FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	1

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STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
PLANS OF PROPOSED
STATE HIGHWAY

F.A.P. I-410-4(34)223
STATE PROJECT 450-37-01

MISSISSIPPI RIVER BRIDGE (LULING)
MAIN RIVER CROSSING - SUBSTRUCTURE

ST. CHARLES PARISH
ROUTE NO. I-410

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STANDARD PLANS

201-203 HIGHWAY SIGNS AND BARRICADES RS-24 (PEV.)

TOTAL SHEETS 50

VICINITY MAP

PLANS PREPARED BY AND RECOMMENDED FOR APPROVAL

FRANKLAND & LIENHARD - MODJESKI & MASTERS

RECOMMENDED FOR APPROVAL

INTERSTATE ENGINEER

RECOMMENDED FOR APPROVAL

TRAFFIC & PLANNING ENGINEER

RECOMMENDED FOR APPROVAL

BRIDGE DESIGN ENGINEER

RECOMMENDED FOR APPROVAL

ROAD DESIGN ENGINEER

RECOMMENDED FOR APPROVAL

CHIEF LOCATION & DESIGN ENGINEER

APPROVED

CHIEF ENGINEER

RECOMMENDED FOR APPROVAL DATE 4-5-74

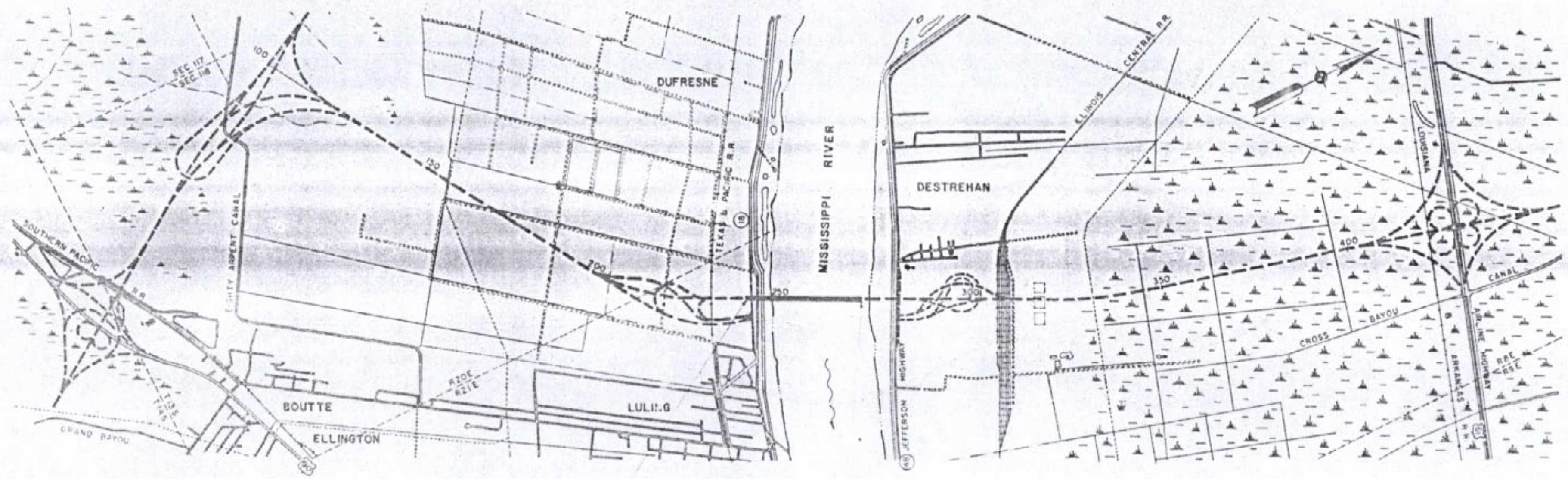
[redacted]

DISTRICT ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED DATE

[redacted]

DIVISION ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION



STA. 241+80.00
END STATE PROJECT 450-38-04
END F.A.P. I-410-4(52)223
BEGIN STATE PROJECT 450-37-01
BEGIN F.A.P. I-410-4(34)223

STA. 271+90.00
END STATE PROJECT 450-37-01
END F.A.P. I-410-4(34)223

DATUM USED: M.S.L.
MAG. VAR.:
BEARINGS ARE U.S.C. & G.S. GRID
TRANSIT BOOKS: 102-305, 102-306, 101-391
LEVEL BOOKS: 102-170, 102-264, 102-265
96-363, 96-367, 97-760
60-604, 101-059, 101-514

SCHEDULE OF REVISIONS

DATE	REVISION	DATE	RECOMMENDED	DATE	APPROVED
5-20-74	Sheets 1,4,5,22,24,25,26,27	5-20-74		5-20-74	
5-23-74	Sheets 1,14,24	5-23-74		5-23-74	

NOTE:

STANDARD SPECIFICATIONS ADOPTED BY THE DEPARTMENT OF HIGHWAYS, OCTOBER 1971, AND APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL GOVERN ON THIS PROJECT EXCEPT AS AMENDED BY SPECIAL PROVISION AND/OR SUPPLEMENTAL SPECIFICATIONS.

TYPE OF CONSTRUCTION:
REINFORCED CONCRETE BRIDGE PIERS

TRAFFIC DATA
1974 ADT - 5,660
1994 ADT - 13,560
D - 55%
K - 10%
T - 9%
DESIGN SPEED - 70 MPH

LAYOUT MAP

SCALE 1 INCH = 2000 FEET
2000 0 2000 4000 6000

LENGTH OF PROJECT

DESCRIPTION	ALGEBRAIC SUM OF ALL EQUATIONS	GROSS LENGTH	EXCEPTION	BRIDGE LENGTH		ROADWAY LENGTH	
STA. TO STA.	FEET	FEET	FEET	FEET	MILES	FEET	MILES
241+80.0 271+90.0	—	3,010	—	3,010	.570	—	—
TOTAL LENGTH OF BRIDGES				3,010	.570		
TOTAL LENGTH OF ROADWAY						—	—
TOTAL MILES							

AS BUILT

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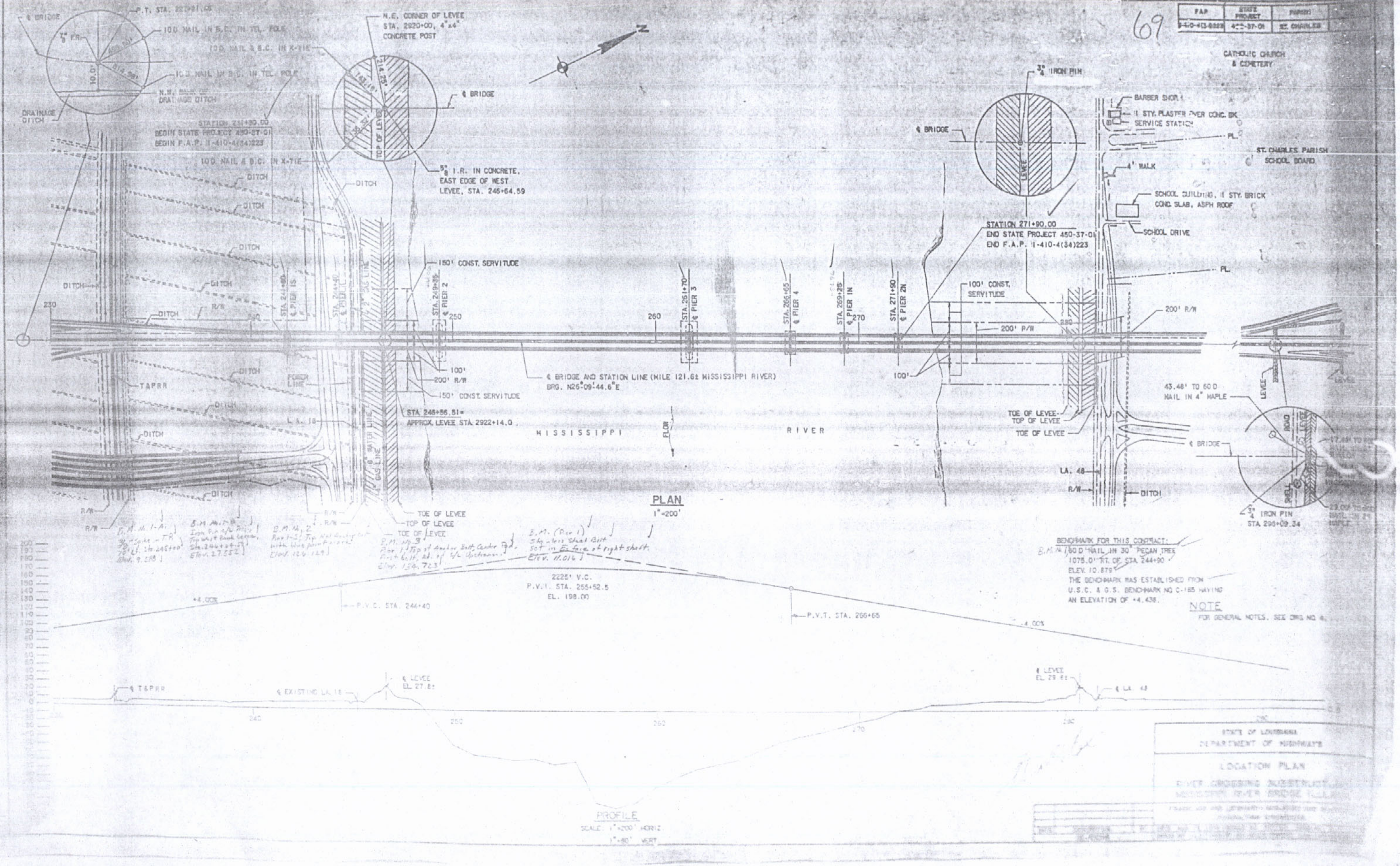
F.A.P.	STATE PROJECT	PARISH
I-410-4(34)223	450-37-01	ST. CHARLES



AS BUILT

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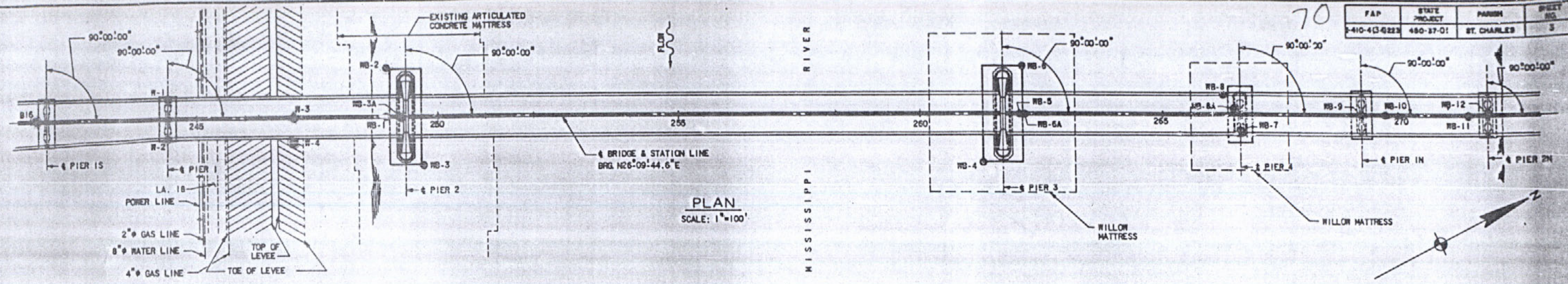
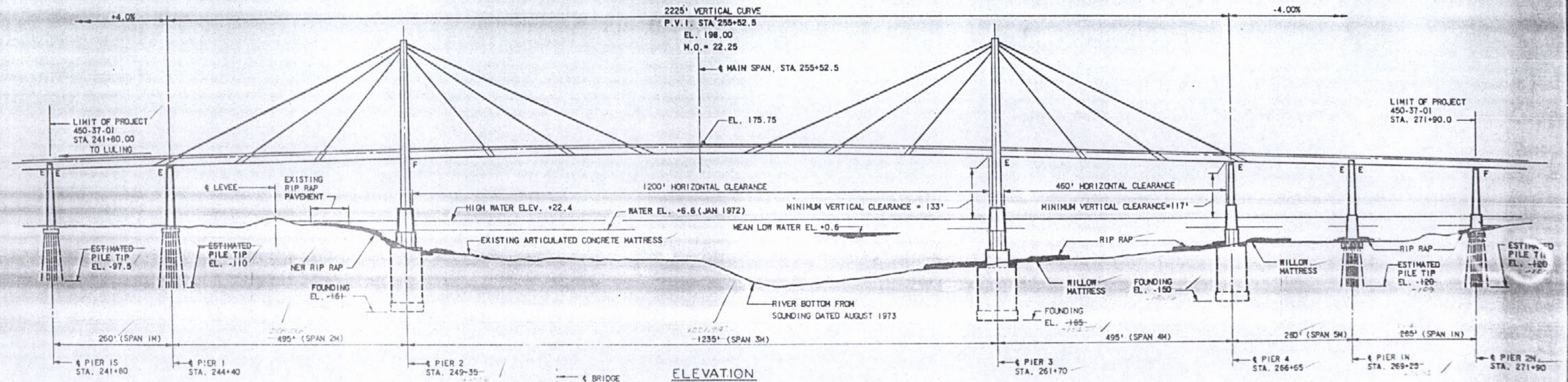
FAP	STATE PROJECT	PARISH	SHEET NO.
3-410-4(3)(222)	450-37-01	ST. CHARLES	3



PLAN
SCALE: 1"=100'

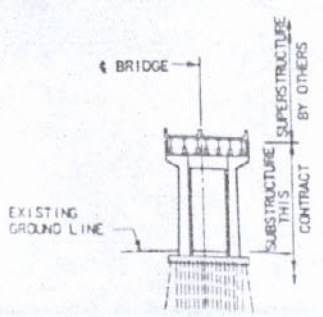


ELEVATION
SCALE: 1"=100'

NOTES:

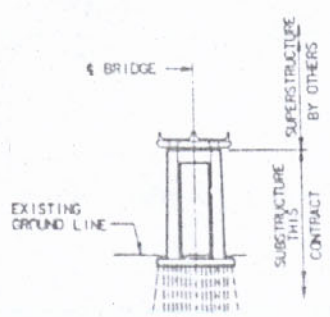
FOR GENERAL NOTES, SEE DWG. NO. 4.

⊙ WB-8 INDICATES CORE BORING. FOR BORING LOG, SEE DWG NOS. 36 THRU 45.



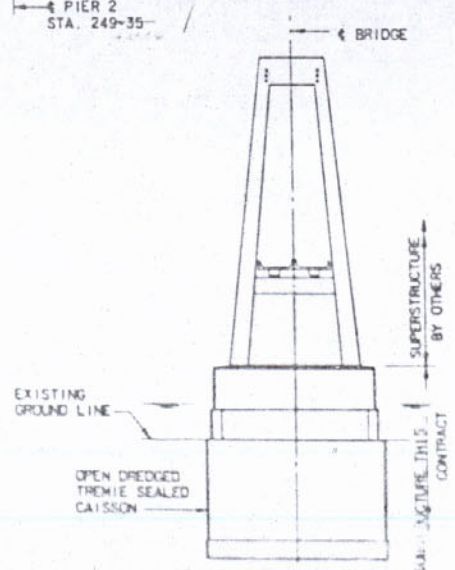
ELEVATION PIER IS
SCALE: 1"=100'

NOTE:
PILES FOR PIER IS SHALL BE 18"φ CAST-IN-PLACE CONCRETE PILES

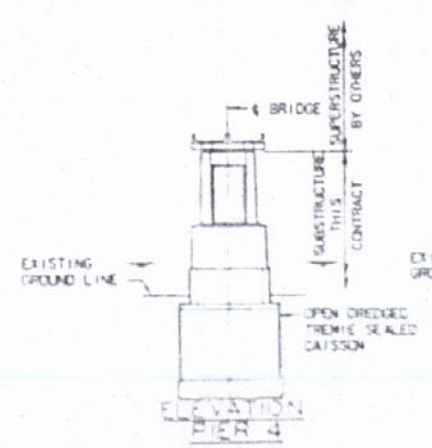


ELEVATION PIER 1
SCALE: 1"=100'

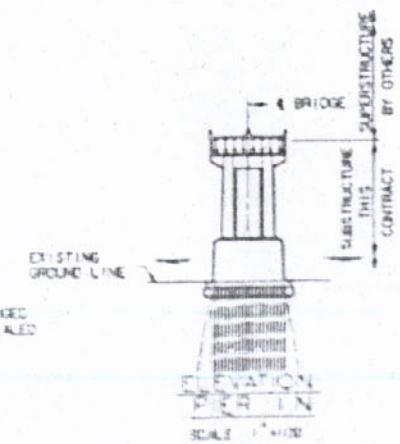
NOTE:
PILES FOR PIER 1 SHALL BE 18"φ CAST-IN-PLACE CONCRETE PILES



ELEVATION PIER 2
SCALE: 1"=100'
(PIER 3 SIMILAR)



ELEVATION PIER 4
SCALE: 1"=100'



ELEVATION PIER IN
SCALE: 1"=100'
(PIER 2N SIMILAR)

NOTE
PILES FOR PIERS IN & 2N SHALL BE 48" φ

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GENERAL PLAN AND ELEVATION
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANK, ANZ, LEONARD, MOSKIERE AND ASSOCIATES
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY	DATE	DESCRIPTION	BY

DESIGNED | DRAWN | CHECKED | SCALE | DATE | TRACING NO.

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
9-410-4(3)223	450-37-01	ST. CHARLES	4

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DESIGN CRITERIA

DESIGN SPECIFICATIONS

THE 1973 STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (A.A.S.H.O.) ELEVENTH EDITION, WILL APPLY, EXCEPT AS MODIFIED AND SUPPLEMENTED ON THE CONTRACT DRAWINGS AND BY THE SPECIAL PROVISIONS.

CONSTRUCTION SPECIFICATIONS

THE STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES OF OCTOBER, 1971, OF THE STATE OF LOUISIANA DEPARTMENT OF HIGHWAYS AS SUPPLEMENTED BY THE SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS SHALL APPLY.

WELDING SPECIFICATIONS

WELDING SHALL CONFORM TO THE LOUISIANA DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS, OCTOBER, 1971; AND TO THE LOUISIANA DEPARTMENT OF HIGHWAYS' WELDING PROCEDURES MANUAL, OCTOBER, 1971; AND LATEST SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS.

DESIGN LOADINGS

D - DEAD LOAD - WEIGHT OF THE COMPLETE STRUCTURE, INCLUDING AN ALLOWANCE FOR FUTURE WEARING SURFACE OF 8 LBS./SQ.FT. ON SPANS 1M THROUGH 5M AND 19 LBS./SQ.FT. ON APPROACH SPANS. NO UTILITIES ARE INCLUDED.

L - LIVE LOAD - HS20-44 MODIFIED TO INCLUDE INTERSTATE LOADING.

W - WIND LOADS - THE WIND LOADS SHALL BE IN ACCORDANCE WITH AASHO SPECIFICATIONS EXCEPT AS NOTED HEREIN.

FOR GROUP II LOADING, THE FOLLOWING WIND LOADS SHALL BE USED IN LIEU OF AASHO WIND LOADINGS;
WIND ON SUBSTRUCTURE - 50 LBS. PER SQUARE FOOT
WIND ON GIRDERS - PIERS 1 TO 4 - 65 LBS. PER SQUARE FOOT
WIND ON GIRDERS - APPROACHES - 50 LBS. PER SQUARE FOOT
WIND ON TOWERS AND CABLES - 110 LBS. PER SQUARE FOOT
THOSE LOADS SHALL BE APPLIED TO THE SAME AREAS AND IN THE SAME MANNER AS THE CORRESPONDING AASHO LOADS.

HW-HURRICANE WIND - HURRICANE WIND LOADS SHALL BE APPLIED IN THE SAME MANNER AS THE WIND LOADS FOR GROUP II LOADING.

DESIGN LOADINGS (CONTINUED)

HW - WIND ON SUBSTRUCTURE - 60 LBS. PER SQUARE FOOT
WIND ON GIRDERS - PIERS 1 TO 4-90 LBS. PER SQUARE FOOT
WIND ON TOWERS AND CABLES - 150 LBS. PER SQUARE FOOT

T - THERMAL FORCES IN ACCORDANCE WITH AASHO SPECIFICATIONS FOR MODERATE CLIMATE.

S - SHRINKAGE FORCES - SHRINKAGE SHALL BE APPLIED IN ACCORDANCE WITH AASHO.

EQ - EARTHQUAKE FORCES - AASHO SPECIFICATIONS FOR MODERATE EARTHQUAKE ZONES WILL APPLY.

ICE - FORCE OF FLOATING ICE WILL NOT APPLY.

E - ERECTION LOADS - ERECTION STRESSES SHALL NOT EXCEED 125% OF BASIC ALLOWABLE UNIT STRESSES, EXCEPT WHEN THE CALCULATED STRESSES INCLUDE THE EFFECT OF 30 P.S.F. WIND LOAD, IN WHICH CASE THE PERMISSIBLE STRESS WILL BE 140% OF BASIC UNIT STRESS.

LOADING COMBINATIONS ARE AS SPECIFIED IN AASHO SPECIFICATIONS AND MODIFIED WITH THE ADDITION OF HURRICANE WIND IN GROUP X LOADING COMBINATION, AS FOLLOWS:
GROUP X=D+HW; ALLOWABLE DESIGN UNIT STRESS = 160% OF BASIC UNIT STRESS.

SUMMARY OF BRIDGE QUANTITIES

ITEM NO.	ITEM	UNIT	PIER 1S	PIER 1	PIER 2	PIER 3	PIER 4	PIER 1N	PIER 2N
711 (5)	STONE BALLAST FOR SINKING MATTRESSES	TON	-	-	-	1,458.0	675.0	-	-
711 (6)	HEAVY DEPOSITED RIPRAP	TON	-	-	* 6,000.0	11,975.0	** 6,300.0	846.4	783.4
802 (3)	STRUCTURAL EXCAVATION FOR PIERS (DRY) (PIERS 1S & 1)	CU. YD.	1,120.0	1,210.4	-	-	-	-	-
802 (4)	STRUCTURAL EXCAVATION FOR PIERS (WET) (PIERS 1N & 2N)	CU. YD.	-	-	-	-	-	3,227.3	2,425.0
804 (5) (D)	CAST-IN-PLACE CONCRETE PILES (18")	LIN. FT.	7,885	9,172	-	-	-	2,930.8	7,697.5
804 (6)	JETTING PILES	EACH	84	84	-	-	-	-	-
804 (10)	UNLOADED CAST-IN-PLACE CONCRETE TEST PILES	EACH	1	1	-	-	-	-	-
804 (11) (A)	LOADING TEST PILES (CAST-IN-PLACE CONCRETE PILES)	EACH	1	1	-	-	-	-	-
804 (12) (A)	RELOADING TEST PILES (CAST-IN-PLACE CONCRETE PILES)	EACH	+ 0	+ 0	-	-	-	-	-
804 (15) (A)	REDRIVING TEST PILES (CAST-IN-PLACE CONCRETE PILES)	EACH	+ 0	+ 0	-	-	-	-	-
804 (16) (A)	LOADING PERMANENT PILES (CAST-IN-PLACE CONCRETE PILES)	EACH	+ 0	+ 0	-	-	-	13,655	14,389
804 (4) (F)	STEEL BEARING PILES (14x14 1/2 - 73#)	LIN. FT.	-	-	-	-	-	14,415	15,046
804 (9)	UNLOADED STEEL BEARING TEST PILES	EACH	-	-	-	-	-	1	1
804 (11) (B)	LOADING TEST PILES (STEEL BEARING PILES)	EACH	-	-	-	-	-	1	1
804 (12) (B)	RELOADING TEST PILES (STEEL BEARING PILES)	EACH	-	-	-	-	-	+ 0	+ 0
804 (15) (B)	REDRIVING TEST PILES (STEEL BEARING PILES)	EACH	-	-	-	-	-	+ 0	+ 0
804 (16) (B)	LOADING PERMANENT PILES (STEEL BEARING PILES)	EACH	-	-	-	-	-	+ 0	+ 0
805 (8) (A)	CLASS A CONCRETE IN PIERS ABOVE FOOTINGS (PIERS 1 & 1S)	CU. YD.	1,668.18	1,641.03	-	-	-	-	-
805 (8) (B)	CLASS A CONCRETE IN PIERS ABOVE SUBSHAFTS (PIERS 4, 1N & 2N)	CU. YD.	-	-	-	-	1,026.59	1,262.81	782.66
805 (11) (A)	CLASS D CONCRETE (DISTRIBUTION BLOCKS - PIERS 2 & 3)	CU. YD.	-	-	3,710.04	1,472.38	-	-	-
805 (11) (B)	CLASS D CONCRETE IN FOOTINGS (PIERS 1S & 1)	CU. YD.	929.33	860.74	-	-	-	2,665.97	1,519.99
805 (11) (C)	CLASS D CONCRETE IN FOOTINGS (PIERS 1N & 2N)	CU. YD.	-	-	-	-	-	1,137.78	821.33
805 (11) (D)	CLASS D CONCRETE IN PIER SUBSHAFTS (PIERS 2, 3, 4, 1N & 2N)	CU. YD.	-	-	15,768.91	16,229.17	5,863.87	2,417.43	1,315.32
805 (13) (A)	CLASS S CONCRETE (PIERS 1N & 2N)	CU. YD.	-	-	-	-	-	1,629.63	1,169.78
805 (13) (B)	CLASS S CONCRETE (CAISSON - PIER 2)	CU. YD.	-	-	5,177.28	-	-	-	-
805 (13) (C)	CLASS S CONCRETE (CAISSON - PIER 3)	CU. YD.	-	-	-	6,770.73	-	258,806	247,069
806 (1) (A)	DEFORMED REINFORCING STEEL	POUND	276,995	220,066	640,238	630,161	231,662	253,575	241,994
807 (1)	STRUCTURAL CARBON STEEL (A36)	POUND	1,418	35,600	752,949	752,949	35,390	1,310	447
812 (2)	TREATED TIMBER	MFBM	-	-	44,707	77,489	26,256	-	-
S101	MASS VOLUME IN CAISSON (PIER 2)	CU. YD.	-	-	54,516.53	-	-	-	-
S102	MASS VOLUME IN CAISSON (PIER 3)	CU. YD.	-	-	-	76,276.10	-	-	-
S103	WILLOW MATTRESS	SQUARE	-	-	-	972	449.0	-	-
S104	8"Φ CAST IRON DRAIN PIPE	LIN. FT.	-	272	-	-	-	-	-
805 (11) (E)	CLASS D CONCRETE (DISTRIBUTION BLOCK - PIER 4 - ALTERNATE A)	CU. YD.	-	-	-	-	1,506.74	-	-
805 (13) (D)	CLASS S CONCRETE (PIER 4 - ALTERNATE A)	CU. YD.	-	-	-	-	2,241.94	-	-
806 (1) (B)	DEFORMED REINFORCING STEEL (DISTRIBUTION BLOCK - PIER 4 - ALTERNATE A)	POUND	-	-	-	-	85,097	-	-
S106	MASS VOLUME IN CAISSON (PIER 4 - ALTERNATE A)	CU. YD.	-	-	-	-	21,429.06	-	-
805 (11) (F)	CLASS D CONCRETE (DISTRIBUTION BLOCK - PIER 4 - ALTERNATE B)	CU. YD.	-	-	-	-	1,749.39	-	-
805 (13) (E)	CLASS S CONCRETE (PIER 4 - ALTERNATE B)	CU. YD.	-	-	-	-	2,589.79	-	-
806 (1) (C)	DEFORMED REINFORCING STEEL (DISTRIBUTION BLOCK - PIER 4 - ALTERNATE B)	POUND	-	-	-	-	89,047	-	-
S107	MASS VOLUME IN CAISSON (PIER 4 - ALTERNATE B)	CU. YD.	-	-	-	-	24,446.16	-	-

* BASED ON CONSTRUCTION METHOD ALTERNATE 4.
** BASED ON ALTERNATE A.
NOTE: ITEMS TO BE PAID FOR ON A LUMP SUM BASIS ARE NOT INCLUDED IN THE ABOVE TABULATION.

MATERIALS AND BASIC DESIGN UNIT STRESSES

STRUCTURAL STEEL:

STRUCTURAL STEEL IN THE CAISSONS AND CUTTING EDGES SHALL BE A WELDABLE GRADE, HAVING A MINIMUM YIELD POINT OF 36,000 PSI, USING A BASIC ALLOWABLE TENSILE STRESS OF 20,000 PSI. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO A.S.T.M. A36, UNLESS NOTED. DESIGN BASIC ALLOWABLE TENSILE UNIT STRESS OF 20,000 PSI IS USED FOR A36 STEEL.

REINFORCING STEEL

REINFORCING BARS SHALL BE AS REQUIRED BY THE LDH STANDARD SPECIFICATIONS, EXCEPT THE USE OF DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60 WILL ALSO BE PERMITTED, SUBSTITUTED ON A ONE FOR ONE BASIS.

CONCRETE:

ALL CONCRETE SHALL BE CLASS A, CLASS D, OR CLASS S AS CALLED FOR ON THE DRAWINGS, AND IN ACCORDANCE WITH THE LDH SUPPLEMENTAL SPECIFICATIONS, REVISION OF OCTOBER, 1973. BEARING OF STEEL ON CONCRETE IS DESIGNED FOR AN ALLOWABLE UNIT STRESS OF 1,000 PSI.

GALVANIZING

WHERE GALVANIZING IS CALLED FOR ON THE PLANS OR IN THE SPECIAL PROVISIONS, PARTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH SUBSECTION 811.15 OF THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS

ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH NOTE ON GALVANIZING, EXCEPT AS NOTED.

GENERAL ITEMS

ELEVATIONS

ALL ELEVATIONS SHOWN ARE MEAN SEA LEVEL, 1929-41 GENERAL ADJUSTMENT.

CONCRETE.

MINIMUM CLEARANCE FROM EDGE OF BAR TO FACE OF CONCRETE SHALL BE 4 INCHES IN CAISSONS AND FOOTINGS AND 3 INCHES IN SHAFTS, UNLESS NOTED.

ALL REINFORCING STEEL DIMENSIONS AND CLEARANCES ARE OUT TO OUT.

MINIMUM BAR LAP SHALL BE 35 DIAMETERS UNLESS SHOWN.

ALL EXPOSED EDGES SHALL BE CHAMFERED $1\frac{1}{2}$ INCHES BY $1\frac{1}{2}$ INCHES, UNLESS NOTED. NO DEDUCTION IN CONCRETE QUANTITIES WILL BE MADE FOR CHAMFERS OF $1\frac{1}{2}$ INCHES OR LESS.

ALL CONSTRUCTION JOINTS SHALL BE ADEQUATELY KEYED. ALL KEYS SHALL BE RAISED, UNLESS SHOWN.

UNLESS NOTED, CONCRETE SURFACE FINISHING SHALL BE CLASS 1 ORDINARY SURFACE FINISH IN ACCORDANCE WITH ARTICLE 805.14 OF THE STANDARD SPECIFICATIONS. NO DIRECT PAYMENT WILL BE MADE FOR REQUIRED CONCRETE SURFACE FINISHING.

VERTICAL CONSTRUCTION JOINTS WILL NOT BE PERMITTED, EXCEPT AS PROVIDED FOR IN SPECIFIC DETAILS.

UTILITIES

CONTRACTOR SHALL EXERCISE CARE TO AVOID DAMAGE TO EXISTING UTILITIES ADJACENT TO LA. ROUTE NO. 18.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GENERAL NOTES AND QUANTITIES
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LL&NW)

AS BUILT

FINAL

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY (LAYOUT A & LAYOUT B)	QUANTITY (LAYOUT A)	QUANTITY (LAYOUT B)	PROJECT TOTAL
711 (5)	STONE BALLAST FOR SINKING MATTRESSES	TON	2133.0			2,133.0
711 (6)	HEAVY DEPOSITED RIPRAP	TON	~~25,904.8~~			26,796.85
713 (1)	TEMPORARY SIGNS AND BARRICADES	LUMP SUM	LUMP SUM			17,000.00
			~~4,088.9~~			~~4,191.85~~
802 (3)	STRUCTURAL EXCAVATION FOR PIERS (DRY) (PIERS 1S & 1)	CU. YD.	~~2,330.4~~			[illegible]
802 (4)	STRUCTURAL EXCAVATION FOR PIERS (WET) (PIERS 1N & 2N)	CU. YD.	~~[illegible]~~			3,[illegible]
804 (5) (D)	CAST-IN-PLACE CONCRETE PILES (18")	LIN. FT.	~~17,057~~			17,013.0
804 (6)	JETTING PILES	EACH	~~198~~			0
804 (10)	UNLOADED CAST-IN-PLACE CONCRETE TEST PILES	EACH	2			2
804 (11) (A)	LOADING TEST PILES (CAST-IN-PLACE CONCRETE PILES)	EACH	2			2
804 (12) (A)	RELOADING TEST PILES (CAST-IN-PLACE CONCRETE PILES)	EACH	2			0
804 (15) (A)	REDRIVING TEST PILES (CAST-IN-PLACE CONCRETE PILES)	EACH	2			0
804 (16) (A)	LOADING PERMANENT PILES (CAST-IN-PLACE CONCRETE PILES)	EACH	~~28,018~~ 2			0
804 (4) (F)	STEEL BEARING PILES (14x14½ - 73#)	LIN. FT.	29,463			25,332.0
804 (9)	UNLOADED STEEL BEARING TEST PILES	EACH	2			2
804 (11) (B)	LOADING TEST PILES (STEEL BEARING PILES)	EACH	2			2
804 (12) (B)	RELOADING TEST PILES (STEEL BEARING PILES)	EACH	2			0
804 (15) (B)	REDRIVING TEST PILES (STEEL BEARING PILES)	EACH	2			0
804 (16) (B)	LOADING PERMANENT PILES (STEEL BEARING PILES)	EACH	2			0
805 (8) (A)	CLASS A CONCRETE IN PIERS ABOVE FOOTINGS (PIERS 1 & 1S)	CU. YD.	~~3,309.21~~			3,121.94
805 (8) (B)	CLASS A CONCRETE IN PIERS ABOVE SUBSHAFTS (PIERS 4, 1N & 2N)	CU. YD.	~~3,072.06~~			3,070.05
805 (11) (A)	CLASS D CONCRETE (DISTRIBUTION BLOCKS - PIERS 2 & 3)	CU. YD.	~~5,182.42~~			5,429.93
805 (11) (B)	CLASS D CONCRETE IN FOOTINGS (PIERS 1S & 1)	CU. YD.	1,790.07			1,790.07
805 (11) (C)	CLASS D CONCRETE IN FOOTINGS (PIERS 1N & 2N)	CU. YD.	1,959.11			1,959.11
805 (11) (D)	CLASS D CONCRETE IN PIER SUBSHAFTS (PIERS 2, 3, 4, 1N & 2N)	CU. YD.	~~(41,594.72)~~ ~~42,028.31~~			42,770.32
805 (13) (A)	CLASS S CONCRETE (PIERS 1N & 2N)	CU. YD.	~~2,799.41~~			2,811.18
805 (13) (B)	CLASS S CONCRETE (CAISSON - PIER 2)	CU. YD.	~~5,177.28~~			5,011.90
805 (13) (C)	CLASS S CONCRETE (CAISSON - PIER 3)	CU. YD.	~~6,770.73~~			7,043.39
806 (1) (A)	DEFORMED REINFORCING STEEL	POUND	~~2512,991~~ ~~(2,502,691)~~			2,513,857
807 (1)	STRUCTURAL CARBON STEEL (A36)	POUND	~~1,580,063~~			1,589,133
812 (2)	TREATED TIMBER	MFBM	~~148.451~~			147.341
S101	MASS VOLUME IN CAISSON (PIER 2)	CU. YD.	54,516.53			54,516.53
S102	MASS VOLUME IN CAISSON (PIER 3)	CU. YD.	76,276.10			76,576.10
S103	WILLOW MATTRESS	SQUARE	~~1,421~~			1,[illegible]
S104	8"Ø CAST IRON DRAIN PIPE	LIN. FT.	~~272~~			272.32
S105	MOBILIZATION OF EQUIPMENT AND MATERIALS	LUMP SUM	LUMP SUM			$ 350,000.00
TP-100	TRAINEE REIMBURSEMENT	TRAINEE HR.	~~11,000~~			11,301.50
	LAYOUT "A"					
805 (11) (E)	CLASS D CONCRETE (DISTRIBUTION BLOCK - PIER 4 - ALTERNATE A)	CU. YD.		~~1,506.74~~		1,589.50
805 (13) (D)	CLASS S CONCRETE (PIER 4 - ALTERNATE A)	CU. YD.		~~2,241.94~~		2,350.94
806 (1) (B)	DEFORMED REINFORCING STEEL (DISTRIBUTION BLOCK - PIER 4 - ALTERNATE A)	POUND		85,097		85,097
S106	MASS VOLUME IN CAISSON (PIER 4 - ALTERNATE A)	CU. YD.		21,429.06		21,429.06
	LAYOUT "B"					
805 (11) (F)	CLASS D CONCRETE (DISTRIBUTION BLOCK - PIER 4 - ALTERNATE B)	CU. YD.			~~1,749.39~~	
805 (13) (E)	CLASS S CONCRETE (PIER 4 - ALTERNATE B)	CU. YD.			~~2,589.79~~	
806 (1) (C)	DEFORMED REINFORCING STEEL (DISTRIBUTION BLOCK - PIER 4 - ALTERNATE B)	POUND			~~89,041~~	
S107	MASS VOLUME IN CAISSON (PIER 4 - ALTERNATE B)	CU. YD.			~~24,446.16~~	
802 (4) (x)	STRUCTURAL EXCAVATION FOR PIERS (WET) (PIERS 1-N and 2-N)	CU. YDS.			P.C. no. 7	5,206.01
[illegible]	[illegible] (Pier 1 & 1S) (Contains for 10% Pay)	CU. YDS.			P.C. no. 11	303.86
[illegible]	[illegible] (Pier 2 & 3) (Contains for 10% Pay)	CU. YDS.			P.C. no. 19	2.57
[illegible]	[illegible] (Pier 4 & 1-N & 2-N) (Contains for 10% Pay)	CU. YDS.			P.C. no. 27	[illegible]
[illegible]	[illegible] (Contains for 10% Pay)	CU. YDS.			P.C. no. 11	57.73
[illegible]	[illegible] (Contains for 10% Pay)	CU. YDS.			P.C. no. 27	401.06
[illegible]	[illegible] (Contains for 10% Pay)	CU. YDS.			P.C. no. 27	642.26
[illegible]	[illegible] (Contains for 30% Pay)	CU. YDS.			P.C. no. 27	231.55
[illegible]	[illegible] (Contains for 30% Pay)	CU. YDS.			P.C. no. 27	231.55
[illegible]	[illegible] (Contains for 33% Pay)	CU. YDS.			P.C. 11	1,490.71
[illegible]	[illegible] 1N and 2N	LUMP SUM				$ 7,870.00
[illegible]	[illegible] Horizontal Joints (Pier 2 & 3)	LUMP SUM			P.C. no. 8	[illegible]
[illegible]	[illegible] Horizontal Joints (Pier 4)	LUMP SUM			P.C. no. 10	[illegible]
[illegible]	[illegible] to 24" Header	LUMP SUM			P.C. no. 15	[illegible]
[illegible]	[illegible] Strand and Anchor Strips	LUMP SUM			P.C. no. 14	$ [illegible]
[illegible]	[illegible] Pipe (Piers 2 and 3)	LUMP SUM			P.C. no. 25	$ 1,700.00
[illegible]		~~LUMP SUM~~			~~P.C. no. 34~~	[illegible]
[illegible]	REMOVE FOR REPAIRS OF SUPERSTRUCTURE	LUMP SUM			P.C. no. 31	148,612.00
					100% FOR [illegible]	[illegible]
	FREIGHT ADJUSTMENT					

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(3)223	450-37-01	ST. CHARLES	8

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SUMMARY OF QUANTITIES
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

PRAUSS AND LEWARKO - MOUTON AND MATTERN
CONSULTING ENGINEERS

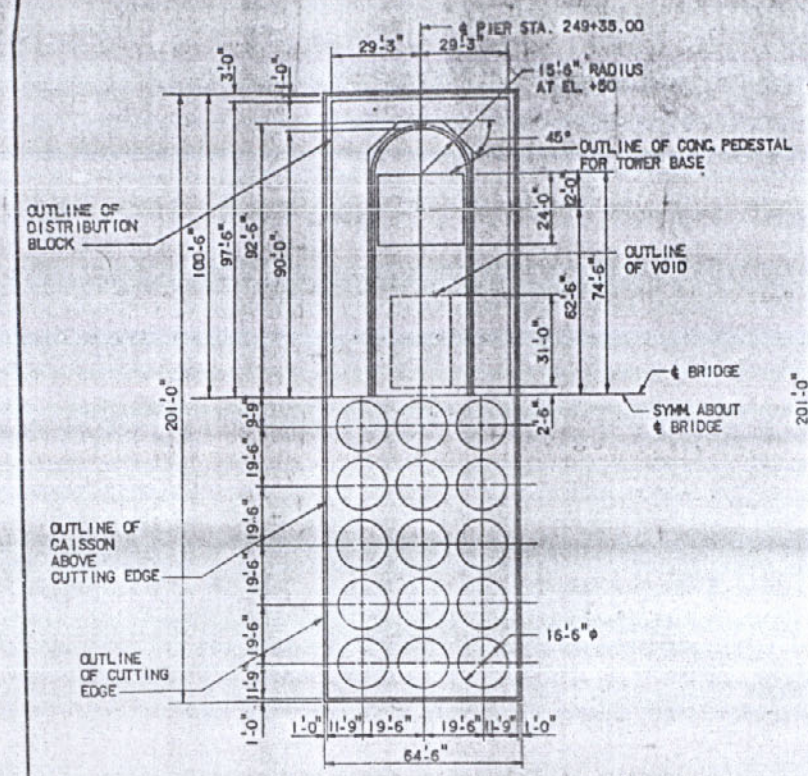
DATE: [illegible]
DRAWN BY: [illegible]
CHECKED BY: [illegible]

REVISIONS

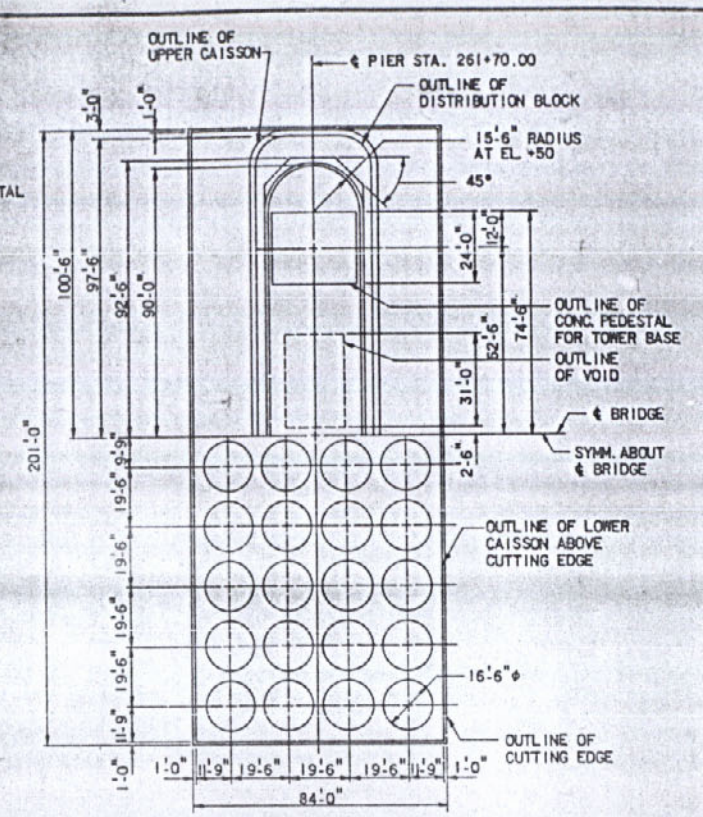
72

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	430-37-01	ST. CHARLES	6

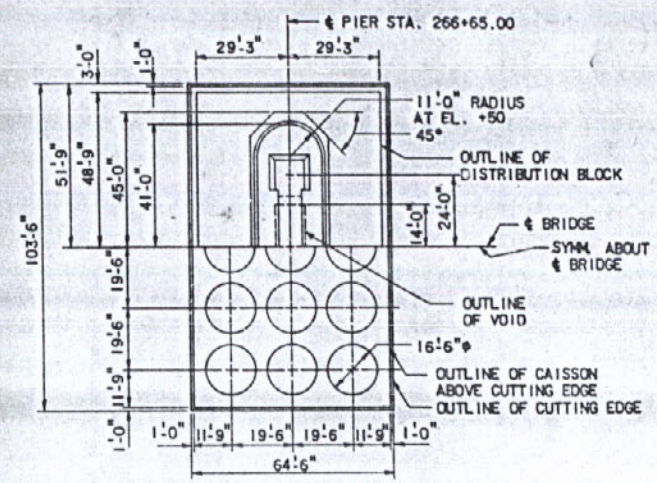
73



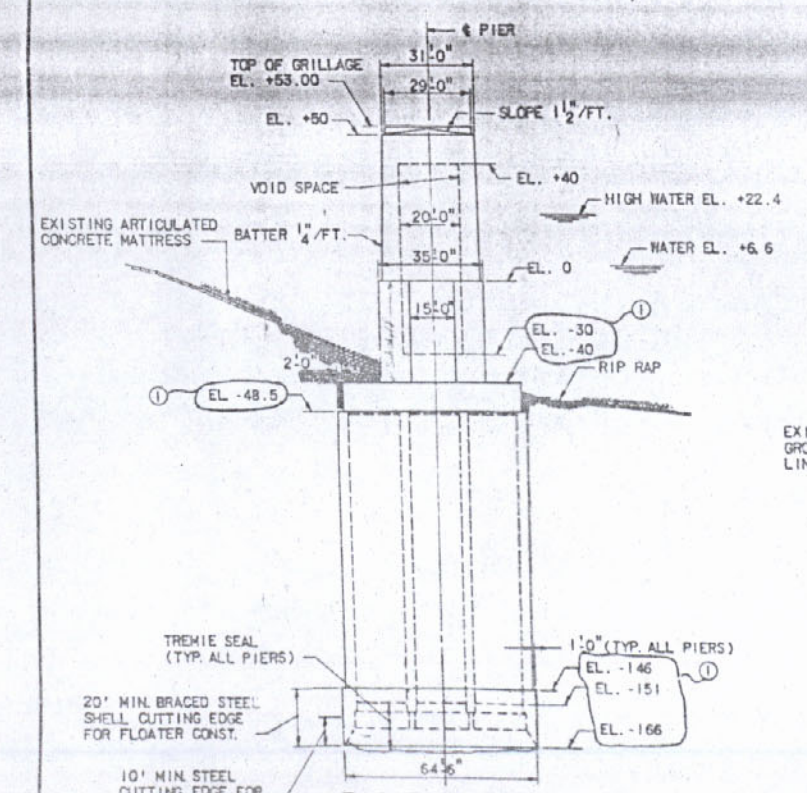
PIER 2
HALF PIER PLAN
& HALF CAISSON SECTION



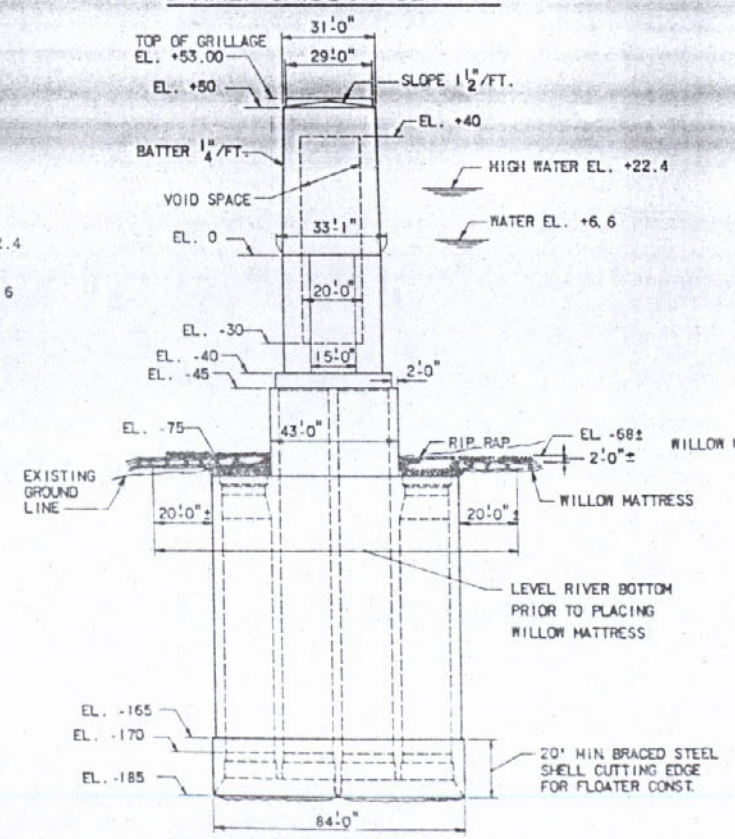
PIER 3
HALF PIER PLAN
& HALF CAISSON SECTION



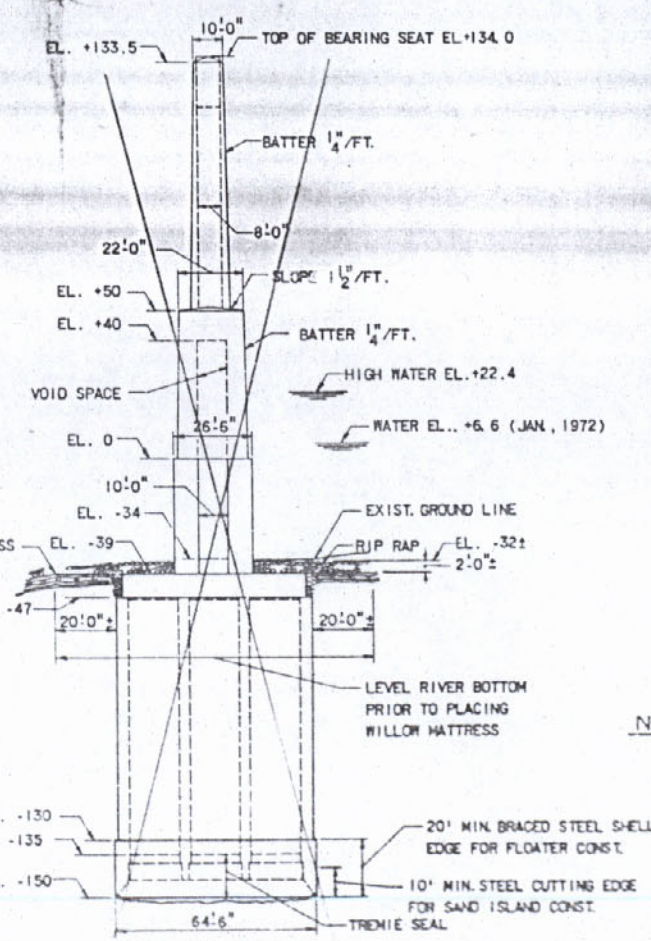
PIER 4-ALTERNATE B
HALF PIER PLAN
& HALF CAISSON SECTION



END ELEVATION
PIER 2



END ELEVATION
PIER 3



END ELEVATION
PIER 4-ALTERNATE B

NOTES
FOR GENERAL NOTES, SEE DWG. NO. 4.
PIER PROTECTION DETAILS ARE NOT SHOWN.

DATE	DESCRIPTION	BY
	REV. PIER 2 ELEV.	
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GENERAL DIMENSIONS
MAIN BRIDGE RIVER PIERS - I
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

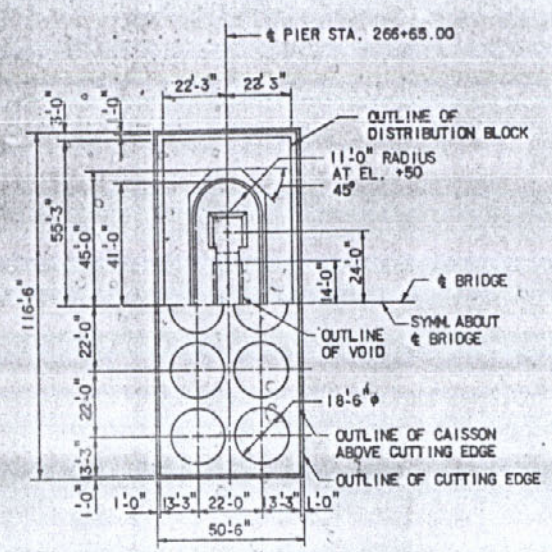
DATE MAR. 15, 1974 | SCALE 1"=30' | DWG. NO. 6
DRAWN BY S.H. | CHKD. BY C.T. | IN CHARGE H.C.B. | APPROVED

0502
0204

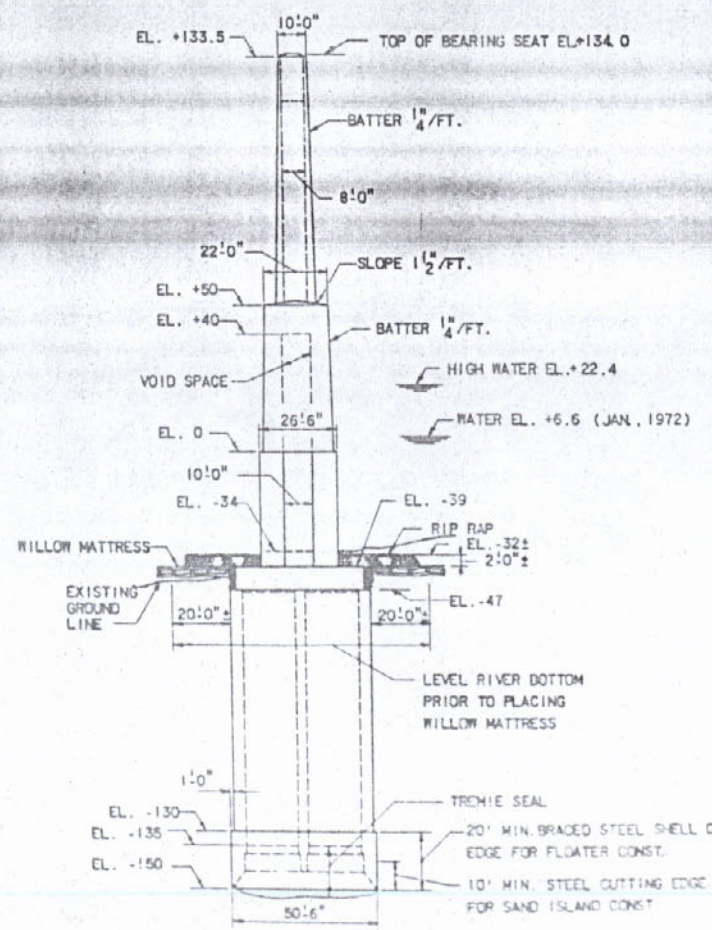
AS BUILT

74

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)225	450-37-01	ST. CHARLES	7



PIER 4-ALTERNATE A
HALF PIER PLAN
& HALF CAISSON SECTION



END ELEVATION
PIER 4-ALTERNATE A

CAISSON DESIGN DATA

LOAD SUMMARY			PIER 2	PIER 3	PIER 4 ALTERNATE A	PIER 4 ALTERNATE C
SUPERSTRUCTURE DEAD LOAD	AXIAL LOAD	(KIPS)	22,500	22,500	910	910
	LONGITUDINAL MOMENT	(K-FT.)	40,000	34,000	—	—
	LONGITUDINAL LOAD	(KIPS)	108	108	—	—
DRY WEIGHT OF PIER BENT		(KIPS)	—	—	4,276	4,276
WEIGHT OF PIER SHAFT TO ELEV. 0 (BUOYANT BELOW EL. +1.0)		(KIPS)	35,326	35,426	11,917	11,917
BUOYANT WEIGHT OF PIER SUBSHAFT		(KIPS)	16,524	17,612	6,849	6,849
BUOYANT WEIGHT OF DISTRIBUTION BLOCK		(KIPS)	8,775	3,882	3,564	4,138
BUOYANT WEIGHT OF CAISSON		(KIPS)	59,102	83,878	24,657	26,972
BUOYANT WEIGHT OF TREMIE SEAL		(KIPS)	12,245	16,015	5,303	6,125
ASSUMED ELEV. OF EARTH AND RIPRAP OVERBURDEN			-25	-68	-32	-32
BUOYANT WEIGHT OF OVERBURDEN ON PROJECTIONS		(KIPS)	7,575	4,945	2,706	2,905
LIVE LOAD REACTION FROM SUPERSTRUCTURE (GROUP I)	MINIMUM AXIAL	(KIPS)	0	0	-1,200	-1,200
	MAXIMUM AXIAL	(KIPS)	2,968	2,974	1,396	1,396
	MAXIMUM LONG. MOM.	(K-FT.)	51,362	45,504	—	—
	MAXIMUM LONG. LOAD	(K-FT.)	136	136	—	—
CAISSON BUOYANT WT. ÷ OUTSIDE CONTACT AREA		(LB/S.F.)	818	1,302	648	704
CAISSON BASE SIZE		(FT.)	201x64.5	201x84	116.5x50.5	103.5x64.5
GROSS BUOYANT D.L. PRESSURE ON BASE (AXIAL LOAD)		(T/S.F.)	6.25	5.45	5.11	4.80
GROSS BUOYANT D.L. EDGE PRESSURE ON BASE (LONG. LOADS)		(T/S.F.)	0.23	0.13	—	—
TOTAL GROSS BUOYANT D.L. PRESSURE ON BASE (EDGE PRESSURE)		(T/S.F.)	6.48	5.58	5.11	4.80
ASSUMED ELEV. OF EXISTING EARTH			-25	-72	-36	-36
EXISTING EARTH PRESSURE		(T/S.F.)	3.92	3.25	3.28	3.28
NET ADDITIONAL D.L. PRESSURE		(T/S.F.)	2.56	2.33	1.83	1.52
EDGE PRESSURE CAUSED BY HURRICANE WIND (HW)		(T/S.F.)	1.72	1.30	0.65	0.54
NET ADDITIONAL EDGE PRESSURE CAUSED BY DL+HW		(T/S.F.)	4.28	3.63	2.48	2.[illegible]

THE LOADS AND PRESSURES GIVEN ABOVE ARE BASED ON THE FOLLOWING ASSUMPTIONS:
WATER ELEVATION +1.00 (M.S.L.)

