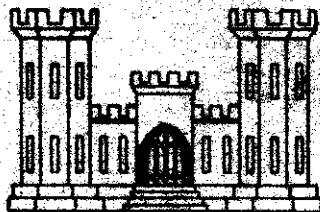


**FLOOD CONTROL  
MISSISSIPPI RIVER AND TRIBUTARIES  
MISSISSIPPI RIVER LEVEES**

**ITEM M-21.5-R  
CHILDRESS LEVEE ENLARGEMENT**

**PLAQUEMINES PARISH, LOUISIANA  
RELOCATION OF FACILITIES  
DESIGN MEMORANDUM NO. 9**



**DEPARTMENT OF THE ARMY  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
NEW ORLEANS, LOUISIANA**

September 1971

Serial No 14

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DEPARTMENT OF THE ARMY  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160

LMNED-DG


23 September 1971

SUBJECT: Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-21.5-R, Childress Levee Enlargement, Plaquemines Parish, Louisiana, Relocation of Facilities, Design Memorandum No. 9

President  
Mississippi River Commission  
ATTN: LMVED-TD

1. The subject design memorandum is submitted herewith for review in accordance with the provisions of ER-1110-2-1150 dated 19 June 1970.
2. Approval of the subject design memorandum is recommended.

1 Incl  
DM No. 9 (11 cys)

  
RICHARD L. HUNT  
Colonel, CE  
District Engineer

STATUS OF DESIGN MEMORANDA

<u>Design Memo No.</u>	<u>Title</u>	<u>Actual (A) or Scheduled (S) Submission Date</u>
1	Flood Control, Mississippi River and Tributaries, Item M-25.0-R, Buras Levee Setback, Plaquemines Parish, Louisiana, Relocation of Facilities	23 Nov 70 (A)
2	Flood Control, Mississippi River and Tributaries, Item M-26.0-R, Upper Buras Levee Setback, Plaquemines Parish, Louisiana, Relocation of Facilities	21 Jan 71 (A)
3	Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-14.9-R, Commander Levee Enlargement, Plaquemines Parish, Louisiana, Relocation of Facilities	11 Jun 71 (A)
4	Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-10.7-R, Venice Levee Enlargement and Setback, Plaquemines Parish, Louisiana, Relocation of Facilities	6 Apr 71 (A)
5	Lower Red River - South Bank Red River Levees, Item R-117.0-R (1957 Mileage), Levee Enlargement, Rapides-Cotton Bayou Levee, Rapides Parish, Louisiana, Relocation of Facilities	22 Jan 71 (A)
6	Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-31.3-R, Tropical Bend Levee Setback, Plaquemines Parish, Louisiana, Relocation of Facilities	30 Mar 71 (A)
7	Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-10.4-R, Lower Venice Levee Enlargement and Setback, Plaquemines Parish, Louisiana, Relocation of Facilities	27 Aug 71 (A)

STATUS OF DESIGN MEMORANDA (cont'd)

<u>Design Memo No.</u>	<u>Title</u>	<u>Actual (A) or Scheduled (S) Submission Date</u>
8	Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-18.9-R. Fort Jackson-Boothville Levee Enlargement, Plaquemines Parish, Louisiana, Relocation of Facilities	Jan 72 (S)
9	Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-21.5-R, Childress Levee Enlargement, Plaquemines Parish, Louisiana, Relocation of Facilities	23 Sep 71 (A)
10	Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-23.2-R, Buras-Triumph Levee Enlargement and Setback, Plaquemines Parish, Louisiana, Relocation of Facilities	Apr 72 (S)
11	Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-55.3-R, Upper Junior Levee Setback, Plaquemines Parish, Louisiana, Relocation of Facilities	21 Jun 71 (A)
12	Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-51.0-L, Gravolet Levee Enlargement and Setback, Plaquemines Parish, Louisiana, Relocation of Facilities	Not Scheduled
13	Flood Control, Mississippi River and Tributaries, Lower Red River - South Bank Red River Levees, Item R-123.5-R (1957 Mileage), Scott Home-Bertrand Levee Enlargement, Rapides Parish, Louisiana, Relocation of Facilities	Not Scheduled
14	Flood Control, Mississippi River and Tributaries, Mississippi River Levees, Item M-96.9-R, Amelia Street Levee, Jefferson Parish, Louisiana, Relocation of Facilities	31 Aug 71 (A)

FLOOD CONTROL  
MISSISSIPPI RIVER AND TRIBUTARIES  
MISSISSIPPI RIVER LEVEES  
ITEM M-21,5-R  
CHILDRESS LEVEE ENLARGEMENT  
PLAQUEMINES PARISH, LOUISIANA  
RELOCATION OF FACILITIES  
DESIGN MEMORANDUM NO. 9

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<u>Appendix No.</u>	<u>Description</u>
I	LOUISIANA DEPARTMENT OF HIGHWAYS' MINIMUM DESIGN STANDARDS
II	ATTORNEY'S REPORTS
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PERTINENT DATA

The Childress Levee Enlargement, Item M-21.5-R, is required to bring the existing levee up to authorized grade and section. Landside and straddle enlargements were chosen for this area as the most economical sections consistent with sound engineering practices. This enlargement will require a larger levee base which will interfere with existing facilities which are located along the levee. Descriptions of these facilities are briefly outlined in tables 1-3.

TABLE 1 - AFFECTED FACILITIES

ITEM	DESCRIPTION	OWNER	DISPOSITION
P-1	34 KV powerline	Louisiana Power and Light Co.	Relocate
P-2	34 KV powerline	Louisiana Power and Light Co.	Relocate
G-1	2-inch dia. gas line	Delta Gas, Inc.	Relocate
G-2A	2-inch dia. gas line	Delta Gas, Inc.	Relocate
G-2B	2-inch dia. gas line	Delta Gas, Inc.	Relocate
R-1	State Hwy. No. 23	State of Louisiana	Relocate
T-1	Telephone line	South Central Bell Telephone Co.	Relocate
T-2A	Telephone cables	South Central Bell Telephone Co.	Relocate
T-2B	Telephone cables	South Central Bell Telephone Co.	Relocate
W-1	6-inch dia. water line	Plaquemines Parish, Louisiana	Relocate
W-2A	6-inch dia. water line	Plaquemines Parish, Louisiana	Relocate
W-2B	6-inch dia. water line	Plaquemines Parish, Louisiana	Relocate
W-2C	2-inch dia. water line	Plaquemines Parish, Louisiana	Relocate
C-1	6-inch dia. pipeline crossing	G, Pivach	Relocated by others
C-2	8-inch dia. pipeline crossing	M, Lulich	Relocated by others

TABLE 2 - FACILITIES NOT AFFECTED

ITEM	DESCRIPTION	OWNER	DISPOSITION
S-1A	Sewer line	Plaquemines Parish, Louisiana	Not affected
S-1B	Sewer line	Plaquemines Parish, Louisiana	Not affected

TABLE 3 - RELOCATED FACILITIES

ITEM	DESCRIPTION	OWNER	REPLACES
RP-1	34 KV powerline	Louisiana Power and Light Co.	P-1
RP-2	34 KV powerline	Louisiana Power and Light Co.	P-2
RG-1	2" dia. gas line	Delta Gas, Inc.	G-1, G-2A and G-2B
RR-1	State Hwy. No. 23	State of Louisiana	R-1
RT-1	Telephone line	South Central Bell Telephone Co.	T-1
RT-2A	Telephone cables	South Central Bell Telephone Co.	T-2A
RT-2B	Telephone cables	South Central Bell Telephone Co.	T-2B
RW-1	8" dia. water line	Plaquemines Parish, Louisiana	W-1, W-2A, W-2B and W-2C

1. PURPOSE OF DESIGN MEMORANDUM. The purpose of this design memorandum is to present the plans for relocation, alteration, and abandonment of facilities which will be affected by the Childress Levee Enlargement. It is being submitted in compliance with Part 3, Section LXXIII, ER 1180-1-1, dated 1 December 1969, and DIVR 1110-2-1, dated 29 January 1968. It establishes the necessity for the relocations and the legal obligations of the Federal Government. Also, it will serve as the basis for reimbursing the Plaquemines Parish Commission Council for costs incurred in accomplishing the relocations described herein.

2. PROJECT AUTHORIZATION.

a. Authorization. Authority for construction, enlargement or improvement of main line Mississippi River Levees is contained in the Flood Control Act of 15 May 1928 (Public Law 391, 70th Congress), as amended. Pursuant to the requirements of DIVR 1110-2-1, the relocation of public roads, highways, railroads, public utilities, and public pipelines will be accomplished at Federal expense. Reimbursement of costs to local cooperating agencies in perfecting relocation of interfering facilities may be made pursuant to the Act of 23 April 1934 (Public Law 171, 73d Congress).

b. Local Cooperation. The furnishing of rights-of-way for levee foundations and levees on the main stem Mississippi River, except levee setbacks, is an obligation of local interests (see Section 3, Act of 15 May 1928).

3. AUTHORITY FOR ACCOMPLISHING RELOCATIONS. The authority for accomplishing the relocations necessitated by this project is provided by DIVR 1110-2-1. The legal obligations of the Federal Government regarding the affected facilities and the extent of authority for the relocations are as established in the Attorney's Reports which are attached as appendix II.

4. DESCRIPTION OF EXISTING FACILITIES AFFECTED BY THE PROJECT.

a. Existing Facilities Affected by the Levee Enlargement.

(1) Roads. The State of Louisiana owns a two-lane, 20-foot wide, concrete paved highway which is located adjacent to the existing levee. The highway is designated as State Route Louisiana 23 by the Louisiana Department of Highways. Approximately 5,131 linear feet of this highway will be affected by the levee enlargement. The highway has been well maintained and is in good condition. It is shown on plates 2 and 3 as Item R-1. The highway was improved in 1938 and again in 1956. The utilities which will be affected by the highway relocation are described in paragraph 4b.

(2) Powerlines. Louisiana Power and Light Company, a Florida Corporation domiciled at Tallahassee, Florida, owns approximately 6,265 circuit feet of 34 KV electrical distribution line which will be affected by the Childress Levee Enlargement. This facility is shown on plates 2 and 3 as Item P-1. The facility was installed in 1969 and is in good condition.

(3) Telephone lines. South Central Bell Telephone Company, a Delaware corporation domiciled at Wilmington, Delaware, owns approximately 370 feet of 2-wire, overhead telephone line which crosses the levee near station 3232+90 and which will be affected by the levee enlargement. This line is shown on plate 3 as Item T-1. The line was installed in 1969 and is in good condition.

(4) Water lines. Plaquemines Parish, Louisiana, owns approximately 2,330 linear feet of 6-inch diameter potable water main adjacent and parallel to Highway No. 23. This water line is located within the proposed levee right-of-way and will be affected by the Childress Levee Enlargement. This line was installed in 1959 and is in good condition. It is shown on plates 2 and 3 as Item W-1.

(5) Gas lines. Delta Gas, Inc., a Louisiana corporation domiciled at New Orleans, Louisiana, owns approximately 3000 linear feet of 2-inch diameter gas transmission and distribution line which will be affected by the Childress Levee Enlargement. This line is shown on plates 2 and 3 as Item G-1. The line was installed in 1969 and is in good condition.

(6) Others. Two pipelines which cross the levee within the limits of the Childress Levee Enlargement will be affected by the project. One is a 6-inch diameter water line crossing the levee near station 3232+40 (This line is erroneously called an 8-inch diameter pipeline in the Attorney's Report). It is used by the owner, Mr. George Pivach, for irrigation. This pipeline is shown on plate 3 as Item C-1. The

other pipeline is an 8-inch diameter water line crossing the levee near station 3242+00. This line is also used by the owner, Mrs. Mary Lulich, for irrigation. It is shown on plate 3 as Item C-2.

b. Existing Facilities Affected by the Louisiana State Highway No. 23 Relocation. As described in paragraph 4a(1), the Childress Levee Enlargement necessitates the relocation of Highway No. 23. Relocation of this highway will affect other facilities which are adjacent to the existing highway and in the path of the proposed relocated highway. These facilities are described in the following paragraphs.

(1) Powerlines. Louisiana Power and Light Company owns approximately 4,435 circuit feet of 34 KV distribution line which will be affected by the highway relocation. This facility was installed in 1969 and is in good condition. It is shown on plates 2 and 3 as Item P-2.

