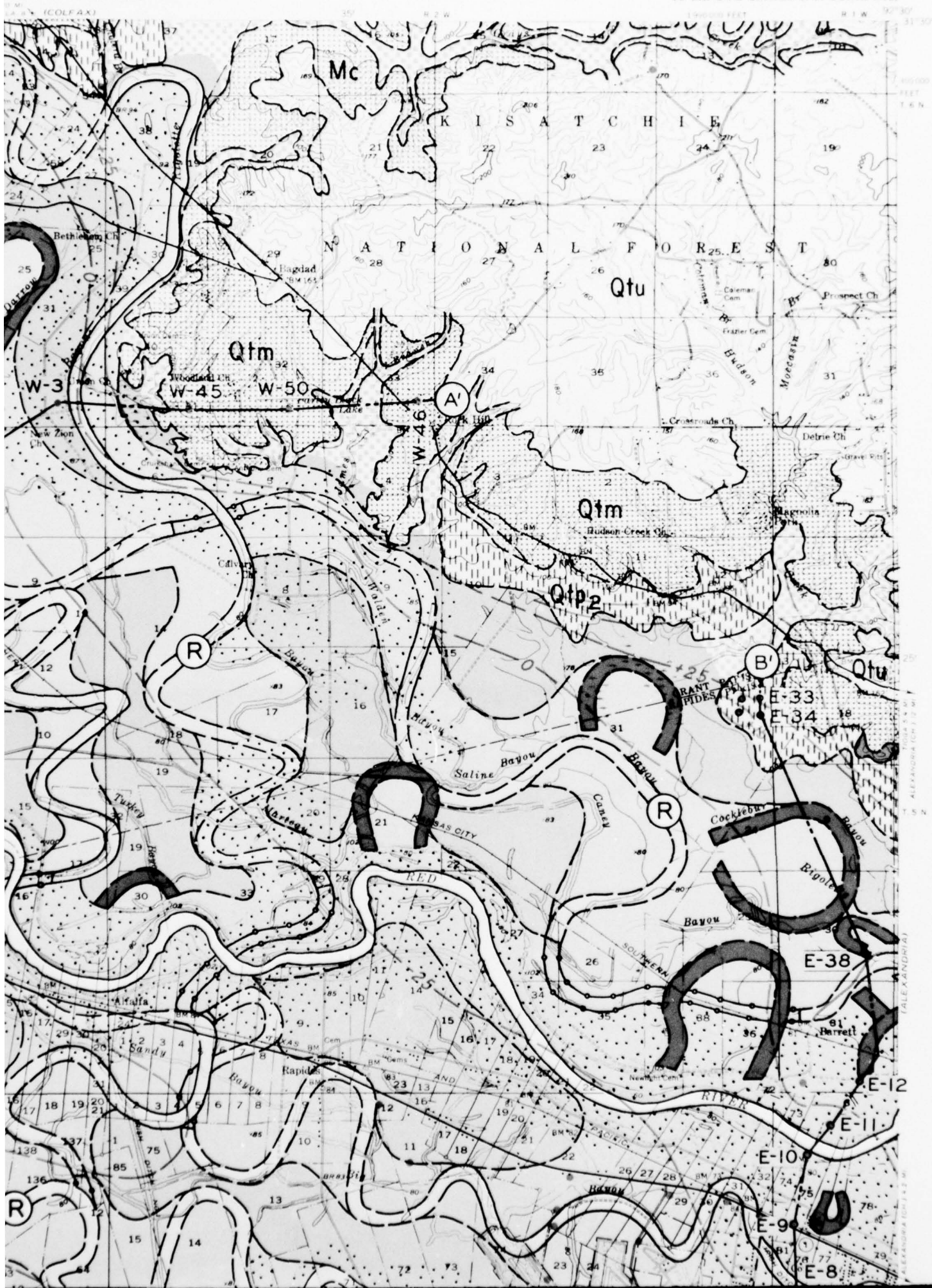
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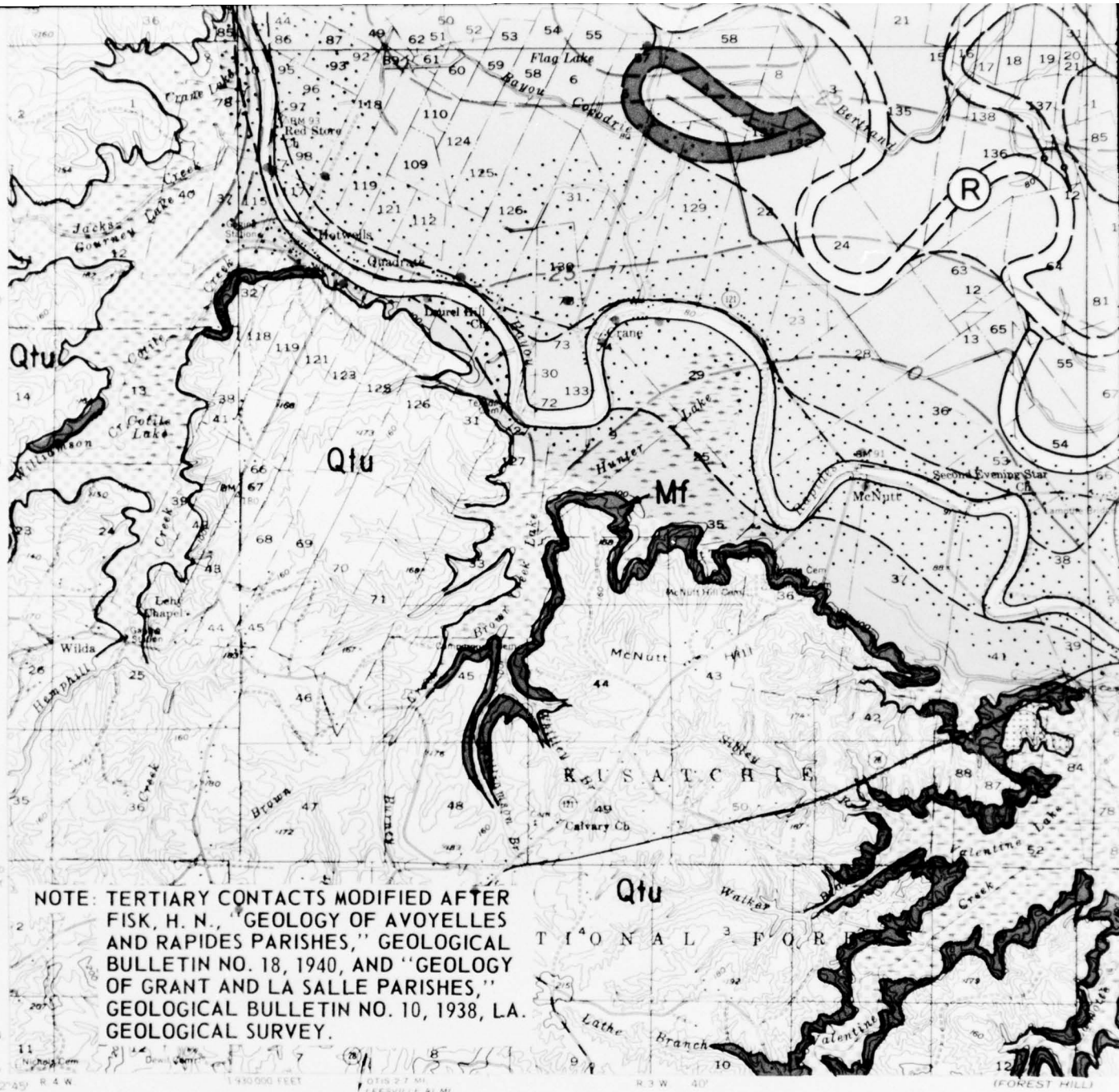


GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 SECTIONS A-A' AND B-B'  
 BOSIER CITY, LA.

4





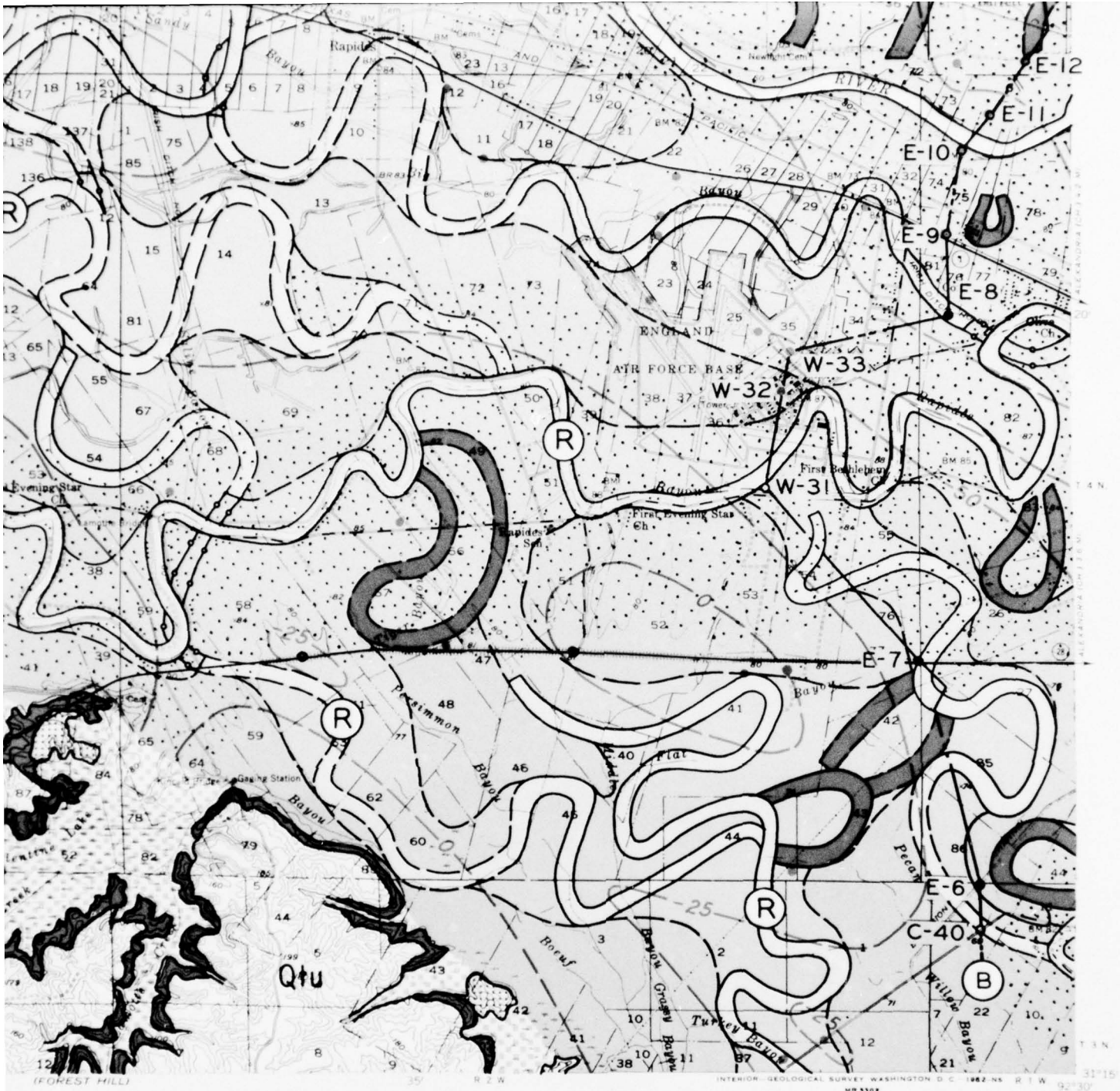


NOTE: TERTIARY CONTACTS MODIFIED AFTER FISK, H. N., "GEOLOGY OF AVOZELLES AND RAPIDES PARISHES," GEOLOGICAL BULLETIN NO. 18, 1940, AND "GEOLOGY OF GRANT AND LA SALLE PARISHES," GEOLOGICAL BULLETIN NO. 10, 1938, L.A. GEOLOGICAL SURVEY.

LEGEND

- |                   |   |                 |                     |  |   |
|-------------------|---|-----------------|---------------------|--|---|
| <u>QUATERNARY</u> |   | <u>TERTIARY</u> |                     |  |   |
| RECENT            |   | MIOCENE         |                     |  |   |
|                   | NATURAL LEVEE                             |                 | FLEMING FORMATION   |  | INDEFINITE CONTACT  |
|                   | POINT BAR                                 |                 | CATAHOULA FORMATION |  | CONTACT   |
|                   | BACKSWAMP                                 |                 | RED RIVER           |  | PROBABLE POSITION OF ABANDONED COURSE REWORKED BY SUBSEQUENT MEANDERING OF A STREAM     |
|                   | ABANDONED CHANNEL                         |                 |                     |  | ELEVATION OF TOP OF TERTIARY SURFACE IN FEET MSL  |
|                   | ABANDONED COURSE                          |                 |                     |  | CLASS I BORING (LOGGED BY SOILS SCIENTIST USED TO CONTOUR BURIED TERTIARY SURFACE)      |
|                   | UNDIFFERENTIATED ALLUVIUM OF SMALL CREEKS |                 |                     |  | CLASS I BORING (LOGGED BY SOILS SCIENTIST NOT REACHING TERTIARY)                        |
| PLEISTOCENE       |   |                 |                     |  | CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST USED TO CONTOUR BURIED TERTIARY SURFACE) |
|                   | PRAIRIE TERRACE-LOWER SURFACE             |                 |                     |  | CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST NOT REACHING TERTIARY)                   |
|                   | MONTGOMERY TERRACE                        |                 |                     |  |   |
|                   | UNDIFFERENTIATED TERRACE                  |                 |                     |  |   |

3



SCALE 1:62500



CONTOUR INTERVAL 20 FEET  
DATUM IS MEAN SEA LEVEL

ABANDONED  
SUBSEQUENT  
TERTIARY

(BY SOILS SCIENTIST)  
ED TERTIARY SURFACE

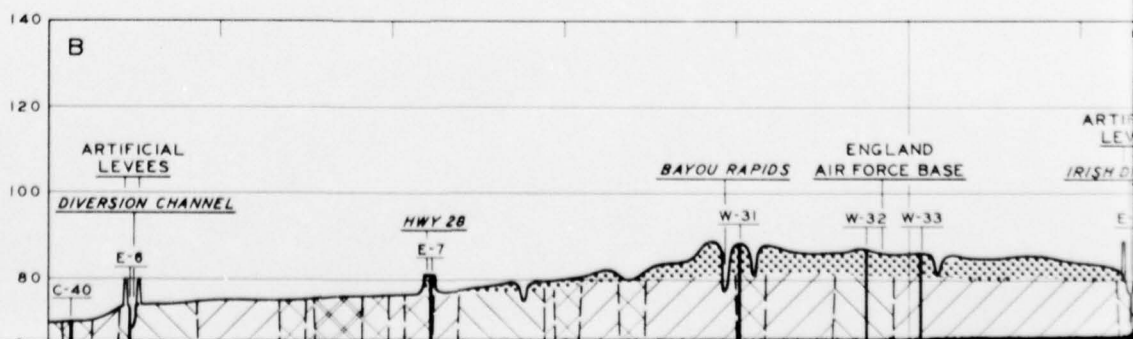
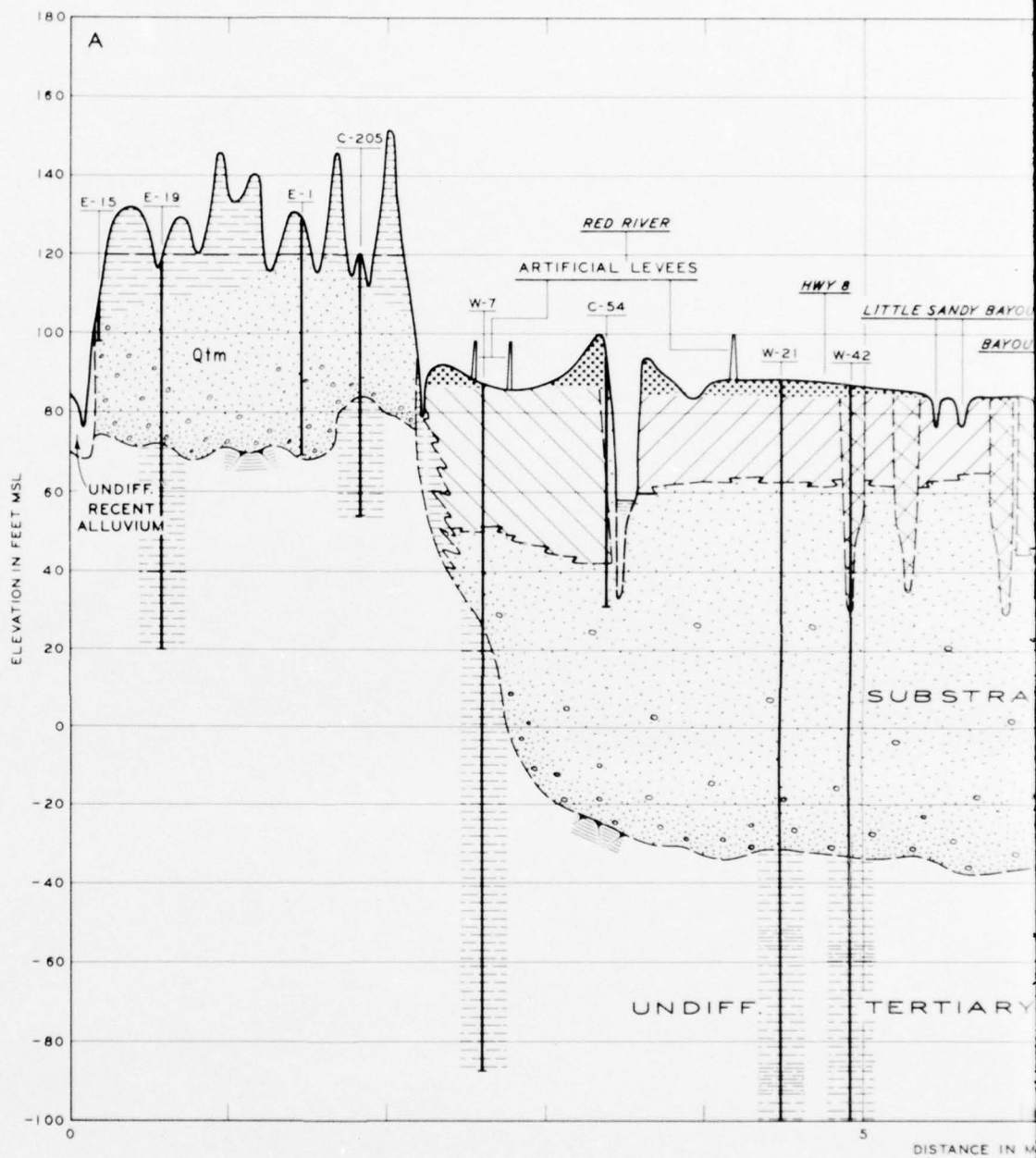
(BY SOILS SCIENTIST)

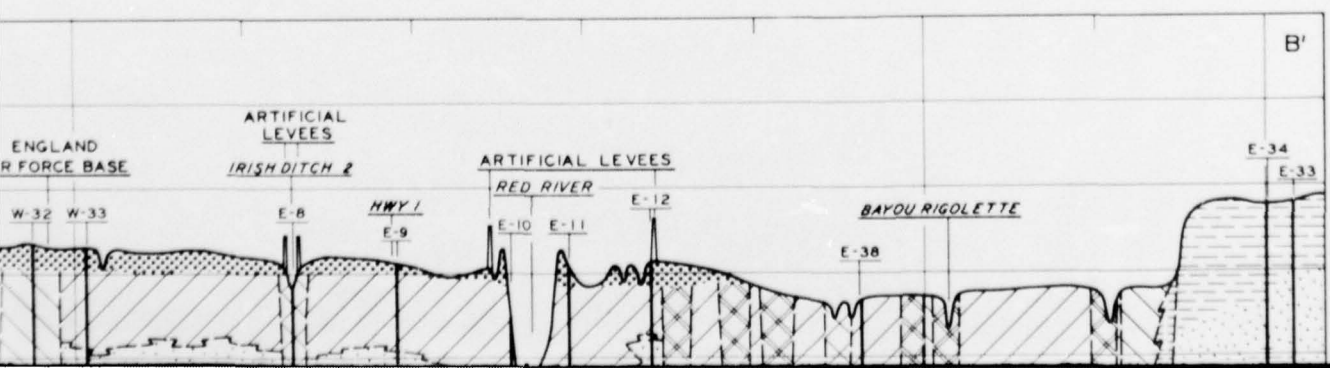
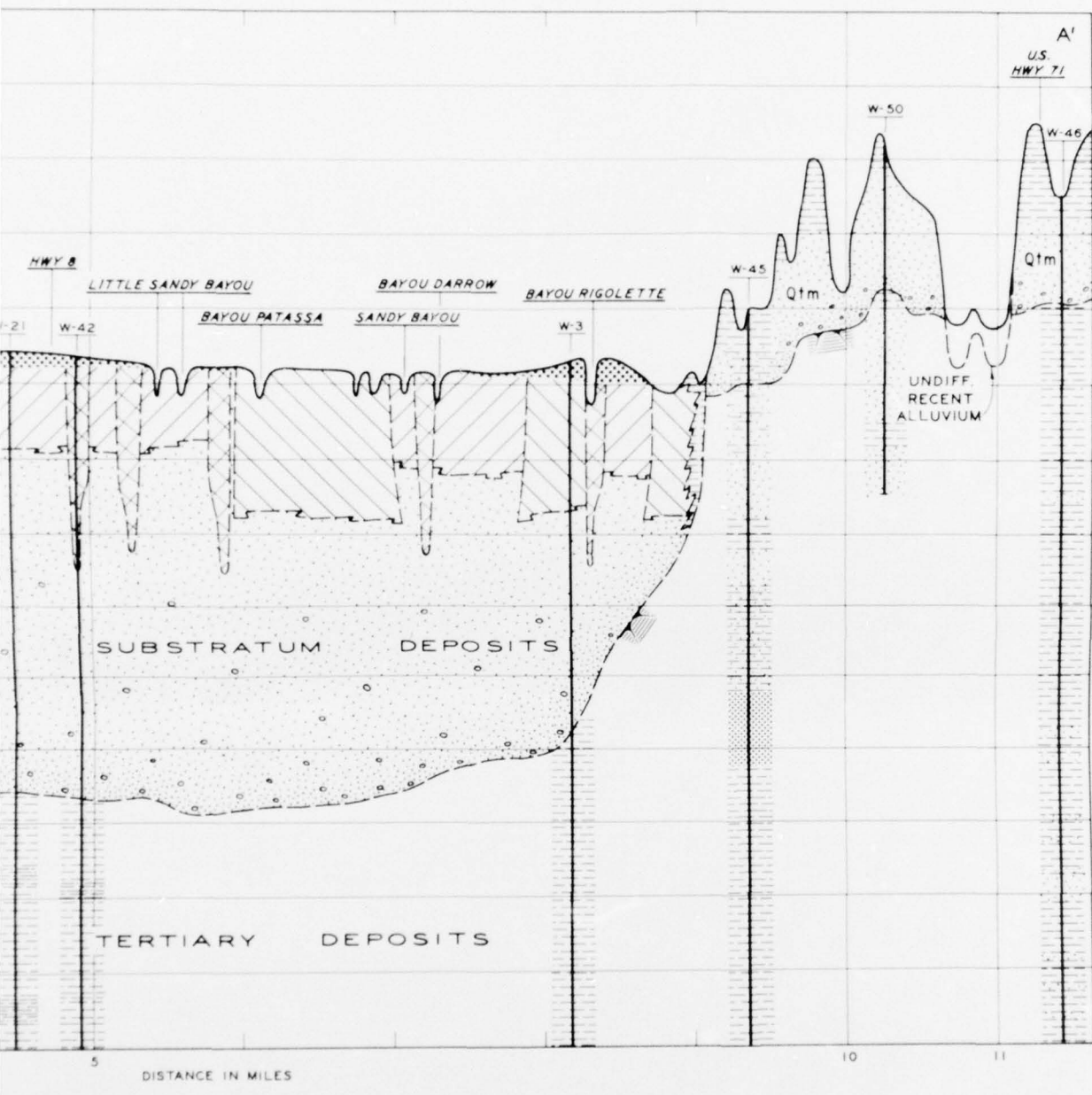
GGED BY SOILS SCIENTIST)  
ED TERTIARY SURFACE

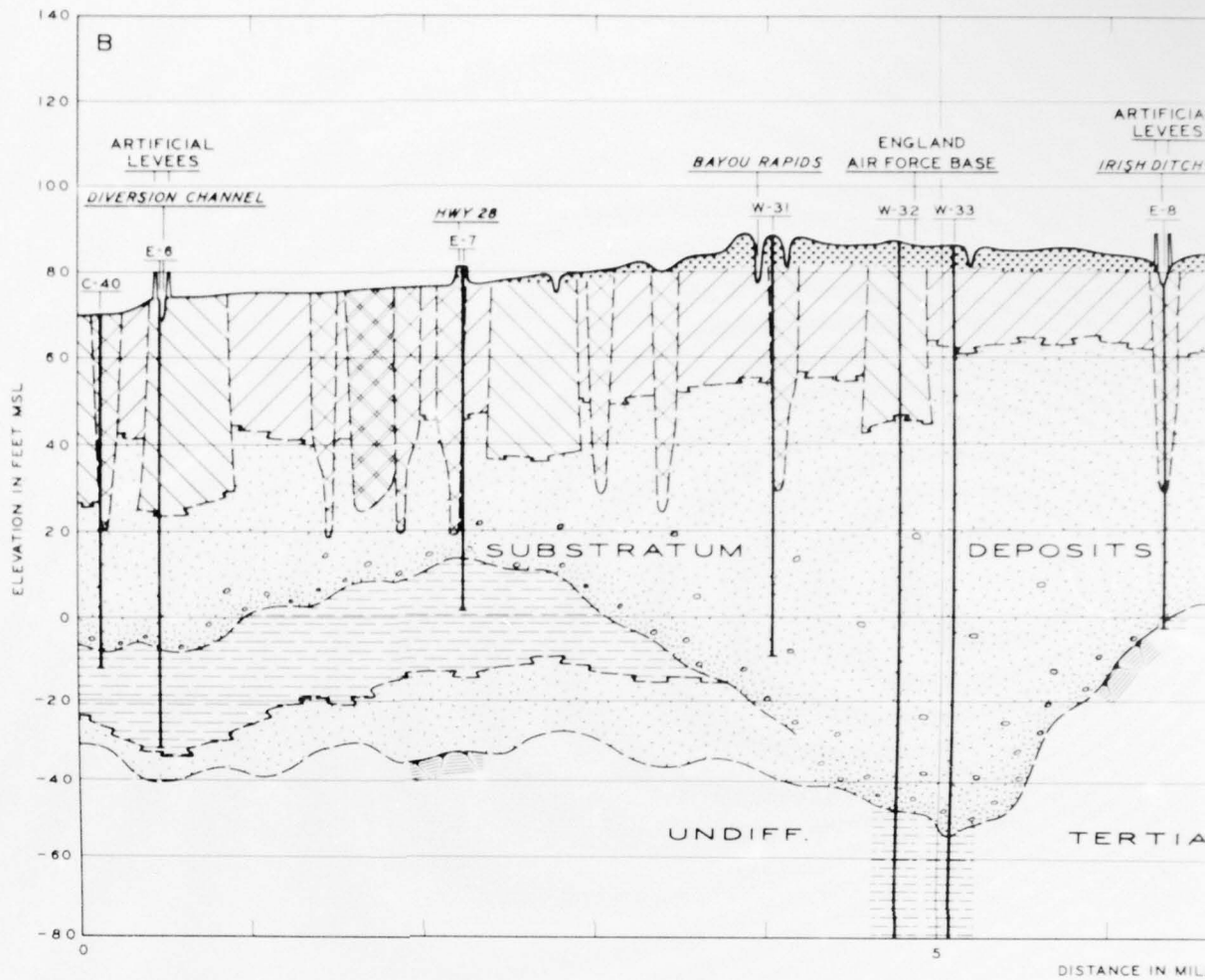
GGED BY SOILS SCIENTIST)

GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
DISTRIBUTION OF ALLUVIAL DEPOSITS  
BOYCE, LA.

4







**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

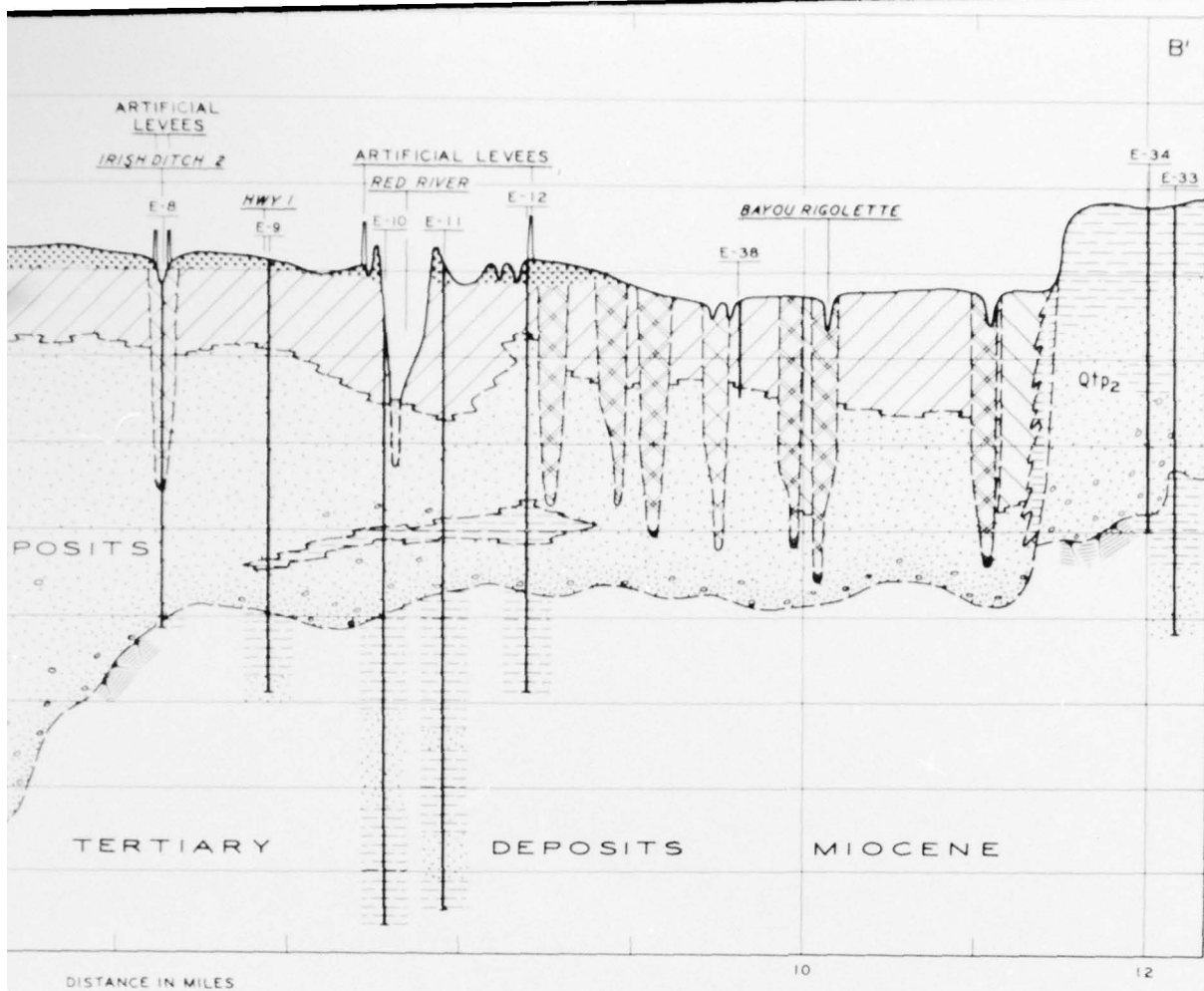
**LITHOLOGIC TYPES**

- TOPSTRATUM**
- NATURAL LEVEE
  - POINT BAR
  - BACKSWAMP
  - ABANDONED CHANNEL
  - ABANDONED COURSE
  - ALLUVIAL APRON
- SUBSTRATUM**
- UNDIFFERENTIATED SAND AND GRAVEL
  - TERTIARY SURFACE

- SAND
- CLAY AND SILT
- SANDSTONE
- SHALE
- SANDY CLAY
- SAND AND GRAVEL

**MAPPING SYMBOLS**

- PRAIRIE TERRACE - LOWER SURFACE
- MONTGOMERY TERRACE



GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER - ATCHAFALAYA BASIN AREA  
 SECTIONS A-A' AND B-B'  
 BOYCE, LA.

4

3530000m N  
M 20,919 27  
5628000 27

T 11 N  
55

29  
32

T 10 N  
17  
16



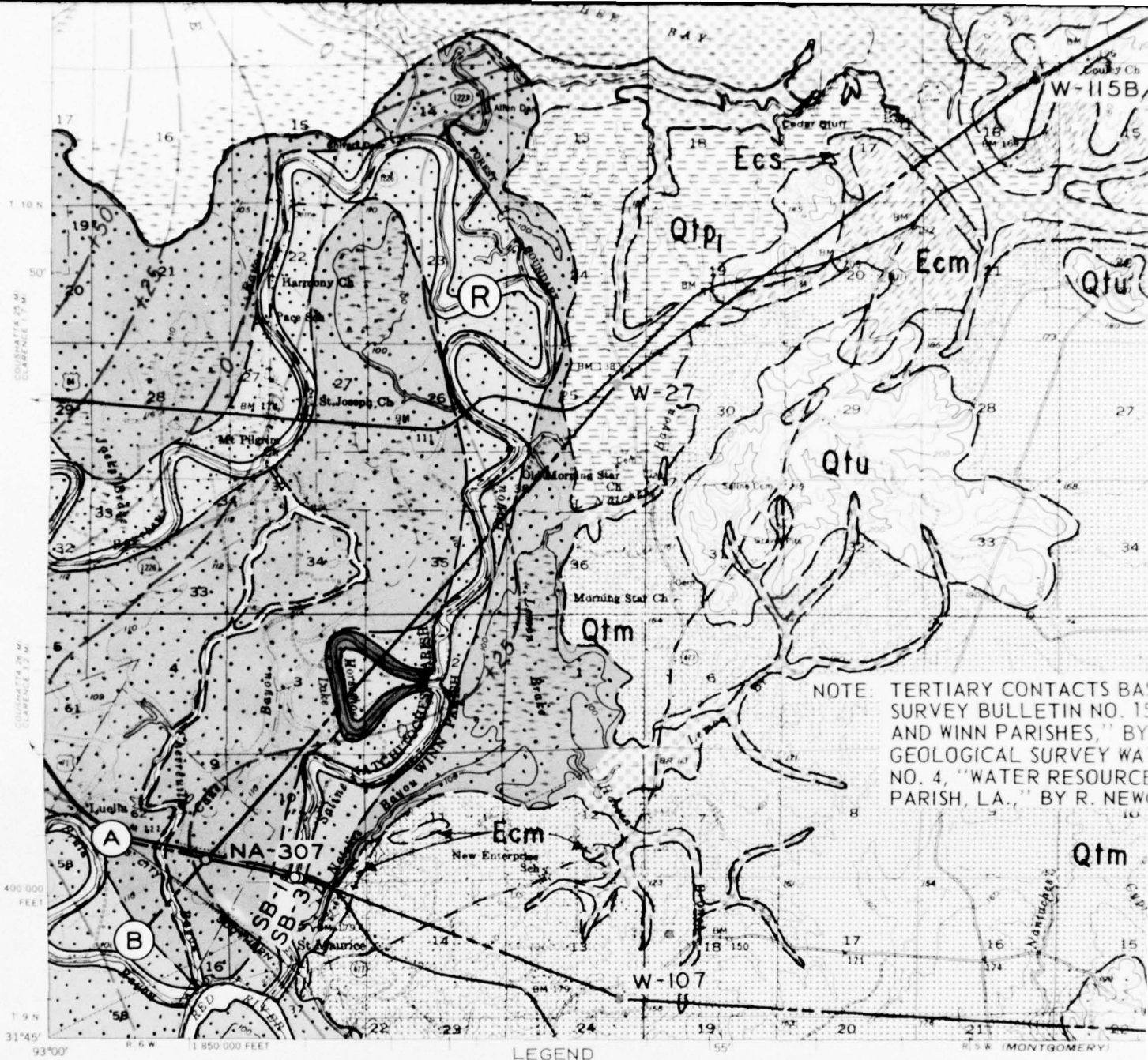
NOTE:  
CONTACT BETWEEN THE CLAIBORNE AND WILCOX  
GROUPS IS INDEFINITE IN THIS AREA.

(CAMP TI)  
CLEAR LAKE

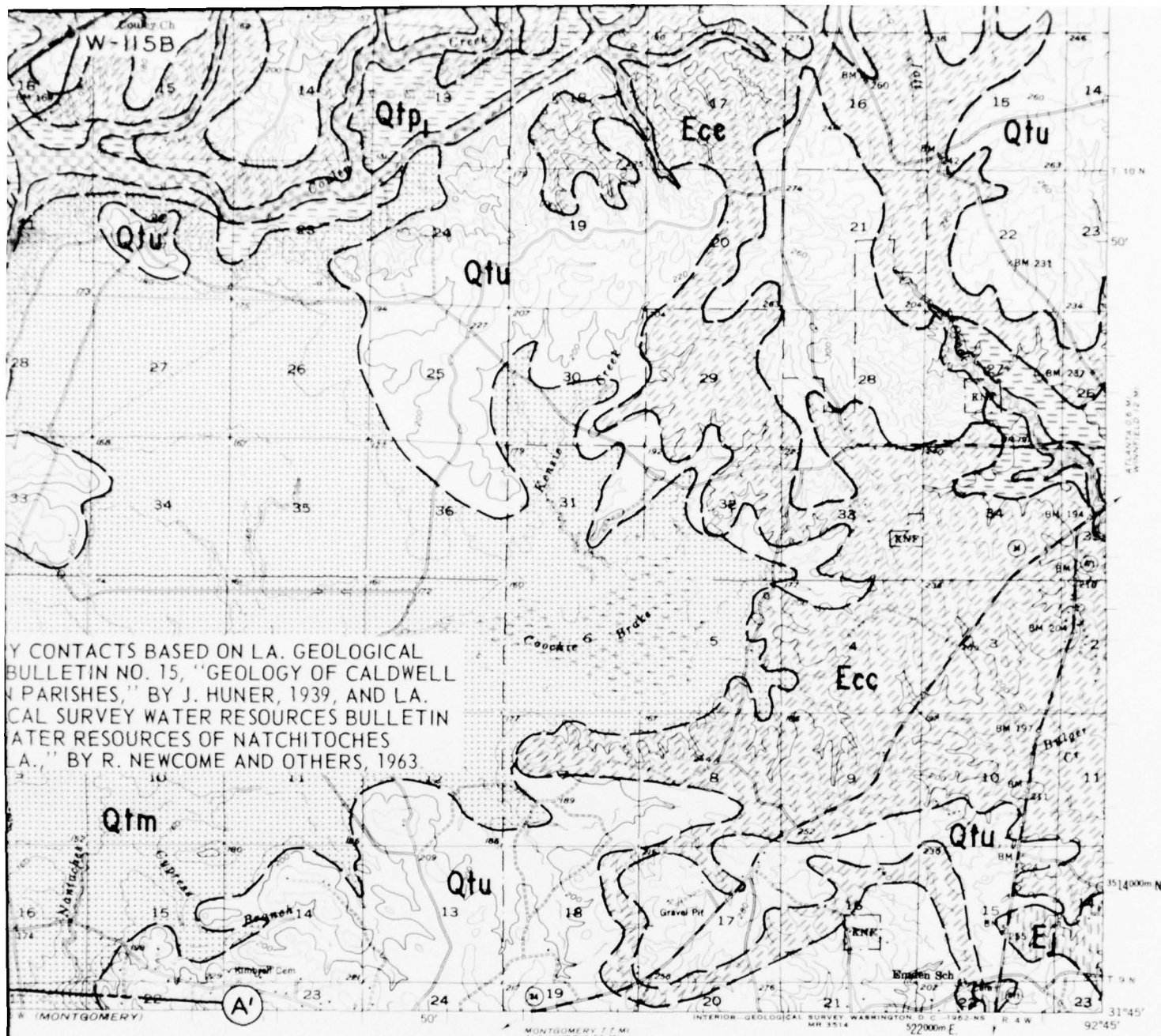
19

W-115E





QUATERNARY		TERTIARY	
<b>RECENT</b>		<b>EOCENE</b>	
	NATURAL LEVEE		JACKSON GROUP
	POINT BAR		CLAIBORNE GROUP UNDIFFERENTIATED
	BACKSWAMP		COCKFIELD FORMATION
	ABANDONED CHANNEL		COOK MOUNTAIN FORMATION
	ABANDONED COURSE		SPARTA FORMATION
	MAJOR CREVASSE CHANNELS	<b>EOCENE-PALEOCENE</b>	
	UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS		WILCOX GROUP UNDIFFERENTIATED
<b>PLEISTOCENE</b>			
	PRAIRIE TERRACE-UPPER SURFACE		
	MONTGOMERY TERRACE		
	UNDIFFERENTIATED TERRACE		
			RED RIVER
			INDEFINITE CONTACT
			CONTACT
			ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL
			CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
			CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY
			CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
			CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY



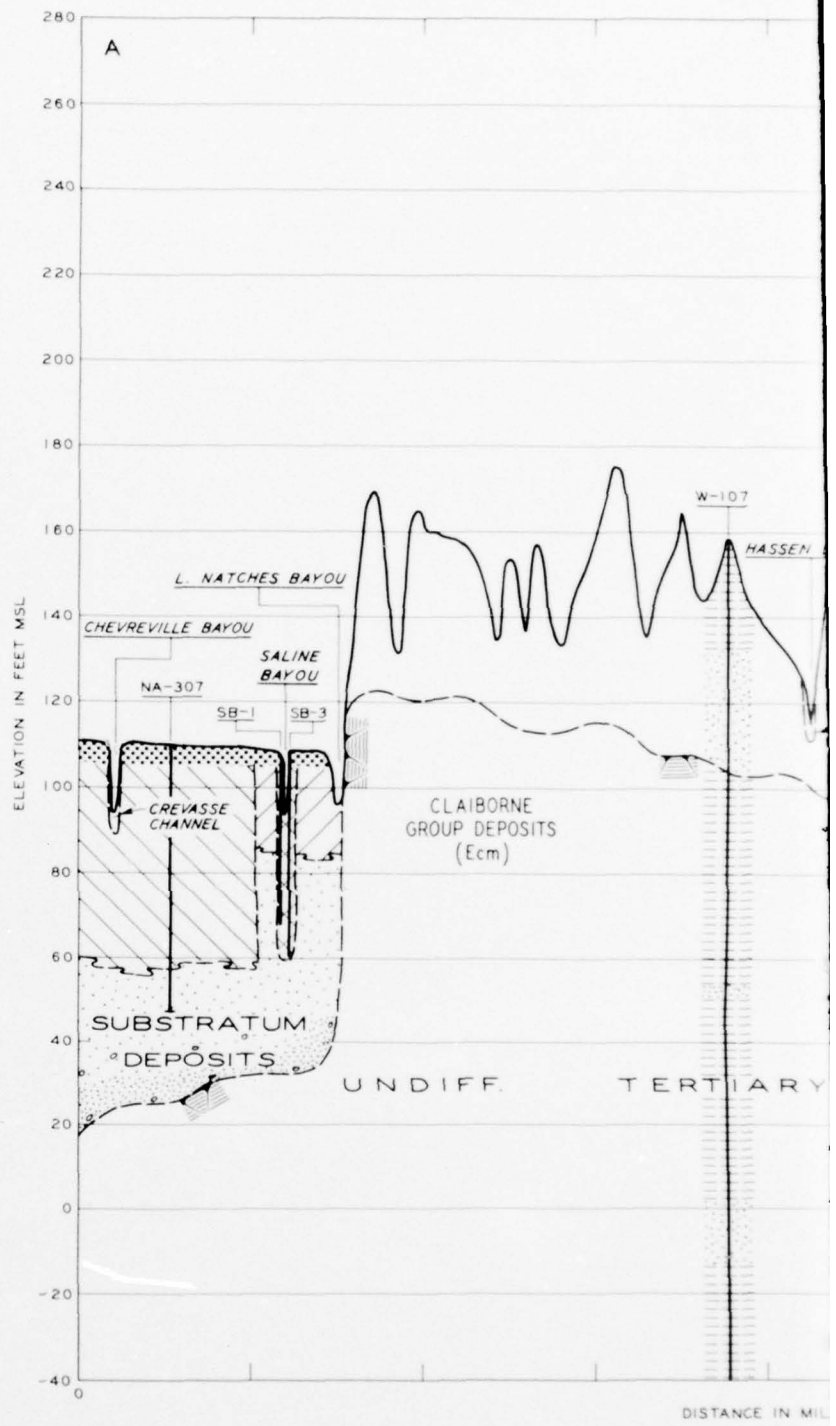
CONTACTS BASED ON LA. GEOLOGICAL BULLETIN NO. 15, "GEOLOGY OF CALDWELL PARISHES," BY J. HUNER, 1939, AND LA. GEOLOGICAL SURVEY WATER RESOURCES BULLETIN NO. 1, "WATER RESOURCES OF NATCHITOCHEES PARISH, LA.," BY R. NEWCOME AND OTHERS, 1963.

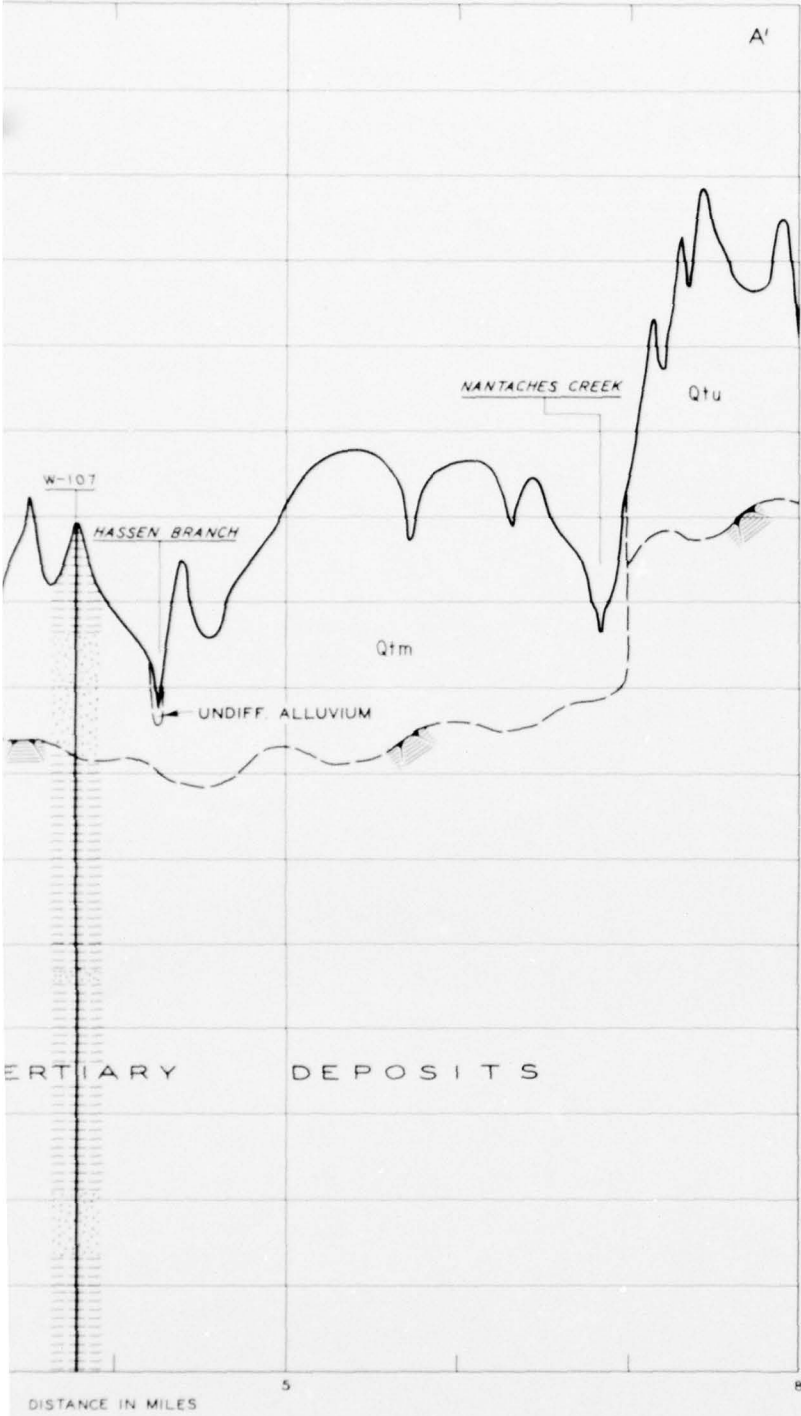


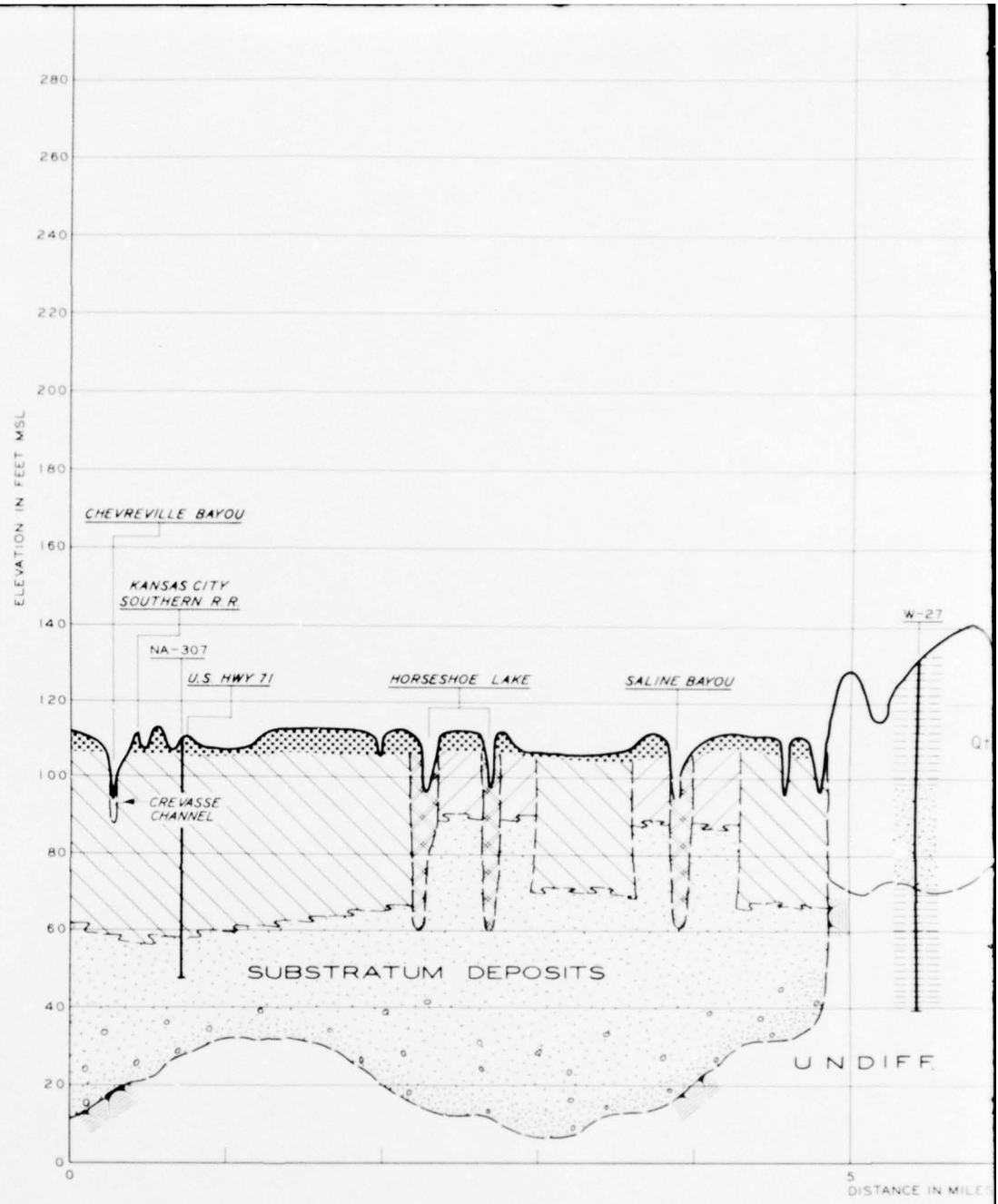
CONTOUR INTERVAL 20 FEET  
 DASHED LINES REPRESENT 10-FOOT CONTOURS  
 DATUM IS MEAN SEA LEVEL

ERTIARY  
 BY SOILS SCIENTIST)  
 D TERTIARY SURFACE  
 BY SOILS SCIENTIST)  
 GED BY SOILS SCIENTIST)  
 D TERTIARY SURFACE  
 GED BY SOILS SCIENTIST)

GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 DISTRIBUTION OF ALLUVIAL DEPOSITS  
 CALVIN, L.A.







**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

- |            |  |                                  |
|------------|--|----------------------------------|
|            |  | NATURAL LEVEE                    |
|            |  | POINT BAR                        |
| TOPSTRATUM |  | BACKSWAMP                        |
|            |  | ABANDONED CHANNEL                |
|            |  | ABANDONED COURSE                 |
| SUBSTRATUM |  | UNDIFFERENTIATED SAND AND GRAVEL |
|            |  | TERTIARY SURFACE                 |

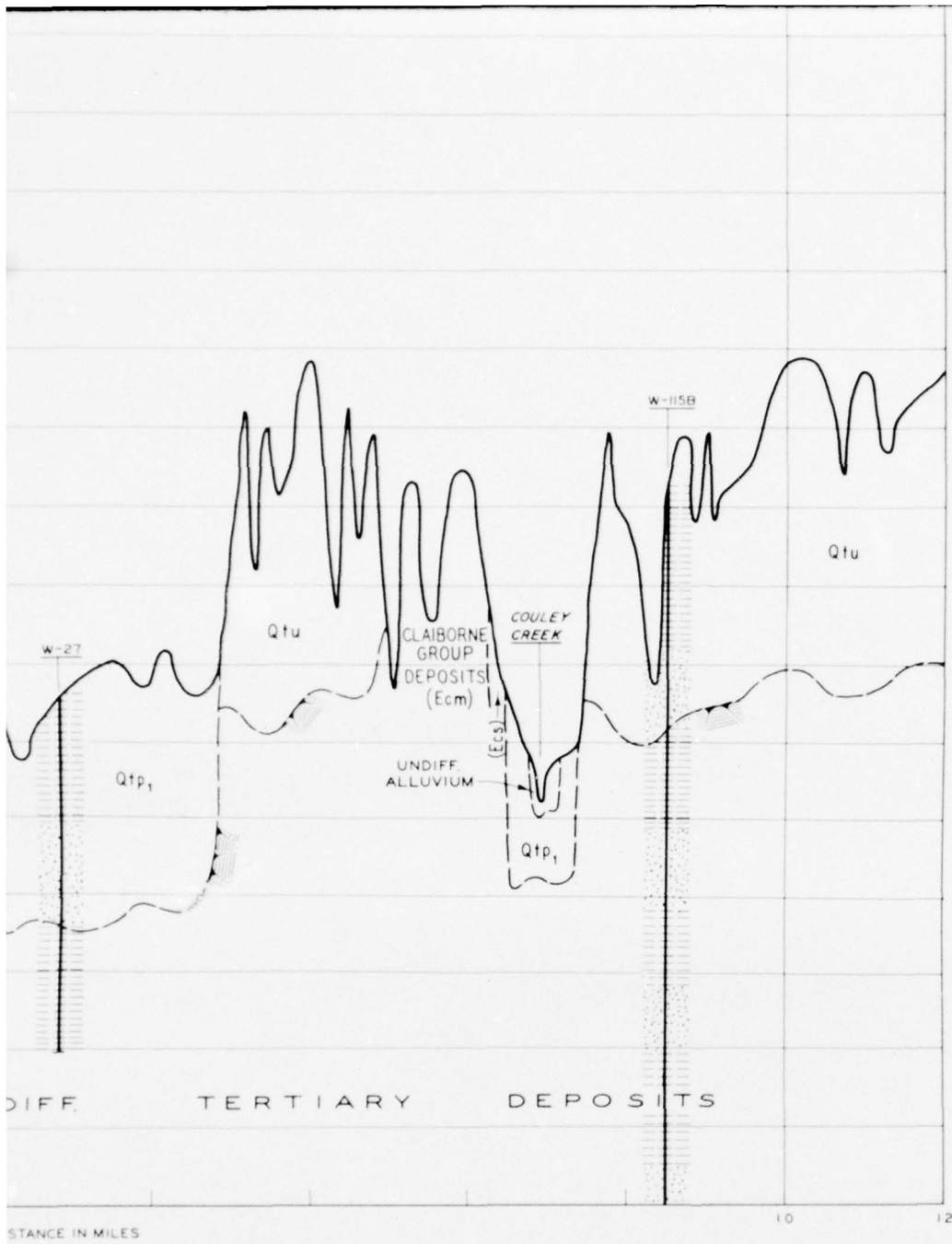
**LITHOLOGIC TYPES**

- |  |               |
|--|---------------|
|  | SAND          |
|  | CLAY AND SILT |

**MAPPING SYMBOLS**

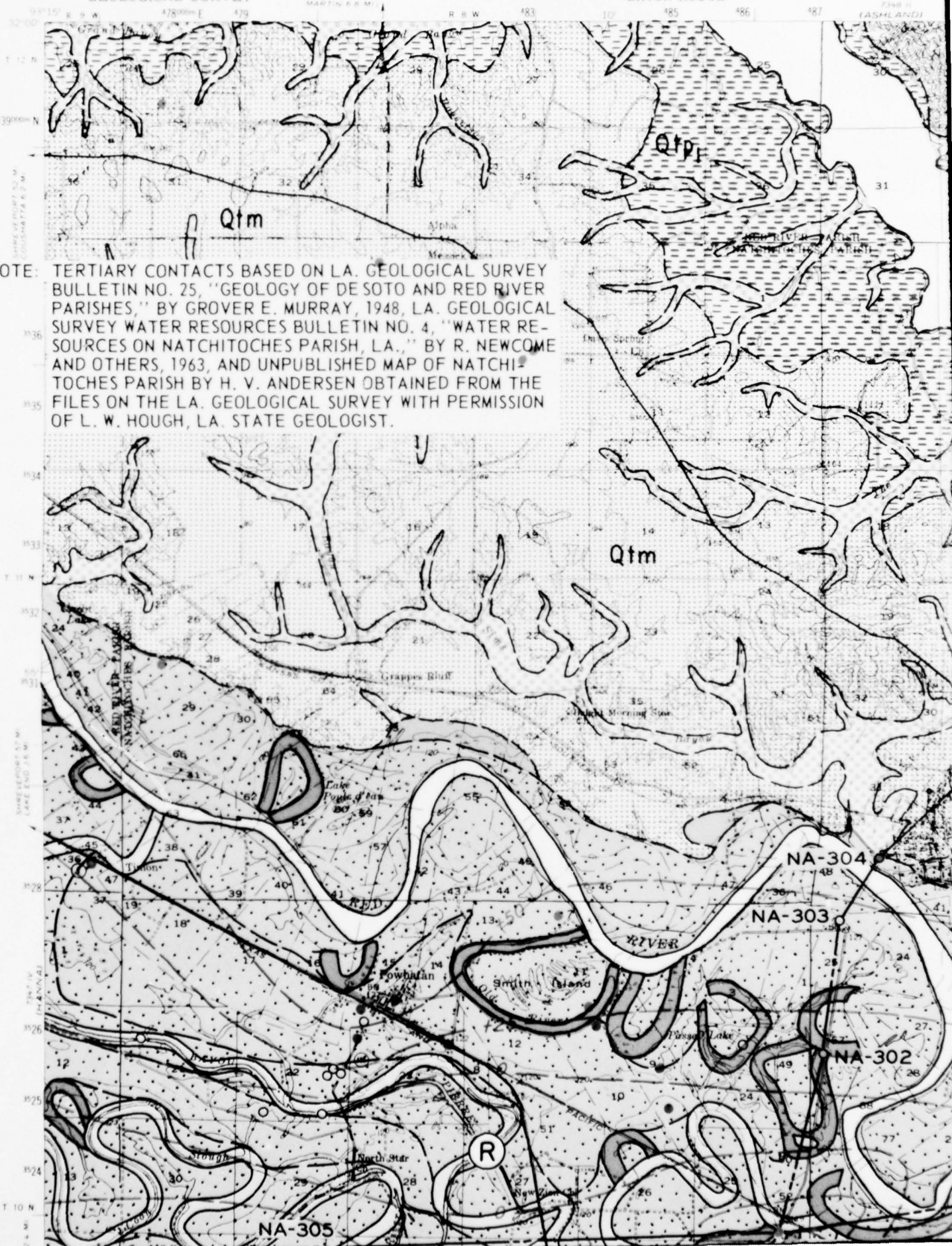
- |  |  |
|--|--|
|  | PRAIRIE TERRACE-UPPER SURFACE                      |
|  | MONTGOMERY TERRACE                                 |
|  | UNDIFFERENTIATED TERRACE                           |
|  | CLAIBORNE GROUP DEPOSITS (COOK MOUNTAIN FORMATION) |
|  | CLAIBORNE GROUP DEPOSITS (SPARATA FORMATION)       |

3



GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 SECTIONS A-A' AND B-B'  
 CALVIN, LA.