	GROSS	BUOYANT
EARTH WEIGHT	120 LB/C.F.	57.6 LB/C.F.
CONCRETE WEIGHT	150 LB/C.F.	87.6 LB/C.F.
RIPRAP WEIGHT	90.4 LB/C.F.	34.0 LB/C.F.

NOTE: SUPERSTRUCTURE LONGITUDINAL LOADS ARE SHOWN FOR EL. +50.

NOTES

FOR GENERAL NOTES, SEE DWG. NO. 4.
PIER PROTECTION DETAILS ARE NOT SHOWN.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GENERAL DIMENSIONS
MAIN BRIDGE RIVER PIERS-2
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LEONARD-MOUTENO AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE MAR. 3, 1971 SCALE 1"=5' CONTRACT 7
DRAWN BY D.A.S. CHKD BY CTR IN CHARGE DEN APPROVED DEN

AS BUILT

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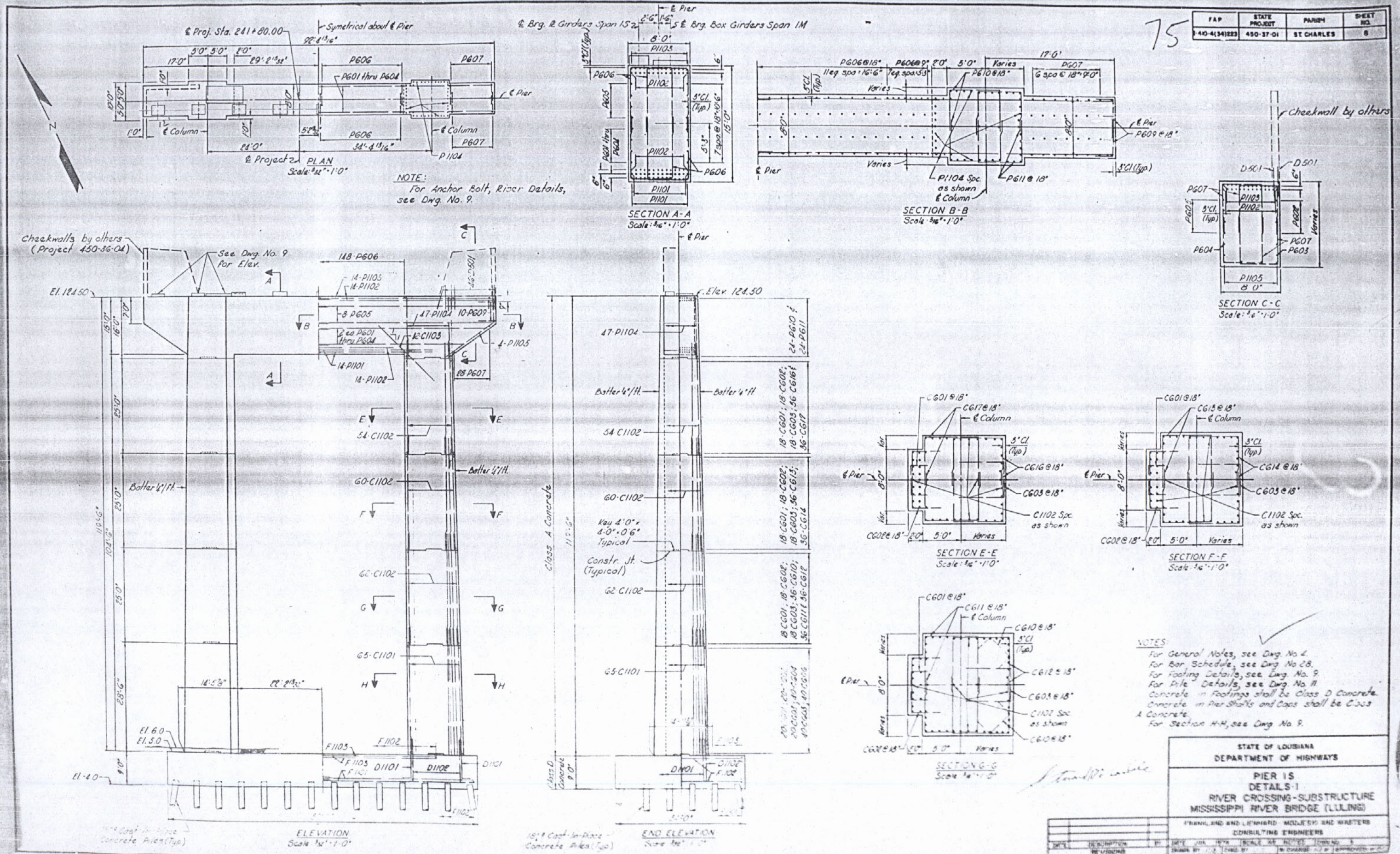
FAP	STATE PROJECT	PARISH	SHEET NO.
F-410-4(34)223	450-37-01	ST CHARLES	8



NOTES:
For General Notes, see Dwg. No. 4.
For Bar Schedule, see Dwg. No. 28.
For Footing Details, see Dwg. No. 9.
For Pile Details, see Dwg. No. 11.
Concrete in Footings shall be Class D Concrete.
Concrete in Pier Shafts and Caps shall be Class A Concrete.
For Section H-H, see Dwg. No. 9.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 1S
DETAILS-1
RIVER CROSSING-SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LENHARD - MOZUCH AND WATTERS
CONSULTING ENGINEERS

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
F-410-4(34)223	450-37-01	ST. CHARLES	9

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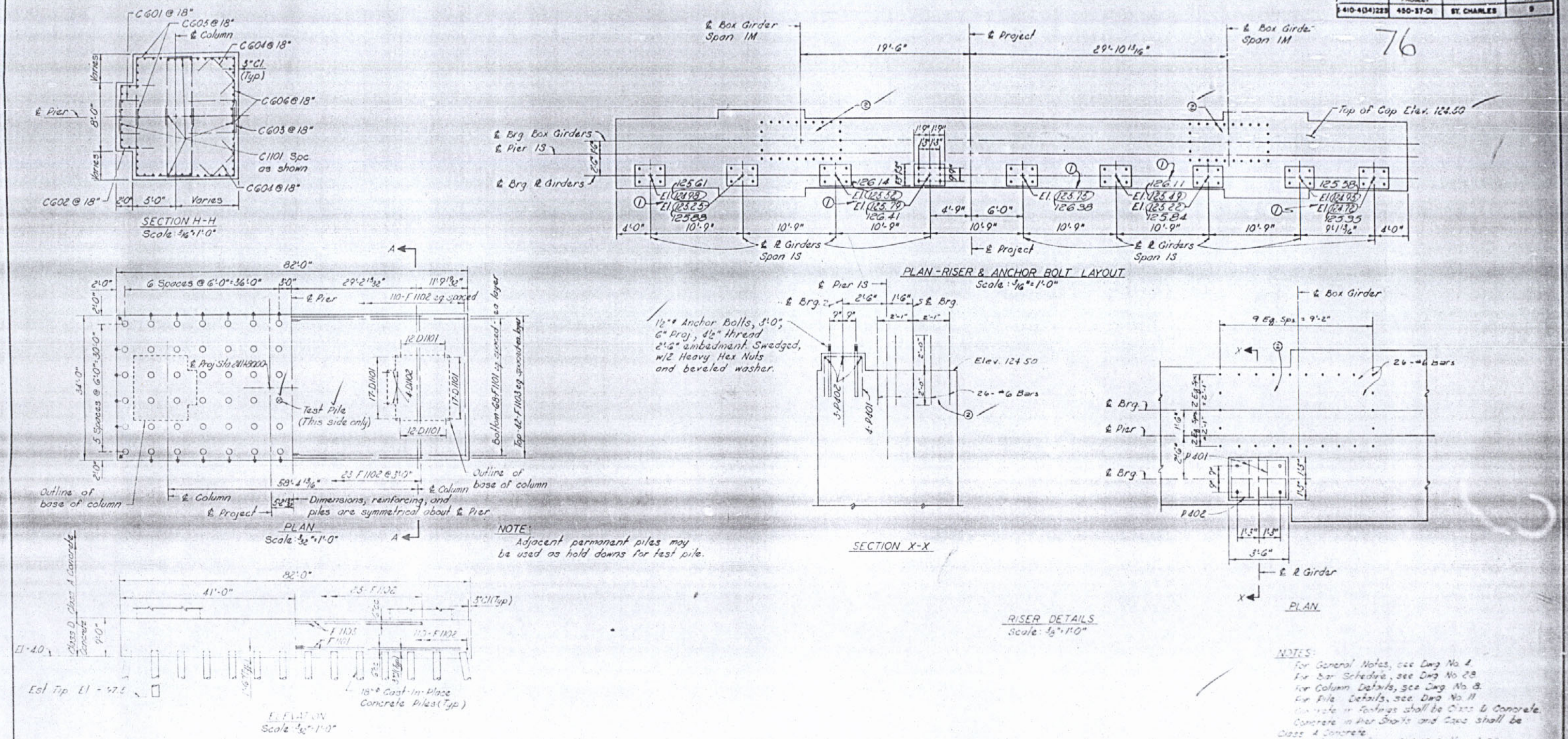

NOTES:
For General Notes, see Dwg. No. 1.
For Bar Schedule, see Dwg. No. 28.
For Column Details, see Dwg. No. 8.
For Pile Details, see Dwg. No. 11.
Concrete in footings shall be Class D Concrete.
Concrete in Pier Shafts and Caps shall be Class A Concrete.
← Denotes direction of 2:12 battered piles.
Design Pile Load = 91.1 Tons.
Payment for Anchor Bolts will be made under Item 607-10, Structural Carbon Steel (A.36).

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 1S
DETAILS - 2
RIVER CROSSING - SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LEONARD - MOJESKI AND MATTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE JUL. 1976 SCALE AS NOTED DWG. NO. 9
DRAWN BY CHKD. BY IN CHARGE APPROVED BY

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
H.410-4(3)223	450-37-01	ST. CHARLES	78

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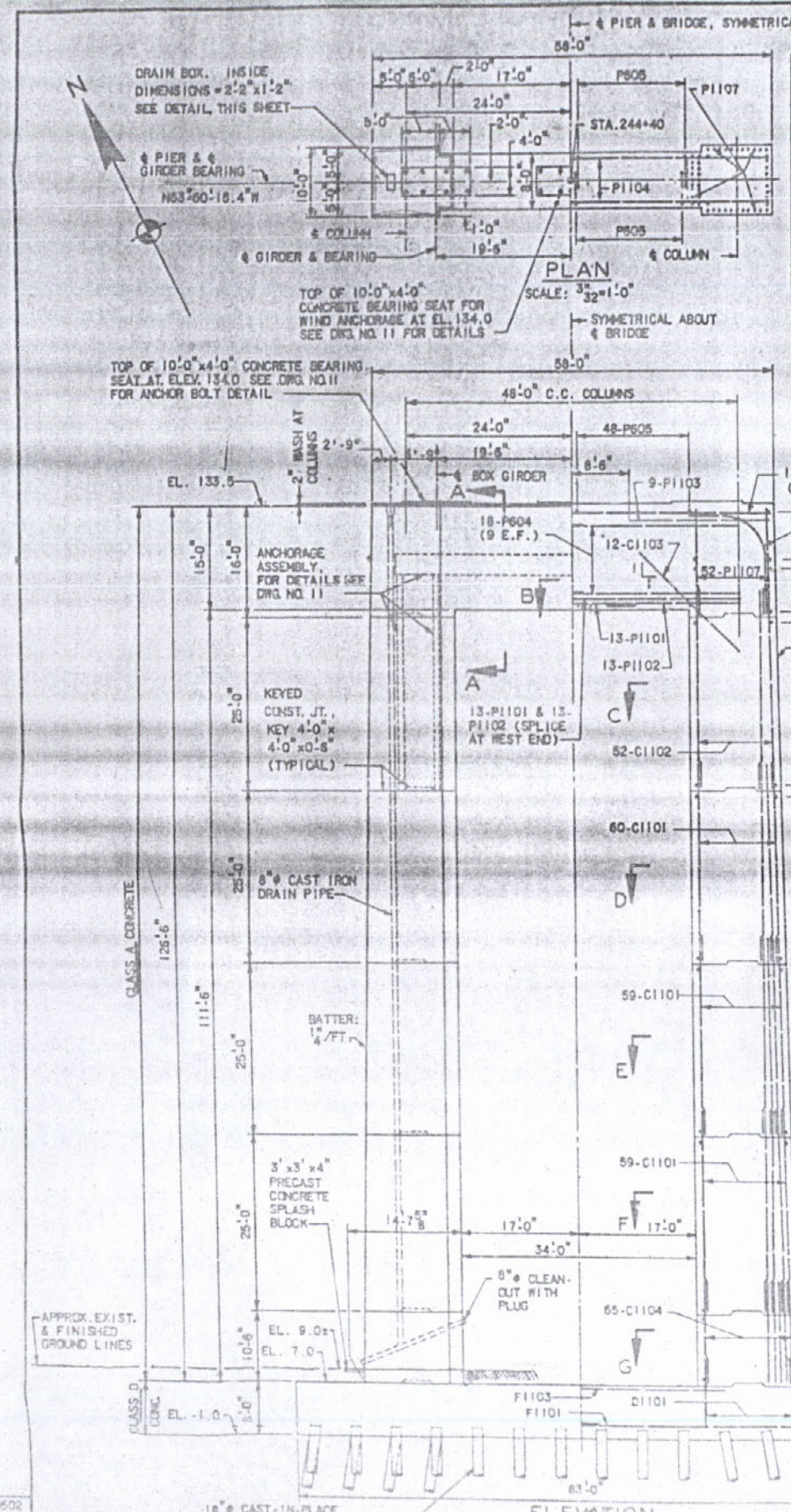
ASSUMED SUPERSTRUCTURE REACTIONS

	VERTICAL FORCE	TRANSVERSE *	
		FORCE	MOMENT
	(KIPS/GIRDER)	(KIPS/PIER)	(FT-KIPS/PIER)
DEAD	98 TO 508	—	—
LIVE (MAX.)	698	—	—
LIVE (MIN.)	-500	—	—
WIND	±160	±445	±4895
.3 WIND +WIND ON LIVE	±61	±148	±1628
HURRICANE WIND	±220	±612	±6732

* ACTING AT CENTER OF STRUT



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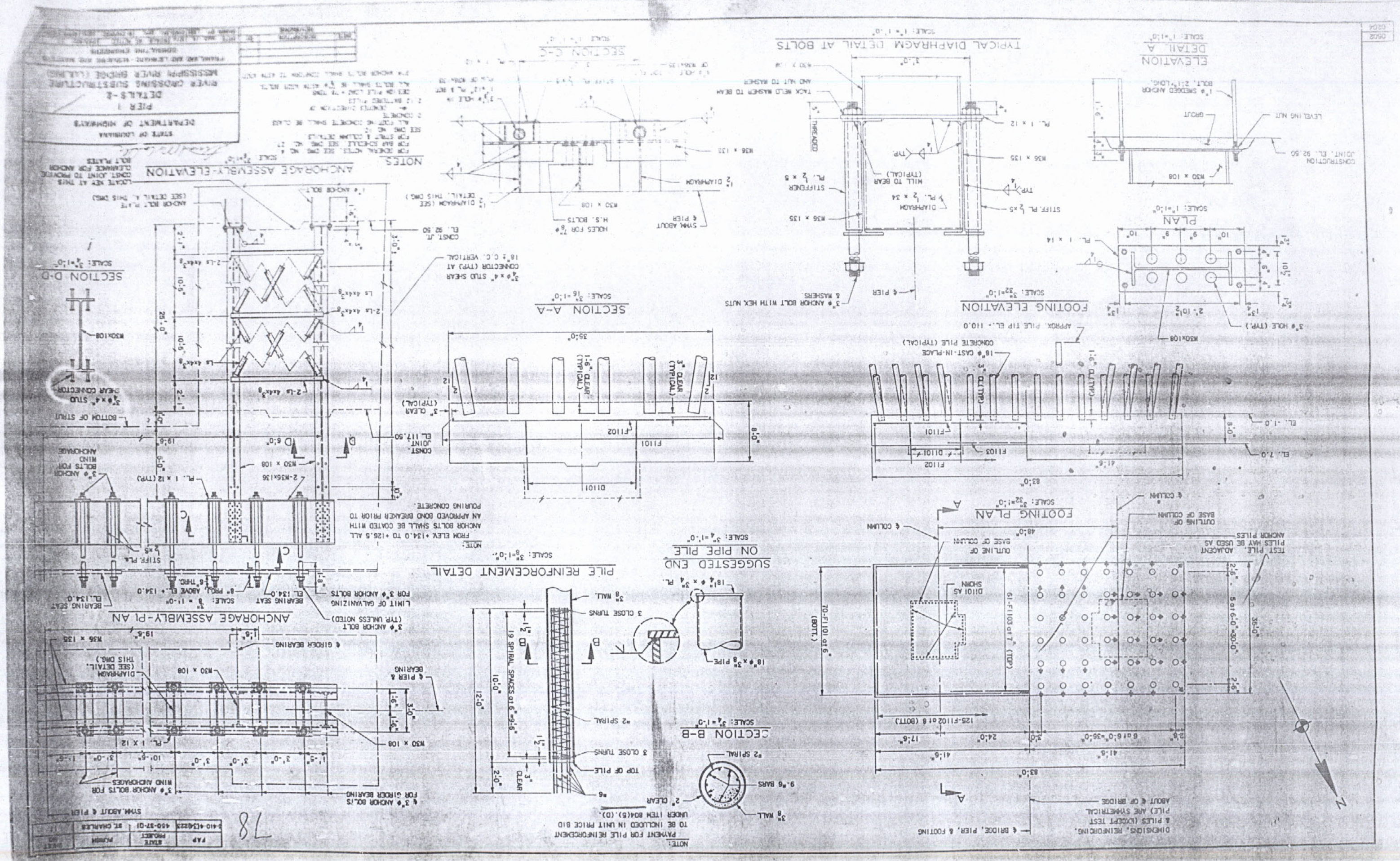
ANCHORAGE ASSEMBLY-ELEVATION
SCALE: 3/4"=1'-0"
ANCHORAGE ASSEMBLY-PLAN
SECTION D-D
SCALE: 3/4"=1'-0"
SECTION A-A
SCALE: 3/16"=1'-0"
SECTION C-C
SCALE: 1"=1'-0"
NOTES
TYPICAL DIAPHRAGM DETAIL AT BOLTS
SCALE: 1"=1'-0"
FOOTING ELEVATION
SCALE: 3/32"=1'-0"
ELEVATION
DETAIL A
SCALE: 1"=1'-0"
PLAN
SCALE: 1"=1'-0"
FOOTING PLAN
SCALE: 3/32"=1'-0"
PILE REINFORCEMENT DETAIL
SCALE: 3/8"=1'-0"
SUGGESTED END ON PIPE PILE
SCALE: 3/4"=1'-0"
SECTION B-B
SCALE: 3/4"=1'-0"
NOTE:
PAVEMENT FOR PILE REINFORCEMENT TO BE INCLUDED IN UNIT PRICE BID UNDER ITEM 804(B).(D).
NOTE:
FROM ELEV. +134.0 TO +126.5 ALL ANCHOR BOLTS SHALL BE COATED WITH AN APPROVED BOND BREAKER PRIOR TO POURING CONCRETE.
DIMENSIONS, REINFORCING, & PILES (EXCEPT TEST PILE) ARE SYMMETRICAL ABOUT ℄ OF BRIDGE
℄ BRIDGE, PIER, & FOOTING
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
PIER 1
DETAILS-2
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FAP 410-4(34223)
STATE PROJECT 450-37-01
ST. CHARLES
SHEET 80
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FAP	STATE PROJECT	PARISH	SHEET NO.
F-410-4(34)223	450-37-01	ST. CHARLES	12

NOTES:

CONSTRUCTION OF THE CAISSON FOR PIER 2 MUST NOT ENDANGER THE STABILITY OF THE LEVEE OR RESULT IN UNDUE DAMAGE TO THE EXISTING ARTICULATED CONCRETE MATTRESS, AND CONSTRUCTION OF PIER 2 MUST CONFORM TO THE REQUIREMENTS OF THE CORPS OF ENGINEERS IN THESE RESPECTS. NO CONSTRUCTION AT THIS LOCATION WILL BE PERMITTED PRIOR TO OBTAINING APPROVAL BY THE CORPS OF ENGINEERS. THE CONSTRUCTION OF PIER 2 CAN BE AS SHOWN IN ANY OF THE ALTERNATE SCHEMES SHOWN HERE WHICH REPRESENT, IN A GENERAL WAY, CONSTRUCTION SCHEMES WHICH HAVE BEEN APPROVED BY THE CORPS OF ENGINEERS. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT TO THE CORPS OF ENGINEERS FOR APPROVAL THE PROPOSED DETAILS AND SEQUENCE OF CONSTRUCTION FOR PIER 2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL SHEET PILE INSTALLATIONS AND SLOPED EMBANKMENTS ARE ADEQUATE IN ALL RESPECTS.

THE CONTRACTOR WILL NOT BE PERMITTED TO DRIVE SHEET PILES, GUIDE PILES, OR DO ANY WORK INVOLVING VIBRATION WHEN THE RIVER STAGE IS ABOVE EL. +12.

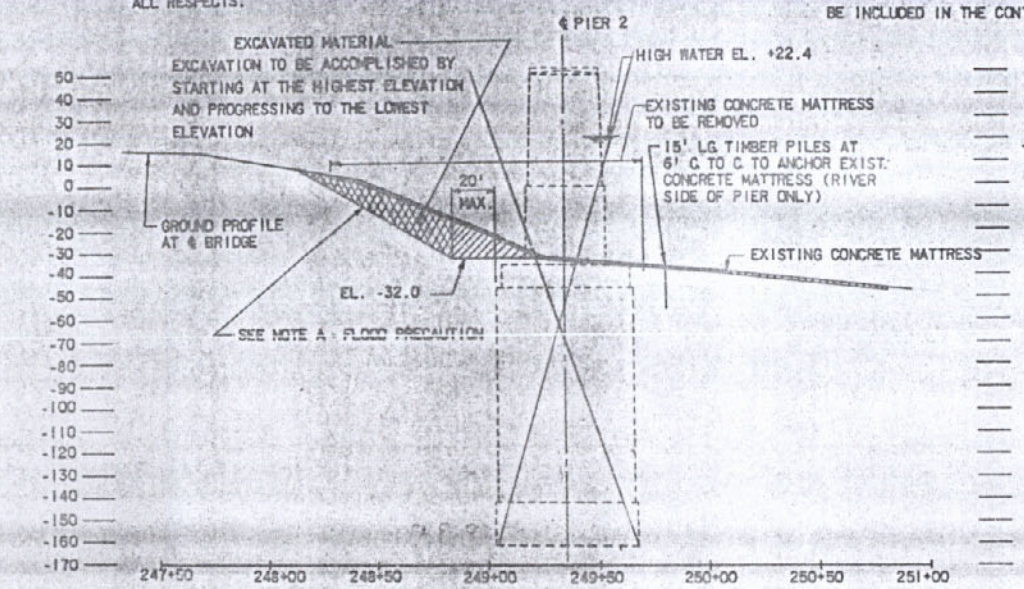
IMMEDIATELY AFTER COMPLETION OF THE CAISSON, ALL EXCAVATED SECTIONS SHALL BE BACKFILLED WITH RIPRAP, SO THAT THE SURFACE MATCHES THE ORIGINAL GROUND LINE WITHIN ONE FOOT TOLERANCE. (SEE DWG NO 29).

EXCAVATION MAY NOT BE CARRIED BELOW THE ELEVATIONS SHOWN.

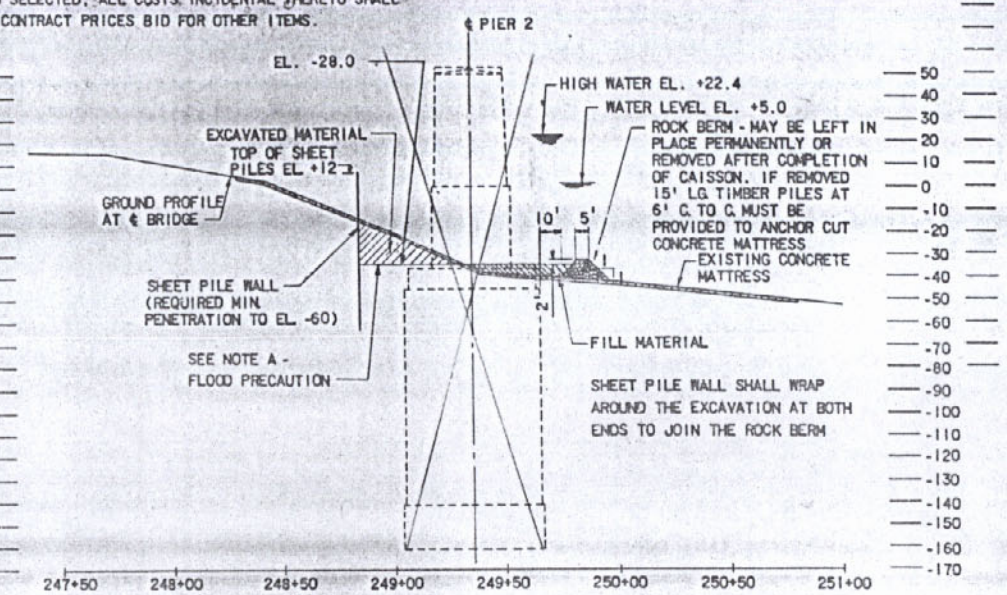
UPON COMPLETION OF THE CAISSON, FILL MATERIAL SHALL BE REMOVED TO THE CONTOURS EXISTING AT THE BEGINNING OF WORK; AND PROTECTIVE RIPRAP PLACED AS SHOWN ON DWG 29 (ALTERNATES 3, 4 & 5).

PAYMENT FOR RIPRAP USED AT PIER 2 WILL BE LIMITED TO A MAXIMUM QUANTITY OF 6,000 TONS. IF ADDITIONAL RIPRAP IS REQUIRED FOR THE CONSTRUCTION METHOD SELECTED, ALL COSTS INCIDENTAL THERETO SHALL BE INCLUDED IN THE CONTRACT PRICES BID FOR OTHER ITEMS.

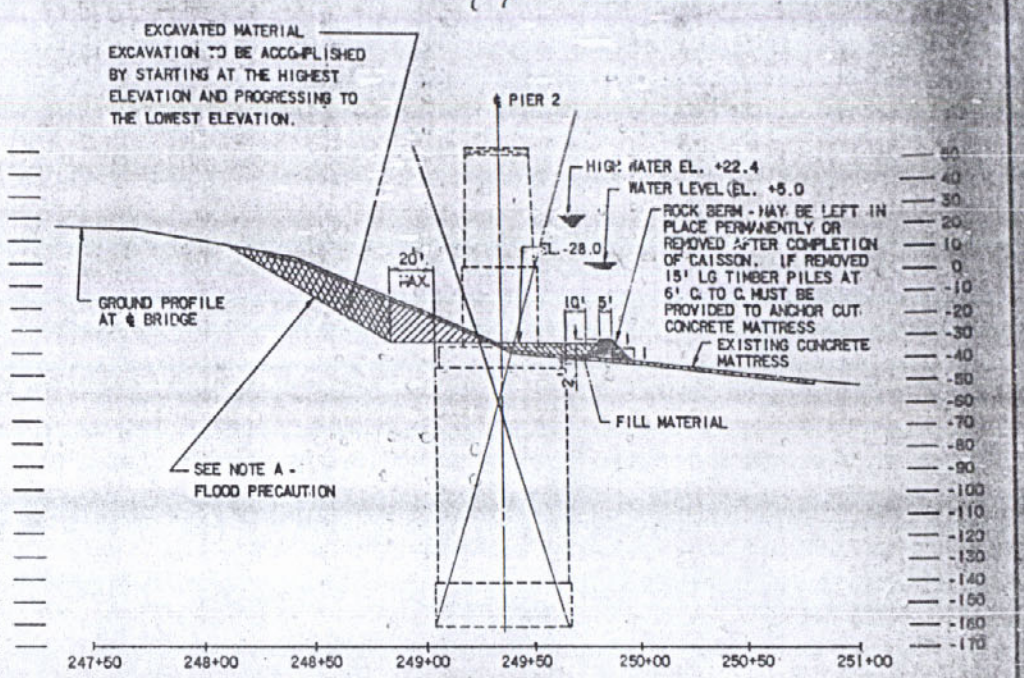
ALL RIPRAP SHALL CONFORM TO THE GRADATION FOR "STONE FOR HEAVY DEPOSITED RIPRAP" AS DEFINED IN THE SPECIAL PROVISIONS, ITEM 711(6).



ALTERNATE 1
FLOATER WITH BENCH



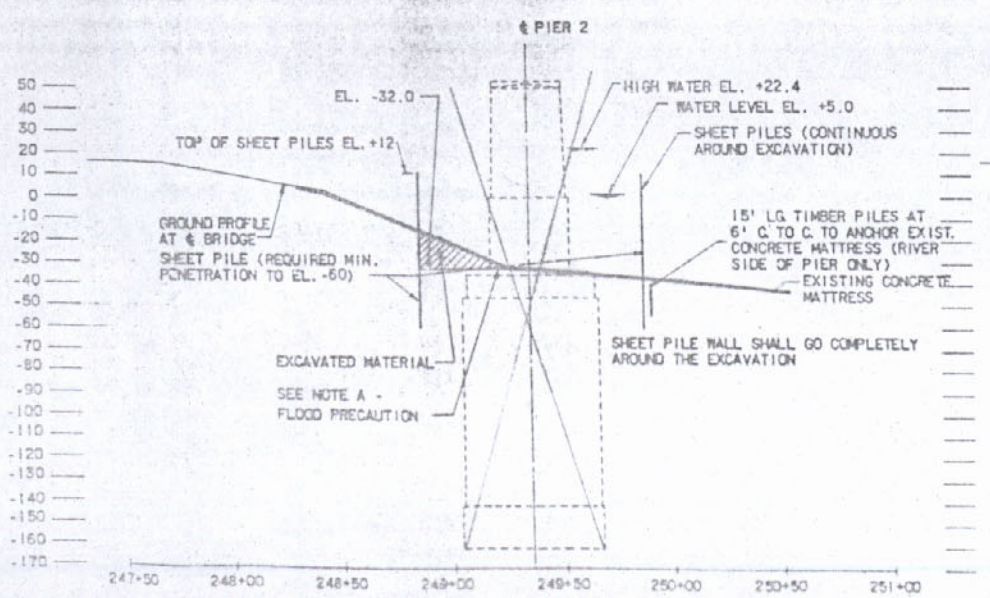
ALTERNATE 3 -
FLOATER WITH CUT & FILL COMBINATION



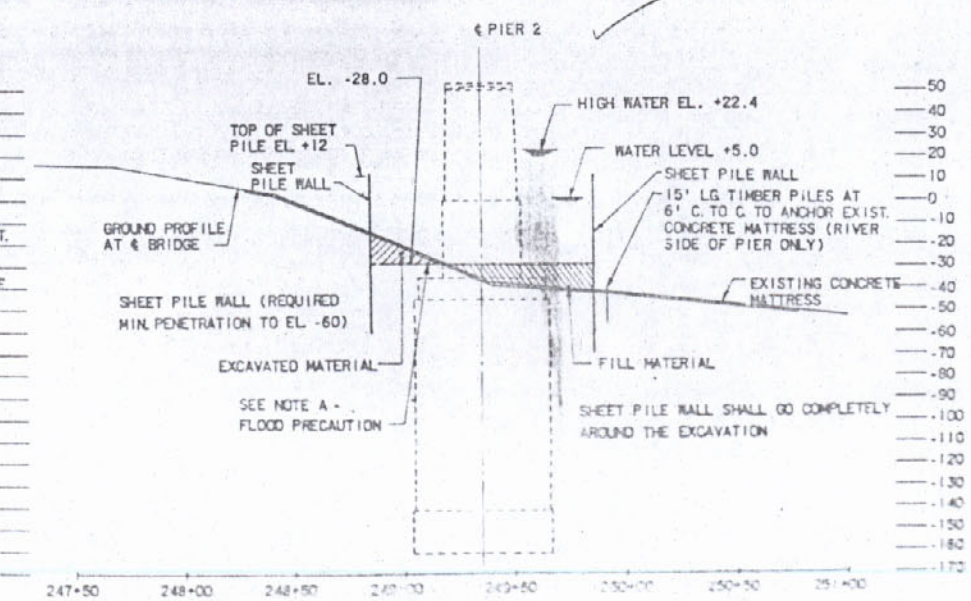
ALTERNATE 5
FLOATER WITH CUT & FILL COMBINATION

NOTE A - FLOOD PRECAUTION

FOR ALTERNATE SCHEMES 1 THRU 5 THE FOLLOWING REQUIREMENT IS NECESSARY TO PROTECT THE STABILITY OF THE LEVEE WHEN THE RIVER STAGE REACHES +12. IF THE RIVER STAGE EXCEEDS +12 THE CONTRACTOR SHALL IMMEDIATELY RESTORE ALL EXCAVATED PORTIONS TO THE ORIGINAL GROUND LINE, BY FILLING WITH RIPRAP SO THAT THE TOP SURFACE OF THE RIPRAP CONFORMS TO THE ORIGINAL GROUND LINE, WITHIN A TOLERANCE OF ONE FOOT. THE CONTRACTOR SHALL INSURE THAT SUFFICIENT QUANTITIES OF RIPRAP ARE AT ALL TIMES AVAILABLE FOR THIS IMMEDIATE USE.



ALTERNATE 2
CAISSON WITH BENCH



ALTERNATE 4
CAISSON WITH CUT & FILL COMBINATION

NOTES:

FOR GENERAL NOTES, SEE DRAWING NO. 4.

FOR DETAILS OF FINAL EROSION PROTECTION AT PIER 2, SEE DRAWING NO. 29.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 2
ALTERNATE CONSTRUCTION METHODS
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIEBHARD - MOUTON AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY

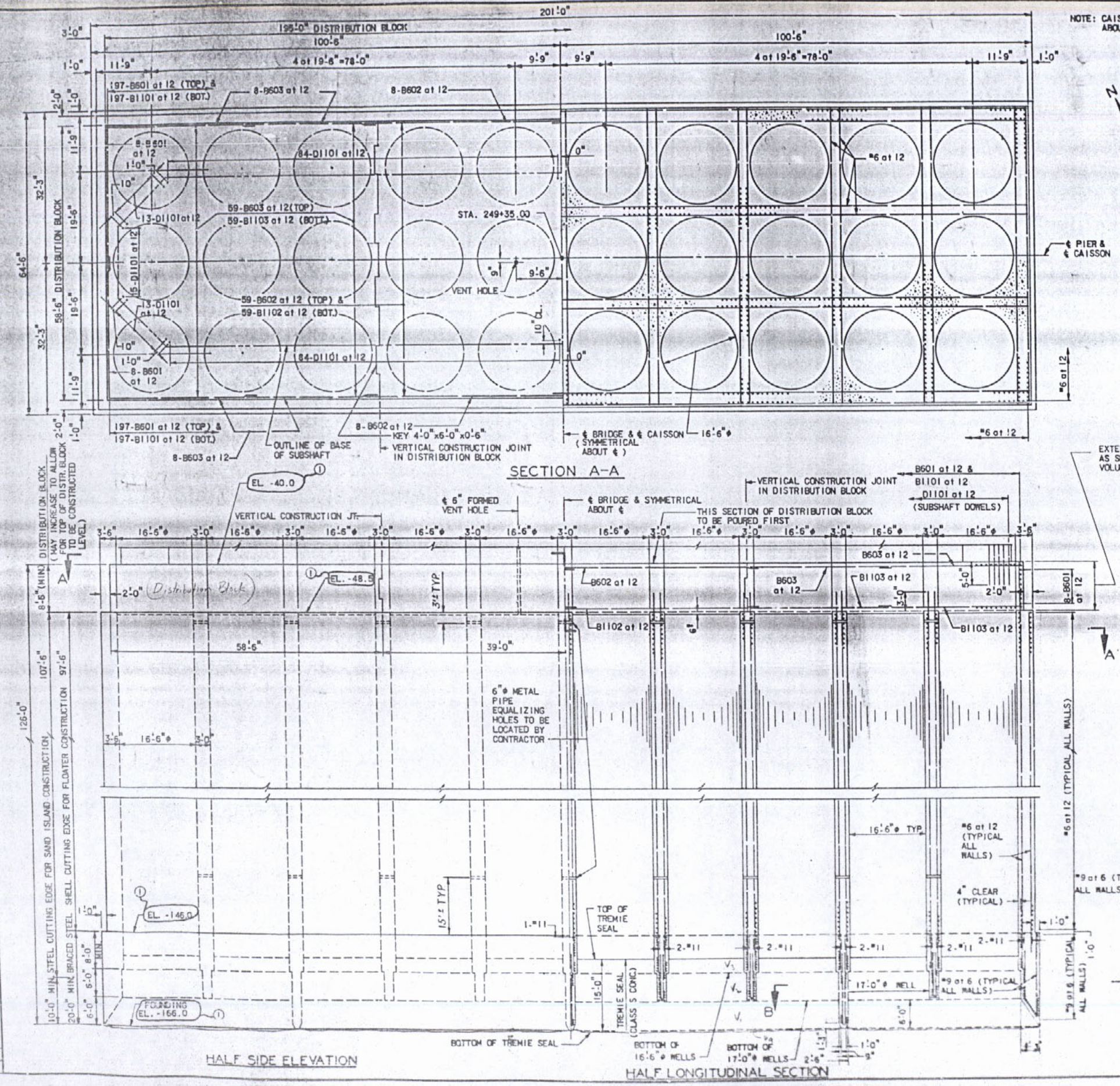
DATE MAR. 1, 1974 SCALE 1" = 40'-0" TRACING NO. 12
DRAWN BY CRC CHKD. BY JCF DRAWING NO. 12 APPROVED

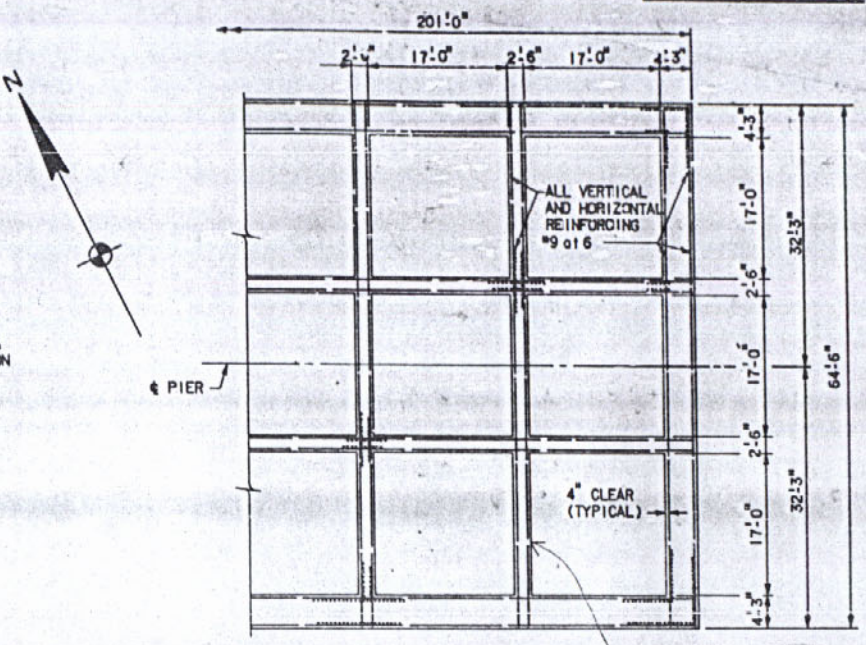
AS BUILT

FAP	STATE PROJECT	PARISH	SHT. NO.
3-410-4(34)223	450-37-01	ST. CHARLES	15

80

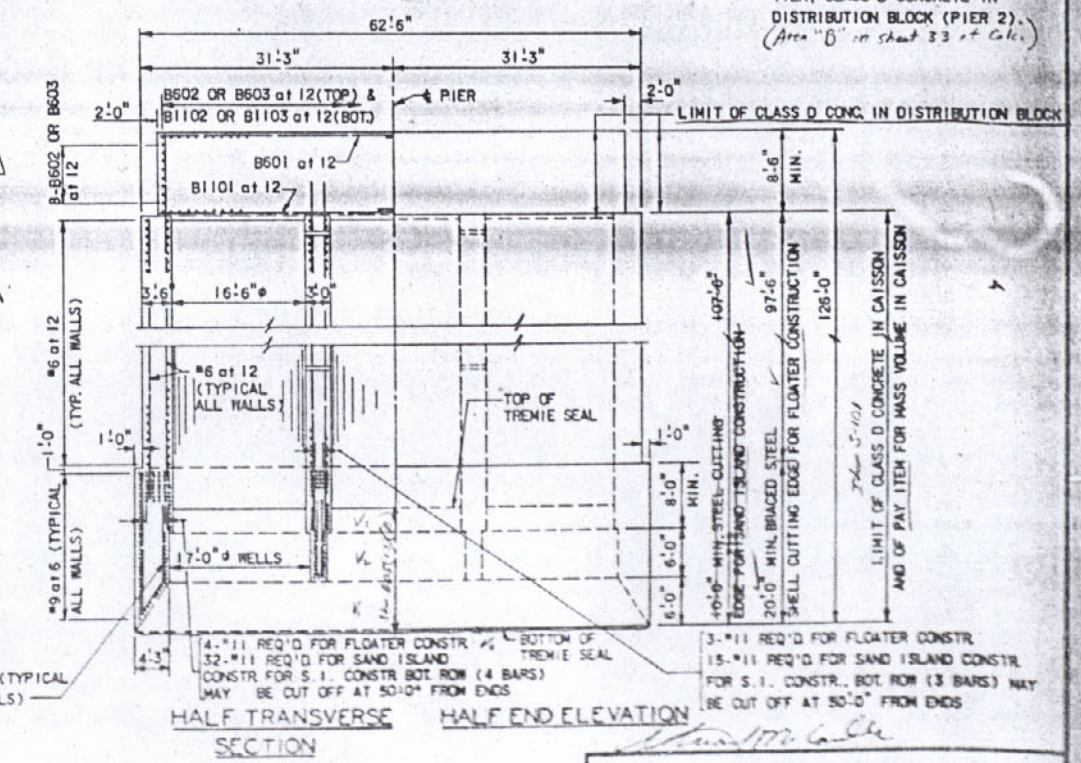
NOTE: CAISSON IS SYMMETRICAL ABOUT ℄'s.





NOTE: NO PAYMENT WILL BE MADE FOR DREDGE WELL SUPPORT FORMS FOR THE DISTRIBUTION BLOCK. THIS WORK IS INCIDENTAL TO THE ITEM, CLASS D CONCRETE IN DISTRIBUTION BLOCK (PIER 2). (Area "D" on sheet 33 of Calc.)

EXTEND VERTICAL #6 AT 12 AS SHOWN (INCLUDED IN MASS VOLUME FOR PAYMENT).



NOTES:

FOR GENERAL NOTES, SEE DWG NO. 4.
FOR PIER SHAFT DETAILS, SEE DWG NO. 17.
FOR LOCATION OF PERMISSIBLE BULKHEADS, SEE DWG NO. 14.
FOR ADDITIONAL NOTES, SEE DWG NO. 14.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 2
CAISSON DETAILS
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANK, AND LEONARD - MOSLEY AND MATTERS
CONSULTING ENGINEERS

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

DATE MAR. 1, 1974 SCALE 1/32" = 1'-0" DWG. NO. 13
DRAWN BY LDR CHKD. BY CTZ W. CHANG CHKD. APPROVED

0502
0204

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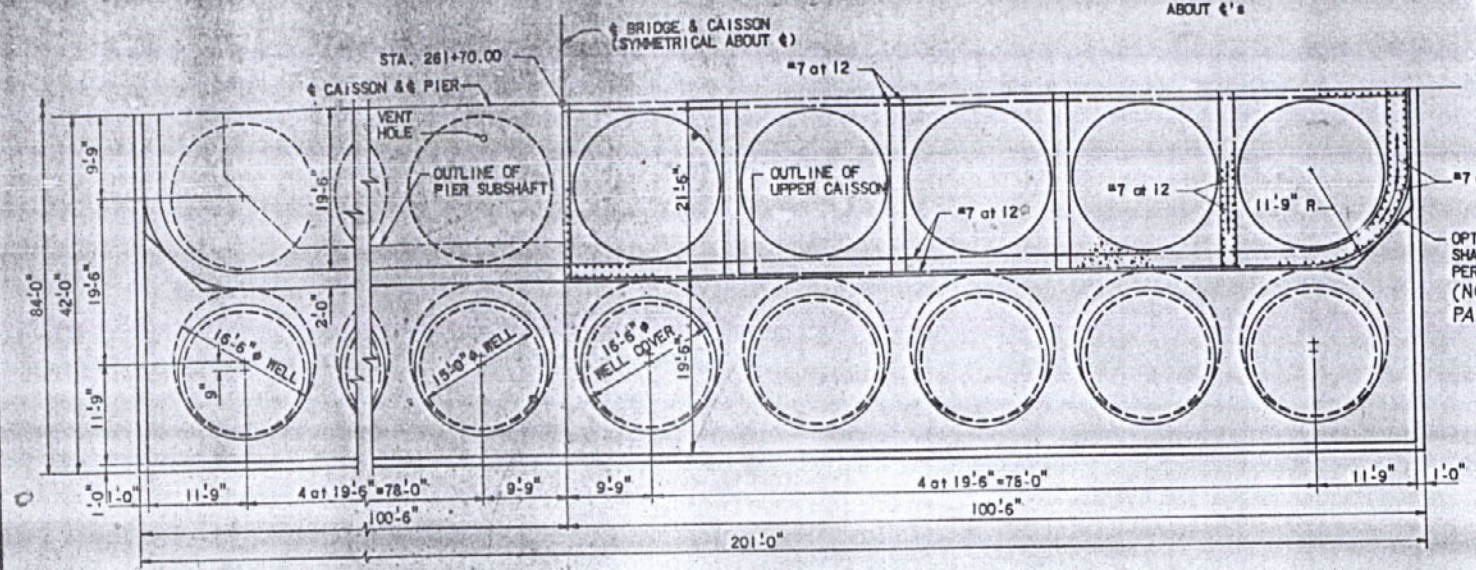
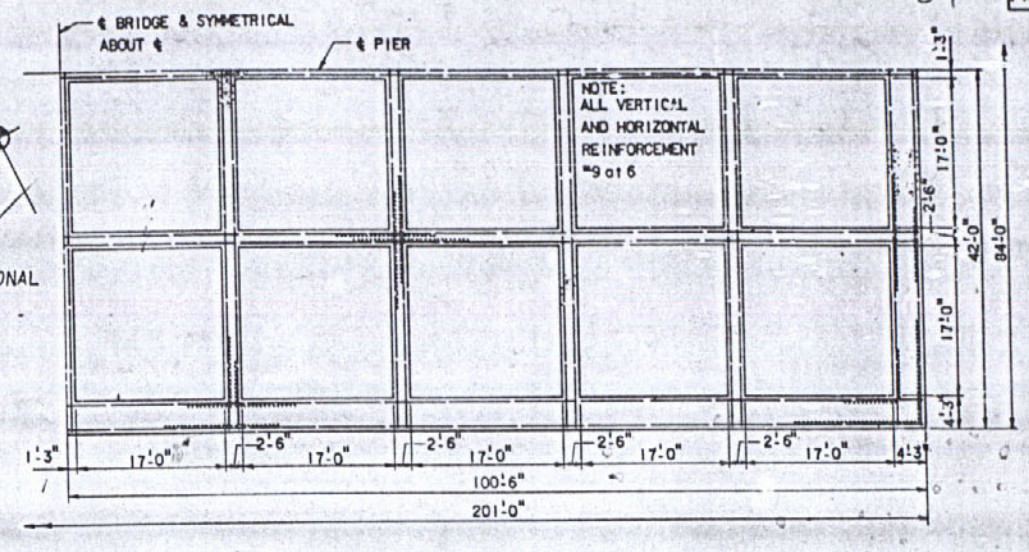
FAP	STATE PROJECT	PARISH	SHEET NO.
3-410-4(34)223	450-37-01	ST. CHARLES	14

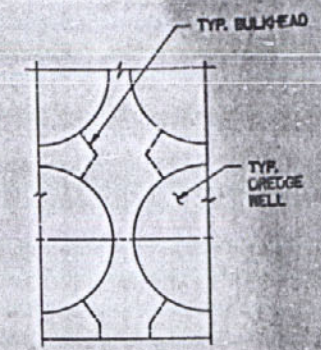
NOTE: CAISSON SYMMETRICAL ABOUT ℄'s



SECTION A-A



NOTE: ALL REINFORCEMENT SHALL BE CONTINUOUS THROUGH BULKHEADS.



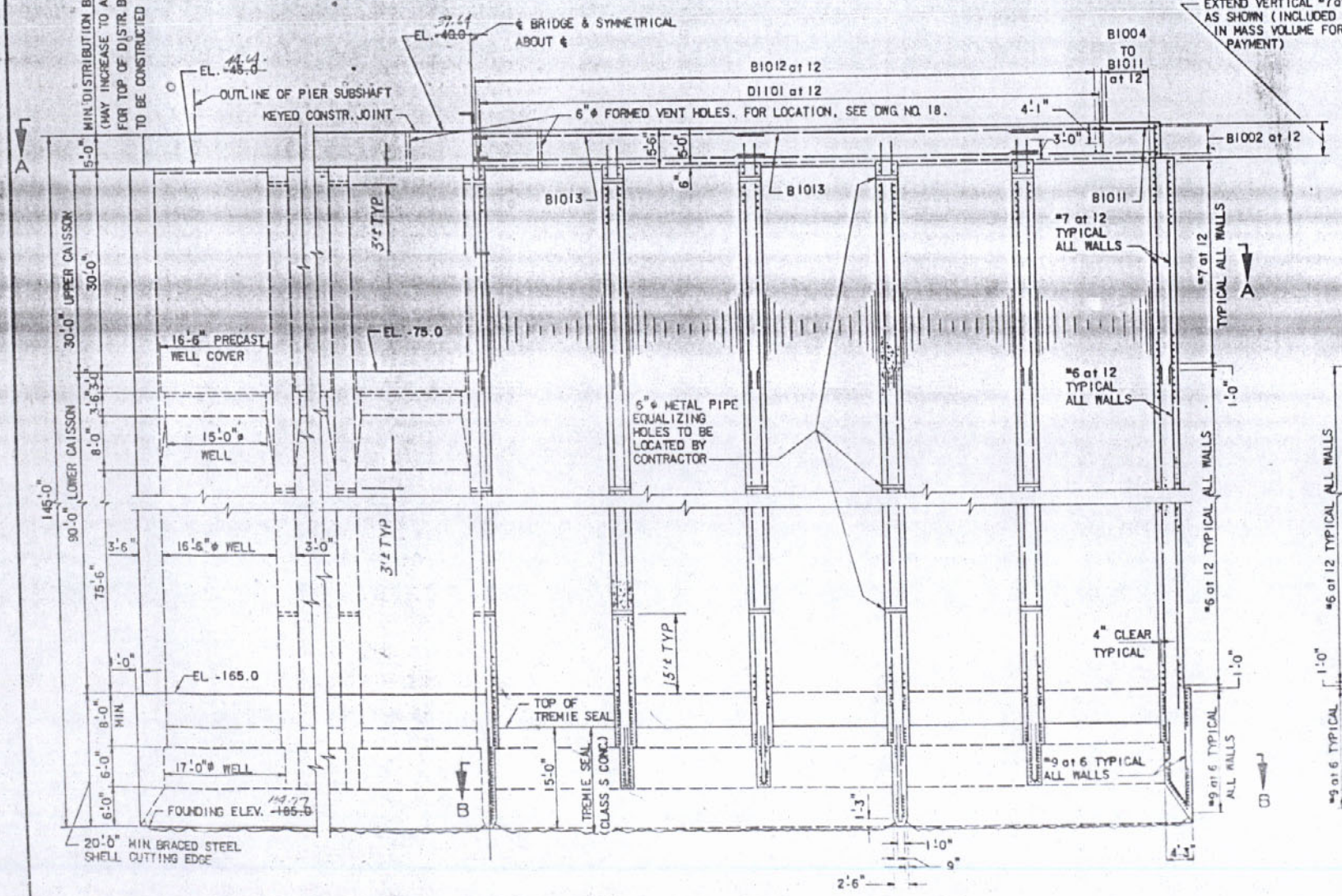
LOCATION OF PERMISSIBLE BULKHEADS

NOTE: BULKHEADS SHALL BE STAGGERED IN SUCCESSIVE LIFTS. IF BULKHEADS ARE NOT STAGGERED THEN ADEQUATE SHEAR KEYS WILL BE PROVIDED BETWEEN POURS. SHEAR KEYS TO BE APPROVED BY ENGINEERS.