(2) Telephone lines. South Central Bell Telephone Company owns approximately 790 feet of 50 pair, 10,180 feet of 100 pair and 1,660 feet of 200 pair buried telephone cable located adjacent and parallel to the existing highway which will be affected by the relocation of Highway No. 23. These cables were installed in 1969 and are in good condition. They are shown on plates 2 and 3 as Items T-2A and T-2B.

(3) Water lines. Plaquemines Parish, Louisiana, owns approximately 2,012 linear feet of 6-inch diameter and 207 linear feet of 2-inch diameter potable water main located adjacent and parallel to the existing highway which will be affected by the relocation of Highway No. 23. These lines were installed in 1959 and are in good



condition. They are shown on plates 2 and 3 as Items W-2A, W-2B and W-2C.

(4) Gas lines. Delta Gas, Inc. owns approximately 1,050 linear feet of 2-inch diameter gas distribution and transmission pipeline which will be affected by the highway relocation. This pipeline is shown on plates 2 and 3 as Items G-2A and G-2B. This line was installed in 1969 and is in good condition.

5. OWNER'S COMPENSABLE INTEREST.

a. Roads. The Attorney's Report (see appendix II) finds that the Louisiana Department of Highways has a compensable interest in the entire length of Highway No. 23 affected by this project. The cost of relocation, including right-of-way cost, is considered to be a Federal Government responsibility.

b. Powerlines. The Attorney's Report (see appendix II) finds that Louisiana Power and Light Company has a compensable interest in that portion of their facilities affected by the project which is outside the existing levee right-of-way and that the Federal Government should be responsible for the cost of relocating that portion, including right-of-way cost. Further, the Report finds that this company has no compensable interest in that portion of their facilities affected by the project which is within the existing levee right-of-way; however, it continues to state that pursuant to the provisions of paragraph 73-701, ER 1180-1-1, the cost for relocation, exclusive of right-of-way cost, may be borne

by the Federal Government. Of the total length of powerline affected, 76 percent of Item P-1 and none of Item P-2 is within the existing levee right-of-way.

c. Telephone Lines. The Attorney's Report (see appendix II) finds that South Central Bell Telephone Company has a compensable interest in that portion of their facility affected by this project which is outside the existing levee right-of-way and no compensable interest in that portion of their facility affected by this project which is inside the existing levee right-of-way. Since the entire length of buried cable is outside the existing levee right-of-way, the cost of its relocation, including right-of-way cost, is considered to be a Federal Government responsibility. Since the entire length of the overhead telephone line is inside the existing levee right-of-way, the Attorney's Report finds that the cost for its relocation, exclusive of right-of-way cost, may be borne by the Federal Government.

d. Water Lines and Sewer Lines. The Attorney's Report (see appendix II) finds that Plaquemines Parish, Louisiana, has a compensable interest in the entire length of water line affected by this project. The cost of relocation, including right-of-way cost, is considered to be a Federal Government responsibility. As described in paragraph 12, the sewer lines will not be affected.

e. Gas Lines. The Attorney's Report (see appendix II) finds that Delta Gas, Incorporated has a compensable interest in that portion of their facility affected by this project which is outside the existing

levee right-of-way. Since all of the facility is outside the existing levee right-of-way, the cost of relocation, including right-of-way cost, is a Federal Government responsibility.

f. Others. The Attorney's Report (see appendix II) finds that the pipelines which cross the levee as described in paragraph 4a(6) are not public utility pipelines; therefore, the Federal Government has no responsibility to relocate or adjust these facilities.

6. FIELD RECONNAISSANCE AND INVESTIGATIONS. Descriptive information on existing facilities presented in this memorandum was obtained through field inspection and surveys, aerial photographs, topographical maps, permit records, and correspondence with the owners of the affected facilities.

7. NECESSITY FOR RELOCATIONS.

a. Necessity for Relocations due to Levee Enlargement. The proposed levee enlargement will result in an increase in the size of the levee base and will require that areas riverward of the levee be used for borrow material. The increased size of the levee base will result in the landside toe of the levee being moved landward of its present position. Although every effort was made to avoid interference with existing facilities during the preliminary design stage of the levee enlargement, the limited width of the batture area necessitated either a straddle enlargement or a landside enlargement (see plate 6). Either of these types of enlargement will result in the landside toe of the levee being shifted landward from its present position. Thus, where improvements

have been placed contiguous to the existing levee toe, the enlargement will encroach upon those facilities. The levee enlargement will also result in a higher levee crown elevation. This will require that the powerline and telephone line crossings be raised or removed to provide adequate clearance for the safe construction and maintenance of the new levee enlargement. The location of the proposed borrow areas is in the batture area between the levee and the top of bank of the river.

Because of the limited space available in this area, all facilities located therein will have to be relocated to facilitate obtaining sufficient borrow material for the levee enlargement.

b. Necessity for Relocations due to the Louisiana State Highway No. 23 Relocation. The proposed route of the Highway No. 23 relocation will lie along a strip just outside the new levee right-of-way (see plates 4 and 5). This route will require the shortest length of new roadway and will sever the least amount of land. However, some utilities which lie adjacent to the existing roadway will be in the path of the new route. Grade work and construction operations for the new roadway will interfere with these utilities and will require their relocation.

8. CRITERIA FOR RELOCATED FACILITIES. The policy of the Chief of Engineers regarding facilities to be provided by the Government is set forth in ECI 73-209. The criteria for relocating the existing facilities affected by this project are as follows:

a. Design Standards. The relocated utilities will be the minimum necessary to serve the owners in the same manner and reasonably as well as the existing utilities. The relocated State Highway No. 23 will be built in accordance with the Louisiana Department of Highways' "Minimum Design Standards for Rural Highways and Roads." These standards are included in this memorandum as appendix I. Some variations to these design standards will be made to incorporate a design which better fits the prevailing conditions of the area. The road is classified by the Louisiana Department of Highways as A System, Class 2. This classification requires four traffic lanes. Since the existing roadway has only two traffic lanes, the relocated roadway will be limited to two traffic lanes. Another variation will be in the roadway section to be used. Since land area is at a premium in this area and since the land adjacent to the roadway is zoned commercial, a "city" roadway section will be used along a portion of the proposed route instead of the "country" section on which some of the criteria in the design standards are based. The "city" roadway section incorporates curbs, gutters and subsurface drainage as opposed to open ditch drainage incorporated with the "country" section. However, the "city" section reduces the right-of-way required for the relocated roadway, and its overall cost will be lower than that of a "country" section. The extended length of the relocated roadway at the upper end (see plate 4) is necessary for a safe and properly designed transition from the relocated roadway to the existing roadway. The

relocated roadway will be two feet wider than the existing roadway. It will also have a greater degree of super-elevation at the curves than the existing roadway. These differences are in accord with the Louisiana Department of Highways' latest design standards. The Department's standard practice for transitioning roads built to present standards into those which were built to less restrictive previous standards is to locate the transition where a long tangent of existing roadway precedes entry onto the roadway improved to current standards.

b. Betterments.

(1) Powerlines. The proposed location of the relocated powerline, Item RP-2, requires an additional 1,769 circuit feet of 34 KV line above that required over the shortest possible route. This extra length is considered a betterment and the cost thereof will be borne by the owner, Louisiana Power and Light Company. The cost of this betterment is presented in Table 5 as \$2,300.

(2) Water lines. The existing 2-inch and 6-inch diameter water lines, Items W-1, W-2A, W-2B, and W-2C will be replaced with 4,422 linear feet of 8-inch diameter water line. The number of fire hydrant assemblies will be increased from four to nine. The additional cost for the larger diameter pipe and the additional fire hydrant assemblies is considered to be a betterment and will be borne by the owner, Plaquemines Parish, Louisiana. The cost of these betterments is presented in Table 7 as \$8,250.

9. DESCRIPTION OF PROPOSED RELOCATIONS.

a. General. The proposed relocations will replace those facilities affected by the levee enlargement and the highway relocation. The descriptions of the existing facilities given in paragraph 4 were segmented so that the location of the facility and the cause for relocation could be better defined. In some cases the description of the proposed relocations given in this paragraph will be for a facility which will replace more than one of those segments of the existing facility. This is necessary because the existing facility, though segmented for description in this memorandum, is physically one facility.

b. Roads. The State of Louisiana Department of Highways will relocate the existing Highway No. 23, Item R-1, to a right-of-way acquired adjacent to the proposed landside levee right-of-way. This relocated highway is shown on plates 4 and 5 as Item RR-1. Authority for acquisition of the highway right-of-way in advance of approval of the relocation design memorandum was received by LMVBC (NOD 26 Jun 70) 1st Ind of 8 Jul 70. The relocated roadway will have a Portland cement concrete pavement, 8-inches thick and 22-feet to 27,5-feet wide. The relocated length of roadway will be 5,110 feet. Typical sections of the proposed roadway are shown on plate 7. The proposed location of the relocated roadway is considered the most desirable considering interference with other facilities, conservation of available land area, and most economical overall plan.

c. Powerlines. Louisiana Power and Light Company will relocate their existing powerlines, Items P-1 and P-2, in order to avoid interference with the project. Item P-1, which will be dislocated by the levee enlargement, will be relocated from approximate levee station 3194+55 to a point adjacent to Highway No. 23 at approximate levee station 3199+90. At this point, the relocated powerline will tie in to the existing powerline, Item P-2, and will continue undisturbed alongside the highway to approximate station 3213+50. Beginning at this point, Item P-2 will be dislocated by the relocation of Highway No. 23. The relocation of Item P-1 will continue adjacent to the relocated highway, constructed just outside the proposed Highway No. 23 right-of-way, to approximate levee station 3257+20 where it will again tie in to the existing Item P-2. As explained previously, the relocation of Item P-2 will be required between approximate stations 3213+50 and 3255+55. Louisiana Power and Light Company chooses to relocate this facility to an alignment adjacent to a proposed 4-lane highway. This requires a greater length of relocated powerline over that required by the project and is considered to be a betterment to the extent of the additional length as explained in paragraph 8b(1). The relocation of Items P-1 and P-2 are shown on plates 4 and 5 as Items RP-1 and RP-2, respectively.

d. Telephone Lines. South Central Bell Telephone Company will relocate their existing buried telephone cable, Item T-2A, two feet inside the proposed riverward highway right-of-way. This relocated cable is shown as Item RT-2A on plate 4. It consists of 1,000 feet of



100 pair, 24 gauge cable placed in 880 linear feet of trench. The cable will connect with closures at frequent intervals. The remaining buried cable, Item T-2B, will be relocated ten feet inside the proposed landward highway right-of-way. This facility will consist of multi-cables as follows: (1) 1,675 feet of 200 pair, 22 gauge cable beginning at the upper end of the highway relocation; (2) 4,300 feet of 100 pair, 24 gauge cable beginning at the upper end of the highway relocation connected to and continuing as 800 feet of 50 pair, 24 gauge cable; (3) 4,950 feet of 100 pair, 22 gauge toll cable located the entire length of the trench. These cables are located in a single trench 4,900 feet in length. Each cable is connected to closures at various locations along the relocated route. This relocated facility is shown on plates 4 and 5 as Item RT-2B. The overhead 2-wire telephone cable, Item T-1, will be removed to permit construction of the levee enlargement. Upon completion of the levee work, the line will be replaced. The location of this adjusted facility is shown on plate 5 as Item RT-1. It will consist of 370 linear feet of 2-wire telephone line.

e. Water Lines. Plaquemines Parish, Louisiana, will replace their existing water lines, Items W-1, W-2A, W-2B, and W-2C, with one continuous 8-inch diameter pipeline 4,422 feet in length. Betterments involved in the relocation of these water lines are discussed in paragraph 8b(2). This relocated facility will be placed five feet inside the proposed landward highway right-of-way. Lateral lines connected to the existing

water main will be severed and connected to the proposed 8-inch line. The proposed relocated water line is shown on plates 4 and 5 as Item RW-1.

f. Gas Lines. Delta Gas, Incorporated will not remove their existing gas lines, Items G-1, G-2A, and G-2B, since the removal cost would exceed the salvage value. Only the meters and 2-inch regulators on these lines will be removed. These gas lines will be relocated with 4,106 linear feet of new 2-inch diameter gas line located 2 feet inside the proposed landward highway right-of-way. The 1-inch diameter gas service lines leading from the existing 2-inch line will be intercepted by and connected to the new 2-inch line providing service essentially the same as that now provided. This relocated gas line is shown on plates 4 and 5 as Item RG-1.

g. Others. The owners of the pipeline crossings described in paragraph 4a(6) will raise these pipes to cross the levee above the proposed levee section.