4



NOTE: TERTIARY CONTACTS BASED ON LA. GEOLOGICAL SURVEY BULLETIN NO. 25, "GEOLOGY OF DE SOTO AND RED RIVER PARISHES," BY GROVER E. MURRAY, 1948, LA. GEOLOGICAL SURVEY WATER RESOURCES BULLETIN NO. 4, "WATER RESOURCES ON NATCHITOCHE PARISH, LA.," BY R. NEWCOMB AND OTHERS, 1963, AND UNPUBLISHED MAP OF NATCHITOCHE PARISH BY H. V. ANDERSEN OBTAINED FROM THE FILES ON THE LA. GEOLOGICAL SURVEY WITH PERMISSION OF L. W. HOUGH, LA. STATE GEOLOGIST.

NA-305

NA-304

NA-303

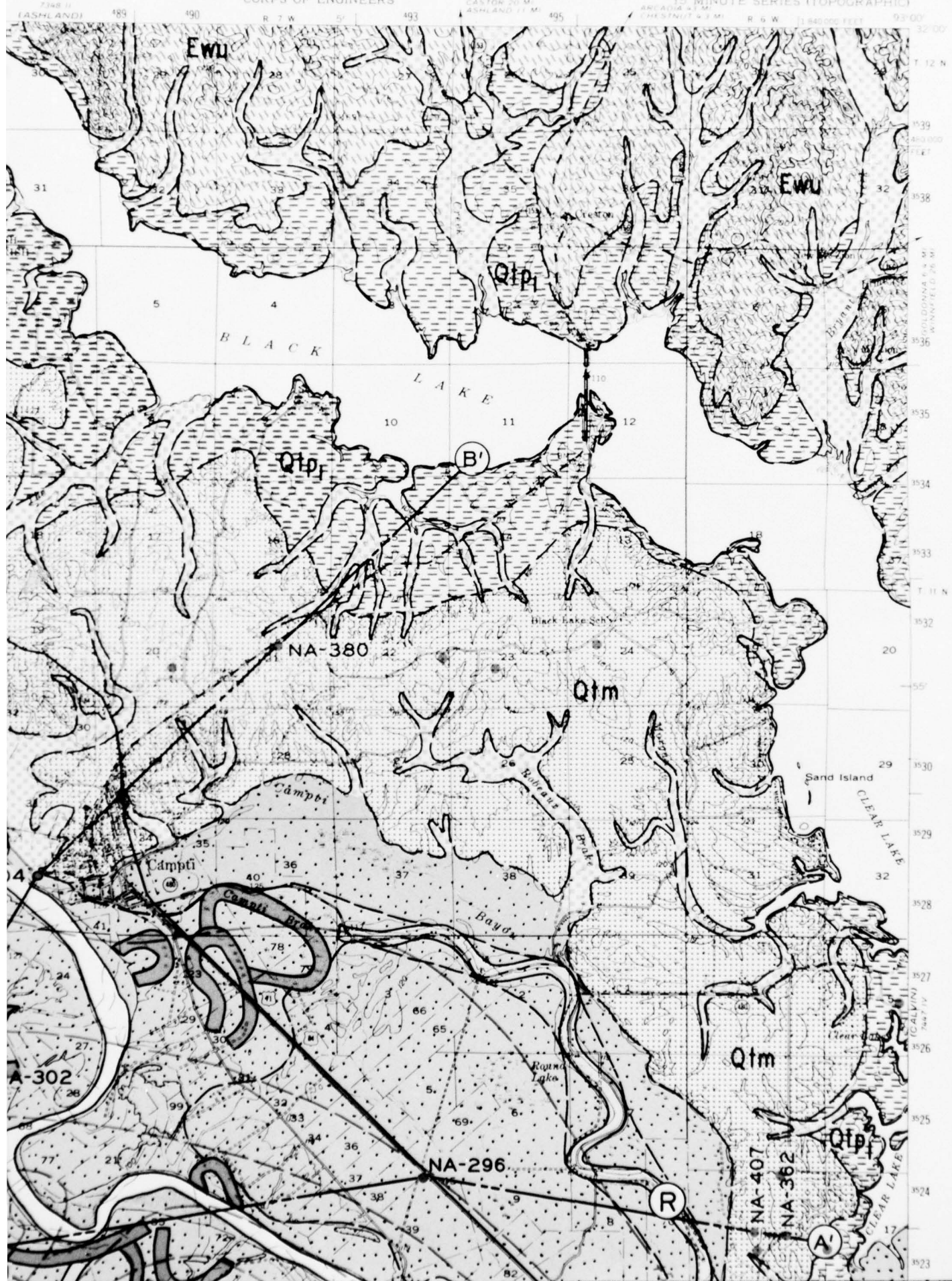
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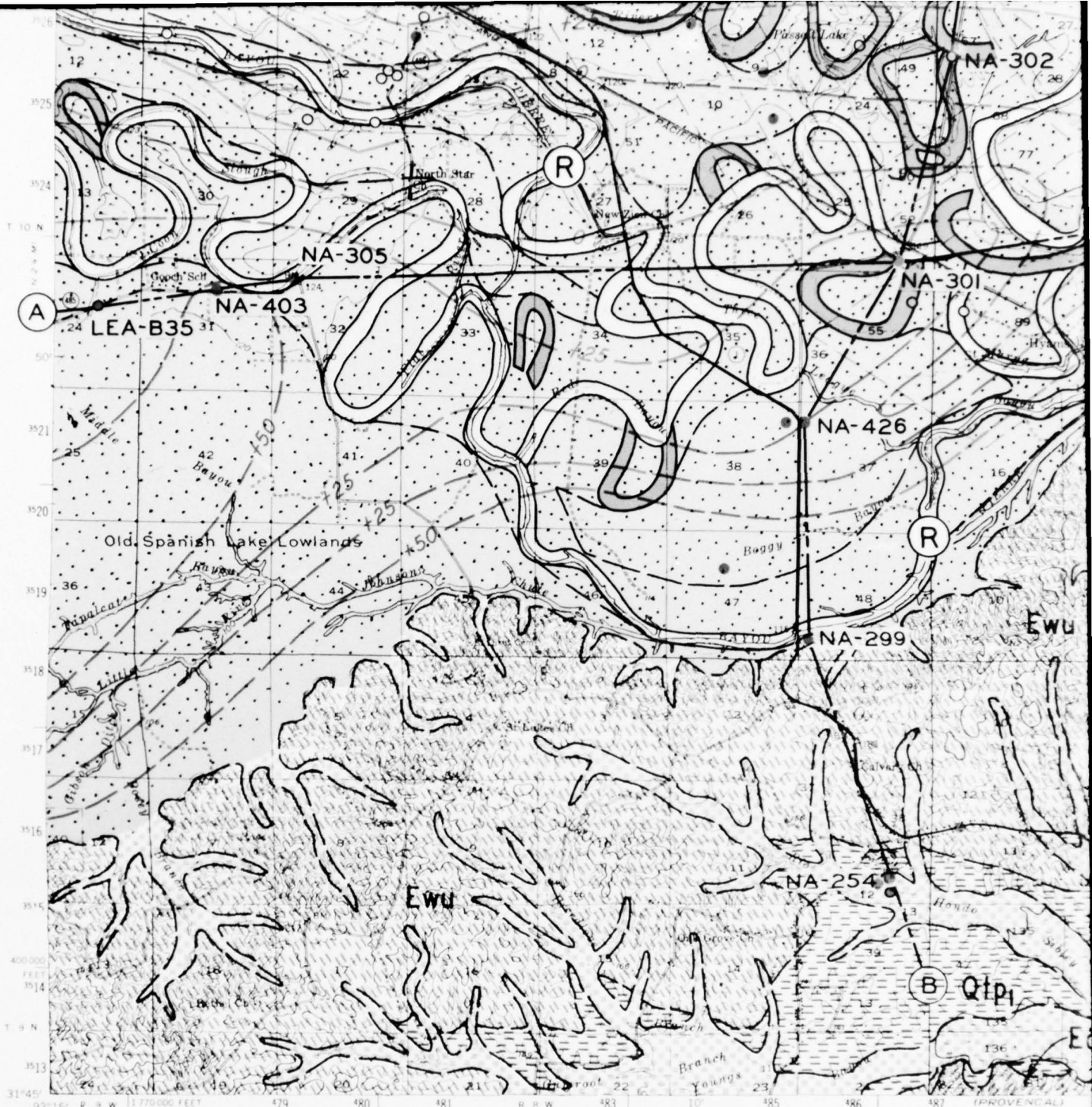
R

UNITED STATES  
DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS

CAMP TI QUADRANGLE  
LOUISIANA  
15 MINUTE SERIES (TOPOGRAPHIC)

2





QUATERNARY

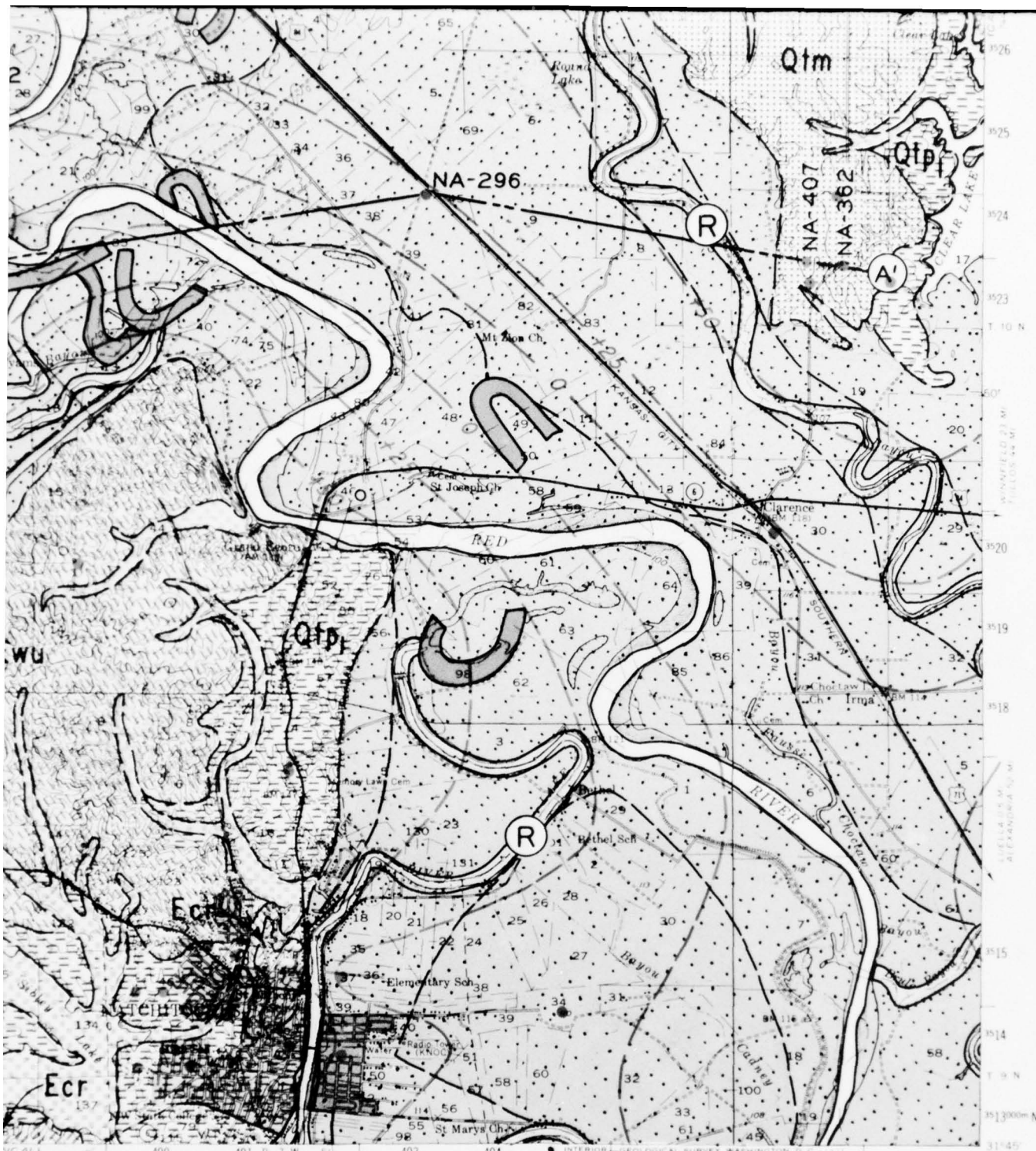
TERTIARY

- RECENT**
- NATURAL LEVEE
  - POINT BAR
  - BACKSWAMP
  - ABANDONED CHANNEL
  - ABANDONED COURSE
  - UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS
- PLEISTOCENE**
- PRAIRIE TERRACE-UPPER SURFACE
  - MONTGOMERY TERRACE

- EOCENE**
- CLAIBORNE GROUP UNDIFFERENTIATED
  - CANE RIVER FORMATION
- EOCENE-PALEOCENE**
- WILCOX GROUP UNDIFFERENTIATED

- RED RIVER
- INDEFINITE CONTACT
- CONTACT
- ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY

3



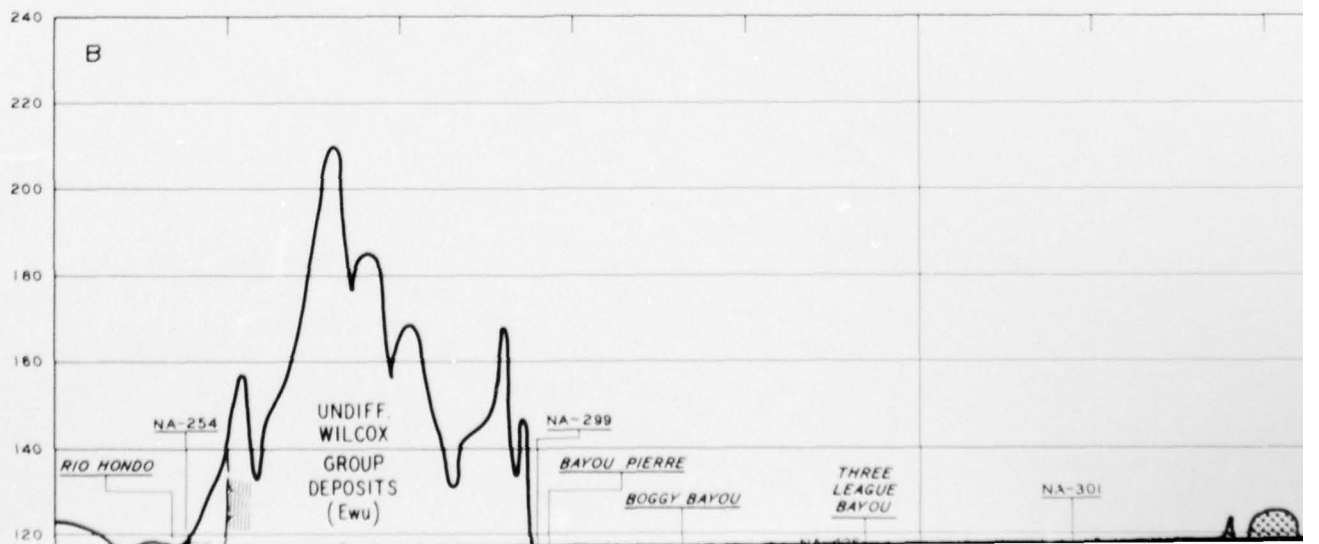
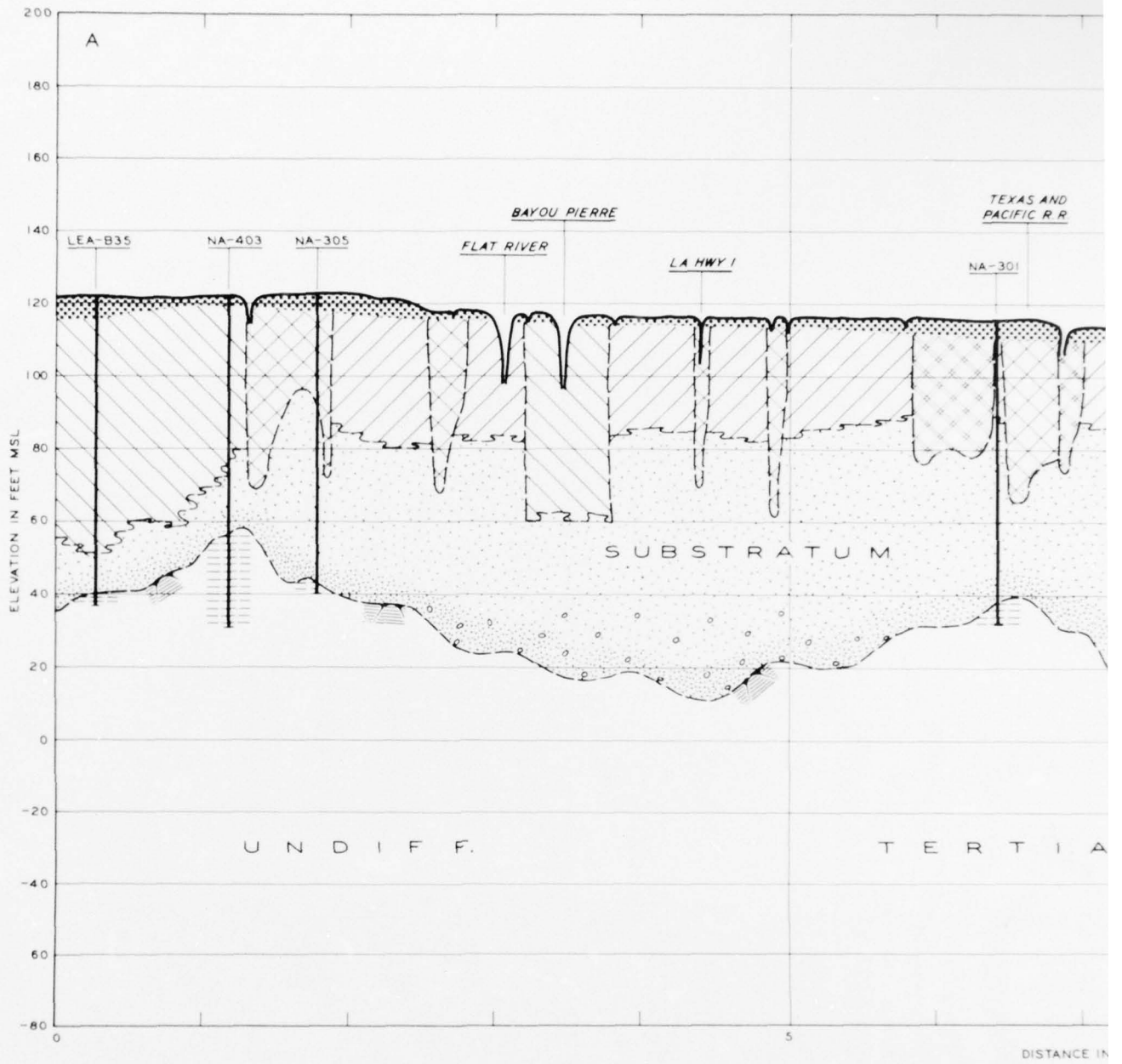
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CONTOUR INTERVAL 20 FEET  
DATUM IS MEAN SEA LEVEL

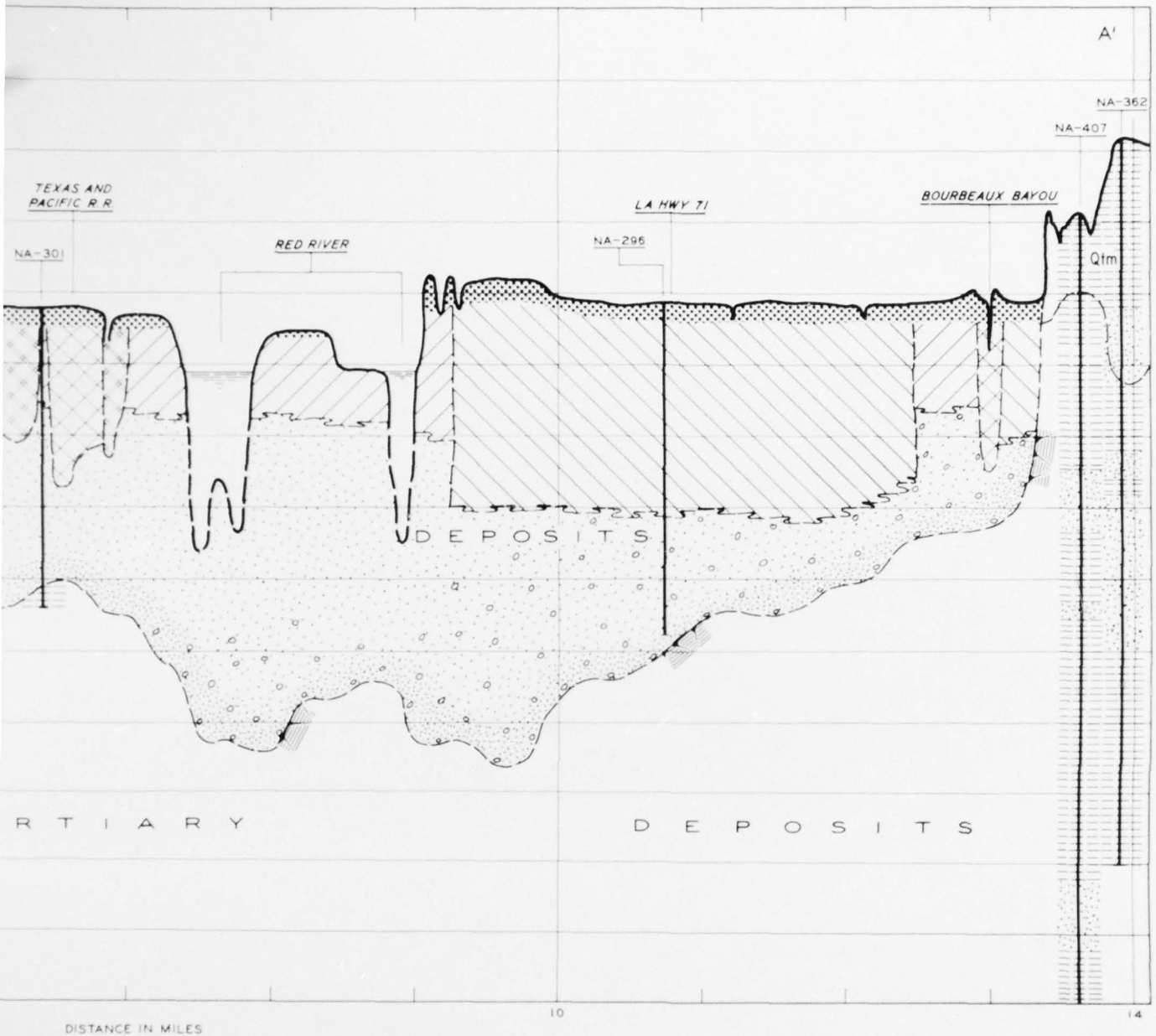
SCIENTIST)  
SURFACE  
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SURFACE  
SCIENTIST)

GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
DISTRIBUTION OF ALLUVIAL DEPOSITS  
CAMPTI, LA.

4



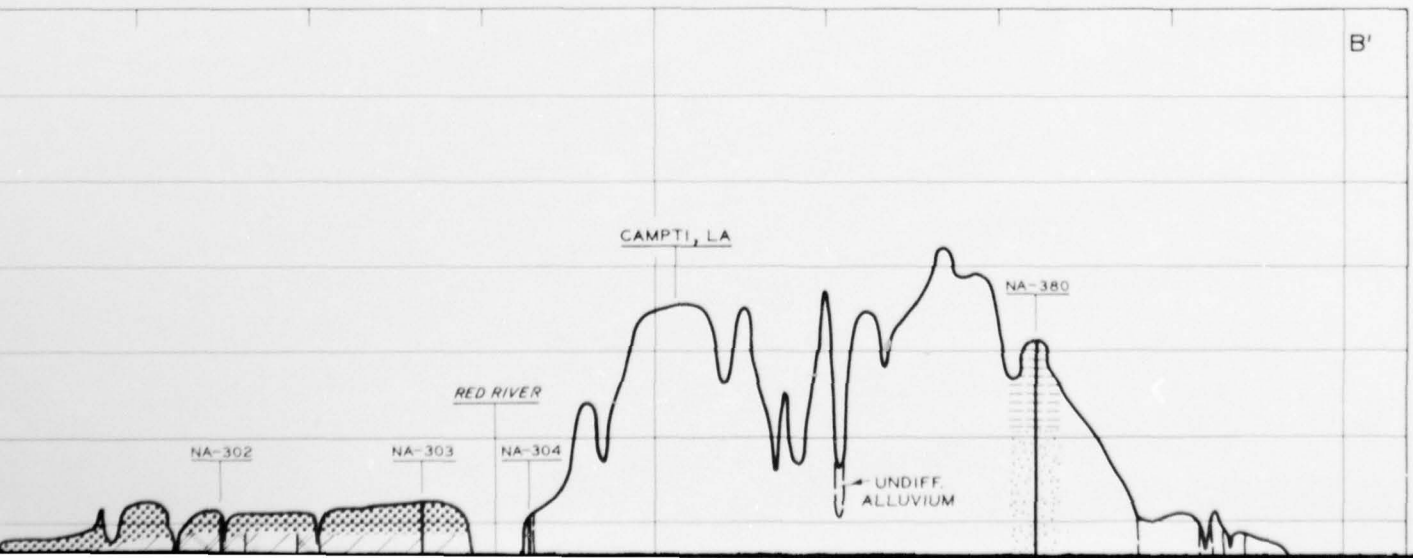
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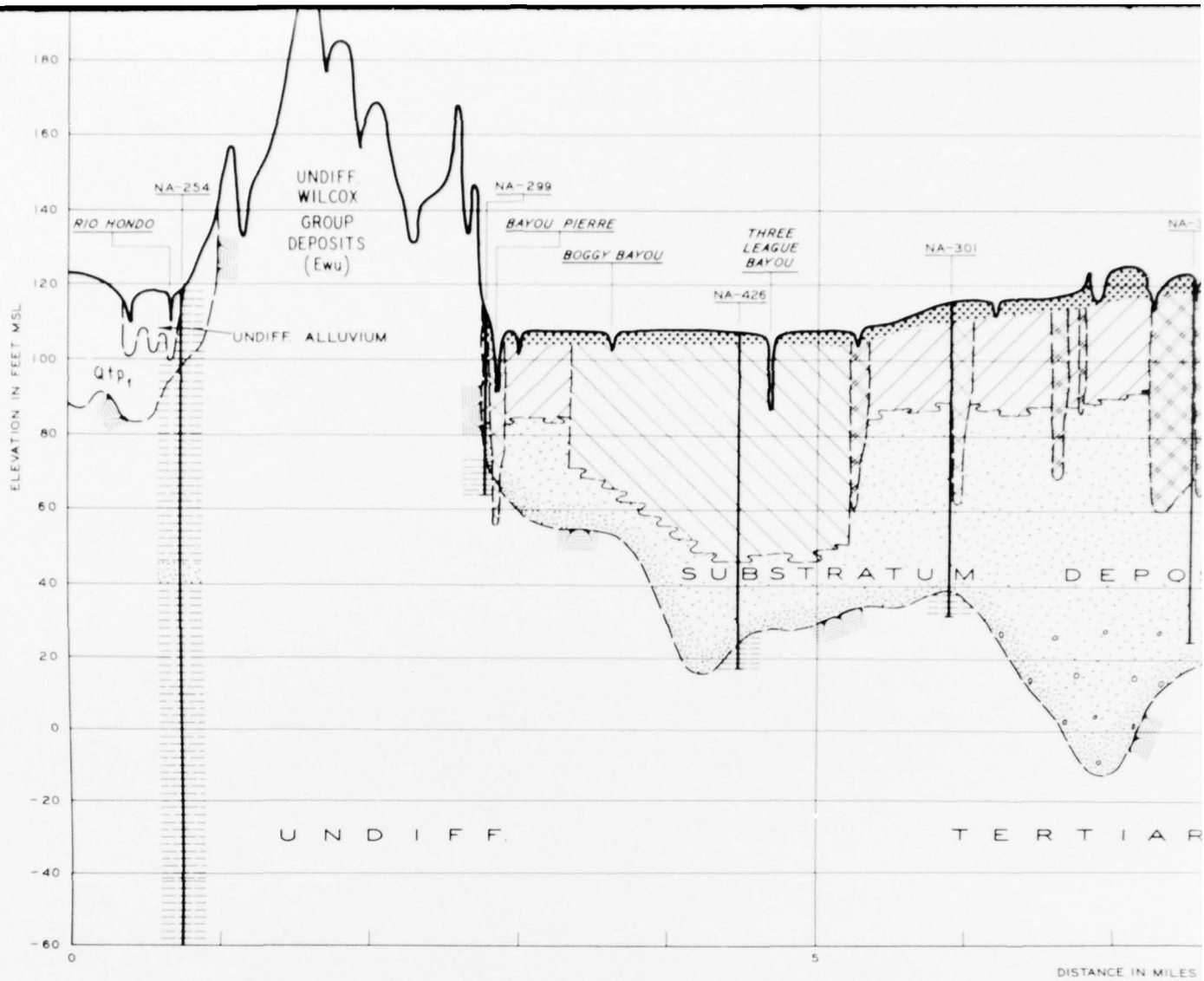


DISTANCE IN MILES

10

14





LEGEND

ENVIRONMENTS OF DEPOSITION

LITHOLOGIC TYPES

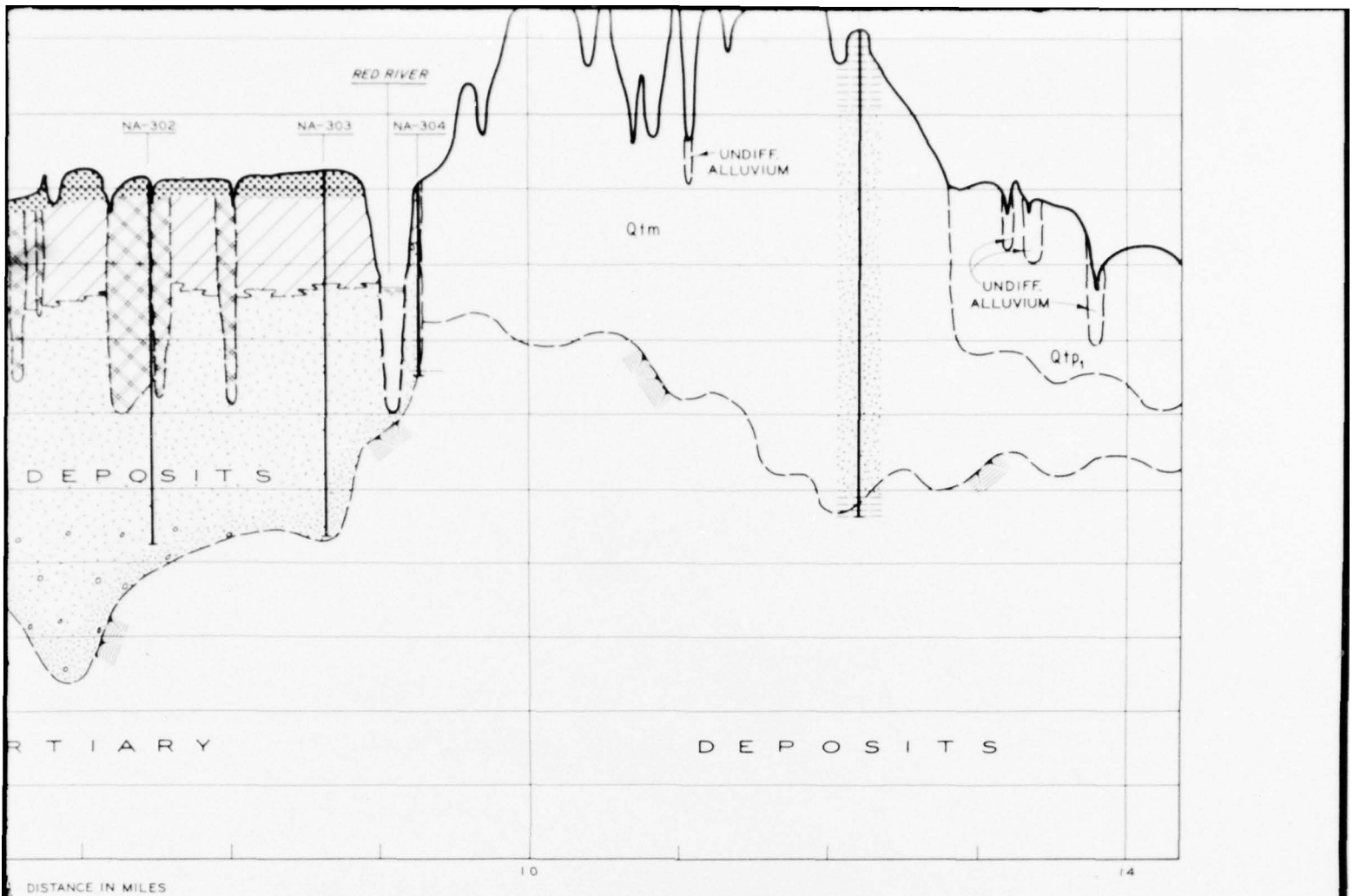
- |            |  |                                  |
|------------|--|----------------------------------|
|            |  | NATURAL LEVEE                    |
|            |  | POINT BAR                        |
| TOPSTRATUM |  | BACKSWAMP                        |
|            |  | ABANDONED CHANNEL                |
|            |  | ABANDONED COURSE                 |
| SUBSTRATUM |  | UNDIFFERENTIATED SAND AND GRAVEL |
|            |  | TERTIARY SURFACE                 |

- |  |               |
|--|---------------|
|  | SAND          |
|  | CLAY AND SILT |
|  | SHALE         |

MAPPING SYMBOLS

- |  |   |
|--|---|
|  | PRAIRIE TERRACE-<br>UPPER SURFACE         |
|  | MONTGOMERY TERRACE DEPOSITS               |
|  | UNDIFFERENTIATED<br>WILCOX GROUP DEPOSITS |

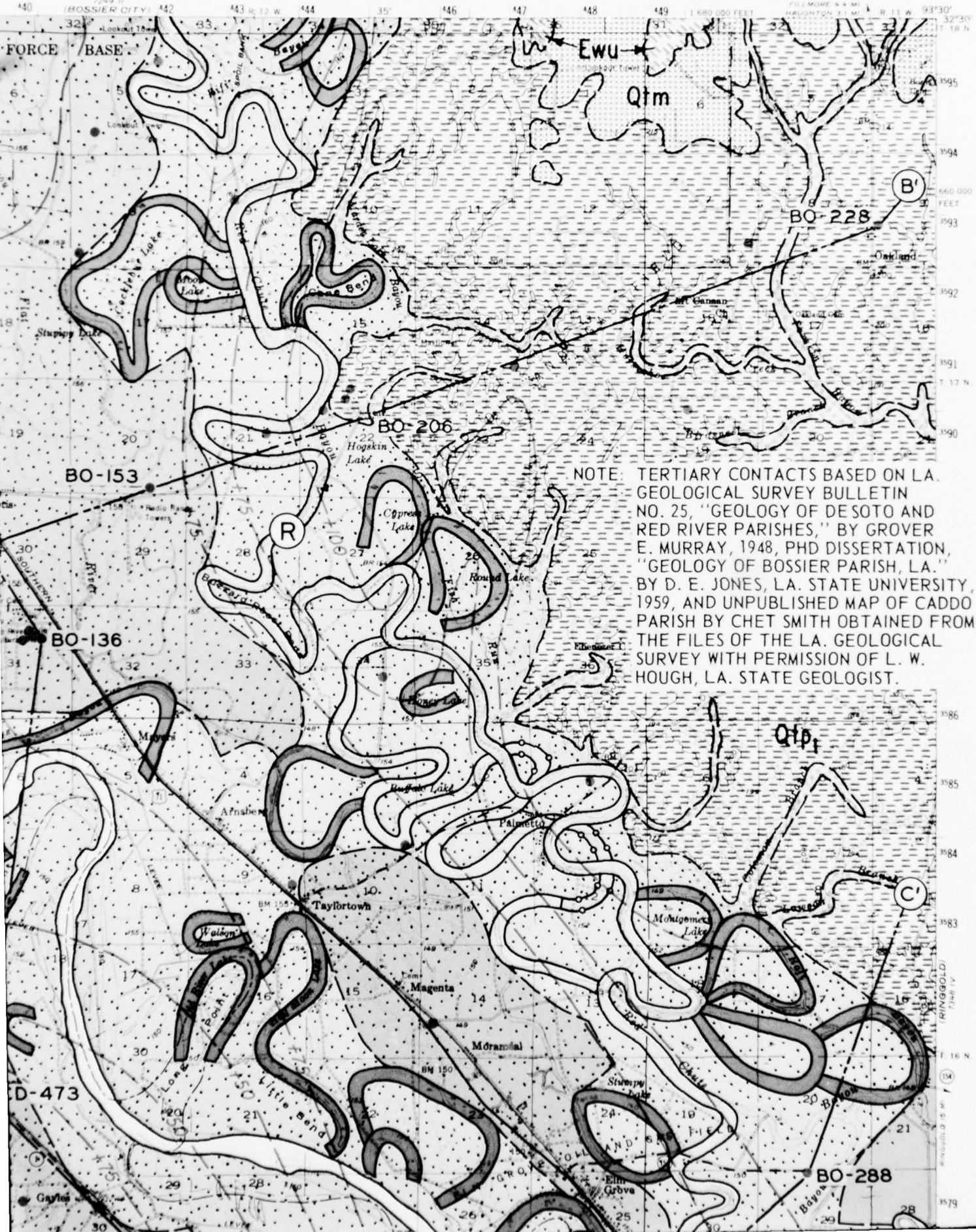
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GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
**SECTIONS A-A' AND B-B'**  
 CAMPTI, LA.

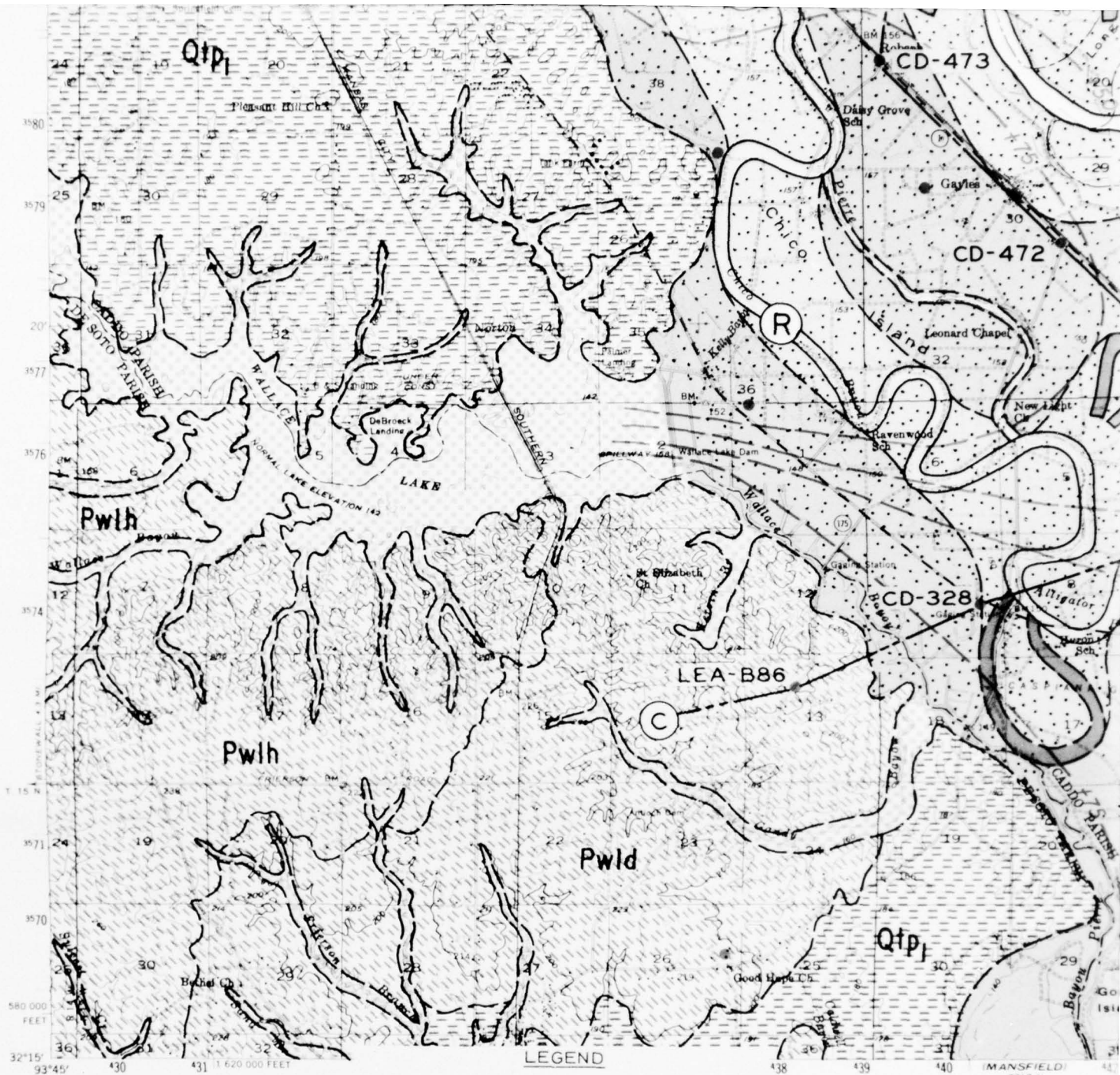
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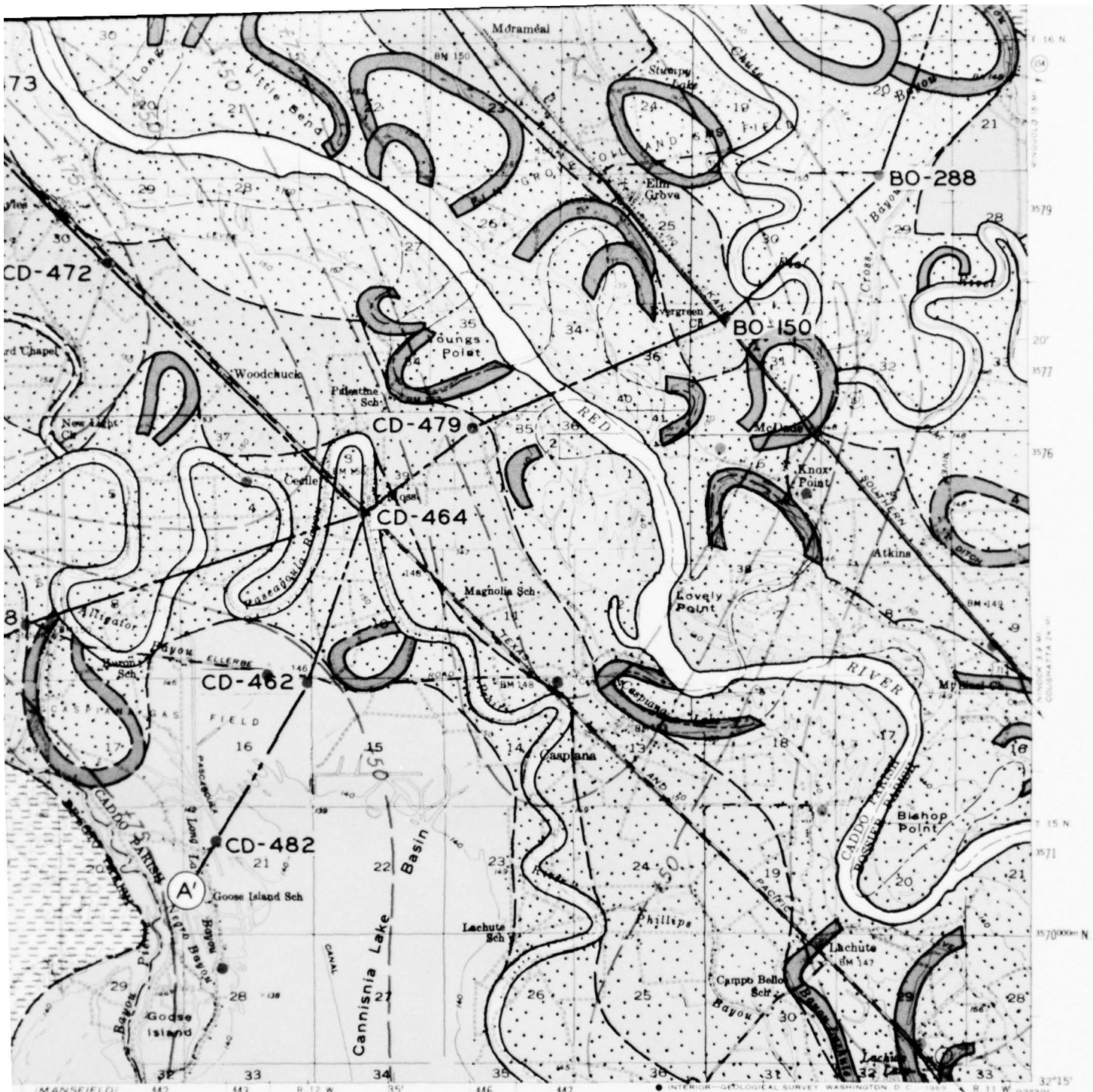
NOTE: TERTIARY CONTACTS BASED ON LA. GEOLOGICAL SURVEY BULLETIN NO. 25, "GEOLOGY OF DE SOTO AND RED RIVER PARISHES," BY GROVER E. MURRAY, 1948, PHD DISSERTATION, "GEOLOGY OF BOSSIER PARISH, LA." BY D. E. JONES, LA. STATE UNIVERSITY, 1959, AND UNPUBLISHED MAP OF CADDOPARISH BY CHET SMITH OBTAINED FROM THE FILES OF THE LA. GEOLOGICAL SURVEY WITH PERMISSION OF L. W. HOUGH, LA. STATE GEOLOGIST.

2



QUATERNARY		TERTIARY			
RECENT		EOCENE-PALEOCENE			
	NATURAL LEVEE		EWu WILCOX GROUP UNDIFFERENTIATED		(R) RED RIVER
	POINT BAR		Pw]b LOGANSPORT FORMATION (AFTER MURRAY-INCLUDES LIME HILL MEMBER IN DESOTO PARISH)		INDEFINITE CONTACT
	BACKSWAMP		Pw]d LOGANSPORT FORMATION (AFTER MURRAY-INCLUDES COW BAYOU AND DOLET HILLS MEMBERS IN DESOTO PARISH)		CONTACT
	ABANDONED CHANNEL				ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL
	ABANDONED COURSE				● CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
	MAJOR CREVASSE CHANNELS				● CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY
	UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS				● CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
PLEISTOCENE					○ CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY
	Prairie Terrace-Upper Surface				
	MONTGOMERY TERRACE				

3



SCALE 1:62500

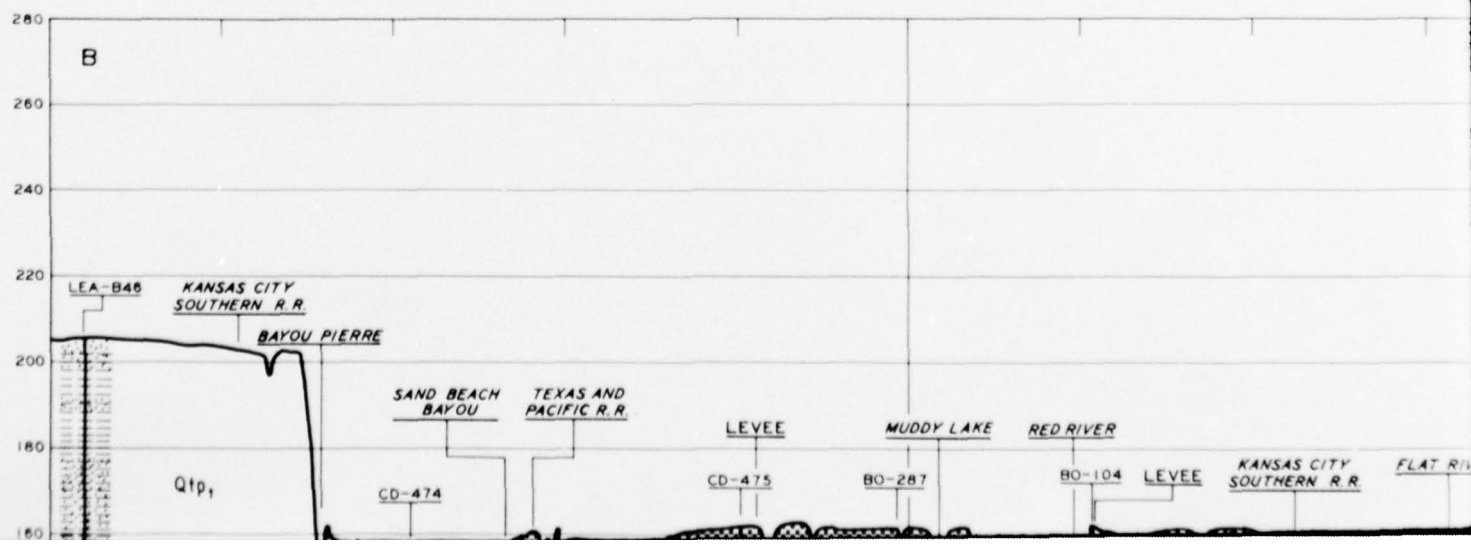
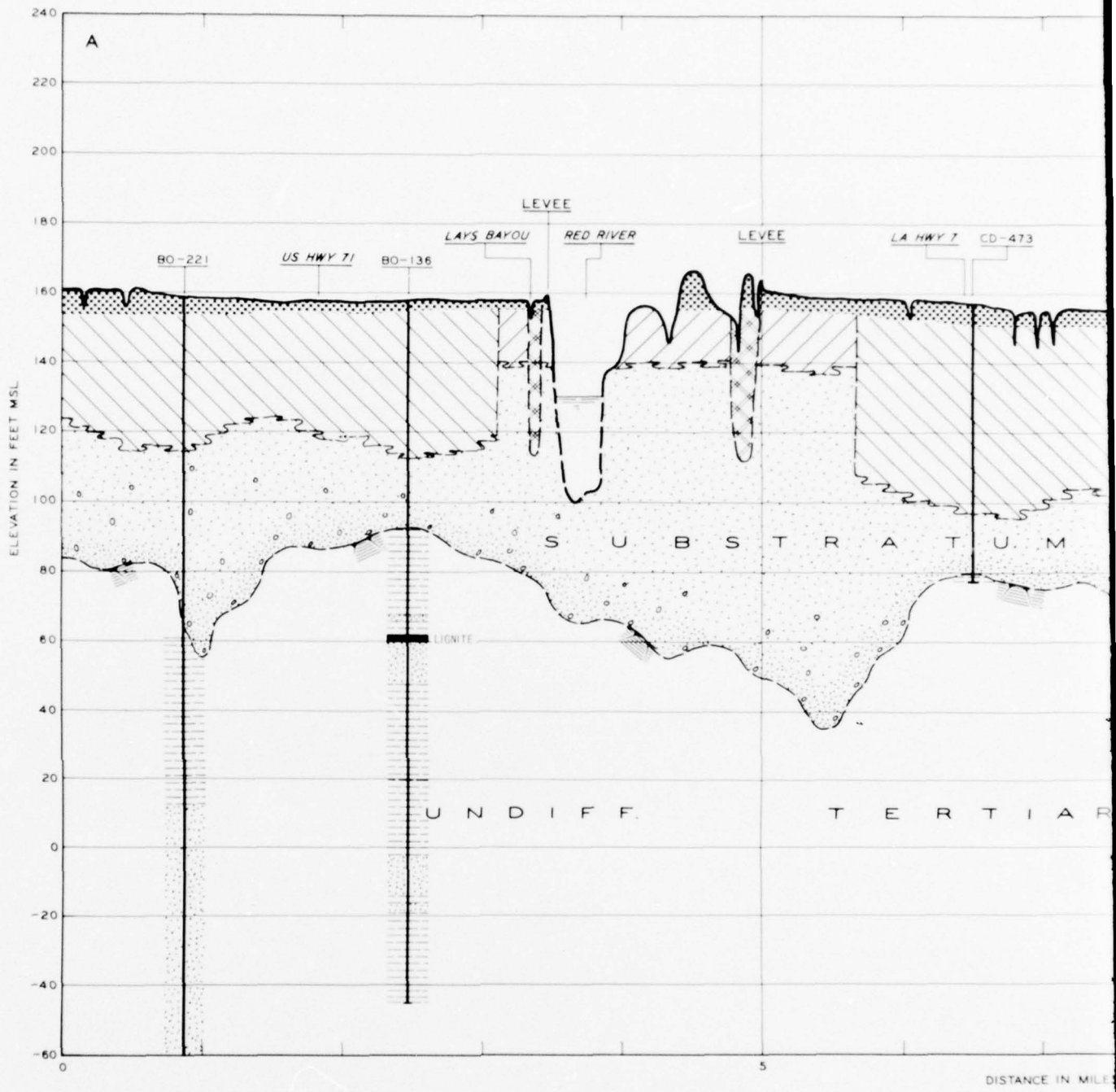


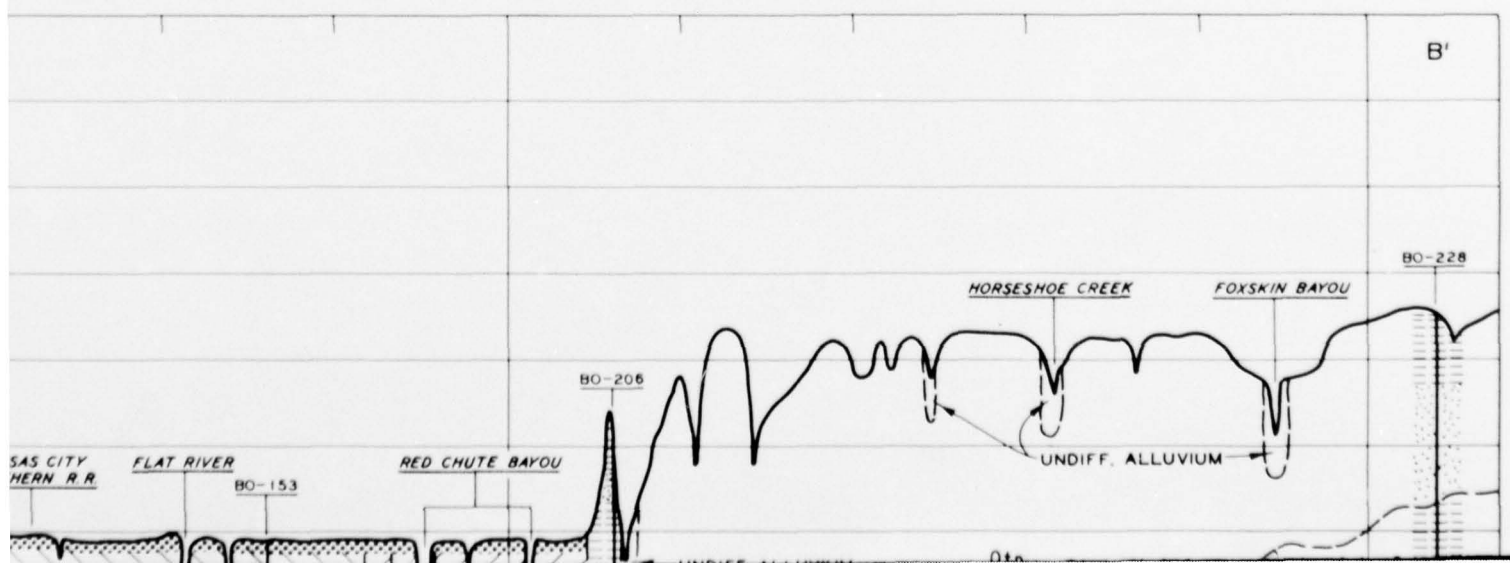
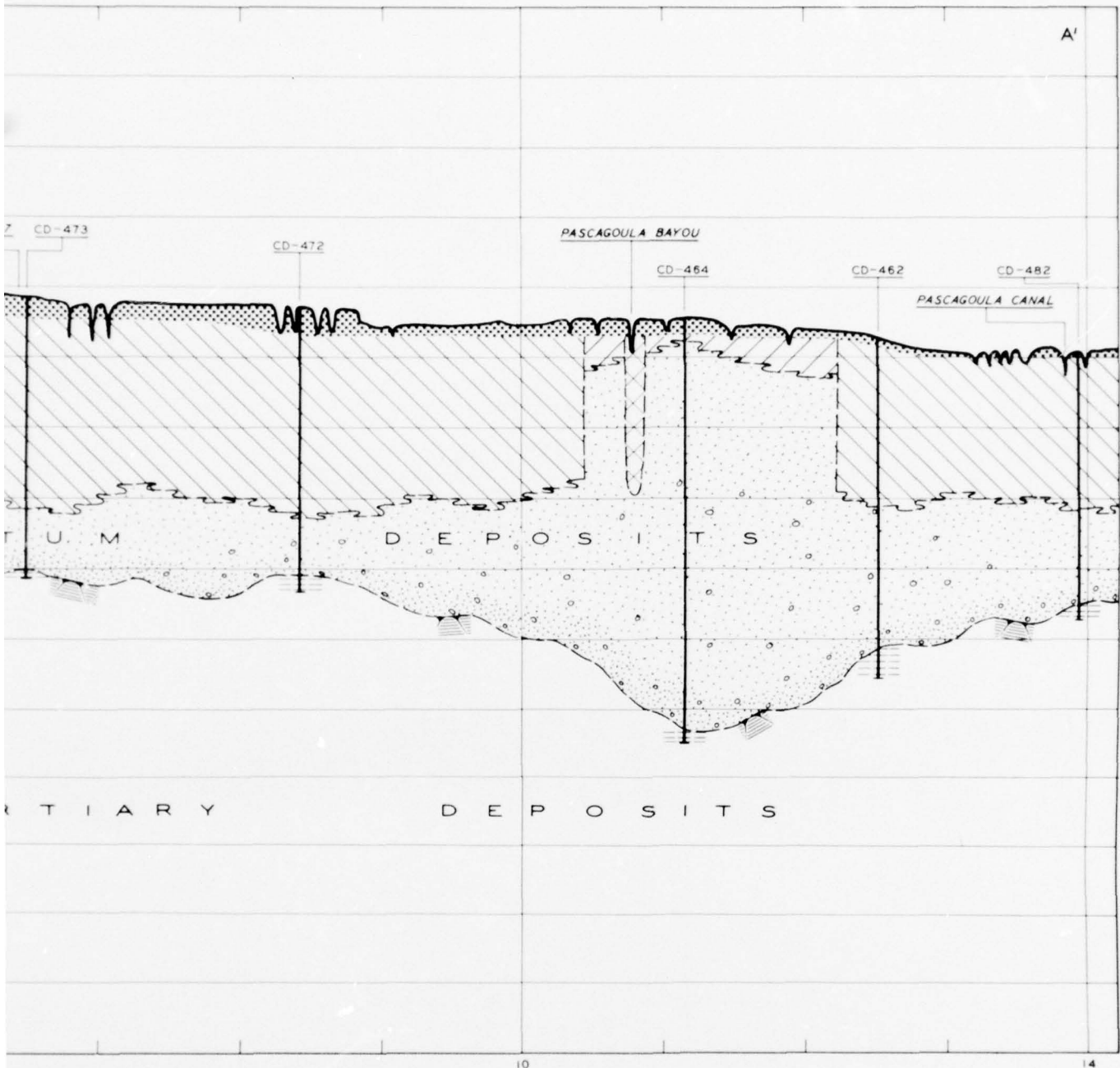
CONTOUR INTERVAL 20 FEET  
 DASHED LINES REPRESENT 10-FOOT CONTOURS  
 DATUM IS MEAN SEA LEVEL

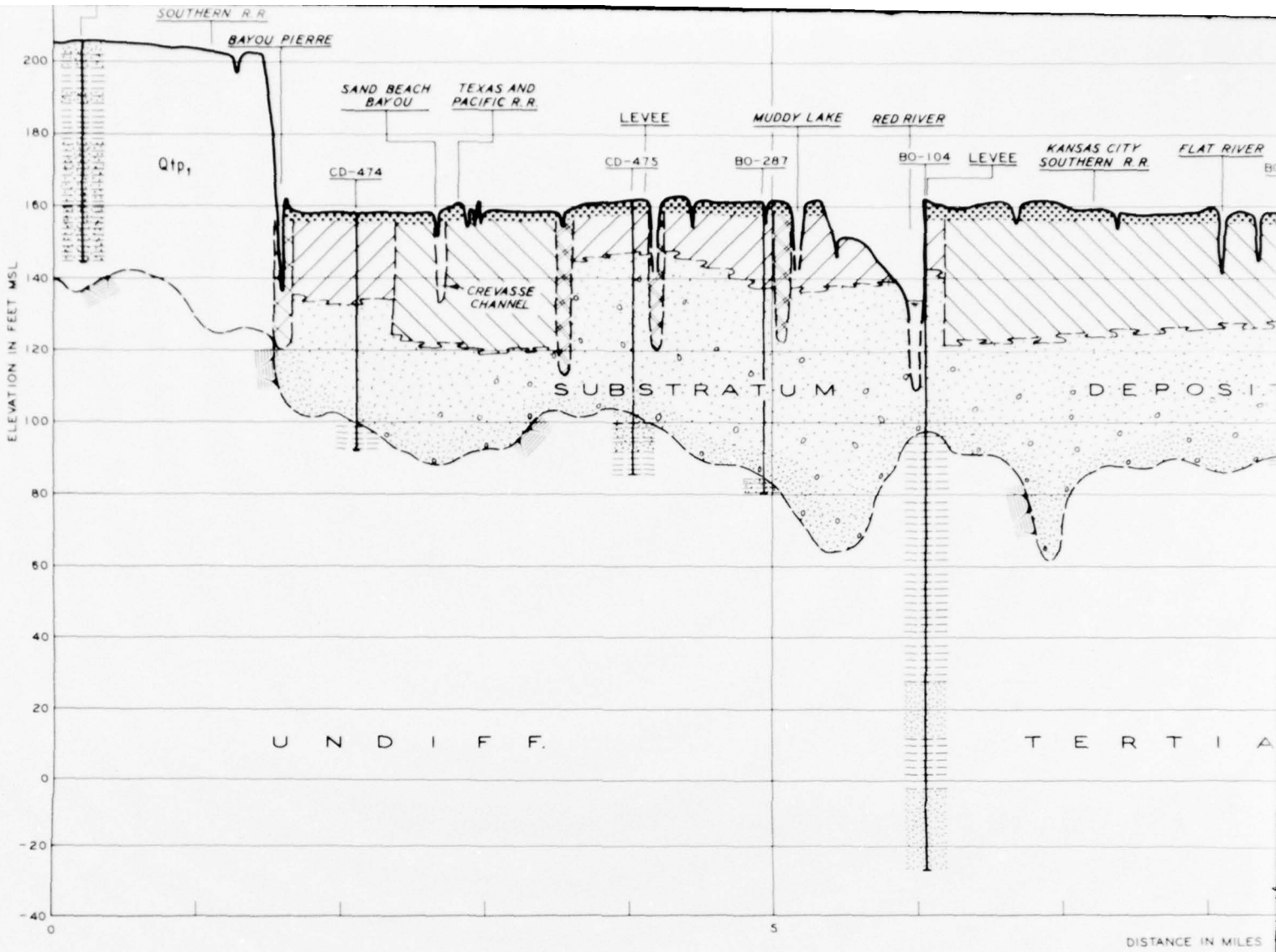
TERTIARY  
 ED BY SOILS SCIENTIST)  
 IED TERTIARY SURFACE  
 ED BY SOILS SCIENTIST)  
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 LOGGED BY SOILS SCIENTIST)  
 IED TERTIARY SURFACE  
 LOGGED BY SOILS SCIENTIST)  
 IRY

GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 DISTRIBUTION OF ALLUVIAL DEPOSITS  
 CASPIANA, LA.