See P.C. 8

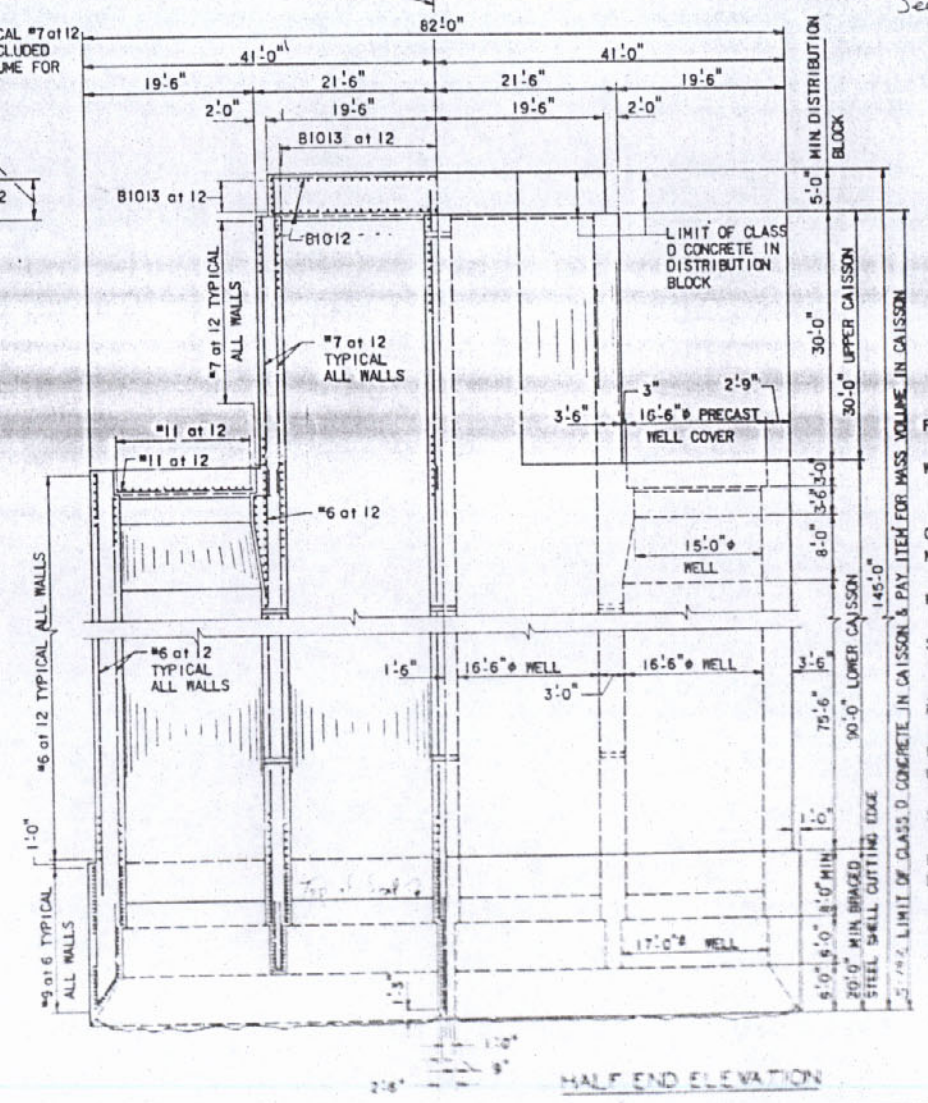
NOTE: NO PAYMENT WILL BE MADE FOR DREDGE WELL SUPPORT FORMS FOR THE DISTRIBUTION BLOCK. THIS WORK IS INCIDENTAL TO THE ITEM. CLASS D CONCRETE IN DISTRIBUTION BLOCK (PIER 3).

SECTION B-B



HALF SIDE ELEVATION

HALF LONGITUDINAL SECTION



HALF TRANSVERSE SECTION

HALF END ELEVATION

GENERAL NOTES FOR CAISSONS:

FOR GENERAL NOTES, SEE DWG. NO. 4.

MINIMUM CLEAR DISTANCE FROM REINFORCING STEEL TO FACE OF CONCRETE SHALL BE 4".

REINFORCING BAR SPLICES MAY BE LOCATED TO CONFORM WITH THE CONTRACTOR'S SCHEDULE AND METHODS OF CONSTRUCTION.

ALL CONSTRUCTION JOINTS SHALL BE ADEQUATELY KEYED.

USE OF INTERNAL JETTING SYSTEM IS OPTIONAL WITH THE CONTRACTOR. PROPOSED LOCATIONS OF JETTING SYSTEM COMPONENTS ARE SUBJECT TO APPROVAL BY THE ENGINEER.

IN ANY REDESIGN OF THE CAISSON, THE CONTRACTOR SHALL USE WALL THICKNESSES NOT LESS THAN THOSE SHOWN.

FOR DETAILS OF DISTRIBUTION BLOCK REINFORCING AND PIER SHAFT, SEE DWG. NO. 18. (PIER 3)

FOR TYPICAL CUTTING EDGE DETAIL, SEE DWG. NO. 15.

FOR GENERAL LOCATION OF GROUND LINE, WATER LEVELS, MATTRESS AND RIPRAP, SEE DWG. NO. 6.

THE PRECAST WELL COVERS FOR THE LOWER CAISSON SHALL BE WATERTIGHT PRIOR TO POURING THE DISTRIBUTION BLOCK FOR THE UPPER CAISSON. (PIER 3)

STRUCTURAL STEEL MAY BE EMBEDDED IN THE CAISSON TO SUBSTITUTE FOR REINFORCING STEEL.

ELEV. OF TOP OF CAISSON AND TOP OF DISTR. BLOCK MAY VARY BECAUSE OF POSSIBLE VARIATION IN CAISSON FOUNDING ELEVATION.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 3
CAISSON DETAILS
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND LEONARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

0502
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AS BUILT

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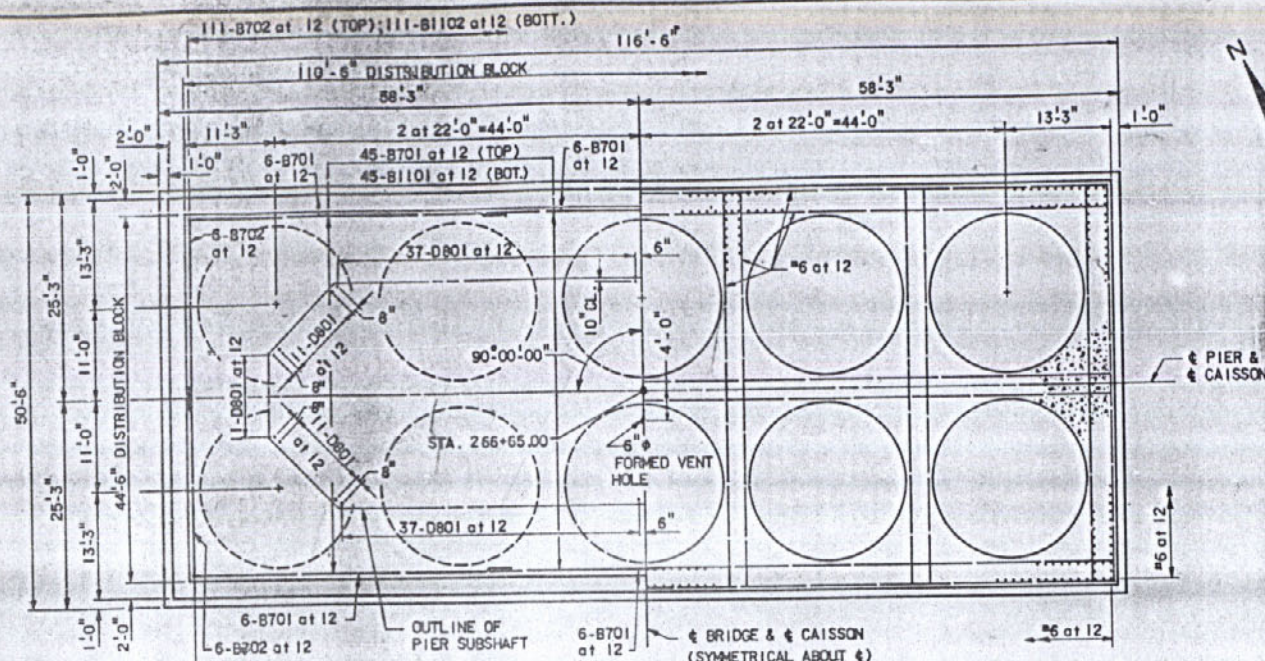
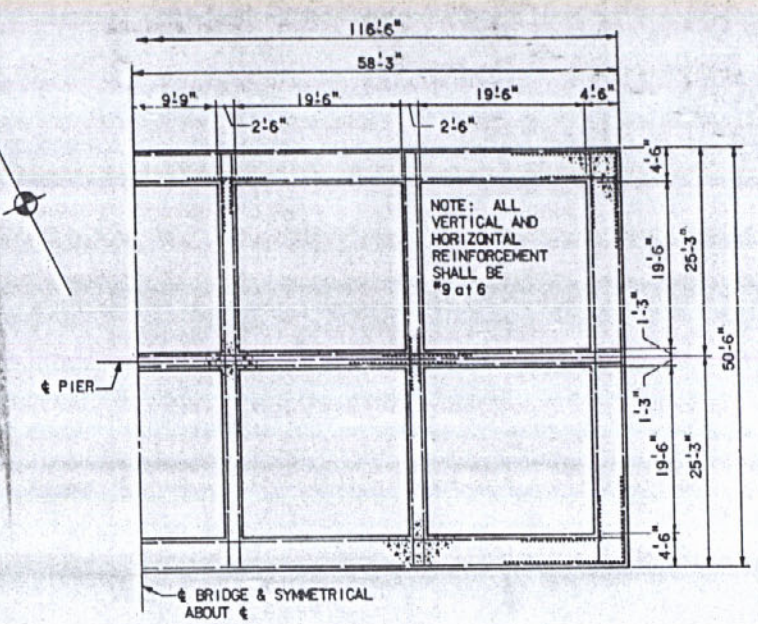
FAP	STATE PROJECT	PARISH	NO.
2-410-4(3)022B	450-57-01	ST. CHARLES	15

NOTE: ½" SKIN PL REQD. TO MIN. 10' ABOVE BOTTOM OF CUTTING EDGE. CONTRACTOR MAY USE ⅜" SKIN PL FOR REMAINDER OF 20' CUTTING EDGE HEIGHT.



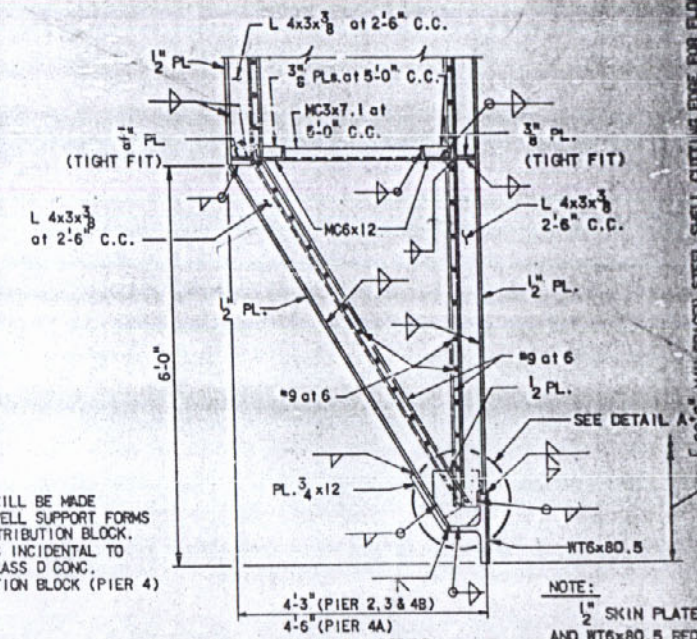
SECTION A-A

NOTE: CAISSON IS SYMMETRICAL ABOUT ℄'s.



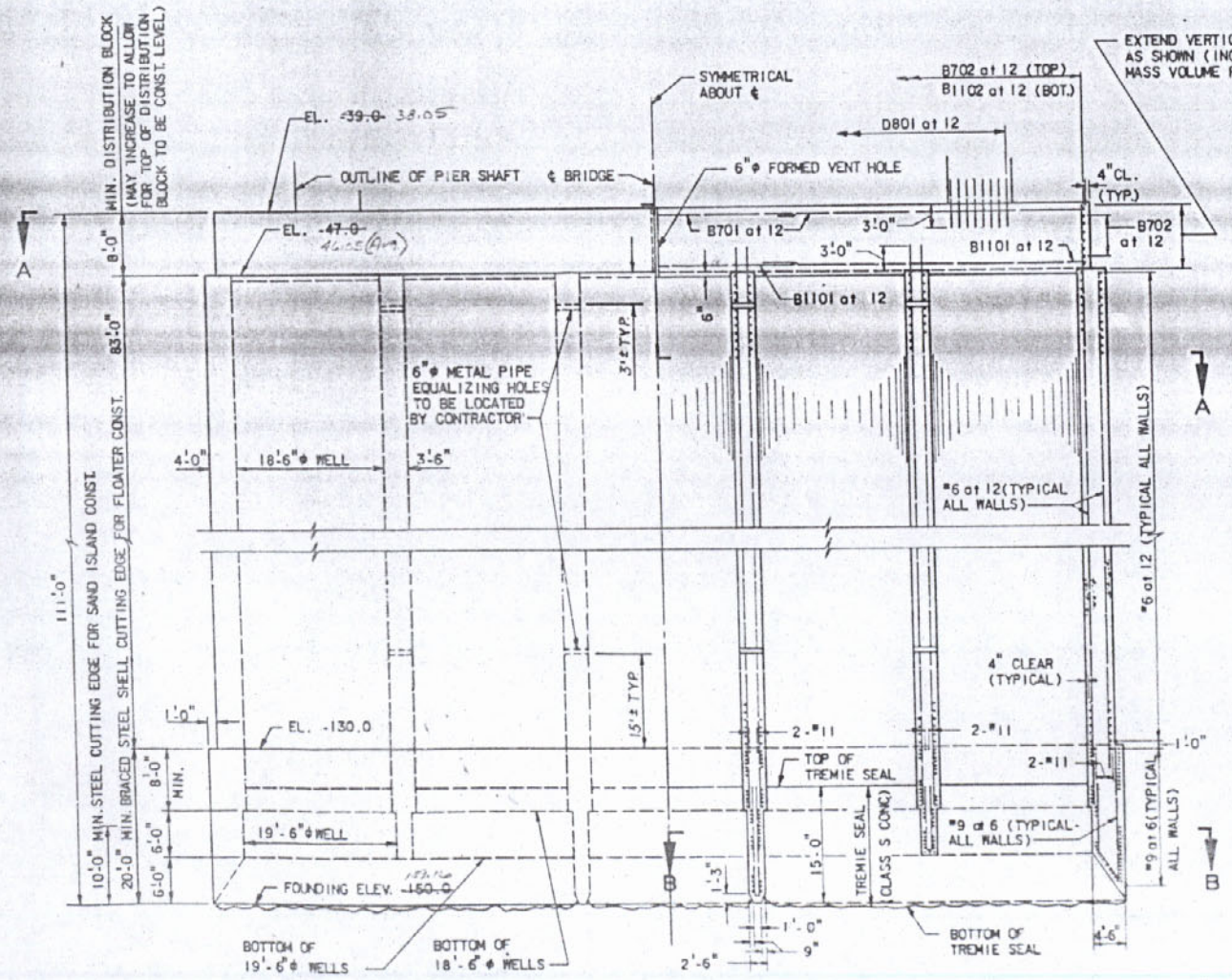
SECTION B-B

NOTE: NO PAYMENT WILL BE MADE FOR DREDGE WELL SUPPORT FORMS FOR THE DISTRIBUTION BLOCK. THIS WORK IS INCIDENTAL TO THE ITEM, CLASS D CONC. IN DISTRIBUTION BLOCK (PIER 4)



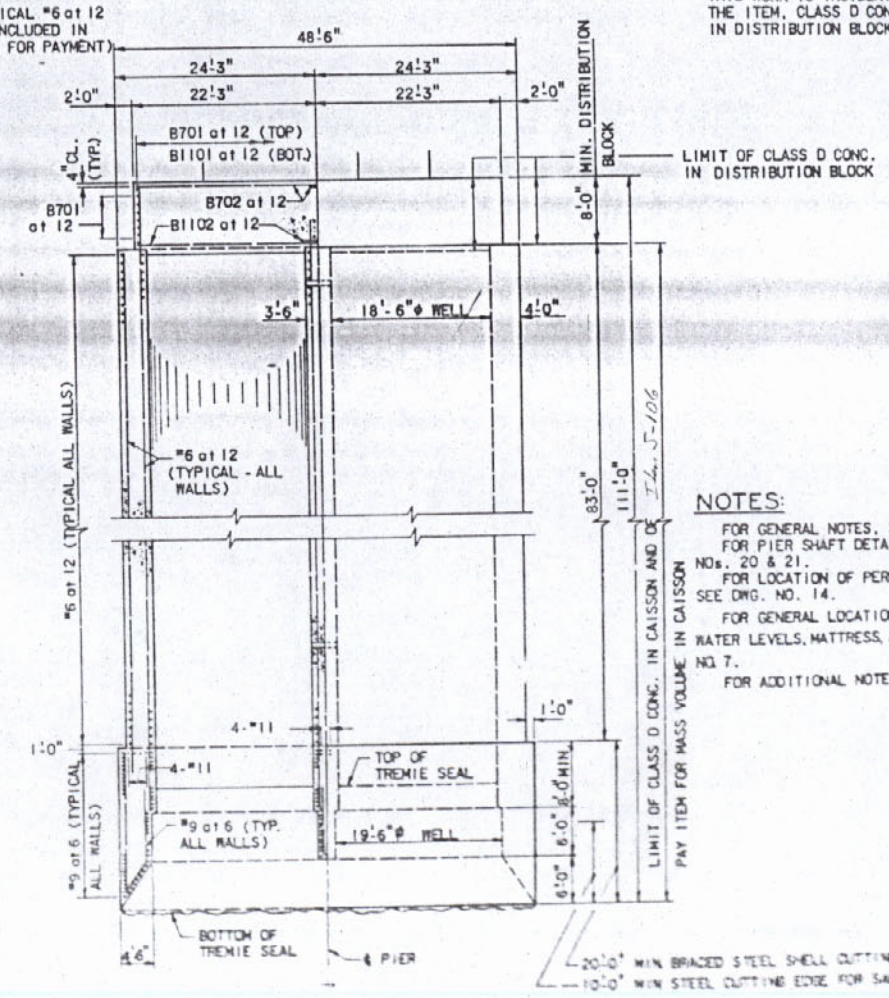
SUGGESTED CUTTING EDGE DETAIL

NOTE: ½" SKIN PLATE AND WT6x80.5 REQUIRED FOR SAND ISLAND CONSTRUCTION.



HALF SIDE ELEVATION

HALF LONGITUDINAL SECTION

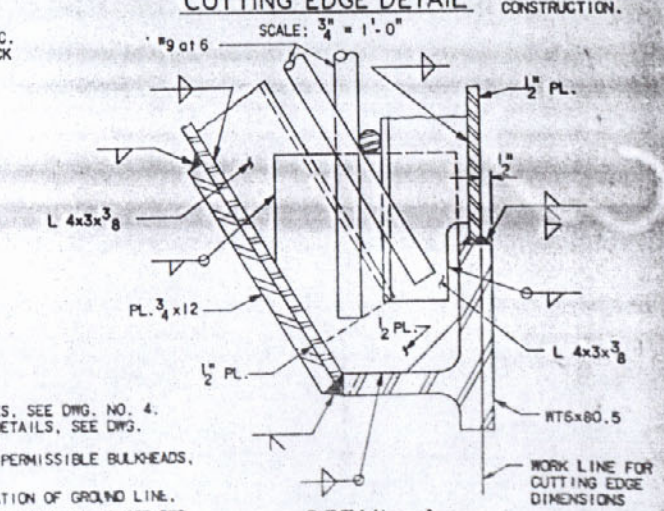


HALF TRANSVERSE SECTION

HALF END ELEVATION

NOTES:

FOR GENERAL NOTES, SEE DWG. NO. 4.
FOR PIER SHAFT DETAILS, SEE DWG. NOs. 20 & 21.
FOR LOCATION OF PERMISSIBLE BULKHEADS, SEE DWG. NO. 14.
FOR GENERAL LOCATION OF GROUND LINE, WATER LEVELS, MATTRESS, AND RIPRAP, SEE DWG. NO. 7.
FOR ADDITIONAL NOTES, SEE DWG NO. 14.



DETAIL A

SCALE: 3" = 1'-0"

NOTE: ALL STEEL IN CUTTING EDGE SHALL BE SPLICED FOR 100% OF GROSS SECTION.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 4
CAISSON DETAILS - ALTERNATE A
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJEDHI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

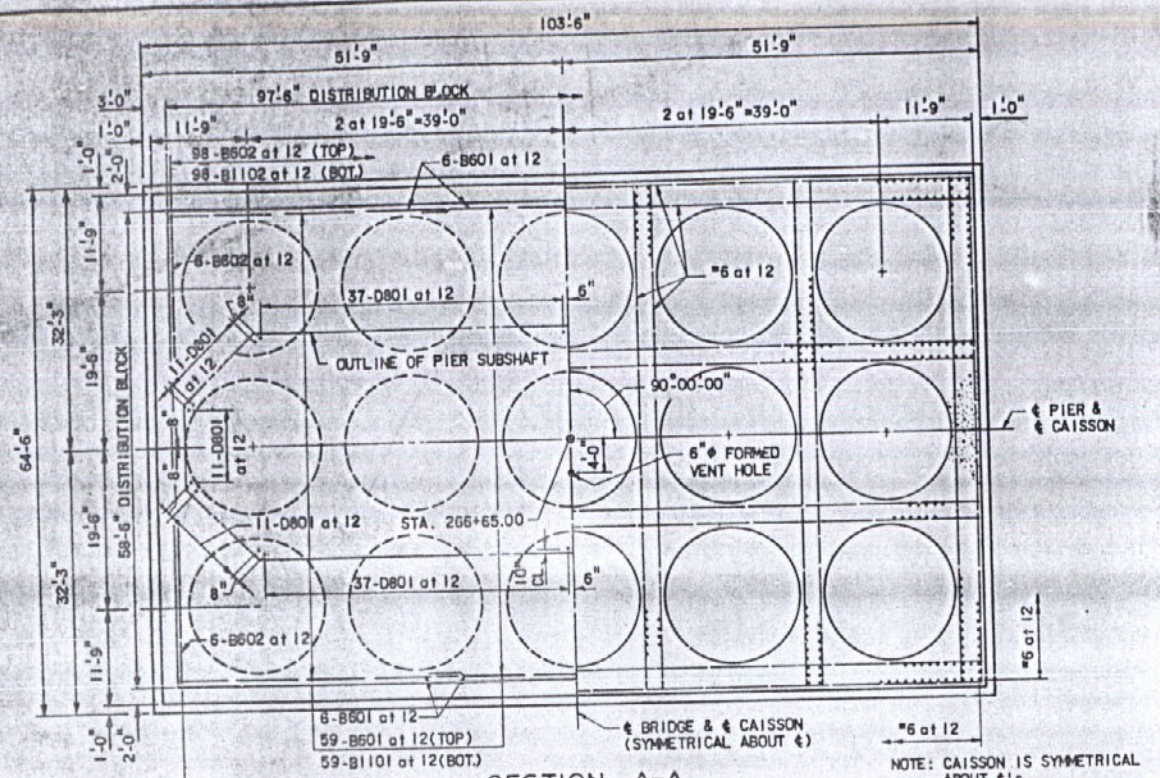
DATE MAR. 1 1974 | SCALE 3/8" = 1'-0" | SHEET NO. 15
DRAWN BY SLM | CHKD BY JT | IN CHARGE NEW | APPROVED

05/12
02/14

AS BUILT

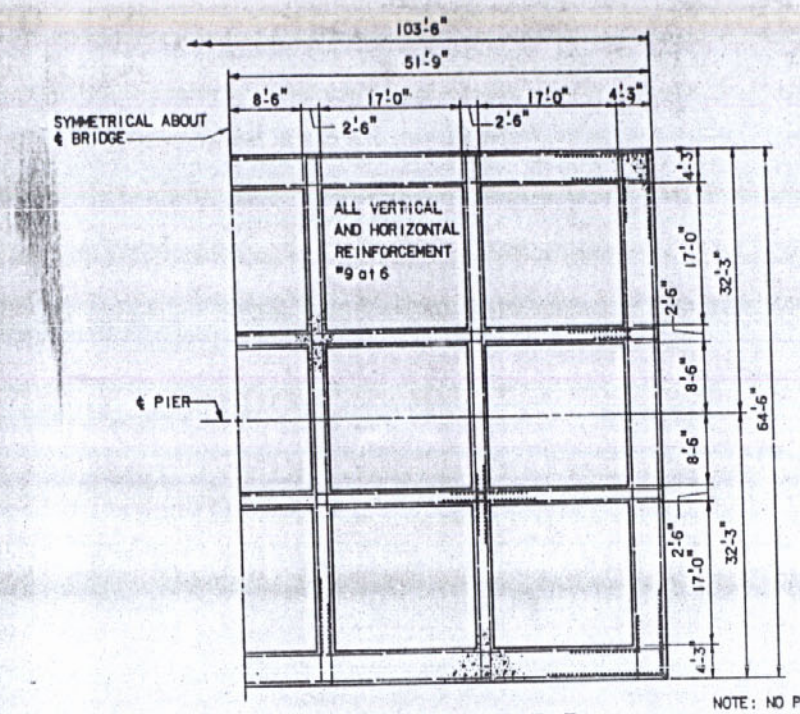
83

FAP	STATE PROJECT	PARISH	SHEET NO.
S-410-4(34)223	490-37-01	ST. CHARLES	15



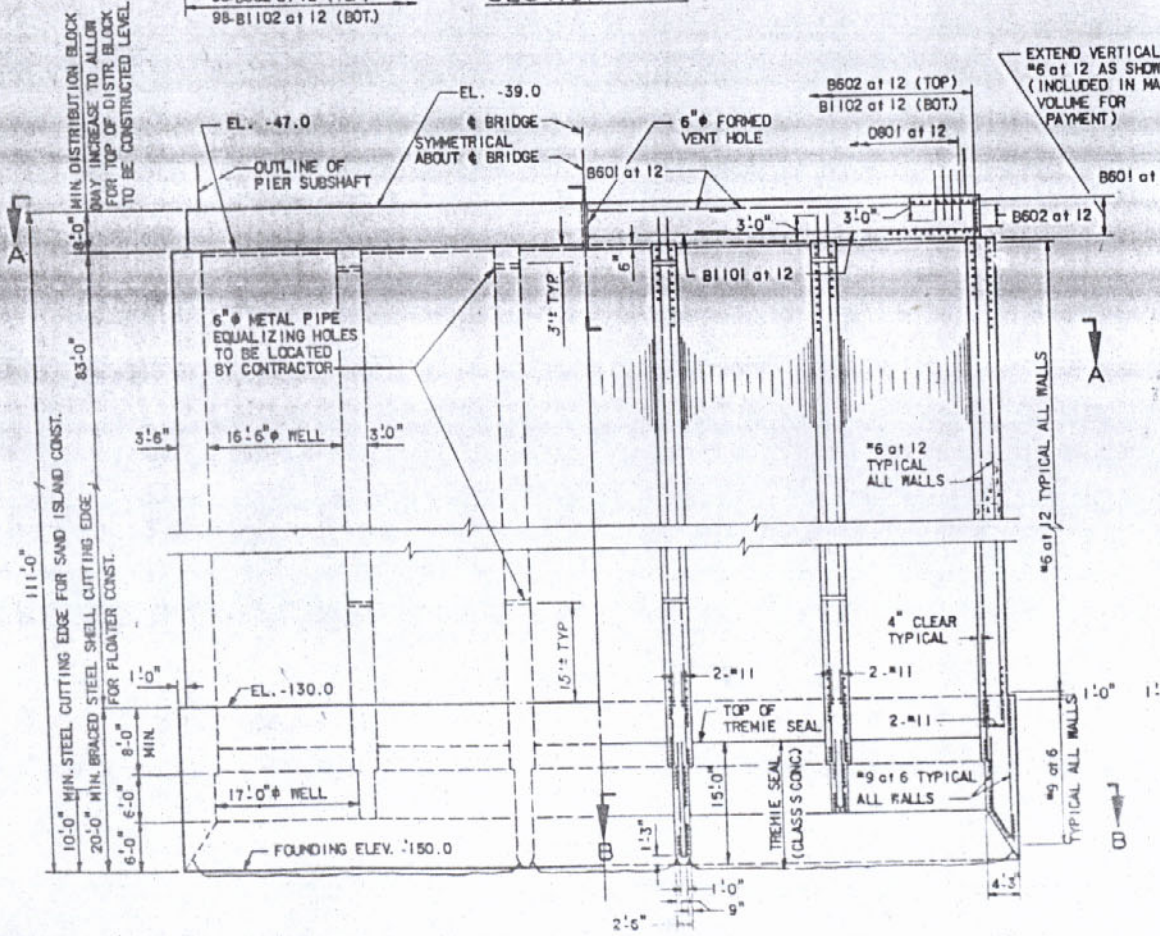
SECTION A-A

NOTE: CAISSON IS SYMMETRICAL ABOUT ℄'s.



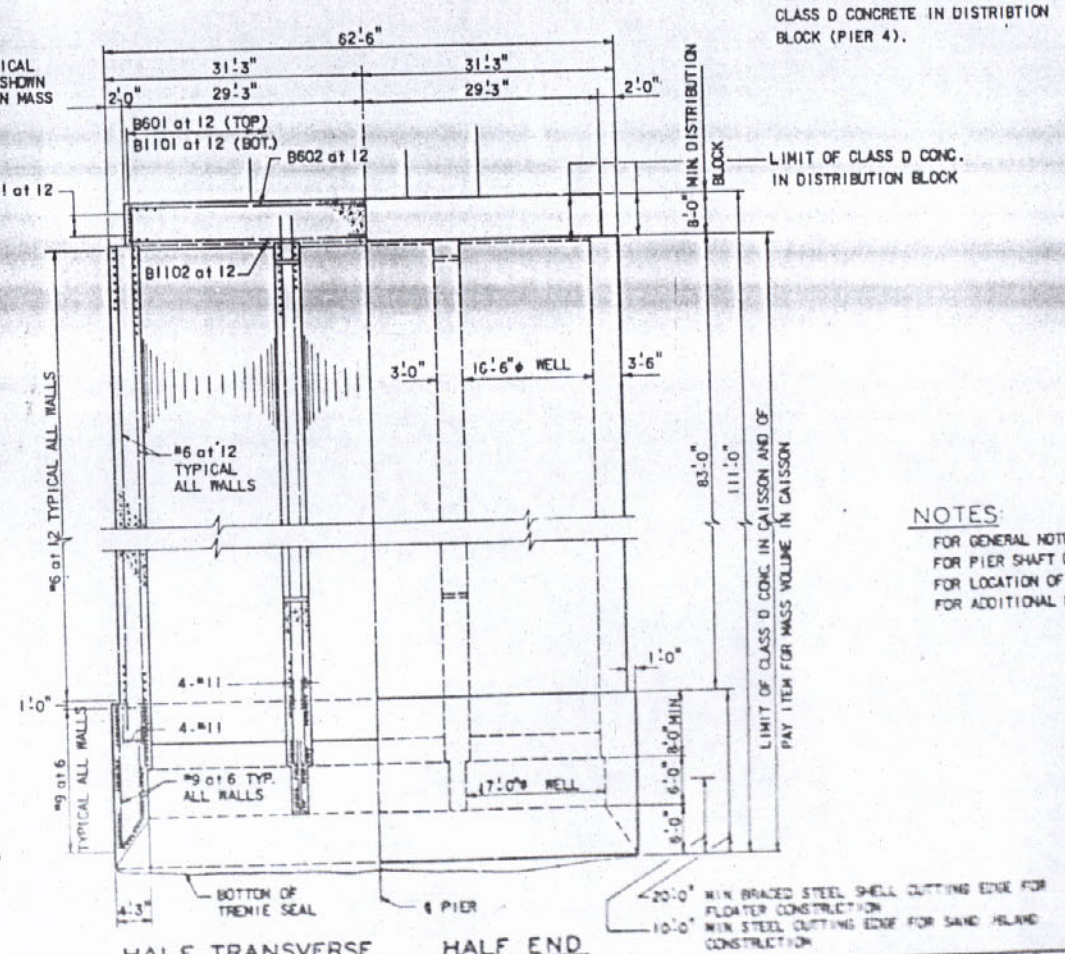
SECTION B-B

NOTE: NO PAYMENT WILL BE MADE FOR DREDGE WELL SUPPORT FORMS FOR THE DISTRIBUTION BLOCK. THIS WORK IS INCIDENTAL TO THE ITEM, CLASS D CONCRETE IN DISTRIBTION BLOCK (PIER 4).



HALF SIDE ELEVATION

HALF LONGITUDINAL SECTION



HALF TRANSVERSE SECTION

HALF END ELEVATION

NOTES:

FOR GENERAL NOTES SEE DWG. NO. 4.
FOR PIER SHAFT DETAILS, SEE DWG. NO. 20 & 21.
FOR LOCATION OF PERMISSIBLE BULKHEADS, SEE DWG. NO. 14.
FOR ADDITIONAL NOTES, SEE DWG. NO. 14.

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STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 4
CAISSON DETAILS - ALTERNATE B
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOSJER INC AND MARTIN
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

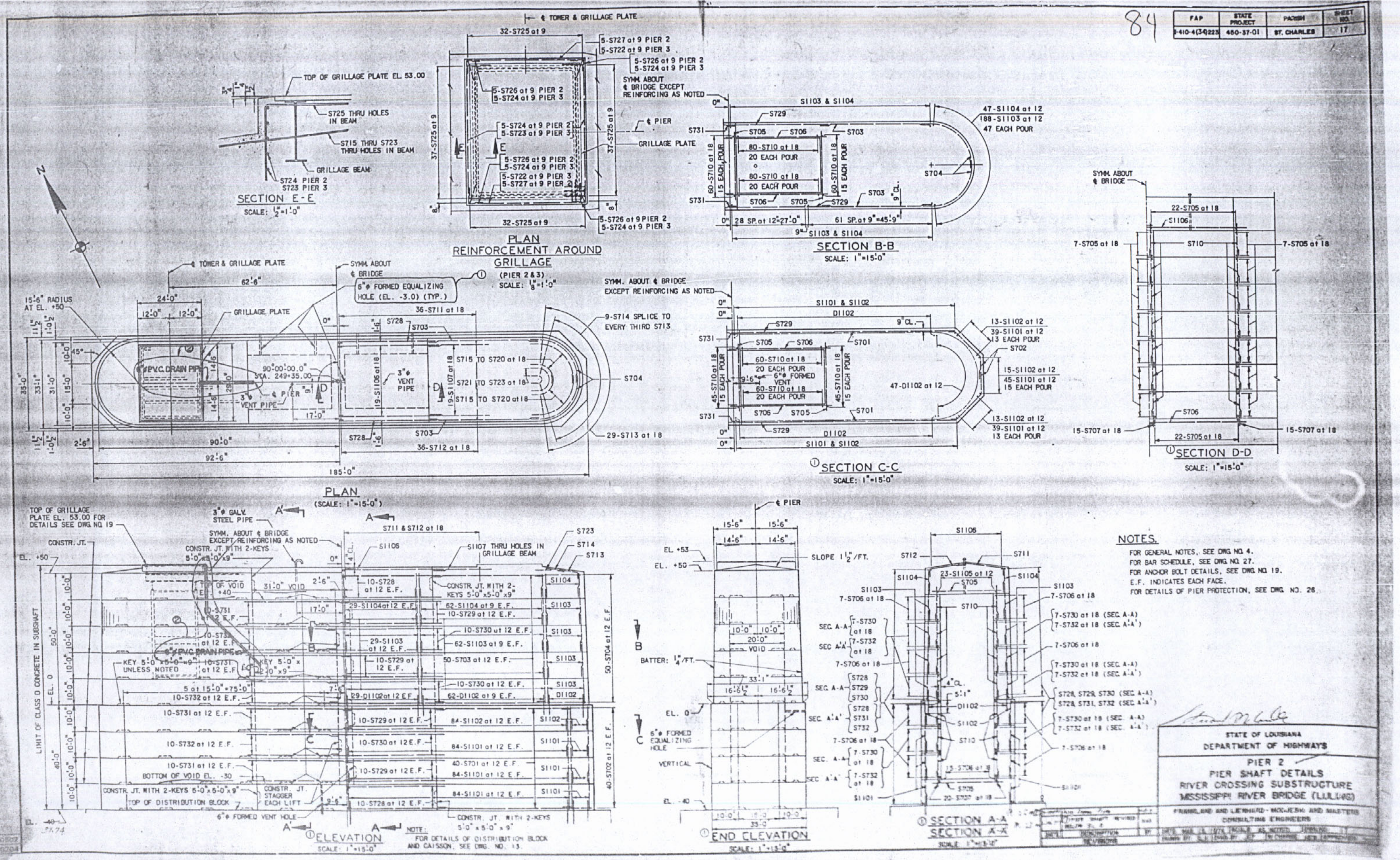
DATE ISSUED | SCALE | DRAWN BY | CHKD BY | DATE | IN CHARGE | DATE | APPROVED BY

0502
0204

AS BUILT

84

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	17



NOTES.

FOR GENERAL NOTES, SEE DWG. NO. 4.
FOR BAR SCHEDULE, SEE DWG. NO. 27.
FOR ANCHOR BOLT DETAILS, SEE DWG. NO. 19.
E.F. INDICATES EACH FACE.
FOR DETAILS OF PIER PROTECTION, SEE DWG. NO. 26.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 2
PIER SHAFT DETAILS
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULUMG)

FRANKLAND AND LIEBHERR - MOCKBEE AND MASTERS
CONSULTING ENGINEERS

AS BUILT

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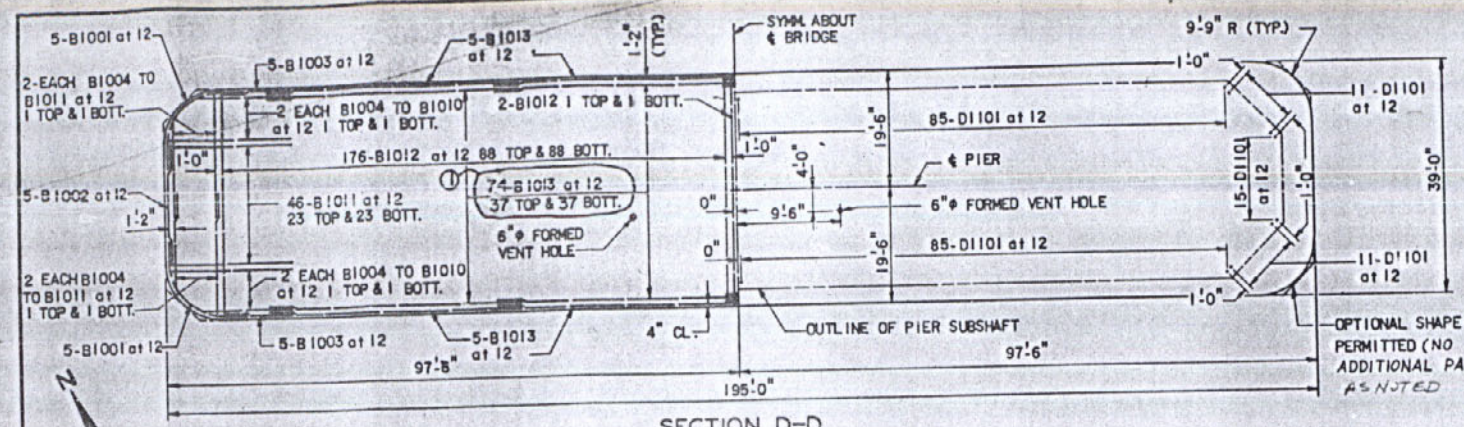
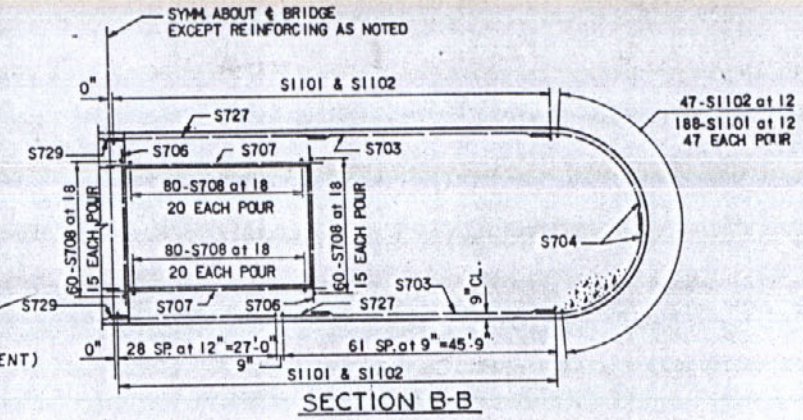
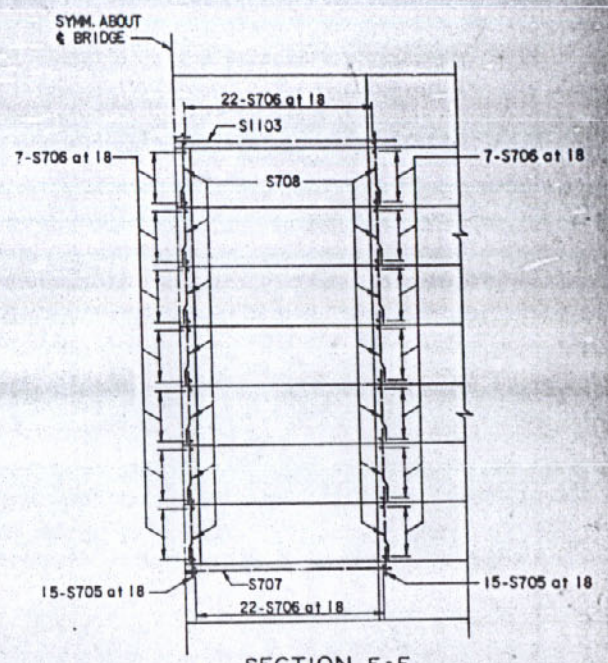
FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	18



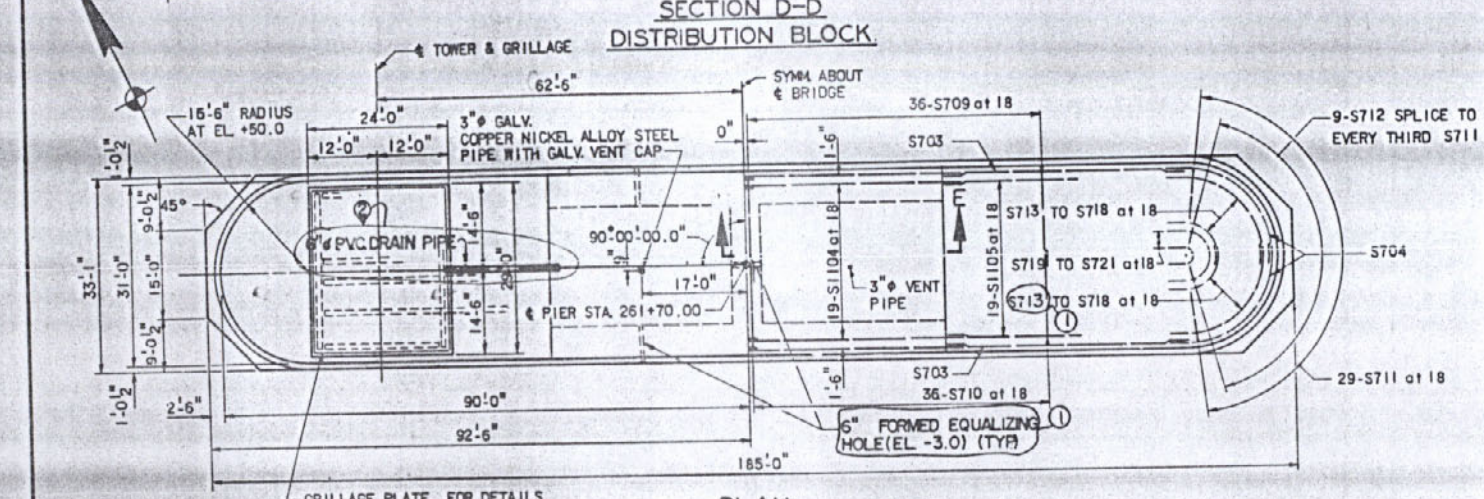
SECTION D-D
DISTRIBUTION BLOCK.



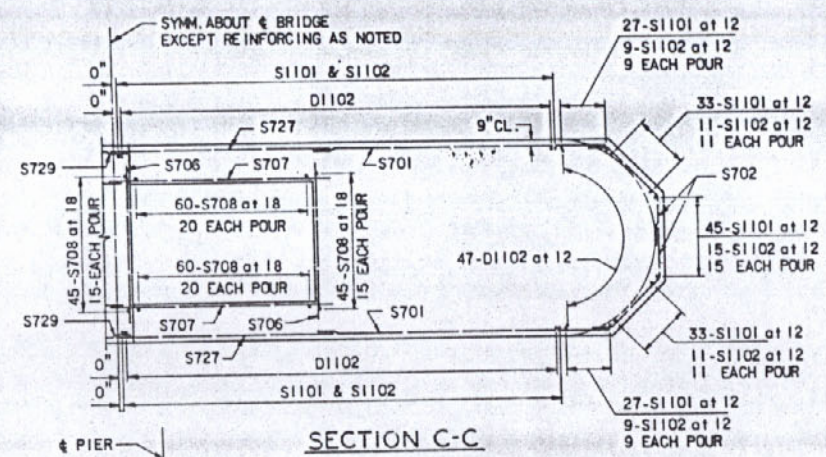
SECTION B-B



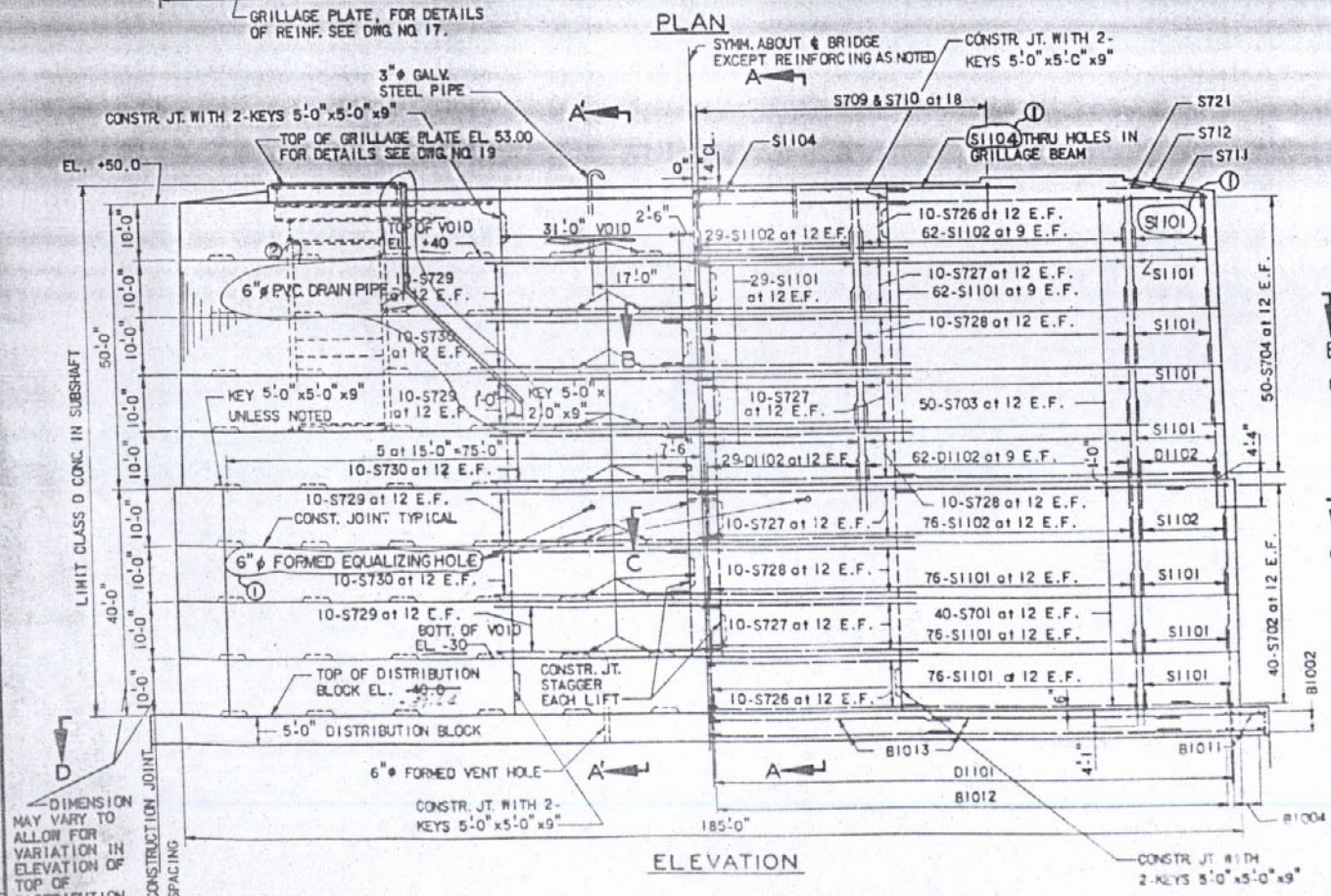
SECTION E-E



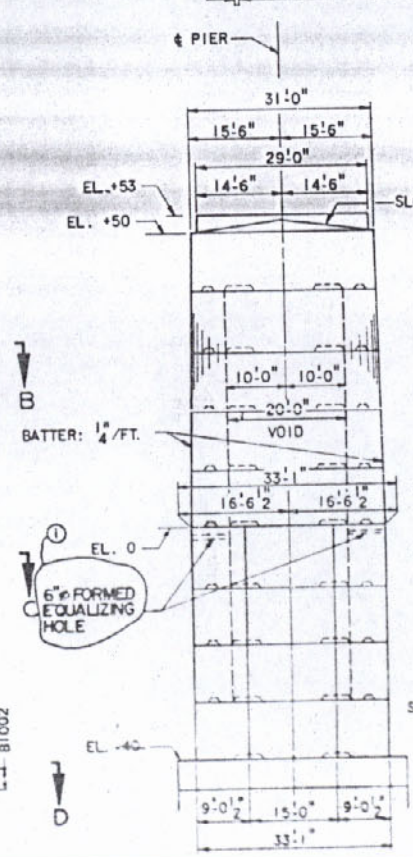
PLAN



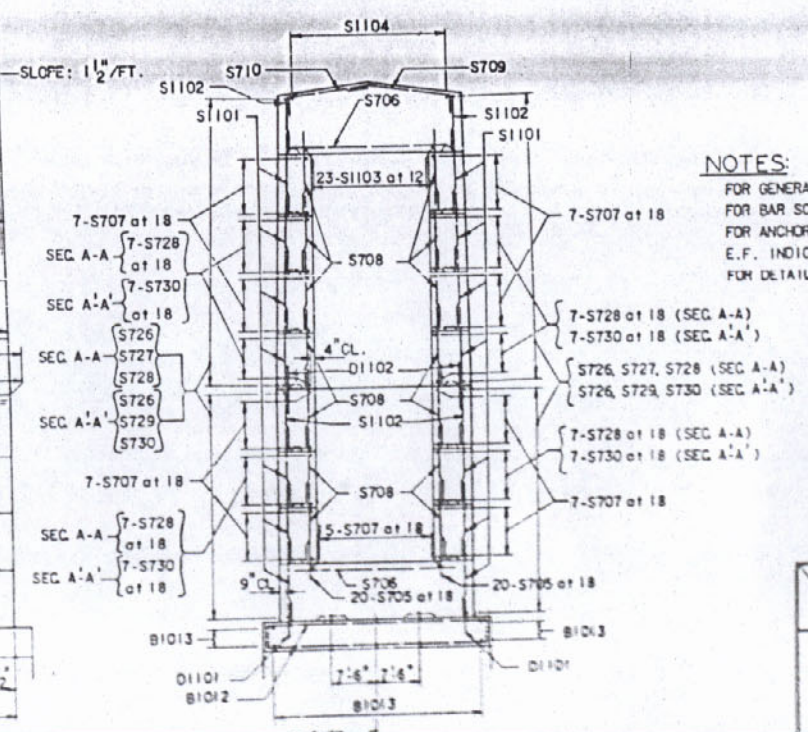
SECTION C-C



ELEVATION



END ELEVATION



SECTION A-A
SECTION A'-A'

NOTES:
FOR GENERAL NOTES, SEE DWG. NO. 4.
FOR BAR SCHEDULE, SEE DWG. NO. 27.
FOR ANCHOR BOLT DETAILS, SEE DWG. NO. 19.
E.F. INDICATES EACH FACE.
FOR DETAILS OF PIER PROTECTION SEE DWG. NO. 26.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 3
PIER SHAFT DETAILS
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LEONARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

0502
0204

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FAP	STATE PROJECT	PARISH	SHEET NO.
2-410-4(34)223	450-37-01	ST. CHARLES	19

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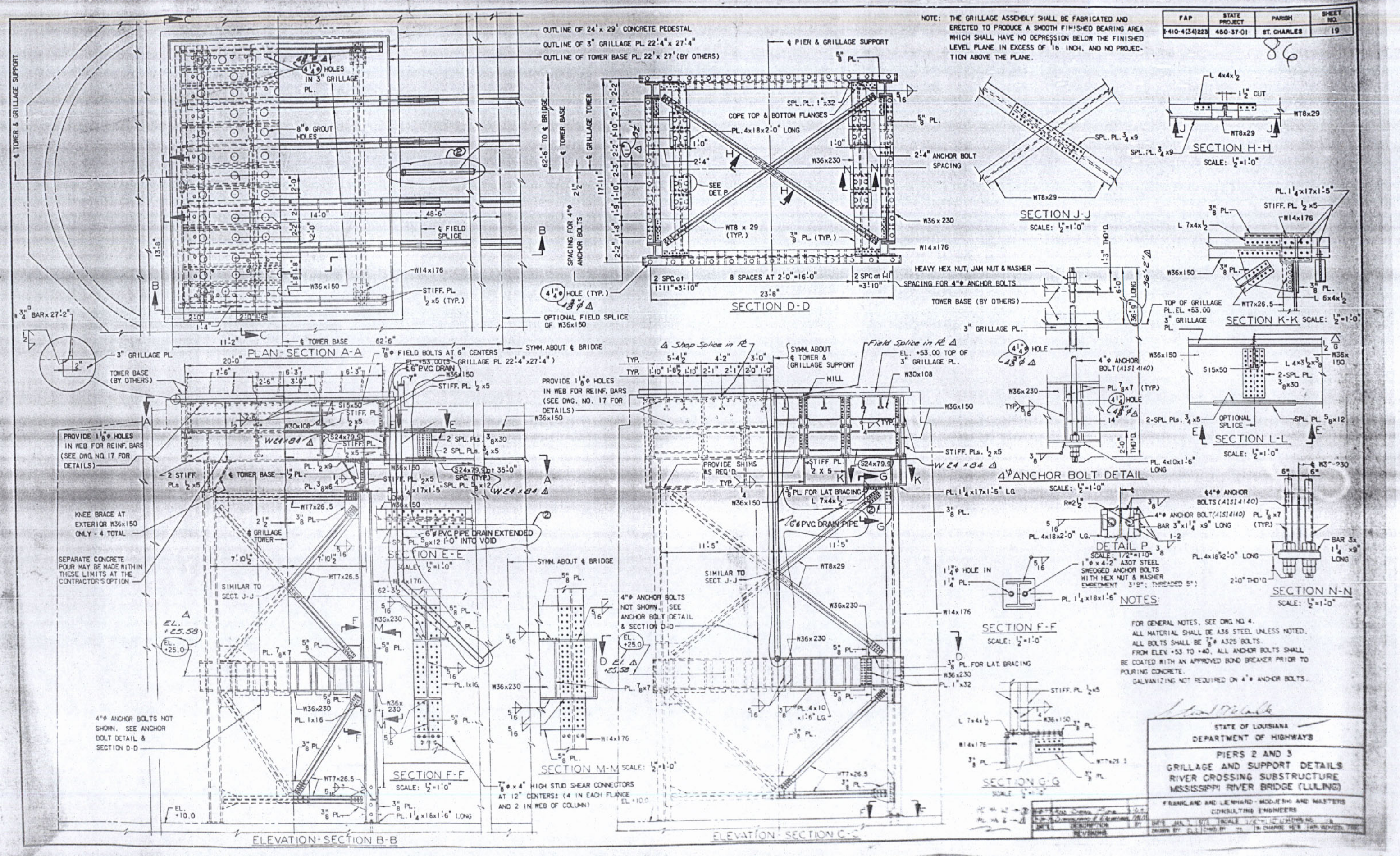
NOTE: THE GRILLAGE ASSEMBLY SHALL BE FABRICATED AND ERECTED TO PRODUCE A SMOOTH FINISHED BEARING AREA WHICH SHALL HAVE NO DEPRESSION BELOW THE FINISHED LEVEL PLANE IN EXCESS OF 1/16 INCH, AND NO PROJECTION ABOVE THE PLANE.