#### 10. PROCEDURE FOR ACCOMPLISHING RELOCATIONS.

a. Roads. The Louisiana Department of Highways plans to relocate Highway No. 23 in accordance with the plan presented in this design memorandum prior to approval of this memorandum. Upon approval of this design memorandum and in accordance with the Flood Control Act of 1938, this District will enter into a cost-reimbursable contract with the Louisiana Department of Highways to cover work already in progress.

b. Utilities. The procedure to be followed in effecting reimbursement for the utility relocations necessitated by the Childress Levee Enlargement has been discussed with representatives of the Plaquemines Parish Commission Council. Upon approval of this design memorandum and related Real Property Appraisal Reports where applicable, the Plaquemines Parish Commission Council being the governing body of the Buras Levee District, the local assuring agency, will be requested to accomplish all utility relocations described herein. The relocations will be accomplished in accordance with the approved design memorandum subject to reimbursement of actual cost. Upon completion of the relocation, the Plaquemines Parish Commission Council will furnish a reimbursement assembly to this District consisting of: (1) a copy of any contracts covering work performed by others; (2) itemized billings for labor and materials for work performed by themselves; (3) a copy of all canceled checks covering related payments. All records related to the reimbursement requests will be subject to audit by the Federal Government and original time cards or payrolls, material records, and accounts for all charges and expenditures for which reimbursement will be claimed from the Federal Government will be available at all reasonable times for Federal Government inspection. So far as practicable, separate records will be maintained for all items and accounts constituting the basis of information from which the reimbursement assembly is prepared.

11. ATTITUDE OF OWNERS. Representatives of all organizations whose facilities will be affected by this project have indicated their

willingness to cooperate in matters pertaining to the project. They have responded satisfactorily to all request for information. No difficulties are expected during the accomplishment and subsequent reimbursement for the relocations,

12. UNAFFECTED FACILITIES, Plaquemines Parish, Louisiana owns two sewer lines located adjacent to Highway No. 23 which will not be affected by the levee enlargement or the highway relocation. These lines, which are outside the limits of the proposed levee enlargement, are located such that they will not be disturbed by the excavation work required for the highway relocation. These sewer lines are shown on plate 2 as Items S-1A and S-1B.

13. COST ESTIMATES, The Government estimates of cost for accomplishing the proposed relocations have been computed in accordance with the policy set forth in ER 1180-1-1 and are generally based on plans for relocation as proposed by the various owners. These estimates are presented in tables 4 thru 8 which follow.

TABLE 4 - ESTIMATE OF COST 1/

Louisiana Department of Highways  
(June 1971 Price Levels)

COST ACCT NO	: :DESCRIPTION	: :UNIT	: :QUANTITY	:UNIT :COST (\$)	: :AMOUNT (\$)
02	Relocations				
.1	Roads				
	Item RR-1, Relocate Highway No. 23	foot	5,110	59.50	304,000
	Contingencies (25% <u>+</u> )				76,000
	Subtotal				380,000
30	E & D (6% <u>+</u> )				23,000
31	S & A (6% <u>+</u> )				23,000
	Subtotal				426,000
	Right-of-way cost				154,300 <u>2/</u>
	TOTAL				\$580,300

1/ For detailed cost estimate see appendix III

2/ R/W cost includes \$145,300 for right-of-way and \$9,000 for estimated cost of benefits allowable under the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970.

TABLE 5 - ESTIMATE OF COST

Louisiana Power and Light Company  
(June 1971 Price Levels)

COST ACCT NO	: :DESCRIPTION	: :UNIT	: :QUANTITY	:UNIT :COST (\$)	: :AMOUNT (\$)
02	Relocations				
.3	Utilities				
	Item RP-1, Relocate 34 KV powerline	feet	4,961	1.30	6,450
	Item RP-2, Relocate 34 KV powerline	feet	7,654	1.30	9,950
	Relocation Cost				16,400
	Less Betterment				2,300 <u>1/</u>
	Subtotal				14,100
	Less Depreciation				0 <u>2/</u>
	Less Salvage Value				0 <u>2/</u>
	Subtotal				14,100
	Plus Removal Cost				7,100
	Subtotal				21,200
	Contingencies (25% <u>+</u> )				5,300
	Subtotal				26,500
30	E & D (6% <u>+</u> )				1,600
31	S & A (6% <u>+</u> )				1,600

TABLE 5 (CONT'd)

COST ACCT NO	: DESCRIPTION	: UNIT	: QUANTITY	:UNIT :COST (\$)	: AMOUNT (\$)
	Subtotal				29,700
	Right-of-way cost				1,500 <u>3/</u>
	TOTAL				\$31,200

- 1/ The powerline will be relocated to a location farther removed than that required to perform the same function as the existing powerline. The cost for the 1,769 feet of extra length required for this is considered a betterment and will be borne by the owner.
- 2/ No new materials were included in the estimate as existing materials will be used on the relocated facility, This will not extend the expected life of the facility.
- 3/ Includes only 24% of the right-of-way cost for Item P-1 (\$400) which was compensable and all of the right-of-way cost for Item P-2 (\$1,100) which was compensable.

TABLE 6 - ESTIMATE OF COST

South Central Bell Telephone Company  
(June 1971 Price Levels)

COST ACCT NO	: :DESCRIPTION	: :UNIT	: :QUANTITY	:UNIT :COST (\$)	: :AMOUNT (\$)
02	Relocations				
.3	Utilities				
	Item RT-1, Adjust overhead 2-wire telephone line	feet	370	1.00	370
	Item RT-2A, Relocate 100 pr, 24 gauge, buried cable	feet	880	2.10	1,850
	Item RT-2B, Relocate multi-buried cables as follows: 100 pr, 24 gauge; 200 pr, 22 gauge; 50 pr, 24 gauge; and 100 pr, 22 gauge toll in single trench	feet	4,900	4.00	19,600
	Relocation Cost				21,820
	Less Depreciation				(1,360) <u>1/</u>
	Subtotal				20,460
	Less Salvage Value				0
	Subtotal				20,460



TABLE 6 (CONT'd)

COST ACCT NO	:DESCRIPTION	:UNIT	:QUANTITY	UNIT :COST (\$)	:AMOUNT (\$)
	Contingencies (25%+)				5,140
	Subtotal				25,600
30	E & D (6%+)				1,500
31	S & A (6%+)				1,500
	TOTAL				\$28,600

1/ Based on 32-year life; average age of facilities is 2 years.

TABLE 7 - ESTIMATE OF COST

Plaquemines Parish Water Line  
(June 1971 Price Levels)

COST ACCT NO	:DESCRIPTION	:UNIT	:QUANTITY	UNIT :COST (\$)	:AMOUNT (\$)
02	Relocations				
.3	Utilities				
	Item RW-1, Relocate 6 inch diameter water line	LF	4,422	6.75	29,850
	Relocation cost				29,850
	Less Salvage Value				0 <u>1/</u>
	Subtotal				29,850
	Plus Removal Cost				0 <u>1/</u>
	Subtotal				29,850
	Less Betterments				(8,250) <u>2/</u>
	Subtotal				21,600
	Less Depreciation				(3,450) <u>3/</u>
	Subtotal				18,150
	Contingencies (25% <u>+</u> )				4,550
	Subtotal				22,700
30	E & D (6% <u>+</u> )				1,400
31	S & A (6% <u>+</u> )				1,400
	TOTAL				\$25,500

1/ Existing water line to be abandoned as scrap.

TABLE 7 (CONT'd)

---

2/ Betterments include increase in pipe size from 6-inch diameter to 8-inch diameter and increase in number of fire hydrant assemblies from 4 to 9.

3/ Depreciation based on 75 year life; average age of facility is 12 years.

TABLE 8 - ESTIMATE OF COST

Delta Gas, Inc.  
(June 1971 Price Levels)

COST ACCT NO	:DESCRIPTION	:UNIT	:QUANTITY	UNIT :COST (\$)	:AMOUNT (\$)
02	Relocations				
.3	Utilities				
	Item RG-1, Relocate 2" diameter gas line	LF	4,106	4.40	18,070
	Relocation Cost				18,070
	Less Depreciation				(1,200) <u>1/</u>
	Subtotal				16,870
	Less Salvage Value				(3,850) <u>2/</u>
	Subtotal				13,020
	Plus Removal Cost				1,480 <u>2/</u>
	Subtotal				14,500
	Contingencies (25%+)				3,600
	Subtotal				18,100
30	E & D (6%+)				1,100
31	S & A (6%+)				1,100
	TOTAL				\$20,300

1/ Based on 30-year life; average age of facility is 2 years

2/ Only meters and 2-inch regulators will be removed and salvaged.

14. PROJECT COST ESTIMATE. The estimated amounts to be included in the project cost estimate for relocations on the Childress Levee Enlargement item are shown in the following table. The costs are based on June 1971 price levels,

COST ACCT NO	ITEM	ESTIMATED COST (\$)
02	Relocations	628,700
.1	Roads	534,300
	Hwy #23	(380,000)
	Hwy #23 R/W	(154,300)
	Utilities	94,400
	LP&L Powerline	(26,500)
	LP&L R/W	(1,500)
	South Central Bell	(25,600)
	Plaquemines Parish Water Line	(22,700)
	Delta Gas, Inc.	(18,100)
30	E & D	28,600
31	S & A	28,600
	TOTAL	\$685,900

15. COMPARISON WITH PRIOR COST ESTIMATES. The latest cost estimate submitted for approval is the Detailed Project Schedule for the Mississippi River Levees project (PB-2A, effective date of 1 July 1971). The itemized cost for Relocations, Childress Levee Enlargement, appears on

lines 6 and 22 of page 1 of that submission. A comparison of estimates given in this memorandum against those last submitted is shown in the following table.

COST ACCT NO	ITEM	DM#9 (1,000's \$)	PB-2A (1,000's \$)	DIFFERENCE
02.1	Hwy 23 Const	380.0	358.5	+21.5
02.1	Hwy 23, R/W	154.3	170.0 <u>1/</u>	-15.7
02.3	Utilities	94.4	167.0	-72.6
30	E & D	28.6	31.5	- 2.9
31	S & A	28.6	31.5	- 2.9
	TOTALS	685.9	758.5	-72.6

1/ This amount (\$170,000) was not itemized on the latest PB-2A, but was projected as completed work as of 30 June 1971. This expenditure was authorized for purchase of Hwy No. 23 right-of-way by LMVBC (NOD 26 Jun 70) 1st Ind of 8 Jul 70. Actual expenditures for this right-of-way were \$145,300 in lieu of the \$170,000 projected on the latest PB-2A. An additional \$9,000 will be required for benefits allowable under the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970.