4







**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

- |            |  |                                  |
|------------|--|----------------------------------|
|            |  | NATURAL LEVEE                    |
|            |  | POINT BAR                        |
| TOPSTRATUM |  | BACKSWAMP                        |
|            |  | ABANDONED CHANNEL                |
|            |  | ABANDONED COURSE                 |
| SUBSTRATUM |  | UNDIFFERENTIATED SAND AND GRAVEL |
|            |  | TERTIARY SURFACE                 |

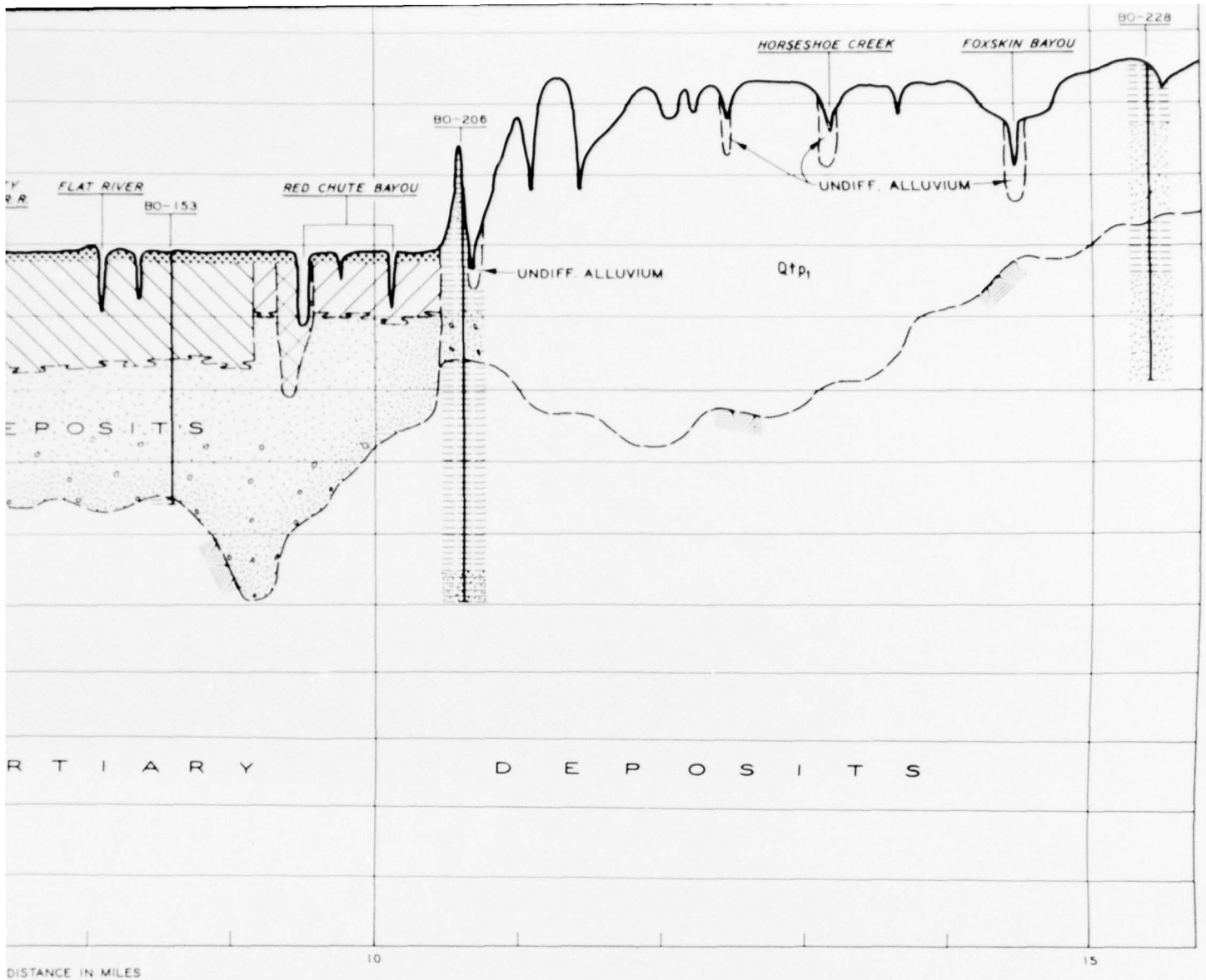
**LITHOLOGIC TYPES**

- |  |               |
|--|---------------|
|  | SAND          |
|  | CLAY AND SILT |
|  | SANDY CLAY    |
|  | SHALE         |

**MAPPING SYMBOLS**

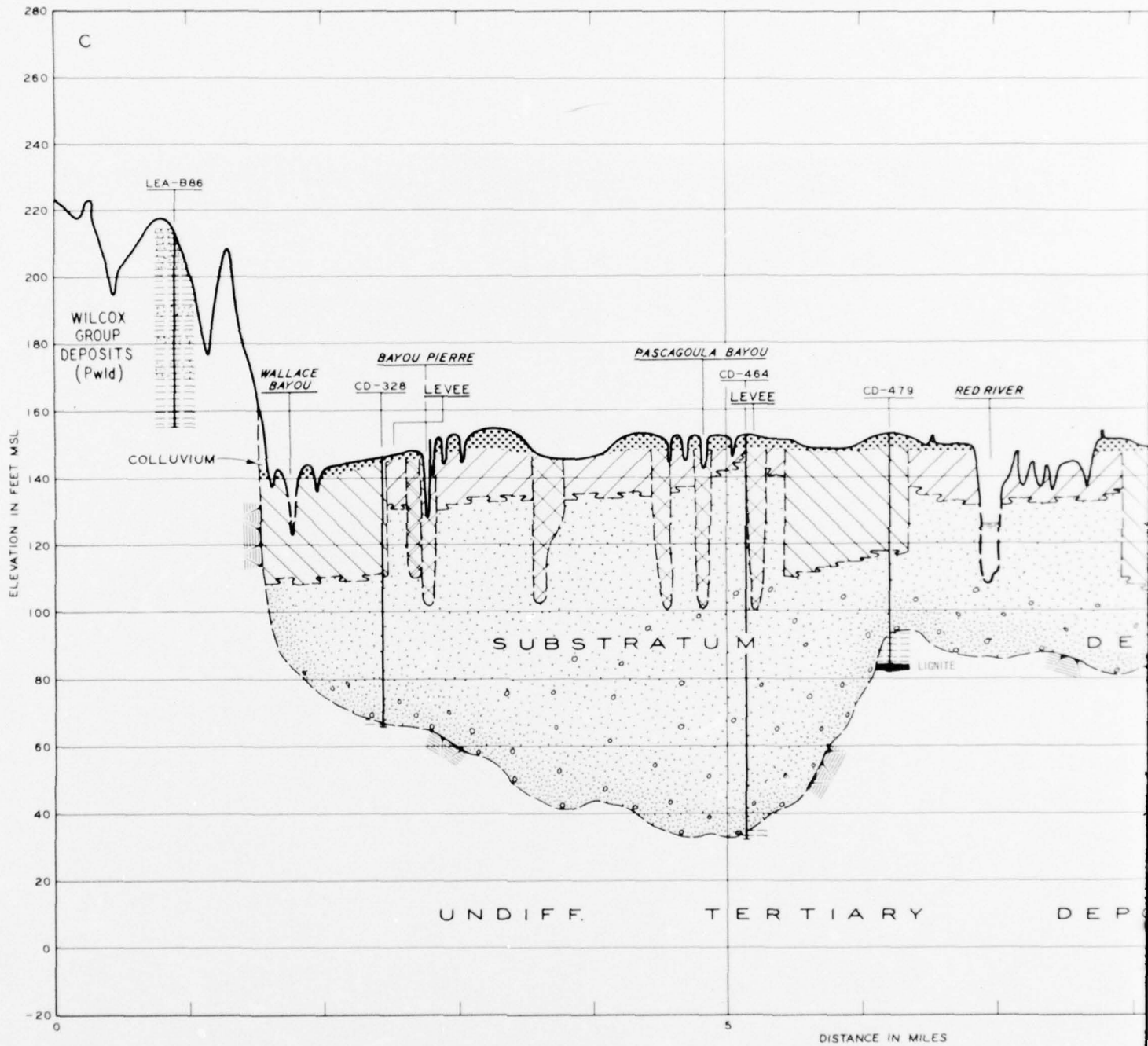
- |  |   |
|--|---|
|  | PRAIRIE TERRACE-UPPER SURFACE                 |
|  | WILCOX GROUP DEPOSITS (DOLET HILLS FORMATION) |

3

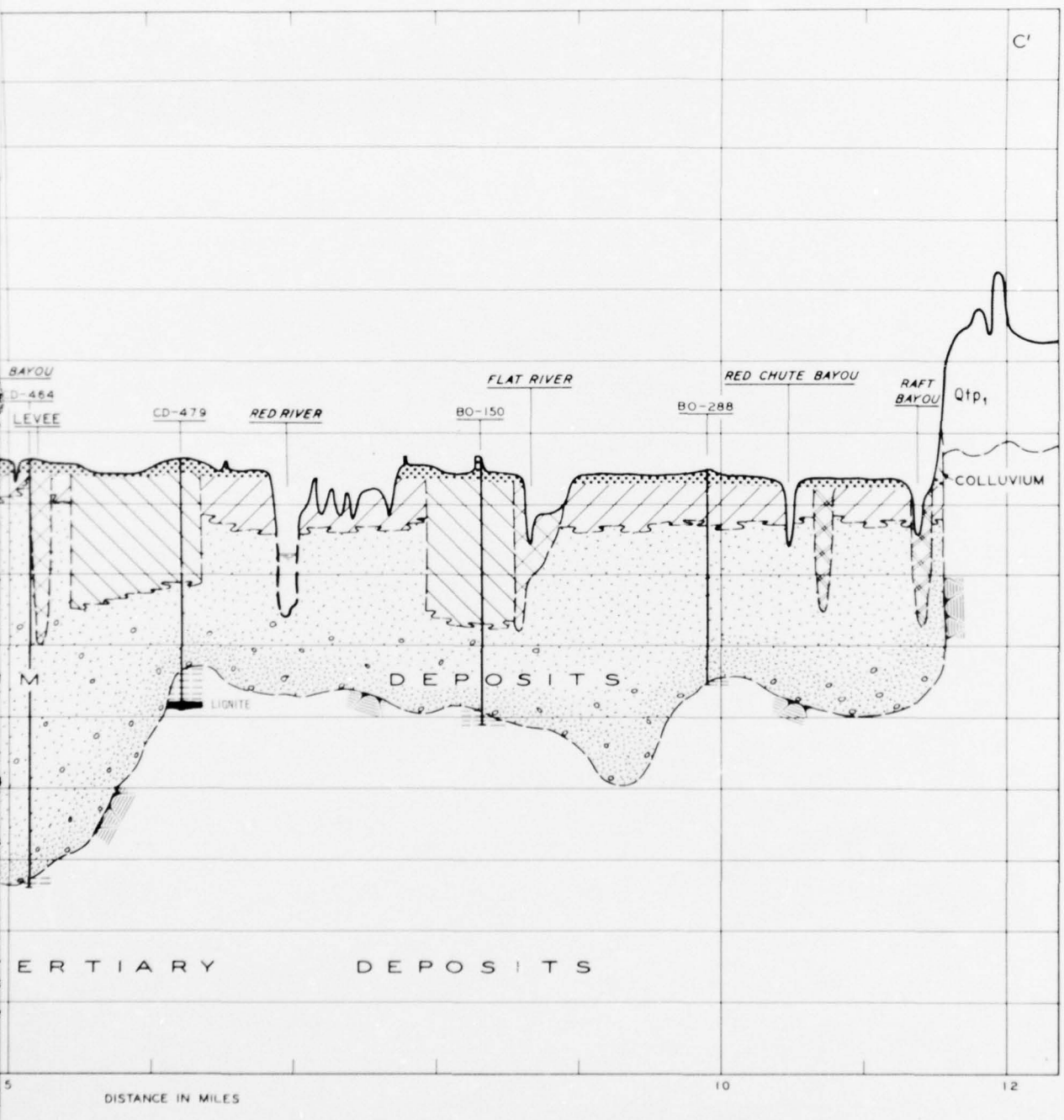


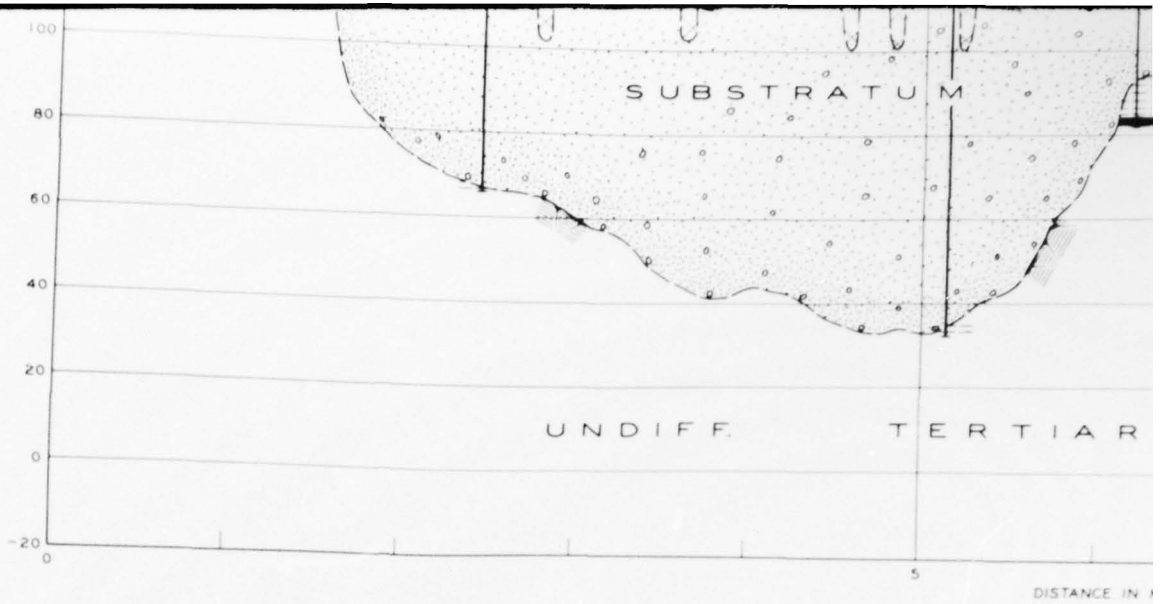
GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 SECTIONS A-A' AND B-B'  
 CASPIANA, LA.

4



2





LEGEND

ENVIRONMENTS OF DEPOSITION

- |            |  |                                  |
|------------|--|----------------------------------|
|            |  | NATURAL LEVEE                    |
|            |  | POINT BAR                        |
| TOPSTRATUM |  | BACKSWAMP                        |
|            |  | ABANDONED CHANNEL                |
|            |  | ABANDONED COURSE                 |
| SUBSTRATUM |  | UNDIFFERENTIATED SAND AND GRAVEL |
|            |  | TERTIARY SURFACE                 |

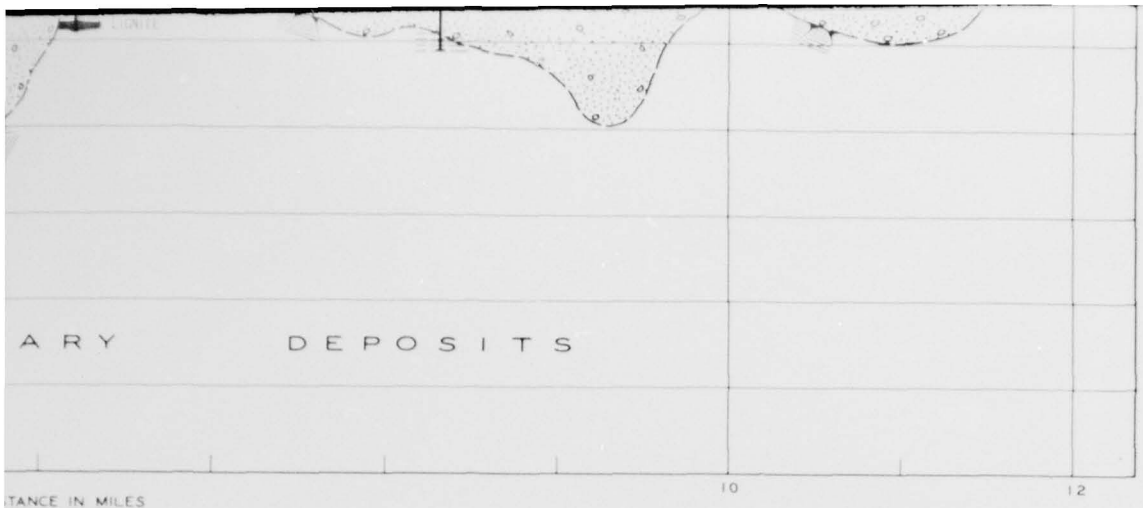
LITHOLOGIC TYPES

- |  |               |
|--|---------------|
|  | SAND          |
|  | CLAY AND SILT |
|  | SANDY CLAY    |
|  | SHALE         |

MAPPING SYMBOLS

- |  |  |
|--|--|
|  | PRAIRIE TERRACE-<br>UPPER SURFACE                |
|  | WILCOX GROUP DEPOSITS<br>(DOLET HILLS FORMATION) |

3



ARY DEPOSITS

DISTANCE IN MILES

10

12

GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AREA

SECTION C-C'

CASPIANA, LA.

4



2

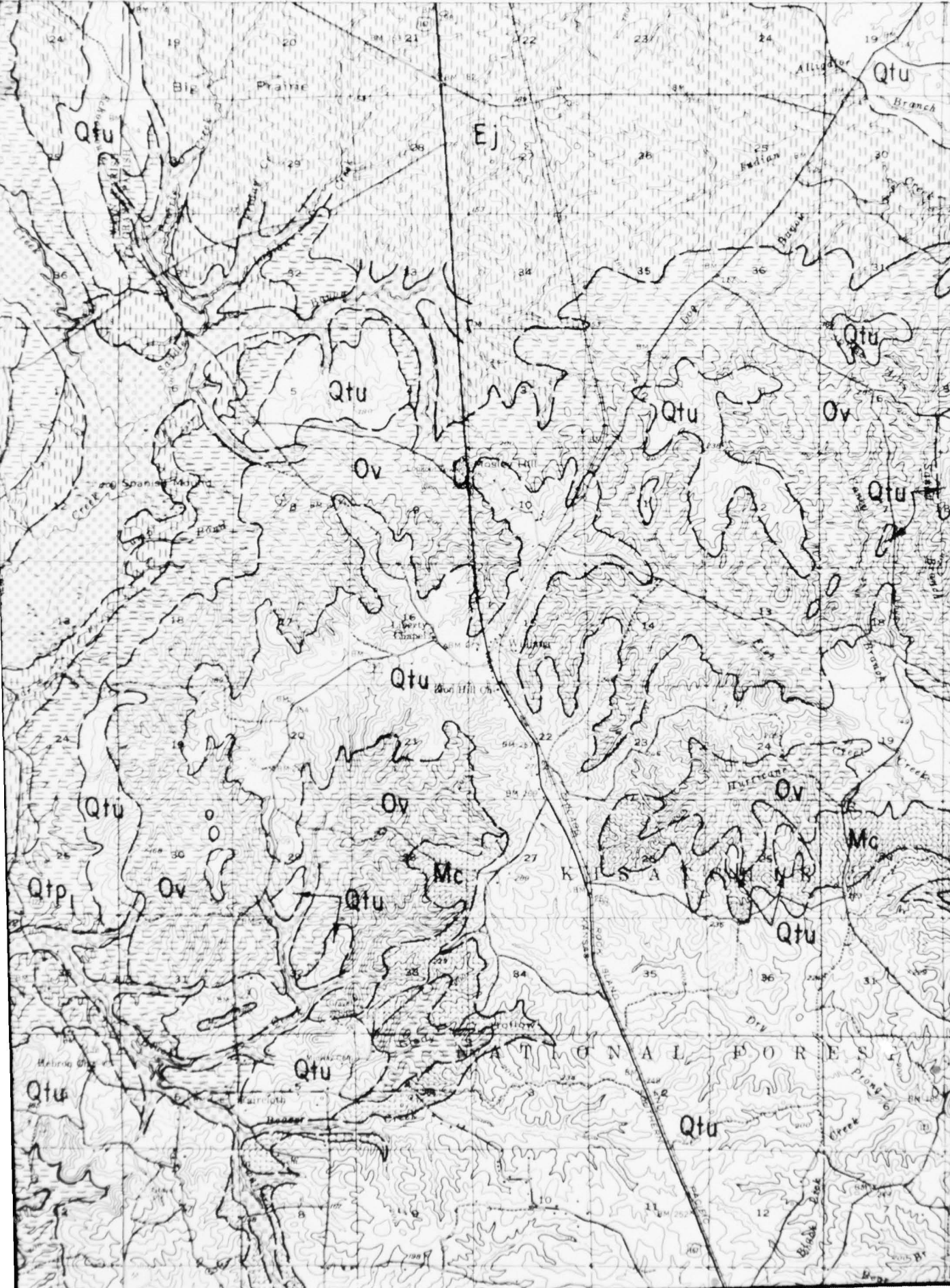
(WINNFELD)

WINNFELD 14 MI  
PACKTON 33 MI  
R 2 W

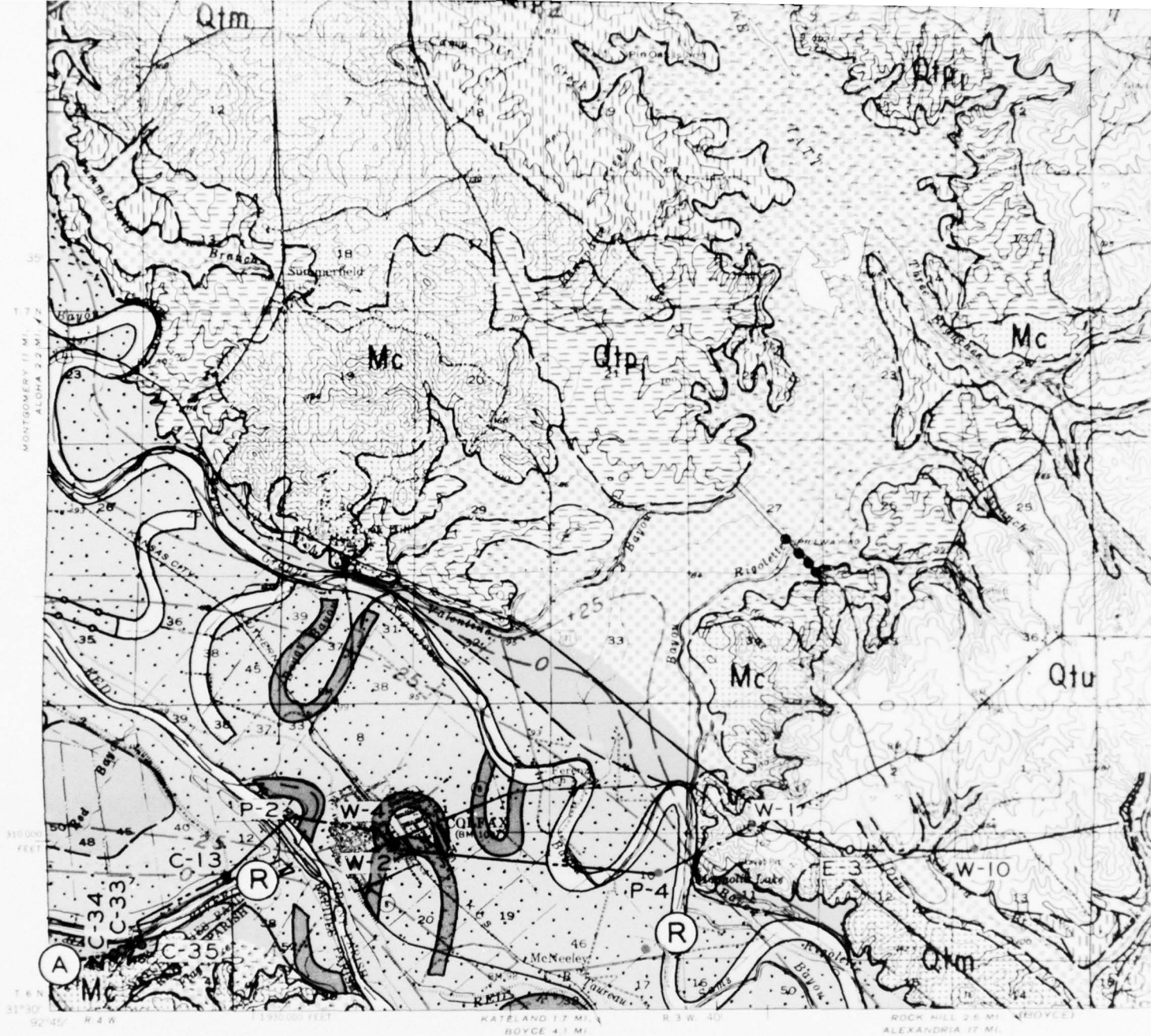
(INDIAN)

R 1 W 72 30'

31 45'



SHREVE HILL S 4 MI  
(POLLOCK)

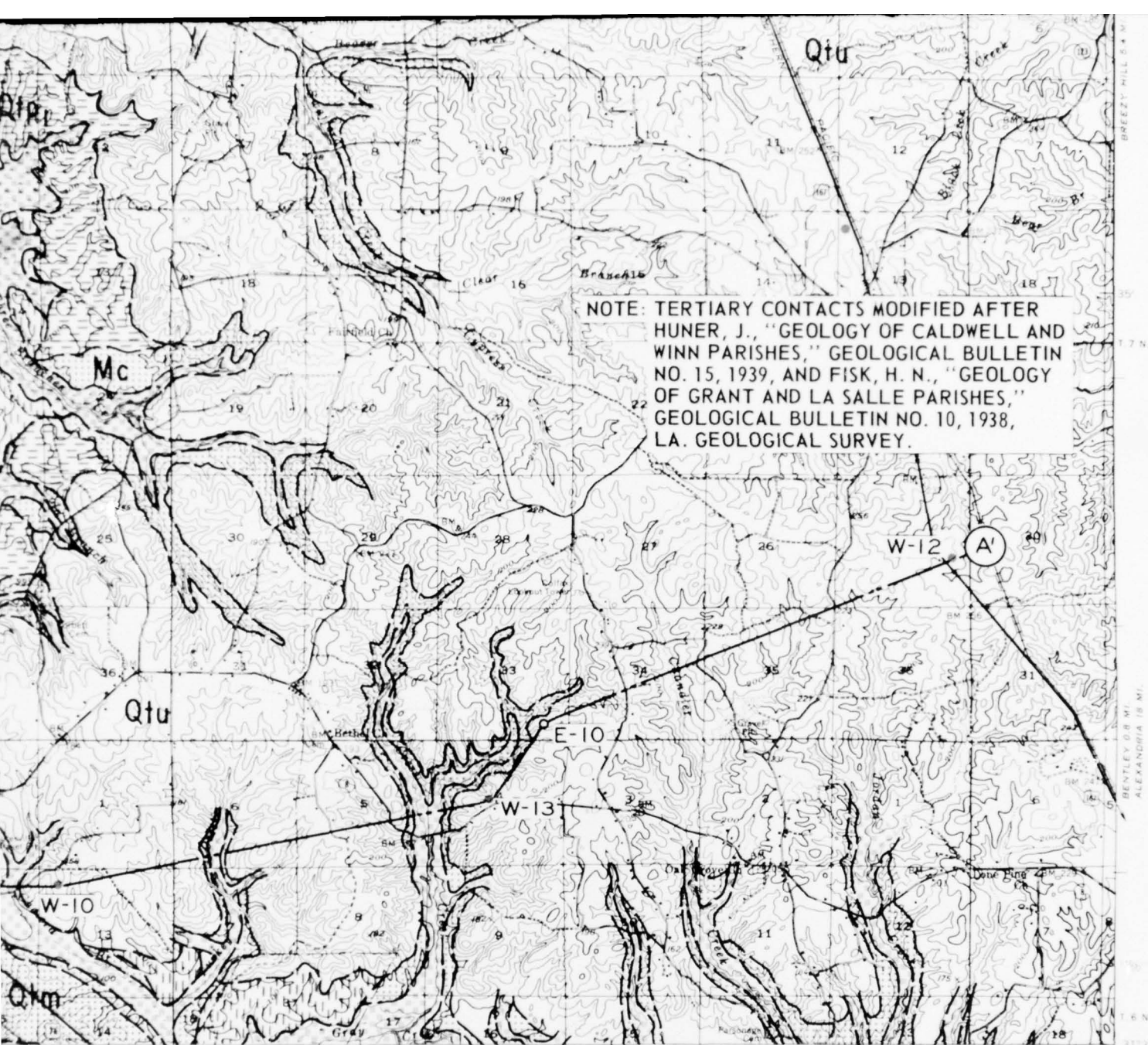


**LEGEND**

QUATERNARY		TERTIARY		
<b>RECENT</b>		<b>MIOCENE</b>		- - - INDEFINITE CONTACT
[Stippled] NATURAL LEVEE	[Horizontal lines] POINT BAR	[Mc] CATAOULA FORMATION	[Wavy line] CONTACT	
[Dotted] BACKSWAMP	[Dark grey] ABANDONED CHANNEL	<b>OLIGOCENE</b>		○ - - - PROBABLE POSITION OF ABANDONED COURSE REWORKED BY SUBSEQUENT MEANDERING OF A STREAM
[Light grey] ABANDONED COURSE	[Checkered] UNDIFFERENTIATED ALLUVIUM OF SMALL CREEKS	[Ov] VICKSBURG GROUP		
<b>PLEISTOCENE</b>		<b>EOCENE</b>		- - - ELEVATION OF TOP OF TERTIARY SURFACE IN FEET MSL
[Qtu] PRAIRIE TERRACE-UPPER SURFACE	[Qtu] PRAIRIE TERRACE-LOWER SURFACE	[J] JACKSON GROUP		
[Qtu] MONTGOMERY TERRACE	[Qtu] UNDIFFERENTIATED TERRACE	Ⓡ RED RIVER		
			● CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE	
			● CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY	
			● CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE	
			○ CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY	

3

COLFAX (a)

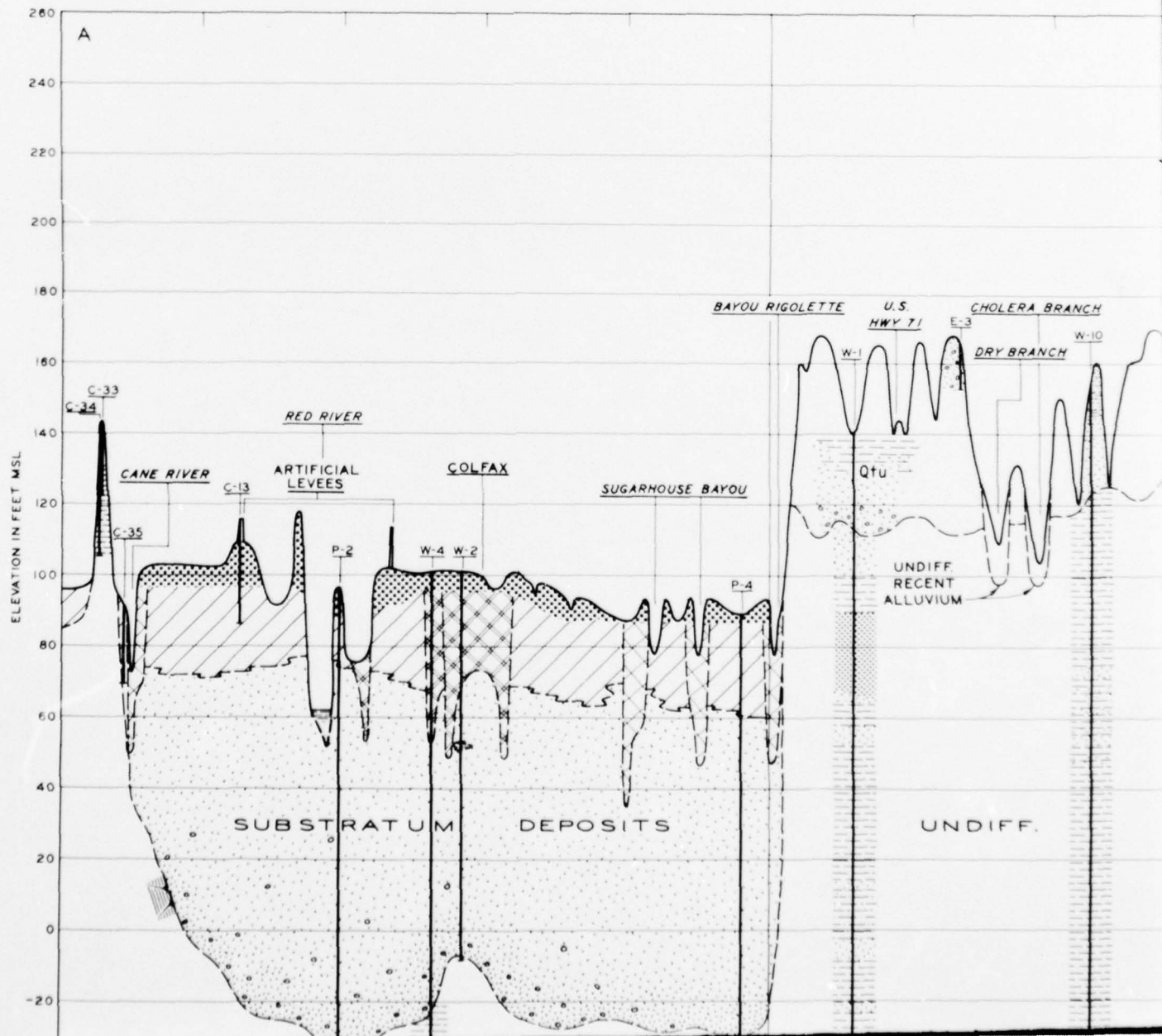


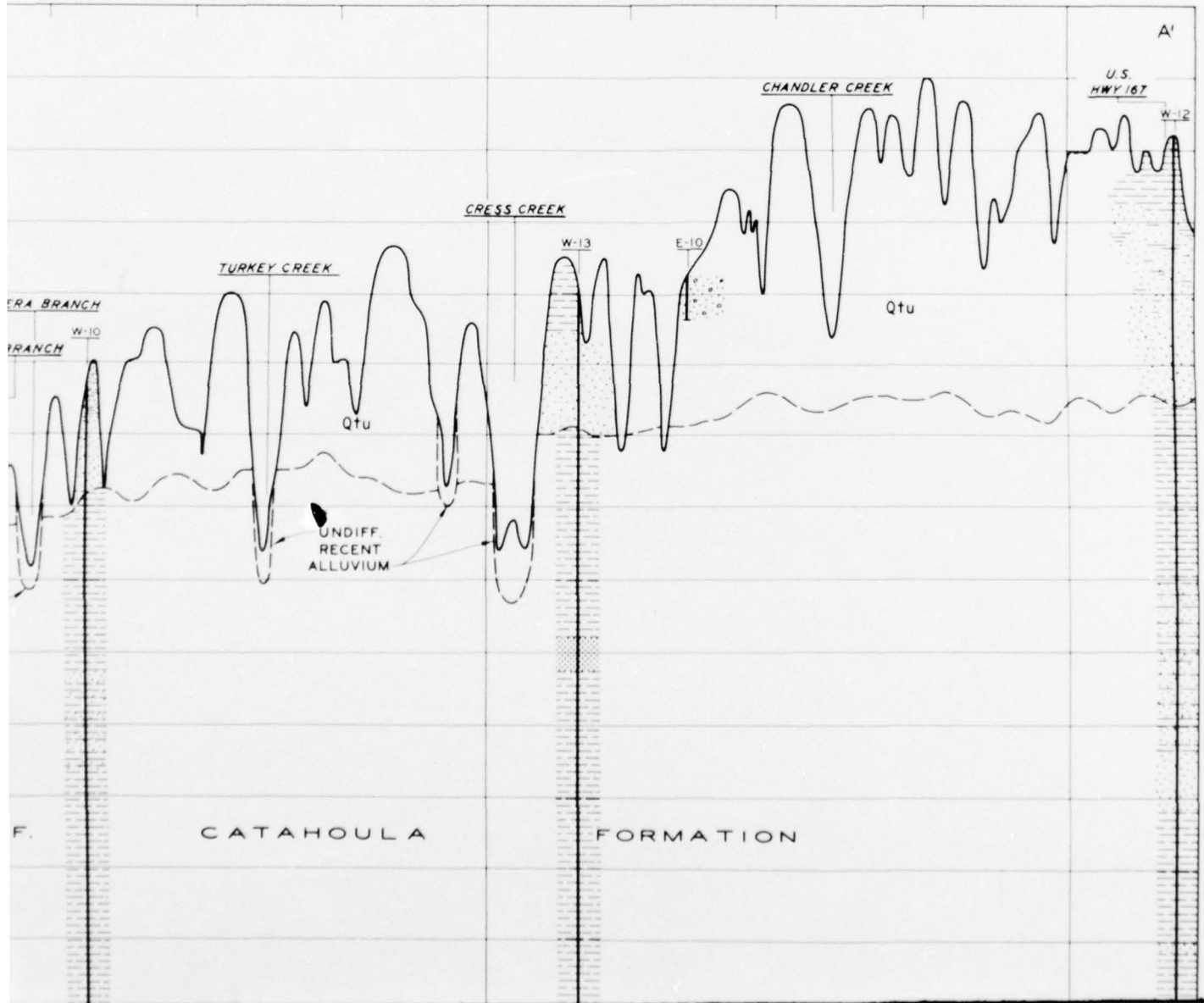
NOTE: TERTIARY CONTACTS MODIFIED AFTER HUNER, J., "GEOLOGY OF CALDWELL AND WINN PARISHES," GEOLOGICAL BULLETIN NO. 15, 1939, AND FISK, H. N., "GEOLOGY OF GRANT AND LA SALLE PARISHES," GEOLOGICAL BULLETIN NO. 10, 1938, LA. GEOLOGICAL SURVEY.

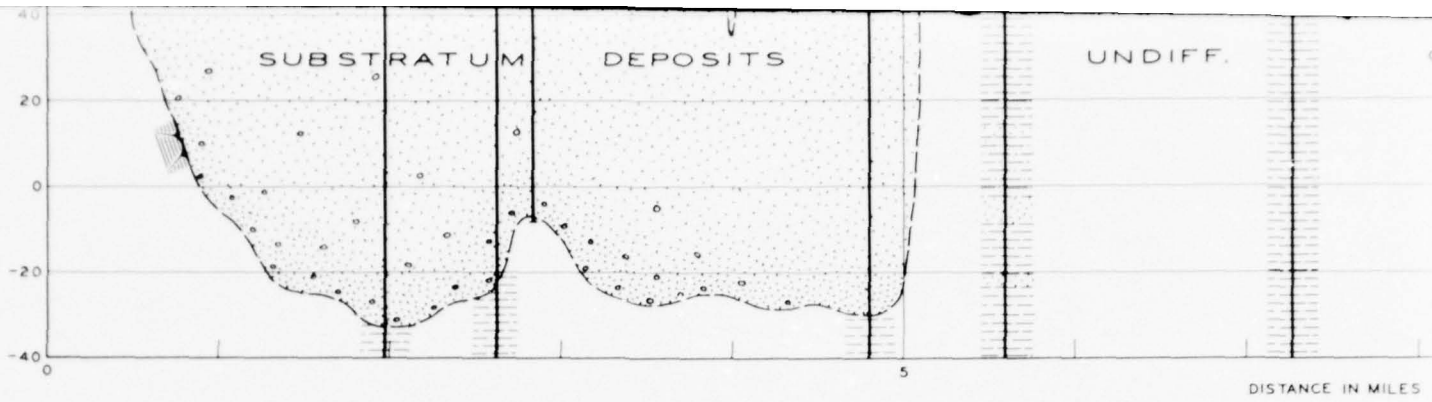
GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 DISTRIBUTION OF ALLUVIAL DEPOSITS  
 COLFAX, LA.

4

OF ABANDONED COURSE  
 QUENT MEANDERING OF  
 OF TERTIARY  
 L  
 GED BY SOILS SCIENTIST)  
 RIED TERTIARY SURFACE  
 GED BY SOILS SCIENTIST)  
 ARY  
 LOGGED BY SOILS SCIENTIST)  
 RIED TERTIARY SURFACE  
 LOGGED BY SOILS SCIENTIST)  
 ARY







LEGEND

ENVIRONMENTS OF DEPOSITION

TOPSTRATUM		NATURAL LEVEE
		POINT BAR
		ABANDONED CHANNEL
		ABANDONED COURSE
SUBSTRATUM		UNDIFFERENTIATED SAND AND GRAVEL
		TERTIARY SURFACE

LITHOLOGIC TYPES

	SAND
	CLAY AND SILT
	SANDSTONE
	SHALE
	SILTSTONE
	SAND AND GRAVEL

MAPPING SYMBOLS

	UNDIFFERENTIATED TERRACE
--	--------------------------

3

UNDIFF.

CATAHOULA

FORMATION

DISTANCE IN MILES

10

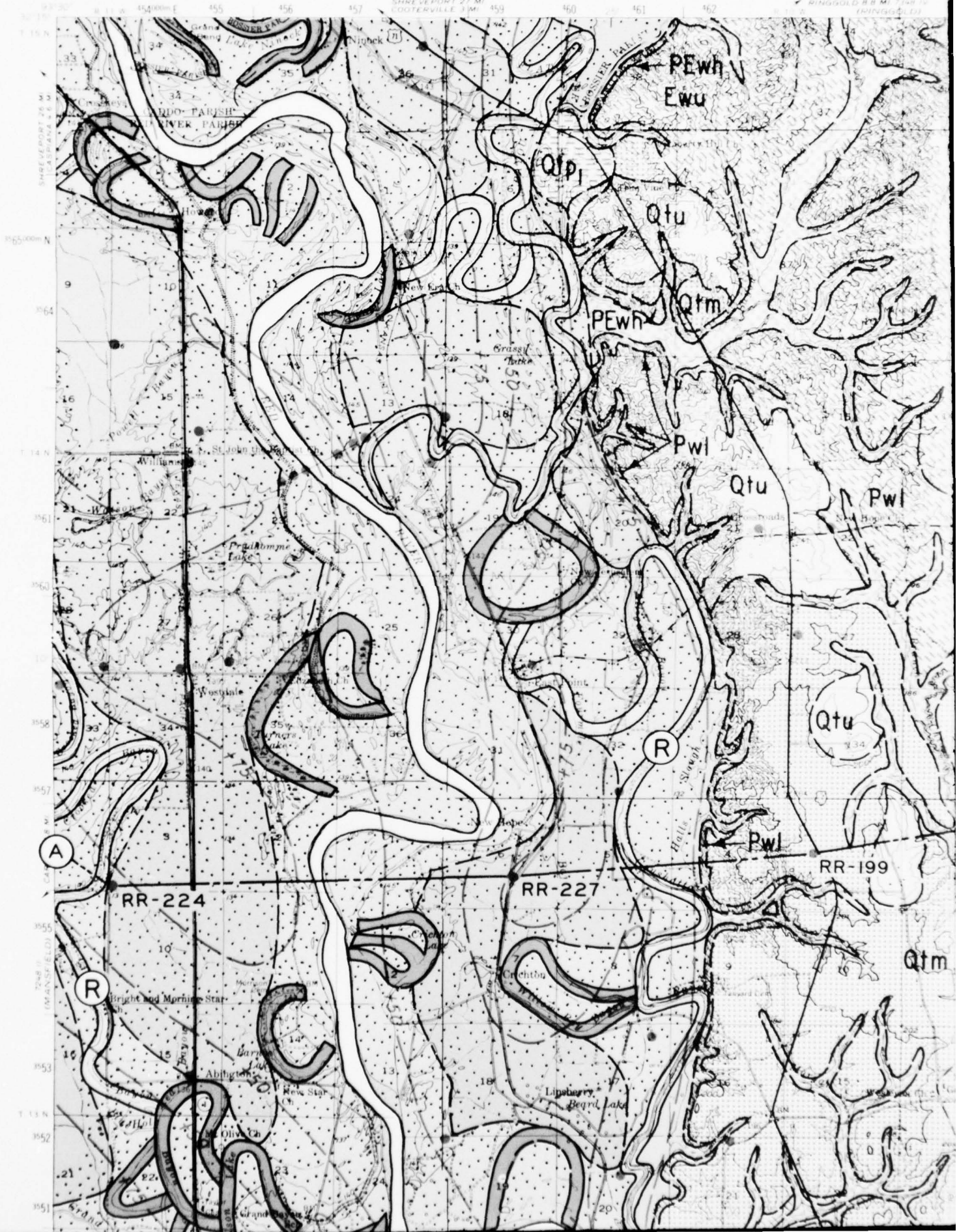
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GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AR  
SECTION A - A'  
COLFAX, LA.

4

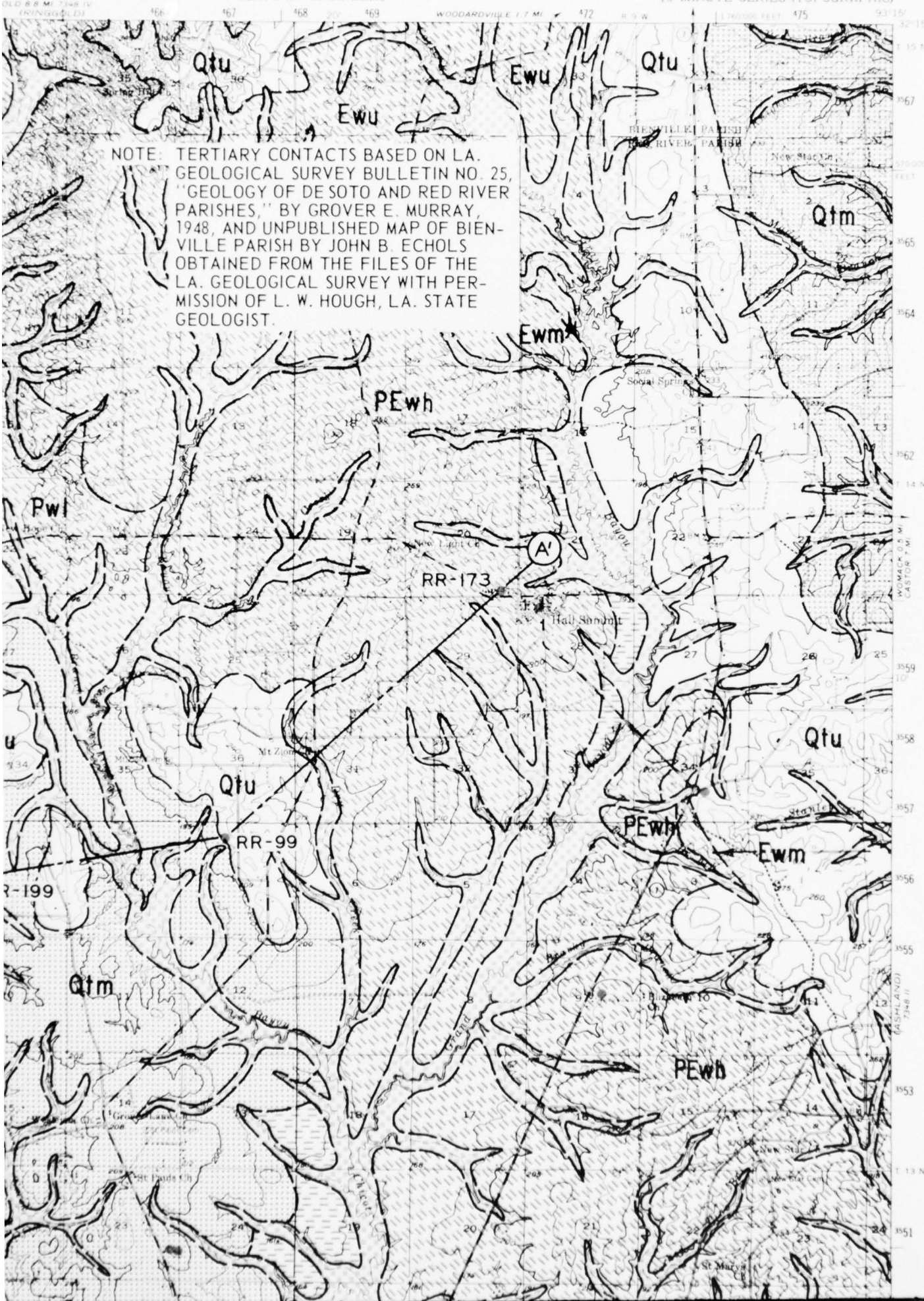
SHREVEPORT 27 MI  
COOTERVILLE 3 MI

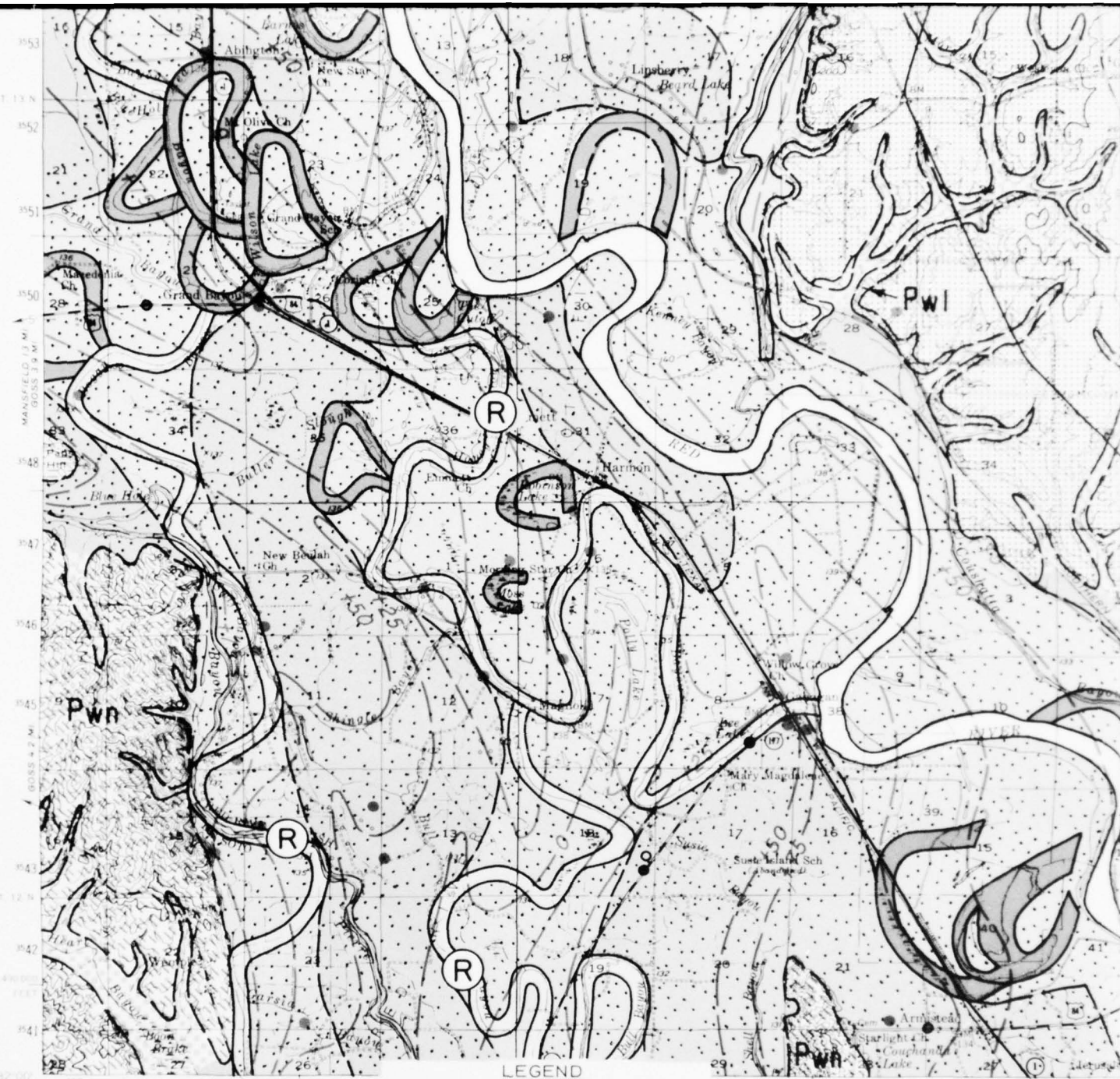
RINGGOLD 8.8 MI  
TIGER 10  
CUMBERLAND 11



2

NOTE: TERTIARY CONTACTS BASED ON LA. GEOLOGICAL SURVEY BULLETIN NO. 25, "GEOLOGY OF DE SOTO AND RED RIVER PARISHES," BY GROVER E. MURRAY, 1948, AND UNPUBLISHED MAP OF BIENVILLE PARISH BY JOHN B. ECHOLS OBTAINED FROM THE FILES OF THE LA. GEOLOGICAL SURVEY WITH PERMISSION OF L. W. HOUGH, LA. STATE GEOLOGIST.