FOR GENERAL NOTES, SEE DWG. NO. 4.
ALL MATERIAL SHALL BE A36 STEEL UNLESS NOTED.
ALL BOLTS SHALL BE 7/8"Φ A325 BOLTS.
FROM ELEV. +53 TO +40, ALL ANCHOR BOLTS SHALL BE COATED WITH AN APPROVED BOND BREAKER PRIOR TO POURING CONCRETE.
GALVANIZING NOT REQUIRED ON 4"Φ ANCHOR BOLTS.

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
H-410-4(34)223	450-37-01	ST. CHARLES	20

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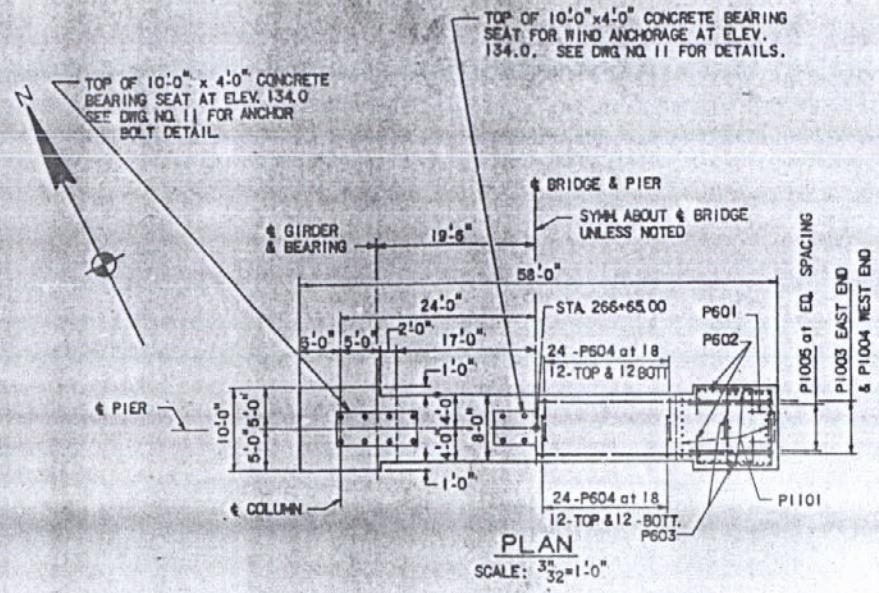
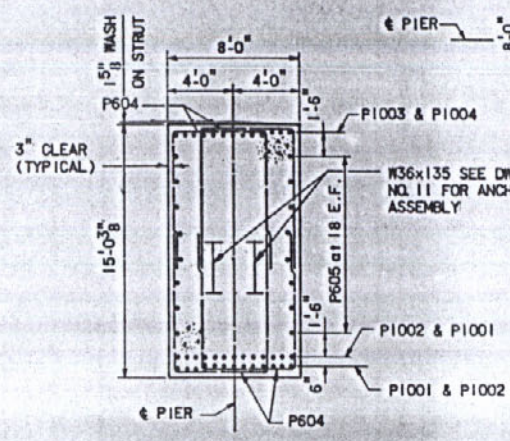
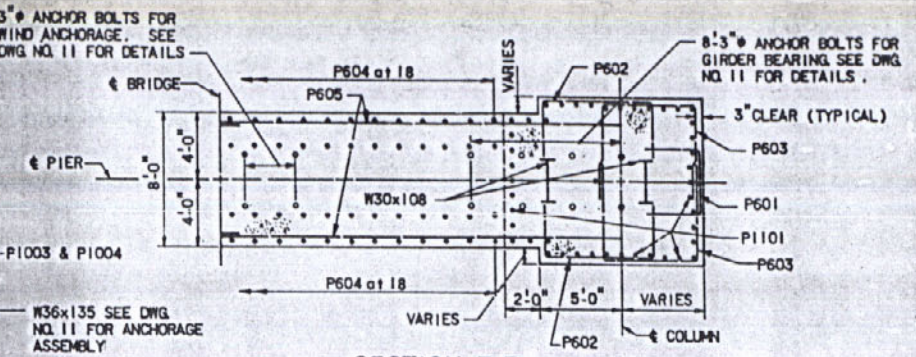


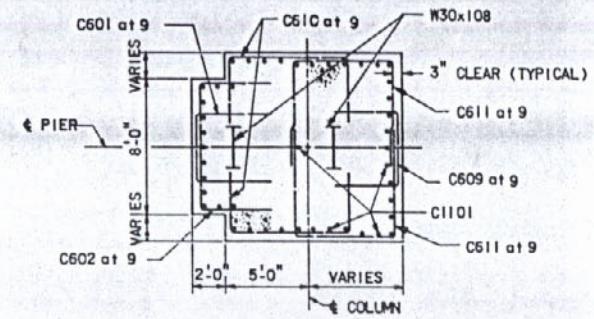
PLAN
SCALE: 3"/32"=1'-0"



SECTION A-A
SCALE: 3"/16"=1'-0"



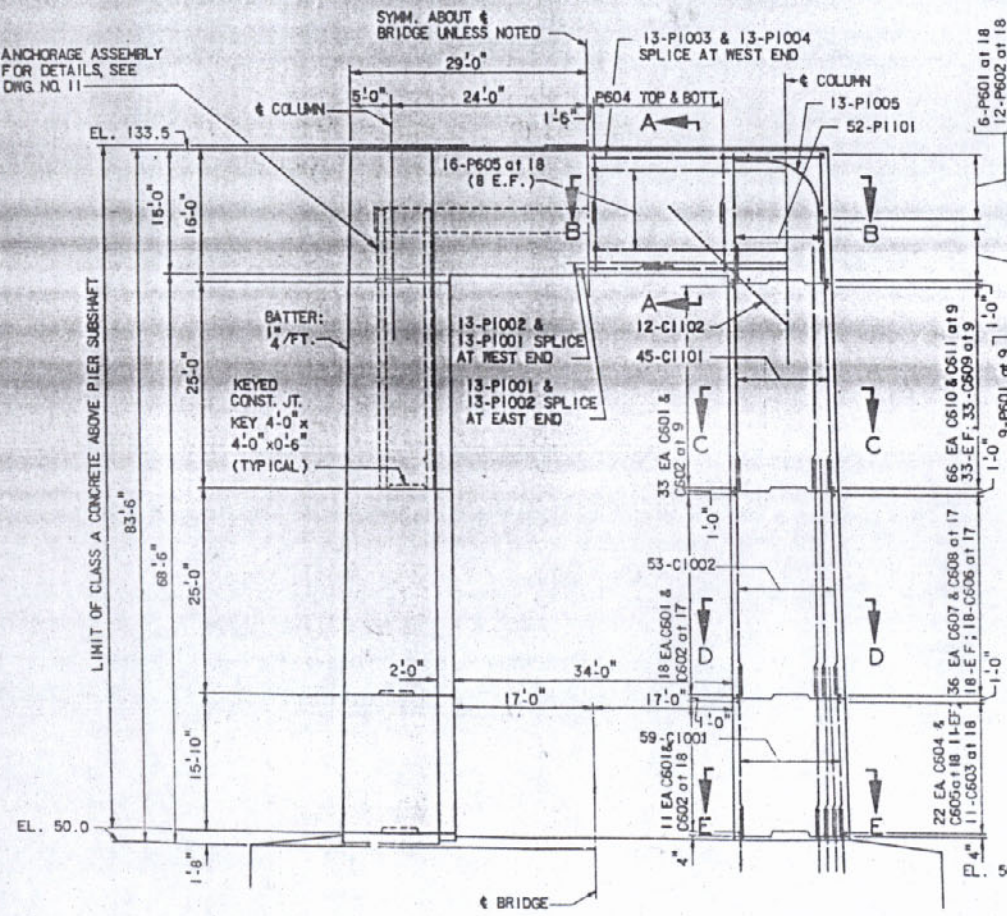
SECTION B-B
SCALE: 3"/16"=1'-0"



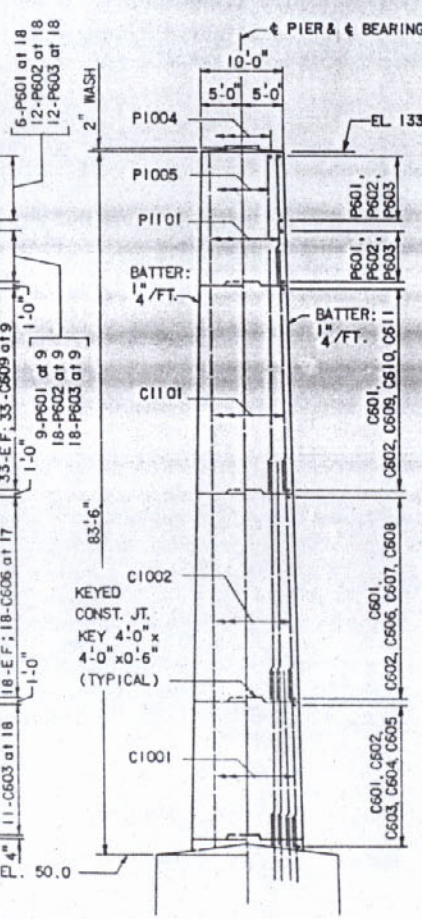
SECTION C-C
SCALE: 3"/16"=1'-0"

ASSUMED SUPERSTRUCTURE REACTIONS			
	VERTICAL FORCE	TRANSVERSE *	
		FORCE	MOMENT
	(KIPS/GIRDER)	(KIPS/PIER)	(FT-KIPS/PIER)
DEAD	-21 TO 421	—	—
LIVE (MAX.)	698	—	—
LIVE (MIN.)	-600	—	—
WIND	±160	±445	±4895
.3 WIND + WIND ON LIVE	±61	±148	±1628
HURRICANE WIND	±220	±612	±6732

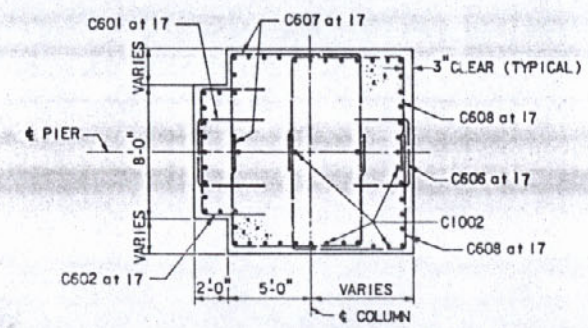
* ACTING AT CENTER OF STRUT



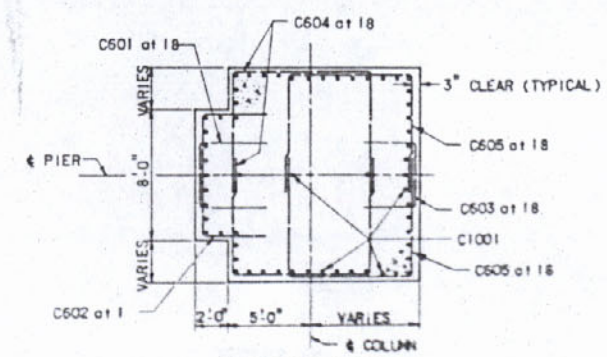
ELEVATION
SCALE: 3"/32"=1'-0"



END ELEVATION
SCALE: 3"/32"=1'-0"



SECTION D-D
SCALE: 3"/16"=1'-0"



SECTION E-E
SCALE: 3"/8"=1'-0"

NOTES:

FOR GENERAL NOTES, SEE DWG. NO. 4.
FOR BAR SCHEDULE SEE DWG. NO. 27
E.F.= INDICATES EACH FACE.
ALL CONCRETE SHALL BE CLASS A CONCRETE.
FOR DETAILS OF ANCHORAGE ASSEMBLY, SEE DWG. NO. 11.
FOR ADDITIONAL DETAILS SEE DWG. NO. 21.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 4
PIER SHAFT DETAILS-I
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOCKEBIO AND MATTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

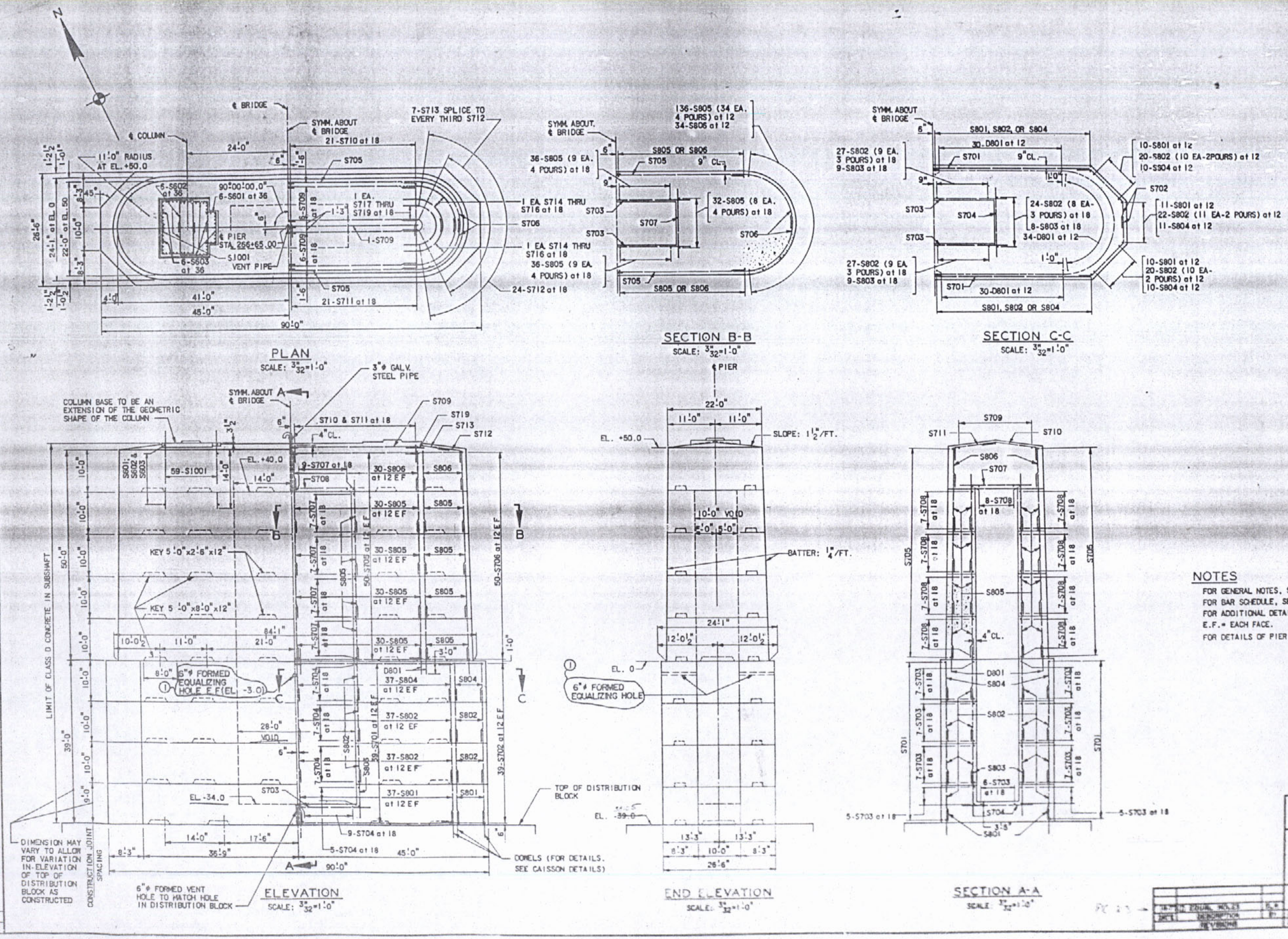
DATE MAR. 15, 1974 SCALE AS NOTED DWG. NO. 20
DRAWN BY CHKD. BY CHIEF ENGINEER CHANGE NO. APPROVED

0502
0204

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	88

88



NOTES

FOR GENERAL NOTES, SEE DWG. NO. 4.
FOR BAR SCHEDULE, SEE DWG. NO. 27.
FOR ADDITIONAL DETAILS, SEE DWG. NO. 20.
E.F.= EACH FACE.
FOR DETAILS OF PIER PROTECTION, SEE DWG. NO. 26

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 4
PIER SHAFT DETAILS-2
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

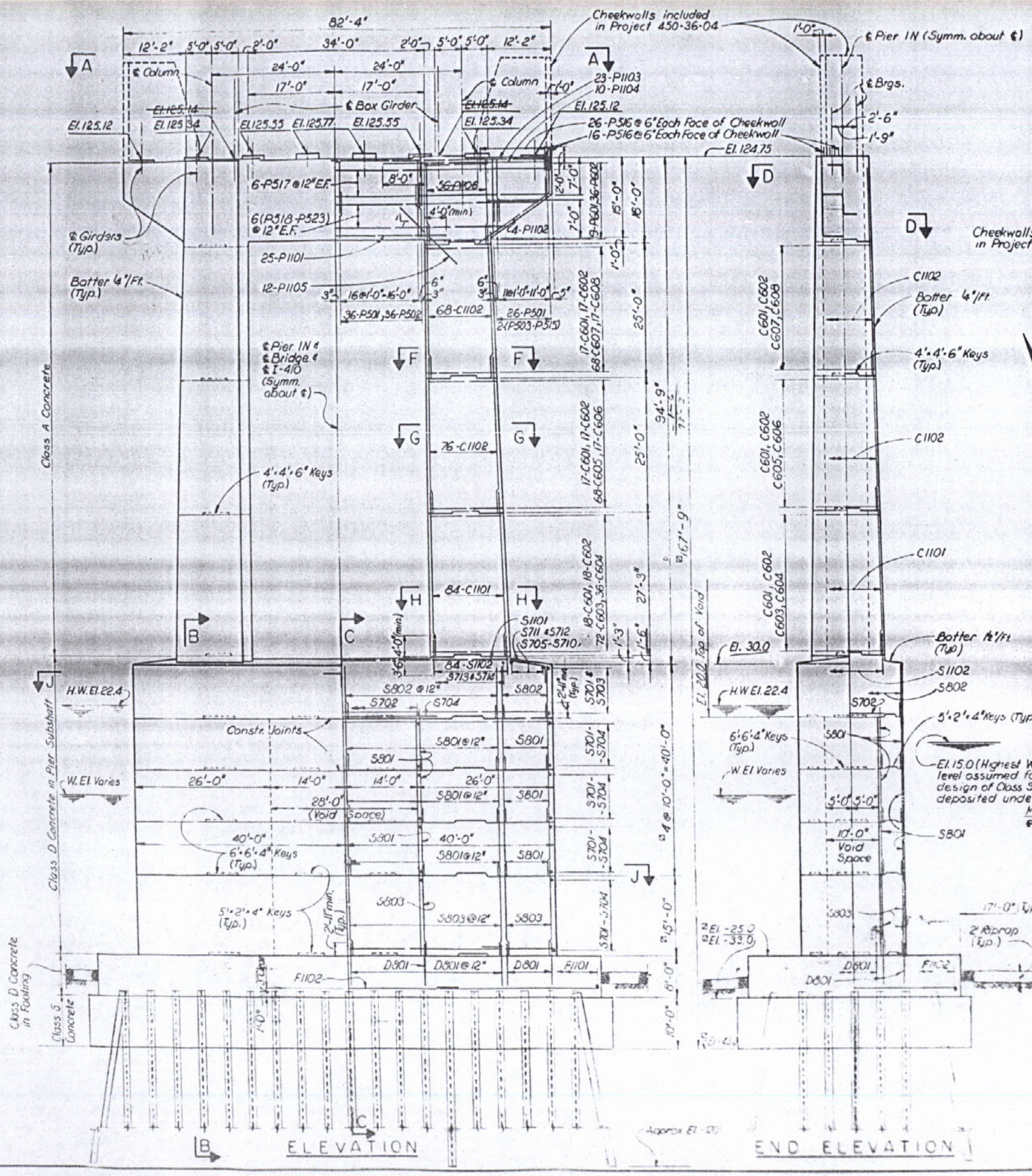
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

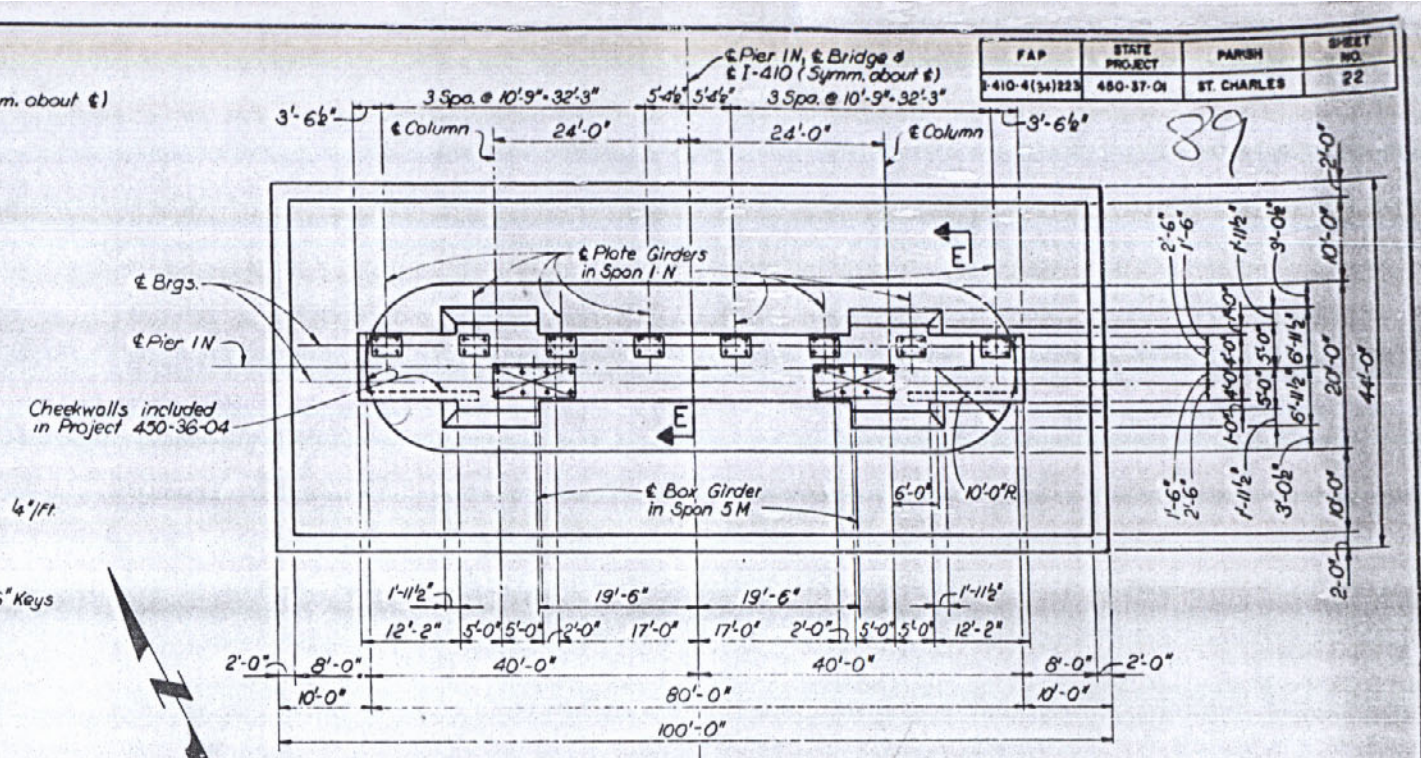
0502
0204

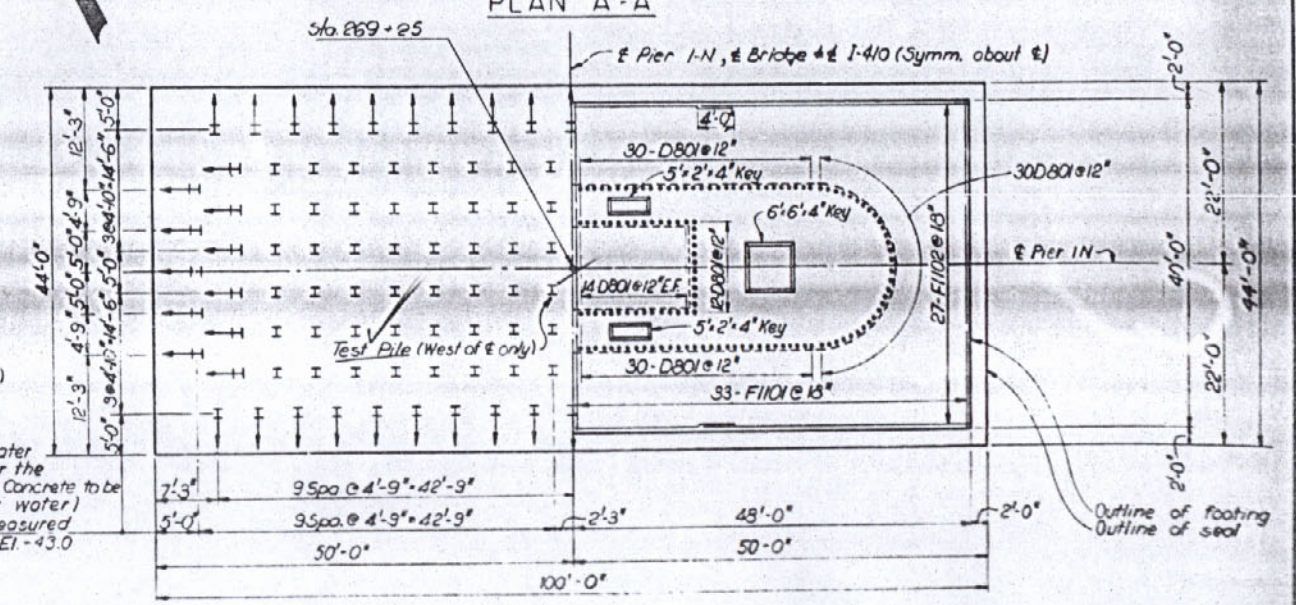
AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(54)223	450-37-01	ST. CHARLES	22

89







FOOTING PLAN

NOTE:
Adjacent permanent piles may be used as hold down for test piles

△ NOTE:
CONTRACTOR WILL BE PERMITTED TO MOVE BATTERED PILES LATERALLY AS NECESSARY TO PLACE COFFERDAM STRUTS. PILE LOCATIONS TO BE APPROVED BY ENGINEER.

NOTES:
For General Notes see Sheet 4.
For Sections B-B thru J-J & Riser Details see Sheet 23.
For Bar Schedule see Sheet 28.
All Piles shall be HP 14-73.
⟷ Denotes Piles battered 2:12 in the direction of arrow.
Design Pile Load = 85 Tons per pile.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

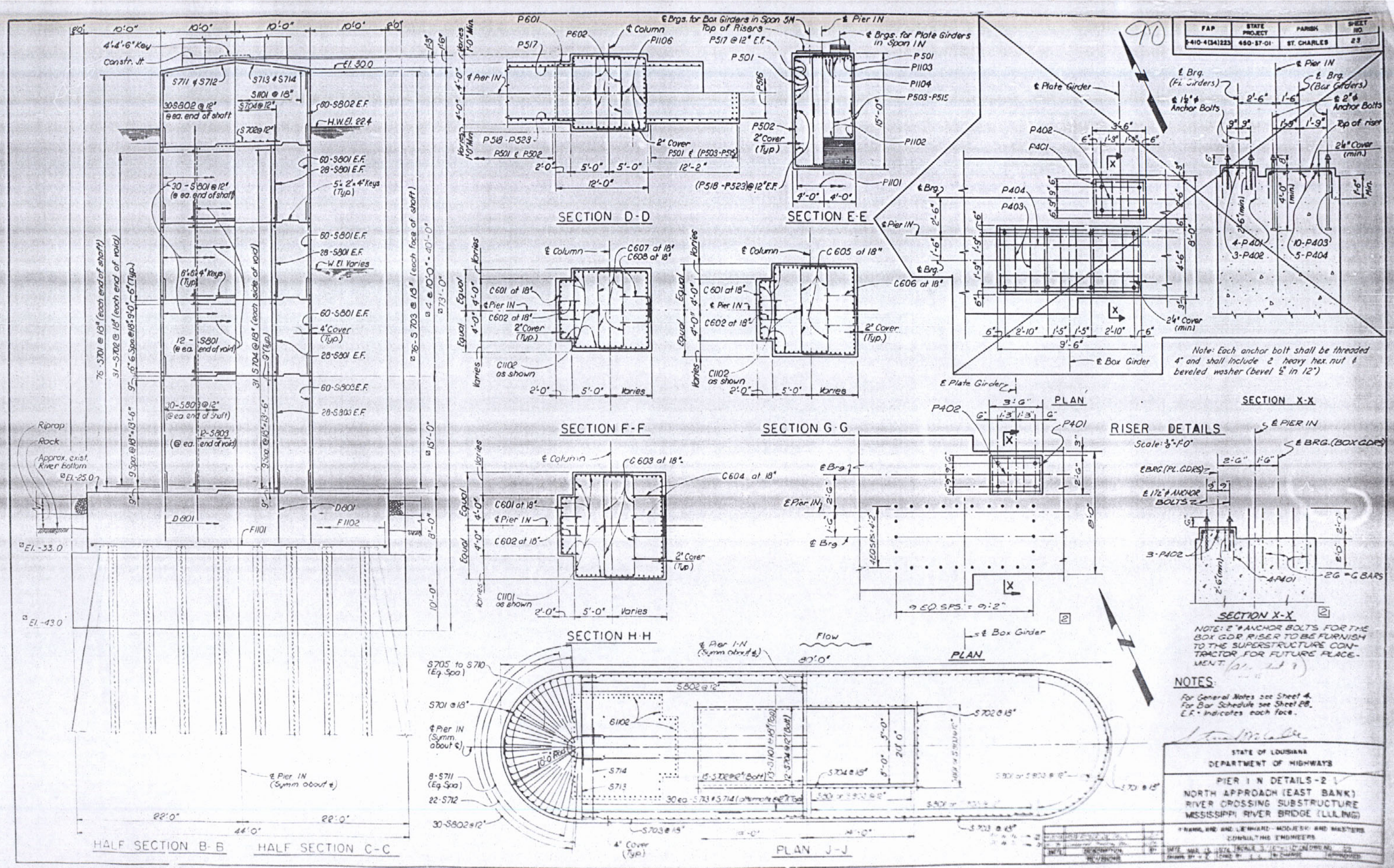
PIER 1 N DETAILS - 1
NORTH APPROACH (EAST BANK)
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LEONARD - MOUTON AND MATTERS
CONSULTING ENGINEERS

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO
9-410-4(34)223	450-37-01	ST. CHARLES	23

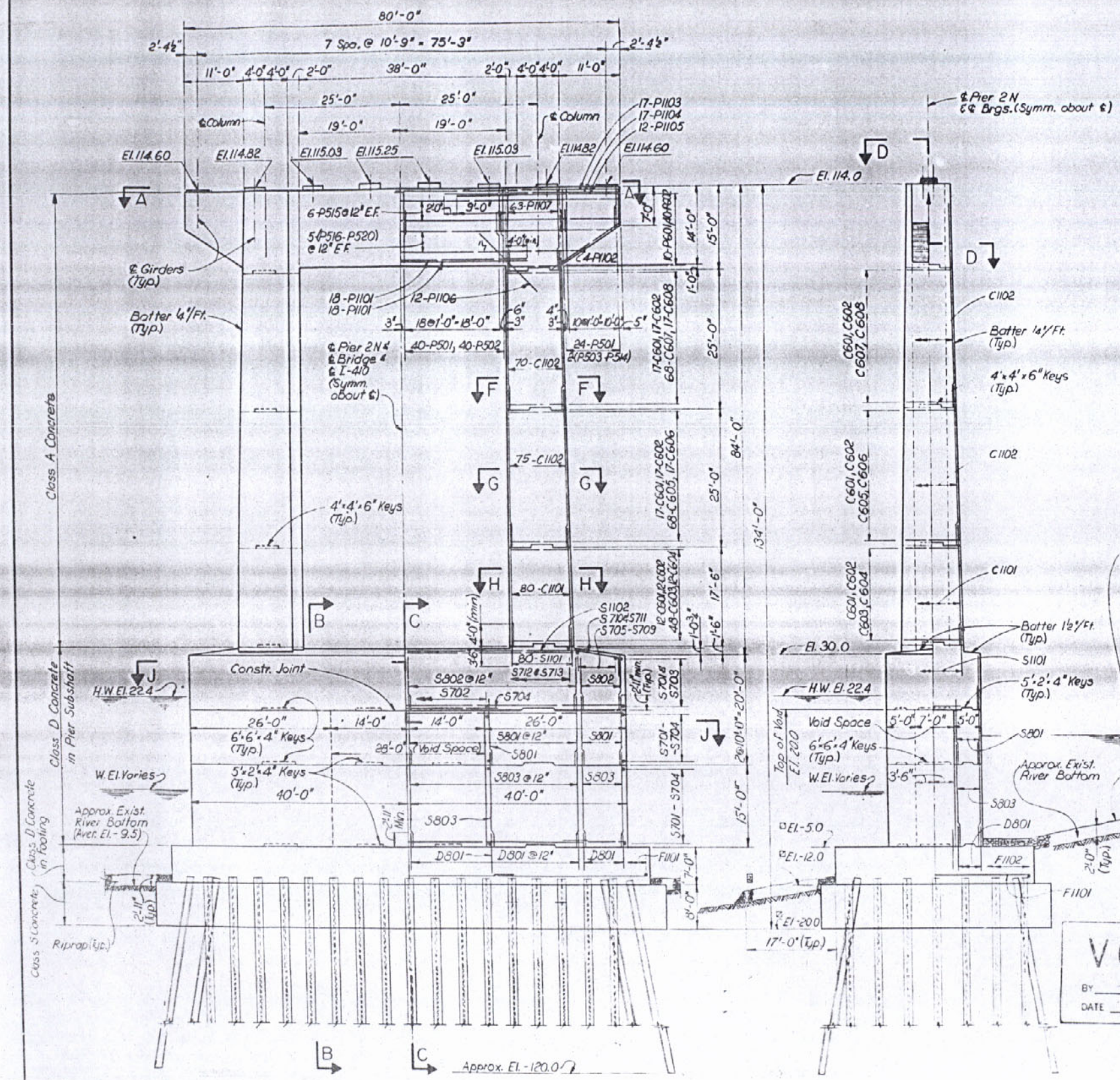
90



AS BUILT

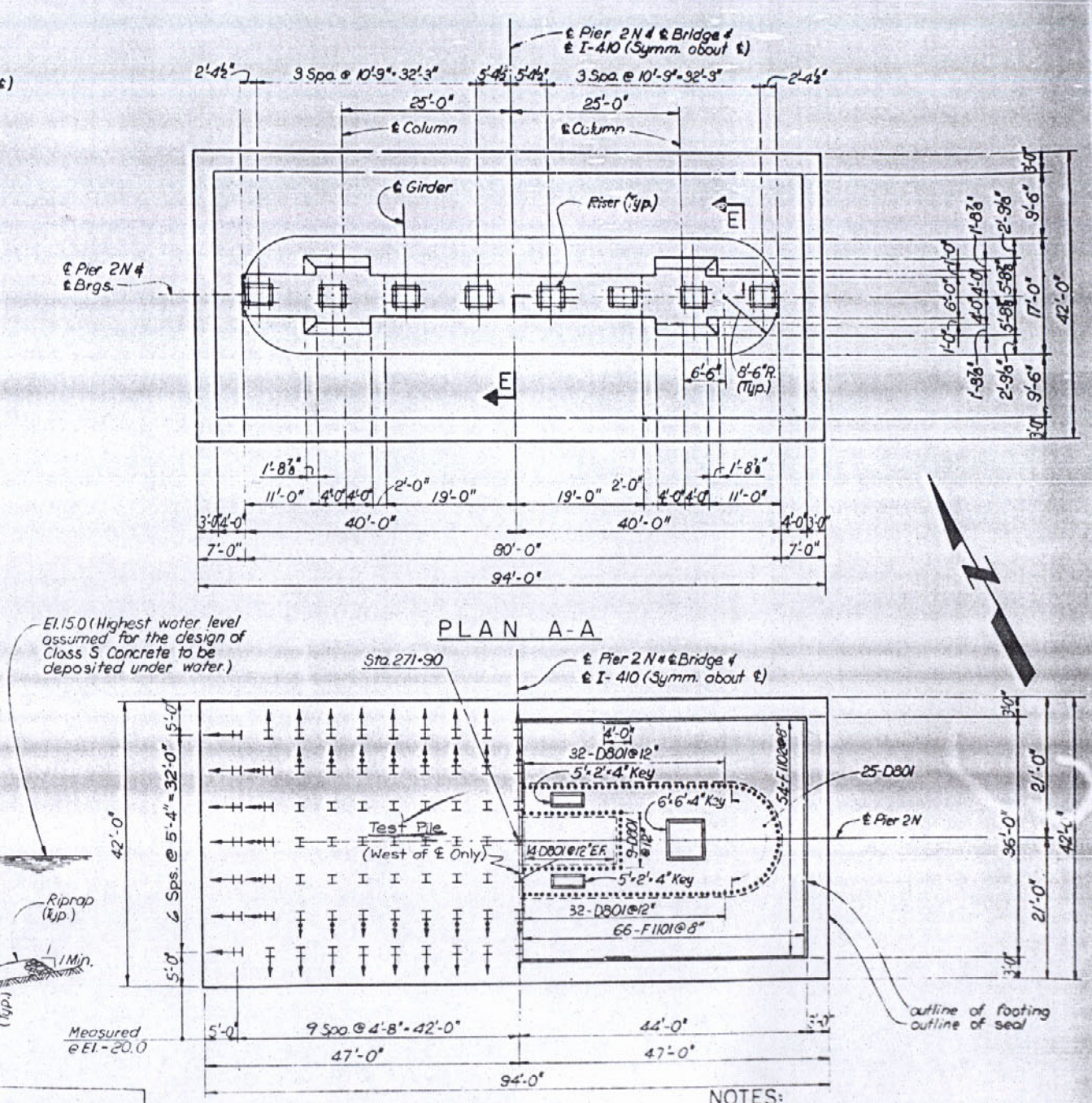
91

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(54)223	450-37-01	ST. CHARLES	24



ELEVATION

END ELEVATION



PLAN A-A

FOOTING PLAN

VOID
BY
DATE

NOTE:
Adjacent permanent piles may be used as hold down for test piles.

NOTE:
CONTRACTOR WILL BE PERMITTED TO MOVE BATTERED PILES LATERALLY AS NECESSARY TO PLACE COFFERDAM STRUTS. PILE LOCATIONS TO BE APPROVED BY ENGINEER.

NOTES:
For General Notes see Sheet # 4.
For Sections B-B thru J-J & Riser Details see Sheet # 25.
For Bar Schedule see Sheet # 28.
All Piles shall be W.P. 14 # 73.
⟵⟶ DENOTES 2:12 BATTER ⟶⟵ DENOTES 1:12 BATTER OF PILES IN THE DIRECTION OF ARROW.
Design Pile Load = 85 Tons per pile.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

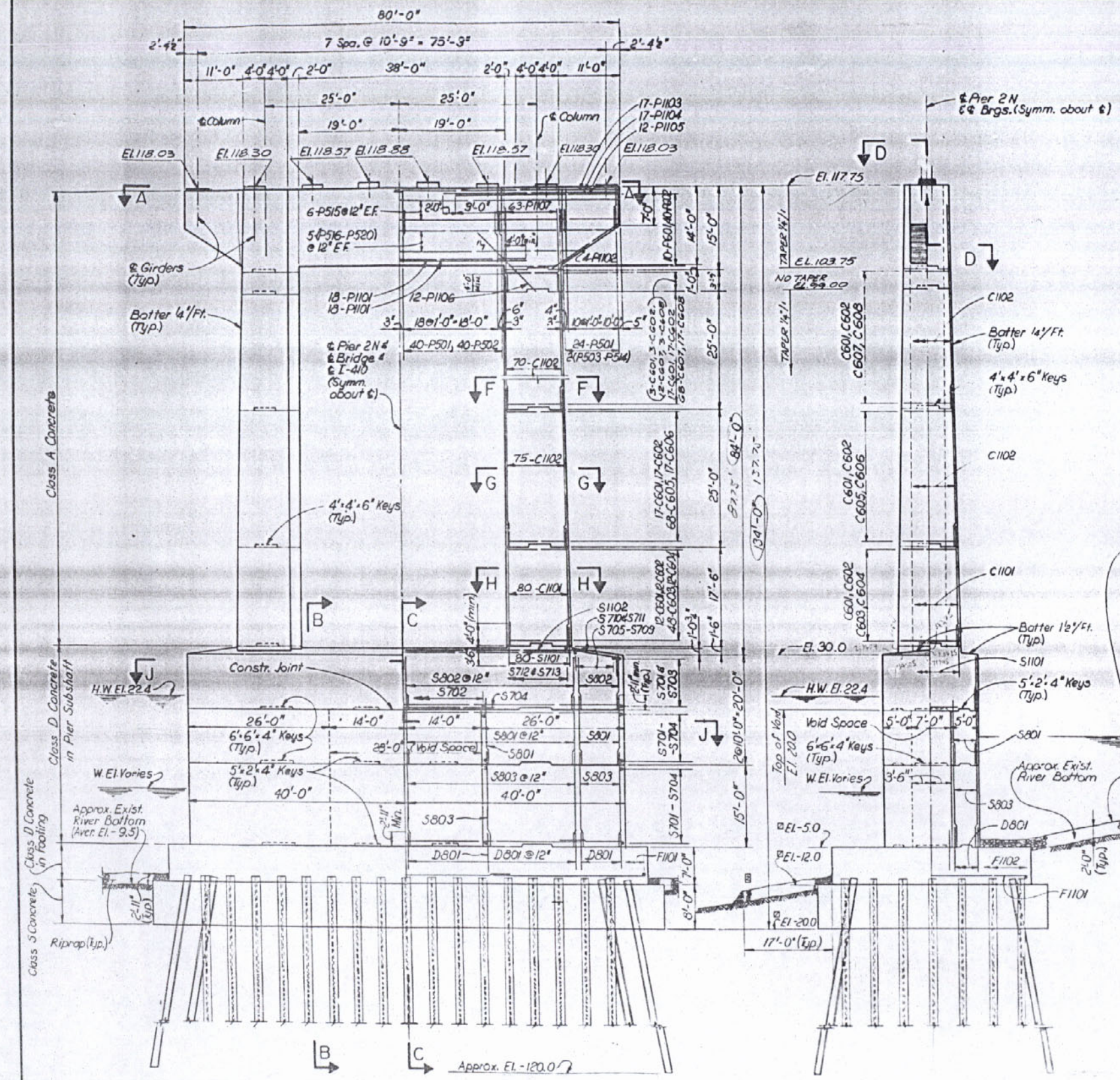
PIER 2 N DETAILS - I
NORTH APPROACH (EAST BANK)
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANGLAND AND LEONARD - MOLNERO AND MATTERS
CONSULTING ENGINEERS

AS BUILT

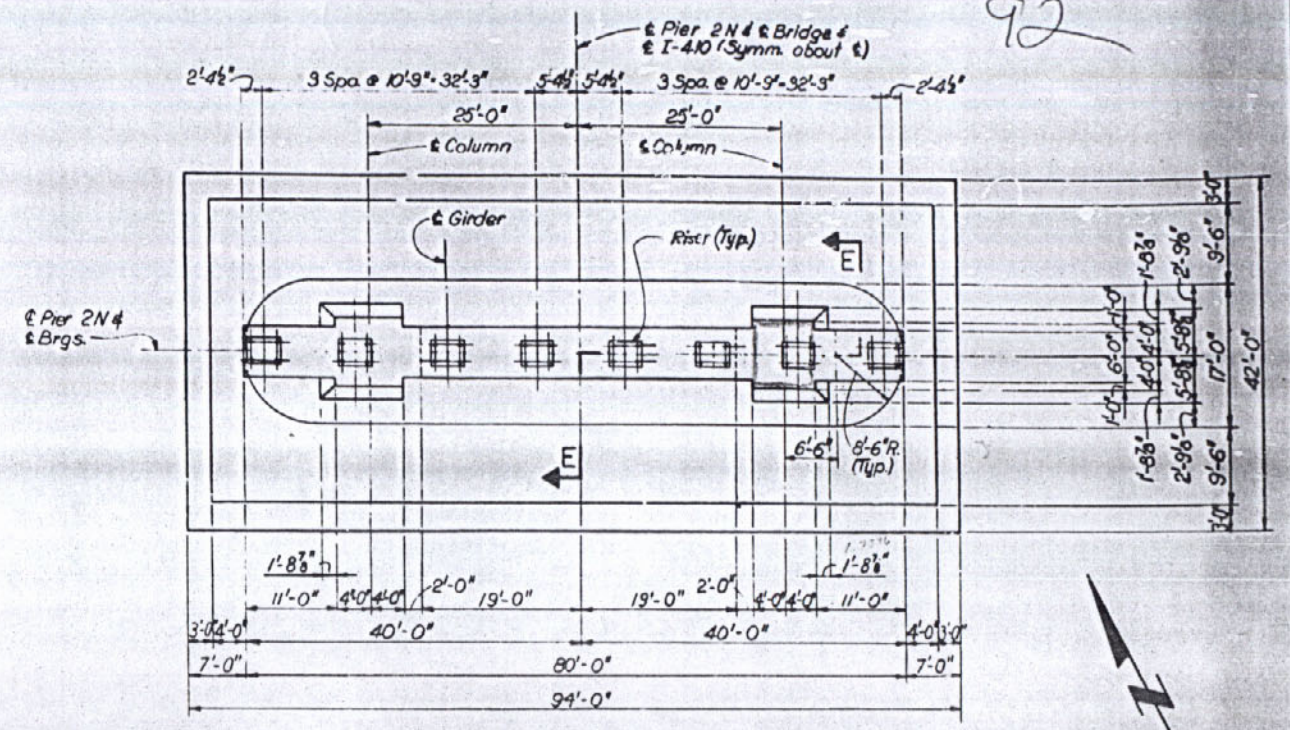
FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(54)223	450-37-01	ST. CHARLES	24 A

92

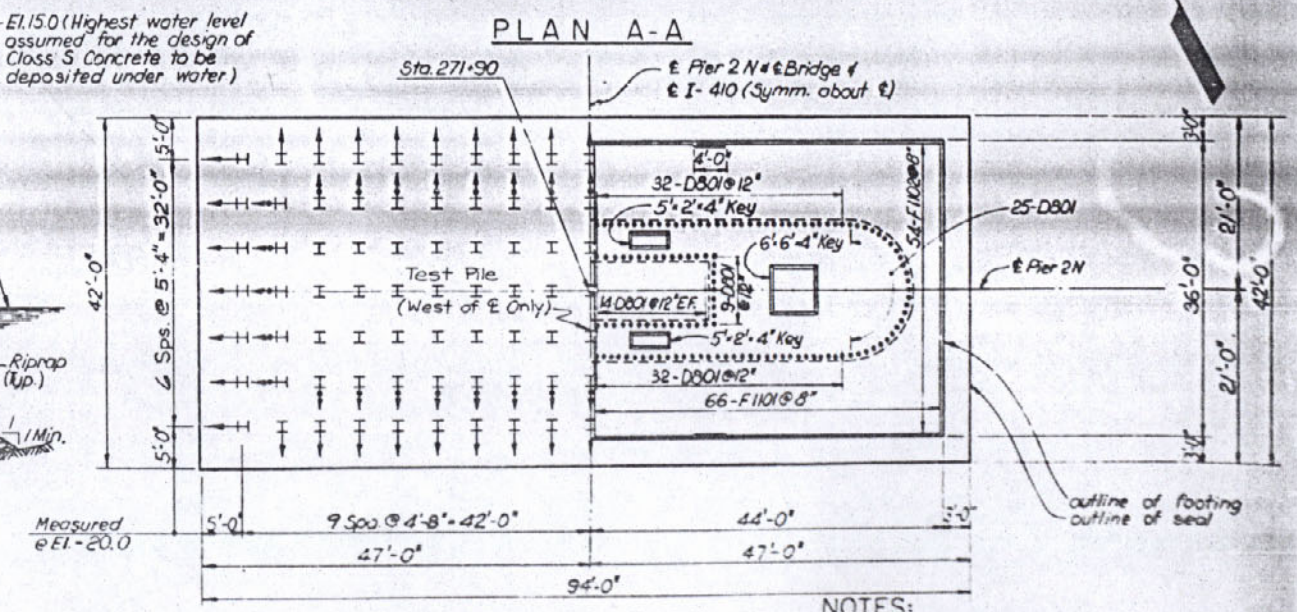


ELEVATION

END ELEVATION



PLAN A-A



FOOTING PLAN

NOTE:
Adjacent permanent piles may be used as hold down for test piles

NOTE
CONTRACTOR WILL BE PERMITTED TO MOVE BATTERED PILES LATERALLY AS NECESSARY TO PLACE COFFERDAM STRUTS PILE LOCATIONS TO BE APPROVED BY ENGINEER

NOTES:
For General Notes see Sheet #4.
For Sections B-B thru J-J & Riser Details see Sheet #23
For Bar Schedule see Sheet #23
All Piles shall be HP 14-73.
←→ DENOTES 2:12 BATTER & →← DENOTES 1:12 BATTER OF PILES IN THE DIRECTION OF ARROW.
Design Pile Load = 85 Tons per pile.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER 2 N DETAILS - I
NORTH APPROACH (EAST BANK)
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIEBHARD - MOUTON AND MASTERS
CONSULTING ENGINEERS

NO.	DESCRIPTION	BY	DATE
1	[illegible]		
2	[illegible]		
3	[illegible]		
4	[illegible]		
5	[illegible]		
6	[illegible]		
7	[illegible]		
8	[illegible]		
9	[illegible]		
10	[illegible]		
11	[illegible]		
12	[illegible]		

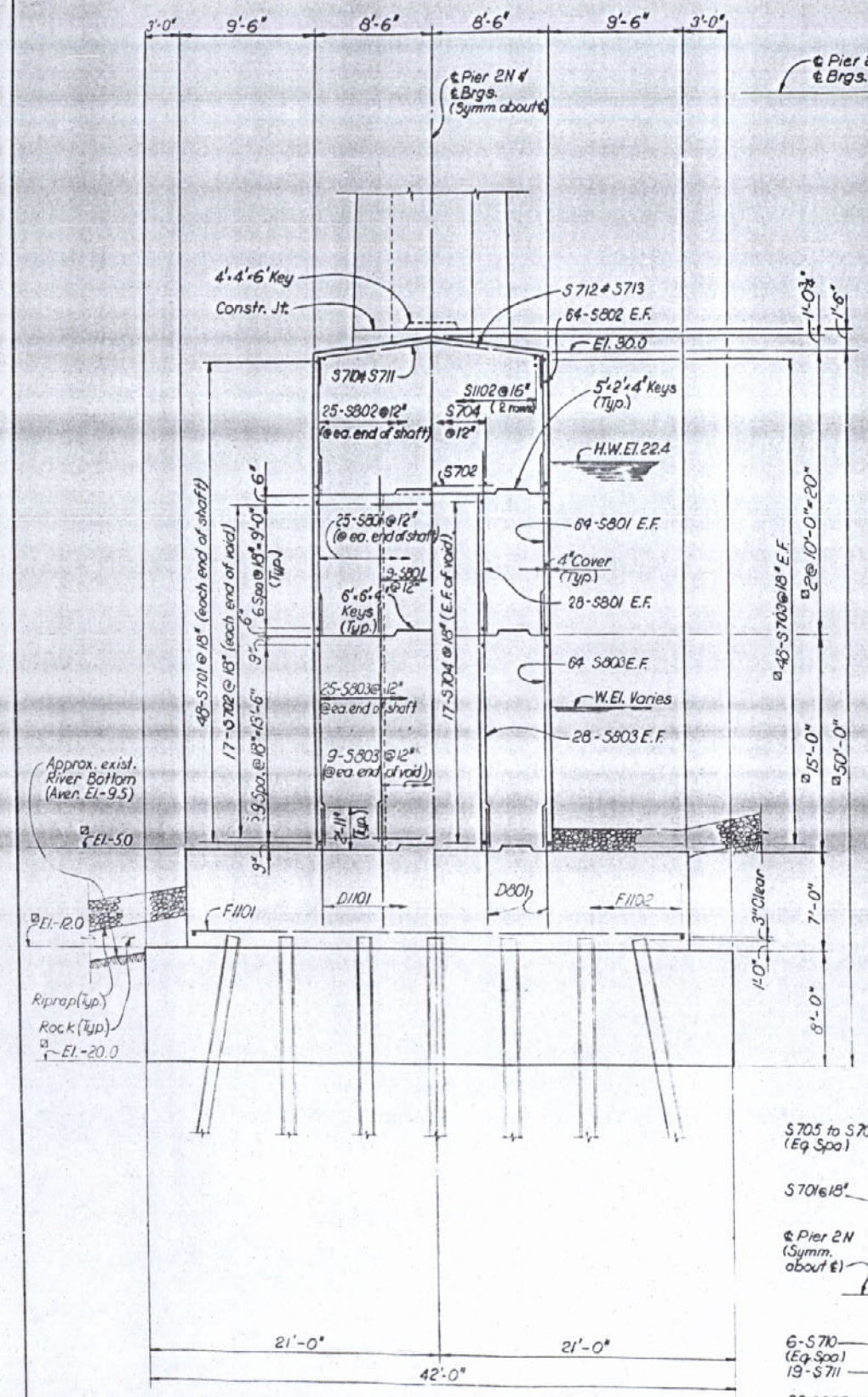
REVISIONS

DATE MAR. 15, 1974 SCALE [illegible] DWG. NO. 24 A
DRAWN BY [illegible] CHKD. BY [illegible] IN CHARGE APPROVED

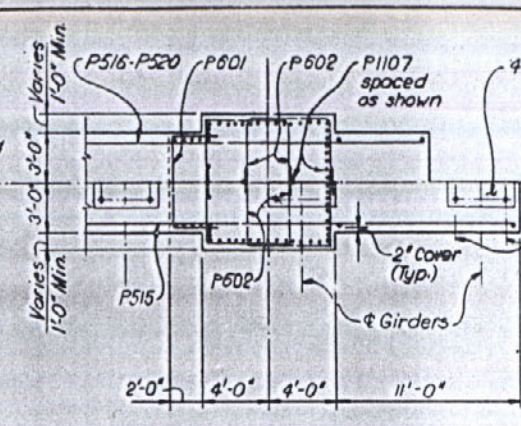
AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
2-410-4(34)223	450-37-01	ST CHARLES	25

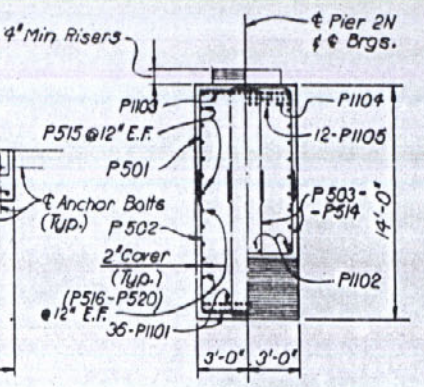
93



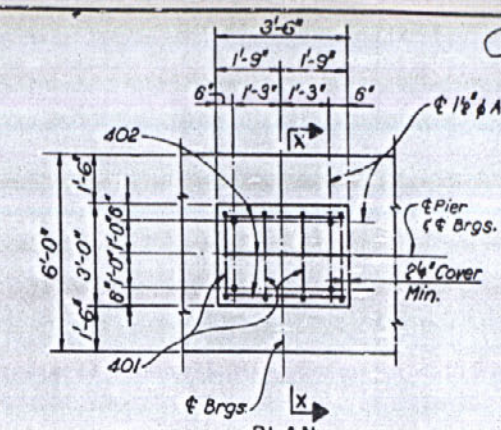
HALF SECTION B-B HALF SECTION C-C



SECTION D-D



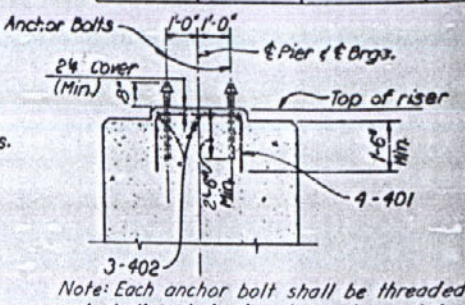
SECTION E-E



PLAN

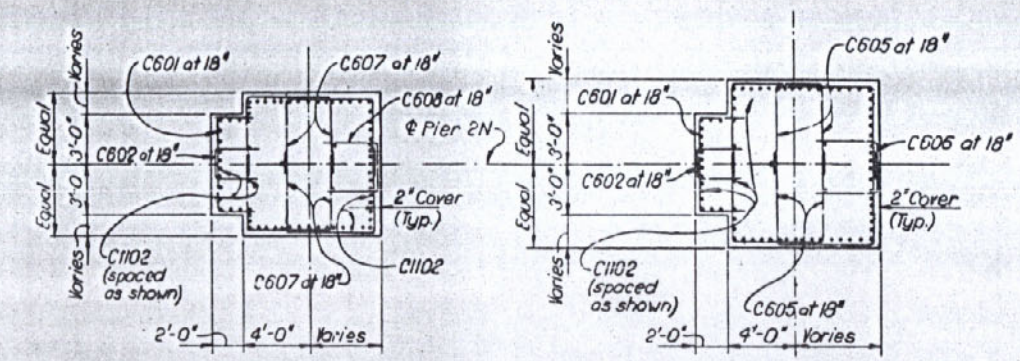
RISER DETAILS

Scale: 3/8" = 1'-0"



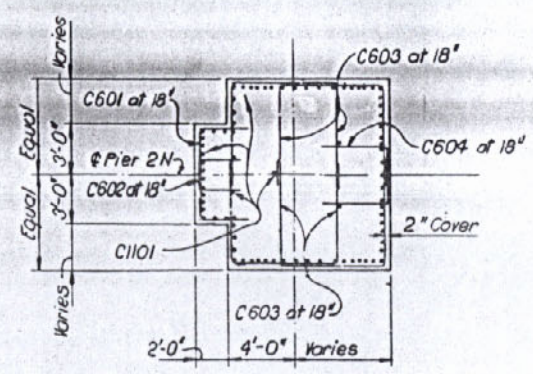
Note: Each anchor bolt shall be threaded 6" and shall include two heavy hex. nut & beveled washer (bevel 1/2" in 12").