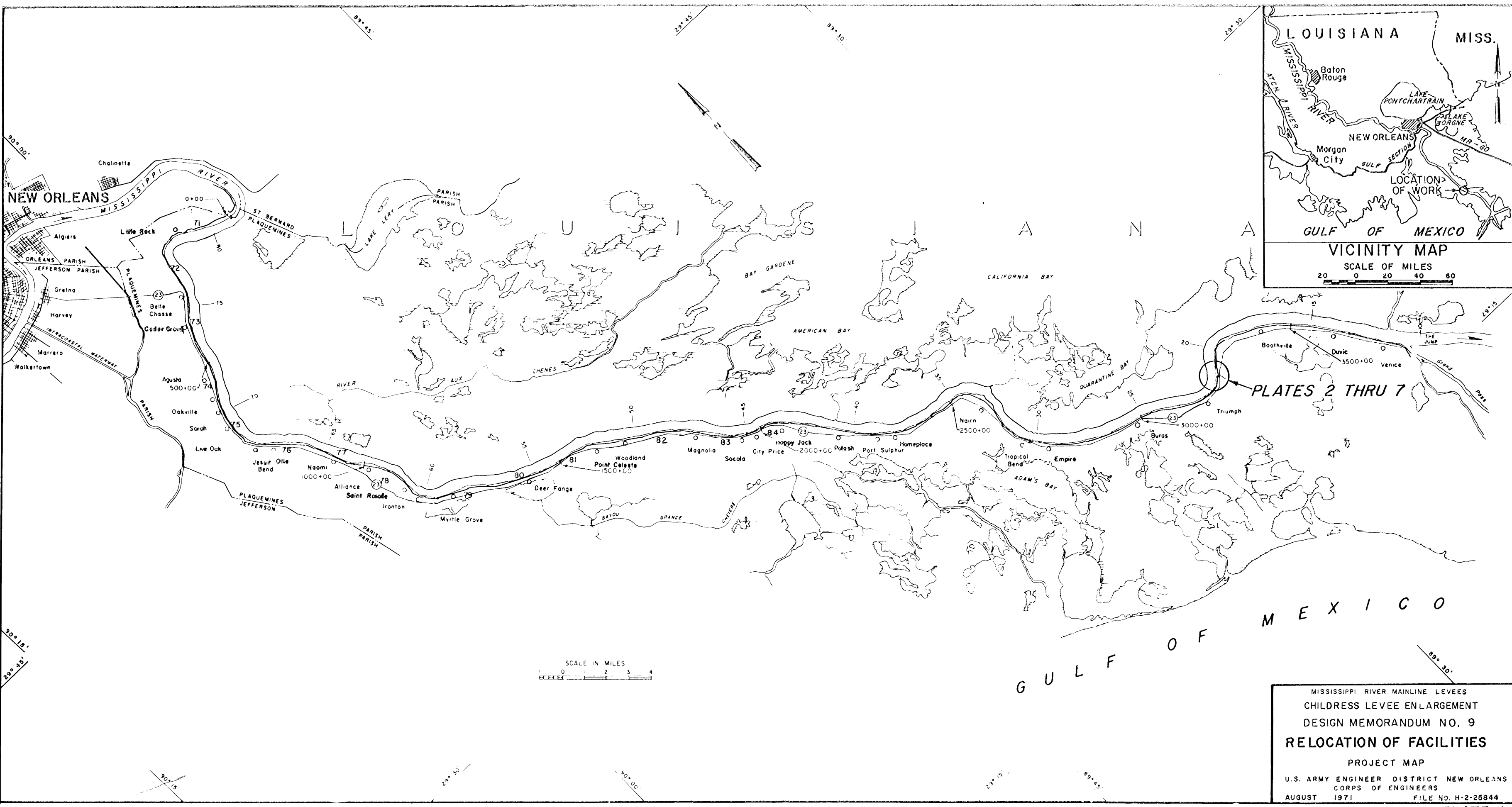
16. JUSTIFICATION FOR COST REVISION.

a. Roads. The increase in cost (\$21,500) for the relocation of Highway No. 23 is due to increasing the contingencies from 15% to 25% of the construction cost. The decrease in the cost (\$15,700) of the Highway No. 23 right-of-way is due to a higher order appraisal of the value and amount of right-of-way required for the road relocation.

b. Utilities. The decrease in cost (\$72,600) for the relocation of the utilities is due to a revision in the quantity of affected utilities

based on correspondence with owners, offset somewhat by an upward revision in contingencies from 15 percent to 25 percent of the construction costs.

17. CONCLUSION AND RECOMMENDATION. The remedial measures proposed in this memorandum are considered necessary to prevent the affected facilities from interfering with the Childress Levee Enlargement. These measures are the minimum required to provide just compensation to the owners of the affected facilities. The proposed measures are practicable, economical, and consistent with sound engineering practices and are considered to be in the best interest of the Government in discharging its legal obligations. It is recommended that this memorandum be approved as a basis for reimbursing the Plaquemines Parish Commission Council and as a basis for negotiating a cost-reimbursable contract with the Louisiana Department of Highways for costs incurred in accomplishing the relocations herein described.

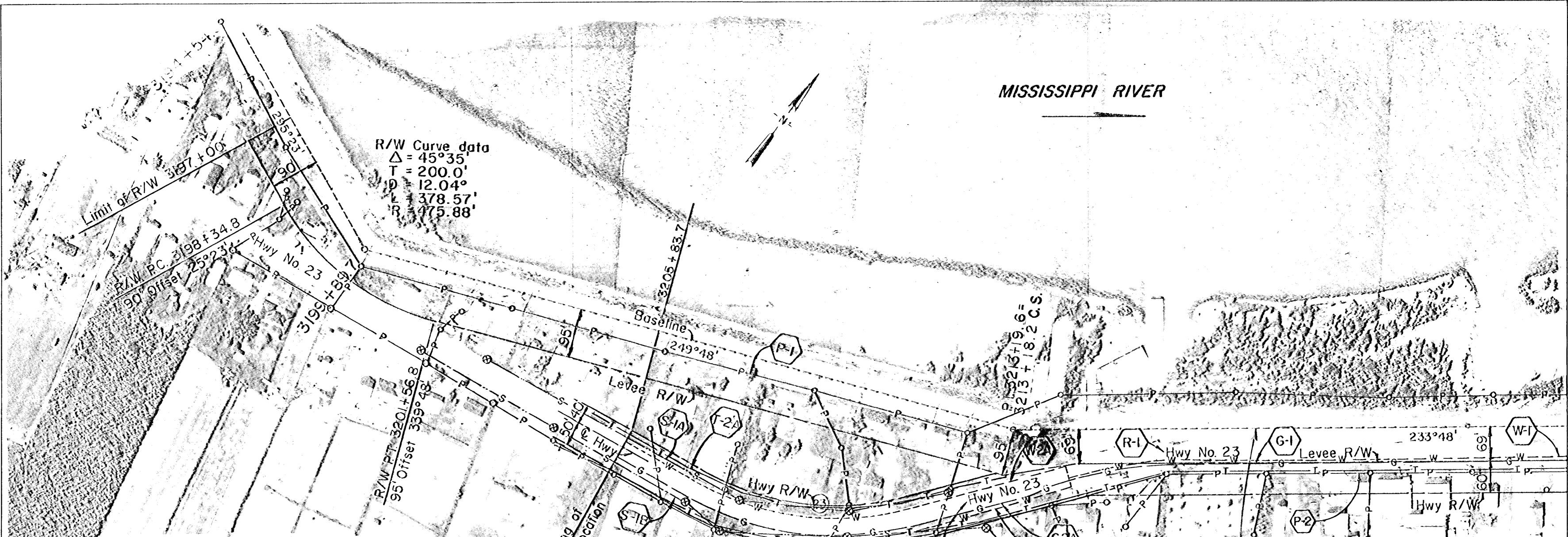


PLATES 2 THRU 7

MISSISSIPPI RIVER MAINLINE LEVEES  
 CHILDRESS LEVEE ENLARGEMENT  
 DESIGN MEMORANDUM NO. 9  
 RELOCATION OF FACILITIES  
 PROJECT MAP  
 U.S. ARMY ENGINEER DISTRICT NEW ORLEANS  
 CORPS OF ENGINEERS  
 AUGUST 1971 FILE NO. H-2-25844



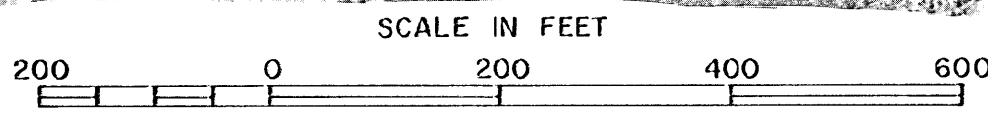
MISSISSIPPI RIVER



R/W Curve data  
 $\Delta = 45^{\circ}35'$   
 $T = 200.0'$   
 $\theta = 12.04^{\circ}$   
 $L = 378.57'$   
 $R = 475.88'$

FACILITIES TO BE RELOCATED

ITEM NO.	TYPE	STATION	OWNER	DISPOSITION					
P-1	34 KV Powerline	3197+00 - 3257+20	La. Power & Light	Relocate					
P-2	34 KV Powerline	3213+50 - 3255+55	La. Power & Light	Relocate					
R-1	Hwy No. 23	3205+83.7 - 3257+15.4	State of La.	Relocate	W-2A	6" dia. Waterline	3212+75 - 3215+80	Plaquemines Parish	Relocate
G-2A	2" dia. Gasline	3205+83.7 - 3216+20	Delta Gas, Inc.	Relocate	W-2C	2" dia. Waterline	3212+75 - 3214+20	Plaquemines Parish	Relocate
G-1	2" dia. Gasline	3216+20 - 3245+15	Delta Gas, Inc.	Relocate	T-2A	Buried Tele. Cable	3205+60 - 3213+19	So. Central Bell	Relocate
S-IA	Sewerline	3202+80 - 3212+30	Plaquemines Parish	Not Affected	T-2B	Buried Tele. Cable	3205+83.7 - 3253+35	So. Central Bell	Relocate
S-IB	Sewerline	3204+40 - 3213+19	Plaquemines Parish	Not Affected	W-1	6" dia. Waterline	3215+80 - 3238+90	Plaquemines Parish	Relocate



NOTES:  
 POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM  
 CONTROLLED MOSAIC PREPARED FROM AERIAL PHOTOS  
 FLOWN 22-29 OCTOBER 1966  
 PHOTOGRAPHY REPRESENTS PRE-CAMILLE CONDITIONS

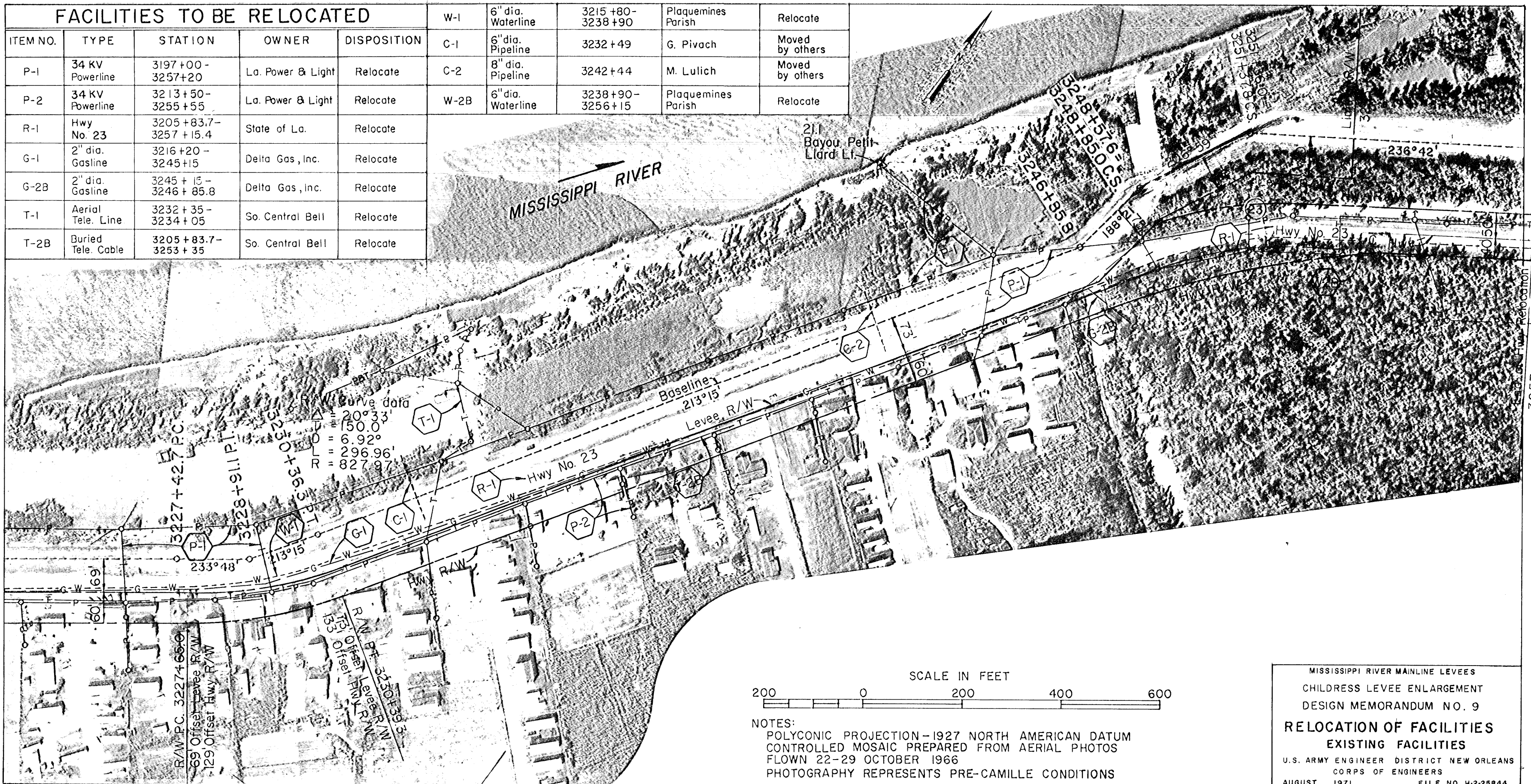
MISSISSIPPI RIVER MAINLINE LEVEES.  
 CHILDRESS LEVEE ENLARGEMENT  
 DESIGN MEMORANDUM NO. 9  
**RELOCATION OF FACILITIES**  
 EXISTING FACILITIES  
 U.S. ARMY ENGINEER DISTRICT NEW ORLEANS  
 CORPS OF ENGINEERS  
 AUGUST 1971 FILE NO. H-2-25844