LEGEND

QUATERNARY

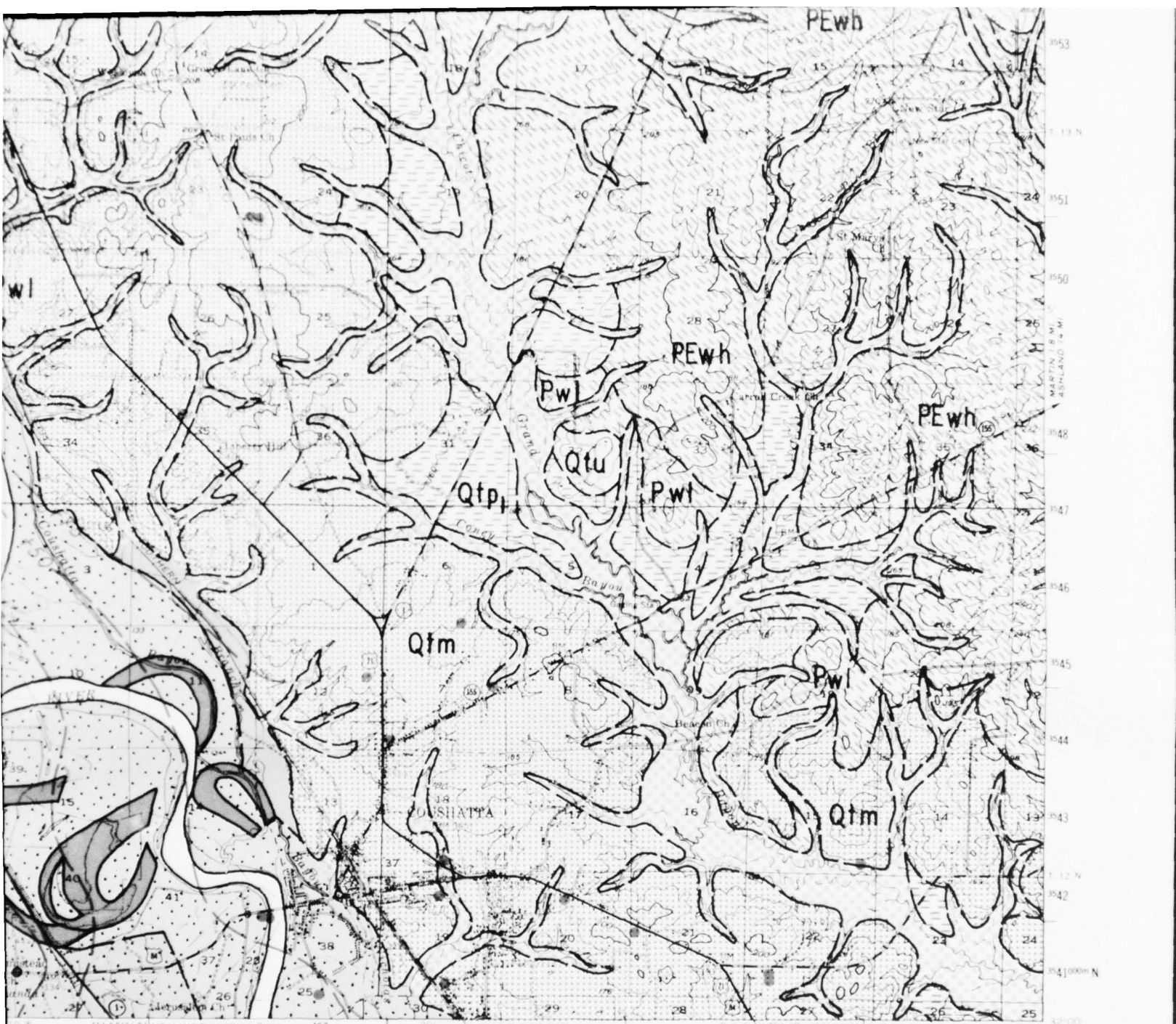
- RECENT**
- NATURAL LEVEE
  - POINT BAR
  - BACKSWAMP
  - ABANDONED CHANNEL
  - ABANDONED COURSE
  - UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS
- PLEISTOCENE**
- PRAIRIE TERRACE-UPPER SURFACE
  - MONTGOMERY TERRACE
  - UNDIFFERENTIATED TERRACE

TERTIARY

- Eocene-Paleocene**
- WILCOX GROUP UNDIFFERENTIATED
  - MARTHAVILLE FORMATION
  - HALL SUMMIT FORMATION
  - LOGANSPORT FORMATION (AFTER MURRAY-INCLUDES LIME HILL, COW BAYOU, AND DOLET HILLS MEMBERS IN RED RIVER PARISH)
  - NABORTON FORMATION

- RED RIVER
- INDEFINITE CONTACT
- CONTACT
- ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY

3



(HAYNA) HOLLINGSWORTH 1.7 MI  
 7347 IV NATCHITOCHE 25 MI  
 SCALE 1:62500  
 PIERMONT 4.3 MI  
 CAMPTI 13 MI  
 CLARENCE 21 MI  
 4750000 E  
 32°00' N  
 93°15' W

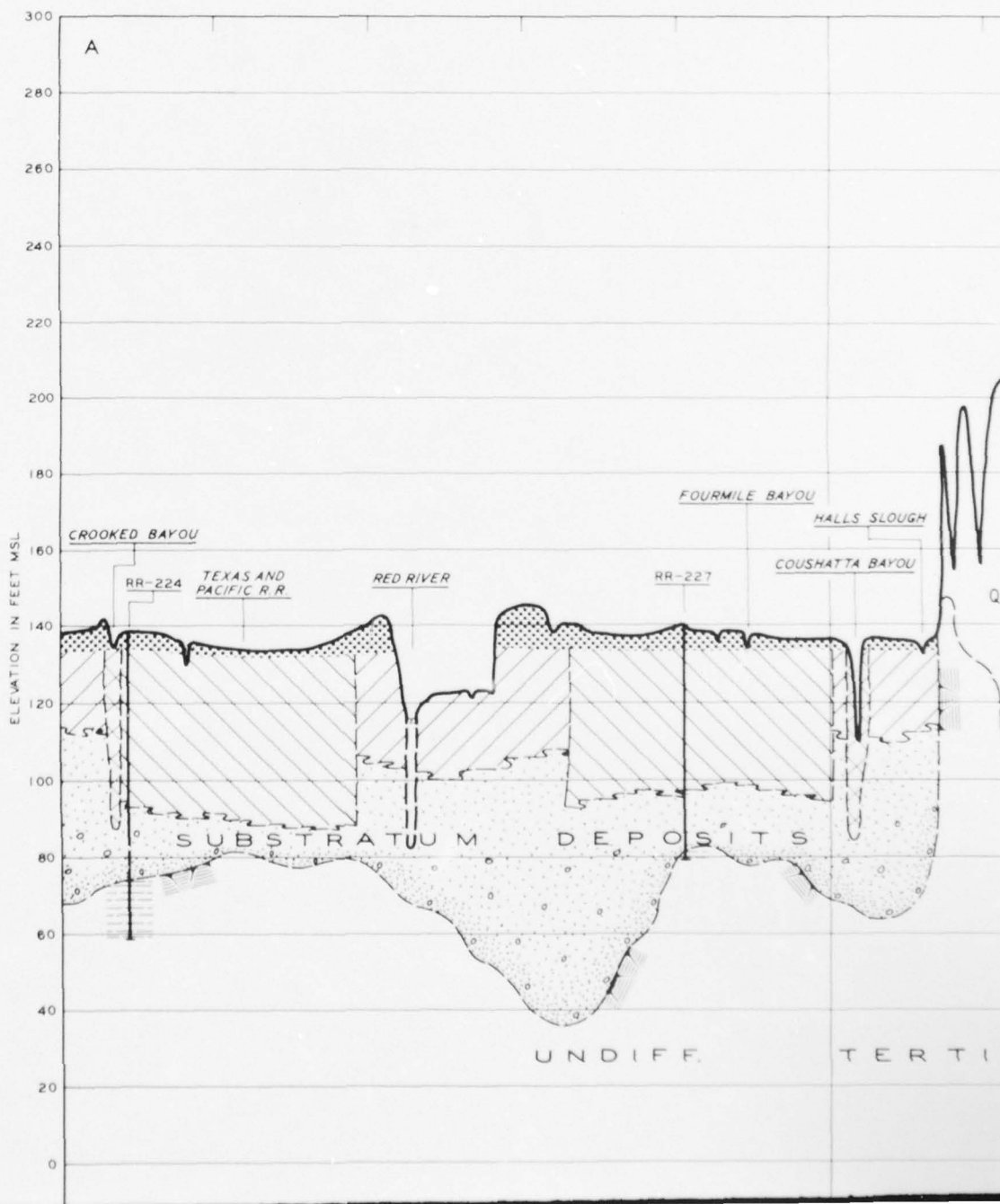


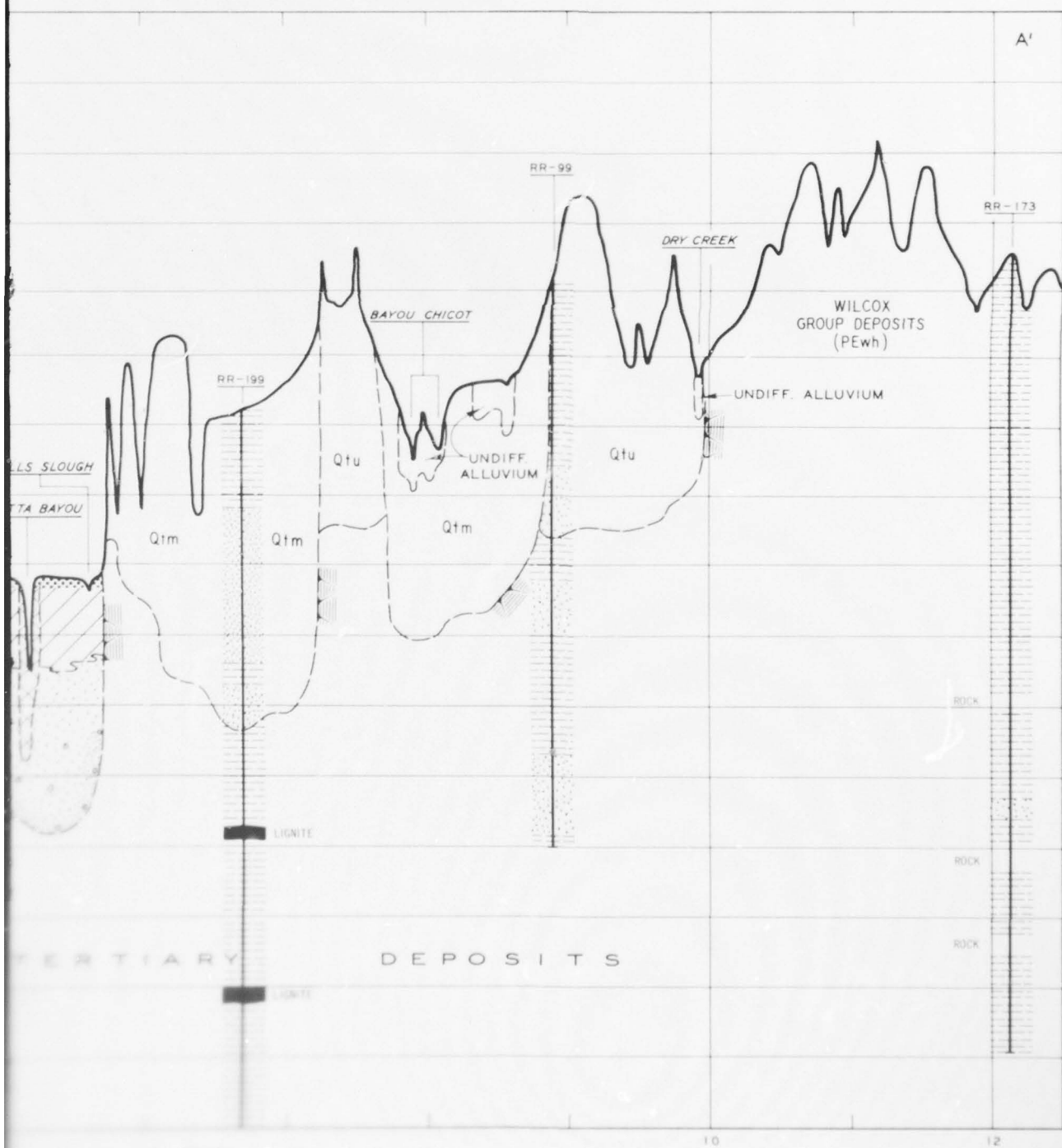
CONTOUR INTERVAL 20 FEET  
 DATUM - MEAN SEA LEVEL

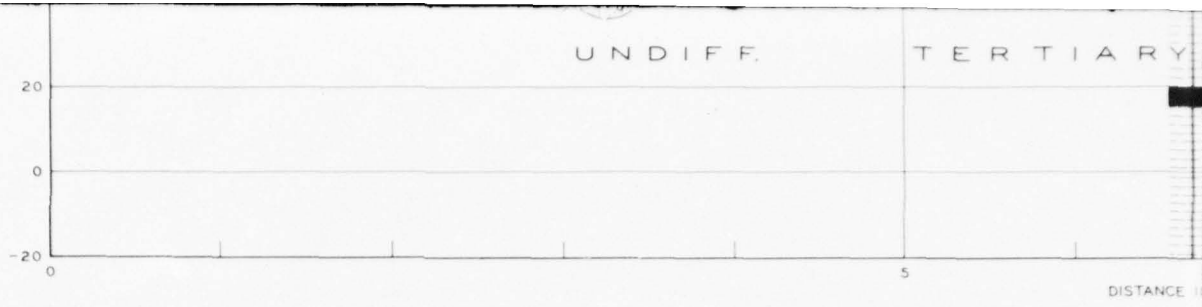
OF TERTIARY  
 L  
 GED BY SOILS SCIENTIST)  
 URIED TERTIARY SURFACE  
 GED BY SOILS SCIENTIST)  
 IARY  
 LOGGED BY SOILS SCIENTIST)  
 URIED TERTIARY SURFACE  
 LOGGED BY SOILS SCIENTIST)  
 IARY

GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
**DISTRIBUTION OF ALLUVIAL DEPOSITS**  
 COUSHATTA, LA.

4
















LEGEND




ENVIRONMENTS OF DEPOSITION

TOPSTRATUM		NATURAL LEVEE
		POINT BAR
		BACKSWAMP
		ABANDONED COURSE
SUBSTRATUM		UNDIFFERENTIATED SAND AND GRAVEL
		TERTIARY SURFACE

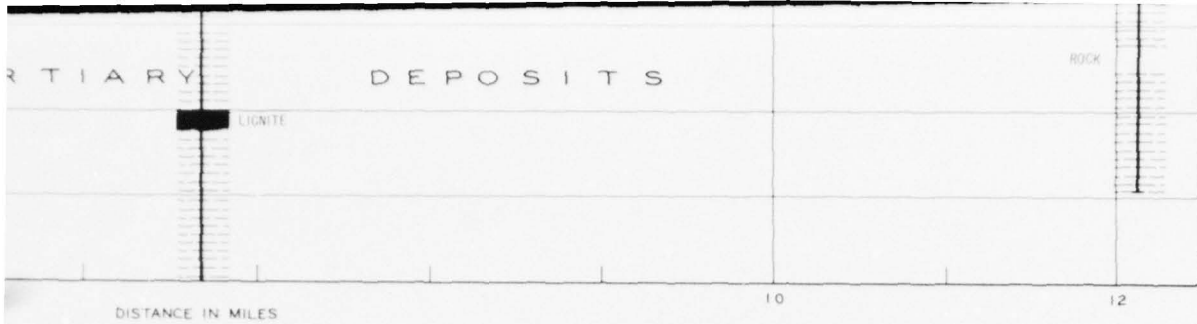
LITHOLOGIC TYPES

	SAND
	CLAY AND SILT
	SHALE

MAPPING SYMBOLS

	MONTGOMERY TERRACE
	UNDIFFERENTIATED PLEISTOCENE TERRACE
	WILCOX GROUP DEPOSITS (HALL SUMMIT FORMATION)

3

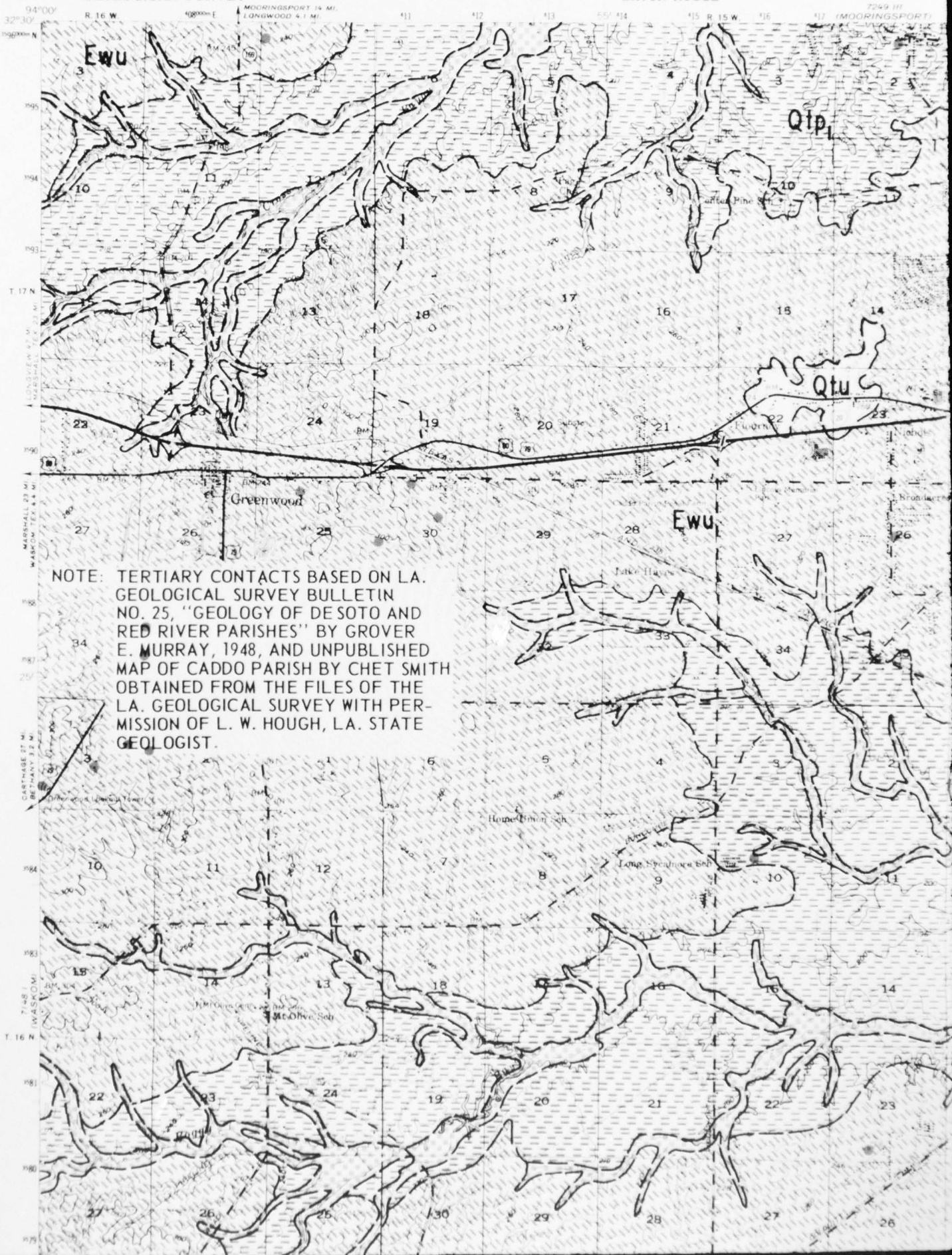


GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
SECTION A-A'  
COUSHATTA, LA.

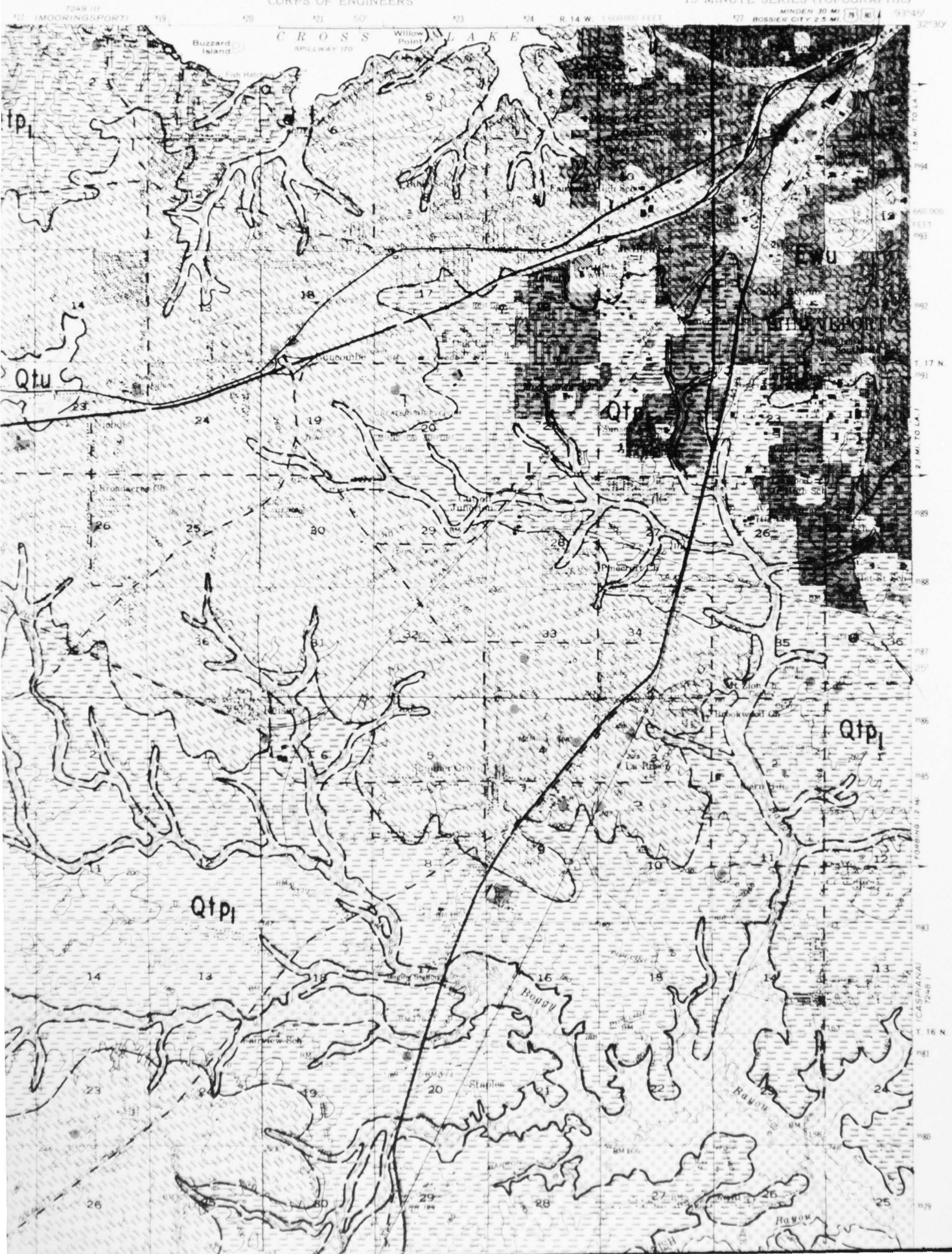
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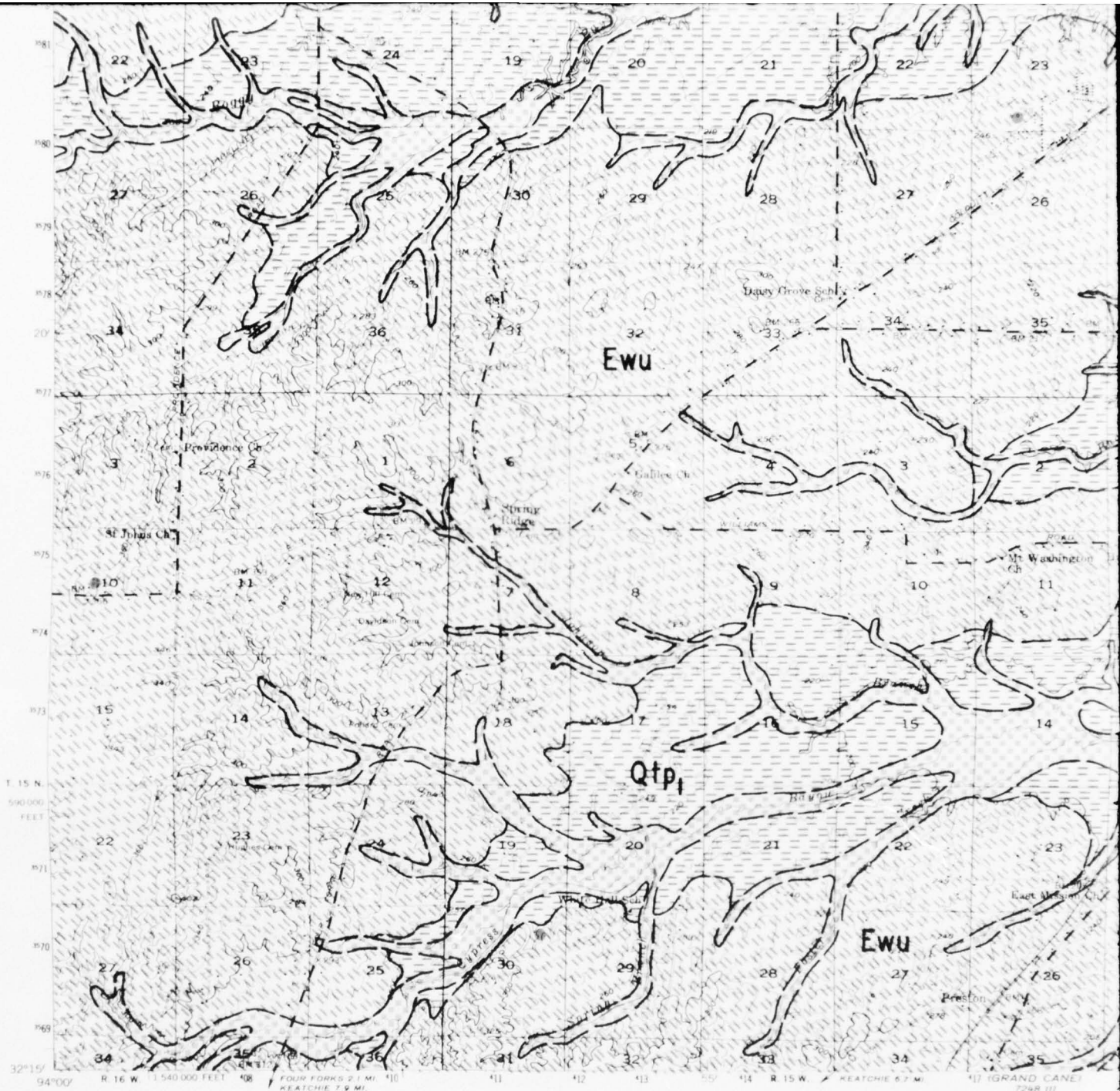
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

STATE OF LOUISIANA  
DEPARTMENT OF PUBLIC WORKS  
BATON ROUGE



2





LEGEND

QUATERNARY

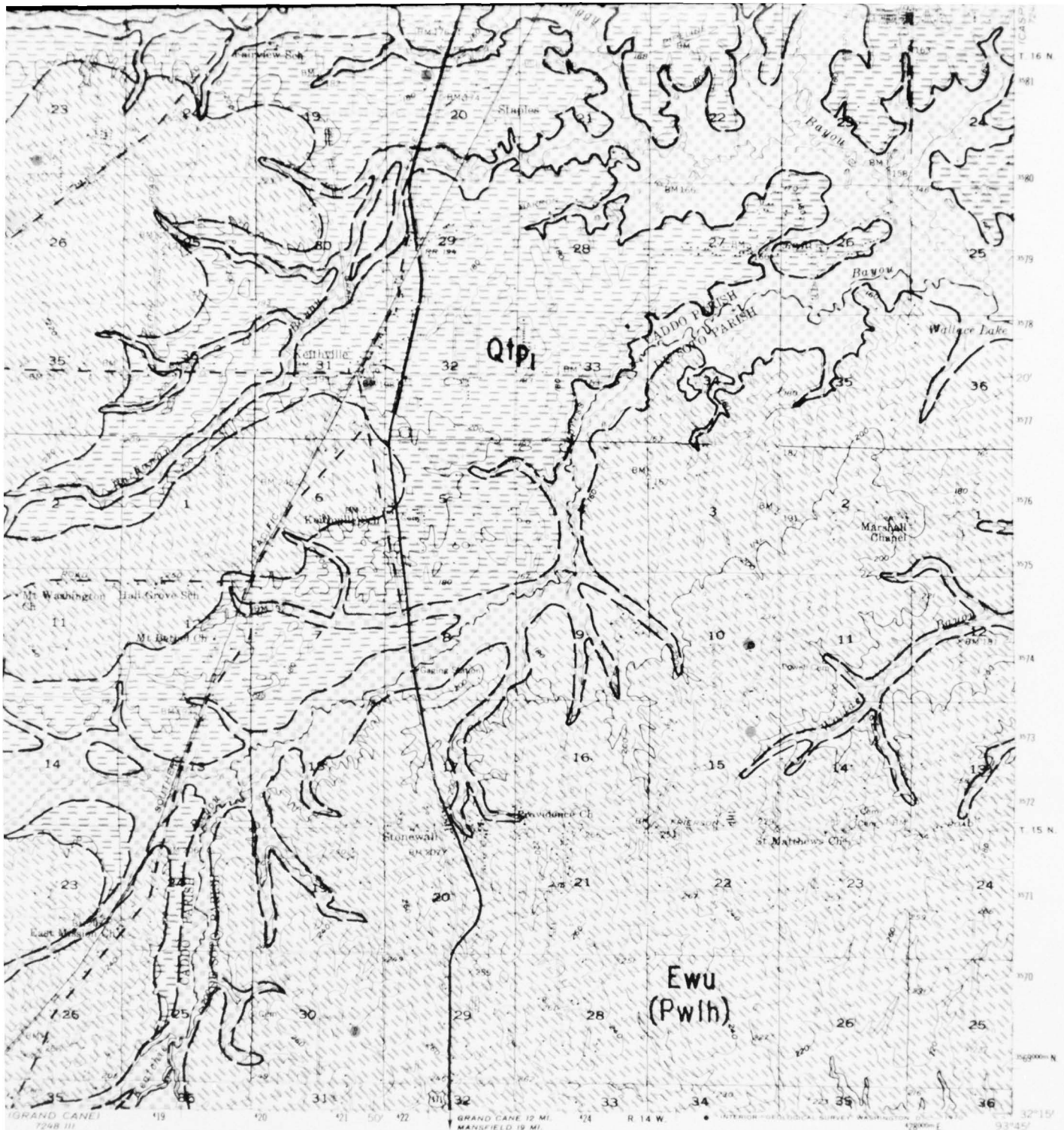
TERTIARY

- RECENT
- UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS
- PLEISTOCENE
- PRAIRIE TERRACE-UPPER SURFACE
  - UNDIFFERENTIATED TERRACE

- EOCENE-PALEOCENE
- WILCOX GROUP UNDIFFERENTIATED
  - LOGANSPORT FORMATION (AFTER MURRAY—INCLUDES LIME HILL IN DESOTO PARISH)

- INDEFINITE CONTACT
- CONTACT
- ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY

3



**GEOLOGICAL INVESTIGATION**  
**LOWER RED RIVER-ATCHAFALAYA BASIN AREA**  
**DISTRIBUTION OF ALLUVIAL DEPOSITS**  
**GREENWOOD, LA.**

4

(S SCIENTIST)  
 (ARY SURFACE)  
 (S SCIENTIST)  
 (Y SOILS SCIENTIST)  
 (ARY SURFACE)  
 (Y SOILS SCIENTIST)





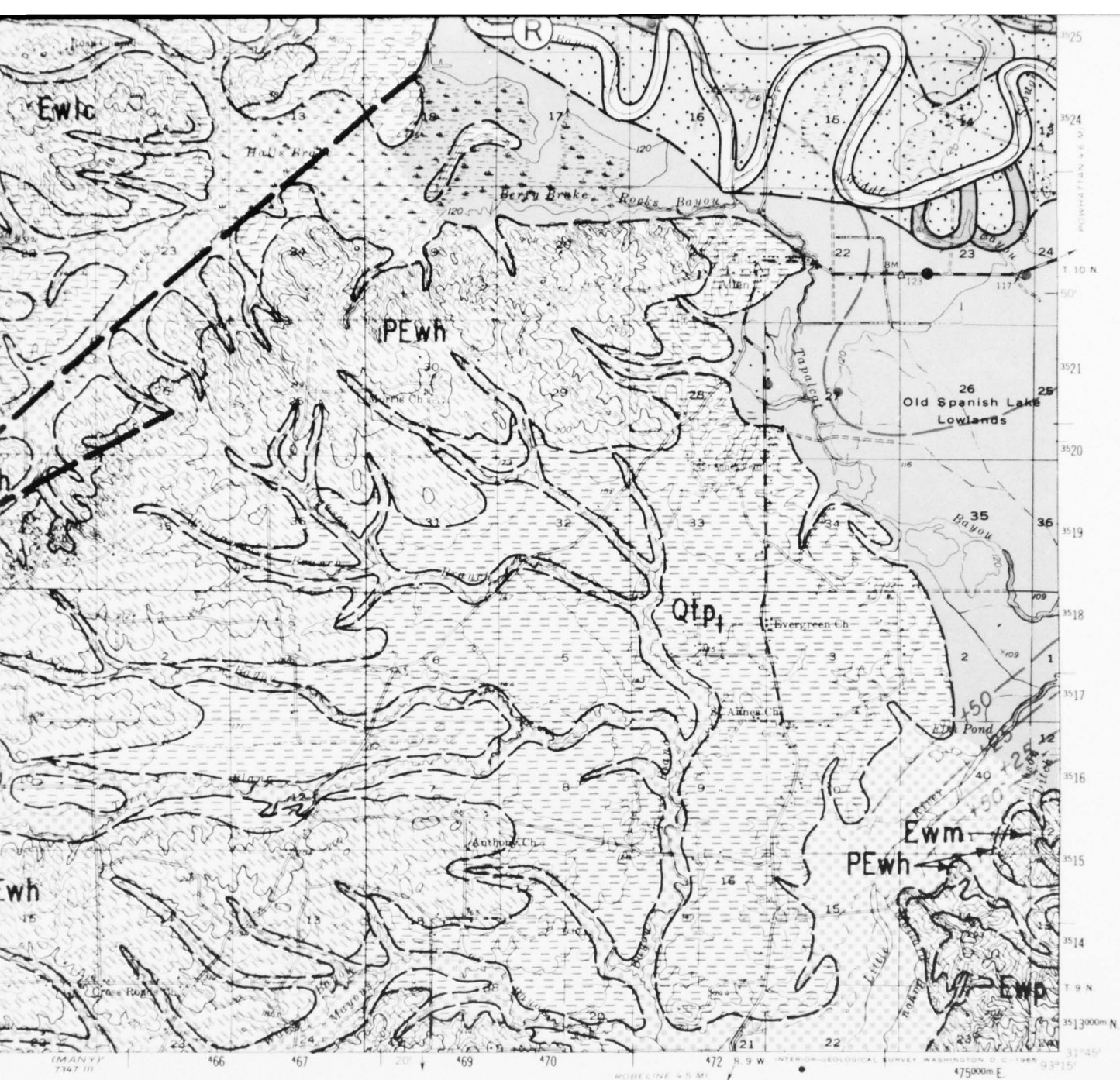


NOTE. TERTIARY CONTACTS BASED ON LA. GEOLOGICAL SURVEY BULLETIN NO. 25, "GEOLOGY OF DE SOTO AND RED RIVER PARISHES," BY GROVER E. MURRAY, 1948, LA. GEOLOGICAL SURVEY BULLETIN NO. 34, "GEOLOGY OF SABINE PARISH," BY H. V. ANDERSEN, 1960, LA. GEOLOGICAL SURVEY WATER RESOURCES BULLETIN NO. 4, "WATER RESOURCES OF NATCHITOCHE PARISH, LA.," BY R. NEWCOME AND OTHERS, 1963, AND UNPUBLISHED MAP OF NATCHITOCHE PARISH BY H. V. ANDERSEN OBTAINED FROM THE FILES OF THE LA. GEOLOGICAL SURVEY WITH PERMISSION OF L. W. HOUGH, LA. STATE GEOLOGIST.

QUATERNARY		TERTIARY		LEGEND	
RECENT		EOCENE-PALEOCENE			
	NATURAL LEVEE		WILCOX GROUP UNDIFFERENTIATED		RED RIVER
	POINT BAR		PENDLETON FORMATION		INDEFINITE CONTACT
	BACKSWAMP		MARTHVILLE FORMATION		CONTACT
	ABANDONED CHANNEL		CONVERSE FORMATION (AFTER ANDERSEN IN NATCHITOCHE PARISH)		ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL
	ABANDONED COURSE		HALL SUMMIT FORMATION		CLASS I BORING (LOGGED BY SOILS SECTION USED TO CONTOUR BURIED TERTIARY SURFACE)
	UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS		LIME HILL FORMATION (CONSIDERED AS A MEMBER OF LOGANSPORT FM BY MURRAY IN DESOTO PARISH)		CLASS II BORING (NOT LOGGED BY SOILS SECTION USED TO CONTOUR BURIED TERTIARY SURFACE)
PLEISTOCENE			CONVERSE FORMATION		CLASS II BORING (NOT LOGGED BY SOILS SECTION USED TO CONTOUR BURIED TERTIARY SURFACE)
	PRAIRIE TERRACE-UPPER SURFACE		LOGANSPORT FORMATION (AFTER MURRAY-INCLUDES COW BAYOU AND DOLET HILLS MEMBERS IN DESOTO PARISH)		
	MONTGOMERY TERRACE		NABORTON FORMATION		

3

HANNA (a)



FACT

OP OF TERTIARY  
T-MSL

LOGGED BY SOILS SCIENTIST)  
R BURIED TERTIARY SURFACE

LOGGED BY SOILS SCIENTIST)  
ERTIARY

NOT LOGGED BY SOILS SCIENTIST)  
R BURIED TERTIARY SURFACE

(NOT LOGGED BY SOILS SCIENTIST)  
ERTIARY

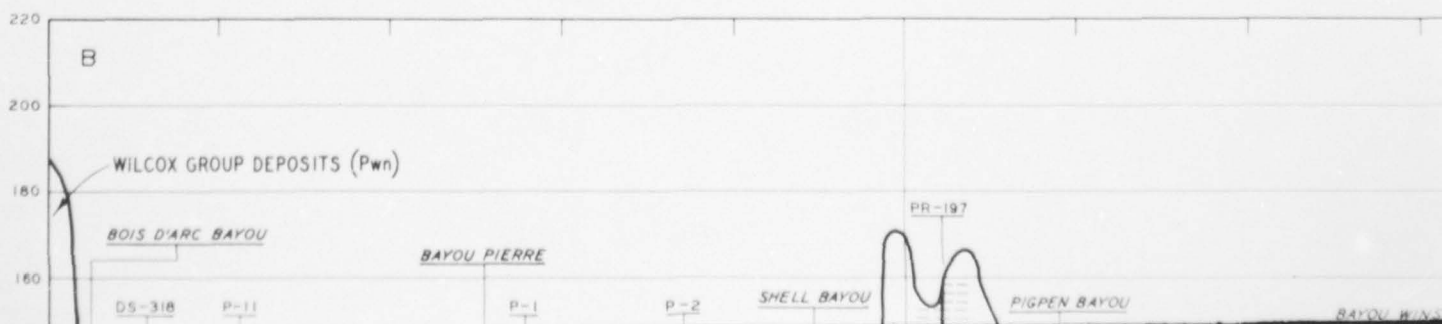
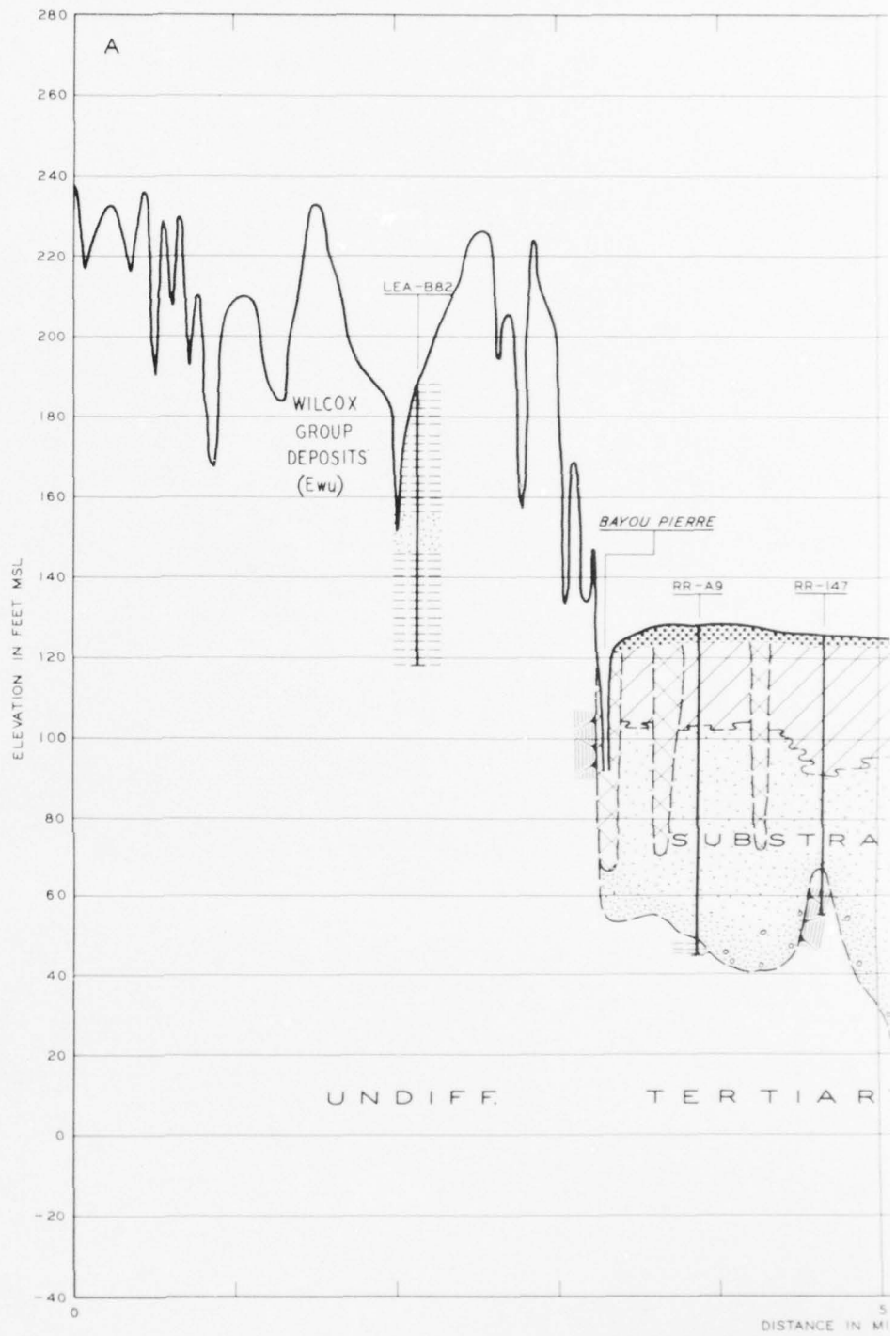


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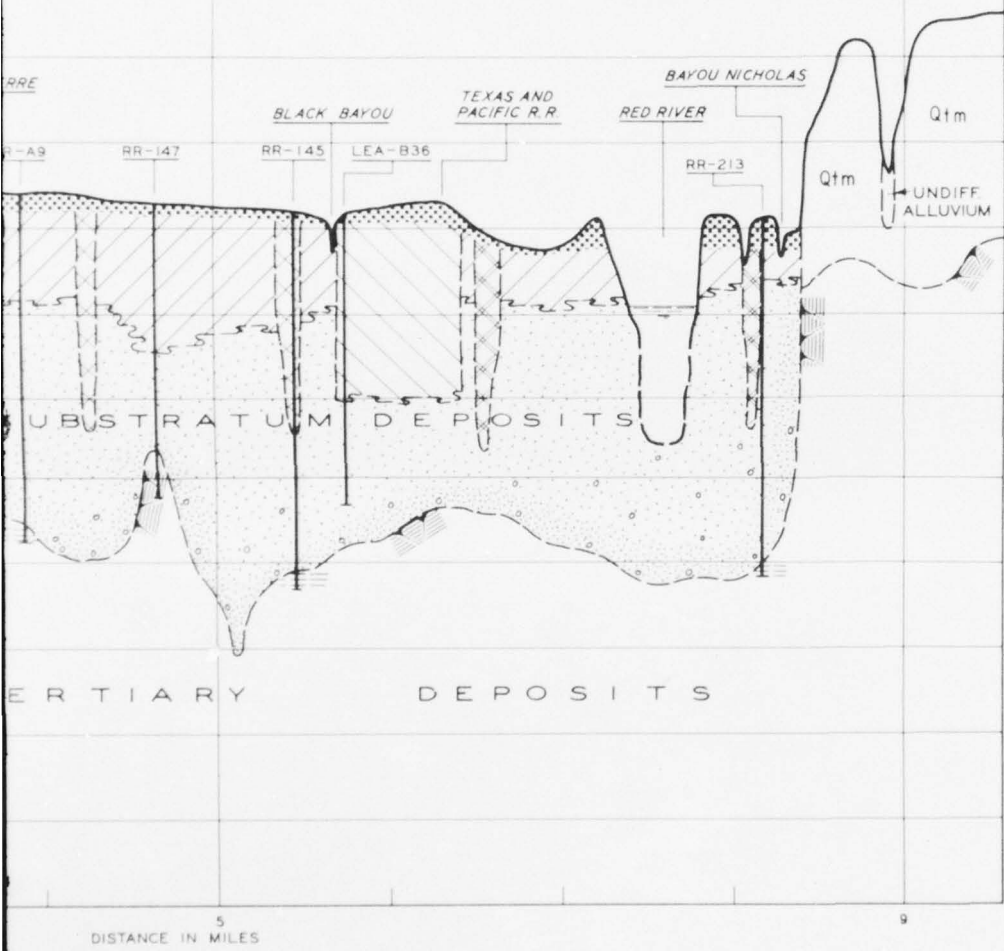
CONTOUR INTERVAL 20 FEET  
DATUM IS MEAN SEA LEVEL

GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
DISTRIBUTION OF ALLUVIAL DEPOSITS  
HANNA, LA.

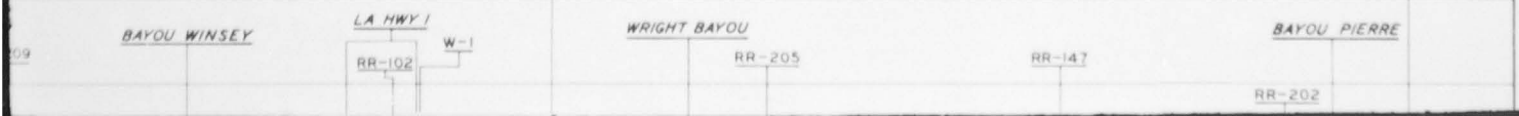
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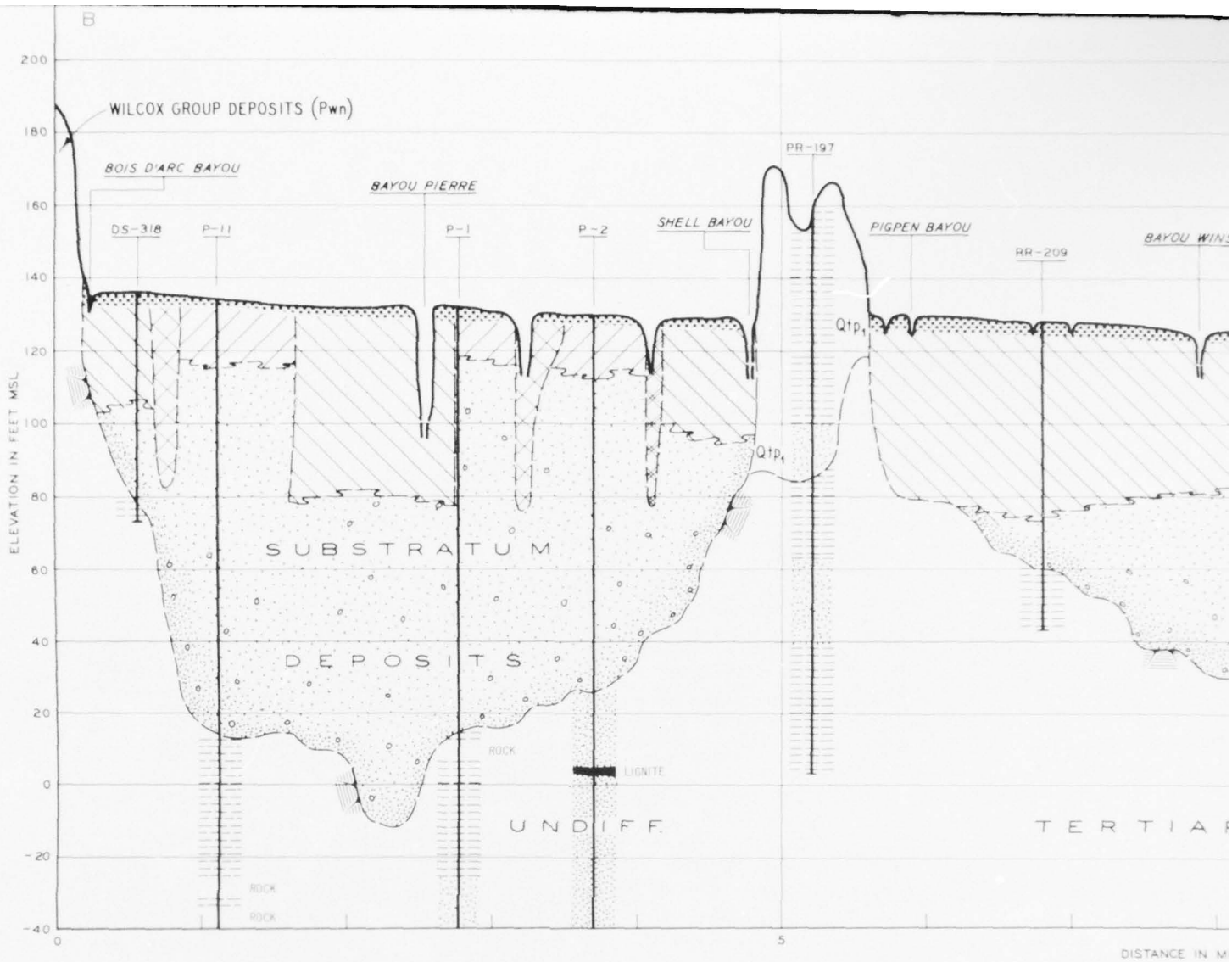


A'



B'





**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

- |            |  |                                  |
|------------|--|----------------------------------|
|            |  | NATURAL LEVEE                    |
|            |  | POINT BAR                        |
| TOPSTRATUM |  | BACKSWAMP                        |
|            |  | ABANDONED CHANNEL                |
|            |  | ABANDONED COURSE                 |
| SUBSTRATUM |  | UNDIFFERENTIATED SAND AND GRAVEL |
|            |  | TERTIARY SURFACE                 |

**LITHOLOGIC TYPES**

- |  |               |
|--|---------------|
|  | SAND          |
|  | CLAY AND SILT |
|  | SHALE         |

**MAPPING SYMBOLS**

- |  |  |
|--|--|
|  | MONTGOMERY TERRACE                         |
|  | UNDIFFERENTIATED WILCOX GROUP DEPOSITS     |
|  | WILCOX GROUP DEPOSITS (NABORTON FORMATION) |

3

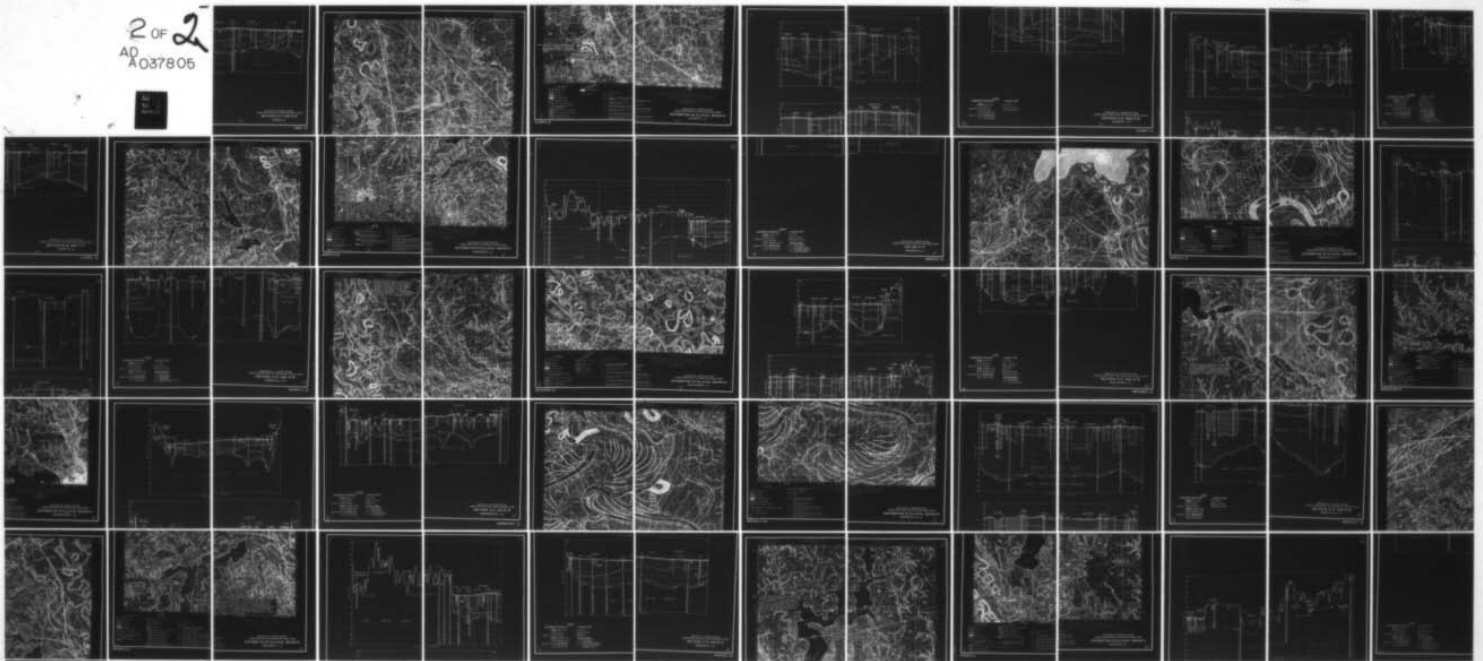
AD-A037 805

ARMY ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG MISS F/G 8/7  
GEOLOGICAL INVESTIGATION OF THE LOWER RED RIVER-ATCHAFALAYA BAS--ETC(U)  
JUL 74 F L SMITH; D P RUSS  
WES-TR-S-74-5

UNCLASSIFIED

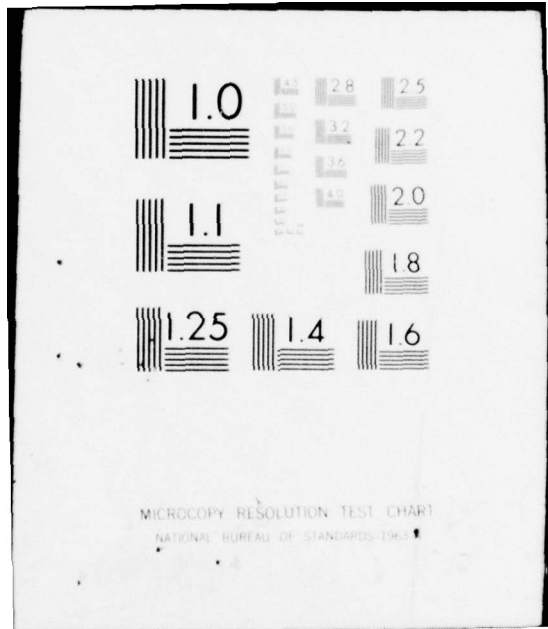
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2 OF 2  
AD A037805

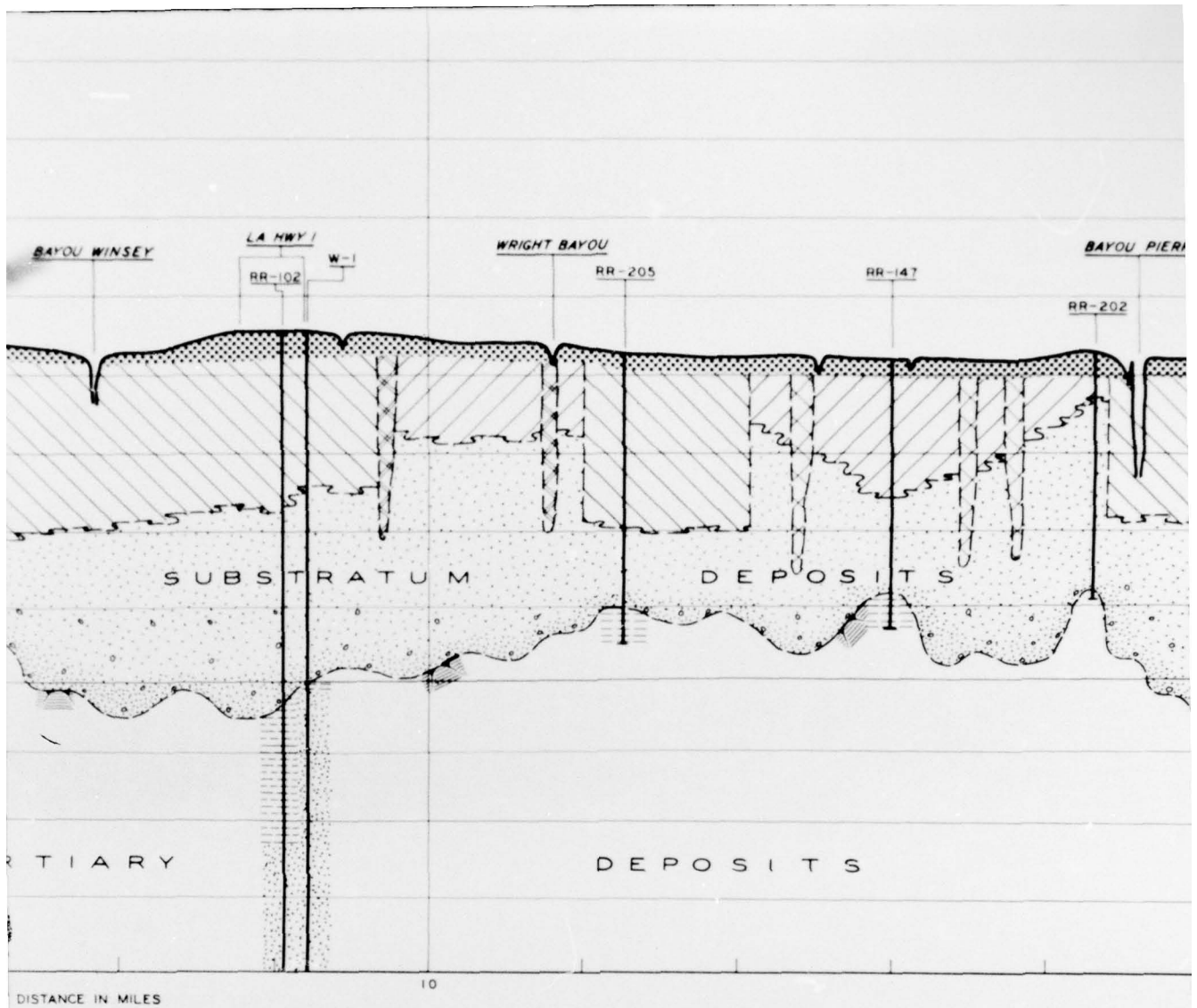


END

DATE  
FILMED  
4-77



MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A



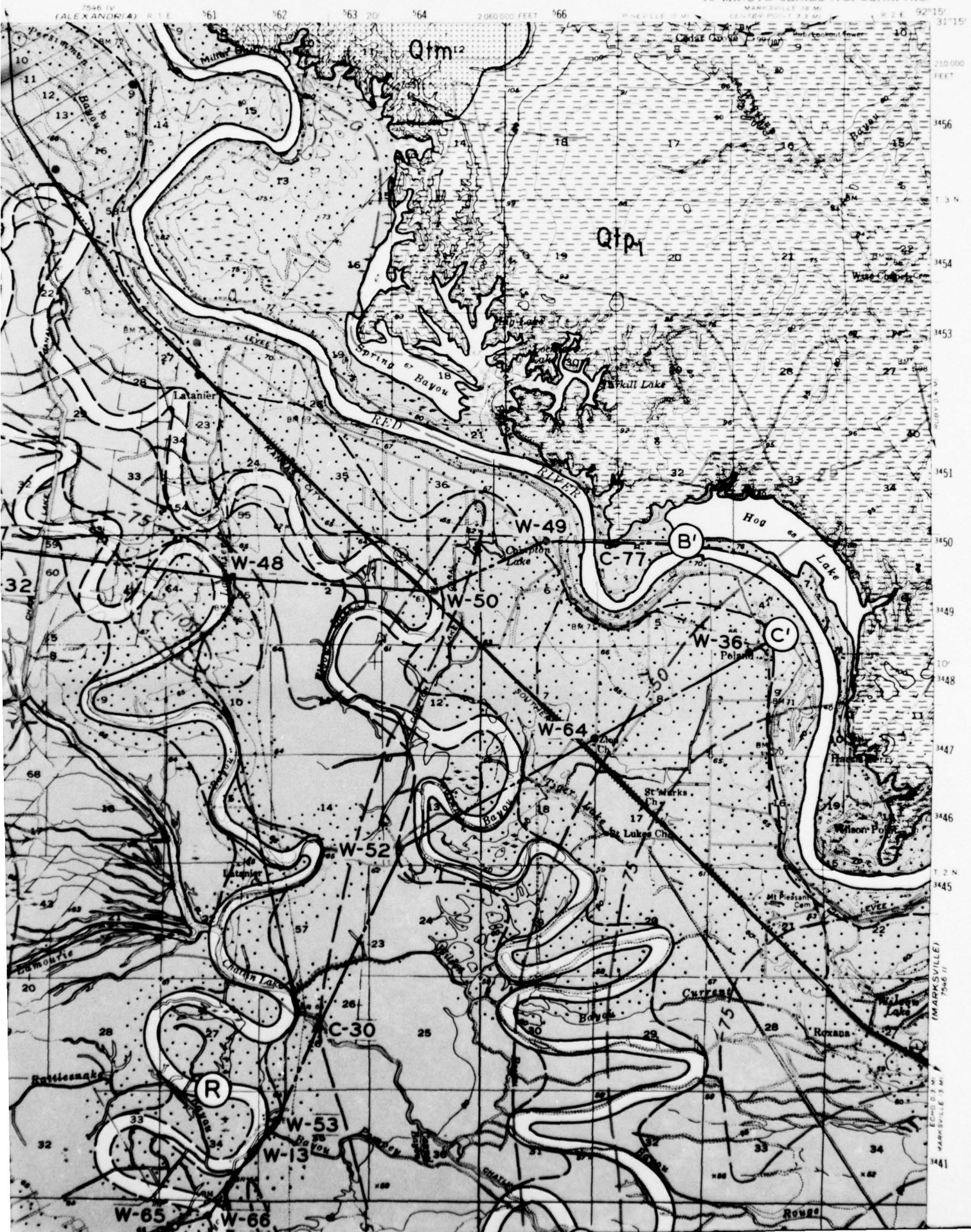
GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN  
 SECTIONS A-A' AND B-B'  
 HANNA, LA.