SECTION X-X

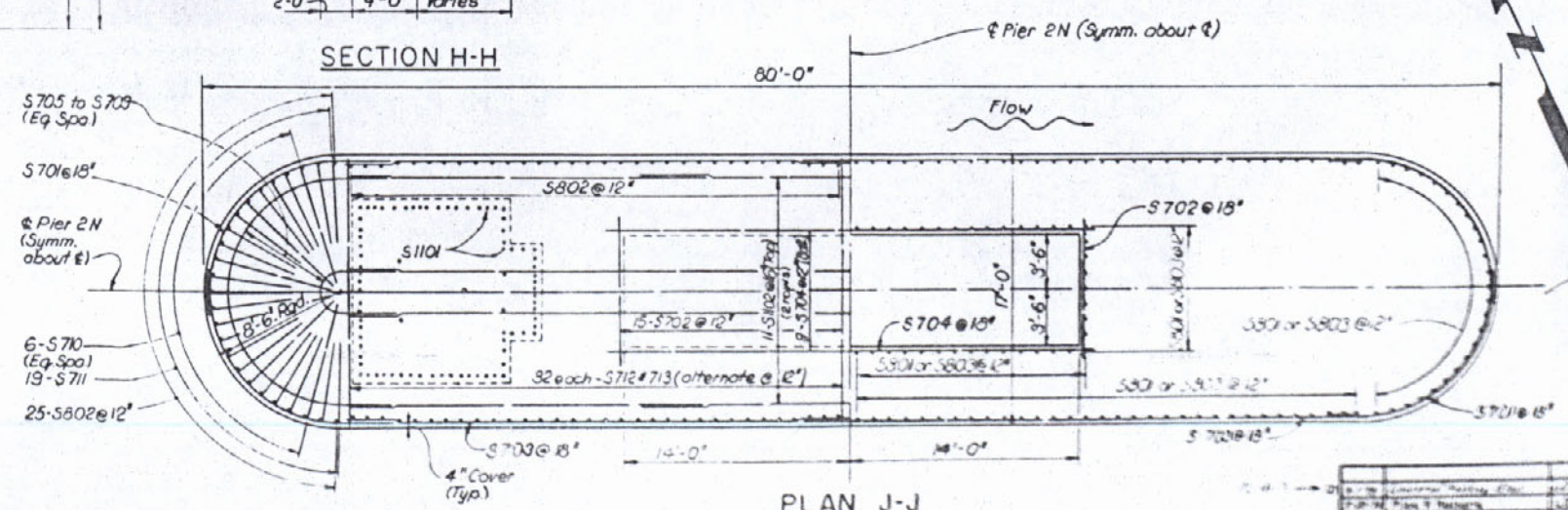


SECTION F-F

SECTION G-G



SECTION H-H



PLAN J-J

NOTES:

For General Notes see Sheet #4
For Bar Schedule see Sheet #28
E.F. indicates each face.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

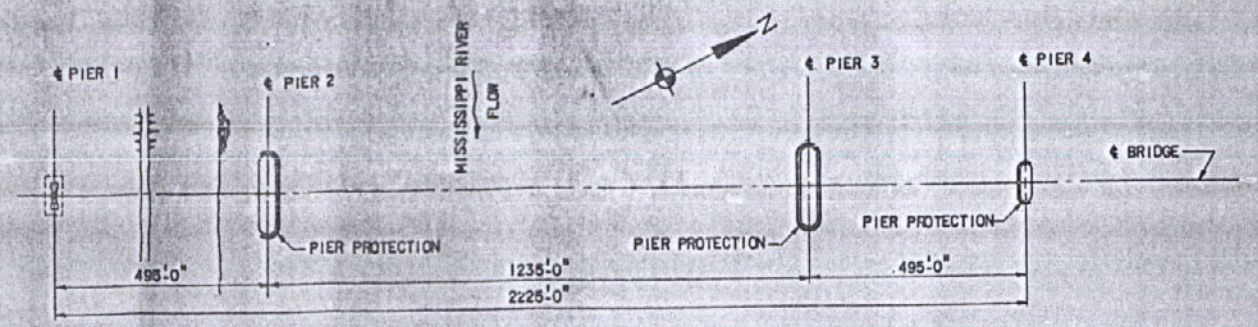
PIER 2 N DETAILS-2
NORTH APPROACH (EAST BANK)
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLIN AND LEONARD, MODJESKI AND MASTERS
CONSULTING ENGINEERS

AS BUILT

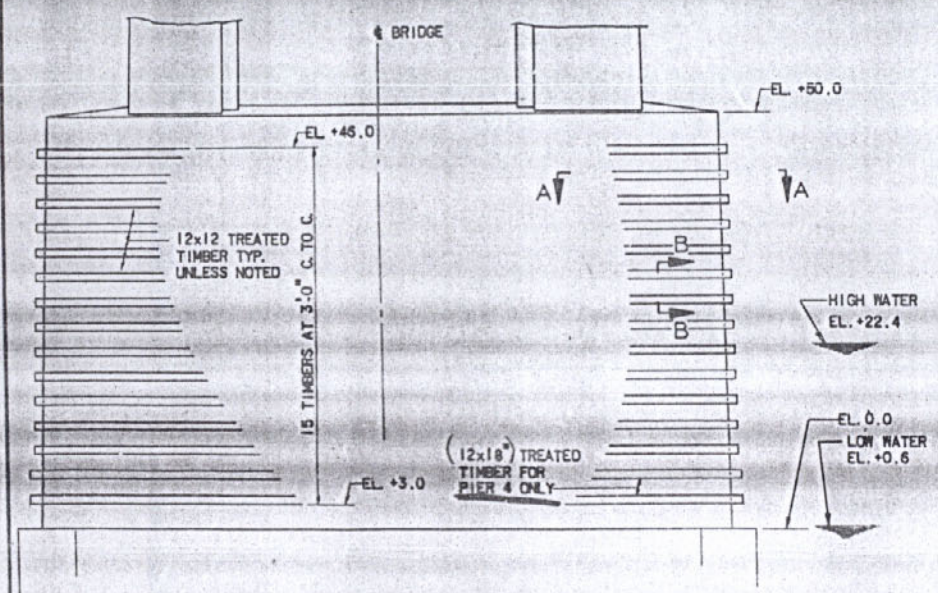
94

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(3)223	450-37-01	ST. CHARLES	26



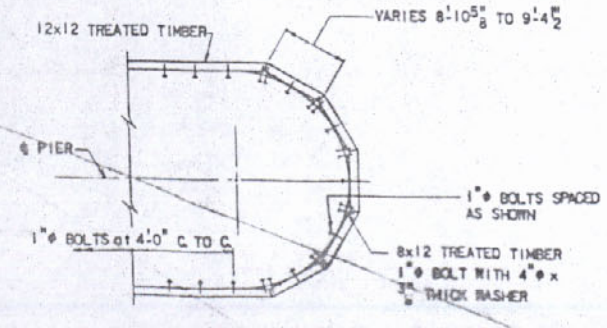
LOCATION PLAN FOR PIER PROTECTION TIMBER

SCALE: 1"=200'



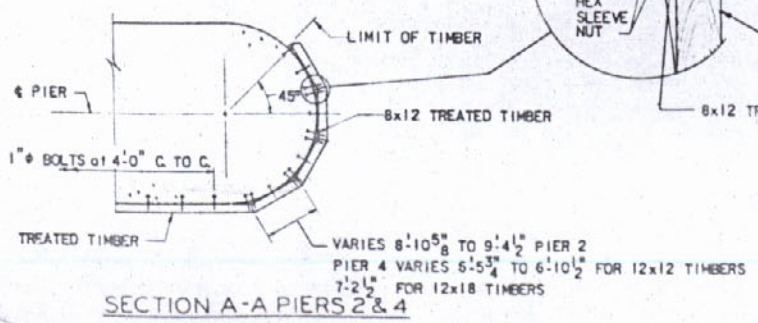
ELEVATION - TYPICAL PIER

SCALE: 3/32"=1'-0"



SECTION A-A PIER 3

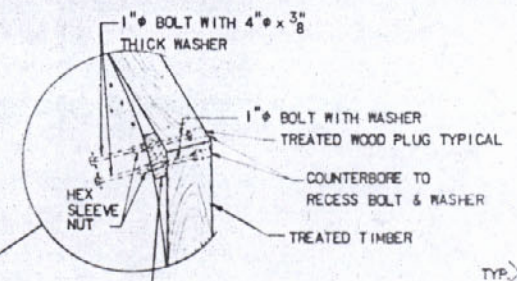
SCALE: 3/32"=1'-0"

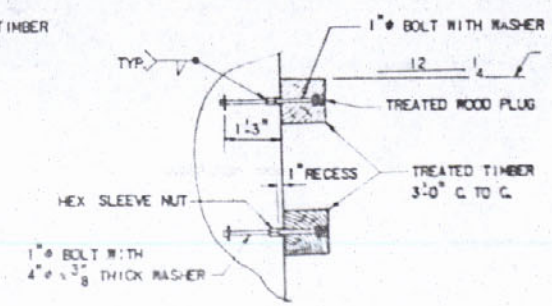


SECTION A-A PIERS 2 & 4

(PIER 4 SHOWN PIER 2 SIMILAR)

SCALE: 3/32"=1'-0"





SECTION B-B

SCALE: 1/4"=1'-0"

NOTES:

FOR GENERAL NOTES, SEE SHEET 4.

TIMBER SHALL BE PREFABRICATED PRIOR TO TREATMENT.

TIMBER TREATMENT SHALL BE APPLIED UNDER PRESSURE AND SHALL CONSIST OF PENTACHLOROPHENOL WITH A PETROLEUM CARRIER, FORMULATED TO MINIMIZE STAINING OF PIER SURFACES.

ENDS OF TIMBER PIECES CUT IN FIELD SHALL BE PROTECTED WITH APPROVED SEALER.

ALL HARDWARE SHALL BE A307 STEEL AND SHALL BE HOT DIP GALV.

NOTE:

BOLTS, WASHERS AND SLEEVE NUTS ARE CLASSIFIED AS TIMBER HARDWARE, FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIER PROTECTION DETAILS
PIERS 2, 3, AND 4
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND LIERHARD - MOUTON AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY

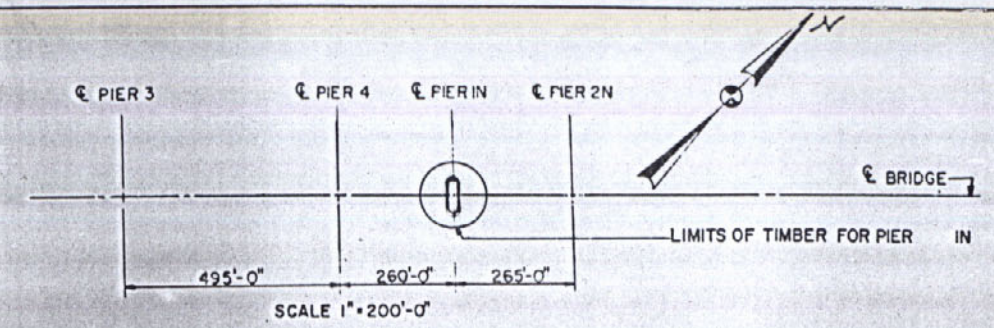
DATE: MAR. 1 | SCALE: AS NOTED | DRAWING NO. 26
DRAWN BY: | CHKD BY: | DESIGNED BY: | CHECKED BY:

ELS

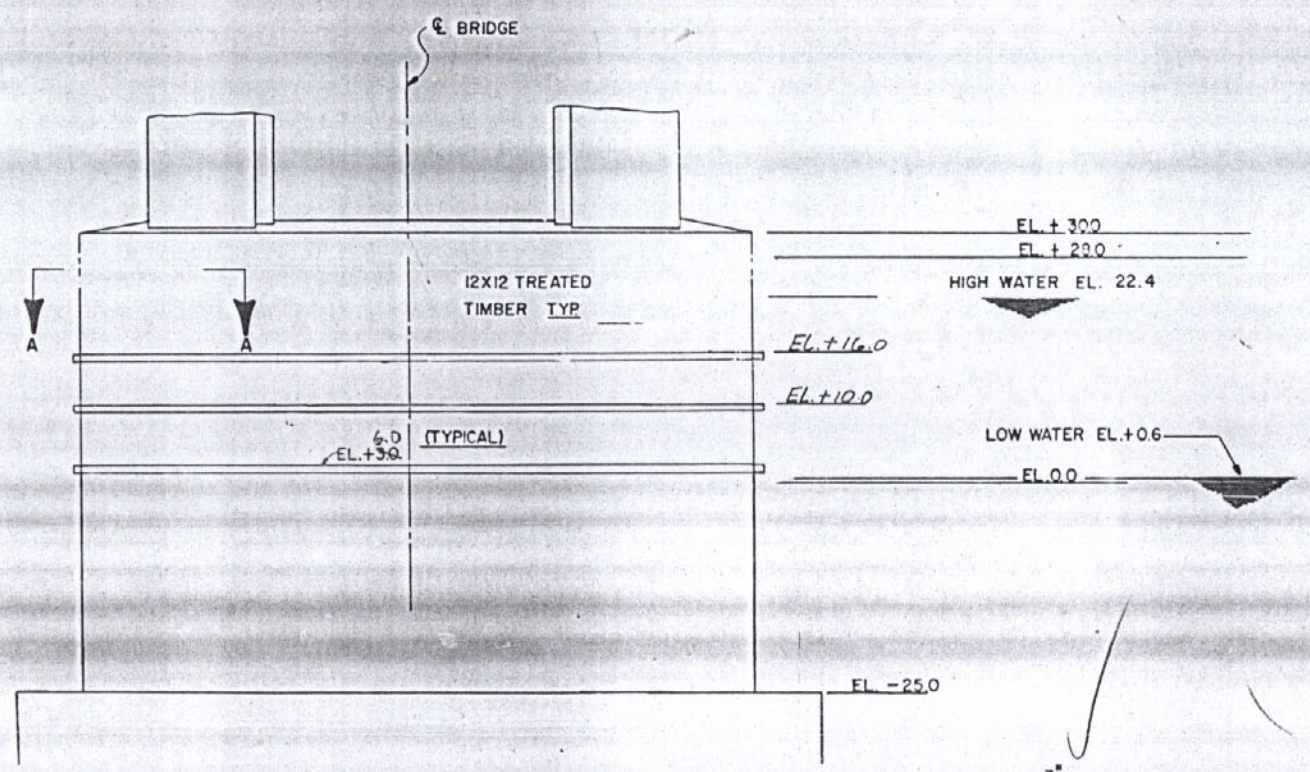
AS BUILT

95

FED. AID PROJECT	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34) 223	450-37-01	ST. CHARLES	26A



LOCATION PLAN FOR PIER PROTECTION TIMBER

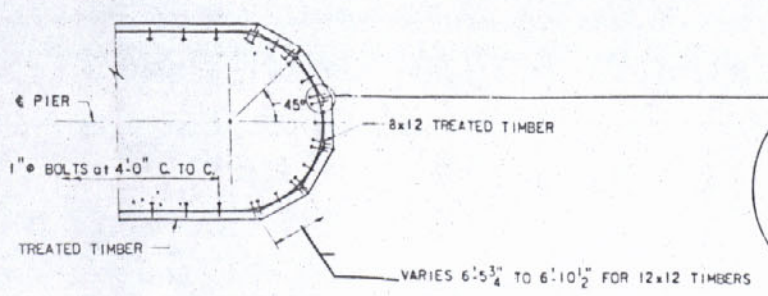


ELEVATION - TYPICAL PIER IN

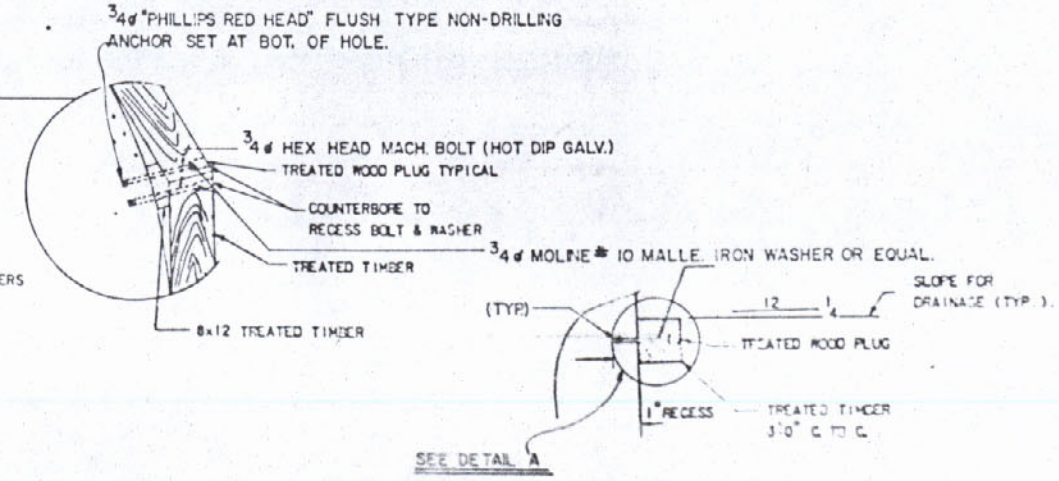
SCALE 3/32" = 1'-0"

NOTES:

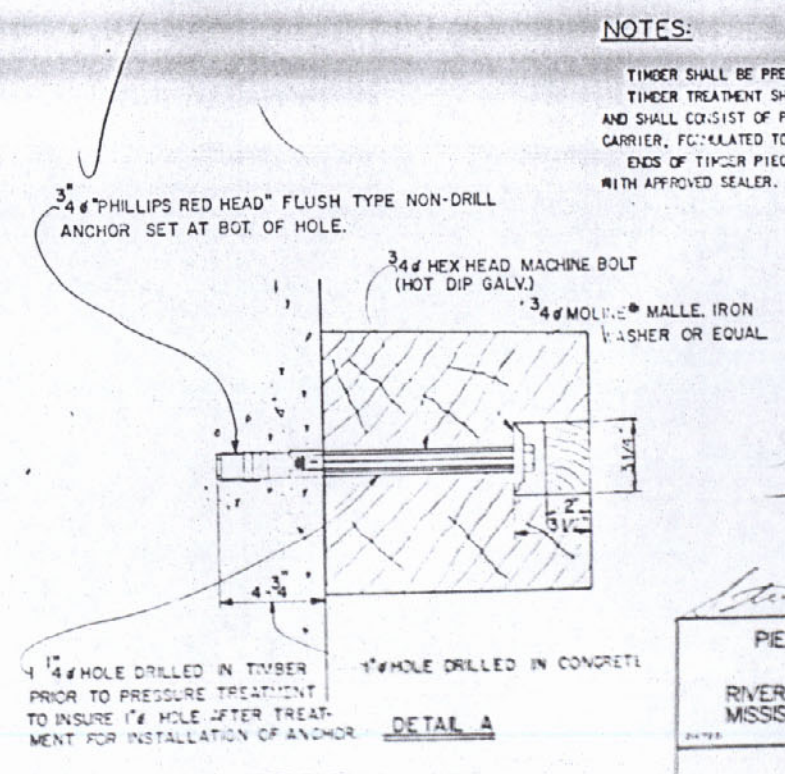
TIMBER SHALL BE PREFABRICATED PRIOR TO TREATMENT.
TIMBER TREATMENT SHALL BE APPLIED UNDER PRESSURE AND SHALL CONSIST OF PENTACHLOROPHENOL WITH A PETROLEUM CARRIER, FORMULATED TO MINIMIZE STAINING OF PIER SURFACES.
ENDS OF TIMBER PIECES CUT IN FIELD SHALL BE PROTECTED WITH APPROVED SEALER.



SECTION A-A PIERS



SECTION B-B TYP PIERS



DETAIL A

See Pl. 17

PIER PROTECTION DETAILS
PIER IN
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

AS BUILT

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FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	27

PIER 1

MARK	NUMBER	SIZE	LENGTH	TYPE	A	B	C	R
F1101	140	11	43'-6"	STR.				
F1102	125	11	34'-6"	STR.				
F1103	61	11	42'-0"	STR.				
D1101	124	11	10'-6"	STR.				
C1101	356	11	29'-0"	STR.				
C1102	104	11	30'-6"	STR.				
C1103	24	11	20'-0"	STR.				
C1104	130	11	14'-6"	STR.				
C601	190	6	15'-10"	2	7'-6"	4'-2"		
C602	190	6	12'-3"	2	3'-11"	4'-2"		
C603	16	6	12'-0"	2	4'-0"	4'-0"		
C604	14	6	15'-8"	2	7'-8"	4'-0"		
C605	32	6	25'-7"	2	8'-7"	8'-6"		
C606	32	6	25'-6"	2	8'-5"	8'-6"		
C607	36	6	11'-6"	2	4'-0"	3'-9"		
C608	72	6	25'-1"	2	8'-7"	8'-3"		
C609	72	6	24'-6½"	2	VARIES	8-3	4 SETS OF 18	
					EACH; A VARIES FROM 7'-10" TO 8'-3" IN GROUPS OF 3 BY 1" INCR.			
C610	36	6	10'-6"	2	4'-0"	3'-3"		
C611	72	6	24'-1"	2	8'-7"	7'-6"		
C612	72	6	AV. 23'-0½"	2	VARIES	7'-9"	4 SETS OF 18	
					EACH; A VARIES FROM 7'-4" TO 7'-9" IN GROUPS OF 3 BY 1" INCR.			
C613	36	6	9'-6"	2	4'-0"	2'-9"		
C614	72	6	23'-1"	2	8'-7"	7'-3"		
C615	72	6	AV. 21'-5½"	2	VARIES	7'-3"	4 SETS OF 18	
					EACH; A VARIES FROM 6'-9" TO 7'-2" IN GROUPS OF 3 BY 1" INCR.			
C616	66	6	12'-0"	2	4'-0"	4'-0"		
C617	132	6	13'-9"	2	6'-9"	3'-6"		
C618	132	6	AV. 20'-0"	2	VARIES	6'-9"	4 SETS OF 33	
					EACH; A VARIES FROM 6'-4" TO 6'-8" IN GROUPS OF 11 BY 2" INCR.			
P1101	26	11	34'-6"	STR.				
P1102	26	11	17'-6"	STR.				
P1103	18	11	20'-3"	STR.				
P1104	13	11	39'-3"	STR.				
P1105	13	11	22'-3"	STR.				
P1106	26	11	17'-5"	3	4'-0"	9'-5"	4'-0"	6'-0"
P1107	104	11	15'-0"	STR.				
P601	30	6	11'-0"	2	4'-0"	3'-6"		
P602	60	6	13'-9"	2	6'-9"	3'-6"		
P603	60	6	AV. 18'-5¼"	2	VARIES	6'-2"	4 SETS OF 15	
					EACH; A=6'-0" FOR 6 BARS; A=6'-2" FOR 9 BARS			
P604	36	6	25'-1"	STR.				
P605	96	6	22'-5"	2	5'-9"	8'-4"		

PIER 2

MARK	NUMBER	SIZE	LENGTH	TYPE	A	B	C	D	R
B1101	394	11	31'-0"	STR.					
B1102	118	11	45'-3"	STR.					
B1103	236	11	31'-2"	STR.					
B601	426	6	30'-1"	STR.					
B602	150	6	42'-3"	STR.					
B603	300	6	30'-0"	STR.					
D1101	416	11	9'-2"	STR.					
D1102	456	11	9'-2"	STR.					
(1) S1101	1248	11	14'-0"	STR.					
(1) S1102	416	11	9'-8"	STR.					
S1103	1824	11	14'-0"	STR.					
S1104	456	11	9'-8"	STR.					
S1105	46	11	39'-9"	STR.					
S1106	38	11	39'-8"	STR.					
S1107	38	11	25'-0"	STR.					
(1) S701	160	7	49'-0"	STR.					
(1) S702	160	7	24'-7"	4	2'-7"	13'-6"	8'-6"		
S703	200	7	41'-0"	STR.					
S704	200	7	AV. 27'-11"	10	2'-7"	VARIES	1'-4"		VARIES
					5 SETS OF 40 EA. B VARIES 23'-4" TO 24'-8" BY 4" INCR. R VARIES 14'-10" TO 15'-8" BY 2½" INCR.				
(1) S705	284	7	25'-9"	STR.					
(1) S706	142	7	37'-9"	STR.					
(1) S707	140	7	5'-3"	STR.					
(1) S710	980	7	12'-7"	STR.					
S711	70	7	19'-11"	7	2'-7"	14'-9"	2'-7"	1'-10"	
S712	70	7	17'-4"	8	2'-7"	14'-9"	1'-10"		
S713	58	7	11'-11"	8	2'-7"	9'-4"	1'-2"		
S714	18	7	7'-0"	STR.					
S715	4	7	26'-6"	10	4'-4"	20'-10"	1'-4"		13'-3"
S716	4	7	24'-1"	10	4'-4"	18'-5"	1'-4"		11'-9"
S717	4	7	21'-9"	10	4'-4"	16'-1"	1'-4"		10'-3"
S718	4	7	19'-5"	10	4'-4"	13'-9"	1'-4"		8'-9"
S719	4	7	17'-1"	10	4'-4"	11'-5"	1'-4"		7'-3"
S720	4	7	14'-8"	10	4'-4"	9'-0"	1'-4"		5'-9"
S721	2	7	22'-0"	9	4'-4"	13'-4"			4'-3"
S722	2	7	17'-4"	9	4'-4"	8'-8"			2'-9"
S723	2	7	12'-7"	9	4'-4"	3'-11"			1'-3"
S724	20	7	20'-6"	STR.					
S725	276	7	9'-3"	1	5'-3"	4'-0"			
S726	40	7	13'-0"	1	6'-6"	6'-6"			
S727	20	7	15'-6"	STR.					
(1) S728	80	7	37'-5"	STR.					
(1) S729	80	7	36'-2"	STR.					
(1) S730	102	7	41'-2"	STR.					
(1) S731	80	7	38'-7"	STR.					
(1) S732	102	7	33'-7"	STR.					

PIER 3

MARK	NUMBER	SIZE	LENGTH	TYPE	A	B	C	D	R
B1001	20	10	22'-2"	3	3'-8"	14'-10"	3'-8"		9'-5"
B1002	10	10	19'-6"	STR.					
B1003	20	10	11'-5"	STR.					
B1004	16	10	16'-0"	STR.					
B1005	16	10	17'-6"	STR.					
B1006	16	10	18'-6"	STR.					
B1007	16	10	19'-3"	STR.					
B1008	16	10	19'-10"	STR.					
B1009	16	10	20'-3"	STR.					
B1010	16	10	20'-7"	STR.					
B1011	100	10	20'-10"	STR.					
B1012	354	10	38'-4"	STR.					
B1013	336	10	42'-9"	STR.					
D1101	412	11	8'-3"	STR.					
D1102	456	11	8'-6"	STR.					
S1101	3060	11	14'-0"	STR.					
S1102	868	11	9'-8"	STR.					
S1103	46	11	39'-9"	STR.					
S1104	38	11	39'-10"	STR.					
S1105	38	11	25'-0"	STR.					
S701	160	7	49'-11"	STR.					
S702	160	7	23'-5"	4	2'-7"	12'-3"	8'-7"		
S703	200	7	41'-8"	STR.					
S704	200	7	AV 27'-11"	10	2'-7"	VARIES	1'-4"		VARIES
					5 SETS 40 EA. B VARIES 23'-4" TO 24'-8" BY 4" INCR. R VARIES 14'-10" TO 15'-8" BY 2½" INCR.				
S705	140	7	5'-3"	STR.					
S706	284	7	25'-9"	STR.					
S707	142	7	37'-9"	STR.					
S708	980	7	12'-7"	STR.					
S709	70	7	19'-11"	7	2'-7"	14'-9"	2'-7"	1'-10"	
S710	70	7	17'-4"	7	2'-7"	14'-9"	0"	1'-10"	
S711	58	7	11'-11"	8	2'-7"	9'-4"			
S712	18	7	7'-0"	STR.					
S713	4	7	26'-6"	10	4'-4"	20'-10"	1'-4"		13'-3"
S714	4	7	24'-1"	10	4'-4"	18'-5"	1'-4"		11'-9"
S715	4	7	21'-9"	10	4'-4"	16'-1"	1'-4"		10'-3"
S716	4	7	19'-5"	10	4'-4"	13'-9"	1'-4"		8'-9"
S717	4	7	17'-1"	10	4'-4"	11'-5"	1'-4"		7'-3"
S718	4	7	14'-8"	10	4'-4"	9'-0"	1'-4"		5'-9"
S719	2	7	22'-0"	9	4'-4"	13'-4"			4'-3"
S720	2	7	17'-4"	9	4'-4"	8'-8"			2'-9"
S721	2	7	12'-7"	9	4'-4"	3'-11"			1'-3"
S722	20	7	15'-6"	STR.					
S723	20	7	20'-6"	STR.					
S724	40	7	13'-0"	1	6'-6"	6'-6"			
S725	276	7	8'-0"	1	5'-3"	2'-9"			
S726	80	7	37'-9"	STR.					
S727	80	7	36'-10"	STR.					
S728	102	7	41'-10"	STR.					
S729	80	7	38'-7"	STR.					
S730	102	7	33'-7"	STR.					

PIER 4

MARK	NUMBER	SIZE	LENGTH	TYPE	A	B	C	R
D801	188	8	6'-0"	STR.				
C1101	90	11	30'-6"	STR.				
C1102	24	11	20'-0"	STR.				
C1001	118	10	19'-8"	STR.				
C1002	106	10	28'-8"	STR.				
C601	124	6	12'-3"	2	3'-11"	4'-2"		
C602	124	6	15'-10"	2	7'-6"	4'-2"		
C603	22	6	10'-6"	2	4'-0"	3'-3"		
C604	44	6	23'-9"	2	8'-7"	7'-7"		
C605	44	6	AV 22'-7¼"	2	VARIES	7'-7"	4 SETS OF 11	
					EA; A=7'-4" FOR 5 BARS; A=7'-6" FOR 6 BARS			
C606	36	6	10'-6"	2	4'-0"	3'-3"		
C607	72	6	23'-1"	2	8'-7"	7'-3"		
C608	72	6	AV 21'-5½"	2	VARIES	7'-3"	4 SETS OF 18	
					EA; A VARIES FROM 6'-9" TO 7'-2" IN GROUPS OF 3 BY 1" INCR.			
C609	66	6	12'-0"	2	4'-0"	4'-0"		
C610	132	6	13'-9"	2	6'-9"	3'-6"		
C611	132	6	AV. 20'-0"	2	VARIES	6'-9"	4 SETS OF 33	
					EA; A VARIES FROM 6'-4" TO 6'-8" IN GROUPS OF 11 BY 2" INCR.			
P1001	26	10	17'-4"	STR.				
P1002	26	10	34'-4"	STR.				
P1003	13	10	22'-1"	STR.				
P1004	13	10	39'-1"	STR.				
P1005	26	10	16'-9"	3	3'-8"	9'-5"	3'-8"	6'-0"
P1101	104	11	15'-6"	STR.				
P601	30	6	11'-0"	2	4'-0"	3'-6"		
P602	60	6	13'-9"	2	6'-9"	3'-6"		
P603	60	6	AV. 18'-5¼"	2	VARIES	6'-2"	4 SETS 15 EA;	
					A=6'-0" FOR 6 BARS; A=6'-2" FOR 9 BARS			
P604	96	6	22'-5"	2	5'-9"	8'-4"		
P605	32	6	25'-1"	STR				
S901	118	9	19'-0"	STR.				
S801	210	8	11'-11"	STR.				
S802	576	8	12'-11"	STR.				
S803	52	8	10'-4"	STR.				
S804	210	8	9'-9"	STR.				
S805	960	8	12'-11"	STR.				
S806	188	8	9'-9"	STR.				
S701	156	7	37'-9"	STR.				
S702	156	7	20'-0"	4	2'-7"	11'-1"	6'-4"	
S703	58	7	33'-2"	STR.				
S704	70	7	15'-10"	STR.				
S705	200	7	31'-4"	STR.				

PIER 4 (CONTINUED)

MARK	NUMBER	SIZE	LENGTH	TYPE	A	B	C	D	R
S706	200	7	AV. 20'-10"	10	2'-7"	VARIES	1'-4"		VARIES
					5 SETS OF 40 EACH; B VARIES 16'-3" TO 17'-7" BY 4" INCR. R VARIES 10'-3" TO 11'-3" BY 3" INCR.				
S707	74	7	15'-10"	STR.					
S708	64	7	33'-2"	STR.					
S709	26	7	31'-4"	STR.					
S710	42	7	15'-6"	7	2'-7"	10'-4"	2'-7"	1'-4"	
S711	42	7	12'-11"	8	2'-7"	10'-4"	1'-3"		
S712	48	7	8'-7"	8	2'-7"	6'-0"	9"		
S713	7	7	6'-4"	STR					
S714	4	7	17'-8"	10	2'-7"	13'-9"	1'-4"		8'-9"
S715	4	7	15'-4"	10	2'-7"	11'-5"	1'-4"		7'-3"
S716	4	7	13'-0"	10	2'-7"	9'-1"	1'-4"		5'-9"
S717	2	7	18'-6"	9	2'-7"	13'-4"			4'-3"
S718	2	7	13'-10"	9	2'-7"	8'-8"			2'-9"
S719	2	7	9'-1"	9	2'-7"	3'-11"			1'-3"
S601	12	6	12'-0"	2	7'-6"	2'-3"			
S602	24	6	21'-11"	2	6'-9"	7'-7"			
S603	24	6	AV. 22'-10½"	2	VARIES	7'-7"	4 SETS OF 6 EACH;		
					A VARIES 7'-6" TO 7'-11" BY 1" INCR.				

NOTES:

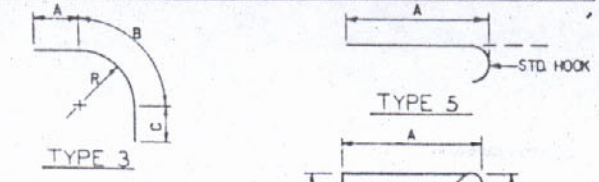
FOR GENERAL NOTES, SEE DWG. NO. 4.
ALL BAR DIMENSIONS ARE SHOWN OUT TO OUT.
ALL BAR BENDS ARE TO BE IN ACCORDANCE WITH ACI STANDARDS.

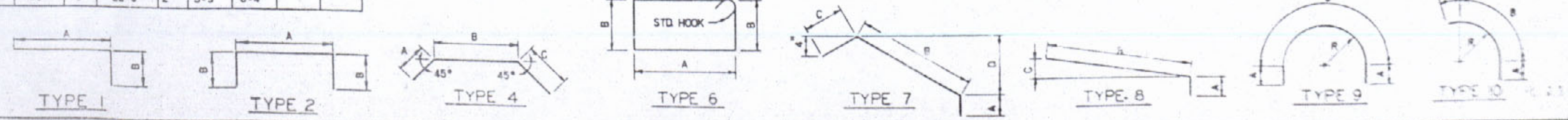
PIER 4 (ALTERNATE A) DISTRIBUTION BLOCK

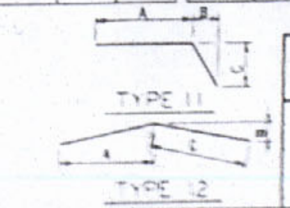
MARK	NUMBER	SIZE	LENGTH	TYPE
B1101	135	11	39'-5"	STR.
B1102	222	11	24'-0"	STR.
B701	171	7	38'-4"	STR.
B702	246	7	23'-3"	STR.
D801	214	8	6'-0"	STR.

PIER 4 (ALTERNATE B) DISTRIBUTION BLOCK

MARK	NUMBER	SIZE	LENGTH	TYPE
B1101	177	11	35'-0"	STR.
B1102	196	11	30'-9"	STR.
B601	213	6	33'-9"	STR.
B602	220	6	29'-11"	STR.
D801	214	8	6'-0"	STR.







STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

REINFORCING BAR SCHEDULE-I
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

0502
0204

AS BUILT

AS BUILT

PIER 1N

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	R
P601	20	6	12;7"	2	5;6"	3;7½			

PIER 2N

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	R
F1101	132	11	35;4"	STR.					
F1102	162	11	31;10"	STR.					
D801	252	8	8;9"	STR.					
S1101	160	11	8;0"	STR.					
S1102	65	11	23;8"	STR.					
S801	178	8	9;8"	STR.					
S802	178	8	9;8"	STR.					
S803	252	8	17;11"	S/4					
S701	96 (96)	7	16;9"	10	2;7½	12;10"	1;3½	8;2"	
S702	44 (96)	7	9;6"	STR.					
S703	96 (96)	7	32;9"	STR.					
S704	96 (96)	7	30;6"	STR.					
S705	2	7	9;4"	9	2;6½	4;3"		1;4"	
S706	2	7	13;6"	9	2;6½	8;5"		2;8"	
S707	2	7	17;8"	9	2;6½	12;7"		4;0"	
S708	2	7	21;10"	9	2;6½	16;9"		5;4"	
S709	2	7	26;0"	9	2;6½	20;11"		6;8"	
S710	12	7	10;0"	8	2;6½	7;6¾"	1;0¾"		
S711	38	7	7;6"	8	2;6½	5;0¾"	0;9"		
S712	64	7	10;9"	8	2;6½	8;3¾"	1;0¾"		
S713	64	7	13;3"	7	2;6½	8;3¾"	2;6½"	1;0¾"	
C1101	160	11	21;6"	STR.					
C1102	290	11	29;0"	STR.					

PIER 1N (CONT'D.)

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	R
P516	168	5	4;0"	STR.					
P517	24	5	42;0"	STR.					
P518	4	5	40;9"	STR.					
P519	4	5	39;6"	STR.					
P520	4	5	38;1"	STR.					
P521	4	5	36;9"	STR.					
P522	4	5	35;6"	STR.					
P523	4	5	34;1"	STR.					
P401	32	4	6;8"	2	2;1½	2;4"			
P402	24	4	3;2"	STR.					
P403	20	4	7;6"	2	4;1½	1;9"			
P404	10	4	9;2"	STR.					

PIER 1S

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	R
D801	260	8	9;8"	STR.					
S1101	39	11	22;8"	STR.					
S1102	168	11	6;0"	STR.					
S801	104 (104)	8	12;11"	STR.					
S802	180	8	9;8"	STR.					
S803	252	8	17;11"	S/4					
S701	96 (96)	7	19;0"	10	2;7½	15;1"	1;3½	9;8"	
S702	96 (96)	7	12;6"	STR.					
S703	96 (96)	7	31;3"	STR.					
S704	96 (96)	7	30;6"	STR.					
S705	2	7	9;10"	9	2;6½	4;8½"		1;6"	
S706	2	7	14;6"	9	2;6½	9;6"		3;0"	
S707	2	7	19;3"	9	2;6½	14;1½"		4;6"	
S708	2	7	24;0"	9	2;6½	18;10½"		6;0"	
S709	2	7	28;8"	9	2;6½	23;7"		7;6"	
S710	2	7	32;5"	9	2;6½	27;3½"		9;0"	
S711	16	7	11;6"	8	2;6½	9;0¾"	1;3"		
S712	44	7	8;6"	8	2;6½	6;0¾"	1;0"		
S713	60	7	12;4"	8	2;6½	9;10¾"	1;3"		
S714	60	7	14;10"	7	2;6½	9;10¾"	2;6½	1;3"	
C1101	168	11	31;3"	STR.					
C1102	288	11	29;0"	STR.					
D601	104	6	14;9"	2	7;6"	3;7½"			
D602	104	6	6;11"	2	2;7"	2;5"			
D603	144	6	23;6"	2	8;0"	7;10"			
D604	72	6	13;7"	2	5;5"	4;2"			
D605	136	6	21;8"	2	7;4"	7;3"			
D606	34	6	12;0"	2	4;2"	4;0"			
D607	136	6	20;7"	2	7;3"	6;9"			
D608	34	6	11;3"	2	3;11"	3;9"			
P501	25	11	42;0"	STR.					
P502	8	11	22;6"	11	6;5½"	8;6"	13;10"		
P503	46	11	43;0"	STR.					
P504	20	11	31;10"	STR.					
P505	24	11	14;0"	STR.					
P506	112	11	15;0"	STR.					
P601	18	6	14;9"	2	7;8"	3;7½"			
P602	72	6	18;10"	2	6;8"	6;2"			
P501	124	5	18;3"	2	5;1"	6;8"			
P502	72	5	24;1"	2	5;1"	9;7"			
P503	4	5	23;9"	2	5;1"	9;5"			
P504	4	5	23;1"	2	5;1"	9;1"			
P505	4	5	21;11"	2	5;1"	8;6"			
P506	4	5	20;7"	2	5;1"	7;10"			
P507	4	5	19;3"	2	5;1"	7;2"			
P508	4	5	17;11"	2	5;1"	6;6"			
P509	4	5	16;7"	2	5;1"	6;0"			
P510	4	5	15;3"	2	5;1"	5;2"			
P511	4	5	13;11"	2	5;1"	4;6"			
P512	4	5	12;7"	2	5;1"	3;10"			
P513	4	5	11;3"	2	5;1"	3;2"			
P514	4	5	9;11"	2	5;1"	2;6"			
P515	4	5	8;7"	2	5;1"	1;10"			

PIER 2N (CONT'D.)

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	R
P602	80	6	15;5"	2	5;3"	5;2"			
P501	128	5	16;11"	2	3;9"	6;8"			
P502	80	5	21;3"	2	3;9"	8;10"			
P503	4	5	20;11"	2	3;9"	8;8"			
P504	4	5	20;7"	2	3;9"	8;6"			
P505	4	5	19;3"	2	3;9"	7;10"			
P506	4	5	17;11"	2	3;9"	7;2"			
P507	4	5	16;7"	2	3;9"	6;6"			
P508	4	5	15;3"	2	3;9"	5;10"			
P509	4	5	13;11"	2	3;9"	5;2"			
P510	4	5	12;7"	2	3;9"	4;6"			
P511	4	5	11;3"	2	3;9"	3;10"			
P512	4	5	9;11"	2	3;9"	3;2"			
P513	4	5	8;7"	2	3;9"	2;6"			
P514	4	5	7;3"	2	3;9"	1;10"			
P515	24	5	40;7"	STR.					
P516	4	5	38;7"	STR.					
P517	4	5	36;7"	STR.					
P518	4	5	34;7"	STR.					
P519	4	5	32;7"	STR.					
P520	4	5	30;7"	STR.					
P401	32	4	5;6"	2	2;7½	1;6"			
P402	24	4	3;6"	STR.					

PIER 1S

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	R
F1101	272	11	42;10"	STR.					
F1102	133	11	33;6"	STR.					
F1103	84	11	60;0"	STR.					
D1101	116	11	13;3"	1	11;3"	2;0"			
D1102	8	11	11;3"	STR.					
C1101	130	11	32;8"	STR.					
C1102	352	11	29;2"	STR.					
C1103	24	11	20;0"	STR.					
C601	148	6	8;2½"	2	3;10½"	2;2"			
C602	148	6	15;10"	2	7;6"	0;4½"			
C603	148	6	14;11½"	2	3;11½"	5;6"			
C604	80	6	AV. 8;2½"	2	VARIES	2;2"	5 SETS OF 16 EACH; A VARIES FROM 3;8" TO 4;1" BY 1¼" INCR.		
C605	80	6	23;3¼"	2	6;8¾"	8;3¼"			
C606	80	6	AV. 24;6½"	2	VARIES	8;0"	8 SETS OF 10 EACH; A VARIES 7;8½" TO 8;3½" BY 1" INCR.		
C610	72	6	AV. 8;5"	2	VARIES	2;2"	6 SETS OF 12 EACH; A VARIES 3;10¼" TO 4;3¾" BY 1" INCR.		
C611	72	6	22;2¼"	2	6;8¾"	7;8¾"			
C612	72	6	AV. 22;10½"	2	VARIES	7;8¾"	8 SETS OF 9 EACH; A VARIES FROM 7;2¼" TO 7;8¾" BY ⅞" INCR.		
C613	72	6	21;1¾"	2	6;8¾"	7;2½"			
C614	72	6	AV. 21;4"	2	VARIES	7;2½"	8 SETS OF 9 EACH; A VARIES FROM 6;8" TO 7;2⅛" BY ⅞" INCR.		
C616	72	6	AV. 19;9¼"	2	VARIES	6;8¼"	8 SETS OF 9 EACH; A VARIES FROM 6;12¾" TO 6;7⅞" BY ⅞" INCR.		
C617	72	6	20;1¼"	2	6;8¾"	6;4¼"			

PIER 1S (CONT'D.)

MARK	NO.	SIZE	LENGTH	TYPE	A	B	C	D	R
D501	92	5	4;0"	STR.					
P601	28	11	60;0"	STR.					
P1101	42	11	40;0"	STR.					
P1102	28	11	48;0½"	STR.					
P1103	94	11	15;9"	STR.					
P1104	8	11	22;6"	11	6;5½"	8;6"	13;10"		
P601	4	6	38;7⅝"	STR.					
P602	4	6	40;9⅝"	STR.					
P603	4	6	43;0¼"	STR.					
P604	4	6	45;2½"	STR.					
P605	16	6	47;0½"	STR.					
P606	148	6	21;11¼"	2	5;3½"	8;4"			
P607	56	6	AV. 18;1¼"	2	VARIES	5;3½"	14 SETS OF 4 EACH; 8 VARIES FROM 4;11" TO 7;11" BY 2½" INCR.		
P609	20	6	9;8"	2	5;4"	2;2"			
P610	48	6	19;0¾"	2	6;8¾"	6;2"			
P611	48	6	AV. 18;3½"	2	VARIES	6;2"	4 SETS OF 12 EACH; A VARIES FROM 5;9¾" TO 6;1½" BY 1¼" INCR.		

NOTES

FOR GENERAL NOTES, SEE DWG NO. 4.
FOR BAR TYPES, SEE DWG NO 27.
ALL BAR BENDING DIMENSIONS SHALL BE MEASURED "OUT TO OUT".

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

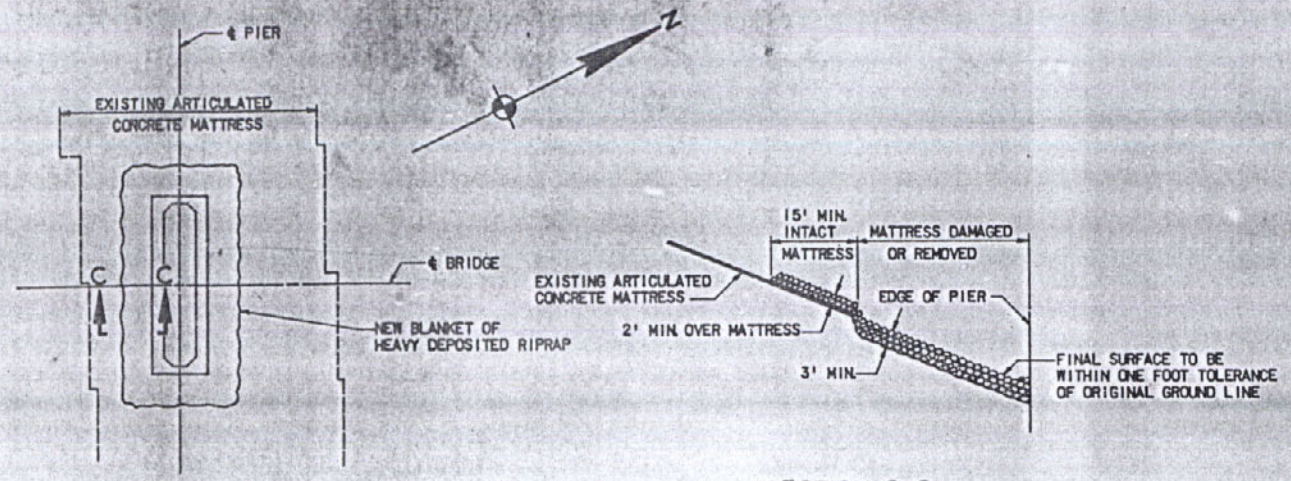
REINFORCING BAR SCHEDULE-2
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANK AND LEONARD - MOSLEDO AND MASTERS
CONSULTING ENGINEERS

FAP	STATE PROJECT	PARISH	SHEET NO.
(410-4(4)223)	450-37-01	ST. CHARLES	28

98

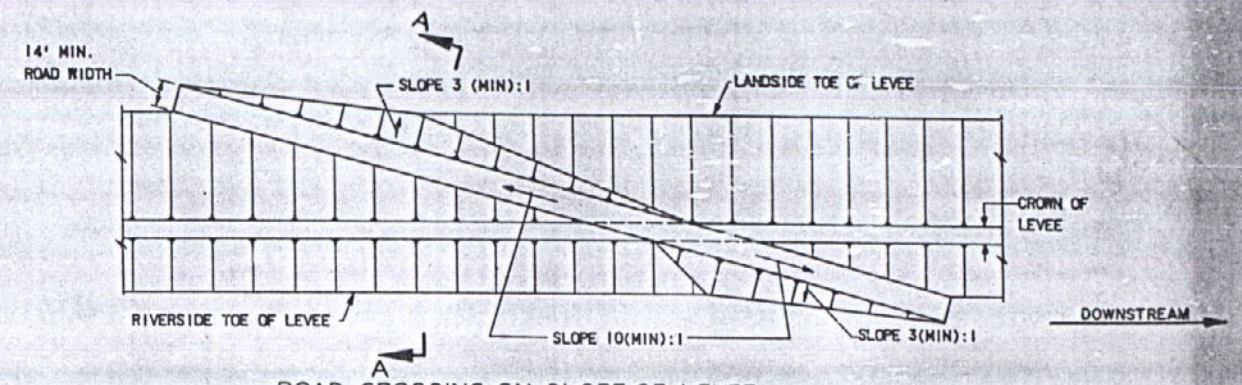
FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	29



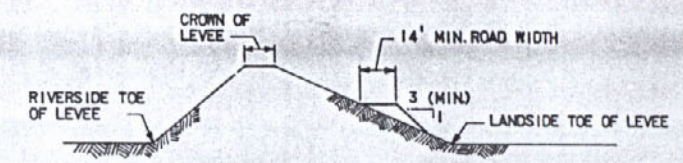
PLAN
SCALE: 1"=100'-0"

SECTION C-C
SCALE: 1"=15'-0"

DETAILS OF FINAL EROSION PROTECTION AT PIER 2

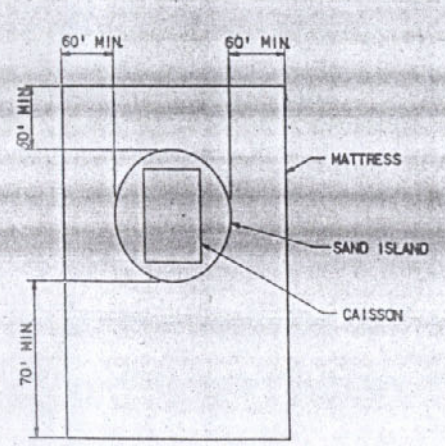


ROAD CROSSING ON SLOPE OF LEVEE



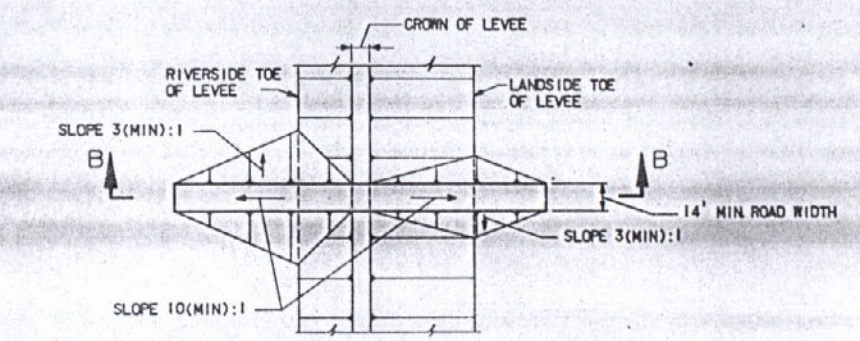
SECTION A-A

NOTE: RAMP SHALL CROSS LEVEE CROWN ONE (1) FOOT ABOVE LATEST ADOPTED LEVEE GRADE, OR AT EXISTING LEVEE CROWN, WHICHEVER IS HIGHER.

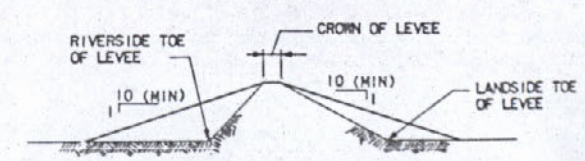


NOTE: IF SAND ISLAND IS USED AT PIER 4 THE WILLOW MATTRESS SHALL EXTEND BEYOND THE SAND ISLAND BY THE DIMENSIONS SHOWN BUT IN NO CASE SHALL THE MATTRESS DIMENSIONS BE LESS THAN SHOWN FOR PIER 4 ON DWG. NO. 30. PAYMENT FOR THE MATTRESS, SINKING STONE, AND RIPRAP WILL BE BASED ON THE MATTRESS DIMENSIONS SHOWN FOR PIER 4 ON DWG. NO. 30.

PLAN-PIER 4
SPECIAL MATTRESS REQUIREMENTS AT PIER 4 IF SAND ISLAND IS USED.
SCALE: 1"=100'-0"



ROAD CROSSING AT RIGHT ANGLE TO LEVEE
NO SCALE



SECTION B-B
NO SCALE

NOTES

MATERIAL USED IN CONSTRUCTING RAMP SHALL BE SIMILAR IN KIND TO MATERIAL IN EXISTING LEVEE.