# FACILITIES TO BE RELOCATED

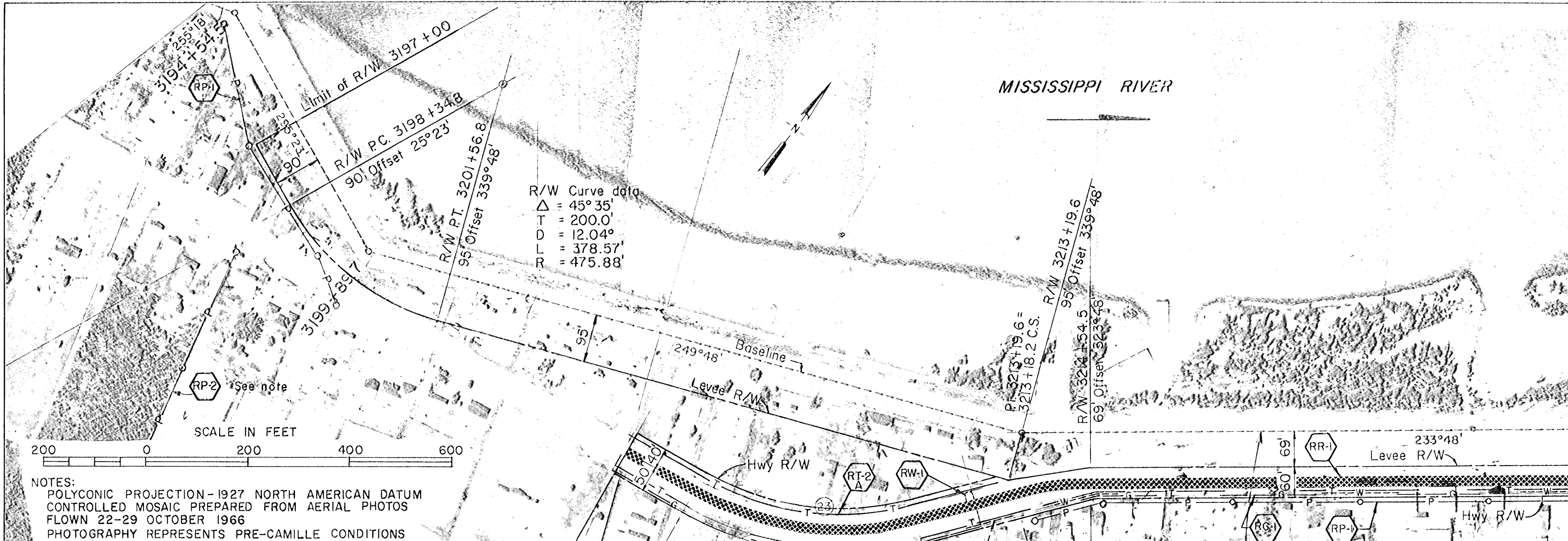
ITEM NO.	TYPE	STATION	OWNER	DISPOSITION
P-1	34 KV Powerline	3197+00 - 3257+20	La. Power & Light	Relocate
P-2	34 KV Powerline	3213+50 - 3255+55	La. Power & Light	Relocate
R-1	Hwy No. 23	3205+83.7 - 3257+15.4	State of La.	Relocate
G-1	2" dia. Gasline	3216+20 - 3245+15	Delta Gas, Inc.	Relocate
G-2B	2" dia. Gasline	3245+15 - 3246+85.8	Delta Gas, Inc.	Relocate
T-1	Aerial Tele. Line	3232+35 - 3234+05	So. Central Bell	Relocate
T-2B	Buried Tele. Cable	3205+83.7 - 3253+35	So. Central Bell	Relocate

W-1	6" dia. Waterline	3215+80 - 3238+90	Plaquemines Parish	Relocate
C-1	6" dia. Pipeline	3232+49	G. Pivach	Moved by others
C-2	8" dia. Pipeline	3242+44	M. Lulich	Moved by others
W-2B	6" dia. Waterline	3238+90 - 3256+15	Plaquemines Parish	Relocate



NOTES:  
 POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM  
 CONTROLLED MOSAIC PREPARED FROM AERIAL PHOTOS  
 FLOWN 22-29 OCTOBER 1966  
 PHOTOGRAPHY REPRESENTS PRE-CAMILLE CONDITIONS

MISSISSIPPI RIVER MAINLINE LEVEES  
 CHILDRESS LEVEE ENLARGEMENT  
 DESIGN MEMORANDUM NO. 9  
**RELOCATION OF FACILITIES**  
**EXISTING FACILITIES**  
 U.S. ARMY ENGINEER DISTRICT NEW ORLEANS  
 CORPS OF ENGINEERS  
 AUGUST 1971 FILE NO. H-2-25844



R/W Curve data  
 $\Delta = 45^\circ 35'$   
 $T = 200.0'$   
 $D = 12.04^\circ$   
 $L = 378.57'$   
 $R = 475.88'$

Hwy Curve data  
 $\Delta = 45^\circ 00'$   
 $D = 10^\circ 00'$   
 $T = 237.33'$   
 $L = 450.00'$   
 $R = 572.96'$

Hwy Curve data  
 $\Delta = 14^\circ 32'$   
 $D = 9^\circ 42'$   
 $T = 75.32'$   
 $L = 149.83'$   
 $R = 590.68'$

NOTES:  
 POLYCONIC PROJECTION-1927 NORTH AMERICAN DATUM  
 CONTROLLED MOSAIC PREPARED FROM AERIAL PHOTOS  
 FLOWN 22-29 OCTOBER 1966  
 PHOTOGRAPHY REPRESENTS PRE-CAMILLE CONDITIONS

**RELOCATED FACILITIES**

ITEM NO.	TYPE	STATION	OWNER	DISPOSITION
RR-1	Hwy No. 23	3205+83.7 - 3257+15.44	State of La.	Relocated
RW-1	8" dia. Waterline	3212+75 - 3256+15	Plaquemines Parish	"
RG-1	2" dia. Gasline	3205+83.7 - 3246+85.8	Delta Gas, Inc.	"
RP-1	34 KV Powerline	3194+55-3199+90 3213+50-3257+20	La. Power & Light	"
RP-2	34 KV Powerline	3198+65 - 3255+55	La. Power & Light	"
RT-2 A	Buried Tele. Cable	3205+60 - 3213+19	So. Central Bell	"
RT-2 B	Buried Tele. Cable	3205+83.7 - 3253+35	"	"

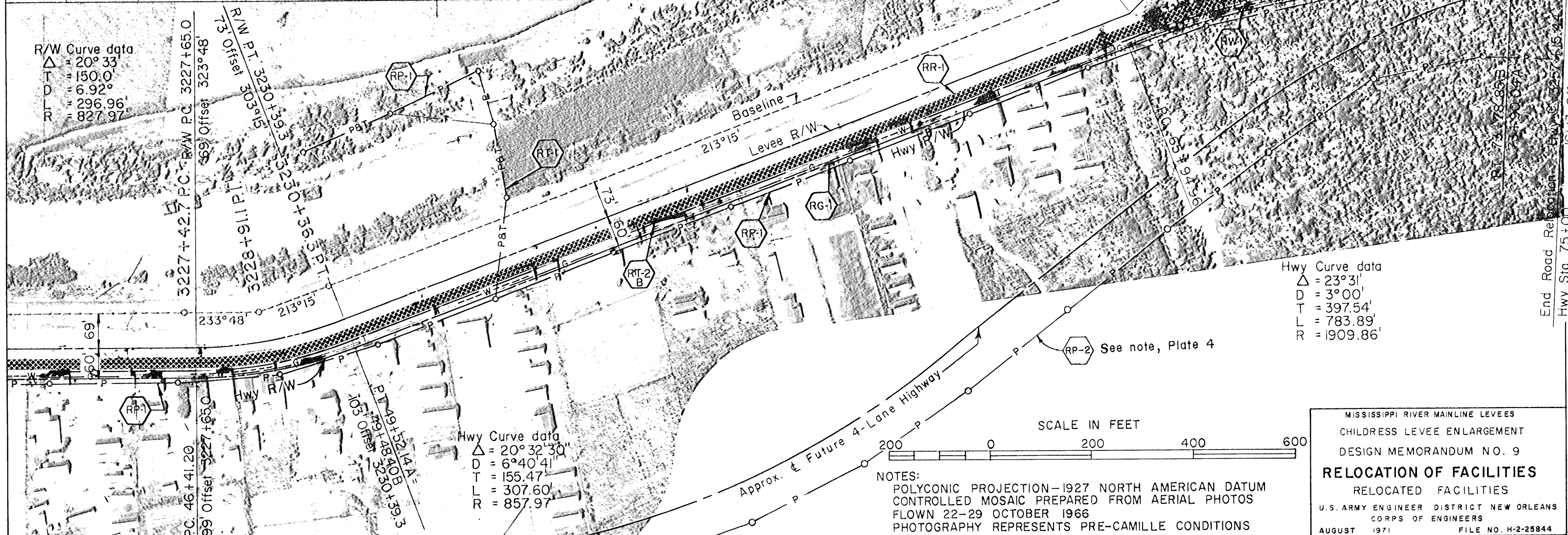
Note:  
 The powerline, item RP-2, will be relocated to follow the landward R/W limits of the proposed 4-lane highway.

MISSISSIPPI RIVER MAINLINE LEVEES  
 CHILDRESS LEVEE ENLARGEMENT  
 DESIGN MEMORANDUM NO. 9  
**RELOCATION OF FACILITIES**  
 RELOCATED FACILITIES  
 U.S. ARMY ENGINEER DISTRICT NEW ORLEANS  
 CORPS OF ENGINEERS  
 AUGUST 1971 FILE NO. H-2-25844



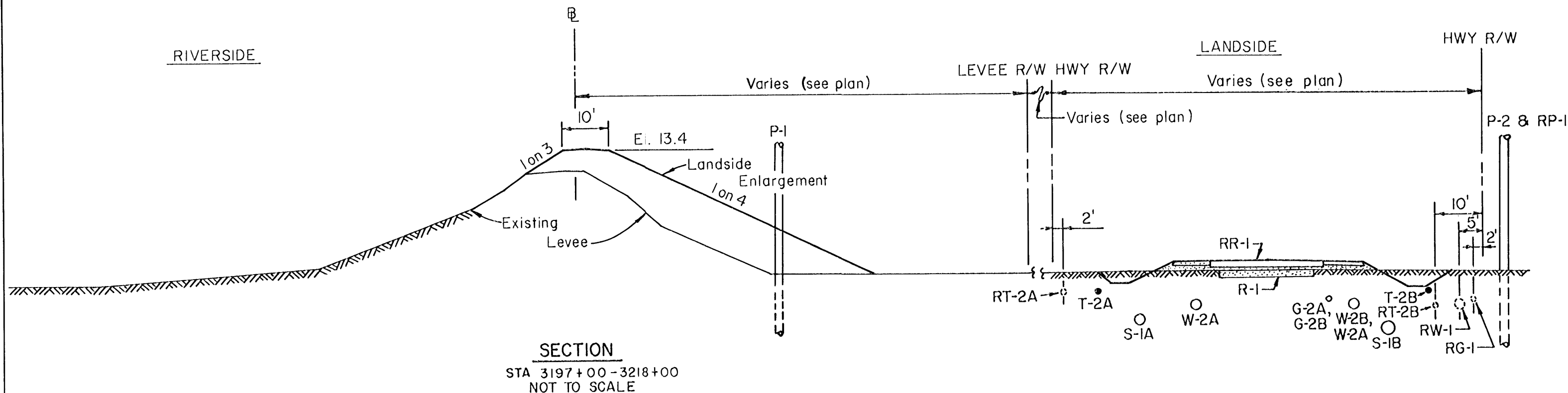
# RELOCATED FACILITIES

ITEM NO.	TYPE	STATION	OWNER	DISPOSITION
RR-1	Hwy No. 23	3205 + 83.7 - 3257 + 15.44	State of La.	Relocated
RW-1	8" dia. Waterline	3212 + 75 - 3256 + 15	Plaquemines Parish	II
RG-1	2" dia. Gasline	3205 + 83.7 - 3246 + 85.8	Delta Gas, Inc.	II
RP-1	34 KV Powerline	3194+55-3199+90 3213+50-3257+20	La. Power & Light	II
RP-2	34 KV Powerline	3198 + 65 - 3255 + 55	"	II
RT-1	Aerial Tele. Line	3233+06	So. Central Bell	II
RT-2 B	Buried Tele Cable	3205 + 83.7 - 3253 + 35	"	II