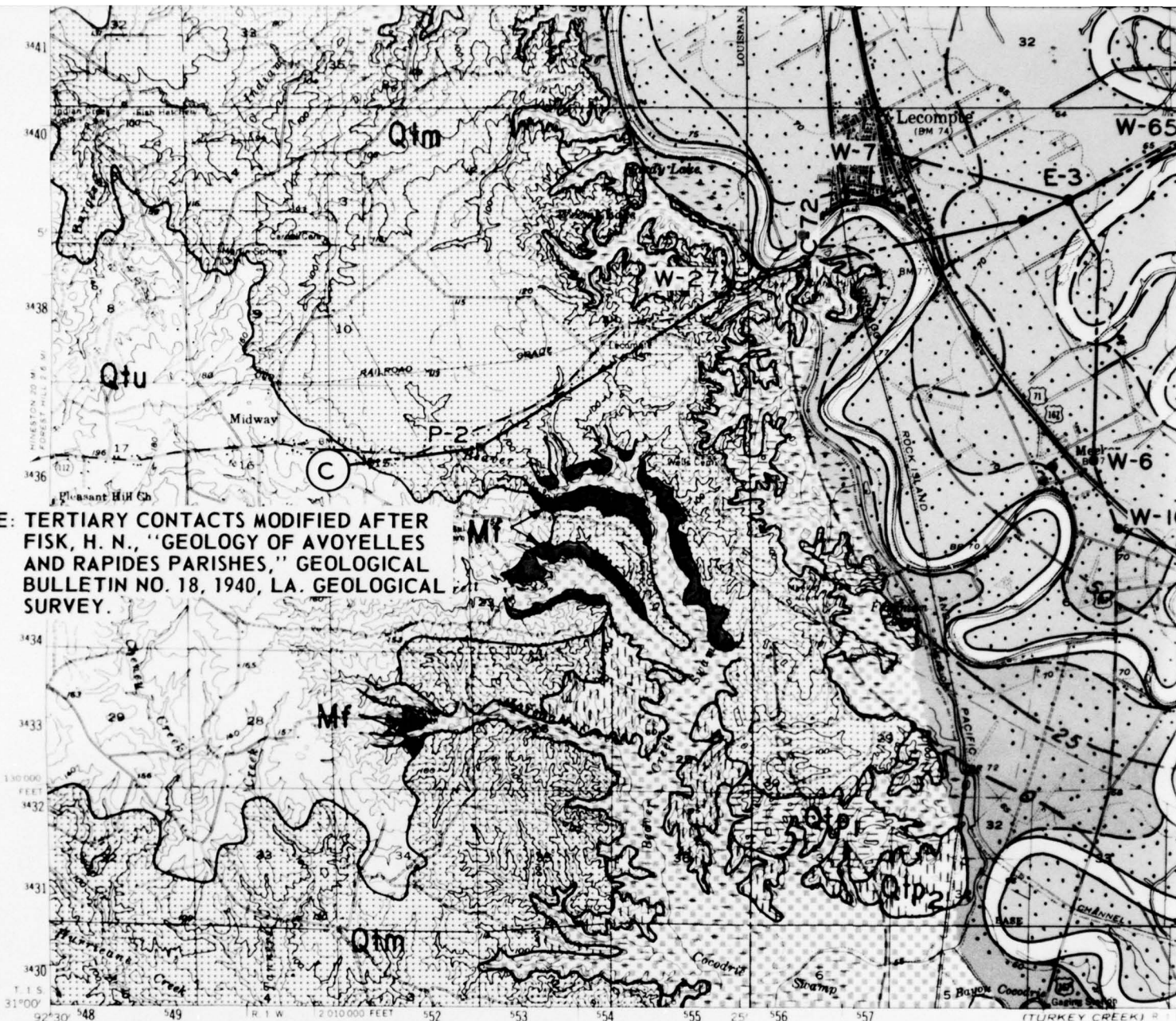
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LECOMPTÉ QUADRANGLE  
LOUISIANA—RAPIDES PARISH  
15 MINUTE SERIES (TOPOGRAPHIC)

2



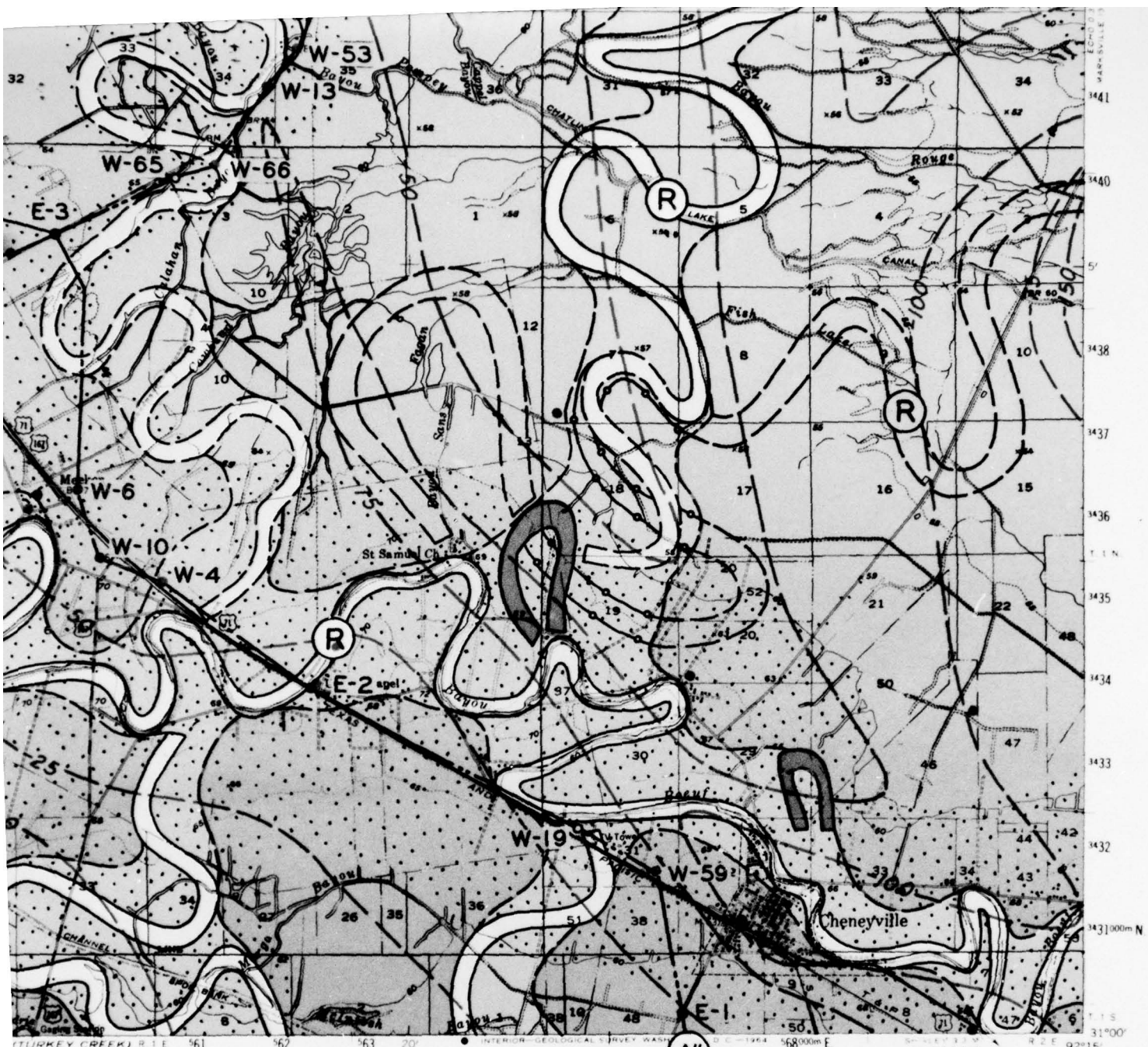


NOTE: TERTIARY CONTACTS MODIFIED AFTER FISK, H. N., "GEOLOGY OF AVOYELLES AND RAPIDES PARISHES," GEOLOGICAL BULLETIN NO. 18, 1940, LA. GEOLOGICAL SURVEY.

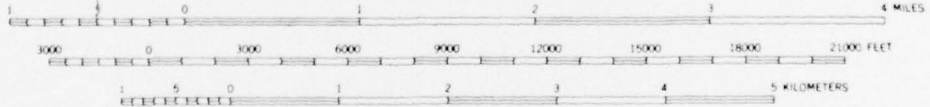
**LEGEND**

- |                    |   |                 |   |
|--------------------|---|-----------------|---|
| <b>QUATERNARY</b>  |   | <b>TERTIARY</b> |   |
| <b>RECENT</b>      |   | <b>MIOCENE</b>  |   |
|                    | NATURAL LEVEE                             |                 | FLEMING FORMATION   |
|                    | POINT BAR                                 |                 | RED RIVER   |
|                    | BACKSWAMP                                 |                 | INDEFINITE CONTACT  |
|                    | ABANDONED CHANNEL                         |                 | CONTACT   |
|                    | ABANDONED COURSE                          |                 | PROBABLE POSITION OF ABANDONED COURSE REWORKED BY SUBSEQUENT MEANDERING OF A STREAM   |
|                    | MAJOR CREVASSE CHANNELS                   |                 | ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL                                      |
|                    | UNDIFFERENTIATED ALLUVIUM OF SMALL CREEKS |                 | CLASS I BORING (LOGGED BY SOILS SCIENCE USED TO CONTOUR BURIED TERTIARY SURFACE)      |
| <b>PLEISTOCENE</b> |   |                 | CLASS I BORING (LOGGED BY SOILS SCIENCE NOT REACHING TERTIARY)                        |
|                    | PRAIRIE TERRACE-UPPER SURFACE             |                 | CLASS II BORING (NOT LOGGED BY SOILS SCIENCE USED TO CONTOUR BURIED TERTIARY SURFACE) |
|                    | PRAIRIE TERRACE-LOWER SURFACE             |                 | CLASS II BORING (NOT LOGGED BY SOILS SCIENCE NOT REACHING TERTIARY)                   |
|                    | MONTGOMERY TERRACE                        |                 |   |
|                    | UNDIFFERENTIATED TERRACE                  |                 |   |

3



SCALE 1:62,500



CONTOUR INTERVAL 20 FEET  
 DOTTED LINES REPRESENT 5 FOOT CONTOURS  
 DATUM IS MEAN SEA LEVEL

OF ABANDONED COURSE  
 QUENT MEANDERING OF

F TERTIARY

(ED BY SOILS SCIENTIST)  
 RIED TERTIARY SURFACE

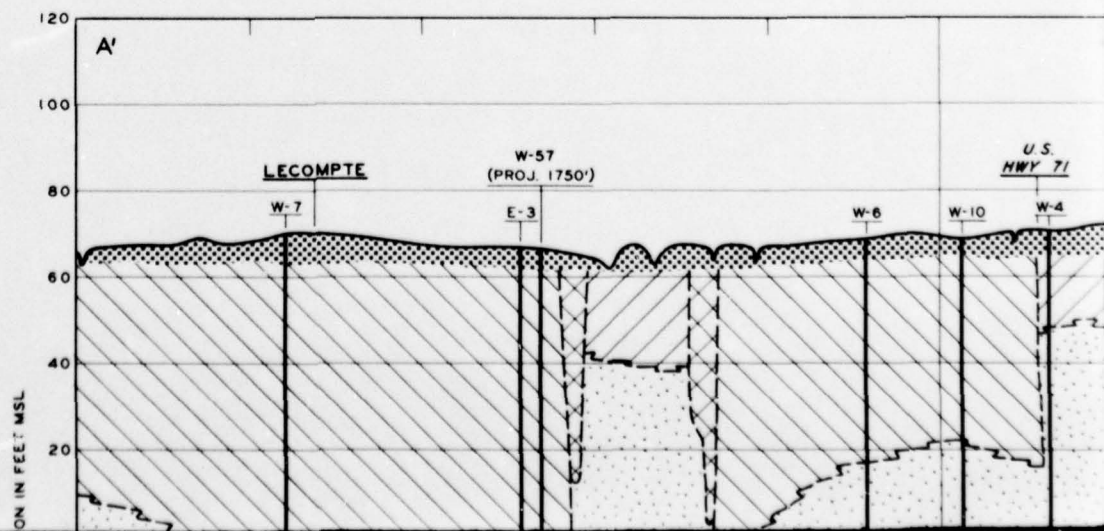
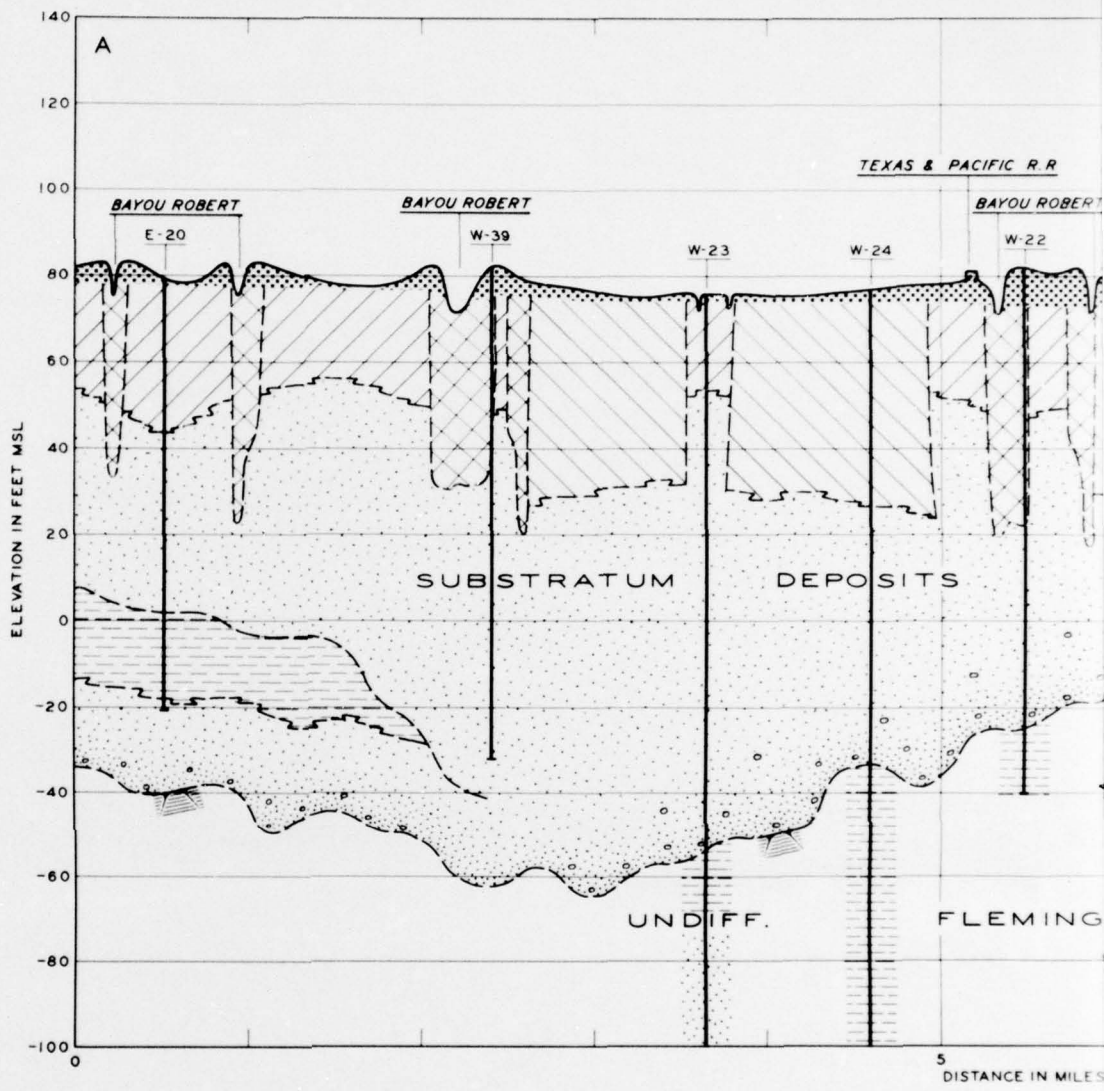
(ED BY SOILS SCIENTIST)  
 ARY

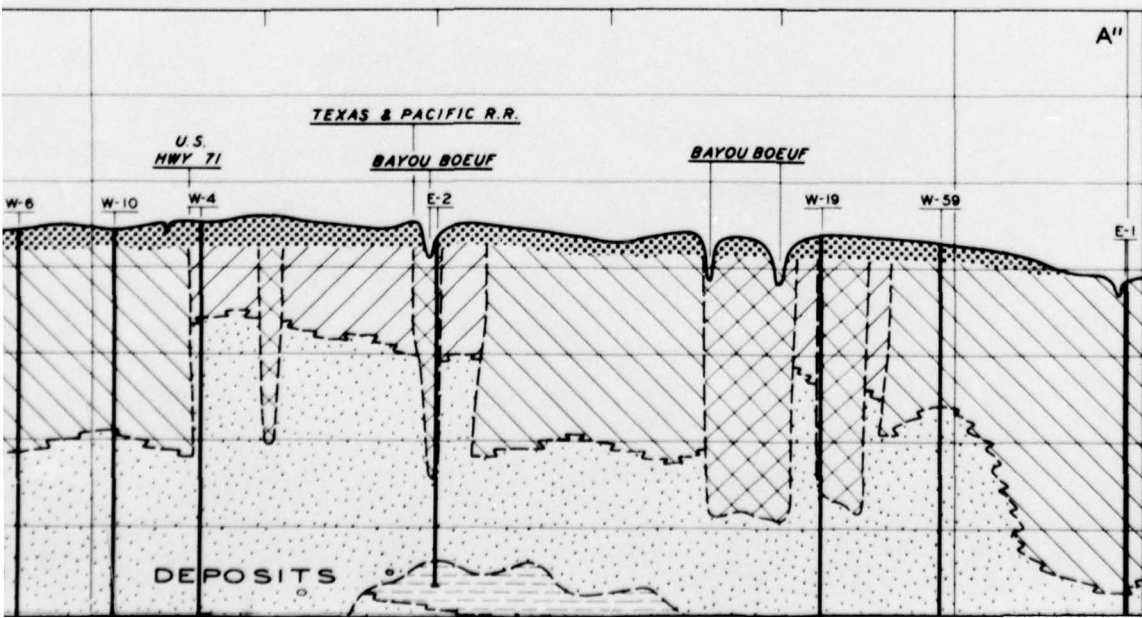
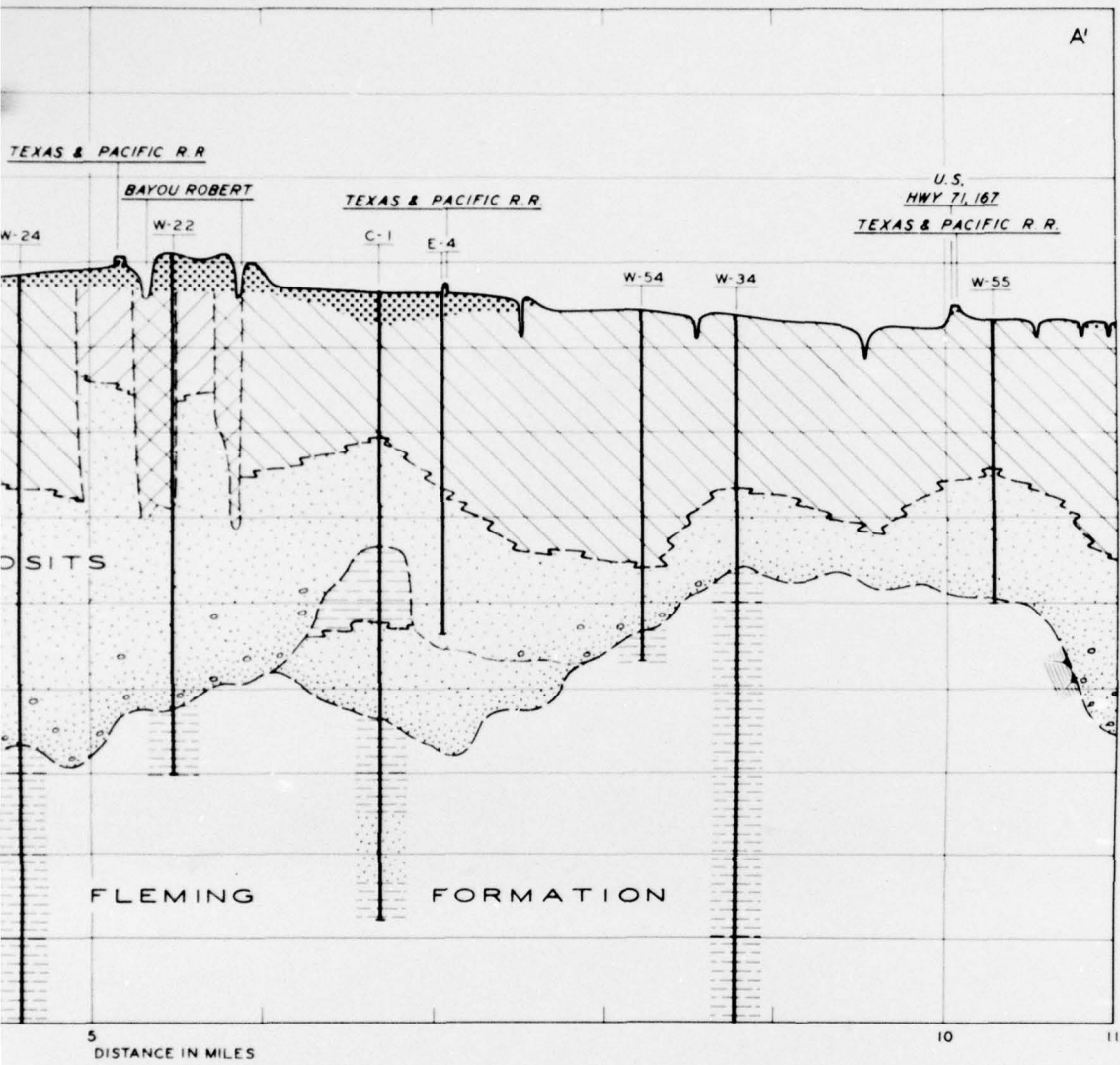
LOGGED BY SOILS SCIENTIST)  
 RIED TERTIARY SURFACE

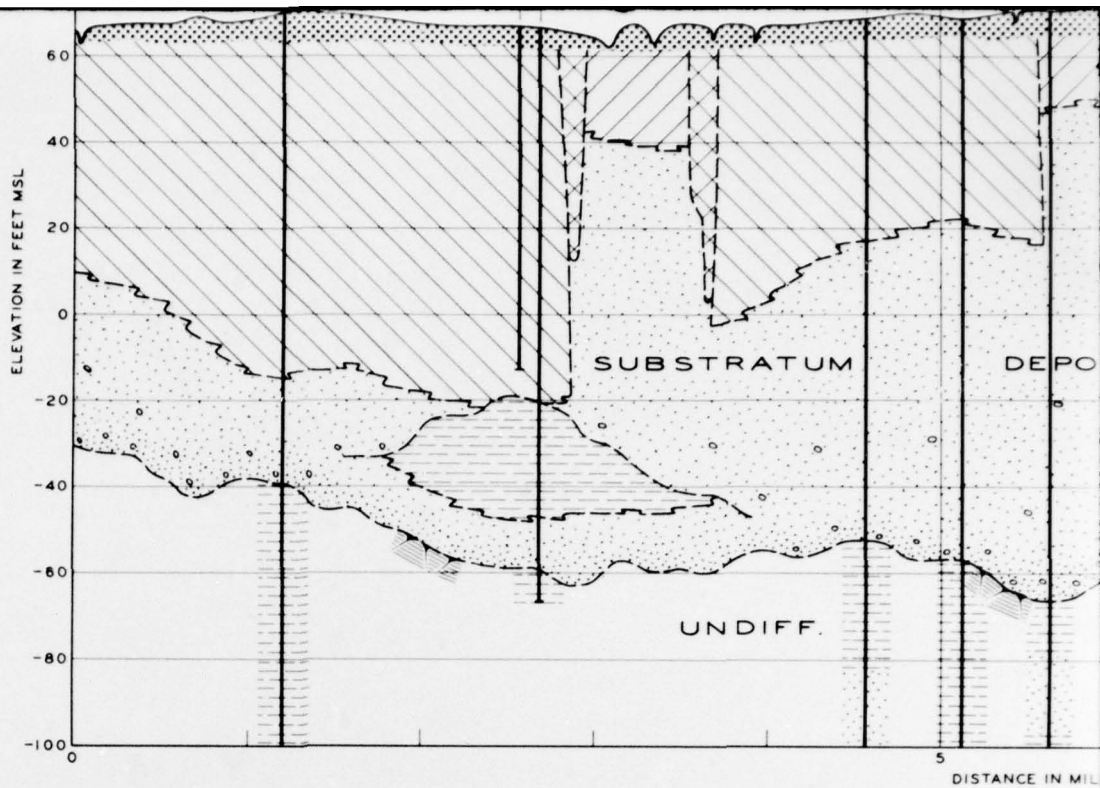
LOGGED BY SOILS SCIENTIST)  
 RY

GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 DISTRIBUTION OF ALLUVIAL DEPOSITS  
 LECOMPTE, LA.

4







**LEGEND**

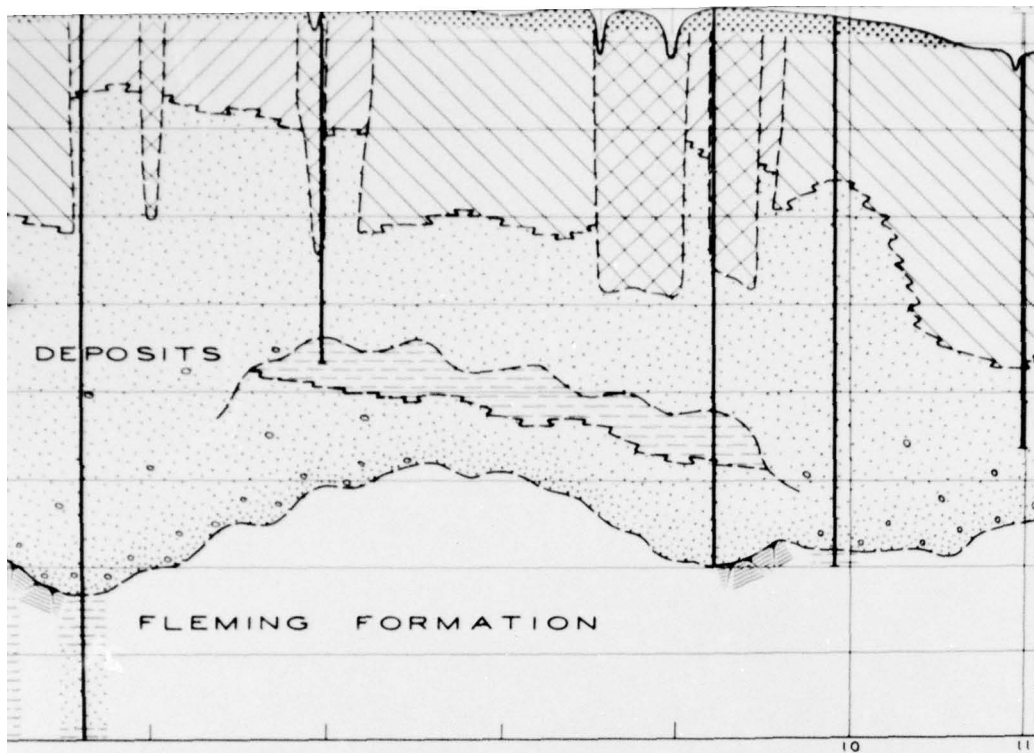
**ENVIRONMENTS OF DEPOSITION**

TOPSTRATUM		NATURAL LEVEE
		POINT BAR
		BACKSWAMP
		ABANDONED COURSE
SUBSTRATUM		UNDIFFERENTIATED SAND AND GRAVEL
		TERTIARY SURFACE

**LITHOLOGIC TYPES**

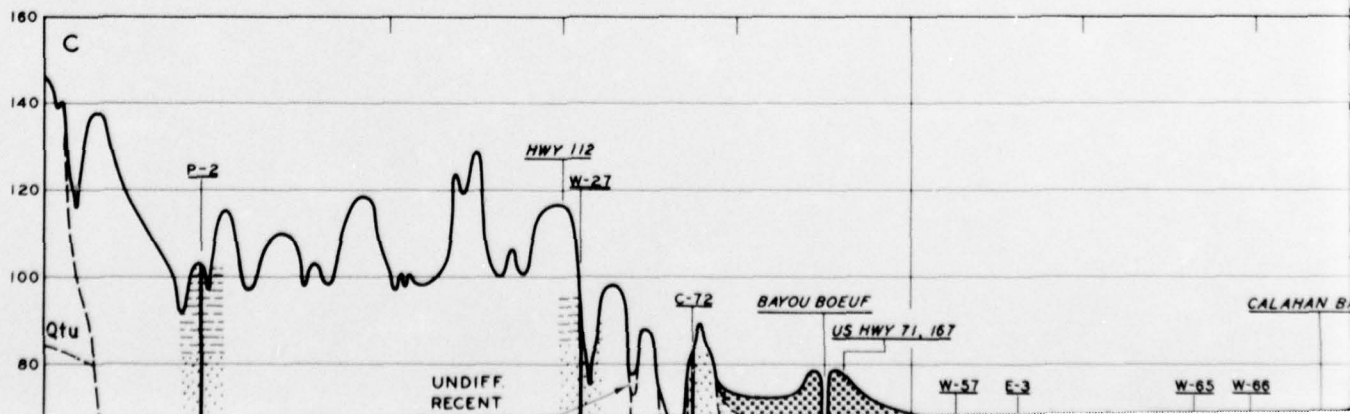
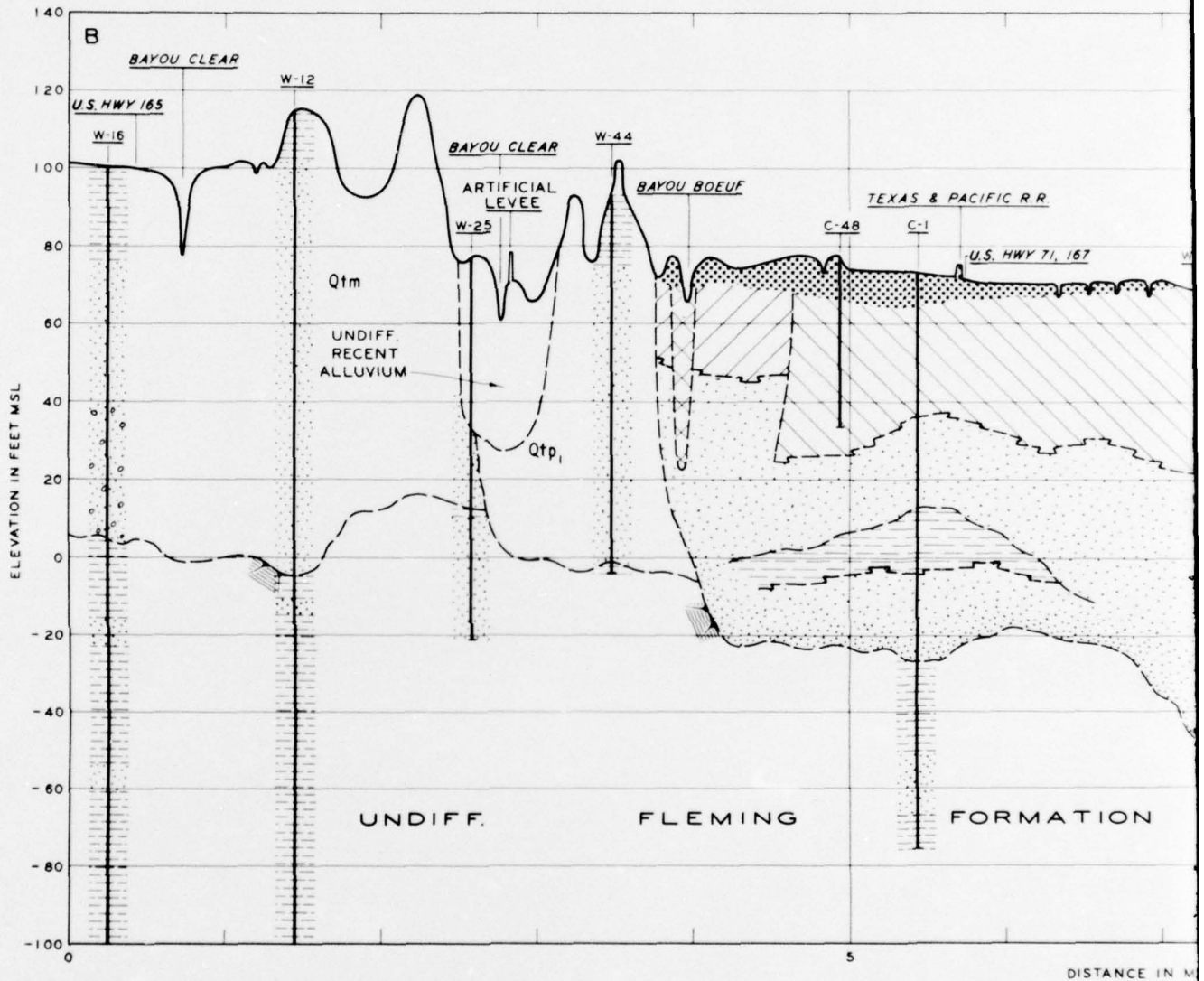
	SAND
	CLAY AND SILT
	SAND AND GRAVEL

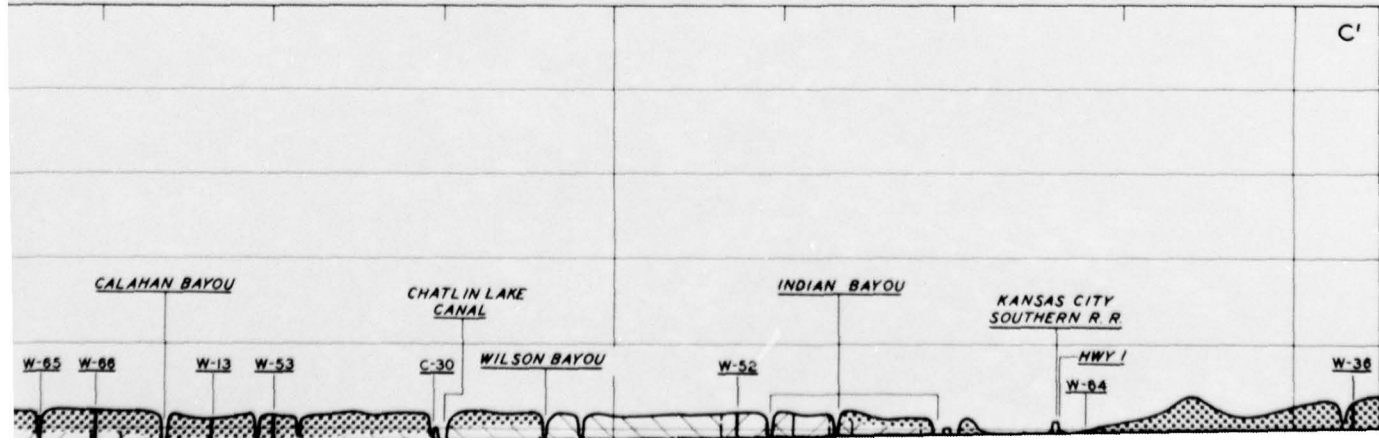
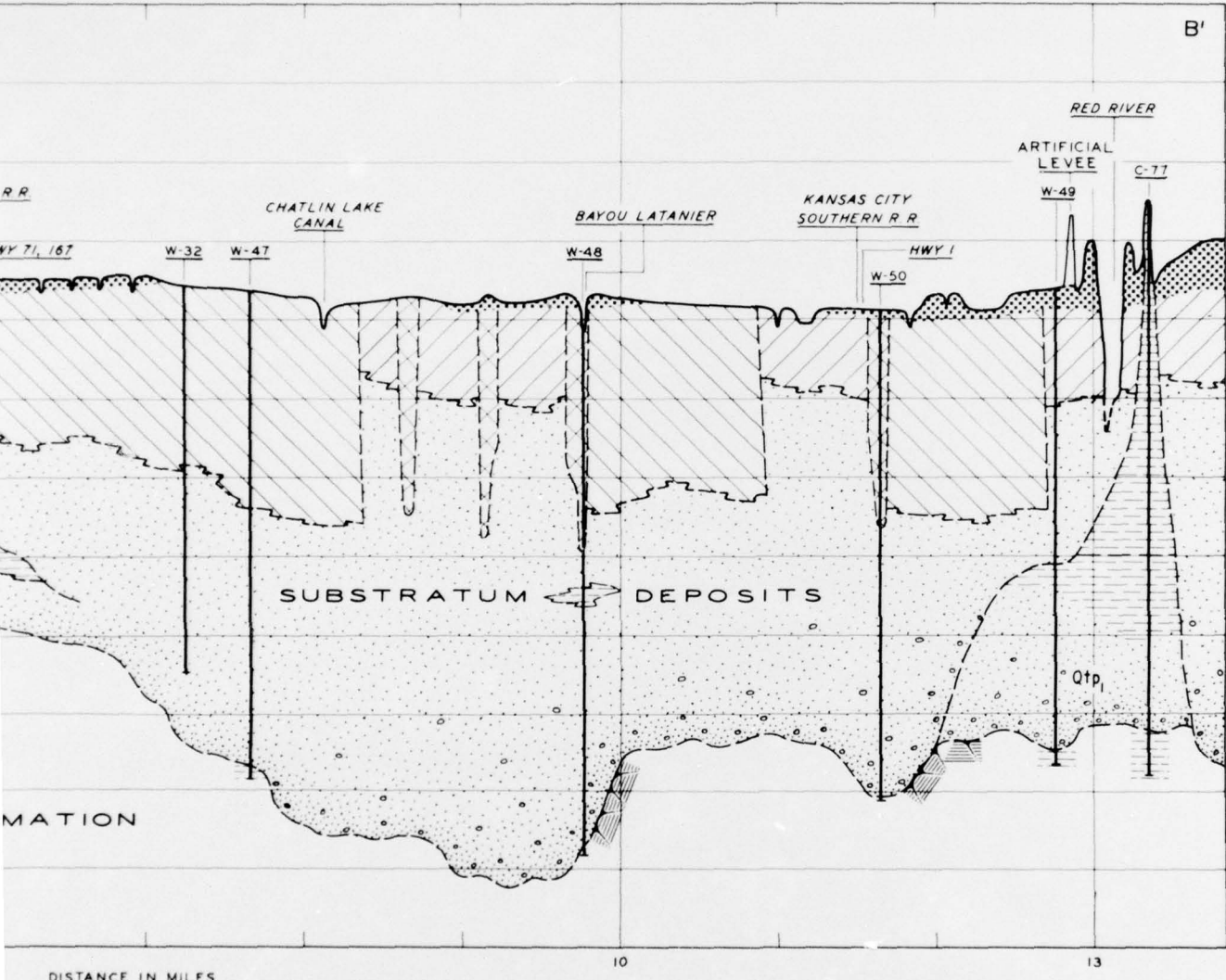
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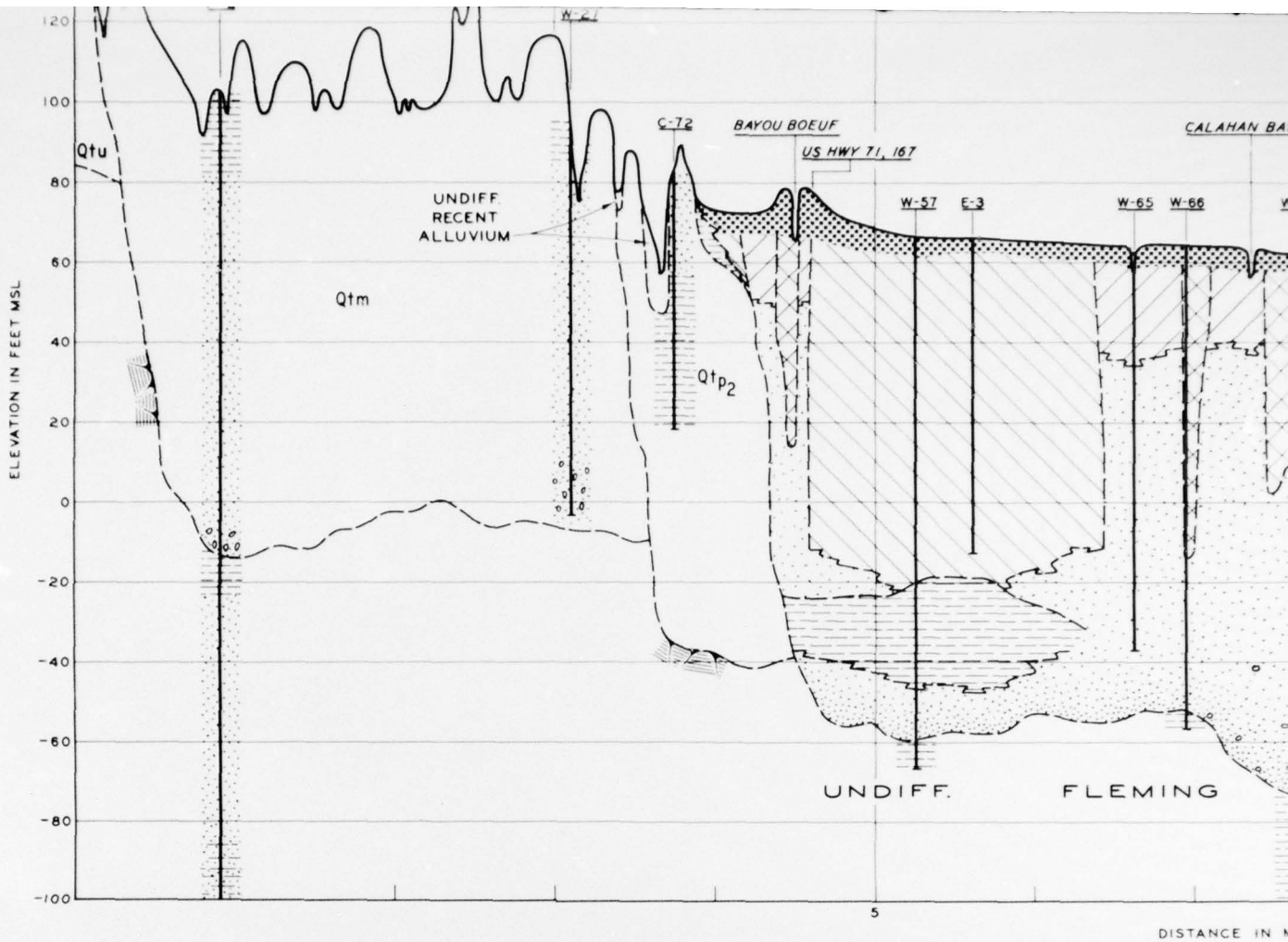


GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
SECTIONS A-A' AND A'-A''  
LECOMPTE, LA.

4







**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

		NATURAL LEVEE
		POINT BAR
TOPSTRATUM		BACKSWAMP
		ABANDONED COURSE
		COLLUVIAL APRON
SUBSTRATUM		UNDIFFERENTIATED SAND AND GRAVEL
		TERTIARY SURFACE

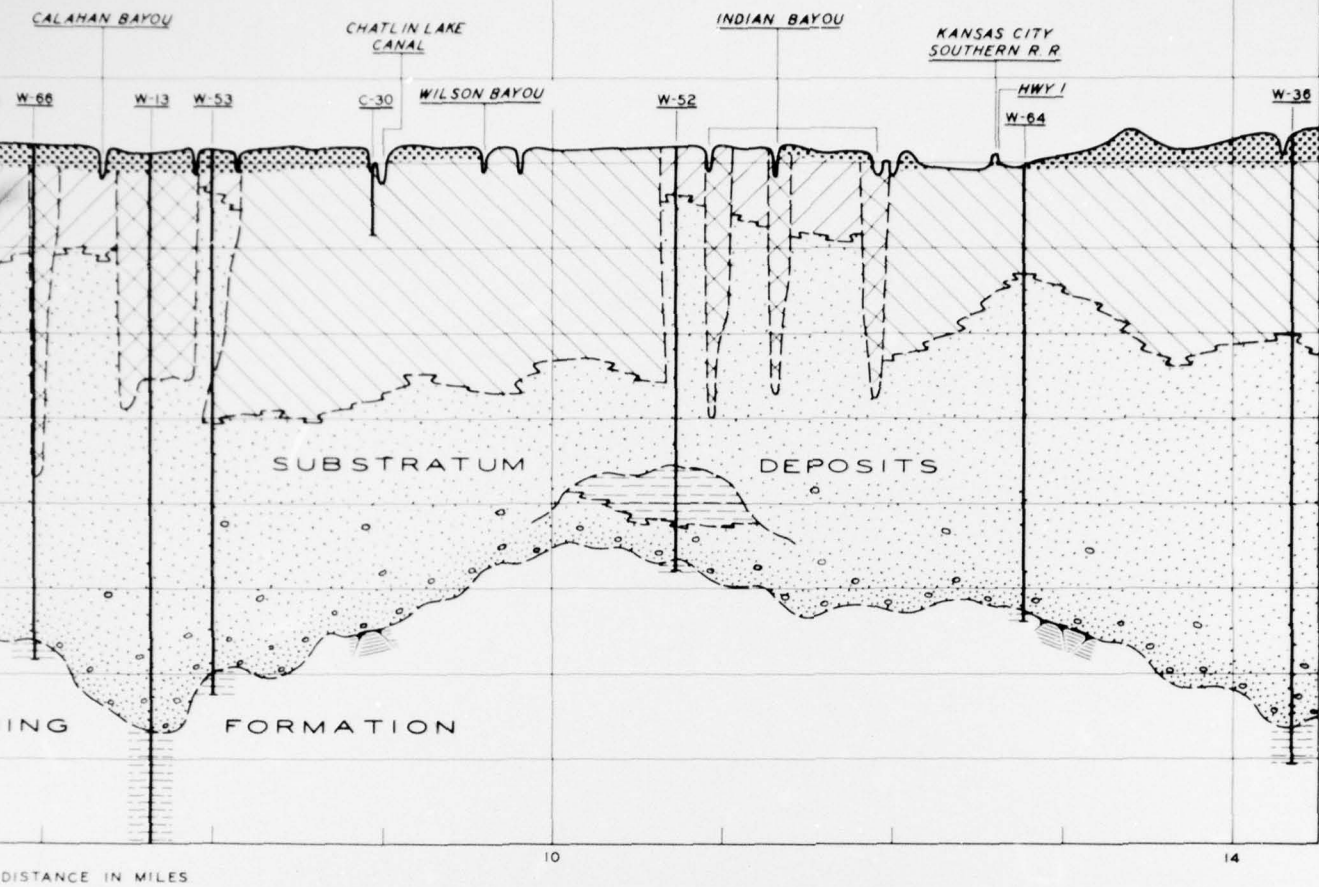
**LITHOLOGIC TYPES**

	SAND
	CLAY AND SILT
	CLAYEY SAND
	SAND AND GRAVEL

**MAPPING SYMBOLS**

	PRAIRIE TERRACE- UPPER SURFACE
	PRAIRIE TERRACE- LOWER SURFACE
	MONTGOMERY TERRACE
	UNDIFFERENTIATED TERRACE

3

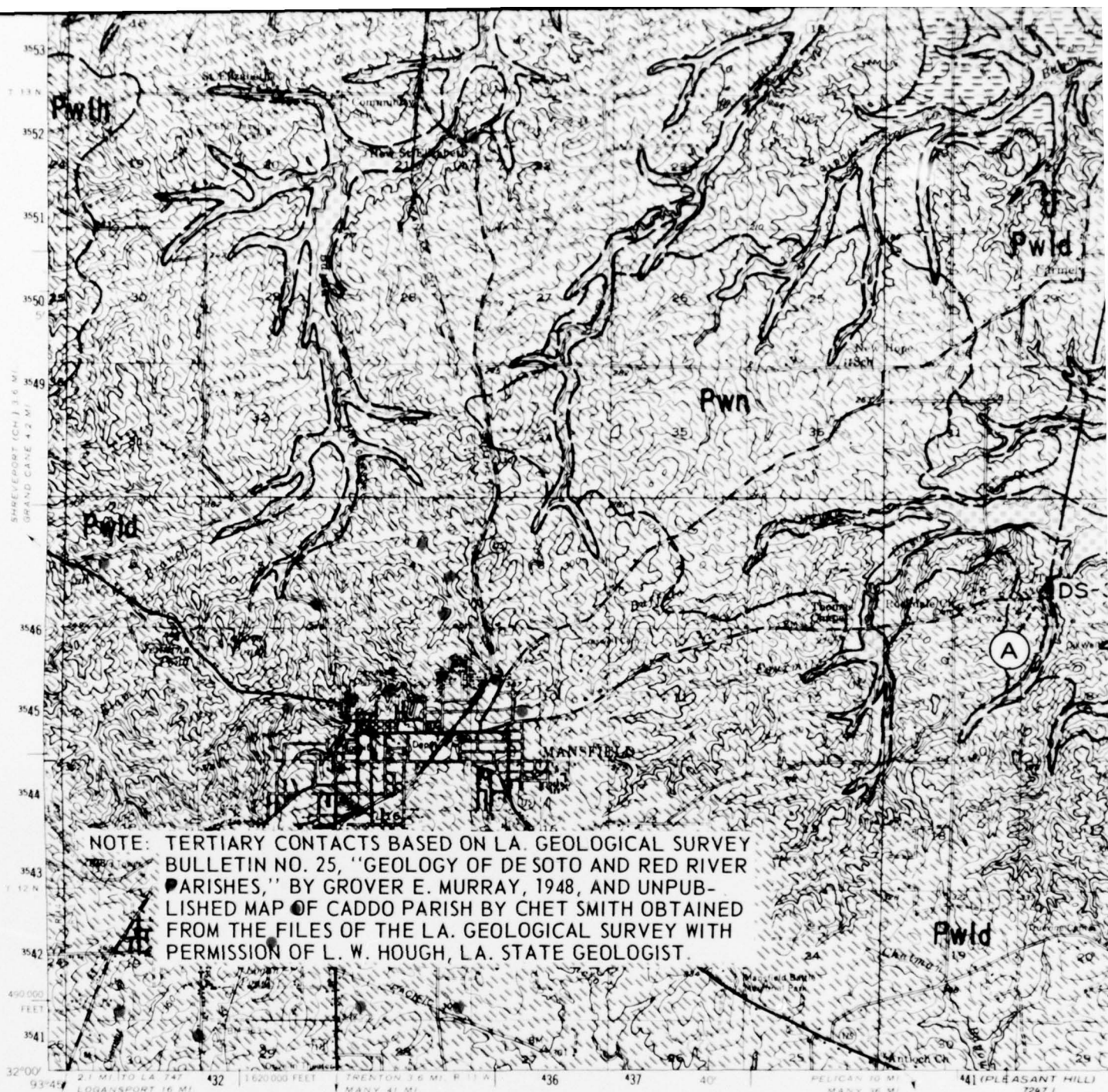


GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 SECTIONS B-B' AND C-C'  
 LECOMPTE, LA.

4





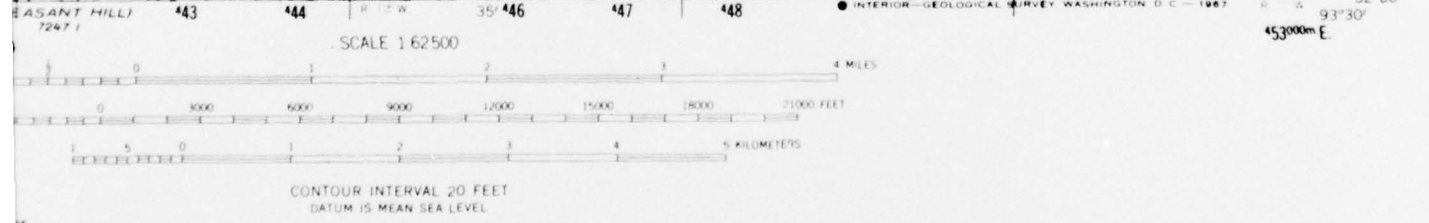


NOTE: TERTIARY CONTACTS BASED ON LA. GEOLOGICAL SURVEY BULLETIN NO. 25, "GEOLOGY OF DE SOTO AND RED RIVER PARISHES," BY GROVER E. MURRAY, 1948, AND UNPUBLISHED MAP OF CADDO PARISH BY CHET SMITH OBTAINED FROM THE FILES OF THE LA. GEOLOGICAL SURVEY WITH PERMISSION OF L. W. HOUGH, LA. STATE GEOLOGIST.

**LEGEND**

- |                    |  |                         |  |     |   |
|--------------------|--|-------------------------|--|-----|---|
| <b>QUATERNARY</b>  |  | <b>TERTIARY</b>         |  | (R) | RED RIVER   |
| <b>RECENT</b>      |  | <b>EOCENE-PALEOCENE</b> |  | --- | INDEFINITE CONTACT  |
|                    | NATURAL LEVEE                              |                         | WILCOX GROUP UNDIFFERENTIATED  | --- | CONTACT   |
|                    | POINT BAR                                  |                         | LOGANSPORT FORMATION<br>(AFTER MURRAY-INCLUDES LIME HILL MEMBER IN DESOTO PARISH)                  | --- | ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL  |
|                    | BACKSWAMP                                  |                         | LOGANSPORT FORMATION<br>(AFTER MURRAY-INCLUDES COW BAYOU AND DOLET HILLS MEMBERS IN DESOTO PARISH) | ●   | CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE      |
|                    | ABANDONED CHANNEL                          |                         | NABORTON FORMATION   | ●   | CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY                        |
|                    | ABANDONED COURSE                           |                         |  | ●   | CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE |
|                    | UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS |                         |  | ○   | CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY                   |
| <b>PLEISTOCENE</b> |  |                         |  |     |   |
|                    | PRAIRIE TERRACE-UPPER SURFACE              |                         |  |     |   |

3

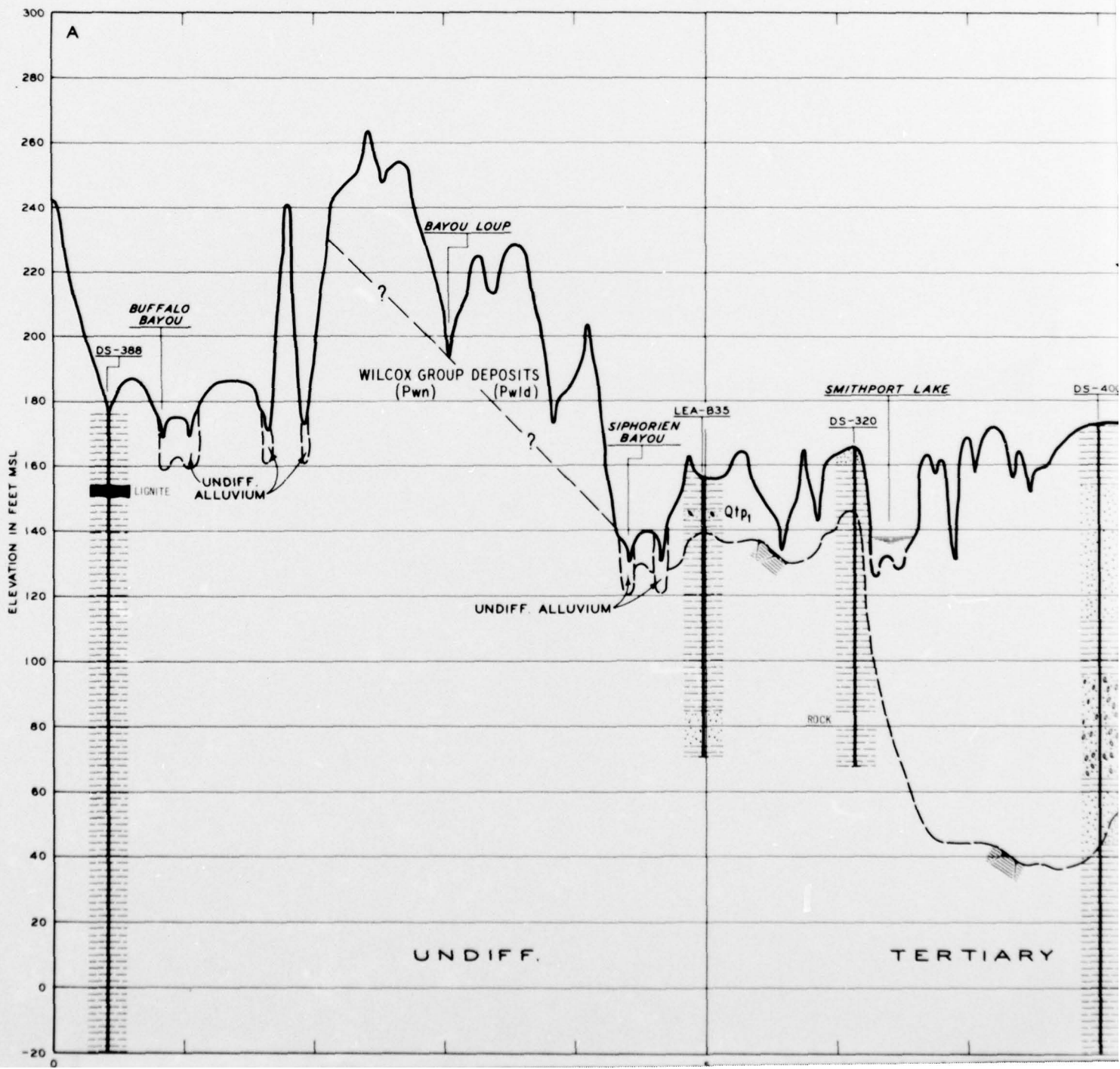


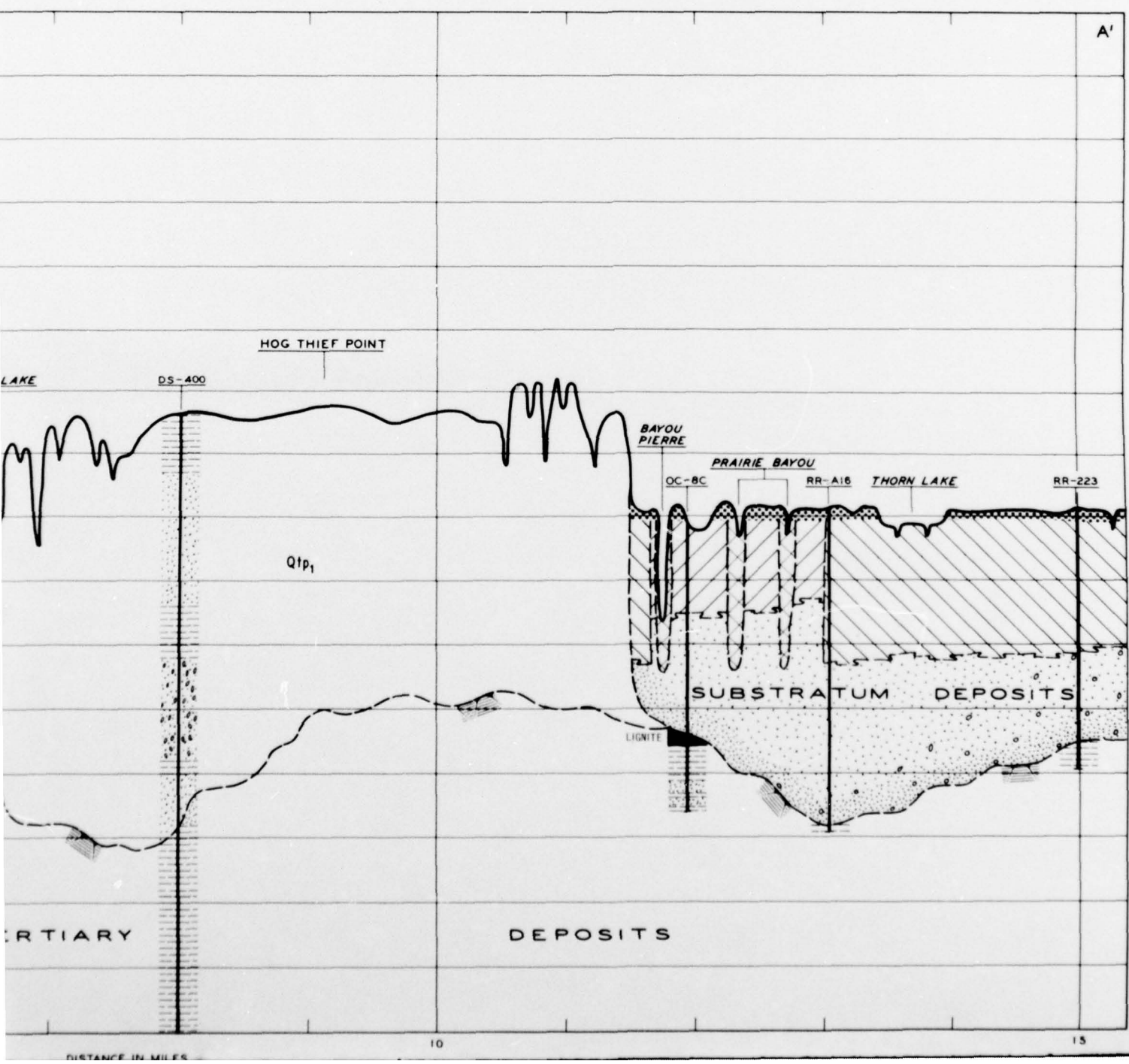
GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
**DISTRIBUTION OF ALLUVIAL DEPOSITS**  
 MANSFIELD, LA.