RAMPS SHALL BE SURFACED WITH 6" OF SHELL FOR A MIN. WIDTH OF 10'.

RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DEPT. OF PUBLIC WORKS DWG. M-720-2, 11/3/1967.

DATE	DESCRIPTION	BY
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

MISCELLANEOUS DETAILS
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOUTIERS AND MATTERS
CONSULTING ENGINEERS

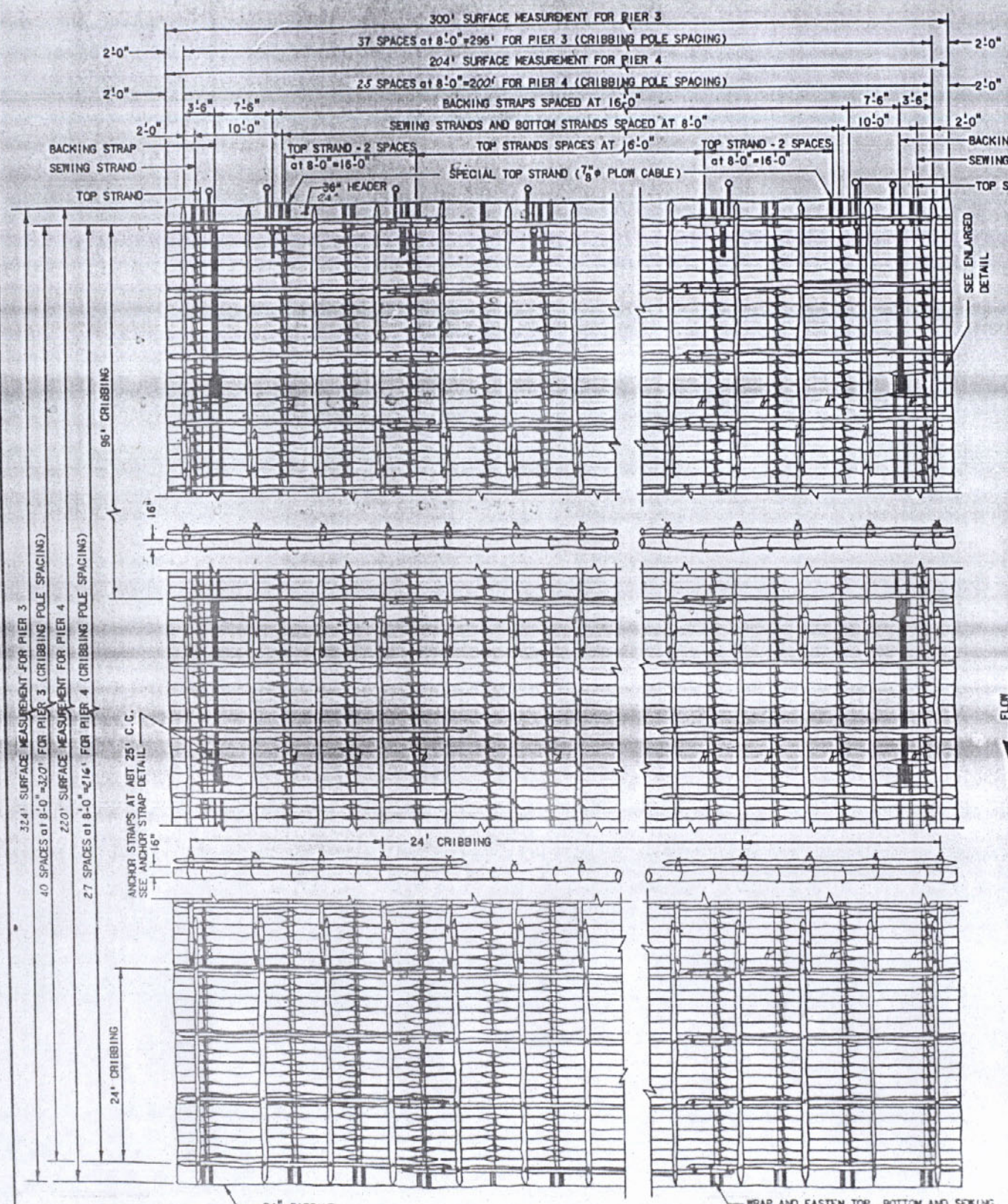
DATE MAR. 15, 1974 SCALE AS NOTED DWG. NO. 31
DRAWN BY: L.D. CHKD. BY: J.P. IN CHARGE: J.E.B. APPROVED:

0502
0204

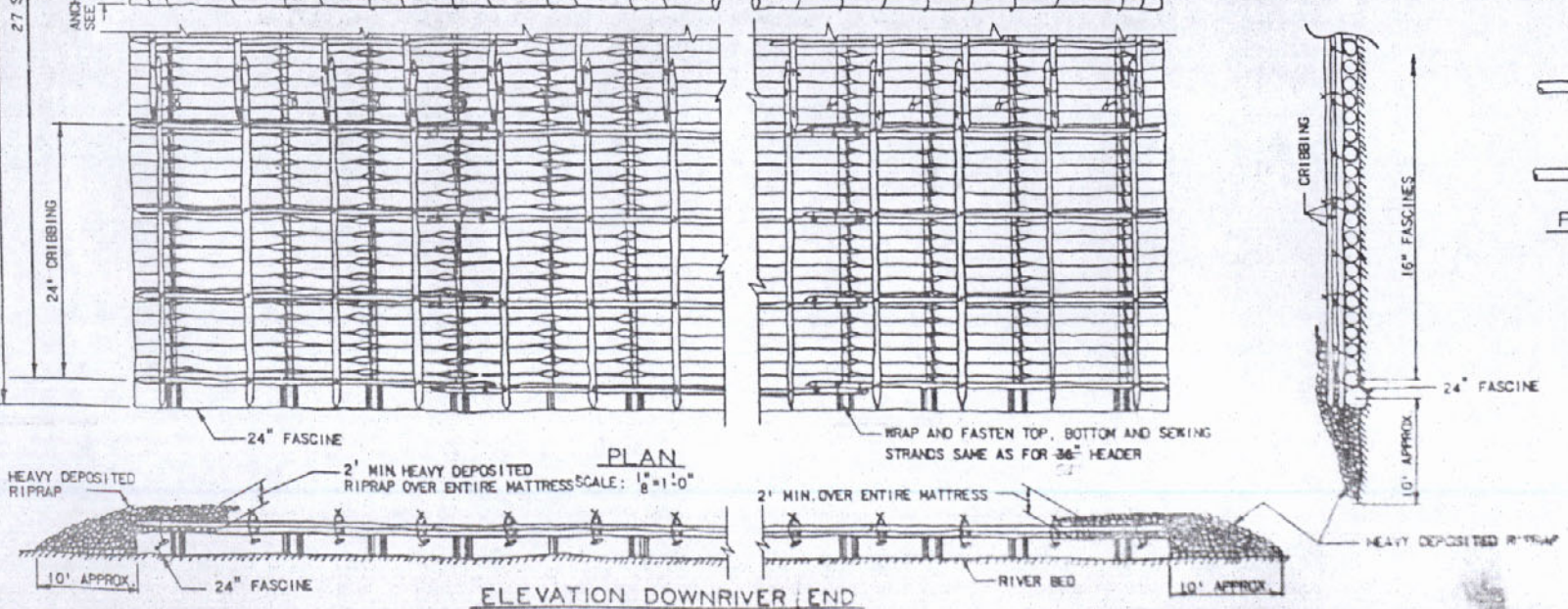
AS BUILT

99

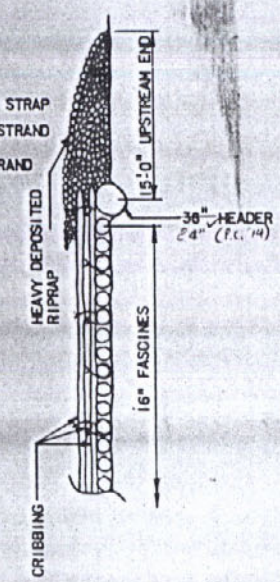
FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	30

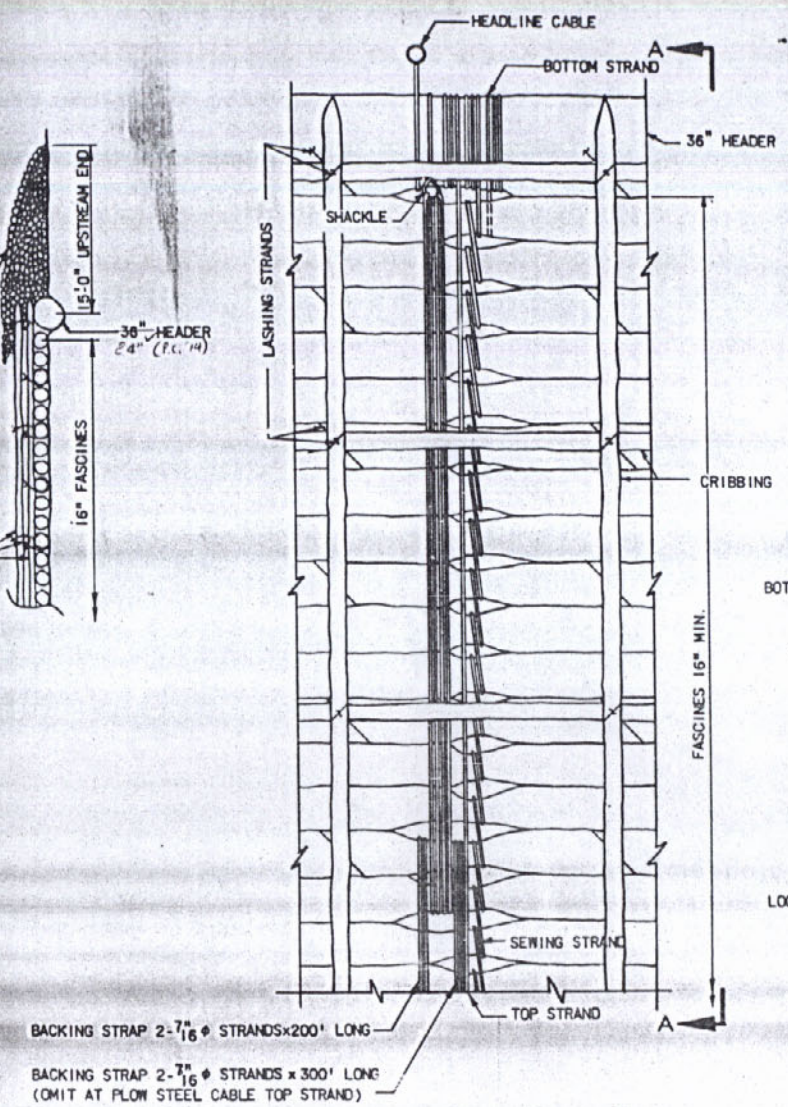


PLAN
SCALE: 1/8" = 1'-0"



ELEVATION DOWNRIVER END

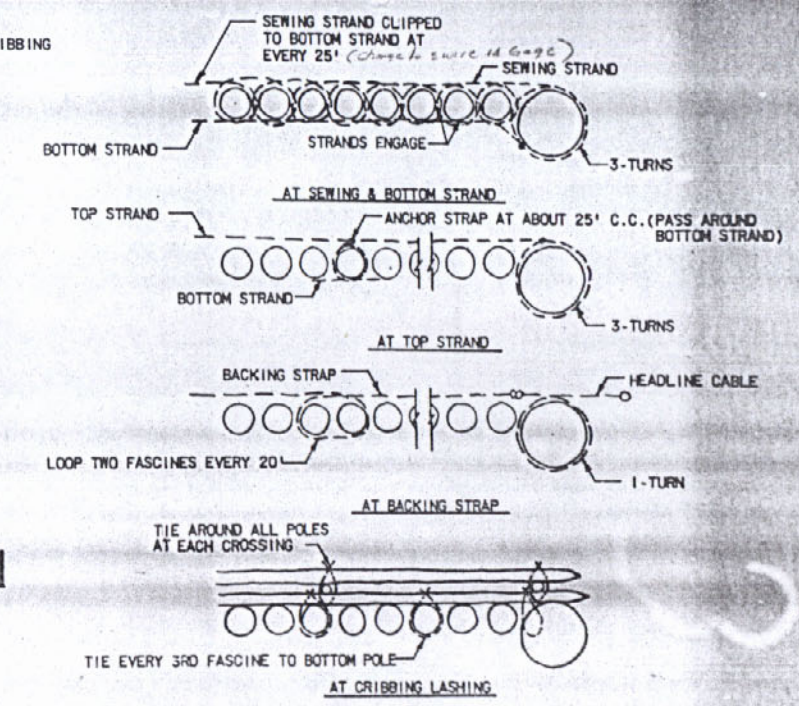




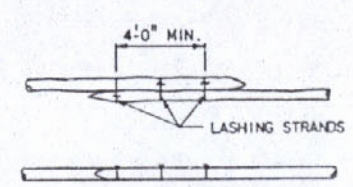
ENLARGED TYP. DETAIL
SCALE: 3/8" = 1'-0"

CABLE SCHEDULE

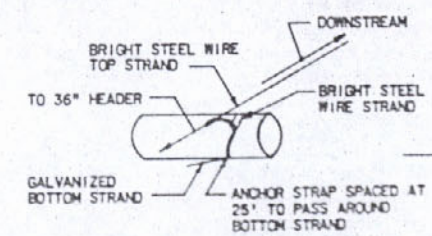
NAME OF STRAND	MINIMUM SIZE	NUMBER OF WIRES	MIN. SIZE WIRES	FINISH	MIN. BREAKING LOAD-LBS.
TOP STRANDS (UNLESS NOTED SPECIAL) ANCHOR STRAPS AND BACKING STRAPS	7/16" ϕ	7	#9 SWG	BRIGHT STEEL	12,000
TOP STRANDS (WHERE NOTED SPECIAL)	7/8" ϕ PLOW STEEL CABLE			BRIGHT STEEL	48,000
BOTTOM STRAND	3/8" ϕ	7	#11 SWG	GALV.	11,000
SEWING STRAND AND CRIBBING LASHING	0.22" ϕ	3	#11 SWG	GALV.	3,140



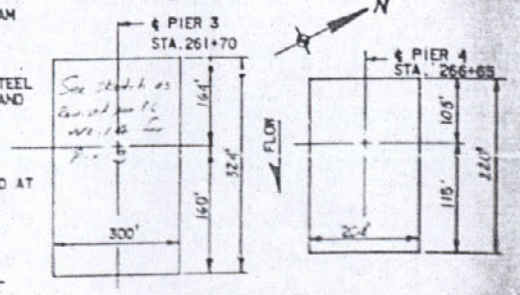
SECTIONS A-A SHOWING CABLING & LASHING
SCALE: 1/4" = 1'-0"



POLE SPLICE DETAIL
SCALE: 1/4" = 1'-0"



ANCHOR STRAP DETAIL
SCALE: 3/8" = 1'-0"



LOCATION PLAN
SCALE: 1" = 200'

NOTES
FOR GENERAL NOTES, SEE DWG. NO. 4.

NOTE
IF SAND ISLAND IS USED FOR CONSTRUCTION OF PIER 4 CAISSON, SEE SHEET NO 29 FOR REQUIRED MATTRESS SIZE AT PIER 4

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

WILLOW MATTRESS DETAILS

RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND LIEBHARD - MOUTON AND WATTERS
CONSULTING ENGINEERS

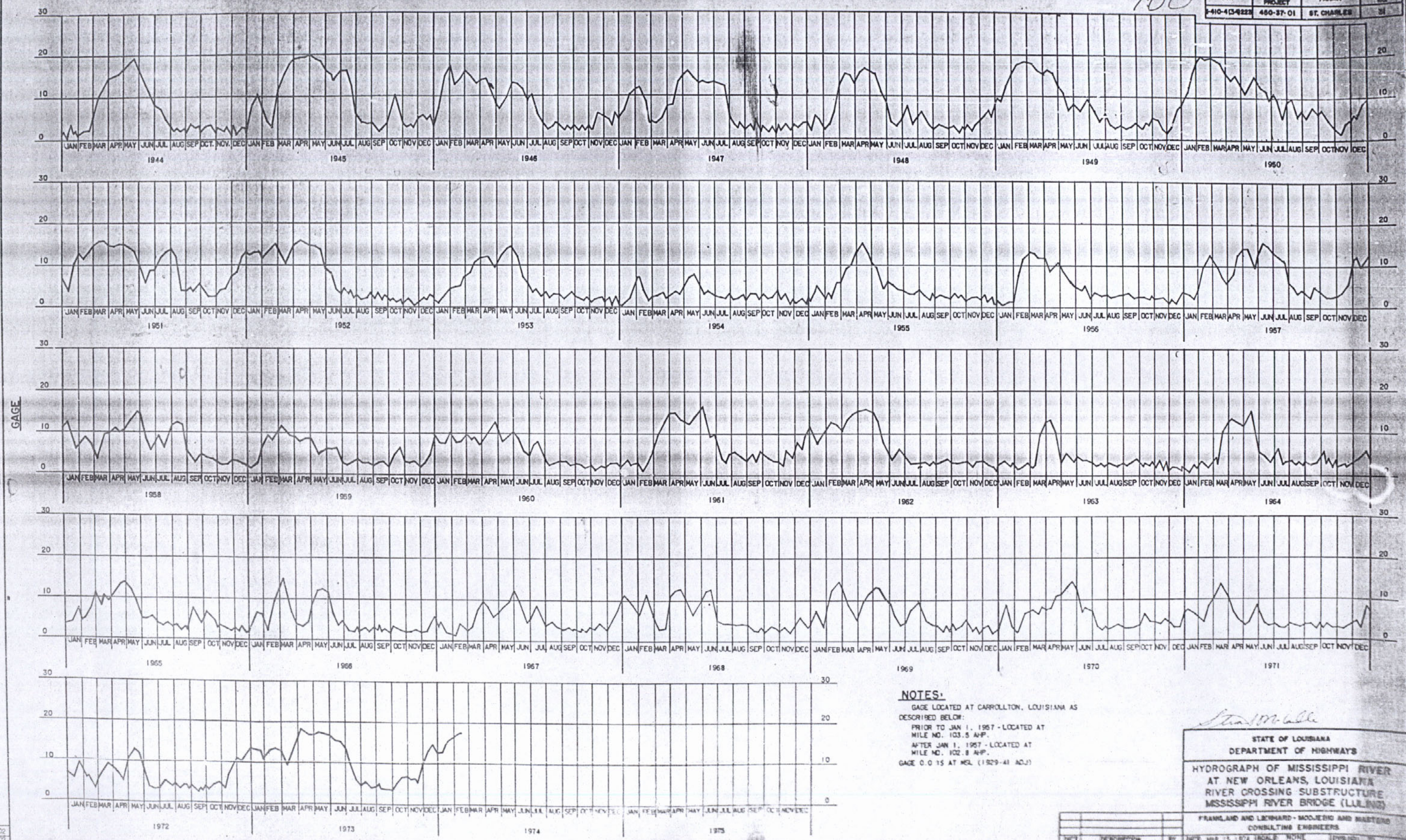
DATE	DESCRIPTION	BY
	REVISIONS	

0502
0202

AS BUILT

100

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(13)223	450-37-01	ST. CHARLES	28



NOTES:

GAGE LOCATED AT CARROLLTON, LOUISIANA AS DESCRIBED BELOW:

PRIOR TO JAN 1, 1957 - LOCATED AT MILE NO. 103.5 AHP.

AFTER JAN 1, 1957 - LOCATED AT MILE NO. 102.8 AHP.

GAGE 0.0 IS AT MSL (1929-41 ADJ)

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

HYDROGRAPH OF MISSISSIPPI RIVER AT NEW ORLEANS, LOUISIANA
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

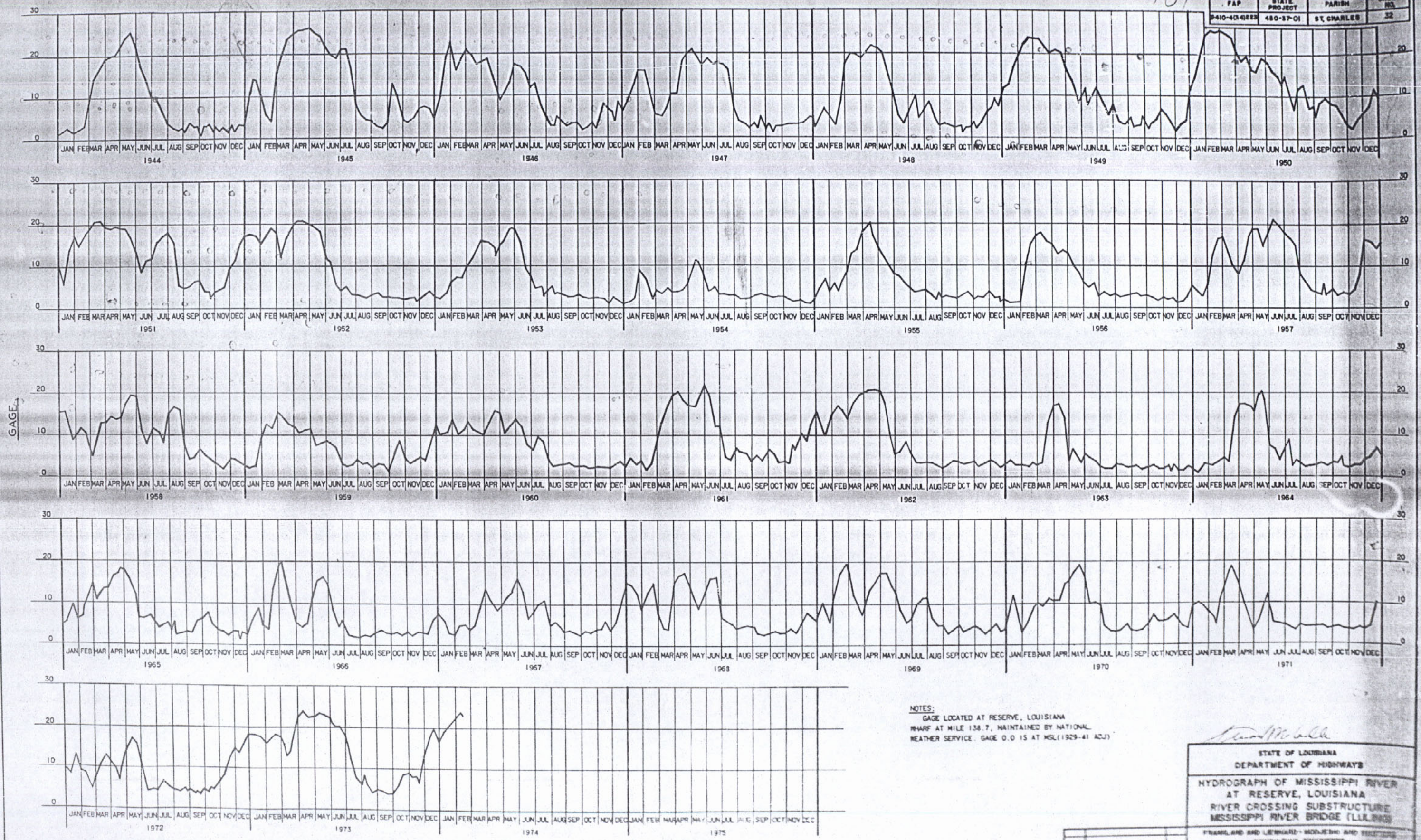
FRANKLAND AND LEONARD - MOONEBIRD AND MARTONE
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE MAR. 15, 1974 SCALE NONE DWG. NO.
DRAWN BY J.R.T. CHKD. BY F.C.P. IN CHARGE

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
P-410-(013)(123)	480-57-01	ST. CHARLES	32



NOTES:
GAGE LOCATED AT RESERVE, LOUISIANA
WHARF AT MILE 138.7, MAINTAINED BY NATIONAL WEATHER SERVICE. GAGE 0.0 IS AT MSL(1929-41 ADJ)

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

HYDROGRAPH OF MISSISSIPPI RIVER
AT RESERVE, LOUISIANA
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LEONARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

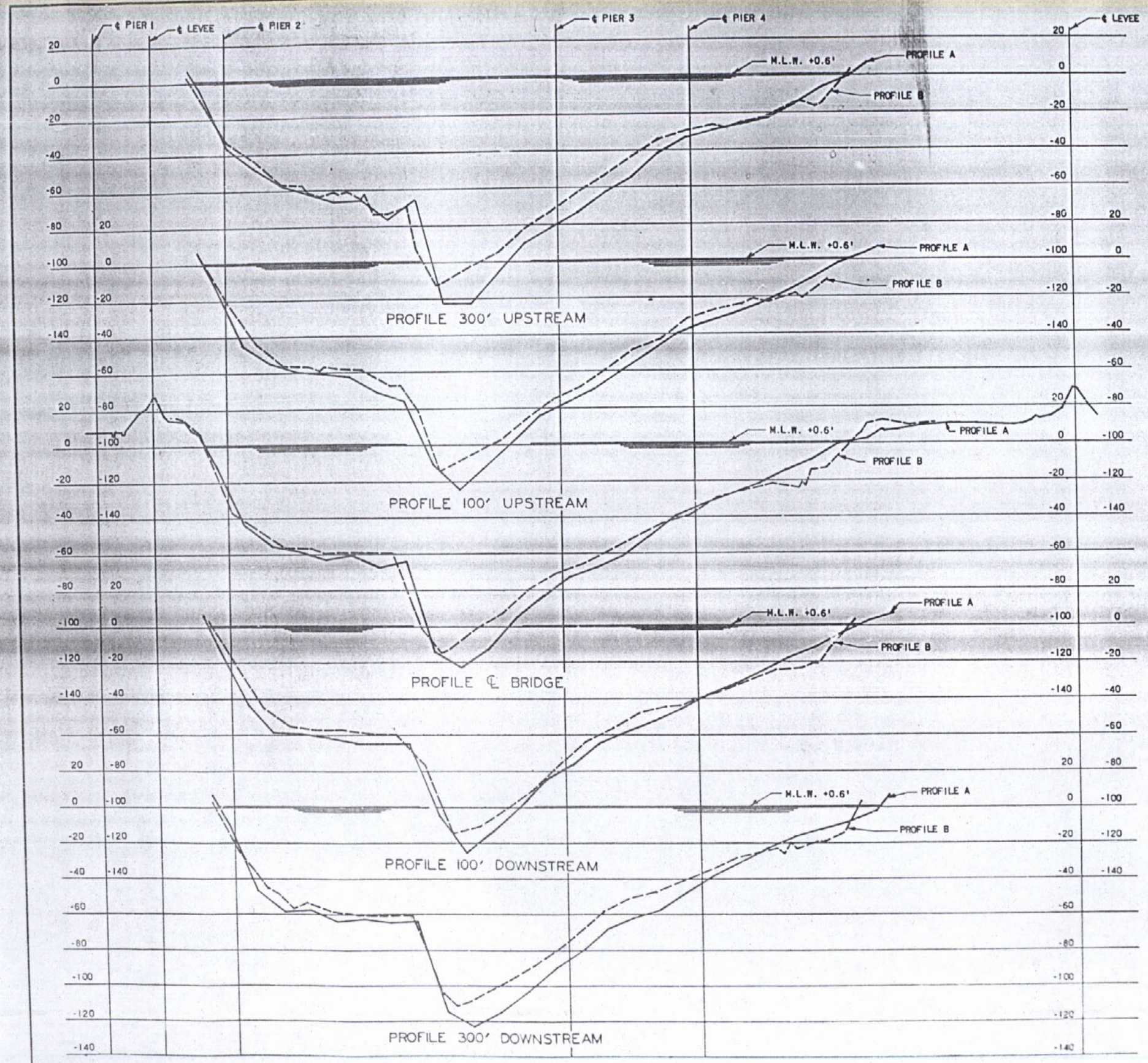
DRAWN BY: J.S.B. CHKD. BY: P.C.F. ENGINEER

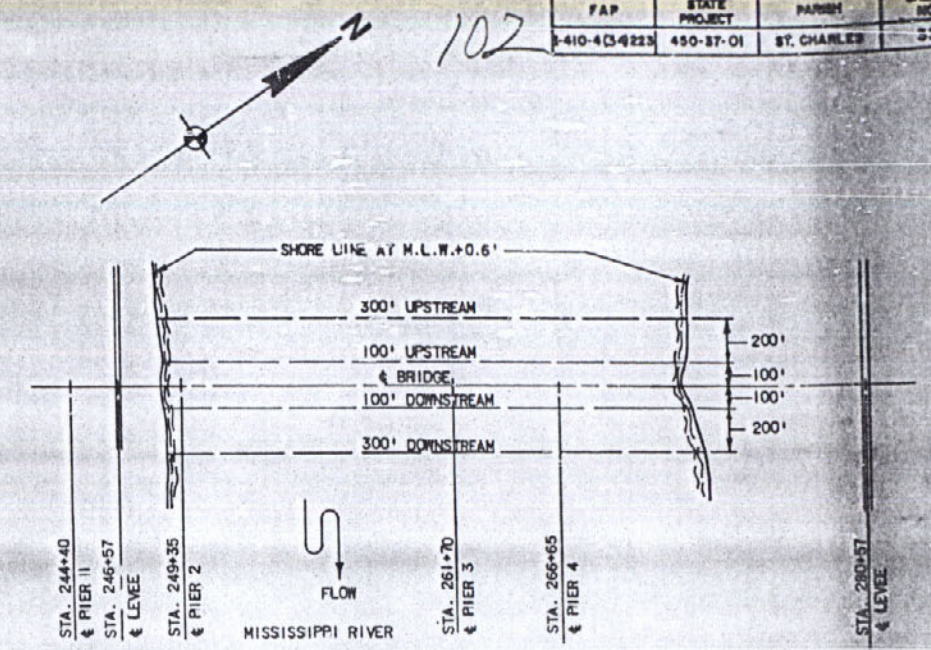
0502
0202

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	33

102





PLAN
SCALE: 1"=400'

NOTES

GAGE 0.0 IS AT MSL (1929-41 ADJ).

HYDROGRAPHIC SURVEY FOR PROFILE A TAKEN FROM JAN. 24, 1972, THRU FEB. 11, 1972; AND FOR PROFILE B, ON AUG. 17, 1973 BY THE LOUISIANA DEPARTMENT OF HIGHWAYS.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

MISSISSIPPI RIVER AT LULING -
RIVER SOUNDINGS
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLIN AND LEERMAKER - MOBJERG AND WASTERN
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

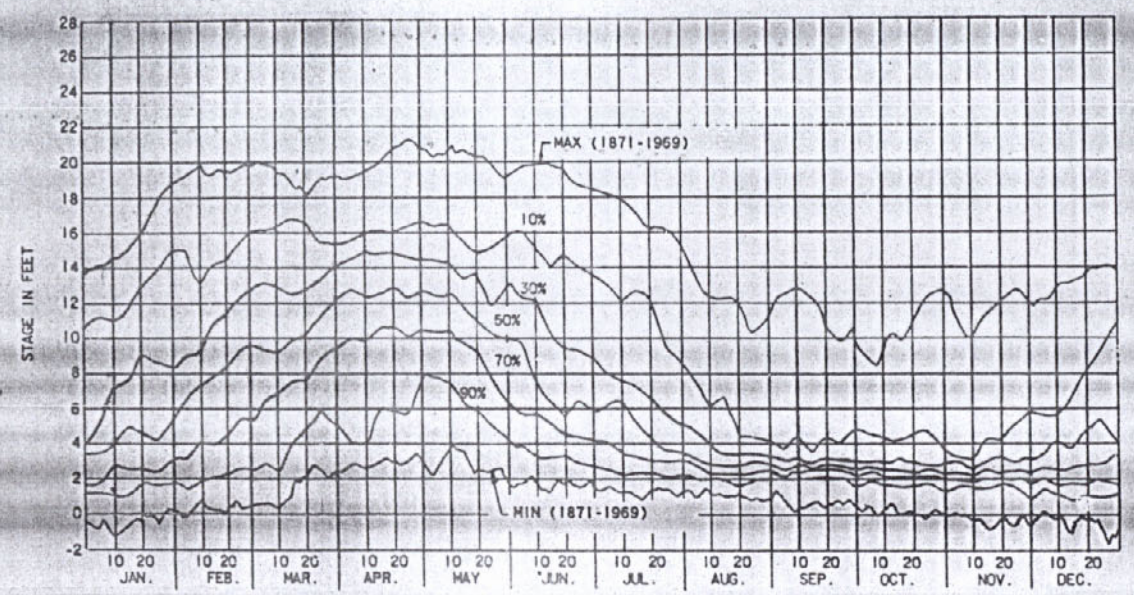
DATE MAR. 1, 1974 SCALE AS NOTED DWG. NO.
DRAWN BY J.A.T. CHKD. BY H.C. DESIGNED BY CHECKED BY

0502
0202

AS BUILT

103

FAP	STATE PROJECT	PARISH	SHEET NO.
F-410-4(34)222	450-37-01	ST. CHARLES	34



BASED ON 35 YEAR PERIOD (1935-1969)
GAGE ZERO: M.S.L.

NOTE: PERCENTAGE INDICATES PROBABILITY OF STAGE EQUALING OR EXCEEDING THAT SHOWN BY THE CURVE ON ANY DAY OR FOR ANY PERIOD.

STAGE CHANGE
MISSISSIPPI RIVER AT NEW ORLEANS
CARROLLTON, LA. STA. 01300

GAGE HEIGHT IN FEET	VELOCITY (FEET PER SECOND)		
	MEAN AT 60% DEPTH	MEAN AT SURFACE	MAXIMUM AT SURFACE
0	0.1	0.1	0.1
1	1.1	1.2	1.5
2	2.0	2.2	2.7
3	2.6	2.9	3.5
4	3.0	3.4	4.0
5	3.4	3.8	4.6
6	3.6	4.0	4.8
7	3.9	4.4	5.2
8	4.1	4.6	5.5
9	4.3	4.8	5.8
10	4.5	5.0	6.0
11	4.7	5.3	6.3
12	4.9	5.5	6.6
13	5.1	5.7	6.9
14	5.3	5.9	7.1
15	5.5	6.2	7.4
16	5.7	6.4	7.7
17	6.0	6.7	8.1
18	6.3	7.1	8.5
19	6.6	7.4	8.9
20	7.1	8.0	9.6

VELOCITIES WERE DERIVED FROM STAGE-VELOCITY CURVES BASED ON DISCHARGE OBSERVATIONS OF 1941, 1942, 1948, 1949 & 1950 TAKEN AT THE CARROLLTON RANGE.

RIVER VELOCITIES AT CARROLLTON DISCHARGE RANGE RELATED TO CARROLLTON GAGE

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

MISSISSIPPI RIVER AT LULING -
STAGE AND VELOCITY DATA
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND LEONARD - MOUTRIE AND MASTERS
CONSULTING ENGINEERS

0502
0808

AS BUILT

AS BUILT

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

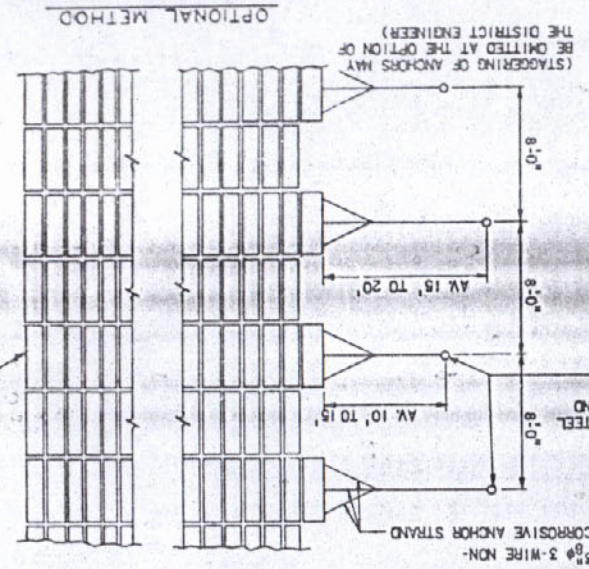
DETAILS OF EXISTING MATTRESS
AT PIER 2
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

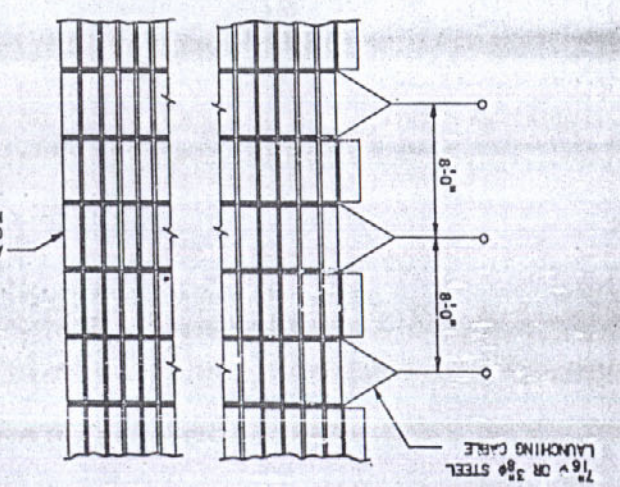
FRANKLAND AND LEMANSKI - MCCLENNY AND WATTS
CONSULTING ENGINEERS

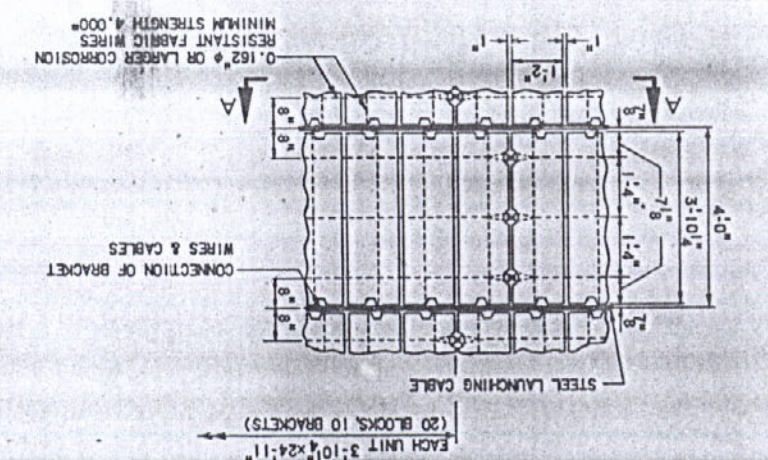
DATE	DESCRIPTION	BY

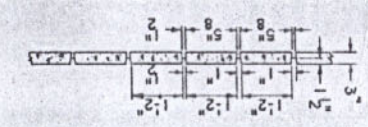
RECORDED

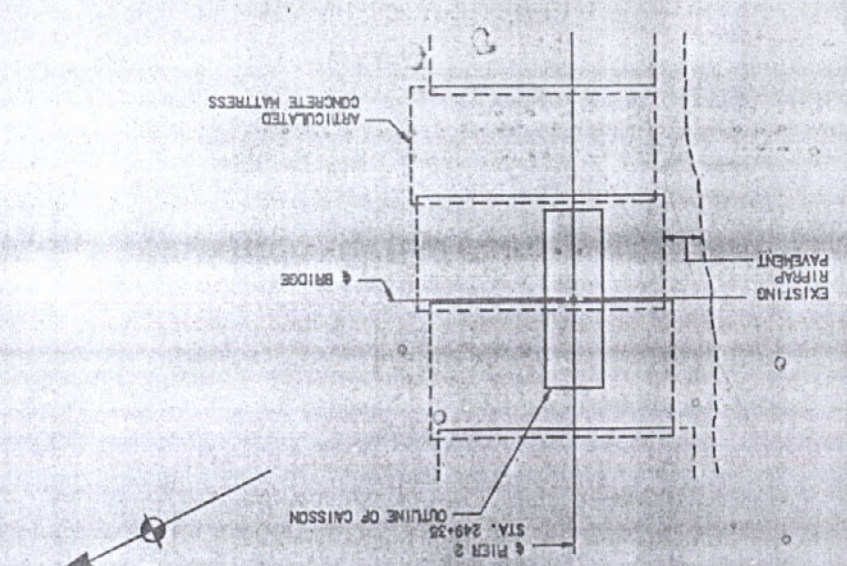
DATE MAR. 1, 1974 REQUEST AT NOTICE [illegible]
DRAWN BY J.A. [illegible] DATE [illegible] CHECKED BY [illegible]











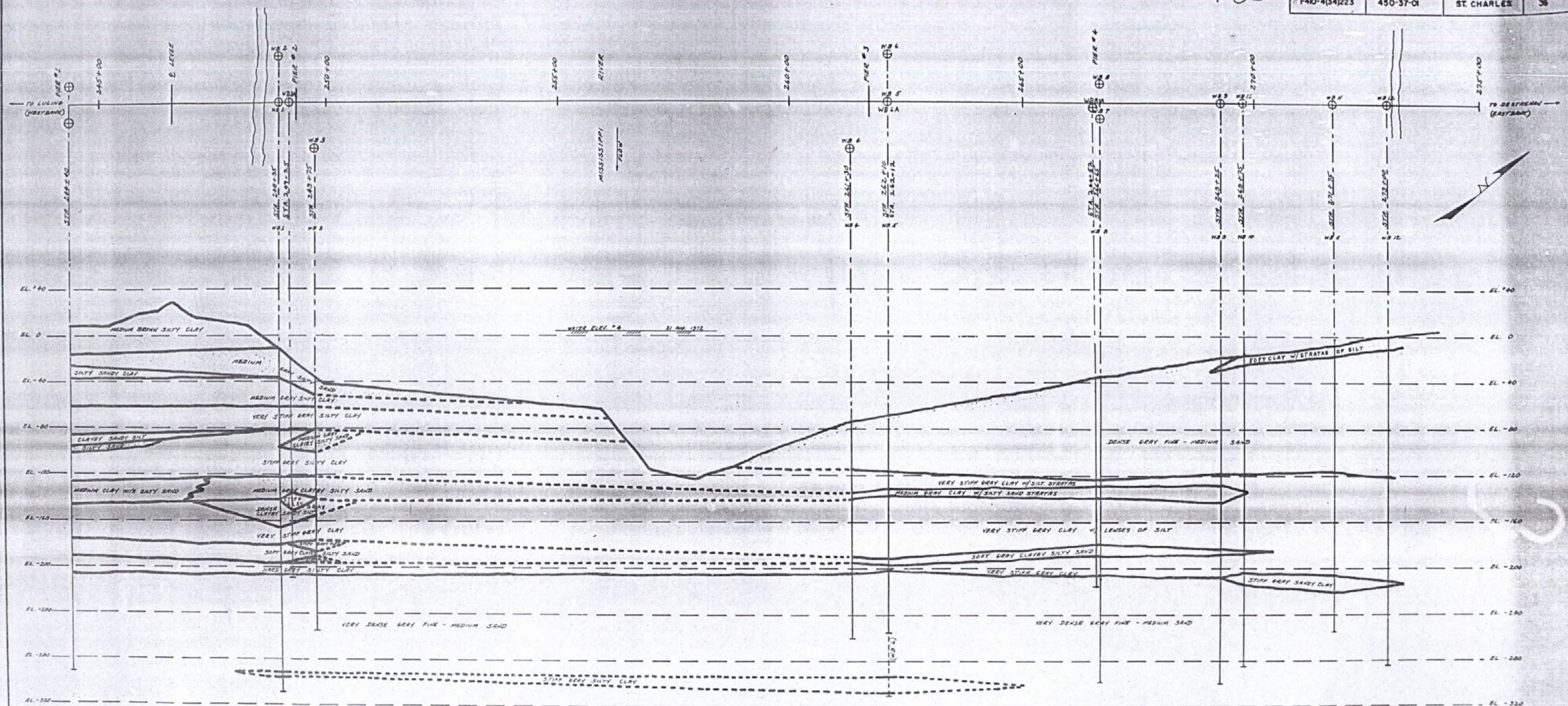
NOTE:
FOR DETAILS OF FINISH CONDITIONS
SEE DRAWING NO. 29.
FOR GENERAL NOTES, SEE DWG NO. 4.

FAP	STATE PROJECT	PARISH	SHEET NO.
F-410-4(34)223	450-37-01	ST. CHARLES	35

104

105

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	36



FOR INFORMATION ONLY

SCALE:
HORIZONTAL 1" = 100'
VERTICAL 1" = 40'
ELEVATIONS FROM M.S.L.

INTERSTATE 410 BRIDGE AT LULING

GENERALIZED CROSS-SECTION

DATED: FEB. 28, 1973

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED | DETAILED | TRACED
CHECKED | CHECKED | CHECKED
GENERAL SUPERVISION

DATE	DESCRIPTION	BY
	REVISIONS	

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET Nº
I-410-4(34)223	450-37-01	ST. CHARLES	57

106

NOTES:

BL.	= Blue	CL.	= Clay	STR.	= Strong
BK.	= Black	GRAV.	= Gravel	Mod.	= Moderate
BR.	= Brown	ORG.	= Organic	TR.	= Trace
GR.	= Gray	SA.	= Sand	N. P.	= Non-Plastic
GN.	= Green	SH.	= Shelly	PENET.	= Penetration
PK.	= Pink	SI.	= Silty	N. C.	= No Cull
WH.	= White	ALT.	= Alternating	S/S	= Slickensides
YE.	= Yellow	CO.	= Coarse	YLD.	= Yield
CONC.	= Concretions	FI.	= Fine	M. S.	= Multiple Shear
RTS.	= Roots	MED.	= Medium	V. S.	= Vertical Shear
ROT.	= Rotten	I. O.	= Iron Ore	60° S.	= Shear Angle
VEG.	= Vegetation	LEN.	= Lenses	SL.	= Slump
WD.	= Wood	Q. A.	= Quick Acting		

MOISTURE CONTENT = Moisture Content of the material in its natural state expressed as a percentage of the dry weight of the material

(3) = Location and Identification of the sample

NO PENETRATION = Unable to drive split spoon sampler initial 6 inches

N = 18 = Number of blows of 140 lbs. hammer dropped 30 in. required to drive 2 in. O.D. Split Spoon sampler 1 ft. after first having been driven 6 in. unless amount of penetration shown otherwise

NO CULL = No preliminary 6" driving prior to securing drive data

qu = Compressive strength from triaxial undrained shear test (tons per sq. ft.)

qc = Compressive strength from consolidated undrained shear test (tons per sq. ft.)

ϕ = Angle of internal friction

γ = Wet weight of in-place material (Tons per cu. ft.)

* = Strength determined by PENETROMETER

E4* = Estimated unconfined compressive strength by correlation with similar material on this project.

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL		DESIGNATION	Nº OF BLOWS "N"	"qu" (UNCONFINED COMPRESSIVE STRENGTH) TONS PER SQ. FT.
SAND & SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4-10	
		MEDIUM	10-30	
		DENSE	30-50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2-4	0.25-0.50
		MEDIUM	4-8	0.50-1.00
		STIFF	8-15	1-2
		VERY STIFF	15-30	2-4
		HARD	OVER 30	OVER 4

PILE DATA

LOCATION (BENT)	STATION	PLAN TIP ELEV.	CUT-OFF ELEV.	PLAN PILE LENGTH	ORDER LENGTH	ORDER LENGTH	AS BUILT TIP ELEV. MAX. ELEV.	MIN. ELEV.	AVE. ELEV.
PIER 1	244+40	-110							

TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR	qu	qc	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. BR. SI. CL. W/TR. IRON OXIDE	0.66		VLD.	.055	32	65	45	(3-1828)	0
GR. FI. SA.				-	N.	P.		(3-1829)	-20
GR. SI. CL. W/LEN. SI. & TR. ORG.	0.93		VLD.	.055	42	86	64	(3-1830)	-30 -40 -50 -60
GR. SA. CL.	1.42		M.S.	.063	18	43	25	(3-1831)	-70
BR. SI. CL.	1.00		VLD.	.055	42	92	65	(3-1832)	-80
GR. CL. SA. SI.	E 1.08*		-	.058	26	29	10	(3-1833)	-90
GR. FI. SI. SA.				-	N.	P.		(3-1834)	-100
GR. CL. W/LEN. SI. W/TR. SHELL @ EL. -125' TO -131'	2.01		60°S	.057	33	68	33	(3-1835)	-110 -120 -130
GR. SI. SA.		0.43	60°S	.058	35	N.	P.	(3-1836)	-140
GR. CL. W/LEN. SI.	1.31		M.S.	.060	25	47	29	(3-1837)	-150 -160
GR. CL. SA. SI.		0.37	VLD.	.061	27	N.	P.	(3-1838)	-170 -180
GR. SA. CL.	4.25		M.S.	.062	23	42	23	(3-1839)	-190 -200
GR. FI.-MED. SA.	N.C.			8" PENET. = 50		- N.	P.	(3-1840)	-210 -220 -230
	N.C.			6" PENET. = 50					-240 -250

BORING Nº W-2 STA: 244+40
DATE MADE: 1-31-93 LOCATION: 40' RT ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR	qu	qc	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. BR. SI. CL. W/TR. IRON OXIDE	0.75		M.S.	.055	43	88	52	(3-1841)	0
GR. FI. SA. W/TR. SHELL				-	N.	NP & P		(3-1842)	-20
GR. SI. SA. CL.	0.31		VLD.	.053	46	54	30	(3-1843)	-30 -40
GR. SI. CL.	0.73		VLD.	.056	40	51	27	(3-1844)	-50 -60
GR. & BR. SI. CL.	1.89		M.S.	.053	27	86	57	(3-1845)	-70 -80
GR. CL. SA. SI.	0.66		VLD.	.062	26	29	9	(3-1846)	-90
GR. FI. SI. SA.				-	N.	P.		(3-1847)	-100
GR. CL.	1.62		VLD.	.056	40	72	45	(3-1848)	-110 -120
GR. CL. W/STR. SI. SA.	0.82		VLD.	.058	-	33	12	(3-1849)	-130 -140
GR. CL. W/TR. SHELL STR. SI. SA. @ EL. -161' TO -166'	1.85		M.S.	.057	46	82	48	(3-1850)	-150 -160
GR. CL. SA. SI.	0.53		M.S.	.060	25	26	8	(3-1851)	-170 -180
GR. SA. CL.	4.53		VLD.	.064	12	33	19	(3-1852)	-190 -200
	N.C.			6" PENET. = 50					-210 -220
GR. FI.-MED. SA.				-	N.	P.		(3-1853)	-230 -240
CR. SA. W/BRAN @ EL. -281' TO -291'	N.C.			5" PENET. = 50					-260 -270 -280 -290 -300

BORING Nº W-1 STA: 244+40
DATE MADE: 1-23-93 LOCATION: 40' LT ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR	qu	qc	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION

BORING Nº STA:
DATE MADE: LOCATION:

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

FOR INFORMATION ONLY

CORE BORINGS AND TEST PILES

INTERSTATE 410 BRIDGE AT LULING

CORE BORINGS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

MATERIAL SECTION — BRIDGE DESIGN SECTION

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	38

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SOIL TYPE & COLOR	qu	qi	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
BR. SI. SA.					N.P.	N.P.		W-4	
BR. SI. CL. w/STR. BR. FI. SI. SA.	0.21	M.S.	.056	31	36	14		W-3	
GR. & BR. SI. CL. w/TR. IRON BLOB	0.48	45°S	.055	34	63	30		W-3	
GR. SI. CL.	0.27	V.L.D.	.053	37	56	25		W-3	
GR. FI. MED. SI. SA. W/TR. SHELL	0.23	40°S	.058	—	N.P.	N.P.		W-3	
GR. FI. SI. SA.				—	—		N=13 R N=9	W-3	
GR. SI. CL. w/STR. SI. SA.	—	—	—	—	—	—	N=3	W-3	
GR. SI. CL. w/LEN. SI. & SI. SA.	0.31	M.S.	.051	55	37	68		W-3	
GR. SI. CL. w/TR. SHELL	0.27	45°S	.051	53	36	63		W-3	
GR. BR. SI. SA. CL. w/TR. LENS.	1.05	V.L.D.	.061	21	55	38		W-3	
BR. SI. CL. w/LEN. SI.	0.51	40°S	.056	43	73	37		W-3	

TEST PILE No.
TYPE OF PILE
TYPE OF HAMMER
FORMULA USED
FT. LBS.
DATE DRIVEN
DATE TESTED
DATE OF LOADING
DESIGN LOAD TONS

STA.

DRIVING RESISTANCE TONS

BORING Nº W-3
DATE MADE 9-.-.-73
STA: 247+03
LOCATION: ℄

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qi	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
BR. & GR. SI. CL. w/STR. BR. FI. SI. SA.								W-4	
BR. & GR. SI. CL. TR. IRON BLOB								W-4	
GR. & BR. SI. CL. TR. IRON BLOB								W-4	
GR. SI. CL. w/STR. GR. FI. MED. SA.								W-4	
GR. FI. MED. SI. SA.								W-4	
GR. SI. SA. CL. & CL. SA. TR. ORG. & SHELL								W-4	

TEST PILE No.
TYPE OF PILE
TYPE OF HAMMER
FORMULA USED
FT. LBS.
DATE DRIVEN
DATE TESTED
DATE OF LOADING
DESIGN LOAD TONS

STA.

DRIVING RESISTANCE TONS

BORING Nº W-4
DATE MADE: 9-.-.-73
STA: 247+03
LOCATION: 10' RT. ℄

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qi	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION

TEST PILE No.
TYPE OF PILE
TYPE OF HAMMER
FORMULA USED
FT. LBS.
DATE DRIVEN
DATE TESTED
DATE OF LOADING
DESIGN LOAD TONS

STA.

DRIVING RESISTANCE TONS

BORING Nº
DATE MADE:
STA:
LOCATION:

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES

BL.	Blue	CL.	Clay	STR.	Strata
BK.	Black	CHK.	Chalky	MOD.	Modified
BR.	Brown	CRSE.	Coarse	SL.	Slope
GR.	Gray	SA.	Sand	FI.	Fine (Sand)
GN.	Green	SI.	Silty	PENET.	Penetration
PK.	Pink	SI.	Silty	FI.	Fine (Silt)
WH.	White	ALT.	Alternating	S.S.	Slickensides
YL.	Yellow	CO.	Coarse	YLD.	Yield
CONC.	Concretions	FI.	Fine	M.S.	Multiple Seams
RTS.	Roots	MED.	Medium	V.S.	Vertical Shear
ROT.	Rotten	1 D	One Day	45°S	45° Angle
VEG.	Vegetation	LEN.	Lenses	ST.	Stains
WD.	Wood	Q. A	Quick Acting		

MOISTURE CONTENT — Moisture Content of the material in its natural state expressed as a percentage of the dry weight of the material

(3) — Location and Identification of the sample

NO PENETRATION — Unable to drive split spoon sampler initial 6 inches

N - 18 — Number of blows of 140 lbs. hammer dropped 30 in. required to drive 2 in. O.D. split spoon sampler 1 ft. after first having been driven 6 in. unless amount of penetration shown otherwise

NO CORE — No preliminary 6" drilling prior to securing drive data

qi — Compressive strength from triaxial unconstrained shear test (tons per sq. ft.)

qs — Compressive strength from consolidated unconsolidated shear test (tons per sq. ft.)

φ — Angle of internal friction

γ — Wet weight of in-place material (tons per cu. ft.)

* — Strength determined by PENETROMETER

(4*) — Estimated unconfined compressive strength by correlation with similar material on this project.

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL		DESIGNATION	Nº OF BLOWS "N"	"Qu" UNCONFINED COMPRESSIVE STRENGTH TONS PER SQ.FT.
SAND & SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4-10	
		MEDIUM	10-30	
		DENSE	30-50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2-4	0.25 - 0.50
		MEDIUM	4-8	0.50 - 1.00
		STIFF	8-15	1 - 2
		VERY STIFF	15-30	2 - 4
		HARD	OVER 30	OVER 4

PILE DATA

LOCATION (BENT)	STATION	PLAN TIP ELEV.	CUT-OFF ELEV.	PLAN PILE LENGTH	ORDER LENGTH	ORDER LENGTH	AS BUILT TIP ELEV. MAX. ELEV.	MIN. ELEV.	AVE. ELEV.