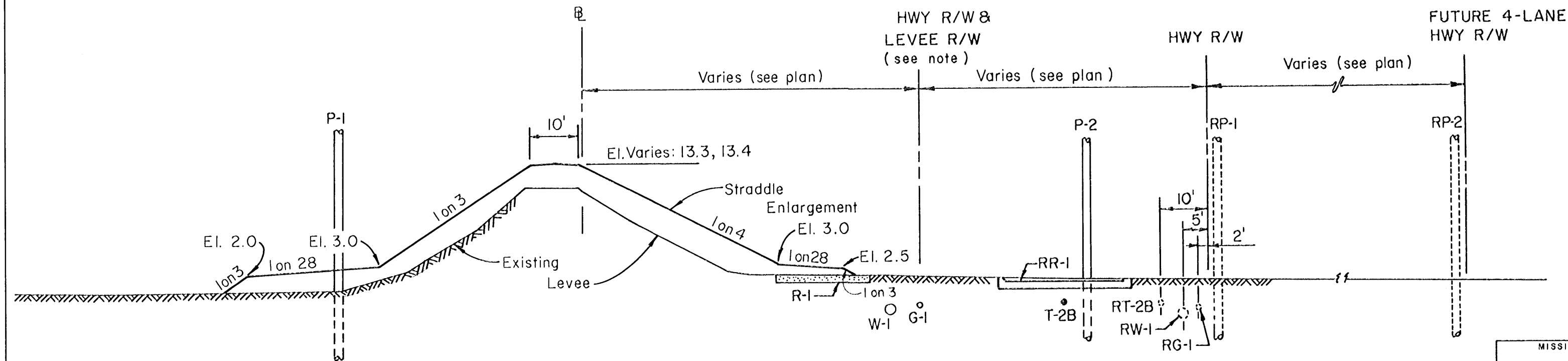


RIVERSIDE

LANDSIDE



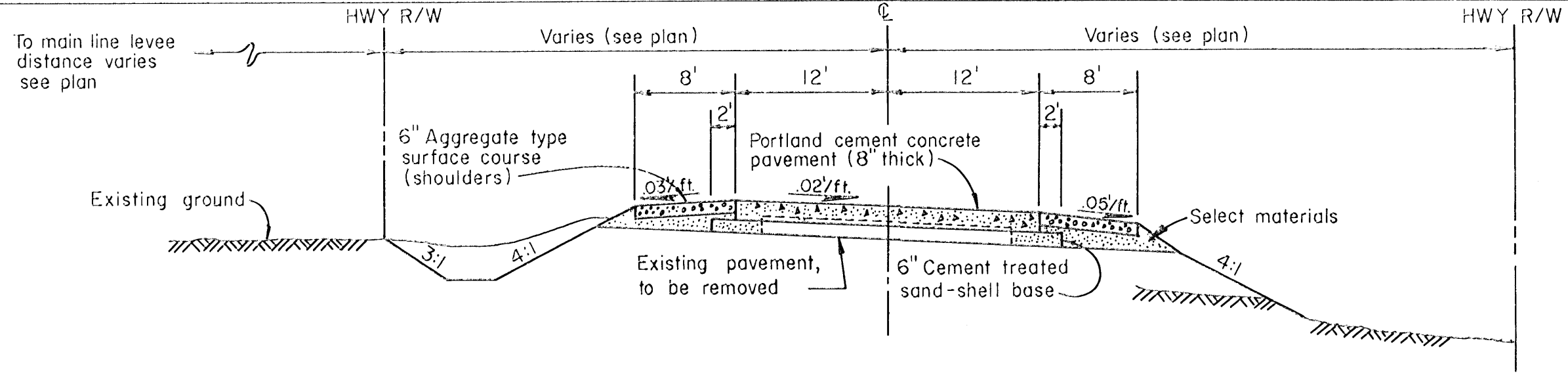
SECTION  
STA 3197+00 - 3218+00  
NOT TO SCALE



SECTION  
STA 3218+00 - 3253+50  
NOT TO SCALE

Note:  
Hwy. R/W & Levee R/W are divergent  
between Stations 3248+57.6 & 3253+50.  
(see plan)

MISSISSIPPI RIVER MAINLINE LEVEES  
 CHILDRESS LEVEE ENLARGEMENT  
 DESIGN MEMORANDUM NO. 9  
**RELOCATION OF FACILITIES**  
 TYPICAL SECTIONS  
 U.S. ARMY ENGINEER DISTRICT NEW ORLEANS  
 CORPS OF ENGINEERS  
 AUGUST 1971 FILE NO. H-2-25844



**SECTION**  
 HWY STA  
 23+50 - 33+70  
 65+14.96 - 75+00  
 NOT TO SCALE

**SUBSURFACE DRAINAGE**

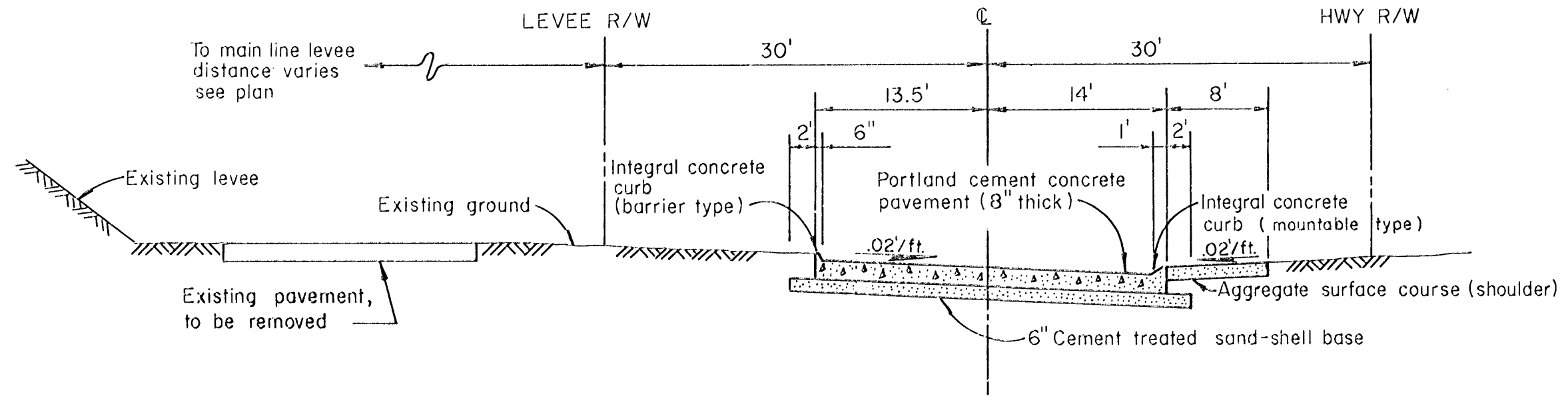
**LEVEE SIDE**

15" A.B.C.M.P. STA. 45+50 - STA. 48+50  
 CATCH BASINS AT STATIONS 35+00,  
 37+00, 43+00, 45+50, 47+00 (TWO),  
 48+50, 52+14, 55+18, 57+80, 59+20,  
 AND 63+84

**LAND SIDE**

15" A.B.C.M.P. STA. 44+00 - STA. 45+50  
 STA. 52+14 - STA. 55+18  
 STA. 57+80 - STA. 61+26  
 STA. 62+80 - STA. 63+84  
 18" A.B.C.M.P. STA. 35+00 - STA. 39+00  
 STA. 43+00 - STA. 44+00  
 STA. 55+18 - STA. 57+80  
 STA. 63+84 - STA. 65+44

29"X18" A.B.C.M.P.A. STA. 39+00 - STA. 43+00  
 CATCH BASINS AT STATIONS 35+00, 37+00,  
 39+00, 40+94, 43+00, 44+00, 45+50,  
 52+14, 53+68, 55+18, 57+00, 57+80,  
 59+20, 60+22, 61+26, 62+80, AND 63+84  
 MANHOLE AT STA. 65+44



**SECTION**  
 HWY STA  
 33+70 - 65+14.96  
 NOT TO SCALE

MISSISSIPPI RIVER MAINLINE LEVEES  
 CHILDRESS LEVEE ENLARGEMENT  
 DESIGN MEMORANDUM NO. 9  
**RELOCATION OF FACILITIES**  
 TYPICAL SECTIONS  
 U.S. ARMY ENGINEER DISTRICT NEW ORLEANS  
 CORPS OF ENGINEERS  
 AUGUST 1971 FILE NO. H-2-25844

**FLOOD CONTROL**  
**MISSISSIPPI RIVER AND TRIBUTARIES**  
**MISSISSIPPI RIVER LEVEES**  
**ITEM M-21,5-R**  
**CHILDRESS LEVEE ENLARGEMENT**  
**PLAQUEMINES PARISH, LOUISIANA**  
**RELOCATION OF FACILITIES**  
**DESIGN MEMORANDUM NO. 9**