(S SCIENTIST)  
 (ARY SURFACE  
 (S SCIENTIST)

(Y SOILS SCIENTIST)  
 (ARY SURFACE  
 (Y SOILS SCIENTIST)

4
















**LEGEND**




**ENVIRONMENTS OF DEPOSITION**

TOPSTRATUM		NATURAL LEVEE
		POINT BAR
		BACKSWAMP
		ABANDONED COURSE
SUBSTRATUM		UNDIFFERENTIATED SAND AND GRAVEL
		TERTIARY SURFACE

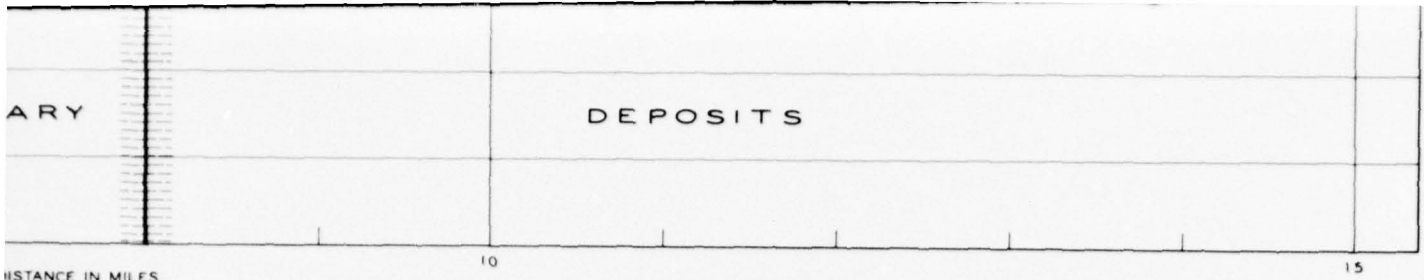
**LITHOLOGIC TYPES**

	SAND
	CLAY AND SILT
	SAND AND GRAVEL

**MAPPING SYMBOLS**

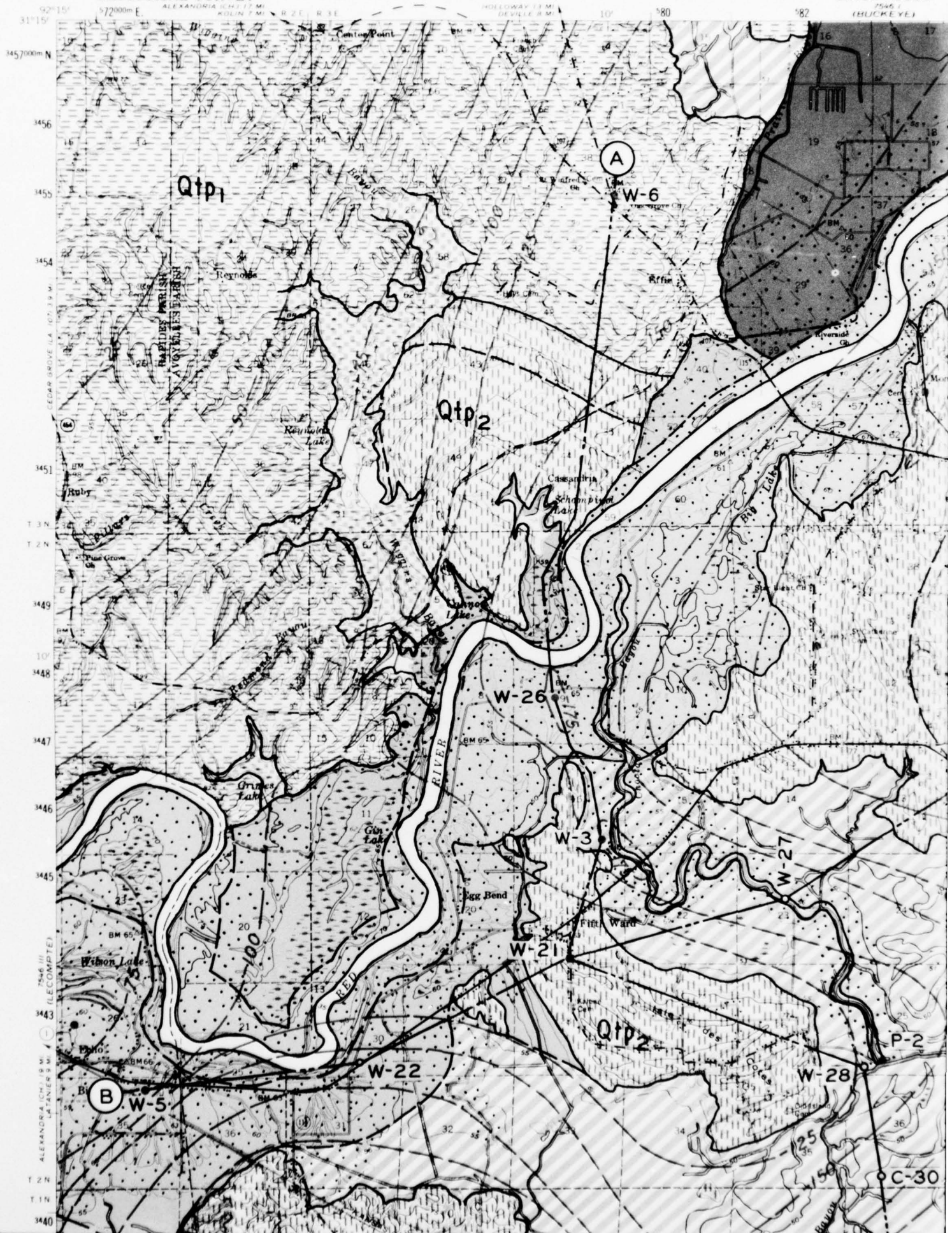
	PRAIRIE TERRACE- UPPER SURFACE
	WILCOX GROUP DEPOSITS (LOGANSPOUT FORMATION)
	WILCOX GROUP DEPOSITS (NABORTON FORMATION)

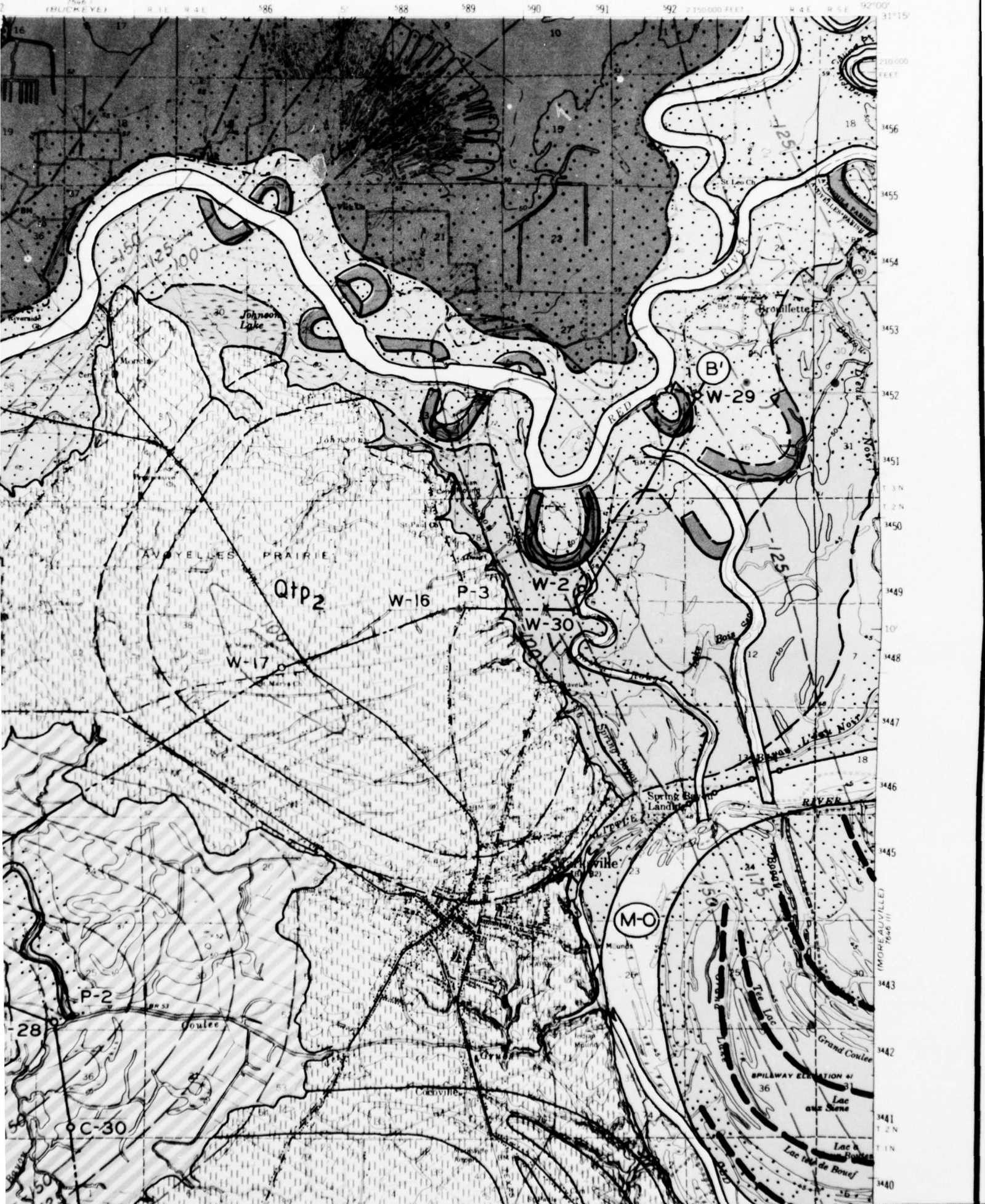
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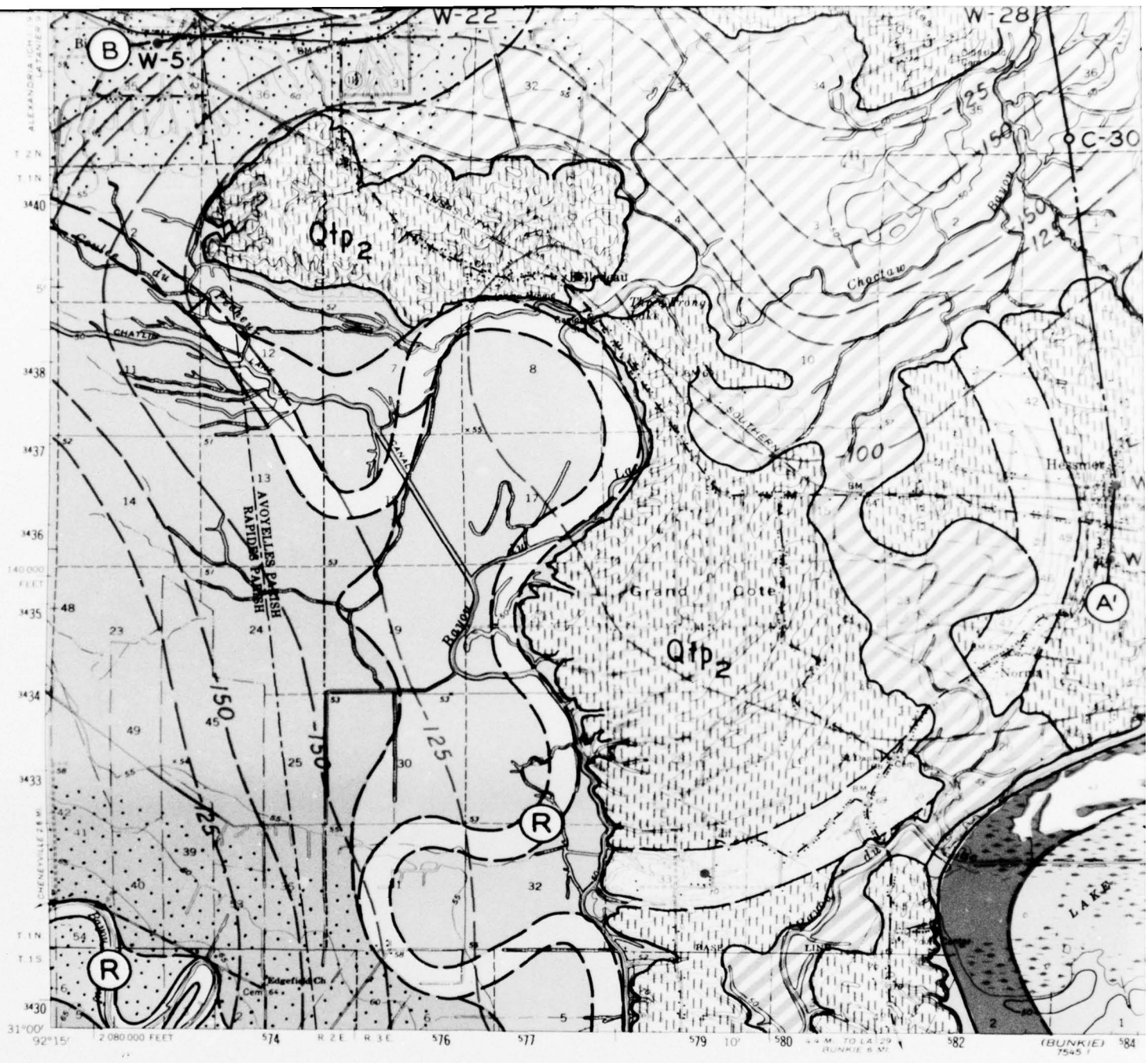


GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
**SECTION A-A'**  
MANSFIELD, LA.

4





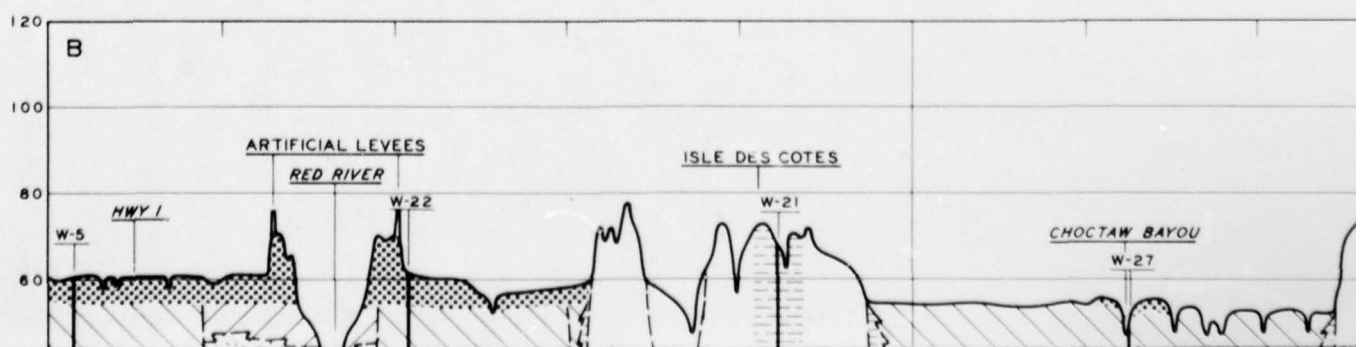
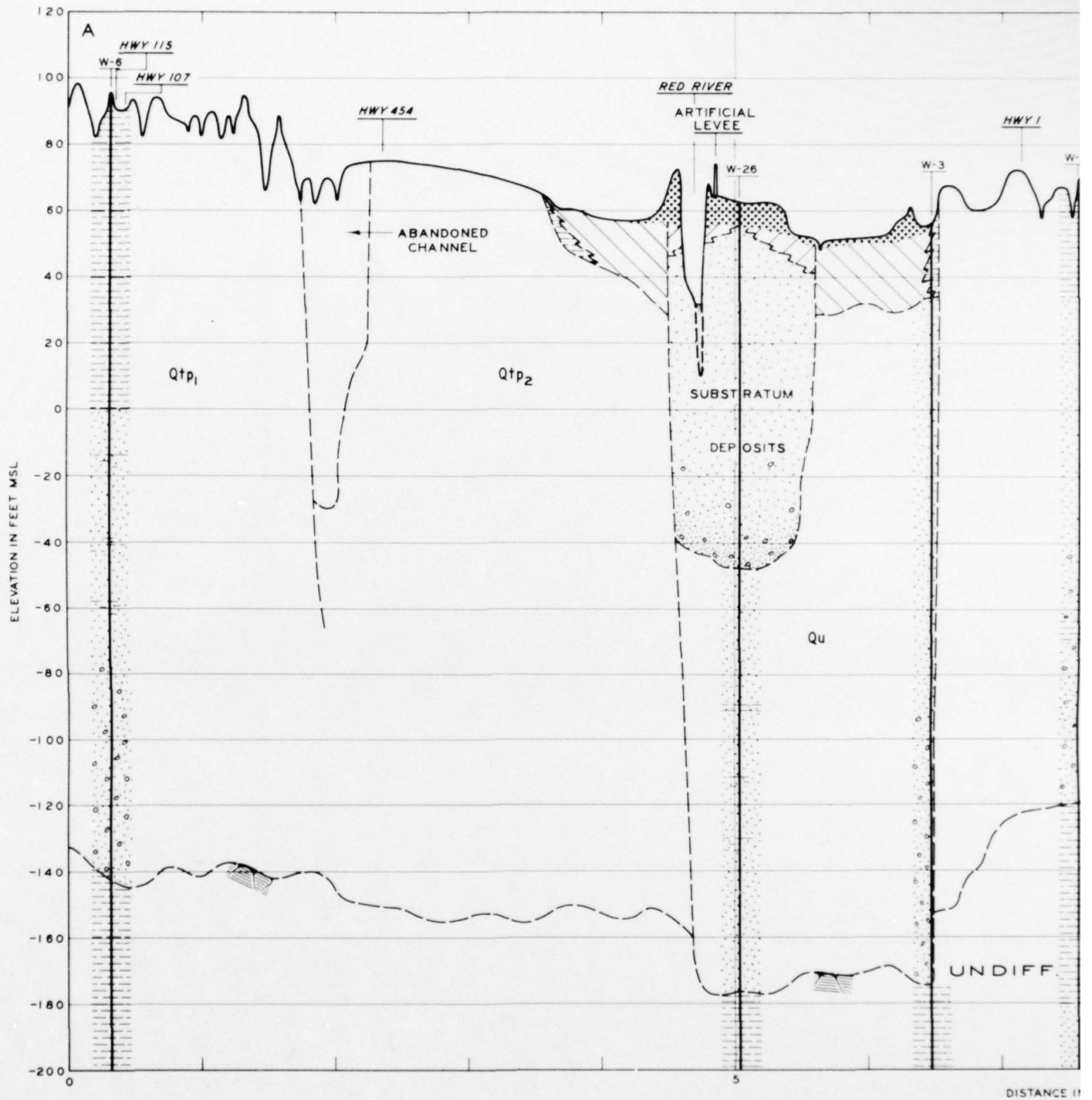


**LEGEND**

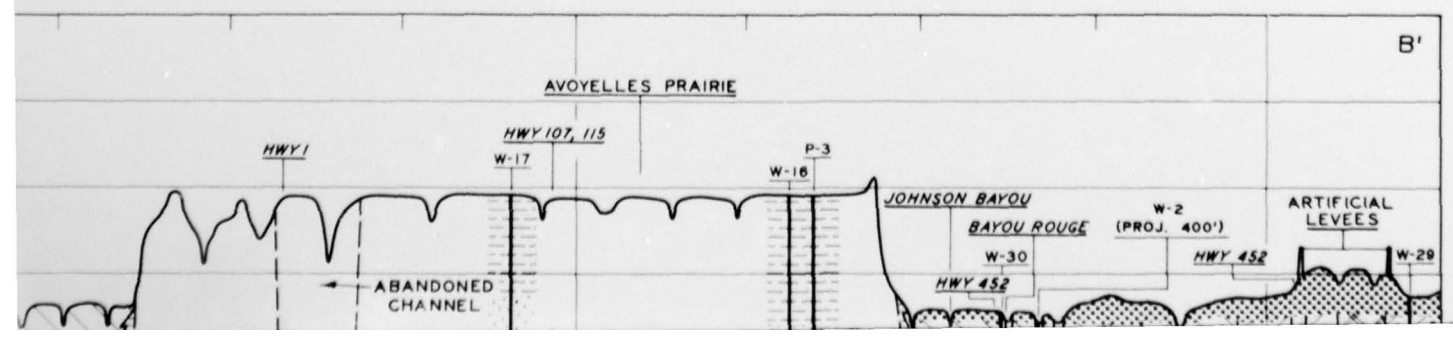
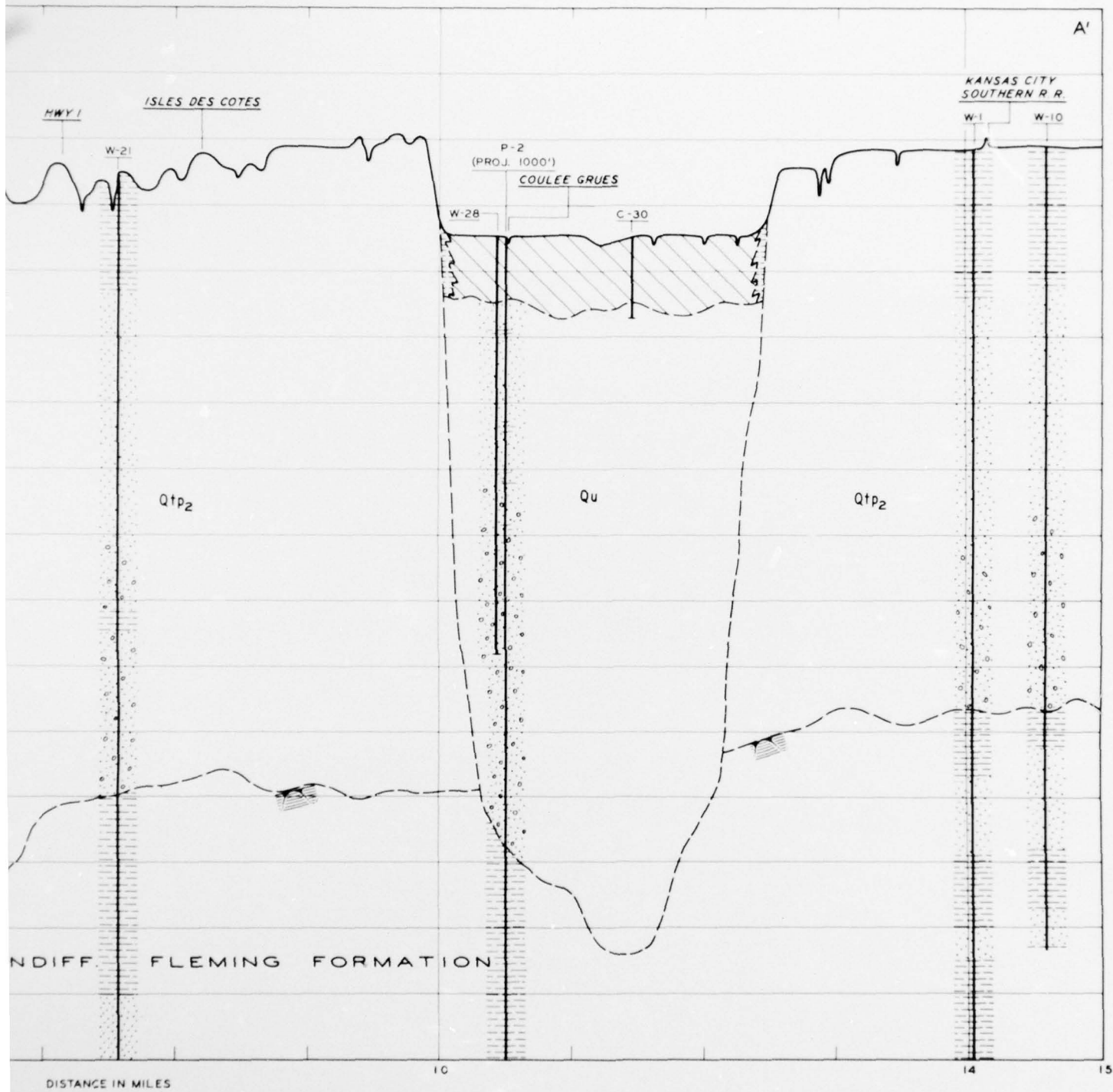
- |  |   |                               |  |   |
|--|---|-------------------------------|--|---|
| <b>RECENT</b>  |   | <b>QUATERNARY</b>             |  | <ul style="list-style-type: none"> <li> SELECTED SWALES INDICATING TRENDS OF MEANDERS</li> <li> INDEFINITE CONTACT</li> <li> CONTACT</li> <li> PROBABLE POSITION OF ABANDONED COURSE BY SUBSEQUENT MEANDER</li> <li> ELEVATION OF TOP OF TERTIARY SURFACE IN FEET MSL</li> <li> CLASS I BORING (LOGGED BY SECTION NOT REACHING TERTIARY)</li> <li> CLASS II BORING (NOT LOGGED BY SECTION NOT REACHING TERTIARY)</li> <li> CLASS II BORING (NOT LOGGED BY SECTION NOT REACHING TERTIARY)</li> </ul> |
| NATURAL LEVEE  |   | <b>PLEISTOCENE</b>            |  |   |
| POINT BAR  | BRAIDED STREAM SURFACE                    | PRAIRIE TERRACE-UPPER SURFACE |  |   |
| BACKSWAMP  | PRAIRIE TERRACE-LOWER SURFACE             | ABANDONED CHANNEL             |  |   |
| ABANDONED CHANNEL  | ABANDONED CHANNEL                         | ABANDONED COURSE              |  |   |
| ABANDONED COURSE   | COMBINED FLOW-MISSISSIPPI AND OHIO RIVERS | RED RIVER                     |  |   |
| MAJOR CREVASSE CHANNELS  |   |                               |  |   |
| UNDIFFERENTIATED ALLUVIUM OF SMALL CREEKS  |   |                               |  |   |
| THIN BACKSWAMP DEPOSITS (<30') OVERLYING BURIED MEANDER BELT DEPOSITS OF PLEISTOCENE AGE |   |                               |  |   |

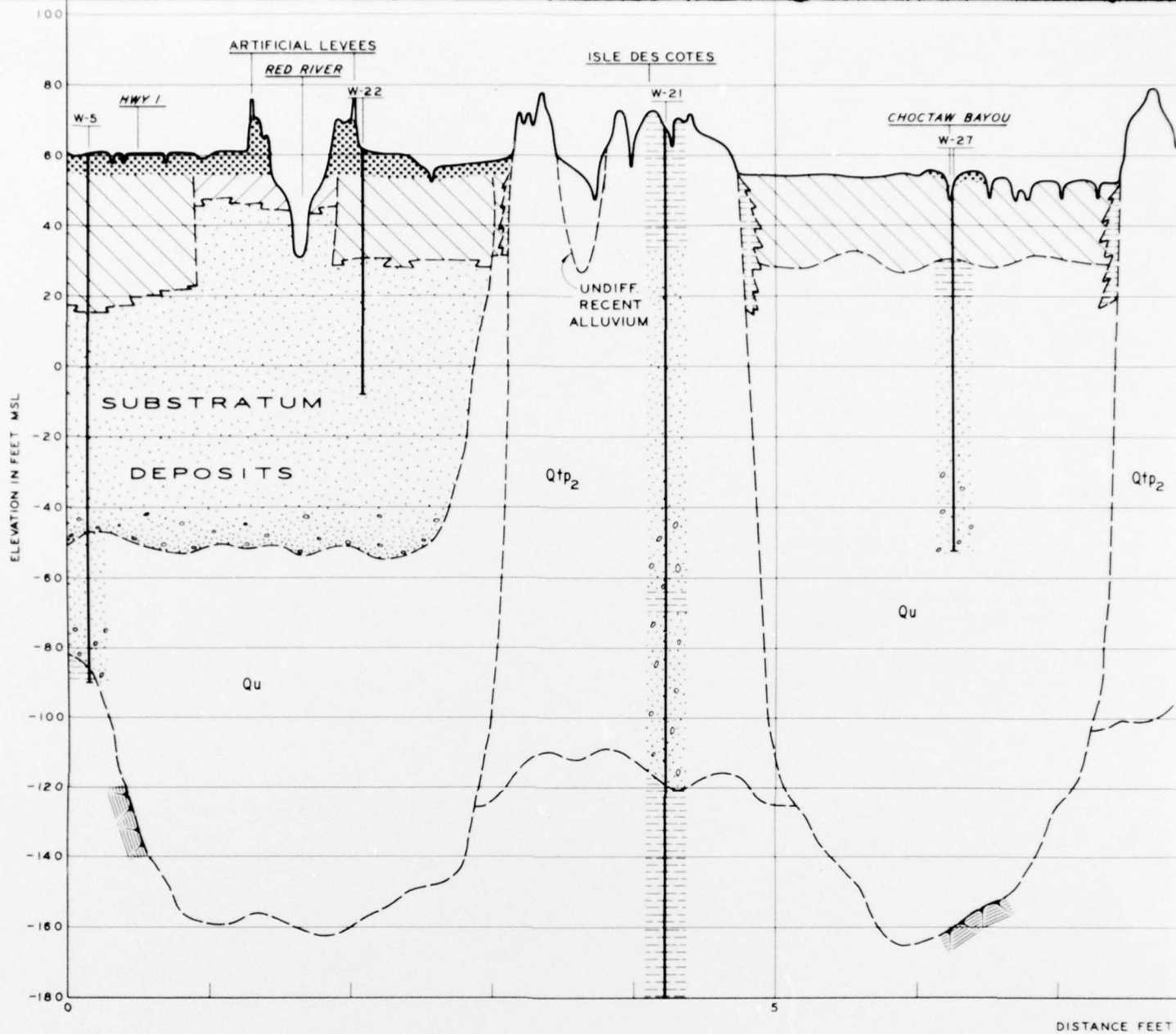
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2





**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

- |            |  |                                  |
|------------|--|----------------------------------|
|            |  | NATURAL LEVEE                    |
|            |  | POINT BAR                        |
| TOPSTRATUM |  | BACKSWAMP                        |
|            |  | ABANDONED CHANNEL                |
|            |  | COLLUVIAL APRON                  |
| SUBSTRATUM |  | UNDIFFERENTIATED SAND AND GRAVEL |
|            |  | TERTIARY SURFACE                 |

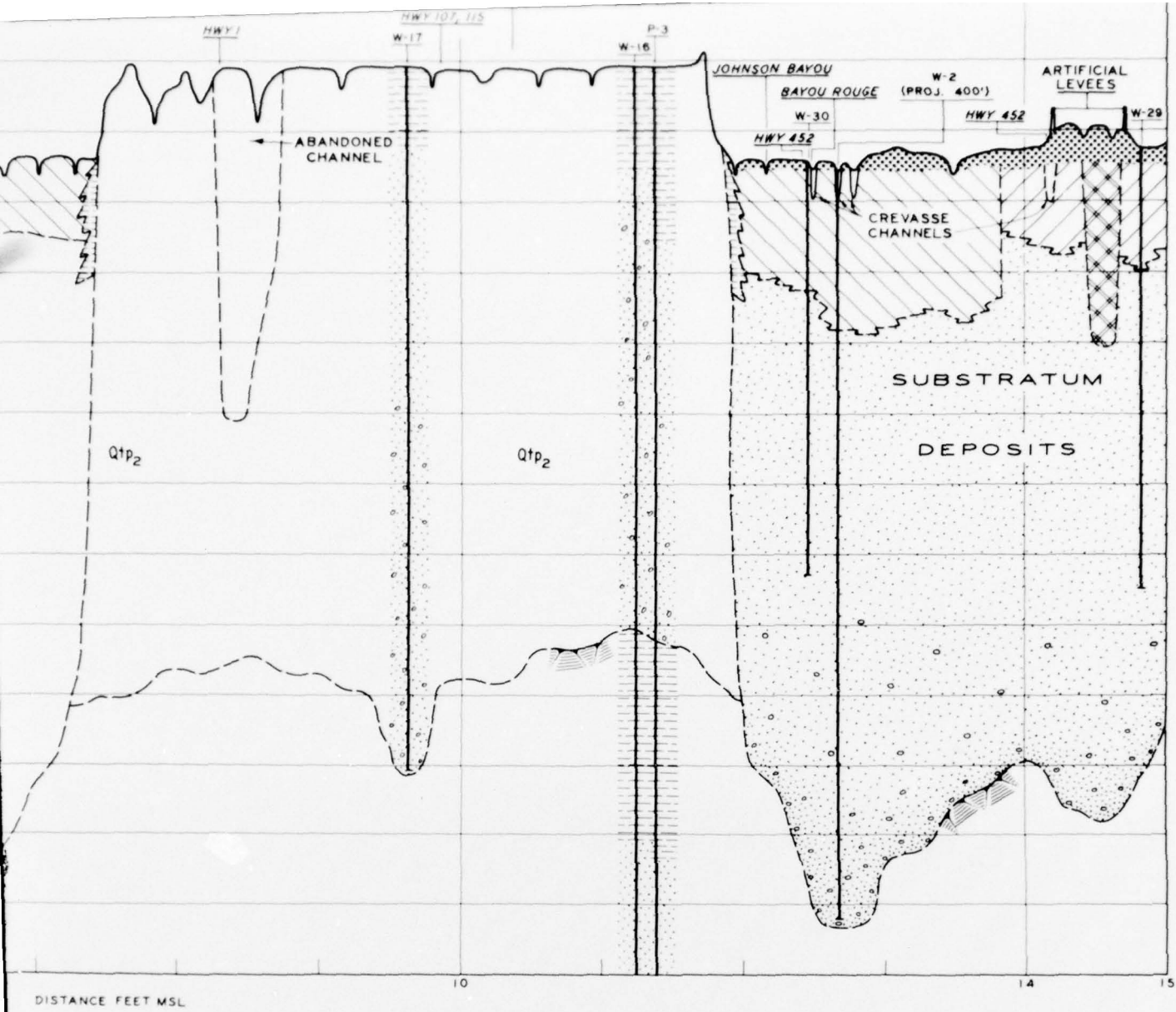
**LITHOLOGIC TYPES**

- |  |                 |
|--|-----------------|
|  | SAND            |
|  | CLAY AND SILT   |
|  | SAND AND GRAVEL |

**MAPPING SYMBOLS**

- |  |   |
|--|---|
|  | PRAIRIE TERRACE - UPPER SURFACE                 |
|  | PRAIRIE TERRACE - LOWER SURFACE                 |
|  | UNDIFFERENTIATED PLEISTOCENE DEPOSITS - FLUVIAL |

3



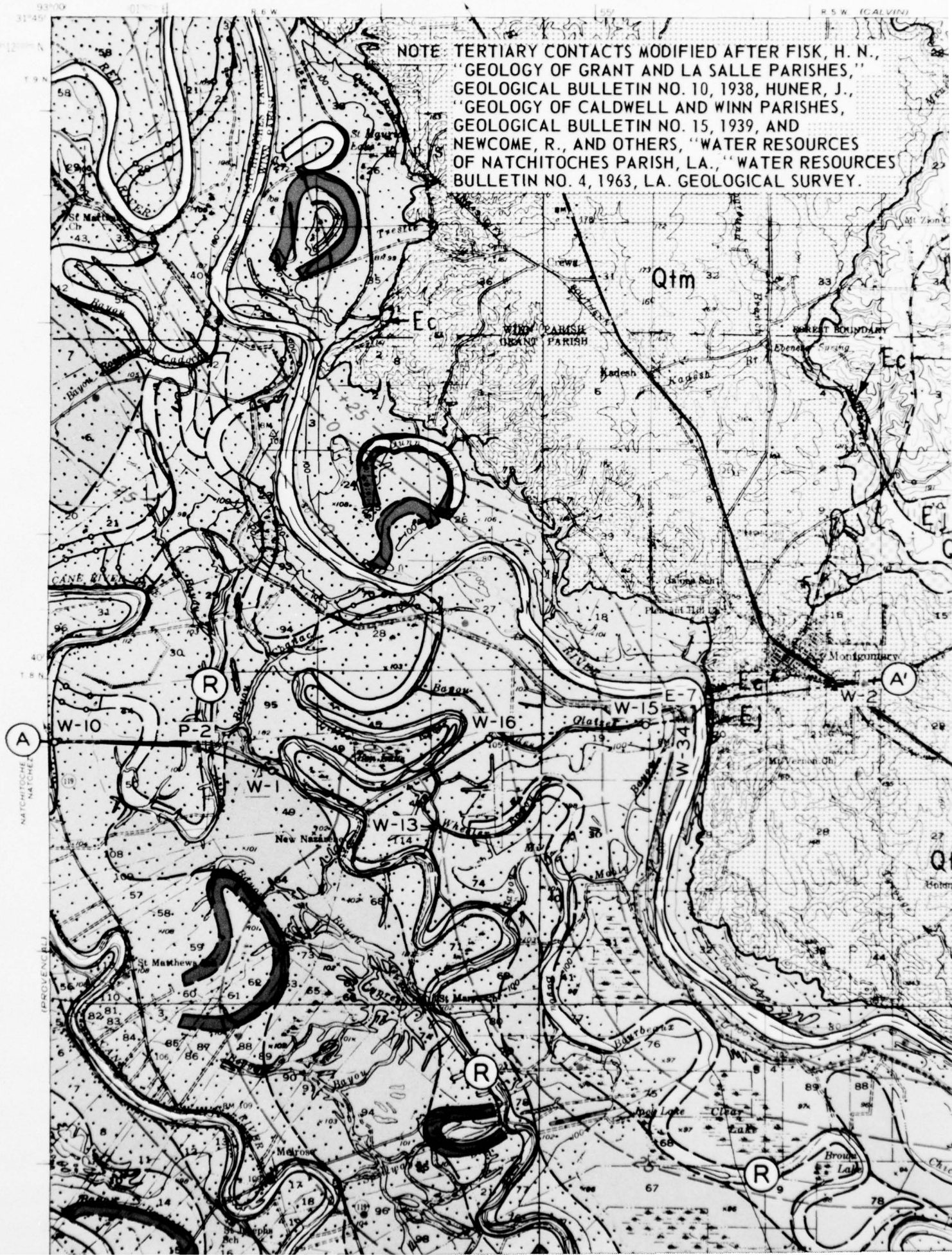
DISTANCE FEET MSL

GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
**SECTIONS A-A' AND B-B'**  
 MARKSVILLE, LA.

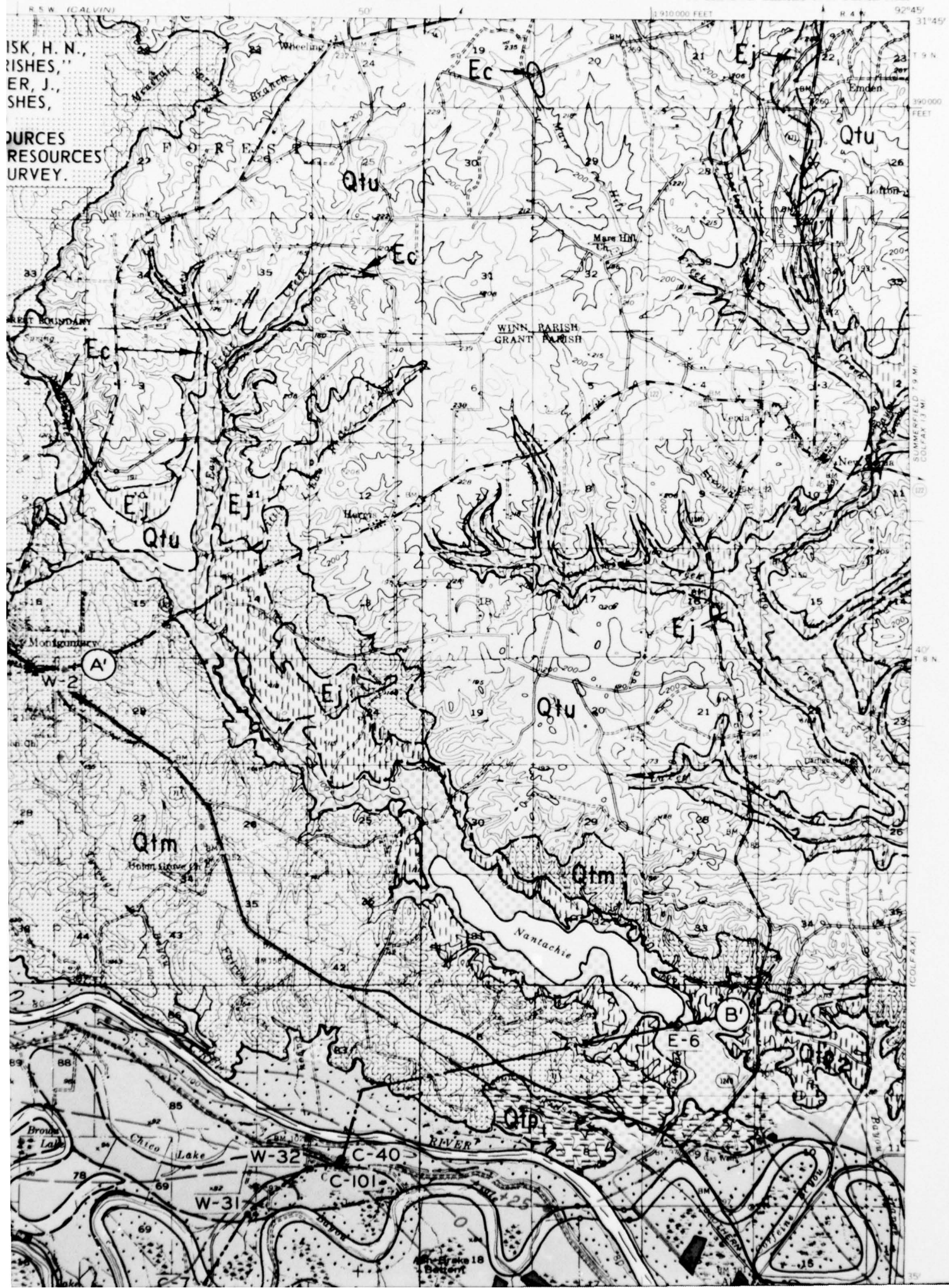
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COUSHATTA 31 MI.  
ST. MAURICE 1.5 MI.

NOTE: TERTIARY CONTACTS MODIFIED AFTER FISK, H. N.,  
"GEOLOGY OF GRANT AND LA SALLE PARISHES,"  
GEOLOGICAL BULLETIN NO. 10, 1938, HUNER, J.,  
"GEOLOGY OF CALDWELL AND WINN PARISHES,"  
GEOLOGICAL BULLETIN NO. 15, 1939, AND  
NEWCOME, R., AND OTHERS, "WATER RESOURCES  
OF NATCHITOCHE PARISH, LA.," "WATER RESOURCES  
BULLETIN NO. 4, 1963, LA. GEOLOGICAL SURVEY.



2

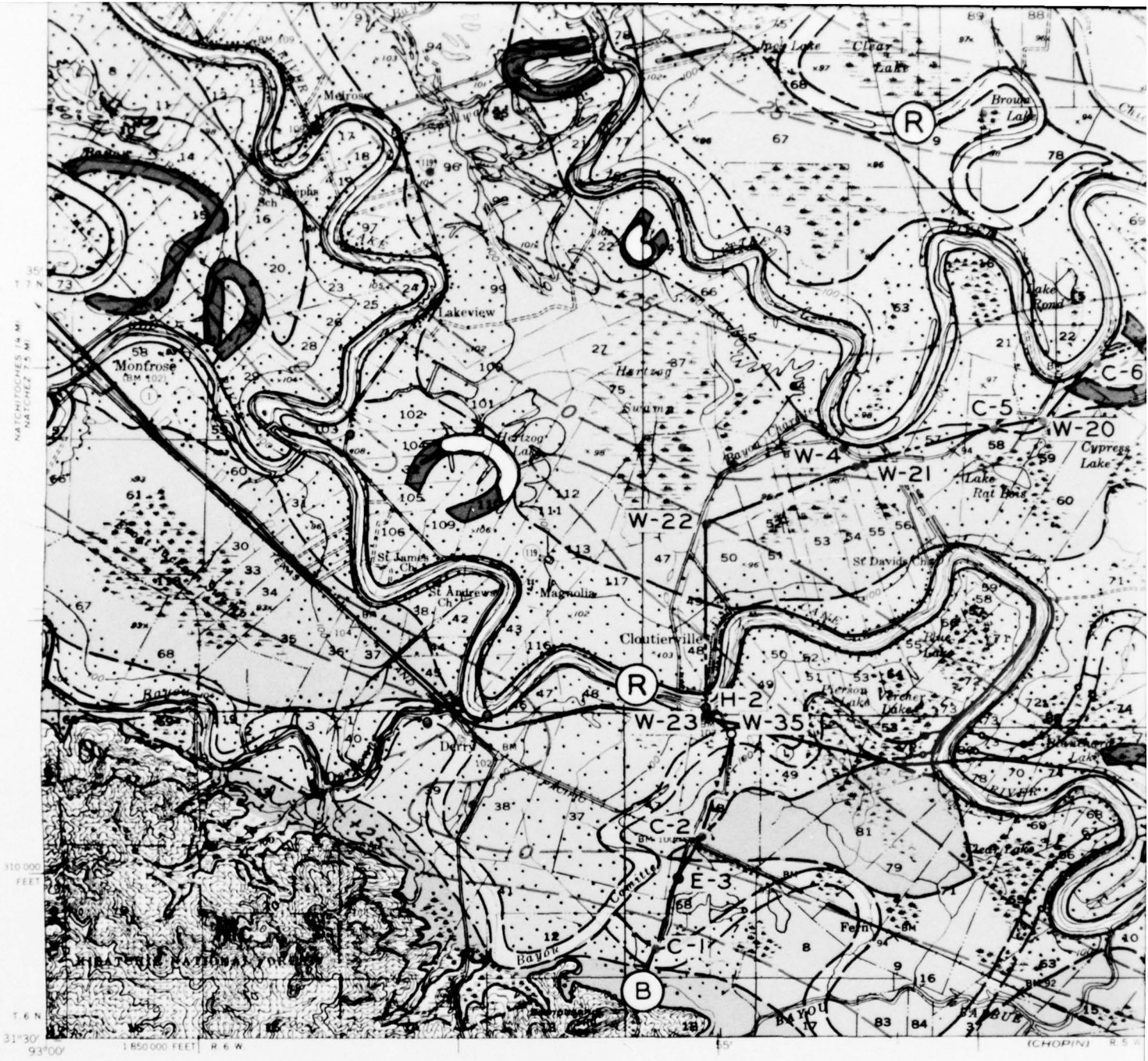


ISK, H. N.,  
ISHES,"  
ER, J.,  
SHES,  
  
URCES  
RESOURCES  
URVEY.

SUMMIT 7.9 M  
COLFAR 13 M

(COLFAR)

15'



LEGEND

QUATERNARY

RECENT

- NATURAL LEVEE
- POINT BAR
- BACKSWAMP
- ABANDONED CHANNEL
- ABANDONED COURSE
- UNDIFFERENTIATED ALLUVIUM OF SMALL CREEKS

PLEISTOCENE

- PRAIRIE TERRACE-UPPER SURFACE
- PRAIRIE TERRACE-LOWER SURFACE
- MONTGOMERY TERRACE
- UNDIFFERENTIATED TERRACE

TERTIARY

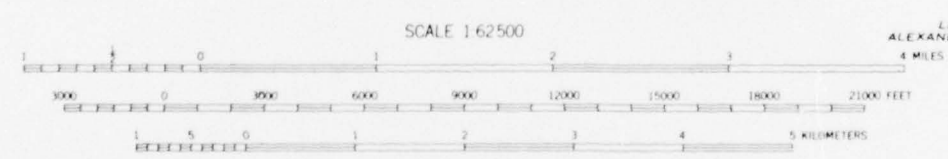
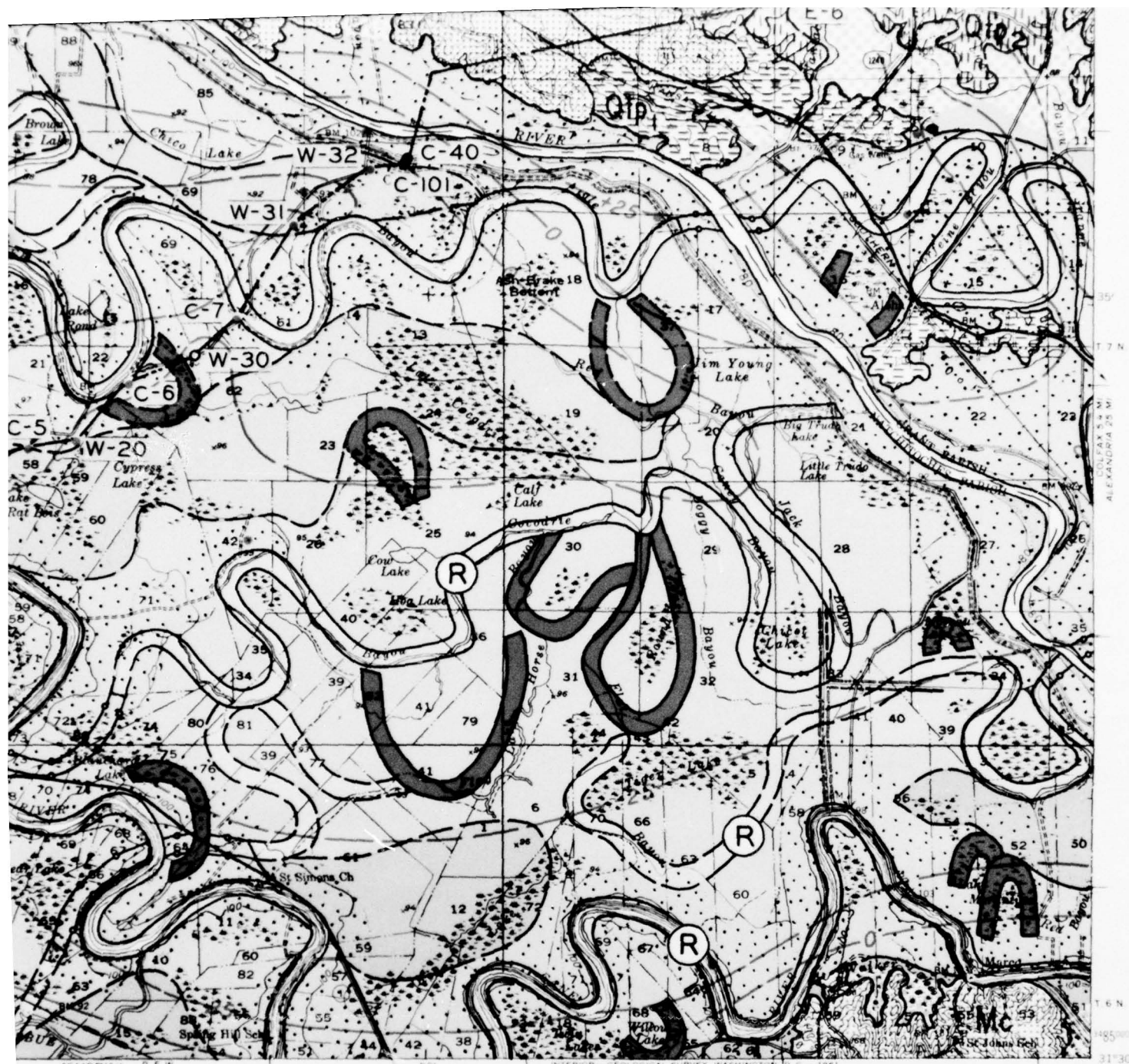
MIOCENE

- CATAHOULA FORMATION
- OLIGOCENE
- VICKSBURG GROUP
- EOCENE
- JACKSON GROUP
  - CLAIBORNE GROUP

(R) RED RIVER

- INDEFINITE CONTACT
- CONTACT
- PROBABLE POSITION OF ABANDONED COURSE REWORKED BY SUBSEQUENT MEANDERING OF A STREAM
- ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY

3



CONTOUR INTERVAL 20 FEET  
DATUM IS MEAN SEA LEVEL

ABANDONED  
BSEQUENT  
M  
ERTIARY

BY SOILS SCIENTIST)  
D TERTIARY SURFACE

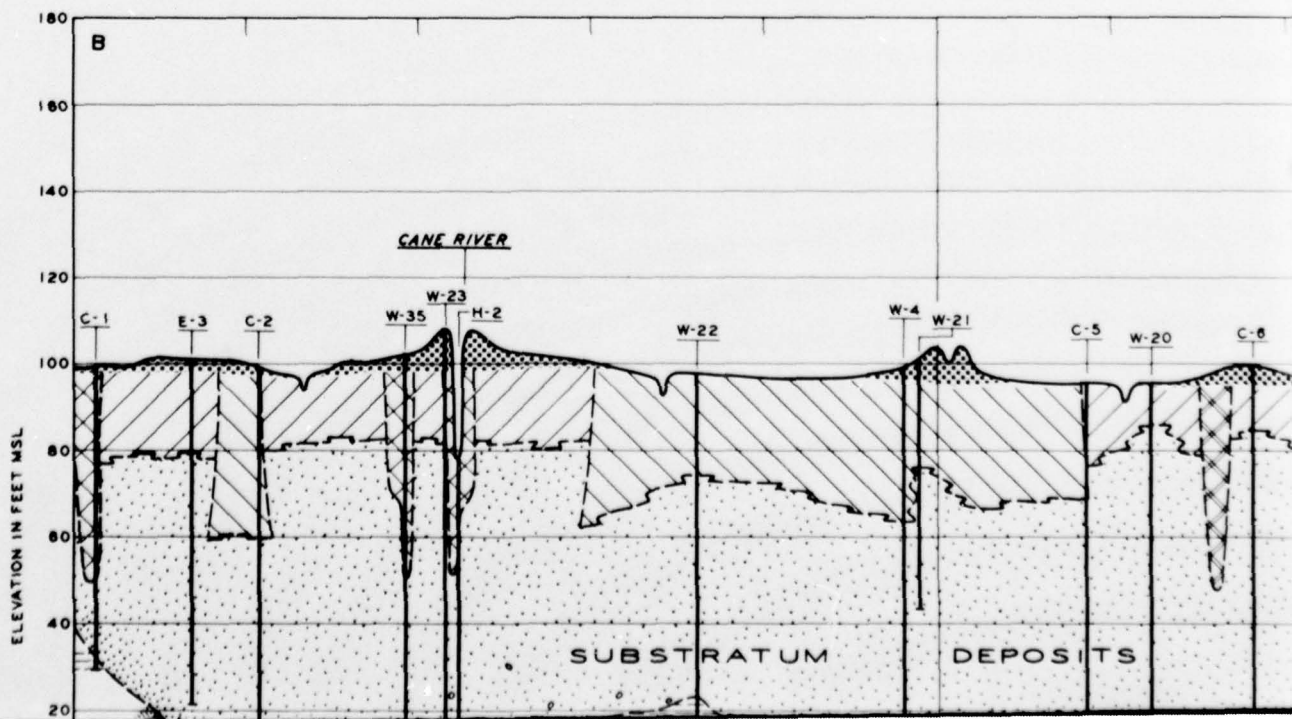
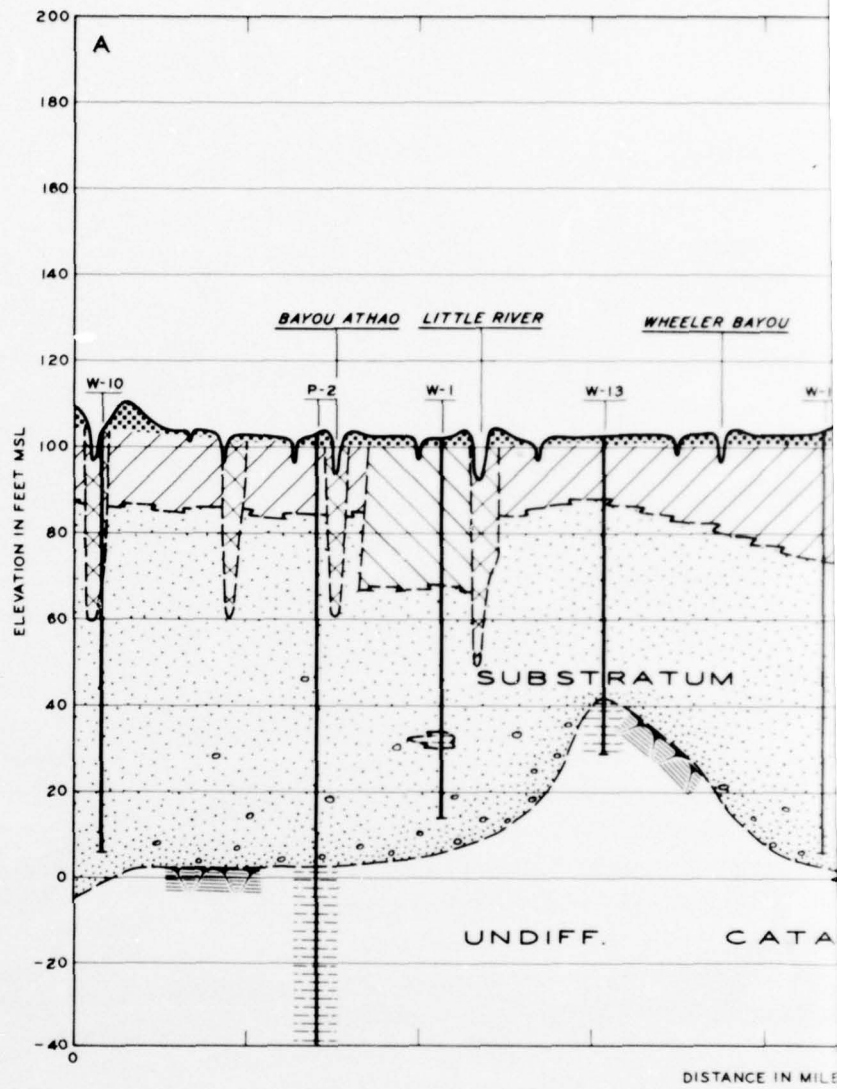
BY SOILS SCIENTIST)

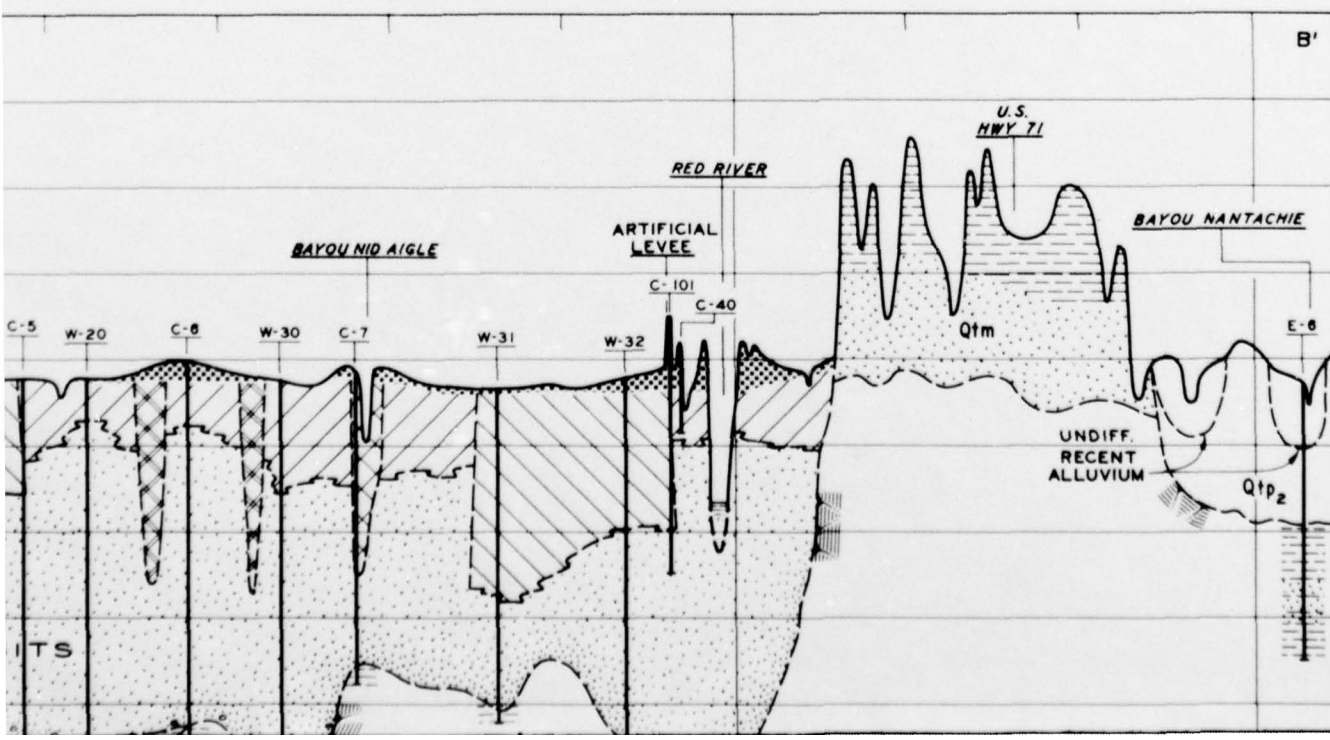
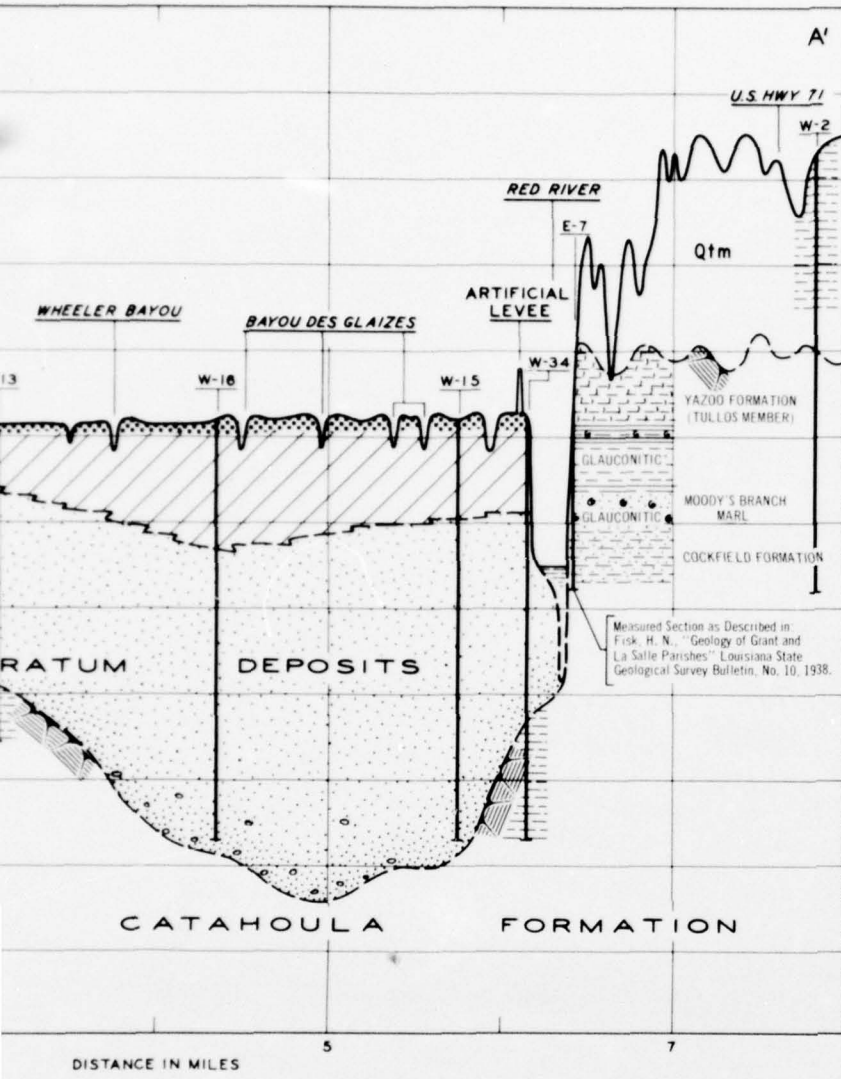
GED BY SOILS SCIENTIST)  
D TERTIARY SURFACE

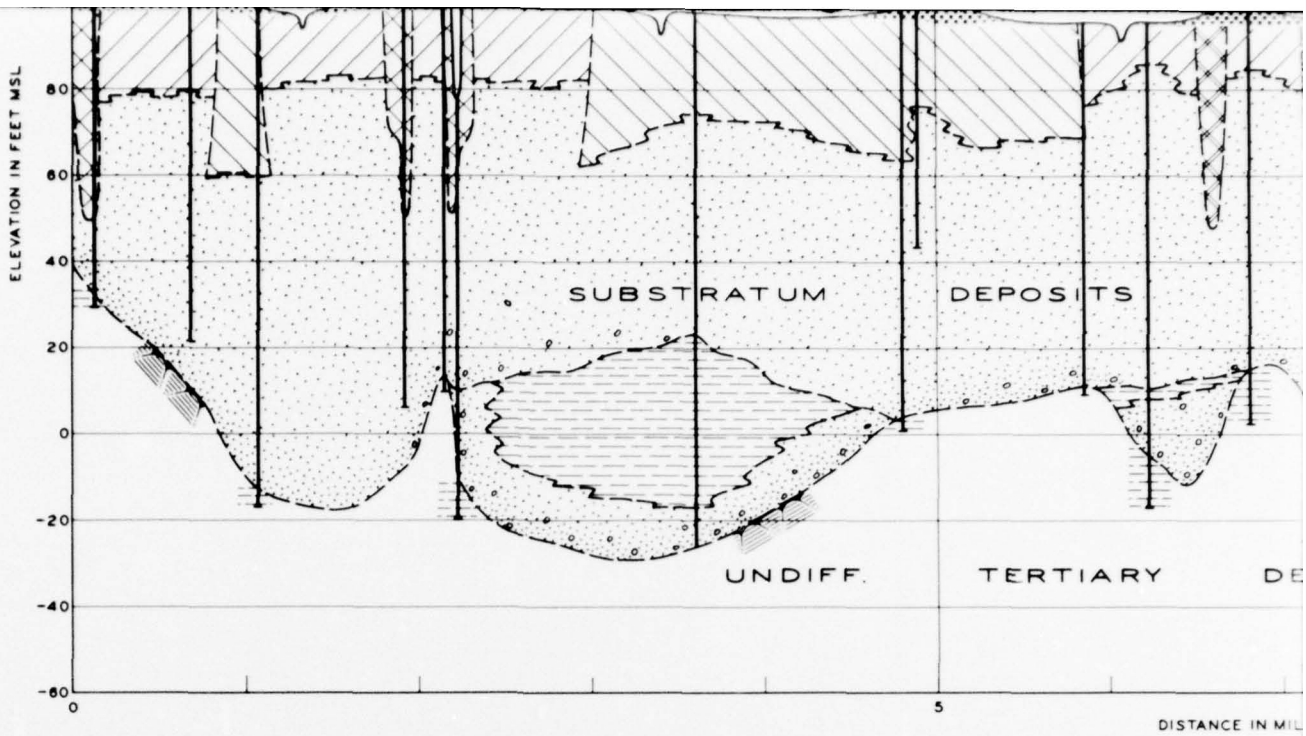
GED BY SOILS SCIENTIST)

GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
DISTRIBUTION OF ALLUVIAL DEPOSITS  
MONTGOMERY, LA.