FOR INFORMATION ONLY

CORE BORINGS AND TEST PILES

INTERSTATE 410 BRIDGE AT LULING

WATER BORINGS - 1

DATE: OCT. 1973

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)823	450-37-01	ST. CHARLES	39

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TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR (15' WATER @ SURF. CONCRETE MATTRESS ON SURF.)	qu	qc	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. SI. SA. w/ STR. SI. CL.		0.56	VLD.	.055	42	N.	P.	(S-24)	-10
GR. SI. CL.	0.70		M.S.	.051	59	110	83	(S-21)	-20
GR. SI. CL.	2.58		M.S.	.060	28	92	51	(S-22)	-30
GR. SI. CL. TR. SHELL	1.13		M.S.	.058	32	52	34	(S-23)	-40
GR. SI. CL.	1.74		VLD.	.054	44	74	49	(S-24)	-50
GR. CL. SI. SA.	N.C.			.058	32	N.	P.	(S-25)	-60
				3" PENET. = 50					-70
GR. CL. SA. SI.	N.C.			—		N.	P.	(S-26)	-80
				3" PENET. = 50					-90
GR. BR. CL. TR. DEB. & SHELL	3.15		S/S	.055	41	66	41	(S-27)	-100
GR. CL. SI. SA.		.057	M.S.	.060	28	30	12	(S-28)	-110
GR. SI. CL.	4.21		M.S.	.063	22	46	30	(S-29)	-120
GR. MED. SA.	N.C.			—		N.	P.	(S-30)	-130
				3" PENET. = 55					-140
	N.C.			6" PENET. = 50					-150
	N.C.			6" PENET. = 50					-160
GR. SA. CL. w/ FINE SHELL & SA.	1.02		VLD.	.061	27	38	20	(S-31)	-170

BORING Nº W.B.-1 STA: 248+35
DATE MADE: SEPT. 12, 1972 LOCATION: ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR (15' WATER @ SURF. CONCRETE MATTRESS ON SURF.)	qu	qc	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. SI. SA. w/ STR. SI. CL.					—	N.	P.	(S-32)	-10
GR. SI. CL. LEN. SI. TR. SHELL	0.67		VLD.	.051	55	102	75	(S-33)	-20
GR. SI. CL. TR. LEN. DEB. & CONC.	2.23		VLD.	.062	22	56	41	(S-34)	-30
GR. SI. CL.	1.33		VLD.	.057	29	39	19	(S-35)	-40
GR. CL. SI. SA.	0.73		VLD.	.062	26	25	8	(S-36)	-50
	N.C.						N.L.=68		-60
GR. SI. CL.	2.02		M.S.	.055	45	65	43	(S-37)	-70
							N.L.=73		-80
GR. FI. SI. SA.				—		N.	N.L.=27 P. N.L.=60	(S-38)	-90
							N.L.=60		-100
GR. CL. SA. SI.	1.50		S/S	.058	—	84	58	(S-39)	-110
GR. BR. CL.	3.02		S/S	.058	35	68	40	(S-40)	-120
GR. FI. SI. SA. TR. DEB.					7" PENET. = 50				-130
					—	N.	P.	(S-41)	-140
GR. SI. CL.	2.35		VLD.	.060	25	32	17	(S-42)	-150
GR. MED. SA.	N.C.						N.L.=63		-160
	N.C.				6" PENET. = 50				-170
					—	N.	P.	(S-43)	-180
	N.C.				6" PENET. = 50				-190

BORING Nº W.B.-2 STA: 248+35
DATE MADE: SEPT. 11, 1972 LOCATION: 100' LT. ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR (15' WATER @ SURF. CONCRETE MATTRESS ON SURF.)	qu	qc	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. SI. SA. TR. CL. & SHELL					—	N.	P.	(S-22)	-10
GR. SI. CL.	0.80		VLD.	.060	23	29	N.L.=74	(S-23)	-20
GR. BR. SA. SI. CL. TR. CONC.	2.83		VLD.	.064	18	47	31	(S-24)	-30
GR. CL. SI. SA.	0.60		VLD.	.060	25	23	10	(S-25)	-40
GR. CL.	1.51		VLD.	.054	38	75	48	(S-26)	-50
GR. CL. SI. SA.		0.63	M.S.	.061	29	N.	P.	(S-27)	-60
							N.L.=50		-70
GR. SA. CL.	1.70		V.S.	.065	19	32	16	(S-28)	-80
GR. CL. LEN. SI. _ TR. CONC w/ DEB. @ 175'-195'	2.42		M.S.	.059	29	41	24	(S-29)	-90
GR. SI. CL.	1.35		VLD.	.058	26	36	13	(S-30)	-100
GR. FI. SI. STR. CL. SI.				—		N.	N.L.=26 P.	(S-31)	-110
GR. SI. CL. LEN. SI.	1.32		VLD.	.061	27	30	10	(S-32)	-120
GR. SA. CL.	2.06		VLD.	.061	23	39	22	(S-33)	-130
	N.C.				6" PENET. = 60				-140
GR. FI. - MED. SA.				—		N.	P.	(S-34)	-150
	N.C.				6" PENET. = 50				-160

BORING Nº W.B.-3 STA: 249+78
DATE MADE: SEPT. 14, 1972 LOCATION: 100' RT. ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES:

BL.	= Blue	CL.	Clay	STR.	Shale
BK.	= Black	GRAV.	Gravel	Mot.	Mottled
BR.	= Brown	ORG.	Organic	Tex.	Texas
GR.	= Gray	SA.	Sand	N. P.	Non-Plastic
GN.	= Green	SH.	Shelly	PENET.	Penetration
PK.	= Pink	SI	Silty	N. C.	No Cull
WH.	= White	ALT.	Alternating	S. S.	Slickensides
YE.	= Yellow	CO.	Coarse	YLD.	Yield
CONC.	= Concretions	FI.	Fine	M. S.	Multiple Shear
RTS.	= Roots	MED.	Medium	V. S.	Vertical Shear
ROT.	= Rotten	I. O.	Iron Ore	60° S.	Shear Angle
VEG.	= Vegetation	LEN.	Lenses	SL.	Slump
WD.	= Wood	Q. A.	Quick Acting		

MOISTURE CONTENT = Moisture Content of the material in its natural state expressed as a percentage of the dry weight of the material

(3) = Location and Identification of the sample

N.C. PENETRATION = Unable to drive split spoon sampler initial 6 inches

N = 18 = Number of blows of 140 lbs. hammer dropped 30 in. required to drive 2 in. O.D. Split Spoon sampler 1 ft. after first having been driven 6 in. unless amount of penetration shown otherwise

NO CULL = No preliminary 6" driving prior to securing drive data

qu = Compressive strength from triaxial undrained shear test (tons per sq. ft.)

qc = Compressive strength from consolidated undrained shear test (tons per sq. ft.)

ϕ = Angle of internal friction

γ = Wet weight of in-place material (Tons per cu. ft.)

* = Strength determined by vane shear test

E.4* = Estimated unconfined compressive strength by correlation with similar material on this project.

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL	DESIGNATION		Nº OF BLOWS "N"	"Qu" UNCONFINED COMPRESSIVE STRENGTH TONS PER SQ. FT.
SAND & SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4-10	
		MEDIUM DENSE	10-30	
		DENSE	30-50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2-4	0.25-0.50
		MEDIUM	4-8	0.50-1.00
		STIFF	8-15	1-2
		VERY STIFF	15-30	2-4
		HARD	OVER 30	OVER 4

PILE DATA

LOCATION (BENT)	STATION	PLAN TIP ELEV.	CUT-OFF ELEV.	PLAN PILE LENGTH	ORDER LENGTH	ORDER LENGTH	AS BUILT TIP ELEV. MAX. ELEV.	MIN. ELEV.	AVE. ELEV.

FOR INFORMATION ONLY
CORE BORINGS AND TEST PILES

INTERSTATE 410
BRIDGE AT LULING

WATER BORINGS-E

DATE APR. 27 1972

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	39

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TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR (5' WATER @ SURF. CONCRETE MATTRESS ON SURF.)	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. SI. SA. w/ STR. SI. CL.		0.54	YLD.	.055	42	N.	P.	46	-20
GR. SI. CL.	0.70		M.S.	.051	59	110	83	47	-40
GR. SI. CL.	2.58		45°S	.060	28	52	51	76	-60
GR. SI. CL. TR. SHELL	1.13		45°S	.058	32	52	34	80	-80
GR. SI. CL.	1.74		YLD.	.054	44	74	49	88	-100
GR. CL. SI. SA. N.C.				.058	32	N.	P. W=12	92	-120
				3" PENET. =			50		-140
GR. CL. SA. SI. N.C.				—		N.	P. W=50	96	-160
				3" PENET. =			50		-180
GR. BR. CL. TR. DEB. & SHELL	3.15		5/5	.055	41	66	41	97	-200
GR. CL. SI. SA.		.057	M.S.	.060	28	30	12	100	-220
GR. SI. CL.	4.21		M.S.	.063	22	46	30	103	-240
GR. MED. SA. N.C.				—		N.	P.	106	-260
				3" PENET. =			55		-280
N.C.				6" PENET. =			50		-300
N.C.				6" PENET. =			50		-320
GR. MED. - COARSE SA.									-340
GR. SA. CL. w/ STR. SHELL & SA.	0.2		YLD.	.061	27	34	20	112	-360

BORING Nº W.B.-1 STA: 248+35
DATE MADE: SEPT. 13, 1972 LOCATION: ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR (5' WATER @ SURF. CONCRETE MATTRESS ON SURF.)	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. SI. SA. w/ STR. SI. CL.					—	N.	P. W=12	112	-20
							W=6		-30
GR. SI. CL. LEN. SI. TR. SHELL	0.67		YLD.	.051	55	102	75	124	-40
									-50
GR. SI. CL. TR IRON ORE & CONC.	2.13		YLD.	.062	22	56	41	127	-60
GR. SI. CL.	1.39		YLD.	.057	29	39	19	129	-70
GR. CL. SI. SA. N.C.	0.79		YLD.	.062	26	25	8 W=66 W=78	132	-80
GR. SI. CL.	2.02		45°S	.055	45	65	43	137	-90
GR. FI. SI. SA.				—		N.	W=27 & W=65 W=80	141	-100
GR. CL. SA. SI.	1.50		5/5	.058	—	84	58	143	-110
GR. BR. CL.	3.02		5/5	.058	35	68	40	145	-120
GR. FI. SI. SA. TR. DEB.					9" PENET. =		50		-130
					—	N.	P.	151	-140
GR. SI. CL.	2.38		YLD.	.060	25	52	17	152	-150
N.C.							W=63		-160
N.C.					6" PENET. =		50		-170
GR. MED. SA.					—	N.	P.	156	-180
N.C.				6" PENET. =			53		-190

BORING Nº W.B.-2 STA: 248+35
DATE MADE: SEPT. 11, 1972 LOCATION: 100' LT ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR (48' WATER @ SURF. CONCRETE MATTRESS ON SURF.)	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. SI. SA. TR. CL. & SHELL					—	N.	P.	223	-40
GR. SI. CL.	0.80		YLD.	.060	23	29	W=8 16	225	-50
GR. BR. SA. SI. CL. TR. CONC.	2.83		YLD.	.064	18	49	31	226	-60
GR. CL. SI. SA.	0.60		YLD.	.060	25	29	10	231	-70
GR. CL.	1.51		YLD.	.054	38	75	48	232	-80
GR. CL. SI. SA.		0.63	M.S.	.061	29	N.	P. W=50	240	-90
GR. SA. CL.	1.70		V.S.	.065	17	32	16	246	-100
GR. CL. LEN. SI. - TR. CONC w/ PEAT @ 170'-175'	2.42		M.S.	.053	29	41	24	246	-110
GR. SI. CL.	1.45		YLD.	.058	26	36	13	249	-120
GR. FI. SI. STR. CL. SI.					—	N.	W=35 P.	251	-130
GR. SI. CL. LEN. SI.	1.32		YLD.	.061	27	30	10	252	-140
GR. SA. CL.	2.06		YLD.	.061	23	39	22	256	-150
N.C.					6" PENET. =		60		-160
GR. FI. - MED. SA.					—	N.	P.	257	-170
N.C.					6" PENET. =		50		-180

BORING Nº W.B.-3 STA: 243+70
DATE MADE: SEPT. 14, 1972 LOCATION: 100' RT ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES

BL.	= Blue	CL.	Clay	STR.	Strata
BK.	= Black	GRAV.	Gravel	Mot.	Mottled
BR.	= Brown	ORG.	Organic	Tr.	Trace
GR.	= Gray	SA.	Sand	N.P.	Non-Plastic
GN.	= Green	SH.	Shelly	PENET.	Penetration
PK.	= Pink	SI	Silty	N.C.	No Cull
WH.	= White	ALT.	Alternating	S.S.	Slickensides
YE.	= Yellow	CO.	Coarse	YLD.	Yield
CONC.	= Concretions	FI.	Fine	M.S.	Multiple Shear
RTS.	= Roots	MED.	Medium	V.S.	Vertical Shear
ROT.	= Rotten	1 O	Iron Ore	60° S	Shear Angle
VEG.	= Vegetation	LENS	Lenses	SL.	Slump
WD.	= Wood	Q. A.	Quick Acting		

MOISTURE CONTENT = Moisture Content of the material in its natural state expressed as a percentage of the dry weight of the material

(3) = Location and identification of the sample

30 PENETRATION = Unable to drive split spoon sampler initial 6 inches

N = 18 = Number of blows of 140 lbs. hammer dropped 30 in. required to drive 2 in. O.D. Split Spoon sampler 1 ft. after first having been driven 6 in. unless amount of penetration shown otherwise

NO CULL = No preliminary 6" driving prior to securing drive data

qr = Compressive strength from triaxial undrained shear test (tons per sq. ft.)

qc = Compressive strength from consolidated undrained shear test (tons per sq. ft.)

ϕ = Angle of internal friction

γ = Wet weight of in-place material (Tons per cu. ft.)

• = Strength determined by vane shear test

E 4° = Estimated unconfined compressive strength by correlation with similar material on this project.

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL		DESIGNATION	Nº OF BLOWS "N"	"qu" UNCONFINED COMPRESSIVE STRENGTH TONS PER SQ FT
SAND & SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4-10	
		MEDIUM	10-30	
		DENSE	30-50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2-4	0.25-0.50
		MEDIUM	4-8	0.50-1.00
		STIFF	8-15	1-2
		VERY STIFF	15-30	2-4
		HARD	OVER 30	OVER 4

PILE DATA

LOCATION (BENT)	STATION	PLAN TIP ELEV.	CUT-OFF ELEV.	PLAN PILE LENGTH	ORDER LENGTH	ORDER LENGTH	AS BUILT TIP ELEV. MAX. ELEV.	MIN. ELEV.	AVE. ELEV.

FOR INFORMATION ONLY
CORE BORINGS AND TEST PILES

INTERSTATE 410
BRIDGE AT LULING

WATER BORINGS-2

DATE SEPT. 27 1972

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SURVEYED CHECKED | DRAWN | TRACED
MATERIAL SECTION — BRIDGE DESIGN SECTION

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	40

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TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
15' WATER @ SURF.									-70
GR. FI. SA.					-	N.	N-16 P. N-50 P. N-60	(W-270)	-80, -90, -100, -110
GR. CL. LEN. SI. CL. TR. ORG.	1.50		M.S.	.053	45	57	37	(S-279)	-120, -130
GR. SA. SI. CL.	5.00*		-	.056	33	N.	P.	(S-279)	-140
STR. CL. SI. SA. @ 155' PAT. WS. @ 159'-163' GR. SI. CL.	2.41		VLD.	.061	23	36	20	(W-282)	-150, -160, -170, -180
GR. FI. SA. SI.					-	N.	N-18 P.	(W-270)	-190
GR. SI. CL.	2.10		M.S.	.062	32	38	14	(S-272)	-200
GR. FI. - MED. SA.	N.C.				10" PENET. .58			(W-272)	-210, -220, -230
SE. PER PAN @ 240'-256'	N.C.				5" PENET. .58				-240, -250
									-260

BORING Nº W.B.-4 STA: 261+30
DATE MADE: AUG. 23, 1972 LOCATION: 100' RT. ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
15' WATER @ SURF.									-70
BR. MED. SA.					-	N.	N-18 P. N-60	(W-271)	-80, -90, -100, -110
GR. CL. LEN. SI.	1.82		VLD.	.056	35	50	32	(S-279)	-120, -130
GR. CL. LEN. SI. SA.	4.92		VLD.	.059	-	29	11	(S-279)	-140
GR. CL. LEN. SI.	2.33		M.S.	.059	37	60	38	(S-279)	-150, -160, -170, -180
GR. FI. SA.	N.C.				9" PENET. .58 -	N.	P.	(W-270)	-190
GR. CL.					27	54	36	(S-272)	-200
GR. FI. - MED. SA.	N.C.				9" PENET. .58 -	N.	P.	(W-272)	-210, -220, -230
	N.C.				6" PENET. .58				-240, -250
									-260

BORING Nº W.B.-5 STA: 262+10
DATE MADE: SEPT. 8, 1972 LOCATION: ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
15' WATER @ SURF.									-70
BR. FI. SA.					-	N.	N-16 P. N-50	(W-276)	-80, -90, -100, -110
GR. CL. - LEN. SA.	1.45		VLD.	.056	38	67	46	(S-281)	-120, -130
GR. CL. SI.				.057	32	N.	P.	(S-273)	-140
GR. CL. - STR. SI. STR. CL. SI. @ 156'	1.70		6.05	.054	41	68	49	(S-281)	-150, -160, -170, -180
GR. FI. SA. SI.					-	N.	N-17 P.	(W-273)	-190
GR. CL. - TR. ORG.	2.17		VLD.	.058	33	54	31	(S-276)	-200
GR. BR. MED. SA.	N.C.				7" PENET. .58 -	N.	P.	(W-272)	-210, -220, -230
	N.C.				6" PENET. .58				-240
	N.C.				6" PENET. .58				-250, -260
GR. CL. LEN. SI. - TR. SHELL	2.10		VLD.	.058	33	53	34	(S-273)	-300, -310

BORING Nº W.B.-6 STA: 262+10
DATE MADE: SEPT. 6, 1972 LOCATION: 100' LT. ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES:

BL.	= Blue	CL.	Clay	STR.	Strata
BK.	= Black	GRAV.	Gravel	MOT.	Mottled
BR.	= Brown	ORG.	Organic	TR.	Trace
GR.	= Gray	SA.	Sand	N.P.	Non-Plastic
GN.	= Green	SH.	Shelly	PENET.	Penetration
PK.	= Pink	SI.	Silty	N.C.	No Cull
WH.	= White	ALT.	Alternating	S.S.	Slickensides
YL.	= Yellow	CO.	Coarse	YLD.	Yield
CONC.	= Concretions	FI.	Fine	M.S.	Multiple Shear
RTS.	Roots	MED.	Medium	V.S.	Vertical Shear
ROT.	Rotten	I.O.	Iron Ore	45° S.	Shear Angle
VEG.	Vegetation	LEN.	Lenses	SL.	Slump
WD.	= Wood	Q.A.	= Quick Acting		

MOISTURE CONTENT = Moisture Content of the material in its natural state expressed as a percentage of the dry weight of the material

(3) = Location and Identification of the sample

NO PENETRATION = Unable to drive split spoon sampler initial 6 inches

N - 18 = Number of blows of 140 lbs. hammer dropped 20 in., required to drive 2 in. O.D. Split Spoon sampler 1 ft. after first having been driven 6 in., unless amount of penetration shown otherwise

NO CULL = No preliminary 6" driving prior to securing drive data

qr = Compressive strength from triaxial undrained shear test (tons per sq. ft.)

qu = Compressive strength from consolidated undrained shear test (tons per sq. ft.)

ϕ = Angle of internal friction

γ = Wet weight of in-place material (Tons per cu. ft.)

* = Strength determined by vane shear test

E 4' = Estimated unconfined compressive strength by correlation with similar material on this project.

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL		DESIGNATION	Nº OF BLOWS "N"	"Qu" UNCONFINED COMPRESSIVE STRENGTH TONS PER SQ. FT.
SAND & SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4-10	
		MEDIUM	10-30	
		DENSE	30-50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2-4	0.25-0.50
		MEDIUM	4-8	0.50-1.00
		STIFF	8-15	1-2
		VERY STIFF	15-30	2-4
		HARD	OVER 30	OVER 4

PILE DATA

LOCATION (BENT)	STATION	PLAN TIP ELEV.	CUT-OFF ELEV.	PLAN PILE LENGTH	ORDER LENGTH	ORDER LENGTH	AS BUILT TIP ELEV. MAX. ELEV.	MIN. ELEV.	AVE. ELEV.

FOR INFORMATION ONLY

CORE BORINGS AND TEST PILES

INTERSTATE 410 BRIDGE AT LULING

WATER BORINGS - 3

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET Nº
I-410-4(34)223	450-37-01	ST. CHARLES	41

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SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
18' WATER @ SURF.									
ALTERNATING LAYERS OF SI. CL. & SI. SA.									
GR. SI. CL.	STIFF								
GR. CL. SI. SA.	MED.								
GR. CL.	STIFF								(P-21)
CL. SA. SI.	MED. TO DENSE								
GR. CL.	VERY STIFF								(P-27) (P-28)
SI. CL.	STIFF								
CL. SI. SA.	SOFT TO MED.								
GR. SI. CL.	HARD								(P-29)
FI. - MED. SA.	DENSE								

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

DRIVING RESISTANCE
TONS

BORING Nº WB-3A STA: 249+25
DATE MADE: 1-16-73 LOCATION: ℄

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
86' WATER @ SURF.									
FI. - MED. SA.	DENSE								
							N=49		
CL. W/LEN. SI.	STIFF								
CL. W/STR. SA. SI.	MED.								
CL. W/LEN. SI.	VERY STIFF								(P-26)
CL. SI. SA.									(P-26)

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

DRIVING RESISTANCE
TONS

BORING Nº WB-6A STA: 262+12
DATE MADE: 1-16-73 LOCATION: ℄

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
51' WATER @ SURF.									
FI. - MED. SA.	DENSE								
							N=48		
SI. CL.	STIFF								
CL. W/STR. SI. SA.	MED.								
CL. W/LEN. SI.	VERY STIFF								
CL. SA. SI.	MED.								
SI. CL.	VERY STIFF								
FI. - MED. SA.	VERY DENSE								

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

DRIVING RESISTANCE
TONS

BORING Nº WB-8A STA: 266+52
DATE MADE: 1-14-73 LOCATION: 12'LT ℄

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES:

BL.	= Blue	CL.	= Clay	STR.	= Strata
BK.	= Black	GRAV.	= Gravel	Mot.	= Mottled
BR.	= Brown	ORG.	= Organic	TR.	= Trace
GR.	= Gray	S.	= Sand	N. P.	= Non-Plastic
GN.	= Green	SH.	= Shelly	PENET.	= Penetration
PK.	= Pink	Sl	= Silty	N. C.	= No Cull
WH.	= White	ALT.	= Alternating	S/S	= Slickensides
YE.	= Yellow	CT.	= Coarse	YLD.	= Yield
CONC.	= Concretions	FI.	= Fine	M. S.	= Multiple Shear
ROTS.	= Roots	MED.	= Medium	V. S.	= Vertical Shear
ROT.	= Rotten	I. O.	= Iron Ore	60° S.	= Shear Angle
VEG.	= Vegetation	LEN.	= Lenses	SL.	= Slump
WD.	= Wood	Q. A.	= Quick Acting		

MOISTURE CONTENT = Moisture Content of the material in its natural state expressed as a percentage of the dry weight of the material

(3) = Location and Identification of the sample

NO PENETRATION = Unable to drive split spoon sampler initial 6 inches

N = 18 = Number of blows of 140 lbs. hammer dropped 30 in. required to drive 2 in. O.D. Split Spoon sampler 1 ft. after first having been driven 6 in. unless amount of penetration shown otherwise

NO CULL = No preliminary 6" driving prior to securing drive data

qr = Compressive strength from triaxial undrained shear test (tons per sq. ft.)

qc = Compressive strength from consolidated undrained shear test (tons per sq. ft.)

ϕ = Angle of internal friction

γ = Wet weight of in-place material (Tons per cu. ft.)

• = Strength determined by vane shear test

E 4' = Estimated unconfined compressive strength by correlation with similar material on this project.

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL	DESIGNATION		Nº OF BLOWS "N"	"qu" (UNCONFINED COMPRESSIVE STRENGTH TONS PER SQ FT)
SAND & SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4-10	
		MEDIUM DENSE	10-30	
		DENSE	30-50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2-4	0.25-0.50
		MEDIUM STIFF	4-8	0.50-1.00
		STIFF	8-15	1-2
		VERY STIFF	15-30	2-4
		HARD	OVER 30	OVER 4

PILE DATA

LOCATION (BENT)	STATION	PLAN TIP ELEV.	CUT-OFF ELEV.	PLAN PILE LENGTH	ORDER LENGTH	ORDER LENGTH	AS BUILT TIP ELEV. MAX. ELEV.	MIN. ELEV.	AVG. ELEV.

FOR INFORMATION ONLY
CORE BORINGS AND TEST PILES

INTERSTATE 410
BRIDGE AT LULING
WATER BORINGS - 4

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

MATERIAL SECTION — BRIDGE DESIGN SECTION

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET Nº
I-410-4(34)225	450-37-01	ST. CHARLES	42

TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
56' WATER @ SURF.									-20
									-30
									-40
									-50
									-60
									-70
					W:30				-80
BR. FI. SA.				-	N.	P.		(W/C 21/2)	-90
					W:48				-100
									-110
	N. C.				W:53				-120
GR. CL. LEN. SI.	1.57		M.S.	.055	40	63	43	(C/21)	-130
GR. CL. SI. SA.					28	N.	P.	(C/23)	-140
									-150
GR. SI. CL.	1.90		45°S	.053	43	54	27	(C/32)	-160
									-170
GR. CL. - LEN. SI. SA. & OCR.	1.26		V.D.	.058	30	37	21	(C/32)	-180
									-190
GR. CL. - TR. SHELL	2.88		45°S	.053	32	53	30	(C/35)	-200
									-210
	N. C.				6" PENET: .58				-220
GR. FI. - MED. SA.				-	N.	P.		(W/C 24)	-230
	N. C.				6" PENET: .65				-240
									-250
									-260

BORING Nº W.B.-7 STA: 266+65
DATE MADE: AUG. 28, 1972 LOCATION: 32' RT. ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
57' WATER @ SURF.									-20
									-30
									-40
									-50
									-60
							W: 5		-70
GR. BR. FI. - MED. SA.				-	N.	P.		(W/C 23)	-80
							W: 28		-90
									-100
	N. C.						W: 50		-110
									-120
GR. SI. CL. - LEN. SI.	1.57		M.S.	.055	43	65	45	(C/21)	-130
GR. SI. SA.				-	N.	P.		(W/C 17)	-140
									-150
GR. SI. CL.	2.23		V.D.	.061	26	42	25	(C/26)	-160
									-170
GR. CL. SI. SA.		0.47	V.D.	.057	30	8" PENET: .52 N.	P.	(C/23)	-180
									-190
GR. CL. TR. SHELL & EST. WD.	2.23		M.S.	.058	33	48	26	(C/25)	-200
									-210
	N. C.						W: 55		-220
									-230
	N. C.				6" PENET: .60				-240
GR. FI. - MED. SA.				-	N.	P.		(W/C 22)	-250
QUICK ACTING @ 262'S. ELEV.									-260
									-270
									-280
									-290
	N. C.				7" PENET: .66				-300

BORING Nº W.B.-8 STA: 266+30
DATE MADE: AUG. 26, 1972 LOCATION: 48' LT. ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

TEST PILE No.

TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
26' WATER @ SURF.									-20
STR. BR. CL. @ 30'									-30
							W: 7		-40
									-50
GR. FI. SA.				-	N.	P.		(W/C 16)	-60
							W: 23		-70
									-80
									-90
							W: 54		-100
									-110
GR. CL. - LEN. SI.	1.43		V.D.	.056	45	62	43	(C/21)	-120
GR. SI. SA.	0.40		M.S.	.058	-	23	11	(C/23)	-130
									-140
GR. SI. CL.	1.50		45°S	.053	47	65	37	(C/32)	-150
									-160
GR. CL. - STR. SI. SA.				.057	23	N.	P.	(C/33)	-170
GR. CL.	2.11		V.D.	.053	23	42	23	(C/35)	-180
									-190
	N. C.				6" PENET: .50				-200
									-210
GR. FI. - MED. SA.				-	N.	P.		(W/C 22)	-220
	N. C.				6" PENET: .55				-230
									-240
									-250
	N. C.				6" PENET: .60				-260
									-270
									-280
									-290
	N. C.				6" PENET: .75				-300

BORING Nº W.B.-9 STA: 269+25
DATE MADE: AUG. 26, 1972 LOCATION: ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES:

BL.	= Blue	CL.	= Clay	STR.	= Streak
BK.	= Black	GRAV.	= Gravel	MOT.	= Mottled
BR.	= Brown	ORG.	= Organic	TR.	= Trace
GR.	= Grey	SA.	= Sand	N. P.	= Non-Plastic
GN.	= Green	SI.	= Silt	PENET.	= Penetration
PK.	= Pink		= Silty	N. C.	= No Cull
WH.	= White	ALT.	= Alternating	S. S.	= Slickensides
YE.	= Yellow	CO.	= Coarse	YLD.	= Yield
CONC.	= Concretions	FI.	= Fine	M. S.	= Multiple Shear
RTS.	= Roots	MED.	= Medium	V. S.	= Vertical Shear
ROT.	= Rotten	I. O.	= Iron Ore	60° S.	= Shear Angle
VEG.	= Vegetation	LEN.	= Lenses	SL.	= Slump
WD.	= Wood	Q. A.	= Quick Acting		

MOISTURE CONTENT = Moisture Content of the material in its natural state expressed as a percentage of the dry weight of the material

(3) = Location and Identification of the sample

NO PENETRATION = Unable to drive split spoon sampler initial 6 inches

N = 18 = Number of blows of 140 lbs. hammer dropped 30 in. required to drive 2 in. O.D. Split Spoon sampler 1 ft. after first having been driven 6 in. unless amount of penetration shown otherwise

NO CULL = No preliminary 6" driving prior to securing drive data

qr = Compressive strength from triaxial unconfined shear test (tons per sq. ft.)

qc = Compressive strength from consolidated unconfined shear test (tons per sq. ft.)

φ = Angle of internal friction

γ = Wet weight of in-place material (Tons per cu. ft.)

• = Strength determined by vane shear test

E 4' = Estimated unconfined compressive strength by correlation with similar material on this project.

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL	DESIGNATION		Nº OF BLOWS "N"	"Qu" UNCONFINED COMPRESSIVE STRENGTH TONS PER SQ FT
SAND & SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4-10	
		MEDIUM	10-30	
		DENSE	30-50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2-4	0.25 - 0.50
		MEDIUM	4-8	0.50 - 1.00
		STIFF	8-15	1 - 2
		VERY STIFF	15-30	2 - 4
		HARD	OVER 30	OVER 4

PILE DATA

LOCATION (BENT)	STATION	PLAN TIP ELEV.	CUT-OFF ELEV.	PLAN PILE LENGTH	ORDER LENGTH	ORDER LENGTH	AS BUILT TIP ELEV. MAX. ELEV.	MIN. ELEV.	AVE. ELEV.
PIER IN	269+25	-120							

FOR INFORMATION ONLY

CORE BORINGS AND TEST PILES

INTERSTATE 410
BRIDGE AT LULING

WATER BORINGS - 5

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
410-4(34223)	450-3701	ST. CHARLES	43

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SOIL TYPE & COLOR	qu	qp	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
1' WATER @ SURF.									0
BR. CL.					15" SHELBY @ 118		PLASTIC	W.B.-10	-10
							W=3		-20
									-30
							W=15		-40
GR. FI. SA.						N.	P.	W.B.-10	-50
	N.C.						W=28		-60
STR. SI. CL. @ 38'									-70
	N.C.						W=50		-80
									-90
									-100
									-110
									-120
									-130
									-140
TR. BRC. MAP. @ 150'-155'									-150
GR. SI. CL.	1.51		60'S	.056	43	71	47	W.B.-10	-160
									-170
STR. CL. SA. @ 178'									-180
									-190
									-200
GR. CL. SA.		0.58	M.S.	.060	22	N.	P.	W.B.-10	-210
STR. SA. CL.									
	N.C.				11" PENET. = 30				-220
									-230
GR. MED. - CR. SA.					-	N.	P.	W.B.-10	-240
	N.C.				6" PENET. = 30				-250
									-260
WATER FLOWING @ 256'	N.C.				5" PENET. = 13				-270 (WATER SCALE CHANGE)
									-280

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

BORING Nº W.B.-10 STA: 269+75
DATE MADE: AUG. 22, 1972 LOCATION: ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qp	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
15' WATER @ SURF.									0
GR. FI. SA. - STR. CL.					31	24	W=3 8	W.B.-11	-10
							W=8		-20
									-30
									-40
							W=26		-50
GR. FI. SA.					-	N.	P.	W.B.-11	-60
									-70
									-80
							W=26		-90
									-100
									-110
									-120
									-130
									-140
GR. SI. CL.	1.87		M.S.	.053	32	51	29	W.B.-11	-150
									-160
									-170
									-180
									-190
									-200
GR. SA. CL.	1.73		V.S.	.061	20	21	+	W.B.-11	-210
									-220
	N.C.						W=18		-230
GR. FI. SA.					-	N.	P.	W.B.-11	-240
	N.C.				6" PENET. = 50				-250
									-260

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

BORING Nº W.B.-11 STA: 271+50
DATE MADE: AUG. 21, 1972 LOCATION: ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qp	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
4' WATER @ SURF.)									0
GR. SI. CL.						38	21 W=8	W.B.-12	-10
STR. SI. SA.									
									-20
									-30
									-40
							W=26		-50
GR. FI. SA.					-	N.	P.	W.B.-12	-60
									-70
							W=33		-80
									-90
									-100
							W=50		-110
									-120
									-130
									-140
GR. SI. CL.	1.58		M.S.	.055	33	66	46	W.B.-12	-150
									-160
									-170
									-180
									-190
									-200
GR. SA. CL.					20	24	W=18 11	W.B.-12	-210
	N.C.				3" PENET. = 60				-220
GR. FI. - MED. SA.					-	N.	P.	W.B.-12	-230
	N.C.				6" PENET. = 60				-240
									-250
									-260
	N.C.				6" PENET. = 50				-270 (WATER SCALE CHANGE)

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

BORING Nº W.B.-12 STA: 271+92
DATE MADE: SEPT. 12, 1972 LOCATION: 5' LT ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES:

BL.	= Blue	CL.	= Clay	STR.	= Strata
BK.	= Black	GRAV.	= Gravel	Mot.	= Mottled
BR.	= Brown	ORG.	= Organic	TR.	= Trace
GR.	= Gray	SA.	= Sand	N. P.	= Non-Plastic
GN.	= Green	SH.	= Shelly	PENET.	= Penetration
PK.	= Pink	SI	= Silty	N. C.	= No Cull
WH.	= White	ALT.	= Alternating	S S	= Slickensides
YE.	= Yellow	CO.	= Coarse	YLD.	= Yield
CONC.	= Concretions	FI.	= Fine	M. S.	= Multiple Shear
RTS.	= Roots	MED.	= Medium	V. S.	= Vertical Shear
ROT.	= Rotten	I. O.	= Iron Ore	60° S.	= Shear Angle
VEG.	= Vegetation	LEN.	= Lenses	SL.	= Slump
WD.	= Wood	Q. A.	= Quick Acting		

MOISTURE CONTENT - Moisture Content of the material in its natural state expressed as a percentage of the dry weight of the material

③ = Location and identification of the sample

NO PENETRATION = Unable to drive split spoon sampler initial 6 inches

N = 18 = Number of blows of 140 lbs. hammer dropped 30 in. required to drive 2 in. O.D. Split Spoon sampler 1 ft. after first having been driven 6 in. unless amount of penetration shown otherwise

NO CULL = No preliminary 6" driving prior to securing drive data

qp = Compressive strength from triaxial undrained shear test (tons per sq. ft.)

qu = Compressive strength from consolidated undrained shear test (tons per sq. ft.)

ϕ = Angle of internal friction

γ = Wet weight of in-place material (Tons per cu. ft.)

• = Strength determined by vane shear test

E 4' = Estimated unconfined compressive strength by correlation with similar material on this project.

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL		DESIGNATION	Nº OF BLOWS "N"	"qu" UNCONFINED COMPRESSIVE STRENGTH TONS PER SQ FT.
SAND & SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4-10	
		MEDIUM	10-30	
		DENSE	30-50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2-4	0.25 - 0.50
		MEDIUM	4-8	0.50 - 1.00
		STIFF	8-15	1 - 2
		VERY STIFF	15-30	2 - 4
		HARD	OVER 30	OVER 4

PILE DATA

LOCATION (BENT)	STATION	PLAN TIP ELEV.	CUT-OFF ELEV.	PLAN PILE LENGTH	ORDER LENGTH	ORDER LENGTH	AS BUILT TIP ELEV. MAX. ELEV.	MIN. ELEV.	AVE. ELEV.
PIER 2N	271+90	-120							

FOR INFORMATION ONLY
CORE BORINGS AND TEST PILES

INTERSTATE 410
BRIDGE AT LULING
WATER BORINGS - 6

DATED DEC. 27 1972

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SURVEYED | DRAWN | TRACED
CHECKED | CHECKED | CHECKED
MATERIAL SECTION — BRIDGE DESIGN SECTION

AS BUILT

SOIL TYPE & COLOR	qu	qp	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
SL. LBR. SL. CL. w/LEN. SL.	0.28*		–	.046	–	39	16	(B-2)	10
BR. SL. CL. w/STR. SL. SA.	0.41		M.S.	.084	–	59	14	(B-2)	0
GR. FI. - MED. SA.					–	N.	W.T.T. W.T.B. P. W.T.S.	(B-2)	-10
BR. SL. CL. w/STR. SA.					42	49	W.T.B. 26 W.T.S.	(B-2)	-20
GR. FI. - MED. SA.					–	N.	W.T.B. W.T.S. P. W.T.S. W.T.S. W.T.S.	(B-2)	-30 -40 -50
GR. SL. CL. w/STR. SA.					41	68	W.T.B. 39 W.T.S.	(B-2)	-60
GR. FI. - MED. SA. w/TR. ORG.					–	N.	P. W.T.S. W.T.T.	(B-2)	-70 -80 -90
BR. SL. CL. w/STR. CL. SL.	1.00		60*S	.058	27	35	16	(B-2)	
BR. SL. CL. w/STR. CL. SL.	1.59		60*S	.059	26	37	18	(B-2)	-100
GR. CL. SL.		0.35	M.S.	.060	–	27	7	(B-2)	
GR. CL. SL.	1.03		V.L.D.	.060	–	29	8	(B-2)	
BR. SL. CL. w/STR. MED. SA.	1.00*		–	.054	–	34	20	(B-2)	-110
GR. FI. - MED. SA.					– 3* PENET.	N. =	P. 50	(B-2)	-120
GR. CL. SL. w/LEN. SL. SA. & TR. ORG.	0.64		60*S	.057	–	31	7	(B-2)	-130
GR. SL. CL. w/TR. EST. WD.	3.20		45*S	.051	52	65	29	(B-2)	-140
GR. SL. SA. CL.	2.60		V.S.	.061	21	32	12	(B-2)	-150
BR. LBR. FI. SL. SA. w/TR. ORG.					–	N.	W.T.B. P.	(B-2)	-160
GR. SL. CL. w/TR. CONC.	2.19		M.S.	.052	52	85	54	(B-2)	-170
GR. SL. CL. w/STR. CL. SL.					29	40	14	(B-2)	-180
GR. SL. CL. w/TR. SHELL	3.00		45*S	.056	37	68	41	(B-2)	-190
BR. SL. SA. CL. w/STR. SL. SA.	0.98		M.S.	.053	–	28	10	(B-2)	-200
GR. FI. SL. SA.	N.C.			1.0*	PENET. =		50	(B-2)	-210
NOTE: DRILLED TO 250' STILL IN SAND					–	N.	P.		-220

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

BORING Nº B-1E
DATE MADE 8-1-73
STA: 276+00
LOCATION: ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qp	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
BR. SA. SL. CL. w/TR. RTS. - ORB. 3%	1.20		V.L.D.	.058	26	38	20	(B-2)	
BR. SA. SL. CL.	0.62		V.L.D.	.054	37	41	22	(B-2)	-10
BR. CL. SA. SL.	0.32		V.L.D.	.061	–	28	5	(B-2)	0
GR. SL. CL.	1.31		V.L.D.	.053	31	54	30	(B-2)	-10
GR. SL. CL.	0.80		V.L.D.	.053	31	35	12	(B-2)	-20
GR. SL. CL.	0.90		V.L.D.	.057	34	42	22	(B-2)	-30 -40
GR. CL. SA.		0.32	M.S.	.060	30	N.	P.	(B-2)	-50 -60
GR. SL. SA. CL.	1.60		V.S.	.060	29	38	17	(B-2)	-70 -80 -90
GR. CL. SA. SL.		0.25	65*S	.056	36	46	21	(B-2)	-100
GR. FI. SA.	N.C.			8*	– PENET. =	N.	P. 60	(B-2)	-110
BR. SL. CL. w/LEN. SL.	2.21		M.S.	.056	42	73	54	(B-2)	-120
BR. CL. SL. w/STR. FI. SL. SA.	0.38		M.S.	.058	–	24	3	(B-2)	-130 -140
BR. SL. CL.	1.70		M.S.	.059	31	57	17	(B-2)	-150
BR. SL. CL.	2.10		S/S	.060	31	57	32	(B-2)	-160
BR. SA. SL. CL.	1.51		V.L.D.	.061	25	32	16	(B-2)	-170
BR. SL. SA. w/LEN. CL.		0.44	V.L.D.	.060	28	N.	P.	(B-2)	
GR. SL. CL. w/TR. RT. WD.	3.03		M.S.	.056	38	56	26	(B-2)	-180
GR. FI. SA.	N.C.			9*	PENET. =		52	(B-2)	-190
				–	N.	P. W.T.B.			-200 -210

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

BORING Nº B-2E
DATE MADE: 7-31-73
STA: 273+50
LOCATION: ℄

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qp	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

BORING Nº
DATE MADE:
STA:
LOCATION:

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES:

FAP	STATE PROJECT	PARISH	SHEET Nº
I-410-4(4)223	450-37-01	ST. CHARLES	44

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BL. = Blue
BK. = Black
BR. = Brown
GR. = Gray
GN. = Green
PK. = Pink
WH. = White
YE. = Yellow
CONC. = Concretions
RTS. = Roots
ROT. = Rotten
VEG. = Vegetation
WD. = Wood

CL. = Clay
GRAV. = Gravel
ORG. = Organic
SA. = Sand
" = Shelly
SI = Silty
ALT. = Alternating
CO. = Coarse
FI. = Fine
MED. = Medium
L. G. = Iron Ore
LEN. = Lenses
Q. A. = Quick Acting

STR. = Strong
Mot. = Mottled
TR. = Trace
N. P. = Non-Plastic
PENET. = Penetration
N. C. = No Cuft
S/S = Slickensides
YLD. = Yield
M. S. = Multiple Shear
V. S. = Vertical Shear
60° S. = Shear Angle
SL. = Slump

MOISTURE CONTENT = Moisture Content of the material in its natural state expressed as a percentage of the dry weight of the material

③ = Location and identification of the sample

NO PENETRATION = Unable to drive split spoon sampler initial 6 inches

N = 18 = Number of blows of 140 lbs. hammer dropped 30 in. required to drive 2 in. O.D. Split Spoon sampler 1 ft. after first having been driven 6 in. unless amount of penetration shown otherwise

NO CULL = No preliminary 6" driving prior to securing drive data

qp = Compressive strength from triaxial undrained shear test (tons per sq. ft.)

qc = Compressive strength from consolidated undrained shear test (tons per sq. ft.)

φ = Angle of internal friction

γ = Wet weight of in-place material (Tons per cu. ft.)

* = Strength determined by *PENETROMETER*

E 4* = Estimated unconfined compressive strength by correlation with similar material on this project.

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL	DESIGNATION		Nº OF BLOWS "N"	"qu" UNCONFINED COMPRESSIVE STRENGTH TONS PER SQ.FT.
SAND & SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4-10	
		MEDIUM	10-30	
		DENSE	30-50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2-4	0.25-0.50
		MEDIUM	4-8	0.50-1.00
		STIFF	8-15	1-2
		VERY STIFF	15-30	2-4
		HARD	OVER 30	OVER 4

PILE DATA

LOCATION (BENT)	STATION	PLAN TIP ELEV.	CUT-OFF ELEV.	PLAN PILE LENGTH	ORDER LENGTH	ORDER LENGTH	AS BUILT ELEV. MAX. ELEV.	MIN. ELEV.	AVE. ELEV.

FOR INFORMATION ONLY
CORE BORINGS AND TEST PILES

INTERSTATE 410
BRIDGE AT LULING
EAST BANK BORINGS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

AS BUILT

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
BR. GR. SI. CL. W/TR. IRON ORE	0.75		60°S	.055	43	92	62	3 (24ft)	
BR. FI. SA. W/TR. SHELL					–	N.	N=18 P.	4 (27ft)	
GR. SI. CL. W/LEN. SI.	0.49		V.S.	.054	48	62	39	5 (32ft)	
BR. SI. CL.	0.78		YLD.	.053	45	82	58	6 (37ft)	
BR. GR. CL. W/TR. CONC. & IRON OXIDE	2.09		M.S.	.059	31	86	63	7 (42ft)	
GR. GR. SA. CL.	0.88		YLD	.060	25	32	15	8 (47ft)	
BR. FI. SI. SA.	N.E.				–	N.	N=50 P.	9 (52ft)	
GR. SI. CL. W/LEN. SI.	1.33		60°S	.056	36	61	38	10 (57ft)	
GR. CL. SI. W/STR. SI. SA.		E 0.96	M.S.	.063	30	N.	P.	11 (62ft)	
BR. SI. CL.	1.56		YLD	.059	32	41	23	12 (67ft)	
GR. CL. W/TR. CONC.	2.50		45°S	.058	37	39	69	13 (72ft)	
BR. SI. CL. W/LEN. SI.	1.05		V.S.	.062	26	30	13	14 (77ft)	
GR. CL. W/TR. CONC.	2.80		M.S.	.055	49	34	63	15 (82ft)	

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

ELEVATION: 10, 0, -10, -20, -30, -40, -50, -60, -70, -80, -90, -100, -110, -120, -130, -140, -150, -160, -170

BORING Nº B-16 STA: 241+60
DATE MADE 2-13-73 LOCATION: ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS

TIME HOURS

SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

BORING Nº
DATE MADE:
STA:
LOCATION:

DRIVING RESISTANCE TONS

TEST LOAD TONS

TIME HOURS

SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION

TEST PILE No.
TYPE OF PILE:
TYPE OF HAMMER:
ENERGY PER BLOW: FT. LBS.
DATE OF DRIVING:
DATE OF LOADING:
DESIGN LOAD: TONS

STA.

BORING Nº
DATE MADE:
STA:
LOCATION:

DRIVING RESISTANCE TONS

TEST LOAD TONS

TIME HOURS

SETTLEMENT INCHES

NOTES:

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	45

114

BL.	= Blue	CL.	= Clay	STR.	Strata
BK.	= Black	GRAV.	Gravel	Mot.	Mottled
BR.	= Brown	ORG.	Organic	Trace	Trace
GR.	= Gray	SA.	= Sand	N. P.	Non-Plastic
GN.	= Green	SH.	= Shelly	PENET.	Penetration
PK.	= Pink	SI	= Silty	N. C.	= No Coll
WH.	= White	ALT.	= Alternating	S S	Slickensides
YE.	= Yellow	CO.	Coarse	YLD.	Yield
CONC.	= Concretions	FI.	Fine	M. S.	Multiple Shear
RTS.	= Roots	MED.	Medium	V. S.	Vertical Shear
ROT.	= Rotten	I. O.	= Iron Ore	60° S.	Shear Angle
VEG.	Vegetation	LEN.	= Lenses	SL.	Slump
WD.	= Wood	Q. A.	= Quick Acting		

MOISTURE CONTENT — Moisture Content of the material in its natural state expressed as a percentage of the dry weight of the material

(3) = Location and identification of the sample

NO PENETRATION = Unable to drive split spoon sampler initial 6 inches

N = 18 = Number of blows of 140 lbs. hammer dropped 30 in. required to drive 2 in. O.D. Split Spoon sampler 1 ft. after first having been driven 6 in. unless amount of penetration shown otherwise

NO CULL = No preliminary 6" driving prior to securing drive data

qr = Compressive strength from triaxial undrained shear test (tons per sq. ft.)

qc = Compressive strength from consolidated undrained shear test (tons per sq. ft.)

φ = Angle of internal friction

γ = Wet weight of in-place material (Tons per cu. ft.)

• = Strength determined by PENETROMETER

E 4* = Estimated unconfined compressive strength by correlation with similar material on this project.

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL		DESIGNATION	NR OF BLOWS "N"	"qu" UNCONFINED COMPRESSIVE STRENGTH TONS PER SQ FT.
SAND & SILT	RELATIVE DENSITY	VERY LOOSE	LESS THAN 4	
		LOOSE	4-10	
		MEDIUM	10-30	
		DENSE	30-50	
		VERY DENSE	OVER 50	
CLAY	CONSISTENCY	VERY SOFT	LESS THAN 2	LESS THAN 0.25
		SOFT	2-4	0.25-0.50
		MEDIUM	4-8	0.50-1.00
		STIFF	8-15	1-2
		VERY STIFF	15-30	2-4
		HARD	OVER 30	OVER 4

PILE DATA

LOCATION (BENT)	STATION	PLAN TIP ELEV.	CUT-OFF ELEV.	PLAN PILE LENGTH	ORDER LENGTH	ORDER LENGTH	AS BUILT TIP ELEV. MAX. ELEV.	MIN. ELEV.	AVE. ELEV.
PIER 15	241+80	-97.5							

FOR INFORMATION ONLY
CORE BORINGS AND TEST PILES

INTERSTATE 410
BRIDGE AT LULING
WEST BANK BORINGS

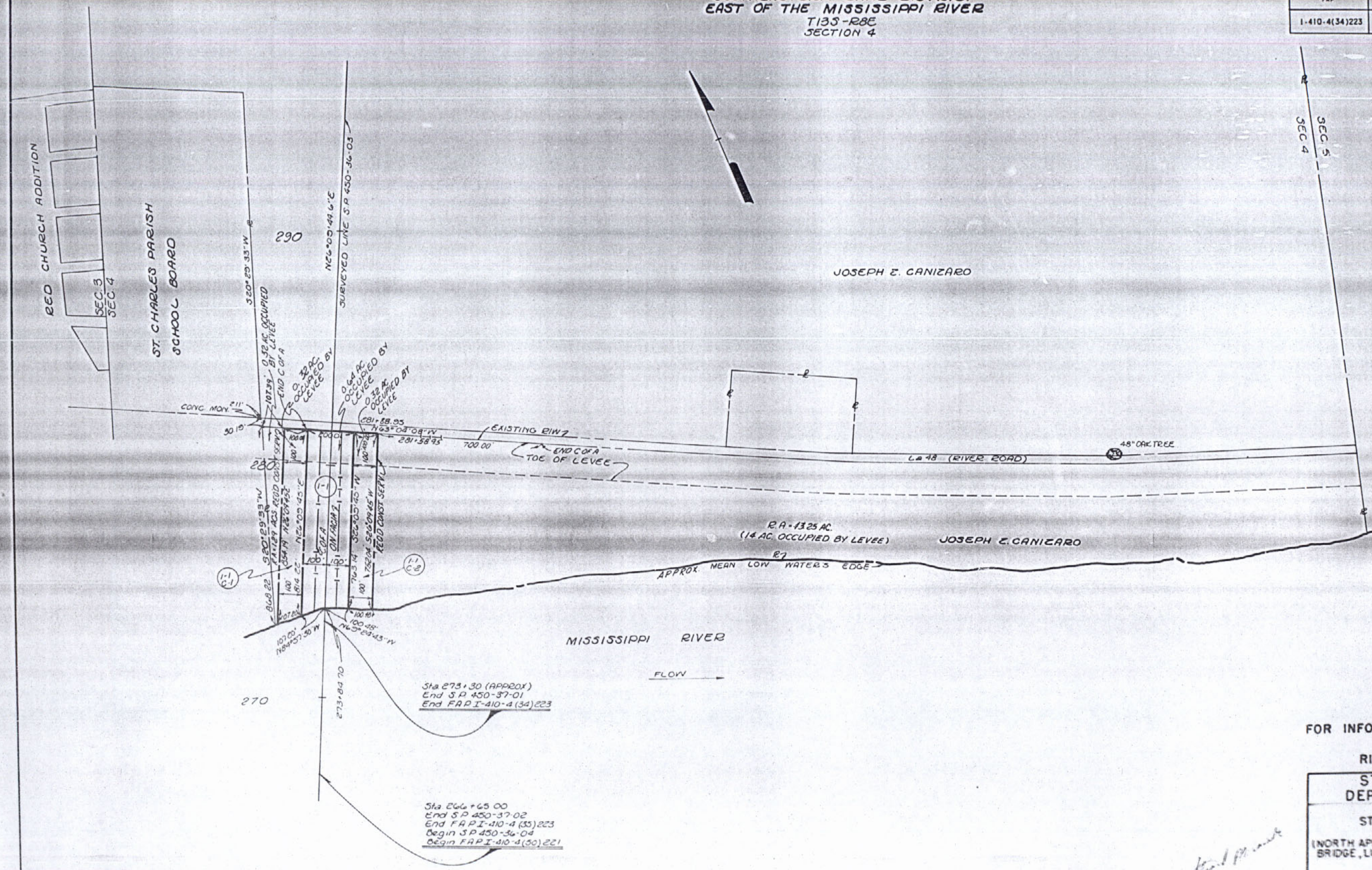
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

AS BUILT

SOUTHEASTERN LAND DISTRICT
EAST OF THE MISSISSIPPI RIVER
T13S-R8E
SECTION 4

FAP	STATE	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	46

115



FOR INFORMATION ONLY

RIGHT OF WAY PLAN-1

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 450-36-03
LAPLACE-BOUTTE HWY.
(NORTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
F.A.P. I-410-4(45)219
ROUTE I-410
ST. CHARLES PARISH

FRANK B. CHACHERE, REG. LAND SURVEYOR
JAMES R. WHEAT, REG. LAND SURVEYOR
DATE 7-8-78
SCALE 1" = 200'
DRAWN BY L.P.S.
COMPUTER J.E.W.
SHEET

PARCEL	OWNER	ACQUISITION	AREA	ACQ. BY DEPT. OF HWYS.
1-1 C.2	JOSEPH E. CANIZARO	C.O. # 100 AS SHOWN 2-16-77	7.94 AC.	
1-1 C.1			4.5 AC.	
1-1			3.325 AC.	