**APPENDIX I**  
**LOUISIANA DEPARTMENT OF HIGHWAYS**  
**MINIMUM DESIGN STANDARDS**  
**FOR RURAL HIGHWAYS AND ROADS**

# LOUISIANA DEPARTMENT OF HIGHWAYS MINIMUM DESIGN STANDARDS FOR RURAL HIGHWAYS AND ROADS

DATE  
JULY 1, 1969  
REV. AUGUST 6, 1969  
REV. MARCH 10, 1971

ITEM NO.	ITEMS	A SYSTEM						B SYSTEM			C SYSTEM		LOCAL ROADS	
		CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5	CLASS 6	HARD SURFACED	AGGREGATE OR NO SURFACE	CLASS 4	CLASS 5	CLASS 6	HARD SURFACED	AGGREGATE OR NO SURFACE
		OVER 12,000 OVER 2,400	12,000 - 3,001 2,400 - 601	3,000 OR LESS 600 OR LESS	1,500 - 751 400 - 200	750 OR LESS	400 OR LESS	300 OR LESS	300 OR LESS	300 OR LESS	300 OR LESS	300 OR LESS	300 OR LESS	300 OR LESS
1	CURRENT AVERAGE DAILY TRAFFIC	OVER 12,000	12,000 - 3,001	3,000 OR LESS	1,500 - 751	750 OR LESS	400 OR LESS	300 OR LESS	300 OR LESS	300 OR LESS	300 OR LESS	300 OR LESS	300 OR LESS	300 OR LESS
2	DESIGN HOURLY VOLUME (1)	OVER 2,400	2,400 - 601	600 OR LESS	400 - 200	200 OR LESS	200 OR LESS	200 OR LESS	200 OR LESS	200 OR LESS	200 OR LESS	200 OR LESS	200 OR LESS	200 OR LESS
3	NUMBER OF TRAFFIC LANES	6	4	2	2	2	2	2	2	2	2	2	2	2
4	WIDTH OF EACH LANE	12'	12'	12'	12'	10'	10'	10'	10'	10'	10'	9'	9'	9'
5	WIDTH OF SHOULDERS	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'	8' OUT. - INS. 6' 10' OUT. - INS. 6'
6	TYPE OF SHOULDERS	STABILIZED & SURFACED	STABILIZED & SURFACED	AGGREGATE (2)	AGGREGATE (2)	AGGREGATE (2)	AGGREGATE (2)	AGGREGATE (2)	AGGREGATE (2)	AGGREGATE (2)	AGGREGATE (2)	AGGREGATE (2)	AGGREGATE (2)	AGGREGATE (2)
7	WIDTH OF MEDIAN	20' OTHER	20' OTHER	20' OTHER	20' OTHER	20' OTHER	20' OTHER	20' OTHER	20' OTHER	20' OTHER	20' OTHER	20' OTHER	20' OTHER	20' OTHER
8	FORE SLOPE - RATIO	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1
9	BACK SLOPE - RATIO	6:1	6:1	3:1	3:1	3:1	3:1	3:1	3:1	3:1	3:1	3:1	3:1	3:1
10	DESIGN SPEED M.P.H.	70	70	60 (3)	60 (3)	50	50	40	40	40	40	40	40	40
11	STOPPING SIGHT DISTANCE	600'	600'	475' (3)	475'	350'	350'	275'	275'	275'	275'	275'	275'	275'
12	CONTROLLING CURVATURE (4)	3°	3°	5°30'	5°30'	8°30'	8°30'	13°30'	13°30'	13°30'	13°30'	13°30'	13°30'	13°30'
13	CONTROLLING GRADE (5)	4%	4%	5%	5%	6%	6%	7%	7%	7%	7%	7%	7%	7%
14	VERTICAL CLEARANCE (6)	15'	15'	15'	15'	15'	15'	15'	15'	15'	15'	15'	15'	15'
15	HORIZ. CLEARANCE (MEASURED FROM EDGE OF PAVEMENT) (7)	30'	30'	30'	30'	30'	30'	30'	30'	30'	30'	30'	30'	30'
16	RIGHT OF WAY WIDTH (8)	300'	300'	150' (9)	150'	100'	100'	80'	80'	80'	80'	80'	80'	80'
17	DESIGN LOADING FOR BRIDGES	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44	HS 20-44
18	MINIMUM WIDTH OF BRIDGES (MEASURED FROM FACE TO FACE OF BRIDGE RAIL)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)	APPROACH PAVEMENT & SHOULDERS (10)
19	PAVEMENT CROSS SLOPE	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
20	GUARDRAIL REQUIRED AT BRIDGE ENDS	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

- (1) - DETAILED INFORMATION TO BE FURNISHED BY TRAFFIC AND PLANNING.
- (2) - STABILIZED AND SURFACED DESIRABLE.
- (3) - ON FUTURE FOUR LANE FACILITY DESIGN FOR 70 MPH WITH 600' S.S.D. AND 4% CONTROLLING GRADE.
- (4) - BASED ON 0.10 FT/FT MAXIMUM SUPERELEVATION.
- (5) - GRADES MAY BE INCREASED TO MAXIMUM USEABLE WITH DESIGN SPEED SELECTED, BUT NOT TO EXCEED 6% IN ANY CASE, EXCEPT FOR CLASS 6 HIGHWAYS AND LOCAL ROADS.
- (6) - 16 FT. VERTICAL CLEARANCE OVER TRUNK LINE ROUTES.
- (7) - MAY BE LESS IF PROTECTED BY GUARDRAIL.
- (8) - MINIMUM FOR NEW LOCATION. FOR EXISTING LOCATION NOT LESS THAN THAT REQUIRED FOR ALL ELEMENTS OF THE CROSS-SECTION AND APPROPRIATE BORDER AREAS.
- (9) - 300' WHERE FUTURE FOUR LANES ARE INDICATED.
- (10) - AS REQUIRED TO ACCOMMODATE SECTION.
- (11) - IN SPECIAL CASES PARTIAL SHOULDERS MAY BE USED.
- (12) - 18' MINIMUM WIDTH FOR RETENTION OF BRIDGES IN GOOD CONDITION.

ADOPTED *[Signature]*  
A. B. RATCLIFF, JR.  
CHIEF ENGINEER  
MARCH 10, 1971



**FLOOD CONTROL**  
**MISSISSIPPI RIVER AND TRIBUTARIES**  
**MISSISSIPPI RIVER LEVEES**  
**ITEM M-21.5-R**  
**CHILDRESS LEVEE ENLARGEMENT**  
**PLAQUEMINES PARISH, LOUISIANA**  
**RELOCATION OF FACILITIES**  
**DESIGN MEMORANDUM NO. 9**

**APPENDIX II**  
**ATTORNEY'S REPORTS**

## ATTORNEY'S REPORT

**SUBJECT:** Attorney's Investigation and Report, Relocation of Louisiana State Highway 23 below New Orleans, Plaquemines Parish, Louisiana, between Stations 3197+00 and 3248+57.6, Item M-21.5-R, Childress Levee Enlargement Right of Way, shown on advance copy of Map File No. H-8-25269, Sheet 1 of 1, dated (blank) Mississippi River Levees, Buras Levee District, Corps of Engineers, U. S. Army, Office of the District Engineer, New Orleans, Louisiana, and pursuant to authority of DIVR 1110-2-1, 29 January 1968, and Flood Control Act of 15 May 1928, Public Law 70-391, Ch. 569, 45 Stat. 534, Title 33, Sections 702a - 702m, U.S.C.A., as supplemented and amended.

**TO:** District Engineer  
U. S. Army Engineer District, New Orleans  
New Orleans, Louisiana

An investigation and report, in accordance with DIVR 1110-2-2, and ER 1180-1-1, Section 73, Part 2, 73-203 and 73-204, 1 Dec 69, of the legal obligations of the Government regarding affected facilities and determination of compensable interest of STATE OF LOUISIANA, DEPARTMENT OF HIGHWAYS, P. O. Box 44245, Capitol Station, Baton Rouge, Louisiana 70804, is hereby submitted by the undersigned, RALPH E. HALLIBURTON, an attorney licensed to practice law in the State of Louisiana, and employed in the Real Estate Division of the U. S. Army Engineer District, New Orleans.

### LEGAL OBLIGATION

Authority for subject levee enlargement is set forth in caption. DIVR 1110-2-1, 29 January 1968, page 2, at 4.b. Construction, Enlargement, or Improvement of Main Line Mississippi River Levees provides:

"Authority for construction, enlargement, or improvement of main line Mississippi River Levees, including berms, is contained in the Act of 15 May 1928 (PL 391, 70th Congress), as amended. The furnishing of right of way for levee foundations and levees on the main stem Mississippi River, except levee setbacks, is an obligation of local interests (see Section 3, Act of 15 May 1928). The replacement or relocation of public roads, highways, railroads, public utilities, and pipelines required for the construction of main line Mississippi River Levees will be accomplished at Federal expense (see correspondence referred to in para 2a above). Reimbursement of costs to local cooperating agencies in perfecting relocation of interfering facilities may be made pursuant to the Act of 23 April 1934 (PL 171, 73d Congress)."

DETERMINATION OF COMPENSABLE INTEREST

The Department of Highways, State of Louisiana, was created by Act 4 of 1942, Louisiana Revised Statutes, Title 48, Section 11. The said creating act gives the Department the right of Eminent Domain (expropriation), L.R.S. 48:217 and 218. Louisiana Constitution, 1921, Art. 6, Sec. 19, authorizes acquisition of rights of way for highways by expropriation or otherwise. As held in HORNSBY v. STATE DEPARTMENT OF HIGHWAYS, 241 La. 989, 132 So. 2d 871, (1961) the Highway Department, likewise, for certain purposes, under La. Civil Code, Arts. 665, 707, may also appropriate land required on the shores of navigable rivers. The Act of 1942, as amended, established (at PART XI, STATE HIGHWAY SYSTEM, R.S. 48:191) a system of state highways consisting of Class A Highways, or a Primary System; Class B Highways, or a Secondary System; and Class C Highways, or a Farm-to-Market System. Subject Louisiana State Highway 23, in said Act R.S. 48-191, is classified and included in the States Primary Systems' Class "A" highway descriptions, as follows: "LA 23 - From a point on the right descending bank of the Mississippi River at or near Venice through or near Buras, Port Sulphur and Gretna to a junction with LA-US 90 at or near New Orleans."

Highway rights of way easements (servitudes) were acquired for subject Louisiana No. 23, beginning in 1923, from the abutting landowners by the Parish of Plaquemines, and later by the Department of Highways in 1937, 1938 (La. Highway Commission prior to 1942) 1953 and 1956. All such servitude acquisitions are locally recorded, i.e., in Plaquemines Parish, Louisiana. Examples so recorded are the following:

<u>Easement Dated</u>	<u>Recorded in Conv. Book</u>	<u>Page</u>
5/16/23	23	189
3/21/37	84	65
3/21/37	84	66
3/29/37	84	74
5/31/37	85	150
10/10/38	92	192
10/12/38	92	196
10/12/38	92	197
10/10/38	92	202
1/16/56	188	368

In view of the foregoing, together with other information in the matter obtained by and for use herein, it is my opinion that the State of Louisiana, Department of Highways, has an established compensable interest in Louisiana State Highway No. 23, required by subject project to be relocated in part, and that the United States is authorized and obligated to pay or reimburse

for the relocations or alterations thereof, as required, to prevent interference therewith.

New Orleans, Louisiana  
11 June 1970



RALPH E. HALLIBURTON  
ATTORNEY

U. S. Army Engineer District,  
New Orleans

ATTORNEY'S REPORT

- a. Powerlines owned by Louisiana Power & Light Company located between approximate levee stations 3197+00 - 3247+80, and 3204+40 - 3255+20. (Note portion located on batture between stations 3213+18.2 - 3246+90).
- b. Telephone lines or cables (aerial and buried) owned by South Central Bell Telephone Company, approximate stations 3232+35 - 3234+05, 3204+40 - 3245+15 and 3205+60 - 3213+19.
- c. Water mains and sewer lines owned by Plaquemines Parish, Louisiana, approximate levee stations 3202+80 - 3212+30; 3204+40 - 3213+19; and 3205+80 - 3257+15.44.
- d. Gas lines owned by Delta Gas, Inc., at approximate stations 3205+80 - 3216+20; 3216+20 - 3245+15; and 3245+15 - 3246+85.8.
- e. Two eight (8) inch diameter water irrigation pipelines:
  1. Item C-1 owned by Mr. George Pivach, Jr., Belle Chasse, La., which crosses levee at station 3232+40; and
  2. Item C-2 owned by Mrs. Mary Lulich, Buras, La., which crosses levee at station 3242+44.

FIRST SUPPLEMENT TO  
11 JUNE 1970  
ATTORNEY'S REPORT

CHILDRESS LEVEE ENLARGEMENT  
ITEM M-21.5-R

LEGAL OBLIGATION

The authority for subject levee enlargement, as set forth in caption of my 11 June 1970 Report, is the Flood Control Act of 15 May 1928, PL 70-391,

Ch. 569, 45 Stat. 534, Title 33, Sections 702a - 702m, U.S.C.A., as supplemented and amended, and the relocation of interfering facilities is authorized in accordance with DIVR 1110-2-1, 29 January 1968, page 2, at 4.b. Construction, Enlargement, or Improvement of Main Line Mississippi River Levees, which provides:

"Authority for construction, enlargement, or improvement of main line Mississippi River Levees, including berms, is contained in the Act of 15 May 1928 (PL 391, 70th Congress), as amended. The furnishing of right of way for levee foundations and levees on the main stem Mississippi River, except levee setbacks, is an obligation of local interests (see Section 3, Act of 15 May 1928). The replacement or relocation of public roads, highways, railroads, public utilities, and pipelines required for the construction of main line Mississippi River Levees will be accomplished at Federal expense (see correspondence referred to in para 2a above). Reimbursement of costs to local cooperating agencies in perfecting relocation of interfering facilities may be made pursuant to the Act of 23 April 1934 (PL 171, 73d Congress)."

#### DETERMINATION OF COMPENSABLE INTEREST

In the order indicated in caption hereof, compensable interest is considered or reported:

##### a. and b.

The powers and authority of South Central Bell Telephone Company, b. herein, to acquire and own real property rights and facilities thereon have been fully set forth in Attorney's Report dated 23 September 1970, Buras Levee Setback, Item M-25.0-R, and to the same extent for Louisiana Power and Light Company, a. herein, in Attorney's Report dated 26 September 1970, a Supplemental Report to the original, dated 23 September 1970, likewise for Buras Levee Setback, Item M-25.0-R.