4







**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

- |            |  |                                  |
|------------|--|----------------------------------|
|            |  | NATURAL LEVEE                    |
|            |  | POINT BAR                        |
| TOPSTRATUM |  | BACKSWAMP                        |
|            |  | ABANDONED CHANNEL                |
|            |  | ABANDONED COURSE                 |
| SUBSTRATUM |  | UNDIFFERENTIATED SAND AND GRAVEL |
|            |  | TERTIARY SURFACE                 |

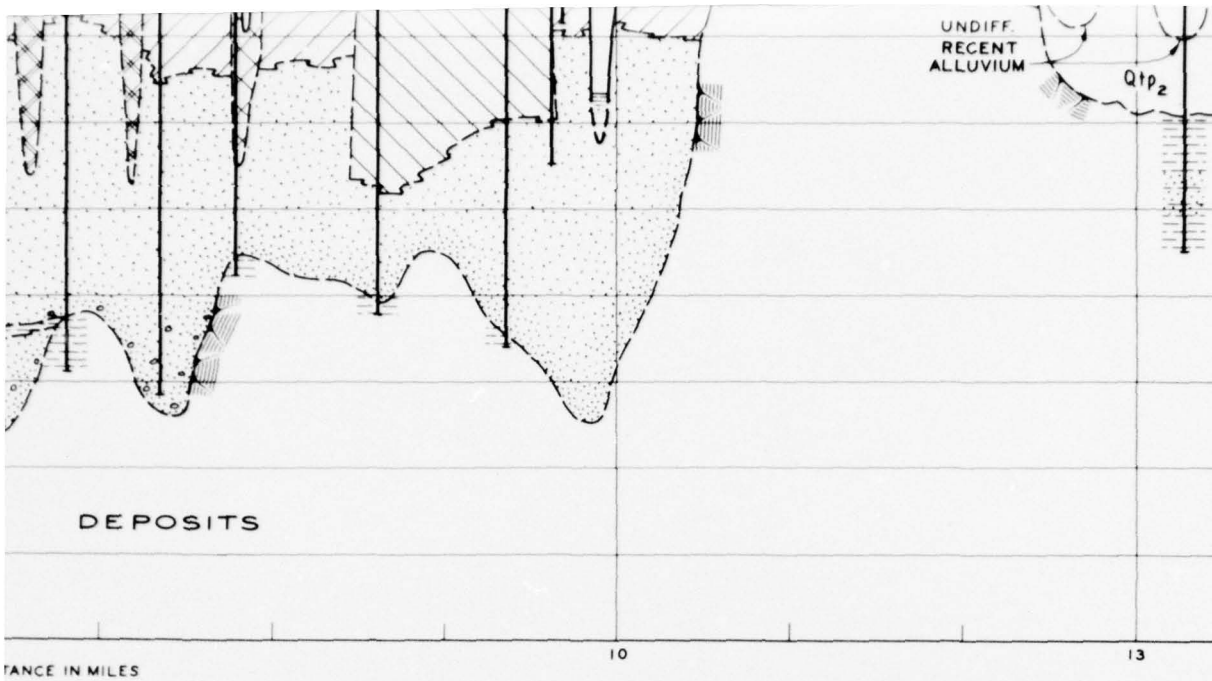
**LITHOLOGIC TYPES**

- |  |                 |
|--|-----------------|
|  | SAND            |
|  | CLAY AND SILT   |
|  | LIMESTONE       |
|  | MARL            |
|  | FOSSILIFEROUS   |
|  | SAND AND GRAVEL |

**MAPPING SYMBOLS**

- |  |                                 |
|--|---------------------------------|
|  | PRAIRIE TERRACE - LOWER SURFACE |
|  | MONTGOMERY TERRACE              |

3

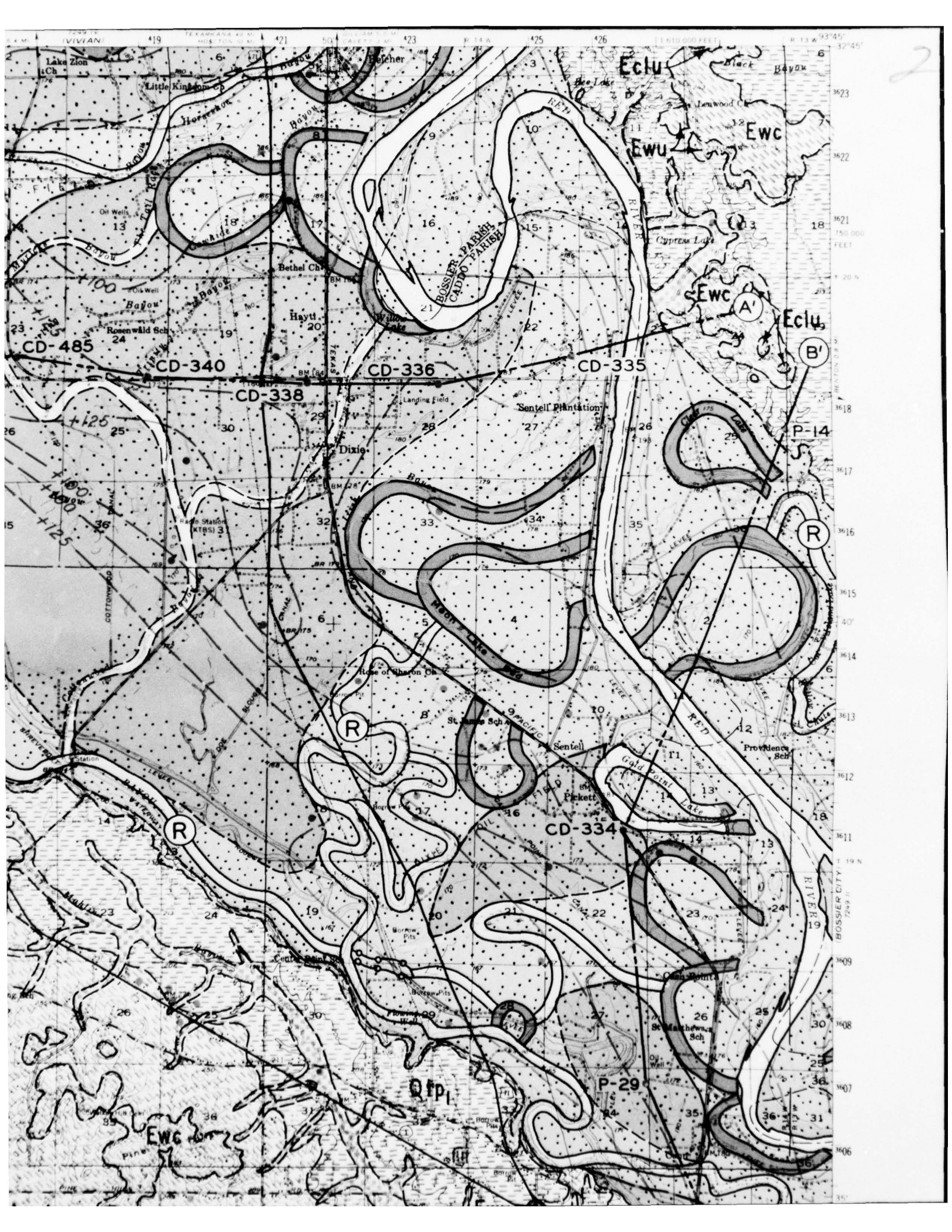


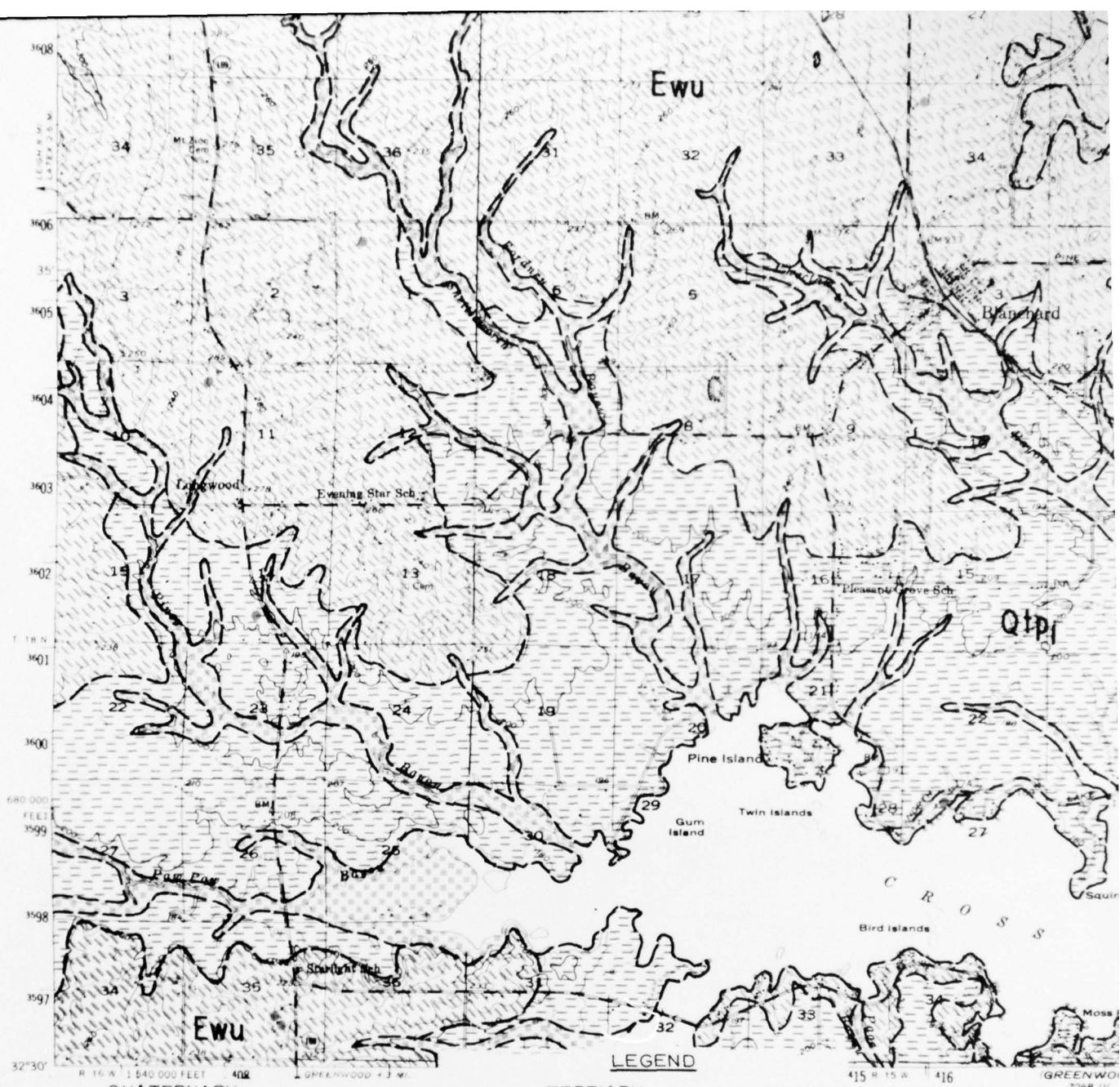
GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
SECTIONS A-A' AND B-B'  
MONTGOMERY, LA.

4



NOTE: TERTIARY CONTACTS BASED ON PHD DISSERTATION, "GEOLOGY OF BOSSIER PARISH, LA.," BY D. E. JONES, LA. STATE UNIVERSITY, 1959, AND UNPUBLISHED MAP OF CADDO PARISH BY CHET SMITH OBTAINED FROM THE FILES OF THE LA. GEOLOGICAL SURVEY WITH PERMISSION OF L. W. HOUGH, LA. STATE GEOLOGIST.

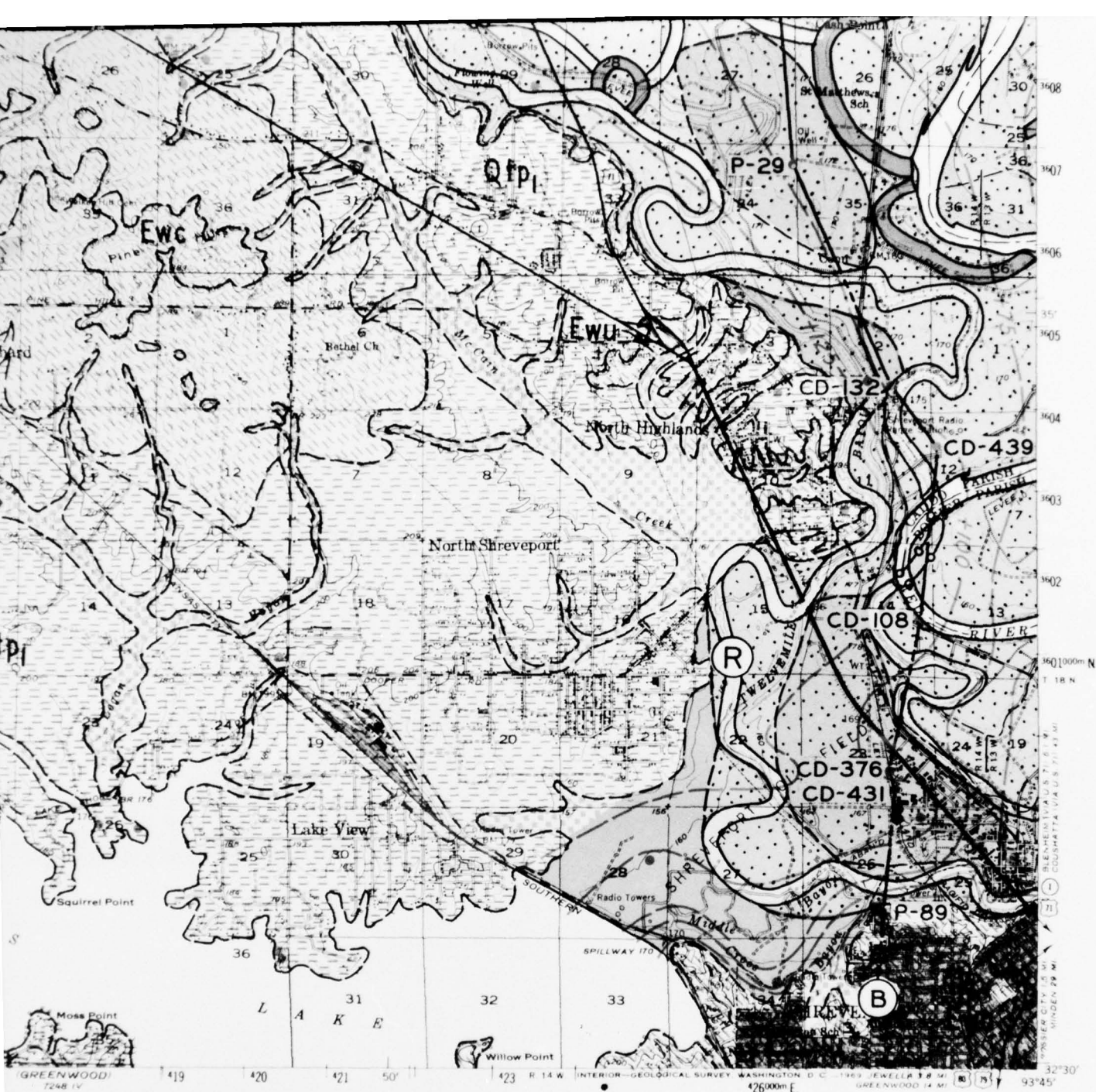




<b>QUATERNARY</b>		<b>TERTIARY</b>			
<b>RECENT</b>		<b>EOCENE</b>			
	NATURAL LEVEE		LOWER CLAIBORNE GROUP UNDIFFERENTIATED		
	POINT BAR	<b>EOCENE-PALEOCENE</b>			
	BACKSWAMP		WILCOX GROUP UNDIFFERENTIATED		RED RIVER
	ABANDONED CHANNEL		CARRIZO FORMATION		INDEFINITE CONTACT
	ABANDONED COURSE	<b>PALEOCENE</b>			CONTACT
	MAJOR CREVASSE CHANNELS		MIDWAY GROUP UNDIFFERENTIATED		PROBABLE POSITION OF COURSE REWORKED BY SU MEANDERING OF A STREAM
	UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS				ELEVATION OF TOP OF T SURFACE IN FEET-MSL
<b>PLEISTOCENE</b>					CLASS I BORING (LOGGED USED TO CONTOUR BURIE
	PRAIRIE TERRACE-UPPER SURFACE				CLASS I BORING (LOGGED NOT REACHING TERTIARY
	PRAIRIE TERRACE-LOWER SURFACE				CLASS II BORING (NOT LO USED TO CONTOUR BURIE
	ABANDONED CHANNEL				CLASS II BORING (NOT LO NOT REACHING TERTIARY
	UNDIFFERENTIATED TERRACE				

3

MOORINGSPORT (a)



CONTACT

POSITION OF ABANDONED  
 MARKED BY SUBSEQUENT  
 OF A STREAM

OF TOP OF TERTIARY  
 FEET-MSL

IG (LOGGED BY SOILS SCIENTIST)  
 FOUR BURIED TERTIARY SURFACE

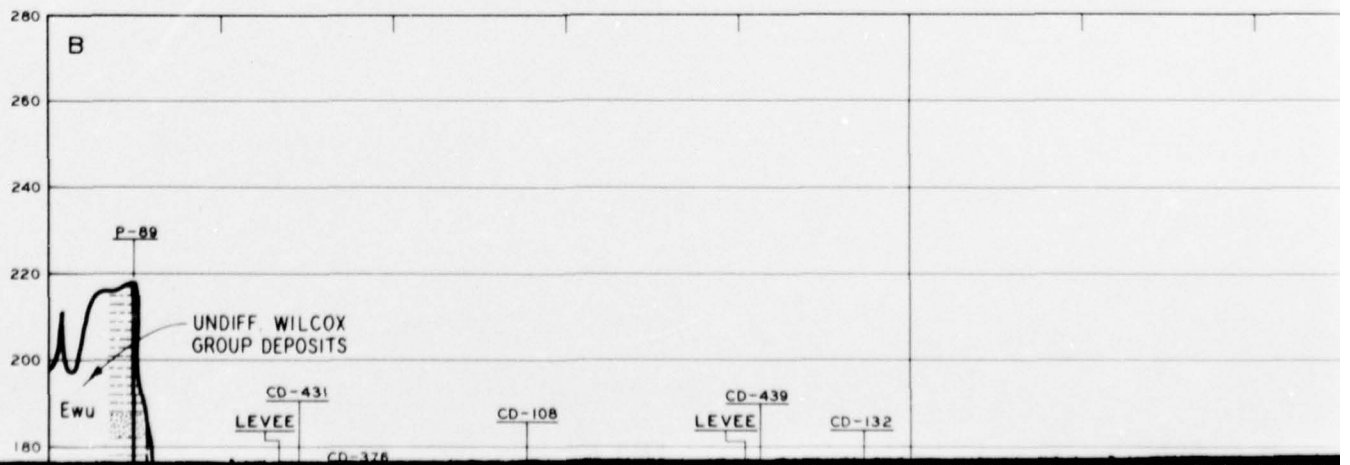
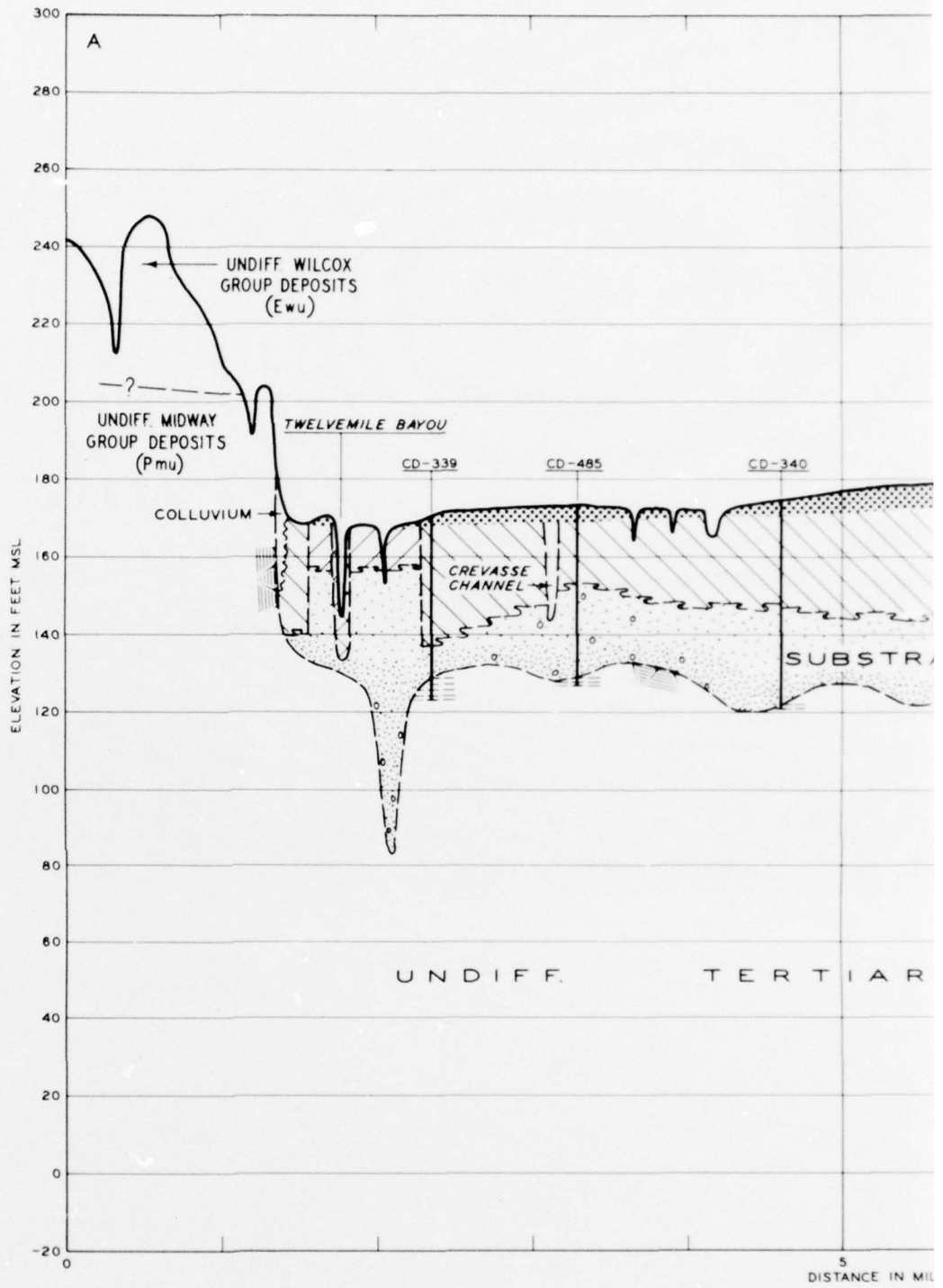
IG (LOGGED BY SOILS SCIENTIST)  
 G TERTIARY

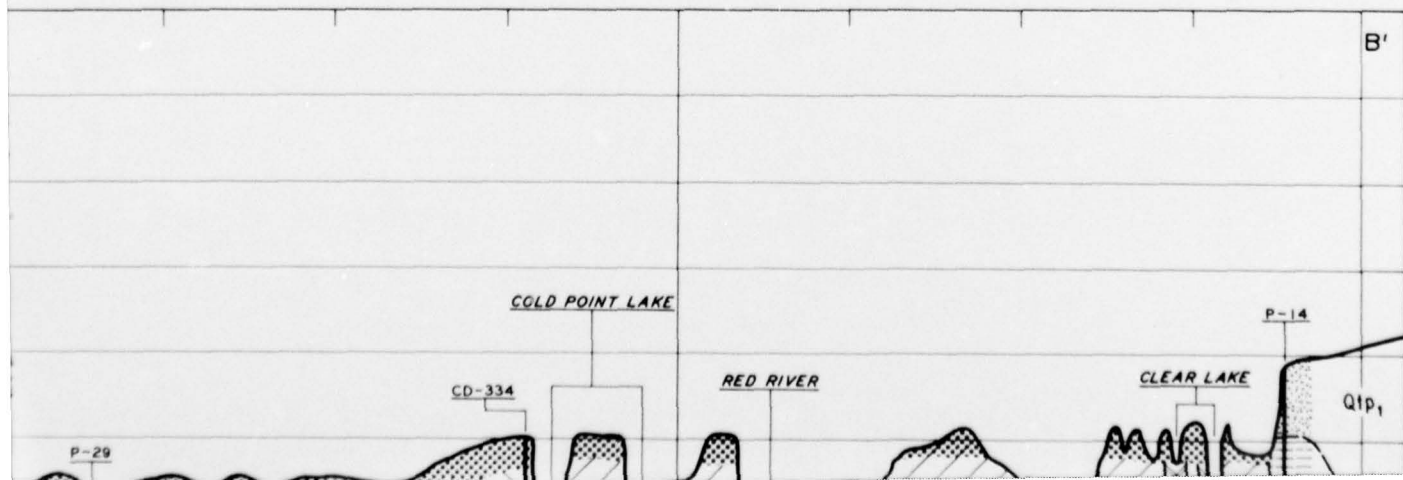
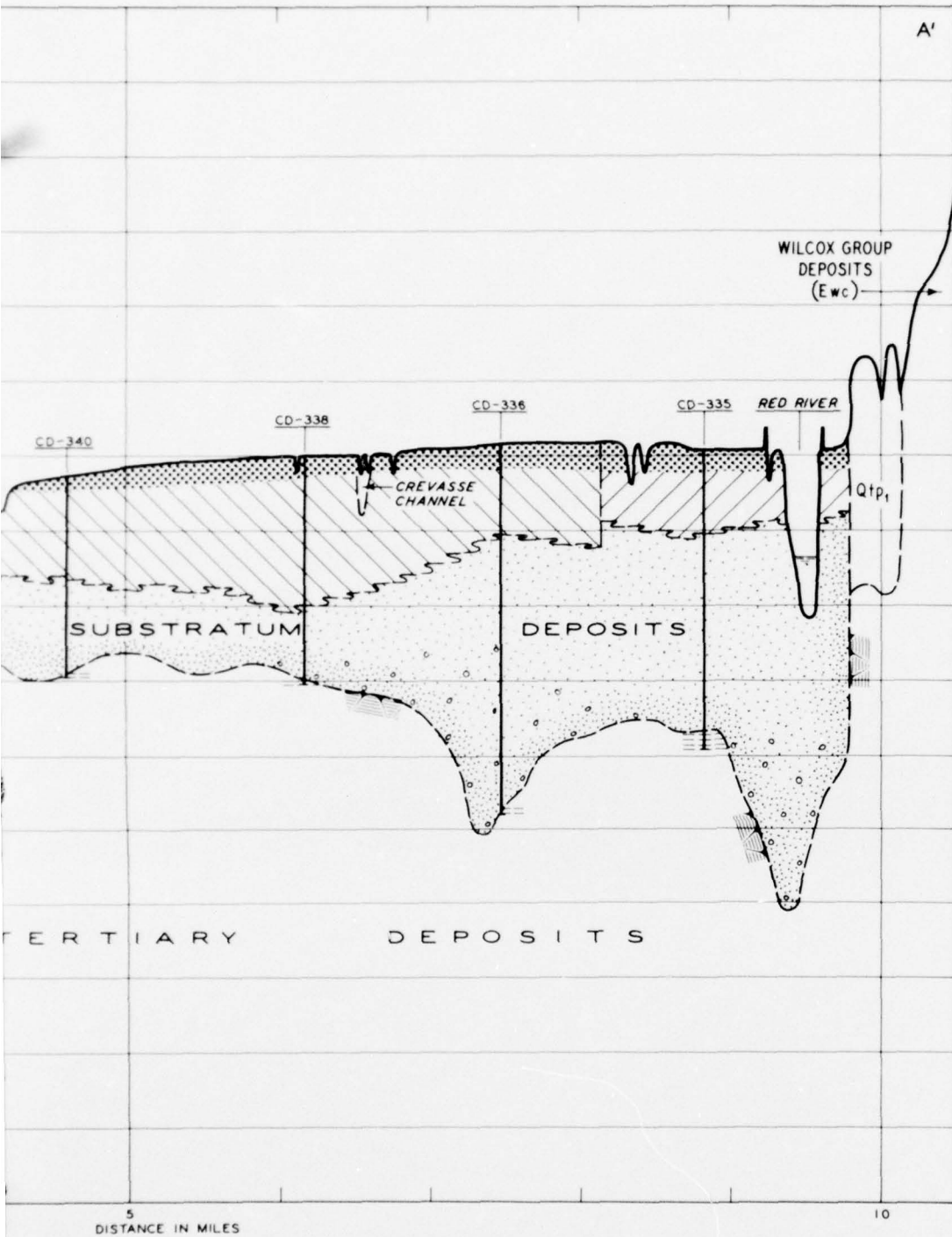
IG (NOT LOGGED BY SOILS SCIENTIST)  
 FOUR BURIED TERTIARY SURFACE

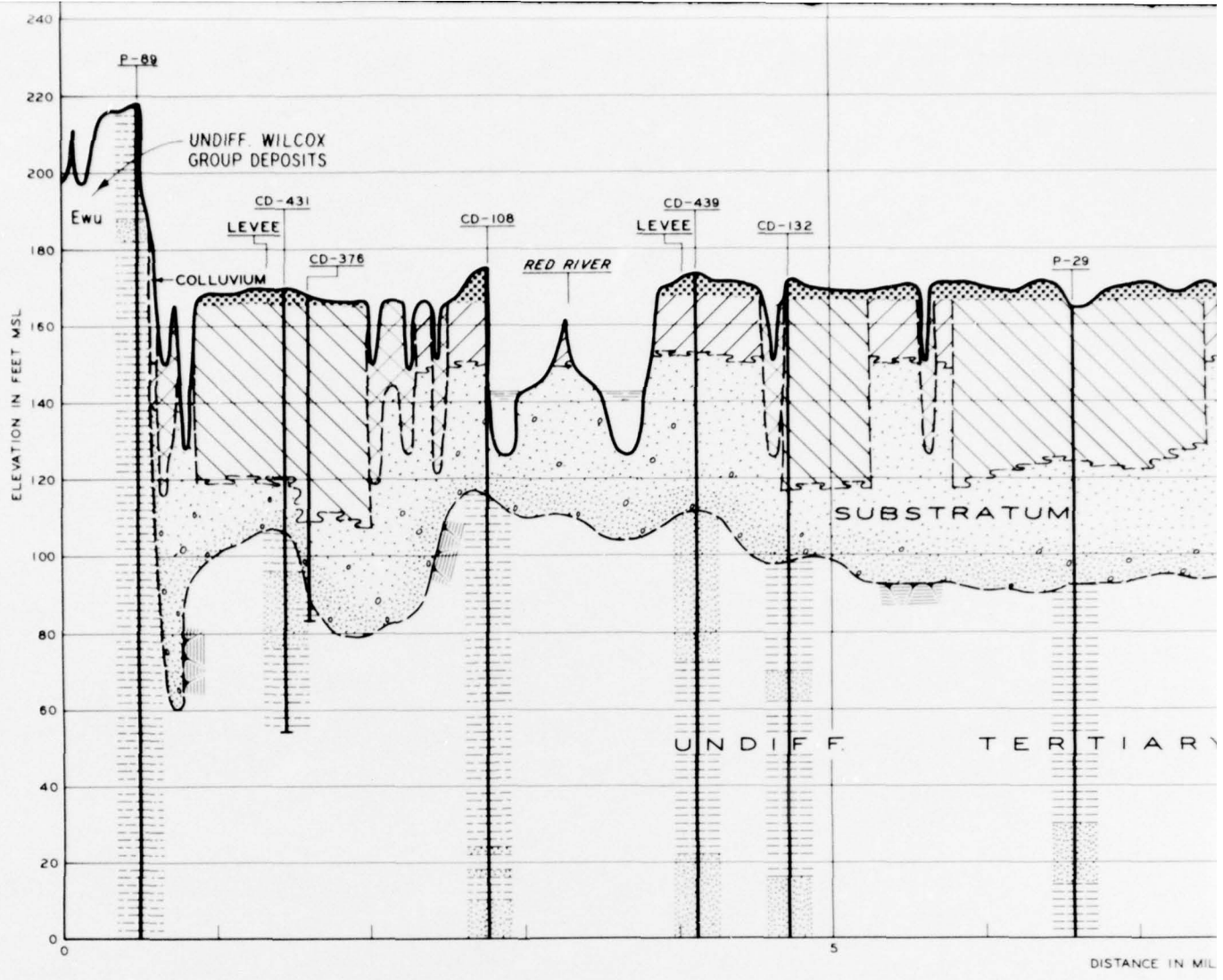
IG (NOT LOGGED BY SOILS SCIENTIST)  
 G TERTIARY

GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 DISTRIBUTION OF ALLUVIAL DEPOSITS  
 MOORINGSPOST, LA.

4







**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

- |            |  |                                  |
|------------|--|----------------------------------|
|            |  | NATURAL LEVEE                    |
|            |  | POINT BAR                        |
| TOPSTRATUM |  | BACKSWAMP                        |
|            |  | ABANDONED CHANNEL                |
|            |  | ABANDONED COURSE                 |
| SUBSTRATUM |  | UNDIFFERENTIATED SAND AND GRAVEL |
|            |  | TERTIARY SURFACE                 |

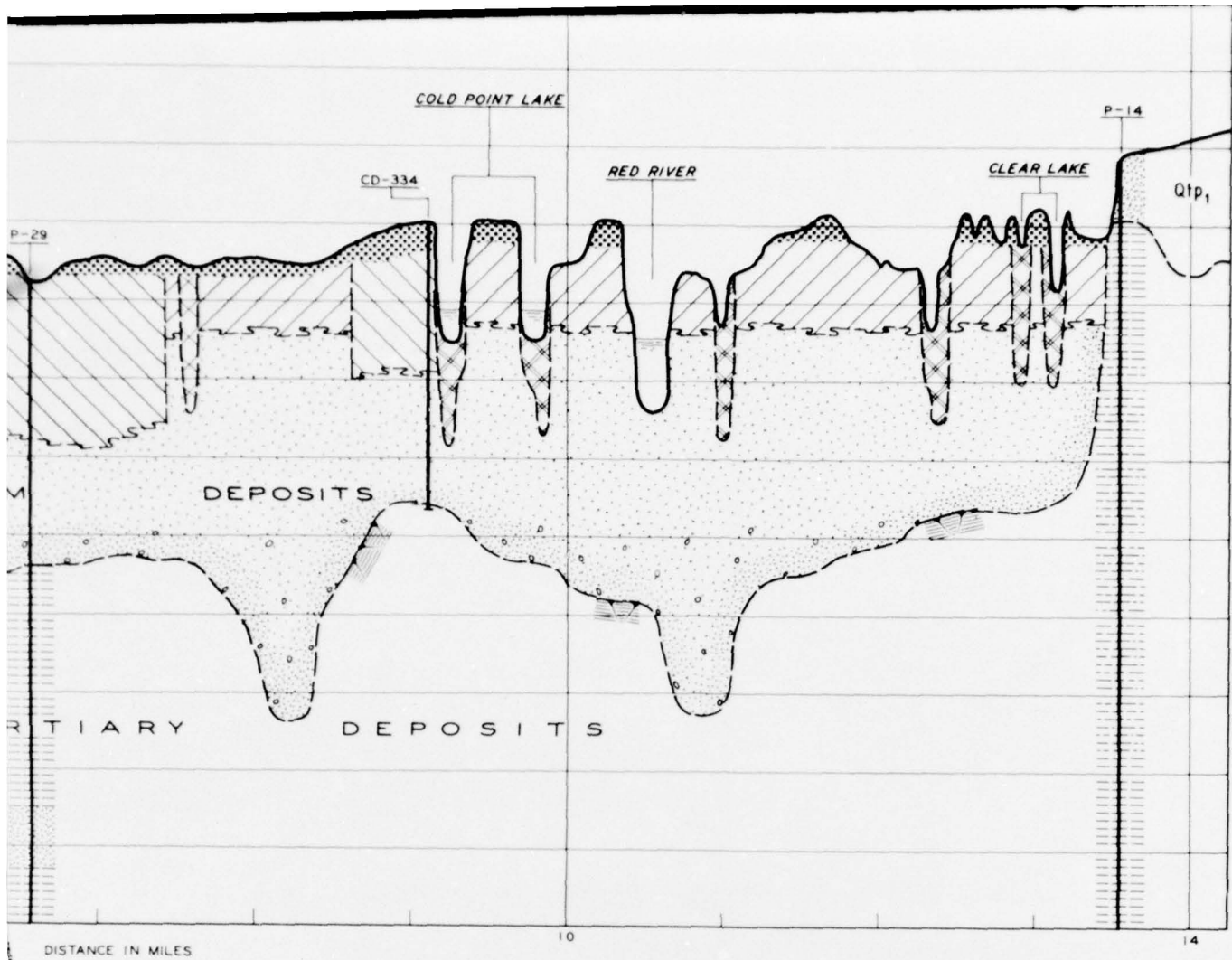
**LITHOLOGIC TYPES**

- |  |               |
|--|---------------|
|  | SAND          |
|  | CLAY AND SILT |
|  | SHALE         |

**MAPPING SYMBOLS**

- |  |   |
|--|---|
|  | PRAIRIE TERRACE-UPPER SURFACE             |
|  | UNDIFFERENTIATED WILCOX GROUP DEPOSITS    |
|  | WILCOX GROUP DEPOSITS (CARRIZO FORMATION) |

3



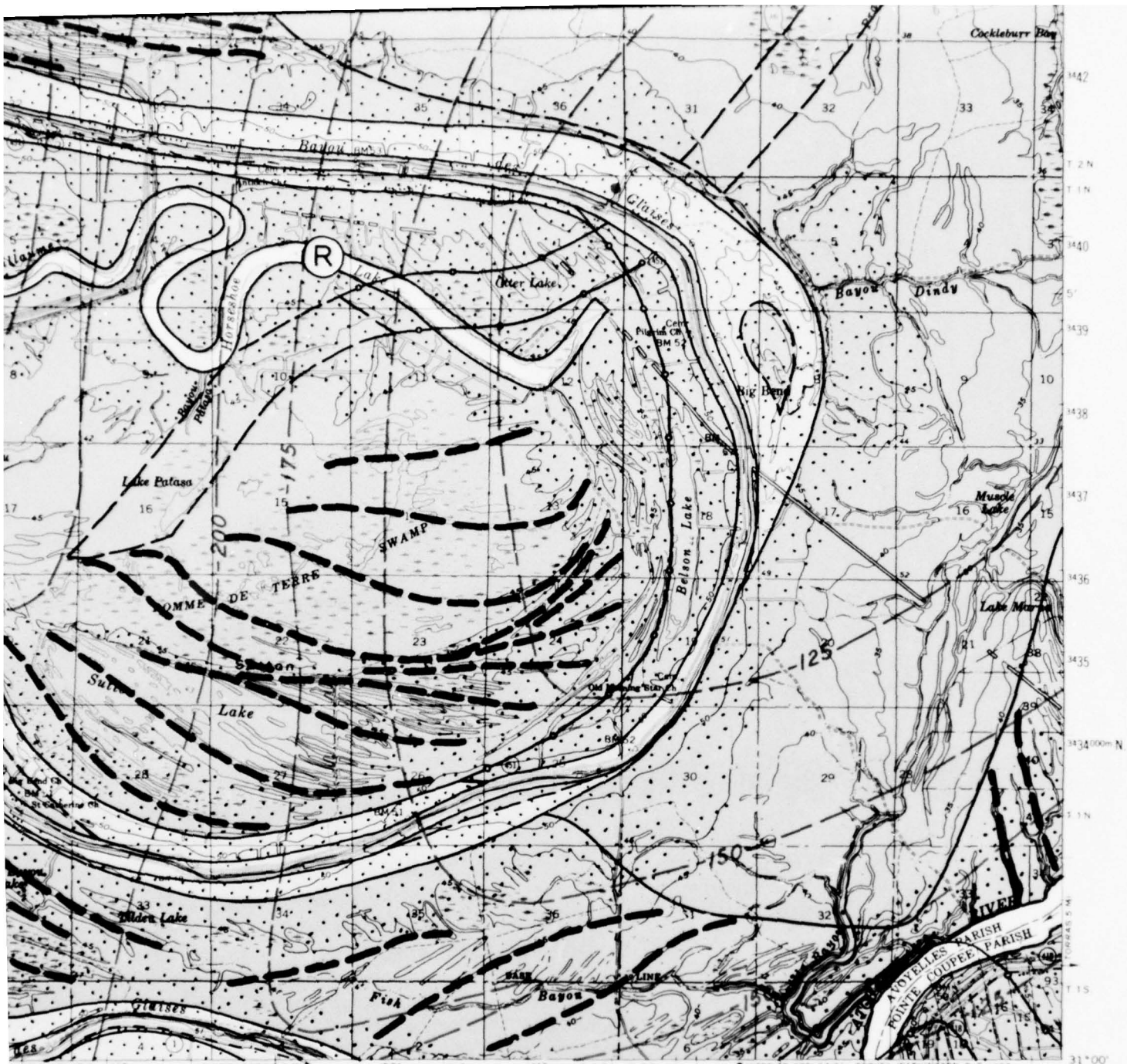
GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 SECTIONS A-A' AND B-B'  
 MOORINGSPOINT, LA.

4









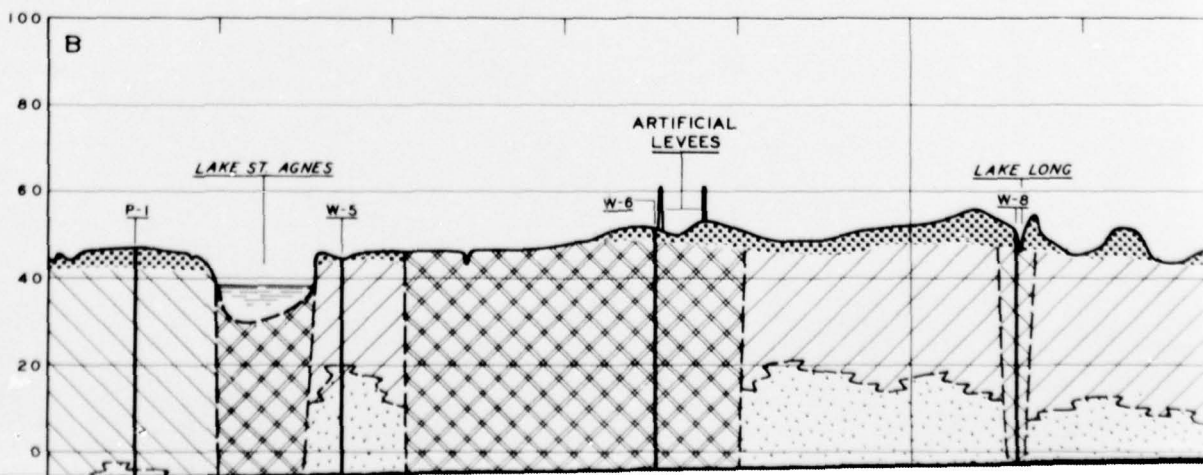
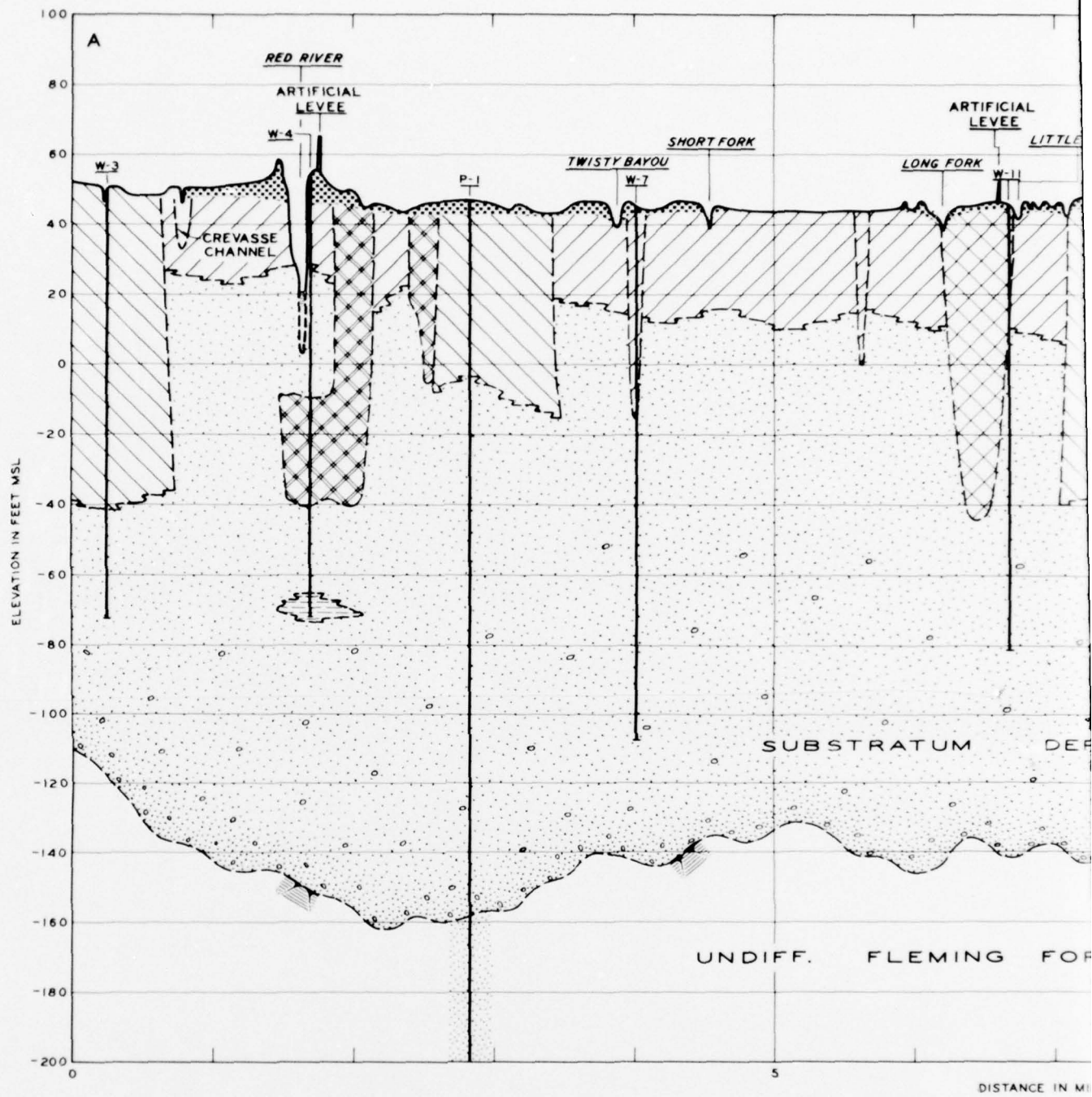
IODENBURG 1608 SIMMSPORT 2.7 MI. NEW ROADS 36 MI. 50' 612 613 R 6 E R 7 E INTERIM GEOLOGICAL SURVEY WASHINGTON, D. C. 20515 26 MI. TO LA 11 618000m E 91°45' 31°00'



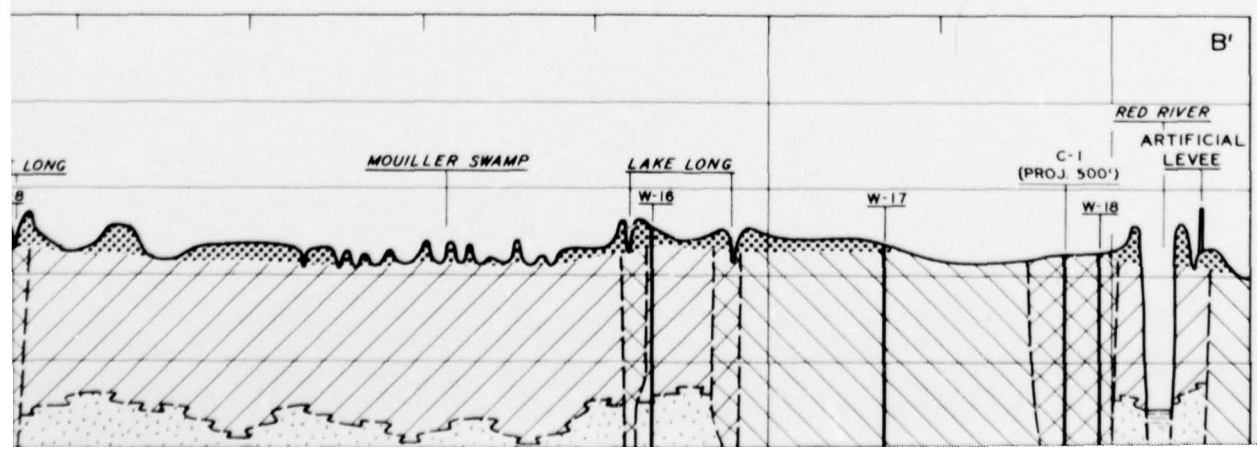
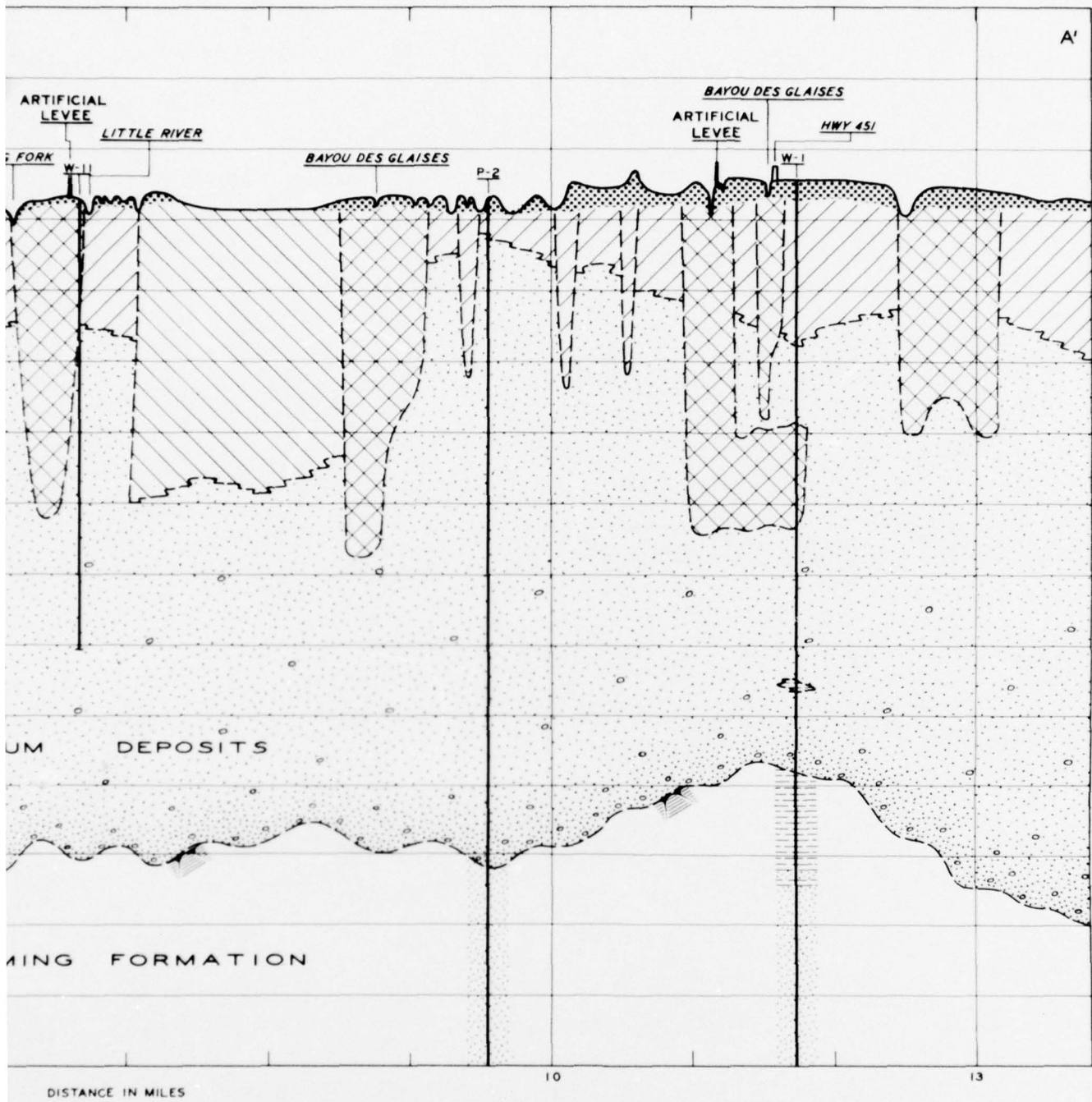
1:62,500  
 5 FEET INTERVAL  
 IS MEAN SEA LEVEL

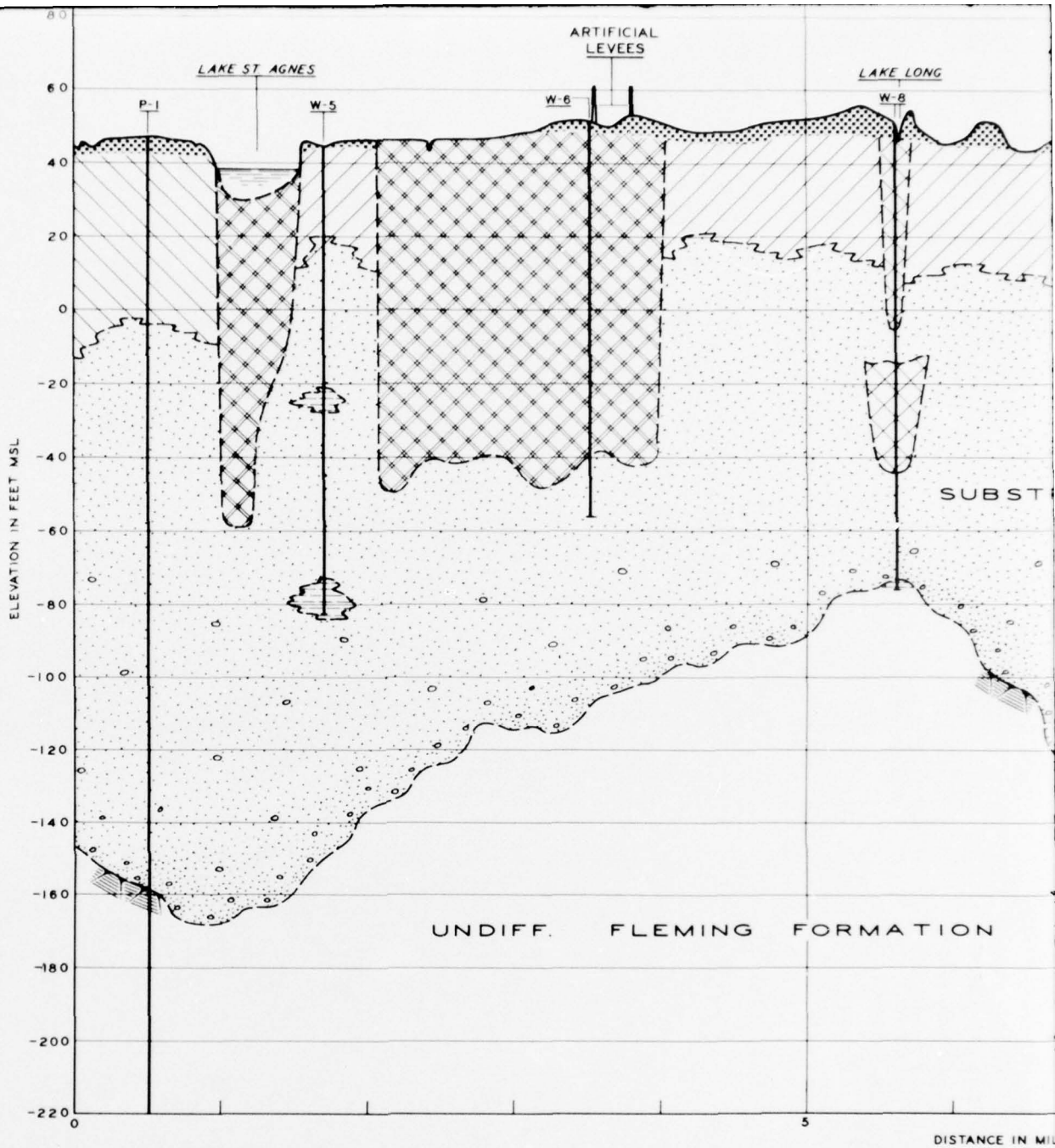
**GEOLOGICAL INVESTIGATION**  
**LOWER RED RIVER-ATCHAFALAYA BASIN AREA**  
**DISTRIBUTION OF ALLUVIAL DEPOSITS**  
**MOREAUVILLE, LA.**

4



2





**LEGEND**

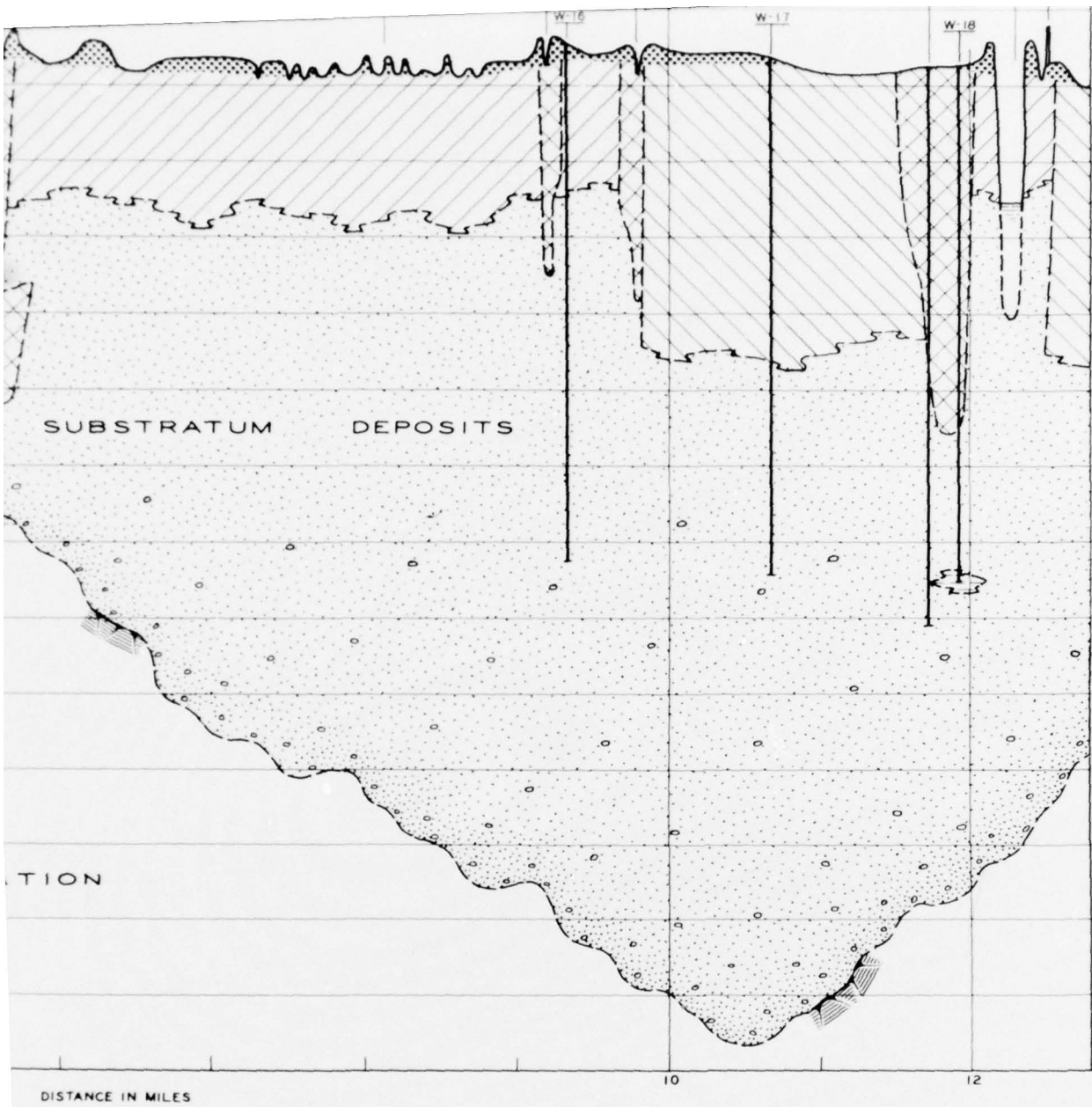
**ENVIRONMENTS OF DEPOSITION**

**LITHOLOGIC TYPES**

- |            |  |                                  |
|------------|--|----------------------------------|
| TOPSTRATUM |  | NATURAL LEVEE                    |
|            |  | POINT BAR                        |
|            |  | BACKSWAMP                        |
|            |  | ABANDONED CHANNEL                |
|            |  | ABANDONED COURSE                 |
| SUBSTRATUM |  | UNDIFFERENTIATED SAND AND GRAVEL |
|            |  | TERTIARY SURFACE                 |

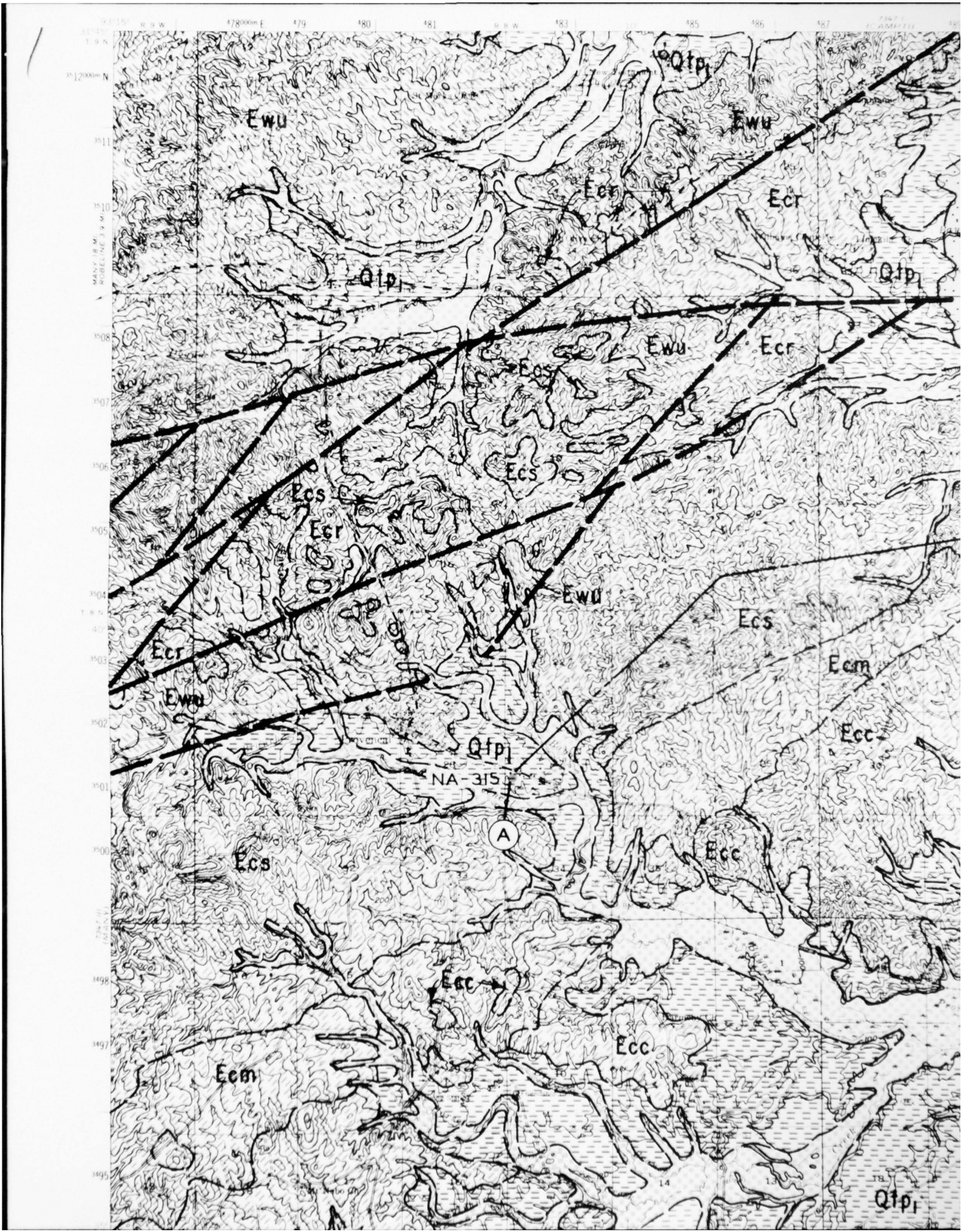
- |  |                 |
|--|-----------------|
|  | SAND            |
|  | CLAY AND SILT   |
|  | SAND AND GRAVEL |

3

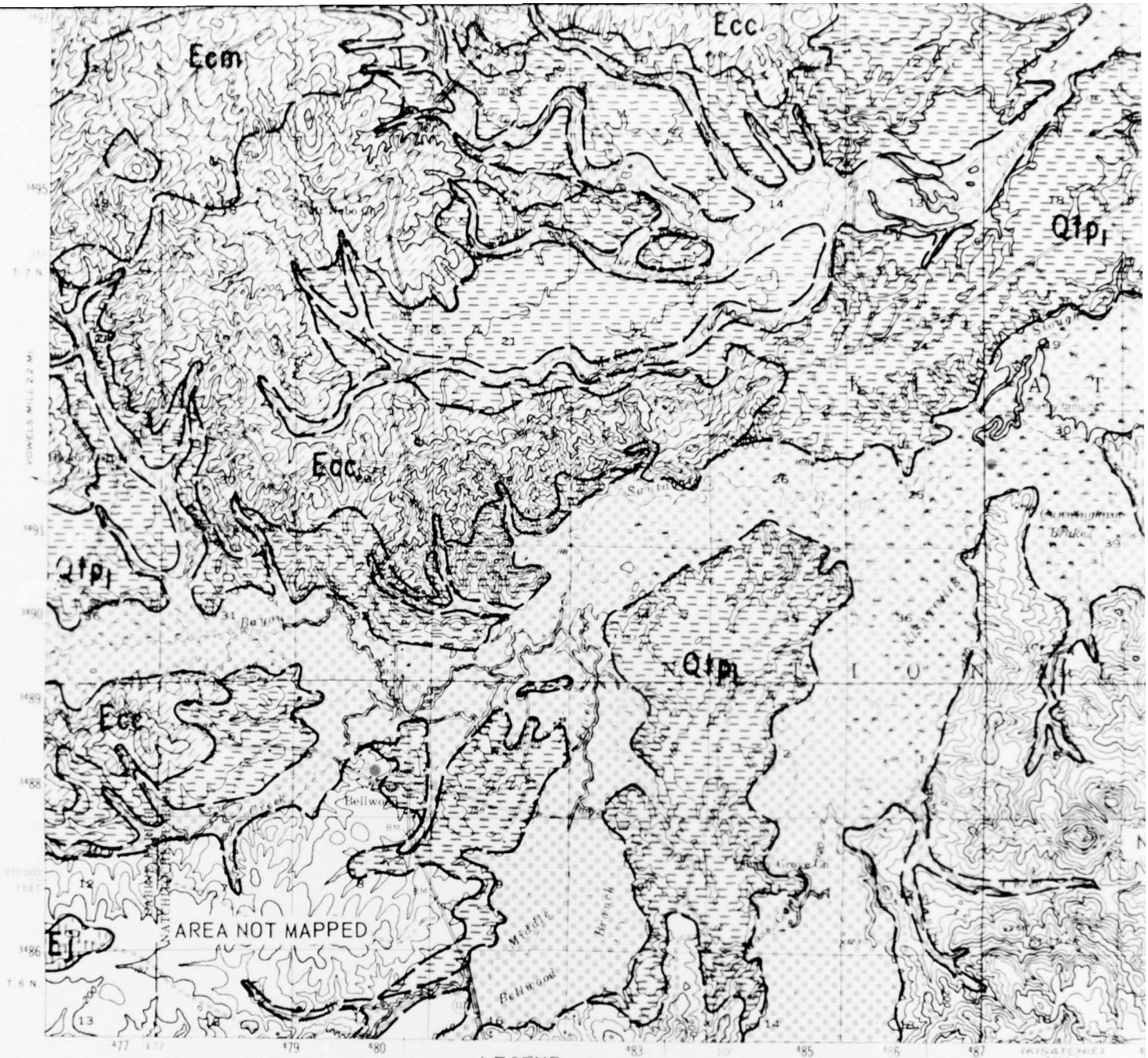


GEOLOGICAL INVESTIGATION  
LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
SECTIONS A-A' AND B-B'  
MOREAUVILLE, LA.

4







LEGEND

QUATERNARY

- RECENT**
- NATURAL LEVEE
  - POINT BAR
  - BACKSWAMP
  - ABANDONED CHANNEL
  - ABANDONED COURSE
  - MAJOR CREVASSE CHANNELS
  - UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS
- PLEISTOCENE**
- PRAIRIE TERRACE-UPPER SURFACE

TERTIARY

- MIOCENE**
- MIOCENE UNDIFFERENTIATED
- OLIGOCENE**
- VICKSBURG GROUP
- EOCENE**
- JACKSON GROUP
  - CLAIRBORNE GROUP UNDIFFERENTIATED
  - COCKFIELD FORMATION
  - COOK MOUNTAIN FORMATION
  - SPARTA FORMATION
  - CANE RIVER FORMATION
- EOCENE-PALEOCENE**
- WILCOX GROUP UNDIFFERENTIATED

- RED RIVER
- INDEFINITE CONTACT
- CONTACT
- PROBABLE POSITION OF ABANDONED COURSE REWORKED BY SUBSEQUENT MEANDERING OF A STREAM
- ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS I BORING (LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) USED TO CONTOUR BURIED TERTIARY SURFACE
- CLASS II BORING (NOT LOGGED BY SOILS SCIENTIST) NOT REACHING TERTIARY

3



NOTE: TERTIARY CONTACTS BASED ON LA. GEOLOGICAL SURVEY BULLETIN NO. 34, "GEOLOGY OF SABINE PARISH," BY H. V. ANDERSEN, 1960, LA. GEOLOGICAL SURVEY WATER RESOURCES BULLETIN NO. 4, "WATER RESOURCES OF NATCHITOCHE PARISH, LA." BY R. NEWCOMB AND OTHERS, 1963, AND UNPUBLISHED MAP OF NATCHITOCHE PARISH BY H. V. ANDERSEN OBTAINED FROM THE FILES OF THE LA. GEOLOGICAL SURVEY WITH PERMISSION OF L. W. HOUGH, LA. STATE GEOLOGIST.

SCALE 1:62500



CONTOUR INTERVAL 20 FEET  
 DATUM IS MEAN SEA LEVEL

DNED  
 IENT

BY

(LS SCIENTIST)  
 TIARY SURFACE

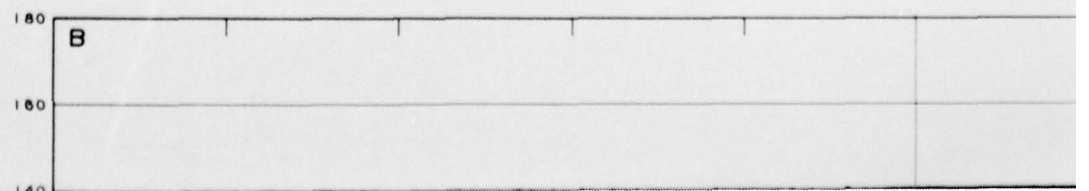
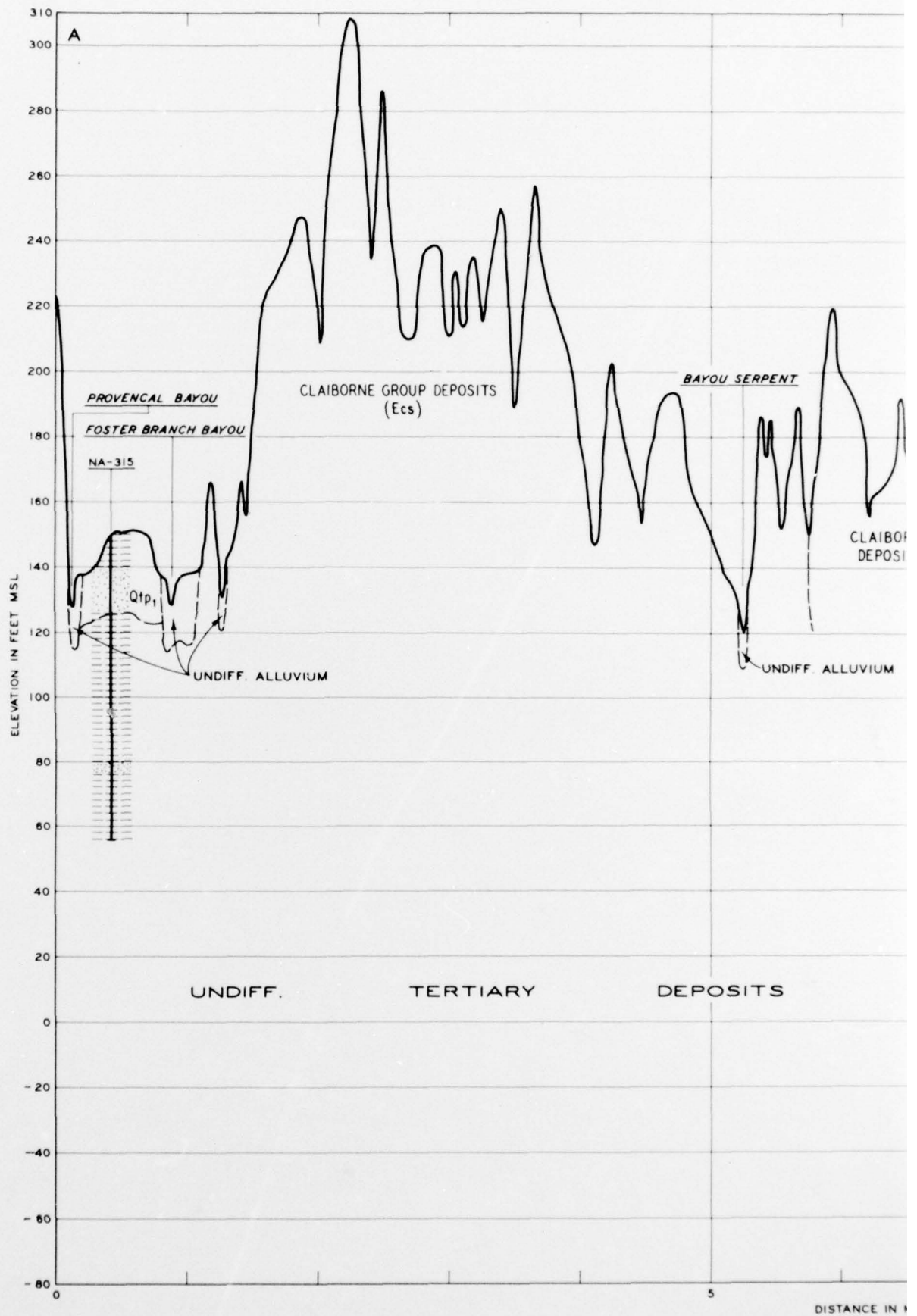
(LS SCIENTIST)

BY SOILS SCIENTIST)  
 TIARY SURFACE

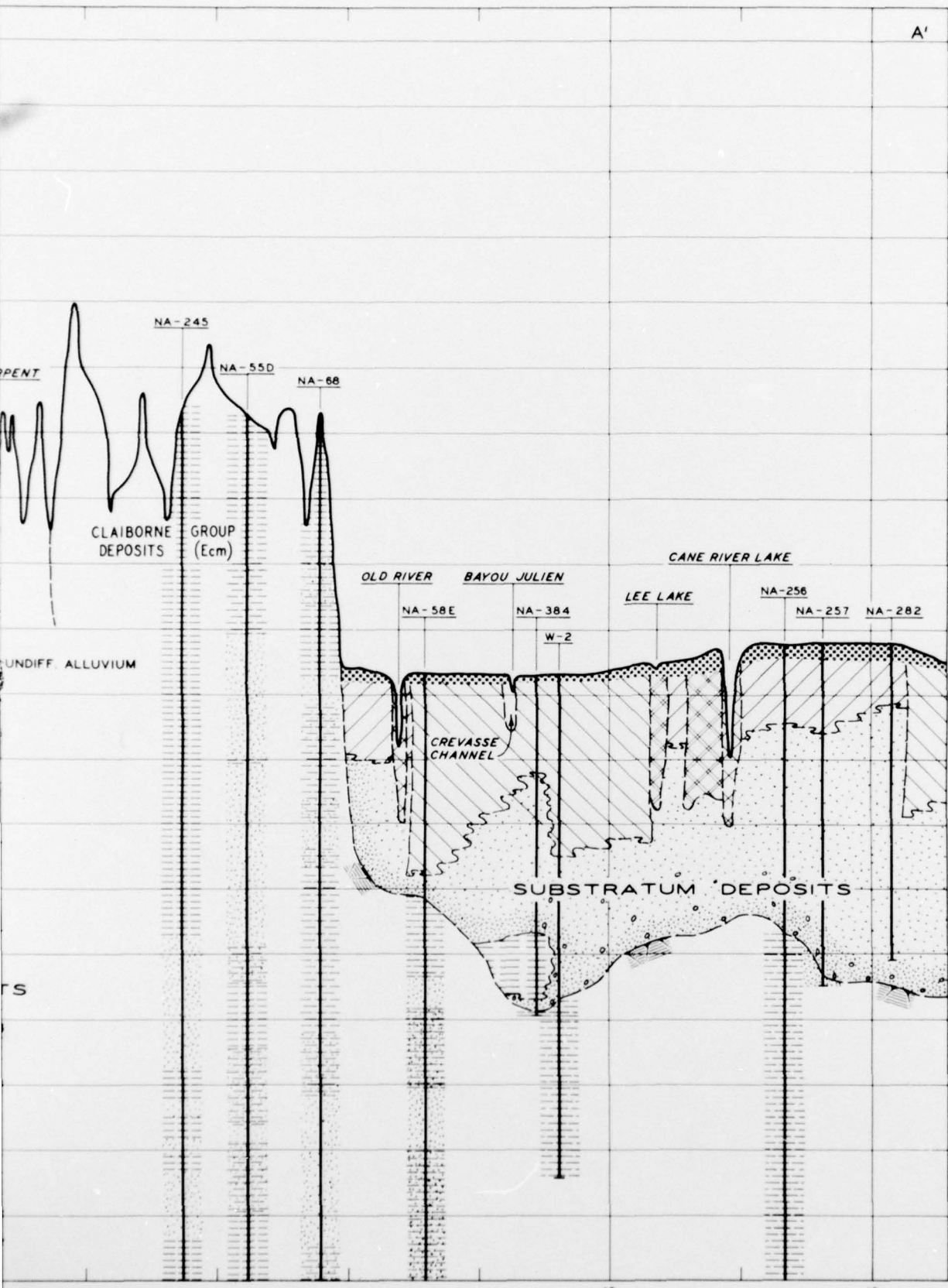
BY SOILS SCIENTIST)

GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 DISTRIBUTION OF ALLUVIAL DEPOSITS  
 PROVENCAL, LA.

4



2



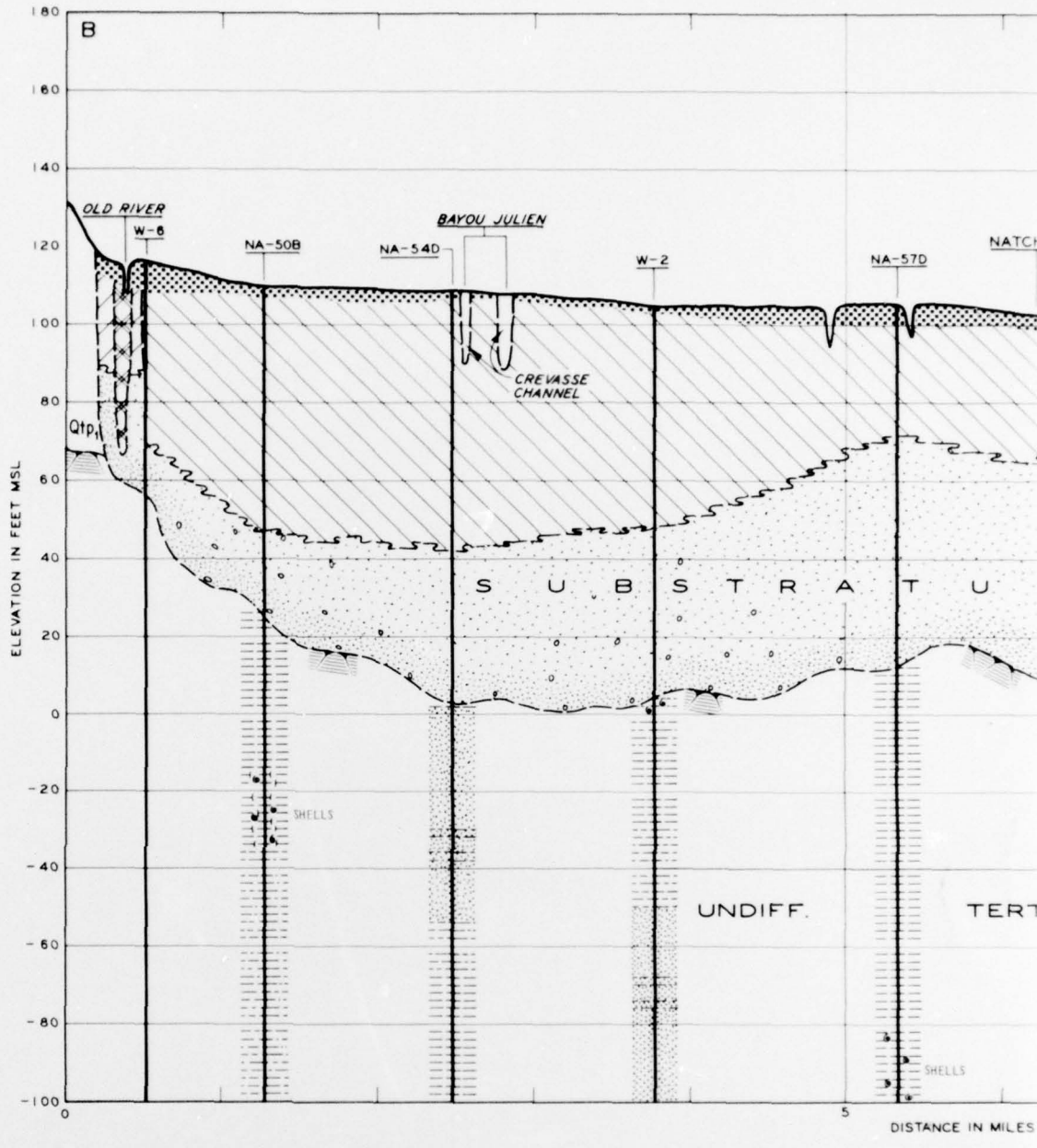
DISTANCE IN MILES

10

12

A'

B'



**LEGEND**

**ENVIRONMENTS OF DEPOSITION**

- |            |  |                                  |
|------------|--|----------------------------------|
| TOPSTRATUM |  | NATURAL LEVEE                    |
|            |  | POINT BAR                        |
|            |  | BACKSWAMP                        |
|            |  | ABANDONED CHANNEL                |
| SUBSTRATUM |  | ABANDONED COURSE                 |
|            |  | UNDIFFERENTIATED SAND AND GRAVEL |
|            |  | TERTIARY SURFACE                 |

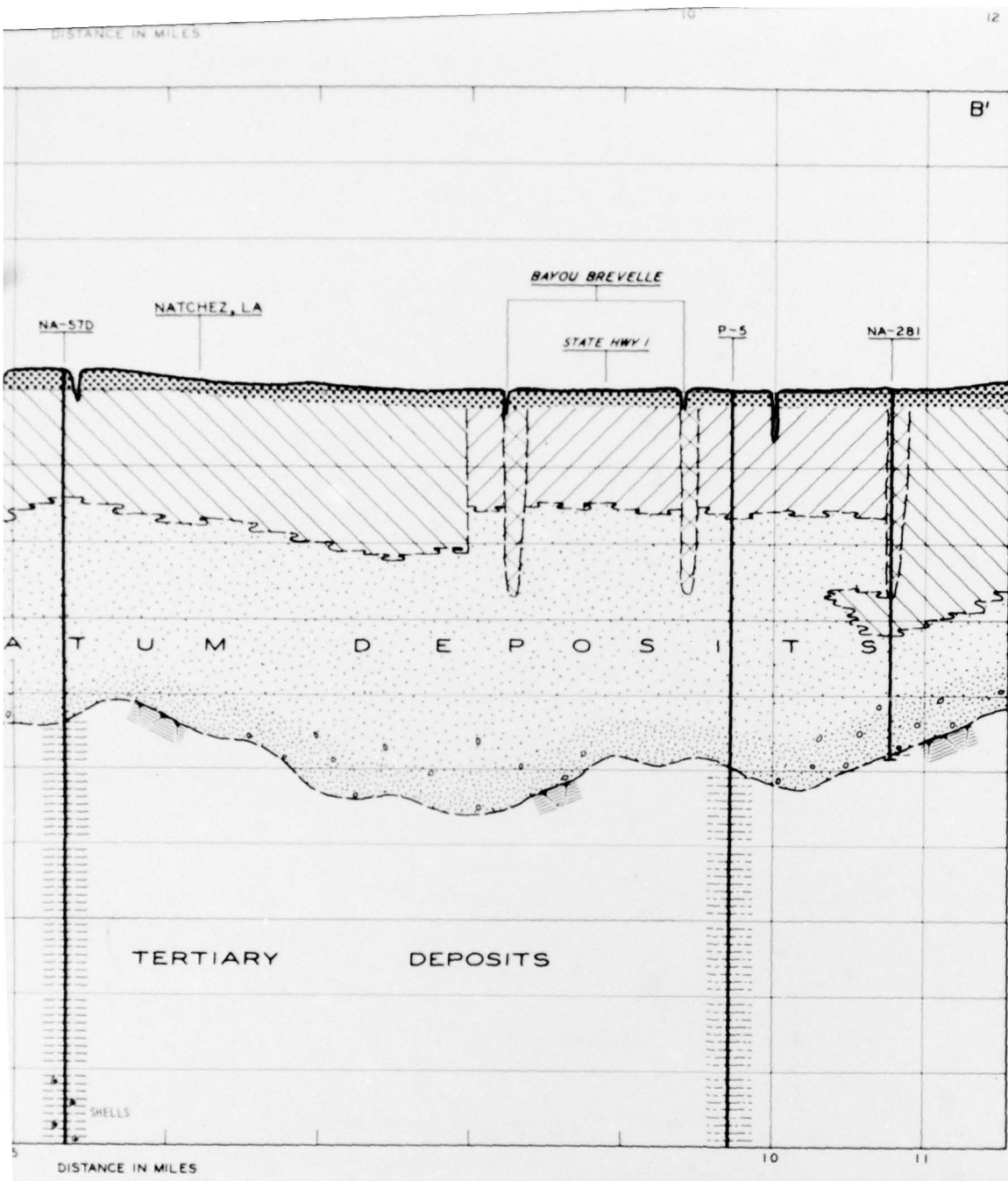
**LITHOLOGIC TYPES**

- |  |               |
|--|---------------|
|  | SAND          |
|  | CLAY AND SILT |
|  | SHALE         |

**MAPPING SYMBOLS**

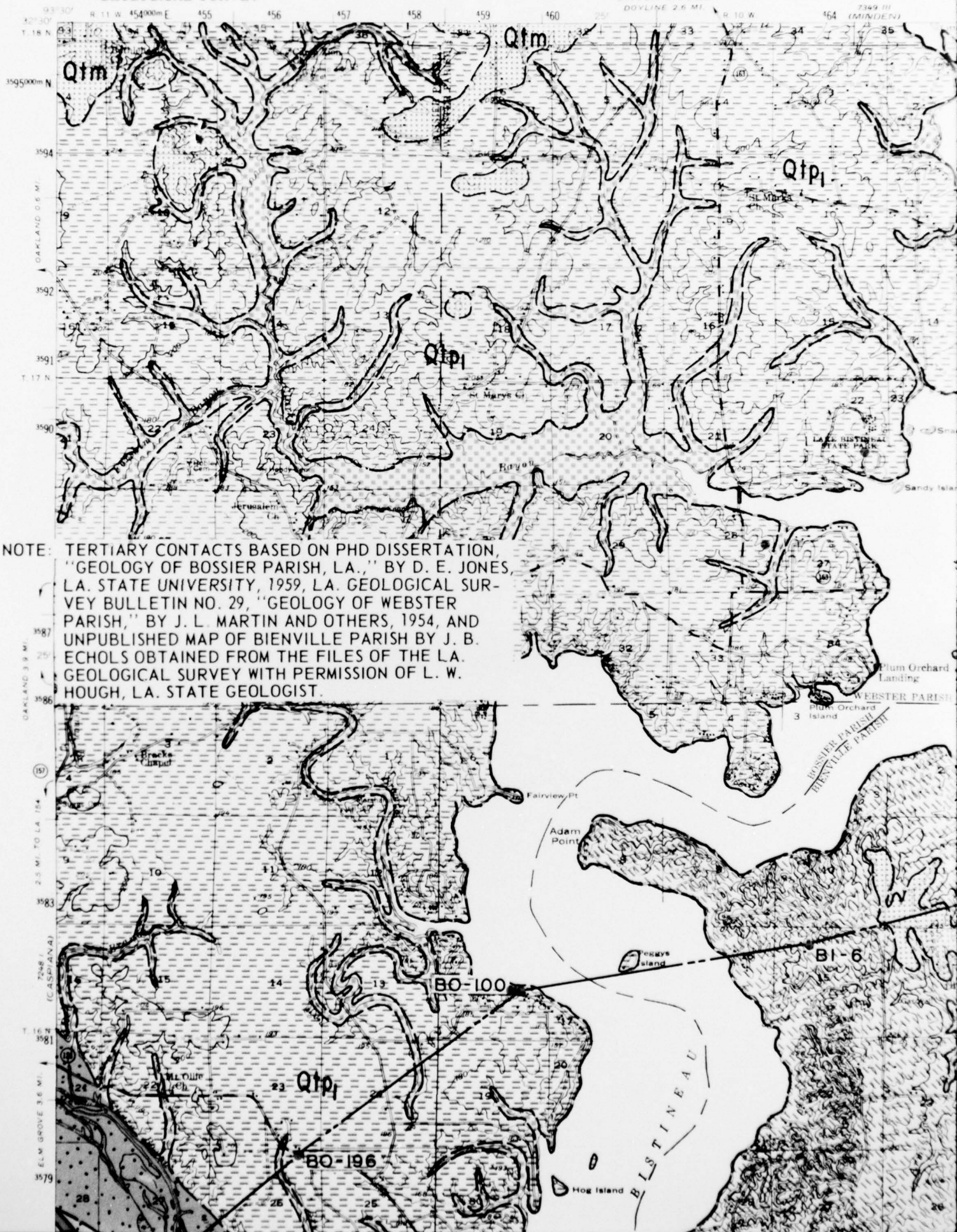
- |  |  |
|--|--|
|  | PRAIRIE TERRACE-UPPER SURFACE                      |
|  | CLAIBORNE GROUP DEPOSITS (COOK MOUNTAIN FORMATION) |
|  | CLAIBORNE GROUP DEPOSITS (SPARATA FORMATION)       |

3

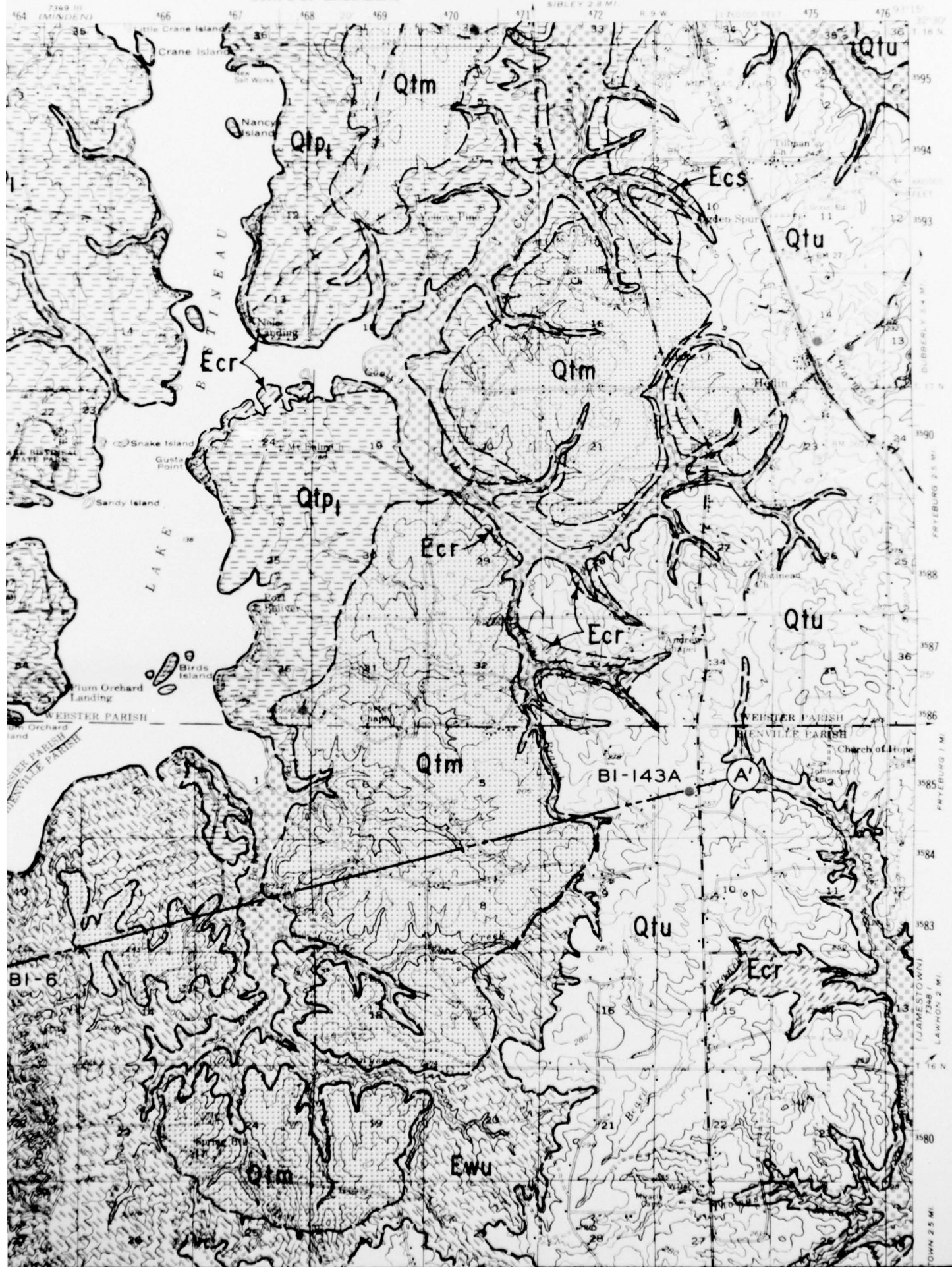


GEOLOGICAL INVESTIGATION  
 LOWER RED RIVER-ATCHAFALAYA BASIN AREA  
 SECTIONS A-A' AND B-B'  
 PROVENCAL, LA.

4



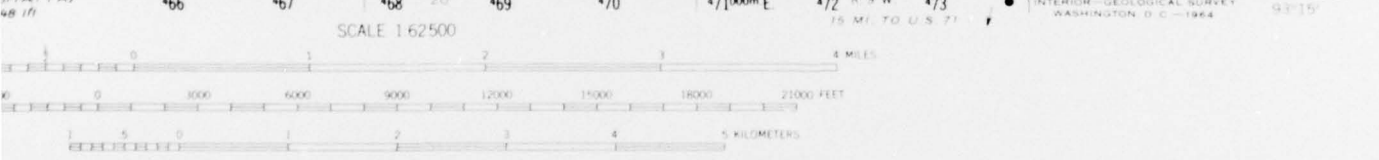
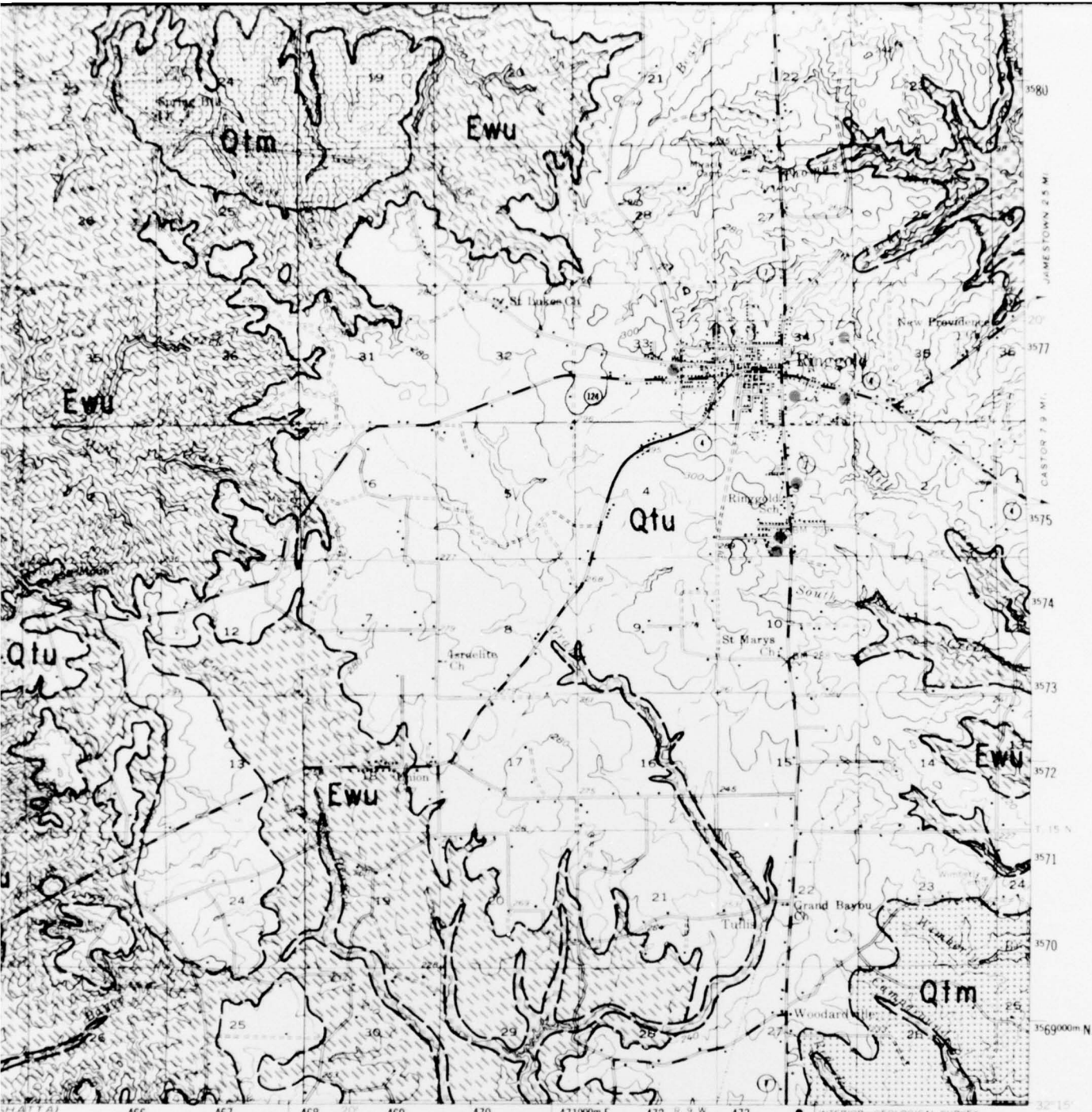
2





QUATERNARY		TERTIARY		LEGEND	
<b>RECENT</b>		<b>EOCENE</b>			
	NATURAL LEVEE		CLAIBORNE GROUP UNDIFFERENTIATED		INDEFINITE CONTACT
	POINT BAR		SPARTA FORMATION		CONTACT
	BACKSWAMP		CANE RIVER FORMATION		ELEVATION OF TOP OF TERTIARY SURFACE IN FEET-MSL
	ABANDONED CHANNEL	<b>EOCENE-PALEOCENE</b>			CLASS I BORING (LOGGED BY SOIL USED TO CONTOUR BURIED TERTIARY)
	ABANDONED COURSE		WILCOX GROUP UNDIFFERENTIATED		CLASS I BORING (LOGGED BY SOIL NOT REACHING TERTIARY)
	UNDIFFERENTIATED ALLUVIUM OF SMALL STREAMS		ABANDONED COURSE AND CHANNEL DEPOSITS COVERED WITH THIN BACKSWAMP DEPOSITS		CLASS II BORING (NOT LOGGED BY SOIL USED TO CONTOUR BURIED TERTIARY)
<b>PLEISTOCENE</b>			RED RIVER		CLASS II BORING (NOT LOGGED BY SOIL NOT REACHING TERTIARY)
	PRAIRIE TERRACE-UPPER SURFACE				
	MONTGOMERY TERRACE				
	UNDIFFERENTIATED TERRACE				

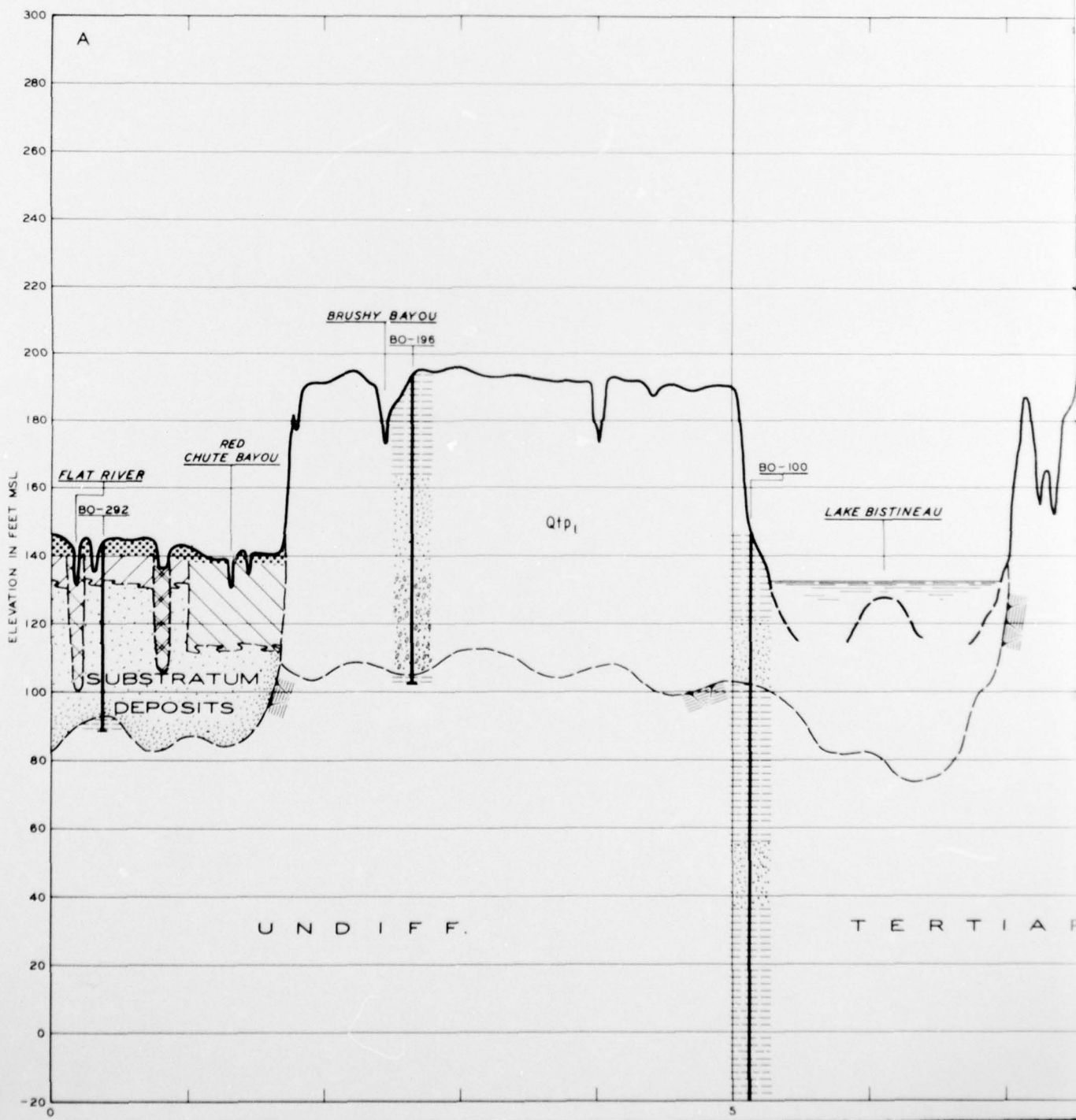
3

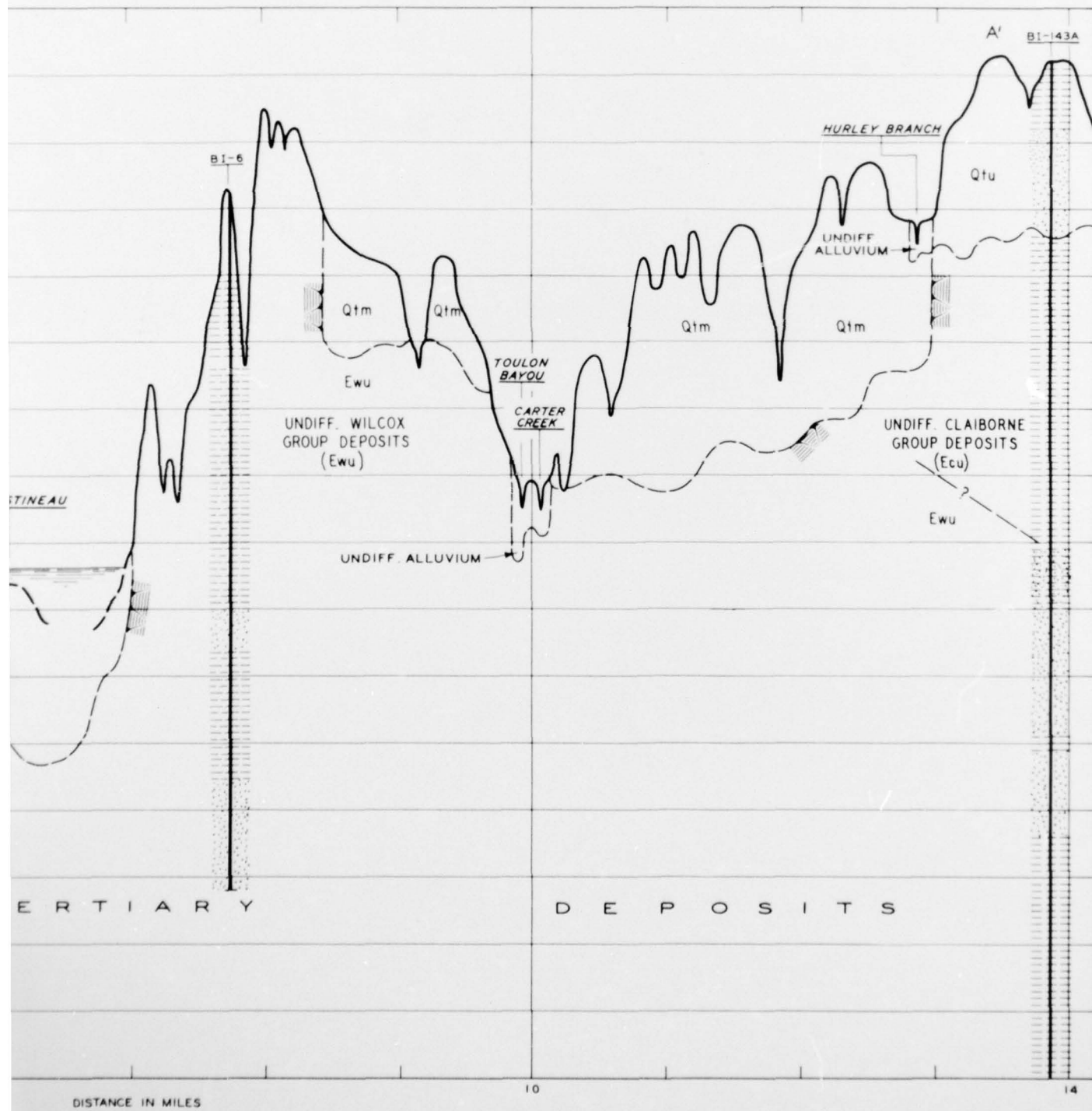


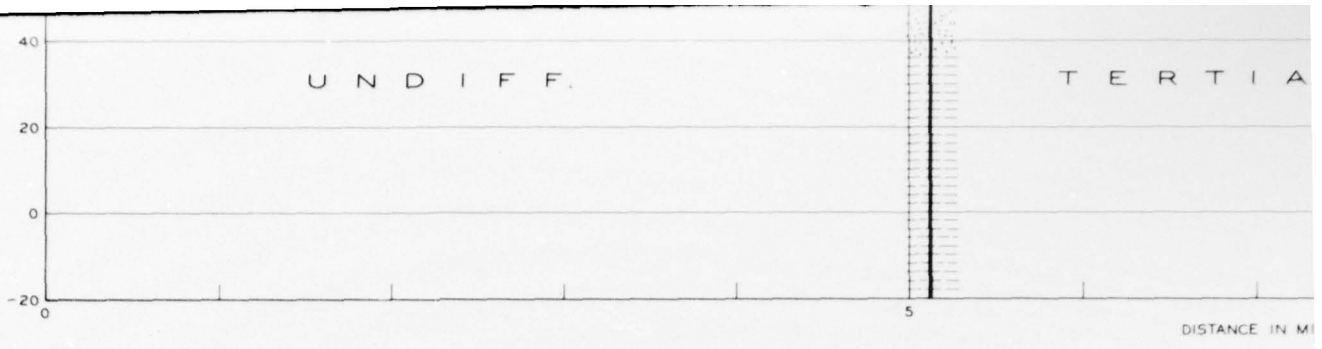
TERTIARY  
 BY SOILS SCIENTIST)  
 D TERTIARY SURFACE  
 BY SOILS SCIENTIST)  
 GED BY SOILS SCIENTIST)  
 D TERTIARY SURFACE  
 GED BY SOILS SCIENTIST)

**GEOLOGICAL INVESTIGATION**  
**LOWER RED RIVER-ATCHAFALAYA BASIN AREA**  
**DISTRIBUTION OF ALLUVIAL DEPOSITS**  
**RINGGOLD, LA.**

4







LEGEND

ENVIRONMENTS OF DEPOSITION

		NATURAL LEVEE
		POINT BAR
TOPSTRATUM		BACKSWAMP
		ABANDONED CHANNEL
		ABANDONED COURSE
SUBSTRATUM		UNDIFFERENTIATED SAND AND GRAVEL
		TERTIARY SURFACE

LITHOLOGIC TYPES

	SAND
	CLAY AND SILT
	SHALE

MAPPING SYMBOLS

	PRAIRIE TERRACE- UPPER SURFACE
	MONTGOMERY TERRACE
	UNDIFFERENTIATED TERRACE
	UNDIFFERENTIATED WILCOX GROUP DEPOSITS

3

T I A R Y

D E P O S I T S

STANCE IN MILES

10

14

GEOLOGICAL INVESTIGATION  
LOWER RED RIVER - ATCHAFALAYA BASIN AREA  
**SECTION A-A'**  
RINGGOLD, LA.

*F*  
RINGGOLD (b)