It is understood that Engineering Division, on the ground, will determine the extent of conflict between existing cables and other facilities and lines of said telephone company, and of the Louisiana Power and Light Company, as presently located along or across the existing levee or across land which actually constitutes batture.

To constitute "batture" such lands must meet the requirements of the legal definition thereof.

The legal definitions of alluvion, as distinguished from batture, are appropriate and follow:

Alluvion is that which is added to land little by little so that it can not be known how much is added at each moment of time. Livingston v. Heerman,

9 Mart. (O.S.) 656. It is defined by the Louisiana Civil Code, at Art. 509: "The accretions, which are formed successively and imperceptibly to any soil situated on the shore of a river or other stream, are called alluvion. The alluvion belongs to the owner of the soil situated on the edge of the water, whether it be a river or stream, and whether the same be navigable or not, who is bound to leave public that portion of the bank which is required by law for public use." Civil Code Article 510 continues: "The same rule applies to derelictions formed by running water retiring imperceptibly from one of its shores and encroaching on the other; the owner of the land adjoining the shore which is left dry, has a right to the dereliction, nor can the owner of the opposite shore claim the land which he has lost. This right does not take place in case of derelictions of the sea."

Batture is that part of river bed which is uncovered at time of low water, but is covered annually at time of ordinary high water; when it ceases to be covered at time of ordinary high water, it ceases to be batture and becomes bank of river. Boyce Cottonseed Oil Mfg. Co. v. Board of Comrs. of Red River, A. & B. B. Levee Dist., 160 La. 727, 107 So. 506. See also Leonard's Heirs v. Baton Rouge, 39 La. Ann. 275, 4 So. 241; Ward v. Board of Levee Comrs. of Orleans Levee Dist., 152 La. 158, 92 So. 769. Whether the accretion be alluvion or batture it belongs to the riparian owner. See Seibert v. Conservation Comm., 181 La. 237, 159 So. 375, which held that sand and gravel bar adjacent to shore and which was proved by lay testimony to be above water level during low stages of the river constitutes alluvion or batture which belongs to the riparian owner. In accordance with Boyce Cottonseed Oil v. Levee District, and other cases cited above, batture which no longer is covered annually at time of ordinary high water ceases to be batture and becomes bank of river. Consequently, land which may have been added to the other property of the owner adjoining the shore, but which accretion being of sufficient elevation to escape being covered annually at time of ordinary high water, must be treated as any other land of owner forming the bank of river, and, although such land, under Louisiana law, be subject to a servitude in favor of the public for levee purposes, such high land is not batture subject to use by the state, or its agencies, for levee purposes without compensation as prescribed by La. Const. 1921, Art. XVI, Sec. 6-LSA, which states, in part:

"Sec. 6. Compensation for property used or destroyed; tax

Section 6. Lands and improvements thereon hereafter actually used or destroyed for levees or levee drainage purposes . . . ., shall be paid for at a price not to exceed the assessed value of the preceding year; provided, that this shall not apply to batture nor to property the control of which is vested in the State or any subdivision thereof for the purpose of commerce; . . . . .  
. . . ." (Emphasis mine)

As was stated in PRUYN v. NELSON BROS., 180 La. 760, at 765:

"The law is clear that all landed proprietors, whose property is adjacent to a navigable stream, hold it subject to certain conditions imposed for the common utility or public welfare. *Dubose v. Levee Commissioners*, 11 La. Ann. 165; *Zenor v. Parish of Concordia*, 7 La. Ann. 150; *Cubbins v. Mississippi River Commission*, 241 U. S. 351, 36 S. Ct. 671, 60 L. Ed. 1041; *Mailhot v. Pugh*, 30 La. Ann. 1359; *Egan v. Hart*, 45 La. Ann. 1358, 14 So. 244; *In re Bass v. State*, 34 La. Ann. 494.

"The batture as well as the riparian property along the Mississippi river is subject to a servitude for the building and repairing of levees, and this servitude is in favor of the public. R.C.C. arts. 453 and 665; *Bass v. State*, 34 La. Ann. 494; *Peart v. President of Red River, A. & B. B. Levee District*, 45 La. Ann. 421, 12 So. 490; *Stevens v. Walker*, 15 La. Ann. 577.

"Previous to the year 1921, no compensation was due the riparian owner when the servitude was legally exercised on the riparian property, and even now compensation is not due when the servitude is validly exercised on the batture by the proper authority for levee purposes. Const. 1921, art. 16, § 6."

In the case of *Mrs. Mattie Mayer v. Board of Commissioners for Caddo Levee District*, 177 La. 1119, 150 So. 295, 296, a consideration of the meaning of this section and article of the Constitution was considered, and we said:

"Lands and improvements thereon hereafter actually used or destroyed for levees or levee drainage purposes shall be paid for at a price not to exceed the assessed value for the preceding year; provided, this shall not apply to batture, nor to property control of which is vested in the State or any subdivision thereof for the purpose of commerce \* \* \*

"This shall not prevent the appropriation of said property before payment."

"The law imposes a servitude for the common utility on lands abutting navigable streams for the construction and repair of levees, roads, and other purposes. Civ. Code, art. 665. The principle recognized by the cited article of the Code is of ancient origin. *Morgan v. Livingston*, 6 Mart. (O.S.) 19, 235, 236; *Ruch v. New Orleans*, 43 La. Ann. 275, 9 So. 473; *Eldridge v. Trezevant*, 160 U. S. 452, 463, 16 S. Ct. 345, 40 L. Ed. 490.  
\* \* \* "

In the Louisiana landmark case of *General Box Company v. United States of America*, 351 U.S. 159, 76 S. Ct. 728, 100 L. Ed. 778, denying payment for timber destroyed for levee purposes, which had been growing on land unquestionably batture, the court held that where the Louisiana Levee Board correctly exercised, for itself and for United States, riparian servitude upon the tracts there in question, compensation, if any, for standing timber destroyed on right of way by United States through its contractors



was to be determined by Louisiana law relative to the servitude.

Hence, in the situation involving any facilities belonging to Louisiana Power & Light Company and to South Central Bell Telephone Company, if they be situated over, on or under land which, although belonging to the riparian owner is merely part of the bank of the river and not on land constituting "batture", then such utility company will have acquired a compensable interest by virtue of permit, grant, unopposed use (coupled with the utility company's right of expropriation), OR, if the land be "batture" which has been, or may be, appropriated for levee building purposes which will involve no payment whatever therefor, the utility cannot be deemed to possess a compensable interest and can be paid or reimbursed for its relocation only by virtue of Congressional authority, Sec. 2 of the Flood Control Act of 1938, which, as in all such cases of Federal payment dependent upon such Act, will not include the cost of new right-of-way as is provided in ER 1180-1-1, 1 Dec. 69, Part 7 - Relocations and Alterations Made Pursuant to Special Statutory Authority, which makes the following provision for public utilities lacking compensable interest:

"73-701 Lack of Compensable Interest - Civil Works. Where a public utility will be destroyed or damaged due to operation of a civil works project and relocation or alteration of the facility is required to continue service to the public, the Government may assume the cost of relocating or altering the facility (but not the cost for a new right-of-way) when, in fact, the utility owner is not presently vested with a compensable interest in the existing right-of-way. Negotiations with utility owners in accordance with the foregoing is authorized under Section 2, Flood Control Act of 1938, (52 Stat. 1215; 33 U.S.C. 701c-1). (See Comp. Gen. Decision B-134242, 24 Dec 1957)."

C.

WATER MAINS AND SEWER LINES  
OWNED BY PLAQUEMINES PARISH, LOUISIANA, GOVERNED BY  
PLAQUEMINES PARISH COMMISSION COUNCIL

Reference is made to this attorney's Report dated 1 September 1970 covering Item M-14.9-R, Commander Levee Enlargement, relating to the relocation of the 6" water main with laterals, the property of Plaquemines Parish, La., governed by the Plaquemines Parish Commission Council, which water main was then situated along the toe of the main line levee for its entire length between Fort Jackson and the Jump Settlement below Venice, La. For the reasons set forth in that earlier report it is my opinion that subject water mains and sewer lines are likewise a part of Plaquemines Parish water and sewerage system and, hence, Plaquemines Parish has a compensable interest therein, and that the United States is authorized and obligated to pay or reimburse for the relocation or alteration thereof as required to prevent interference therewith.

d.  
DELTA GAS, INC.

In this attorney's Report of 29 September 1970, with addendum thereto, of 2 October 1970, being second supplement to 23 September 1970, covering BURAS LEVEE SETBACK, ITEM M-25.0-R, the rights and powers of Delta Gas, Inc., were extensively described.

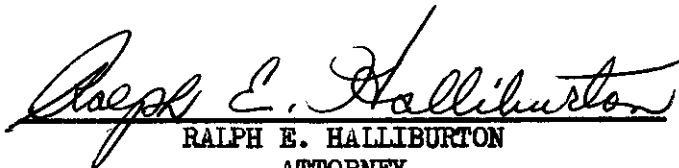
Accordingly, as is set forth in such earlier Report, Delta Gas, Inc., a public utility, has a compensable interest in its right-of-way located outside of levee right-of-way or actual batture, and to its facilities thereon which require relocating to prevent interference. Where such may be now situated within an existing levee right-of-way, or public property, payment may still be made to Delta for labor expense of relocation under the above cited ER 73-701 covering public utilities. Payment may also be made for facilities to be abandoned and not replaced but require removal under 2b. of ECI 73-209.3, set out at page 7309 of ER 1180-1-1, 1 Dec. 69, and Sec. 2 of the Flood Control Act of 1938 as there provided.

e.  
WATER IRRIGATION PIPELINES OF:  
C-1, Mr. George Pivach, Jr., and  
C-2, Mrs. Mary Lulich.

The above owners of subject privately owned and used water irrigation lines, to the extent that they lie within or cross the levee right-of-way, have no compensable interest within such area, and do not qualify for Federal Assistance under such circumstances, as would a public utility pipeline. If, on the ground, however, any part of such owned lines are actually located on owner's private property beyond the public right-of-way, a compensable interest is vested in owners to that degree for reimbursement of such proportionate relocation expense. Failing that, however, such improvements within the limits of subject project must be removed at the expense of owners.

The above captioned facilities, a. through e., inclusive, having herein been reported separately, the mode of and required payment for relocation therefor is likewise separately stated.

New Orleans, La.  
24 July 1971

  
RALPH E. HALLIBURTON  
ATTORNEY  
U. S. ARMY ENGINEER DISTRICT  
NEW ORLEANS

FLOOD CONTROL  
MISSISSIPPI RIVER AND TRIBUTARIES  
MISSISSIPPI RIVER LEVEES  
ITEM M-21.5-R  
CHILDRESS LEVEE ENLARGEMENT  
PLAQUAMINES PARISH, LOUISIANA  
RELOCATION OF FACILITIES  
DESIGN MEMORANDUM NO. 9

APPENDIX III  
DETAILED COST ESTIMATE  
HIGHWAY NO. 23

APPENDIX III  
 DETAILED COST ESTIMATE  
 HIGHWAY NO. 23

<u>ITEM NO</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>UNIT COST (\$)</u>	<u>AMOUNT (\$)</u>
1	Clearing & Grubbing	1	Lot	5,000.00	5,000
2	Removal of Obstructions	1	Lot	20,000.00	20,000
3	Excavation	cu yds	21,965	2.00	43,930
4	Base & Surface Course	cu yds	5,400	7.50	40,500
5	Concrete Pavement (8" thick)	sq yds	15,130	7.50	113,475
6	Drainage Pipe	LF	4,182	10.30	43,075
7	Manholes & Catch Basins	each	34	400.00	13,600
8	Integral Concrete Curb	LF	5,980	1.50	8,970
9	Miscellaneous Structures and Markings	1	Lot	6,500.00	6,500
10	Fertilizing, Seeding and Water	1	Lot	450.00	450
11	Bedding Material and Protective Blanket	cu yds	1,250	6.80	8,500
	Subtotal				304,000
	Contingencies (25%+)				76,000
	Subtotal				380,000
	E & D (6%+)				23,000
	S & A (6%+)				23,000
	Subtotal				426,000

APPENDIX III (CONT'd)

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>UNIT COST (\$)</u>	<u>AMOUNT (\$)</u>
	Right-of-way Cost				154,300 <u>1/</u>
	TOTAL				580,300

1/ R/W cost includes \$145,300 for right-of-way and \$9,000 for estimated cost of benefits allowable under the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970.