DATE	REVISIONS	BY
7-8-78	Revise terminal points of some property lines, add parcels including 2 adjust C of A	

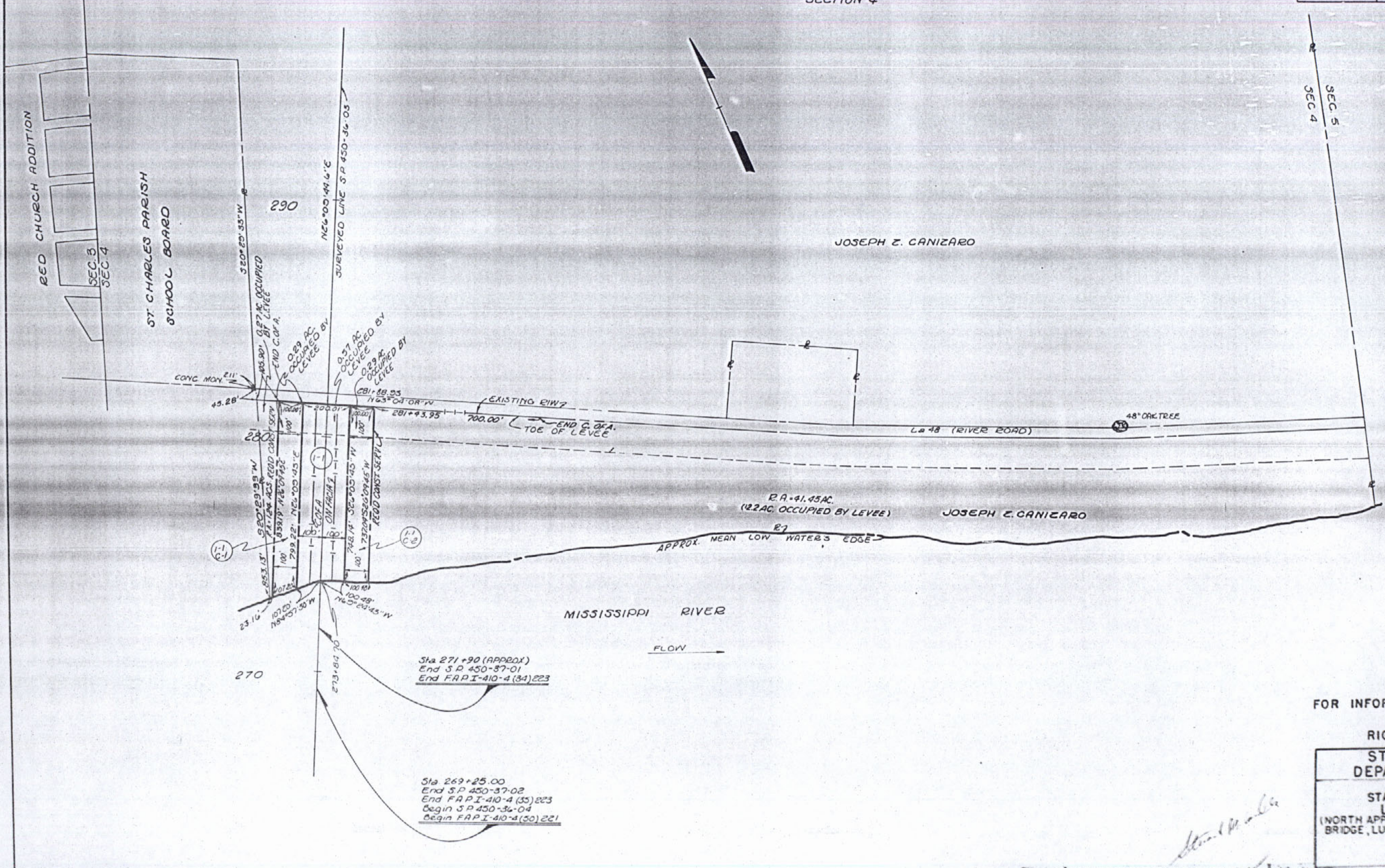
FILE NO. C-5-4-68

AS BUILT

FAP	STATE	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	46A

116

SOUTHEASTERN LAND DISTRICT
EAST OF THE MISSISSIPPI RIVER
T13S-R8E
SECTION 4



FOR INFORMATION ONLY

RIGHT OF WAY PLAN-1A

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 450-36-03
LAPLACE-BOUTTE HWY.
(NORTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
F.A.P. I-410-4(43) 219
ROUTE I-410
ST. CHARLES PARISH

FRANK B. CHACHERE, REG. LAND SURVEYOR
JAMES R. WHEAT, REG. LAND SURVEYOR
DATE: [illegible]
SCALE: 1"=200'
DRAWN BY: [illegible]
COMPUTED: [illegible]
SHEET: [illegible]

PARCEL	OWNER	ACQUISITION	AREA	
1-1-C-2			1.703 AC.	
1-1-C-1	JOSEPH Z. CANIZARO	C.O.B. 100 FO. 399 12-16-71	1.880 AC.	
1-1			3.313 AC.	ACQ. BY DEPT. OF HWYS.

DATE	REVISIONS	BY
3-21-74	REVISED PARCELS 1-1, 1-1-C-1 & 1-1-C-2	[illegible]
3-3-74	ADDED DISTANCE ON WATERS EDGE	[illegible]
2-21-74	Revised terminal points of Const. project	[illegible]
1-8-74	Added terminal points of Const. project	[illegible]
[illegible]	ADDED PARCELS 1-1-C-1, 1-1-C-2 & ADDED C. of A.	[illegible]

FILE NO. 2-5-1-68

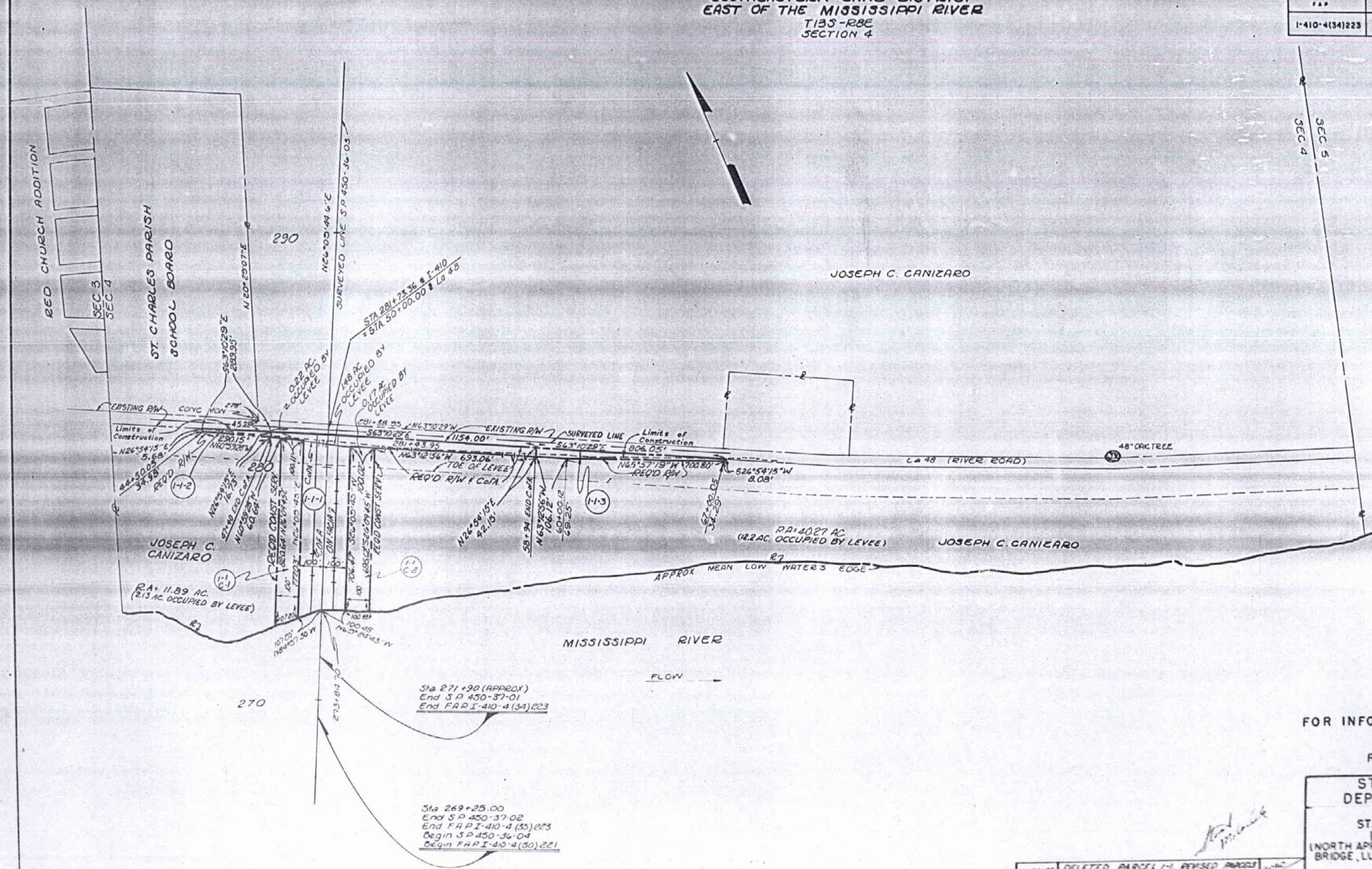
AS BUILT

FAP	STATE	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	46-B

P.C. No. 3

117

SOUTHEASTERN LAND DISTRICT
EAST OF THE MISSISSIPPI RIVER
T13S-R8E
SECTION 4



FOR INFORMATION ONLY

RIGHT OF WAY PLAN-1B

PARCEL	OWNER	ACQUISITION	AREA	ACQ BY DEPT OF HWYS
1-1-3	JOSEPH C. CANIZARO	C.O.B. 120, F.O. 393, DEC 16, 1971	0.506 AC	
1-1-2		C.O.B. 123, F.O. 192, MAR 17, 1972	0.075 AC	
1-1-1		C.O.B. 123, F.O. 557, APR 3, 1972	4.369 AC	
1-1-C.2			1.639 AC	
1-1-C.1			1.834 AC	
1-1			DELETED	

DATE	REVISIONS	BY
1-29-75	DELETED PARCEL 1-1, REVISED PARCELS 1-1-C.1 & 1-1-C.2 & ADDED PARCELS 1-1-1, 1-1-2 & 1-1-3	
11/12/76	GENERAL REVISIONS	
5-27-76	REVISED PARCELS 1-1, 1-1-C.1 & 1-1-C.2	
3-3-76	ADDED DISTANCE ON WATER'S EDGE	
2-27-76	Revised terminal points of Const. Limits	
1-8-76	Added terminal points of Const. Limits	
10-10-75	Added parcels 1-1-C.1 & 1-1-C.2	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 450-36-03
LAPLACE-BOUTTE HWY.
(NORTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
F.A.P. I-410-4(43)219
ROUTE I-410
ST. CHARLES PARISH

FRANK B. CHACHERE
REG. LAND SURVEYOR
DATE 7-8-75
SCALE 1" = 200'

JAMES R. WHEAT
REG. LAND SURVEYOR
DRAWN BY
COMPUTER
SHEET 1B

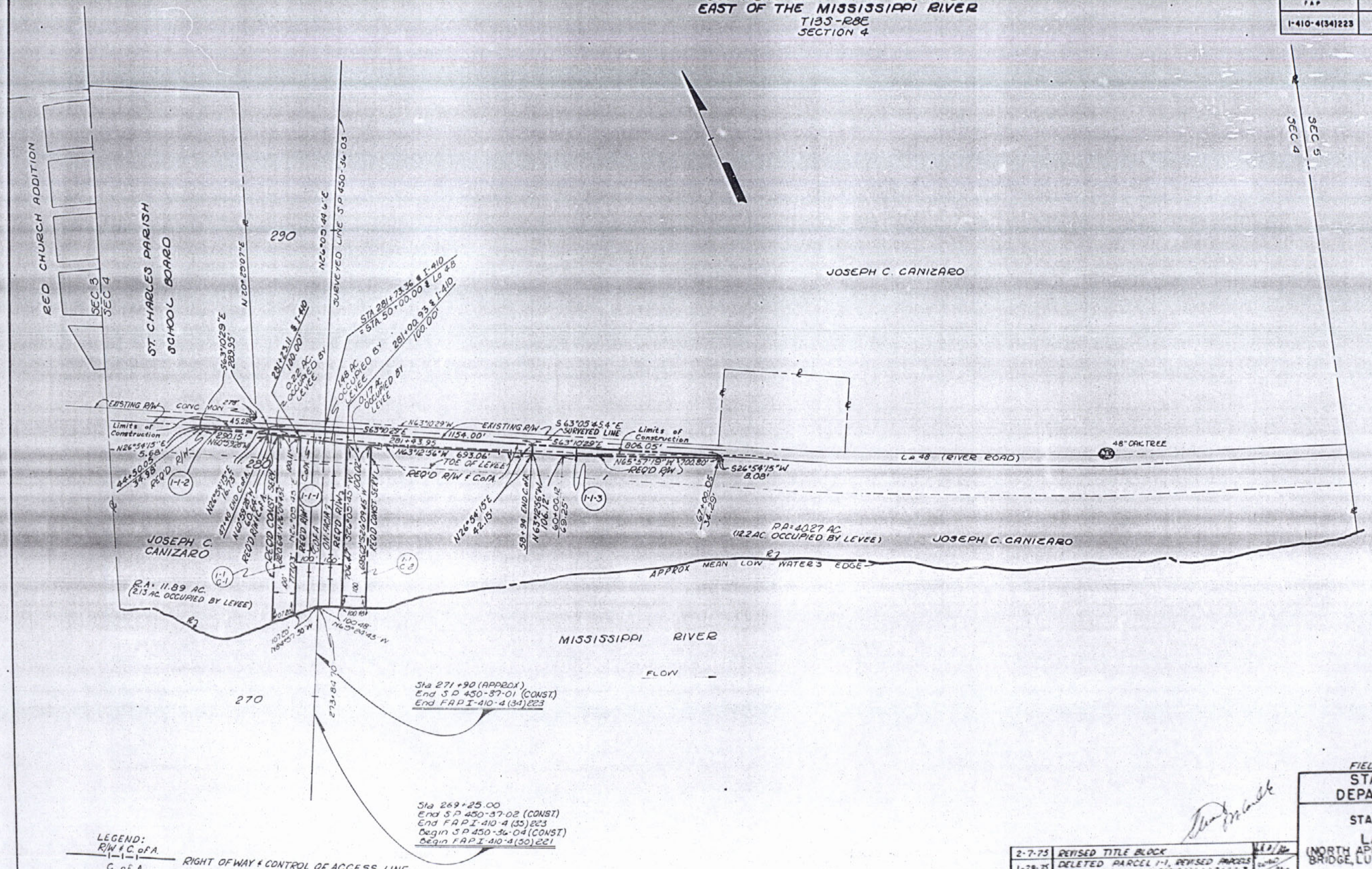
FILE NO. C-5-1-65

AS BUILT

FAP	STATE	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	48-G

118

SOUTHEASTERN LAND DISTRICT
EAST OF THE MISSISSIPPI RIVER
T13S-R8E
SECTION 4



LEGEND:
- R/W & C. of A. — RIGHT OF WAY & CONTROL OF ACCESS LINE
- C. of A. — CONTROL OF ACCESS LINE
- R/W — RIGHT OF WAY LINE

NOTE: STATIONS AND DISTANCES SHOWN THUS, 6+81.06, ARE RELATED TO THE SURVEYED LINE.

PARCEL	OWNER	ACQUISITION	AREA	ACQ-LA. DEPT. OF HWYS.
1-1-3	JOSEPH C. CANIZARO	C.O.B. 120, F.O. 339, DEC 16, 1971	0.506 AC.	
1-1-2		C.O.B. 123, F.O. 192, MAR 17, 1972	0.075 AC.	
1-1-1		C.O.B. 123, F.O. 557, APR. 3, 1972	4.369 AC.	
1-1-C.2			1.208 AC.	
1-1-C.1			1.834 AC.	
1-1			DELETED	

DATE	REVISIONS	BY
2-7-75	REVISED TITLE BLOCK	
1-28-75	DELETED PARCEL 1-1, REVISED PARCELS 1-1-C1 & 1-1-C-2 & ADDED PARCELS 1-1-1 & 1-1-3	
11/11/74	GENERAL REVISIONS	
5-28-74	REVISED PARCELS 1-1, 1-1-C-1 & 1-1-C-2	
3-5-74	ADDED DISTANCE ON WATER'S EDGE	
2-21-74	REVISED TERMINAL POINTS OF CONST. PROJECT	
1-8-74	ADDED TERMINAL POINTS OF CONST. PROJECT	
12-10-73	ADDED PARCELS 1-1-C.1 & 1-1-C.2 & ADDED C.O.B.	

FIELD BOOK NO. 82-391

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 450-36-03
F.A.P. I-410-4(30)221
LAPLACE-BOUTTE HWY.
(NORTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
ST. CHARLES PARISH
I-410

FRANK B. CHADERE, REG. LAND SURVEYOR
JAMES R. WHEAT, REG. LAND SURVEYOR

DATE 7-8-73 | DRAWN BY | SHEET 1C
SCALE 1"=200' | COMPUTER

FILE NO. E-3-1-68

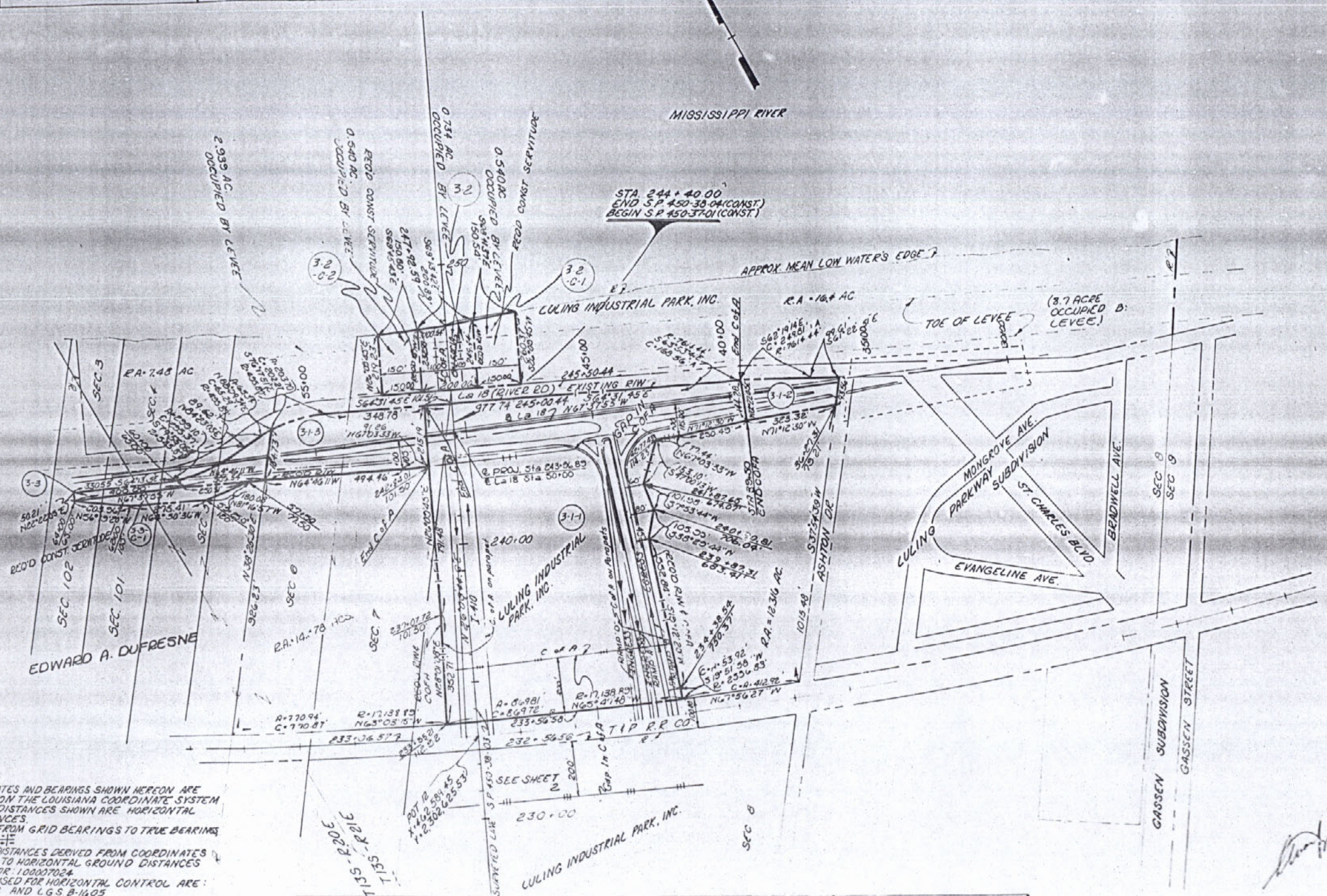
AS BUILT

PARCEL	OWNER	ACQUISITION	AREA	ACQ. STATE OF LA. DEPARTMENT OF HIGHWAYS
3-2	LULING INDUSTRIAL PARK, INC.	C.O.B. 140 F.O. 21, 28, 35 JUNE 8, 1973	1.107 ACS.	
3-2-C-1			0.875 ACS.	
3-2-C-2			0.779 ACS.	
3-1-1			22.576 ACS.	
3-1-2			0.913 ACS.	
3-1-3			2.715 ACS	
3-3	EDWARD A. DUFRESNE	C.O.B. K.K. F.O. 537 AUG. 3, 1937	1.004 ACS.	
3-3-C-1			0.491 ACS.	

SOUTHEASTERN LAND DISTRICT
WEST OF THE RIVER

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	47

119



FOR INFORMATION ONLY

NOTE:
THE COORDINATES AND BEARINGS SHOWN HEREON ARE GRID AND ARE ON THE LOUISIANA COORDINATE SYSTEM, SOUTH ZONE. DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES.
TO CONVERT FROM GRID BEARINGS TO TRUE BEARINGS USE 8°0'28.51"
TO CONVERT DISTANCES DERIVED FROM COORDINATES SHOWN HEREON TO HORIZONTAL GROUND DISTANCES USE SCALE FACTOR: 1.00007024.
MONUMENTS USED FOR HORIZONTAL CONTROL ARE: U.S.C. & G.S. DAVIS AND L.G.S. B-1405

LEGEND:

R/W & C of A	RIGHT OF WAY & CONTROL OF ACCESS
C of A	CONTROL OF ACCESS
R/W	RIGHT OF WAY LINE

PARCEL	OWNER	ACQUISITION	AREA	ACQ. STATE OF LA. DEPARTMENT OF HIGHWAYS
7-3-C-1			DELETED	
7-3			DELETED	
7-1-3			DELETED	
7-1-2			DELETED	
7-1-1			DELETED	
7-2-C-2			DELETED	
7-2-C-1			DELETED	
7-1-C-2			DELETED	
7-1-C-1			DELETED	
7-2			DELETED	
7-1			DELETED	

DATE	REVISIONS	BY
12-20-73	Revised Parcels 3-2, 3-2-C-1, 3-2-C-2, 3-1-1, 3-1-2, 3-1-3	
11-6-73	Revised Sheet by deleting Parcels 7-3-C-1, 7-3, 7-1-3, 7-1-2, 7-1-1, 7-2-C-2, 7-2-C-1, 7-1-C-2, 7-1-C-1, 7-2, 7-1	
10-24-73	Revised all Parcels and C of A.	
8-30-73	Deleted Parcels 7-1-C-1, 7-1-C-2 Revised Parcels 7-1-C-1 and 7-1-C-2. Added Parcels 7-1-C-1, 7-1-C-2, 7-2-C-1, 7-2-C-2, 7-3-C-1	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 450-38-03
LAPLACE-BOUTTE HWY.
(SOUTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
F.A.P. I-410-4(40)223
ROUTE I-410
ST. CHARLES PARISH

FRANK B. CHACHERE, REG. LAND SURVEYOR
JAMES R. WHEAT, REG. LAND SURVEYOR
DATE 7-9-73 | DRAWN BY | SHEET 3
SCALE 1"=200' | COMPUTER

RIGHT OF WAY PLAN-2
FIELD BOOK NOS. 62-39 & 109-773

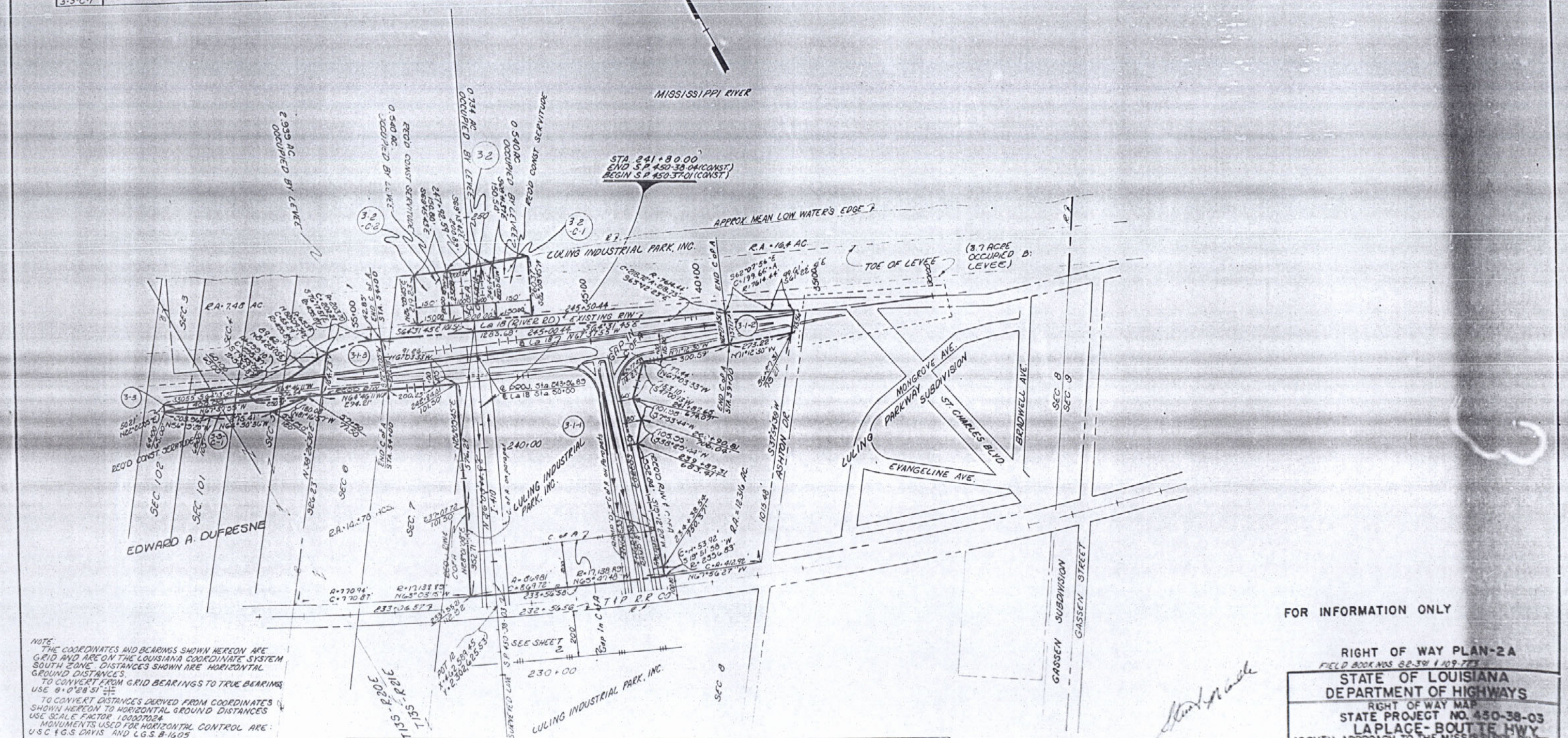
AS BUILT

PARCEL	OWNER	ACQUISITION	AREA	ACQ. STATE OF LA DEPARTMENT OF HIGHWAYS
3-2	LULING INDUSTRIAL PARK, INC.	C.O.B. 140 FO. 21, 22, 35 JUNE 8, 1973	1.107 ACS.	
3-2-C-1			0.878 ACS.	
3-2-C-2			0.779 ACS.	
3-1-1			24.238 ACS.	
3-1-2			0.751 AC.	
3-1-3			1.274 AC.	
3-3	EDWARD A. DUFRESNE	C.O.B. K.K. FO. 537 AUG. 3, 1937	1.004 ACS.	
3-3-C-1			0.491 ACS.	

SOUTHEASTERN LAND DISTRICT
WEST OF THE RIVER

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	47A

120



FOR INFORMATION ONLY

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TO CONVERT FROM GRID BEARINGS TO TRUE BEARINGS USE 8°0'28.51"
TO CONVERT DISTANCES DERIVED FROM COORDINATES SHOWN HEREON TO HORIZONTAL GROUND DISTANCES USE SCALE FACTOR 1.00007024
MONUMENTS USED FOR HORIZONTAL CONTROL ARE: U.S.C. & G.S. DAVIS AND C.G.S. B-1605

LEGEND:

R/W & C. of A.	RIGHT OF WAY & CONTROL OF ACCESS
C. of A.	CONTROL OF ACCESS
R/W	RIGHT OF WAY LINE

PARCEL	OWNER	ACQUISITION	AREA	ACQ. STATE OF LA DEPARTMENT OF HIGHWAYS
3-3-C-1			DELETED	
3-3			DELETED	
3-1-3			DELETED	
3-1-2			DELETED	
3-1-1			DELETED	
3-2-C-2			DELETED	
3-2-C-1			DELETED	
3-2-C-2			DELETED	
3-1-C-1			DELETED	
3-1-C-1			DELETED	
3-2			DELETED	
3-1			DELETED	

DATE	REVISIONS	BY
8-12-74	REVISED PARCELS 3-1-1, 3-1-2, & 3-1-3	
12-20-73	REVISED OWNERSHIP, PARCELS 3-2, 3-2-C-1, 3-2-C-2, 3-1-2, 3-1-3	
11-6-73	Revised Sheet to Show Revised Parcels 3-2, 3-2-C-1, 3-2-C-2, 3-1-1, 3-1-2, 3-1-3	
10-24-73	Revised All Parcels and C of A	
9-20-73	Original Parcels 3-1, 3-1-1, 3-1-2, 3-1-3, 3-2, 3-2-C-1, 3-2-C-2, 3-3, 3-3-C-1 Combined Parcels 3-1-C-1 and 3-1-C-2. Added Parcels 3-1-C-1, 3-1-C-2, 3-2, 3-1	

SCALE
DWG.
DATE
BY

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 450-38-03
LAPLACE-BOUTTE HWY.
(SOUTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
F.A.P. I-410-4(46)223
ROUTE I-410
ST. CHARLES PARISH

FRANK B. CHACHERE
REG. LAND SURVEYOR

JAMES E. WHEAT
REG. LAND SURVEYOR

DATE 7-8-73 | DRAWN BY | SHEET
SCALE 1"=200' | COMPUTER | 3A

RIGHT OF WAY PLAN-2A
FIELD BOOK NOS. 82-391 & 109-773

FILE 8-81-69

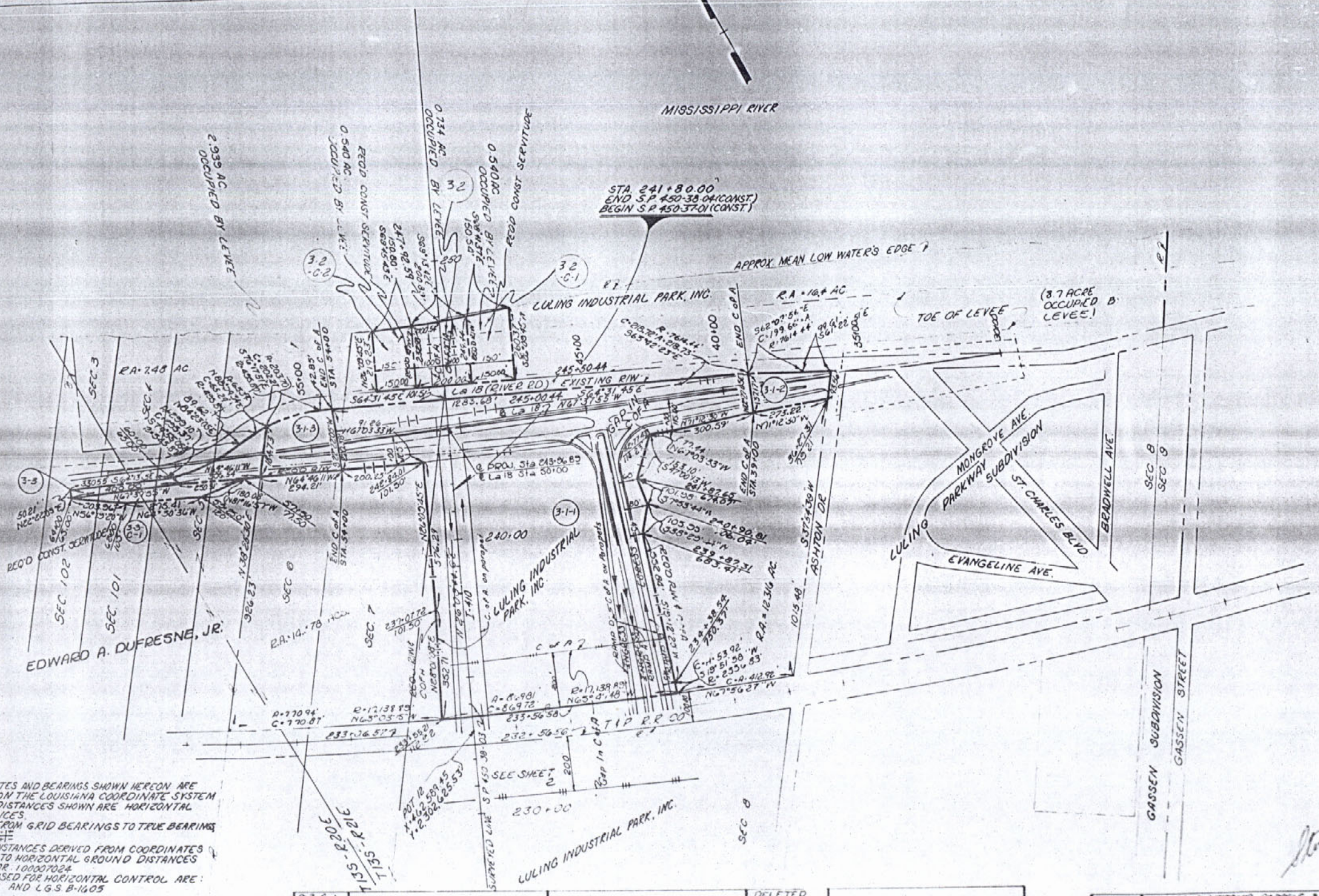
AS BUILT

PARCEL	OWNER	ACQUISITION	AREA	ACQ. STATE OF LA. DEPARTMENT OF HIGHWAYS
3-2	LULING INDUSTRIAL PARK, INC.	C.O.B. 140 F.O. 21, 22, 35 JUNE 8, 1973	1.107 ACS.	
3-2-C-1			0.878 ACS.	
3-2-C-2			0.779 ACS.	
3-1-1			24.238 ACS.	
3-1-2			0.731 AC.	
3-1-3			1.274 AC.	
3-3	EDWARD A. DUFRESNE, JR.	C.O.B. 132 F.O. 455 OCT. 11, 1972	1.004 ACS.	
3-3-C-1			0.491 ACS.	

SOUTHEASTERN LAND DISTRICT
WEST OF THE RIVER

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34)223	450-37-01	ST. CHARLES	47B

121



FOR INFORMATION ONLY

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TO CONVERT FROM GRID BEARINGS TO TRUE BEARINGS USE 8°0'28.51"
TO CONVERT DISTANCES DERIVED FROM COORDINATES SHOWN HEREON TO HORIZONTAL GROUND DISTANCES USE SCALE FACTOR: 1.00007024
MONUMENTS USED FOR HORIZONTAL CONTROL ARE: U.S.C. & G.S. DAVIS AND L.G.S. B-1605

LEGEND:

R/W & C. of A.	RIGHT OF WAY & CONTROL OF ACCESS
C of A	CONTROL OF ACCESS
R/W	RIGHT OF WAY LINE

PARCEL	OWNER	ACQUISITION	AREA	ACQ. STATE OF LA. DEPARTMENT OF HIGHWAYS
7-3-C-1			DELETED	
7-3			DELETED	
7-1-3			DELETED	
7-1-2			DELETED	
7-1-1			DELETED	
7-2-C-2			DELETED	
7-2-C-1			DELETED	
7-1-C-2			DELETED	
7-1-C-1			EX. [illegible]	
7-2			DELETED	
7-1			DELETED	

DATE	REVISIONS	BY
8-22-74	REVISED OWNERSHIP PARCELS 3-3, 3-3-C-1	[illegible]
8-12-74	REVISED PARCELS 3-1-1, 3-1-2, 3-1-3	[illegible]
12-20-73	REVISED OWNERSHIP, PARCELS 3-2, 3-2-C-1, 3-2-C-2, 3-1-1, 3-1-2, 3-1-3	[illegible]
11-16-73	Revised Sheet 3b. Deleted Parcels 7-3-C-1, 7-3, 7-1-3, 7-1-2, 7-1-1, 7-2-C-2, 7-2-C-1, 7-1-C-2, 7-1-C-1, 7-2, 7-1	[illegible]
10-24-73	Revised all Parcels and C of A	[illegible]
8-30-73	Deleted Parcels 3-3-C-1 and 3-3. Combined Parcels 3-1-1, 3-1-2, 3-1-3 and Parcel 3-2. Added Parcels 3-2-C-1 and 3-2-C-2.	[illegible]

RIGHT OF WAY PLAN - 2B

FIELD BOOK NOS. 82-391 & 109-773

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 450-38-03
LAPLACE - BOUTTE HWY.
(SOUTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
F.A.P. I-410-4(46) 223
ROUTE I-410
ST. CHARLES PARISH

FRANK B. CHACHERE
REG. LAND SURVEYOR

JAMES A. WHEAT
REG. LAND SURVEYOR

DATE [illegible]
SCALE 1" = 200'
DRAWN BY [illegible]
COMPUTER [illegible]
SHEET 3B

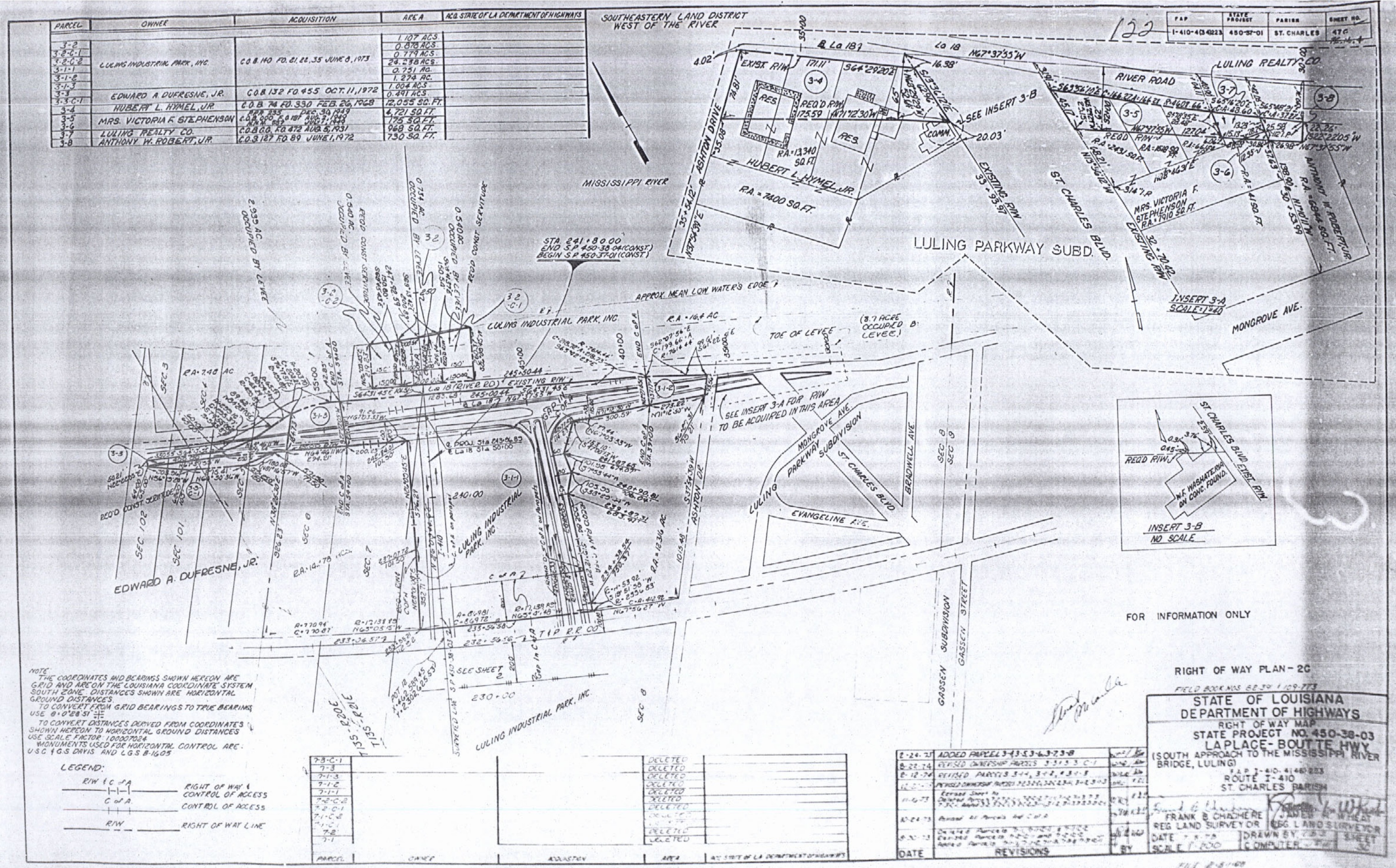
FILE 2-81-68

AS BUILT

PARCEL	OWNER	ACQUISITION	AREA	ACQ. STATE OF LA DEPARTMENT OF HIGHWAYS
3-2	LULING INDUSTRIAL PARK, INC.	C.O.B. 140 FO. 21, 22, 35 JUNE 8, 1973	1.107 ACS.	
3-2-C-1			0.878 ACS.	
3-2-C-2			0.779 ACS.	
3-1-1			24.238 ACS.	
3-1-2			0.751 AC.	
3-1-3			1.274 AC.	
3-3	EDWARD A. DUFRESNE, JR.	C.O.B. 132 FO. 455 OCT. 11, 1972	1.004 ACS.	
3-3-C-1			0.491 ACS.	
3-4	HUBERT L. HYMEL, JR.	C.O.B. 74 FO. 330 FEB. 26, 1968	12,055 SQ. FT.	
3-5	MRS. VICTORIA F. STEPHENSON	R.R.R. 235 DEC. 30, 1949	6,721 SQ. FT.	
3-6		C.O.B. 200 FO. 181 AUG. 7, 1973	175 SQ. FT.	
3-7	LULING REALTY CO.	C.O.B. 60 FO. 472 AUG. 5, 1931	968 SQ. FT.	
3-8	ANTHONY W. ROBERT, JR.	C.O.B. 127 FO. 89 JUNE 1, 1972	730 SQ. FT.	

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(3)223	450-37-01	ST. CHARLES	47G

122



NOTE:
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TO CONVERT FROM GRID BEARINGS TO TRUE BEARINGS USE 0°0'28.51" ⊕
TO CONVERT DISTANCES DERIVED FROM COORDINATES SHOWN HEREON TO HORIZONTAL GROUND DISTANCES USE SCALE FACTOR: 1.00007024
MONUMENTS USED FOR HORIZONTAL CONTROL ARE: U.S.C. & G.S. DAVIS AND L.G.S. B-1605

LEGEND:

R/W & C of A	RIGHT OF WAY & CONTROL OF ACCESS
C of A	CONTROL OF ACCESS
R/W	RIGHT OF WAY LINE

PARCEL	OWNER	ACQUISITION	AREA	ACQ. STATE OF LA DEPARTMENT OF HIGHWAYS
7-3-C-1			DELETED	
7-3			DELETED	
7-1-3			DELETED	
7-1-2			DELETED	
7-1-1			DELETED	
7-2-C-2			DELETED	
7-2-C-1			DELETED	
7-1-C-2			DELETED	
7-1-C-1			DELETED	
7-2			DELETED	
7-1			DELETED	

DATE	REVISIONS	BY
2-24-73	ADDED PARCEL 3-4 3-5 3-6 3-7 3-8	
8-22-74	REVISED OWNERSHIP PARCELS 3-3 1-3 3-C-1	
8-12-74	REVISED PARCELS 3-4, 3-2, 1-3, 3-3	
[illegible]	REVISED OWNERSHIP PARCELS 3-2, 3-2-C-2, 3-1-3, 3-2-C-1, 3-3	
11-6-73	Revised Sheet No. Deleted Parcels [illegible] P.R.L. Added [illegible]	
10-24-73	Revised All Parcels Add C of A	
8-30-73	Deleted Parcels [illegible] Added Parcels [illegible] Added Parcels [illegible]	

RIGHT OF WAY PLAN - 2C

FIELD BOOK NOS. BE 391 & 109-773

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 450-38-03
LA PLACE - BOUTTE HWY
(SOUTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
F.A.P. I-410-4(46)223
ROUTE I-410
ST. CHARLES PARISH

FRANK B. CHACHERE
REG. LAND SURVEYOR

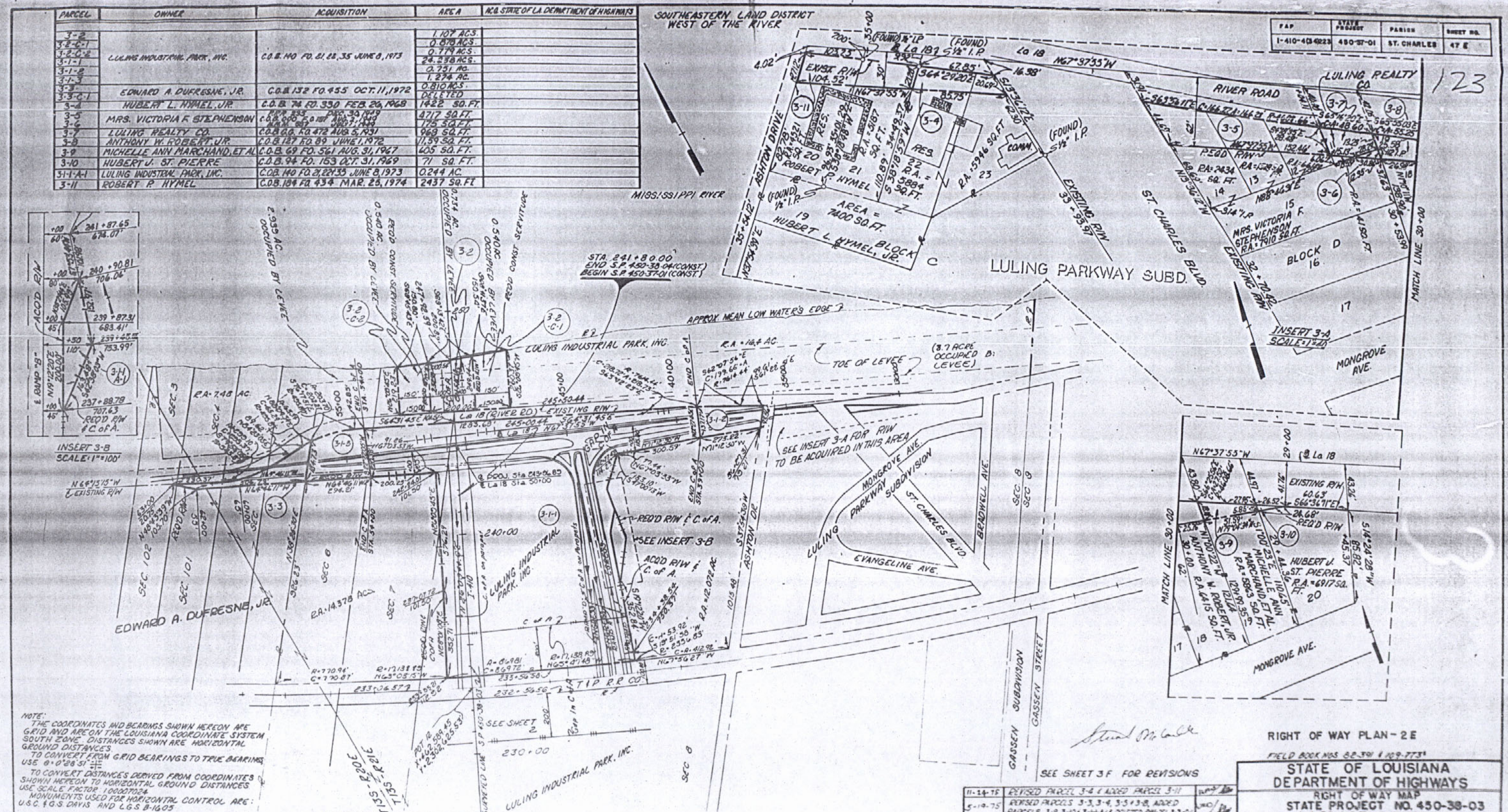
JAMES H. WHEAT
REG. LAND SURVEYOR

DATE: [illegible]
SCALE: 1" = 200'
DRAWN BY: [illegible]
COMPUTER: [illegible]
SHEET 3C

FILE 2-8-1-109

AS BUILT

PARCEL	OWNER	ACQUISITION	AREA	AC. STATE OF LA. DEPARTMENT OF HIGHWAYS
3-2	LULING INDUSTRIAL PARK, INC.	C.O.B. 140 FO. 21, 22, 35 JUNE 8, 1973	1.107 ACS.	
3-2-C-1			0.813 ACS.	
3-2-C-2			0.779 ACS.	
3-1-1			24.238 ACS.	
3-1-2			0.731 AC.	
3-1-3			1.274 AC.	
3-3	EDWARD A. DUFRESNE, JR.	C.O.B. 132 FO. 455 OCT. 11, 1972	0.810 ACS.	
3-3-C-1			DELETED	
3-4	HUBERT L. HYMEL, JR.	C.O.B. 74 FO. 330 FEB. 26, 1968	1422 SQ. FT.	
3-5	MRS. VICTORIA F. STEPHENSON	R/W 233 DEC. 30, 1949	4717 SQ. FT.	
3-6		C.O.B. 200 F.O. 187 AUG. 3, 1949 R/W 237 DEC. 30, 1949	175 SQ. FT.	
3-7	LULING REALTY CO.	C.O.B. C.O.B. FO. 472 AUG. 5, 1931	969 SQ. FT.	
3-8	ANTHONY W. ROBERT, JR.	C.O.B. 127 FO. 89 JUNE 1, 1972	11.59 SQ. FT.	
3-9	MICHELLE ANN MARCHAND, ET AL	C.O.B. 69 FO. 561 AUG. 31, 1967	605 SQ. FT.	
3-10	HUBERT J. ST. PIERRE	C.O.B. 94 FO. 153 OCT. 31, 1969	71 SQ. FT.	
3-1-1-A-1	LULING INDUSTRIAL PARK, INC.	C.O.B. 140 FO. 21, 22, 35 JUNE 8, 1973	0.244 AC.	
3-11	ROBERT P. HYMEL	C.O.B. 184 FO. 434 MAR. 25, 1974	2437 SQ. FT.	



PARCEL	OWNER	ACQUISITION	AREA	AC. STATE OF LA. DEPARTMENT OF HIGHWAYS
7-3-C-1			DELETED	
7-3			DELETED	
7-1-3			DELETED	
7-1-2			DELETED	
7-1-1			DELETED	
7-2-C-2			DELETED	
7-2-C-1			DELETED	
7-1-C-2			DELETED	
7-1-C-1			DELETED	
7-2			DELETED	
7-1			DELETED	

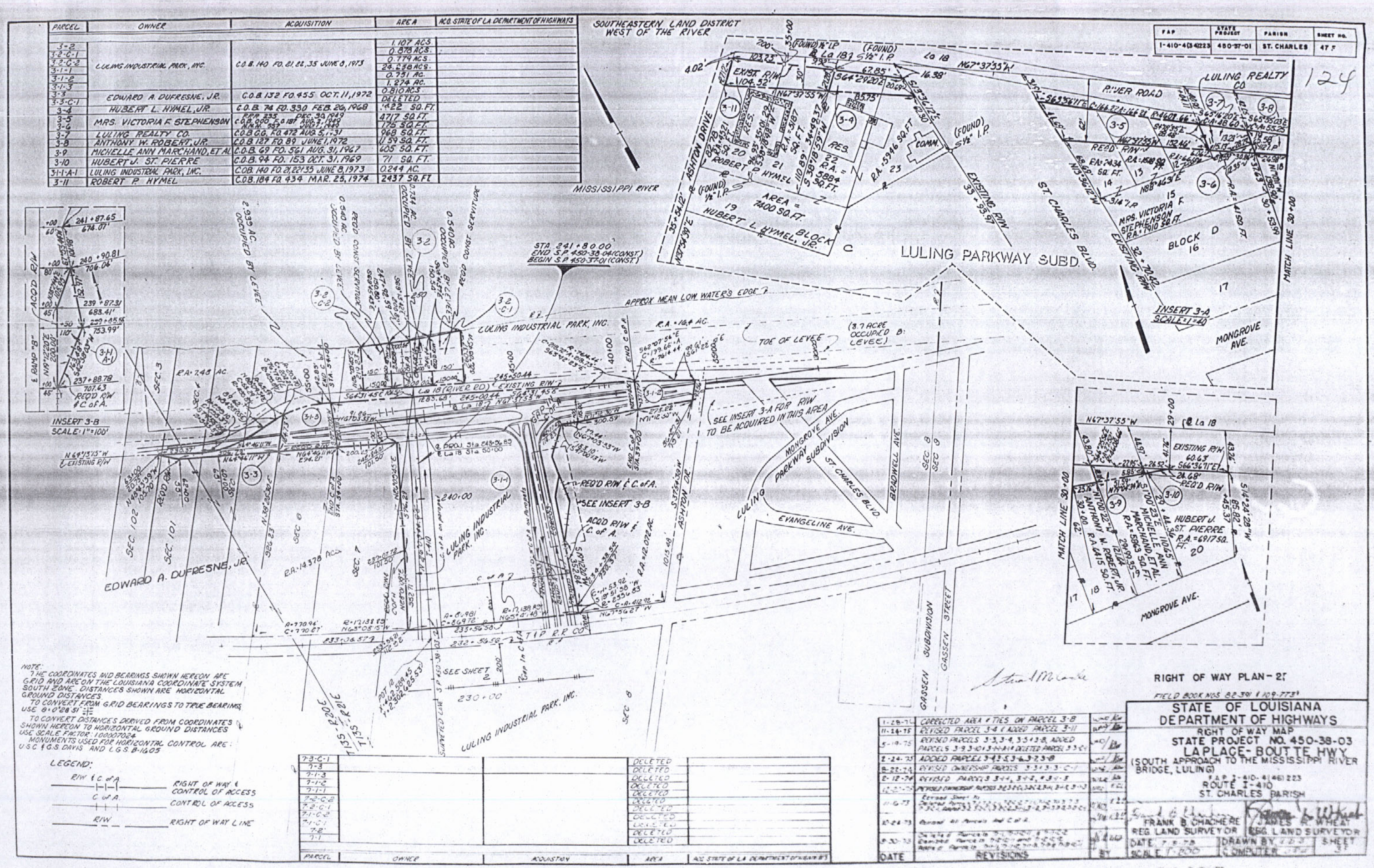
DATE	REVISIONS	BY
11-14-75	REVISED PARCEL 3-4 & ADDED PARCEL 3-11	
5-19-75	REVISED PARCELS 3-3, 3-4, 3-5 & 3-8, ADDED PARCELS 3-9, 3-10 & 3-11, DELETED PARCEL 3-3-C-1	
2-24-75	ADDED PARCELS 3-4, 3-5, 3-6, 3-7, 3-8	
8-22-74	REVISED OWNERSHIP PARCELS 3-3 & 3-3-C-1	
2-12-74	REVISED PARCELS 3-1-1, 3-1-2, & 3-1-3	
12-20-73	REVISED OWNERSHIP PARCELS 3-2-C-1 & C-2, 3-1-2, & 3-1-3	
11-6-73	Revised Sheet to Delete Parcels [illegible]	
10-24-73	Revised all Parcels and C of A	
8-30-73	[illegible]	

AS BUILT

PARCEL	OWNER	ACQUISITION	AREA	ACQ. STATE OF LA DEPARTMENT OF HIGHWAYS
3-2	LULING INDUSTRIAL PARK, INC.	C.O.B. 140 FO. 21, 22, 35 JUNE 8, 1973	1.107 ACS.	
3-2-C-1			0.878 ACS.	
3-2-C-2			0.779 ACS.	
3-1-1			24.238 ACS.	
3-1-2			0.751 AC.	
3-1-3			1.274 AC.	
3-3	EDWARD A. DUFRESNE, JR.	C.O.B. 132 FO. 455 OCT. 11, 1972	0.810 ACS.	
3-3-C-1			DELETED	
3-4	HUBERT L. HYMEL, JR.	C.O.B. 74 FO. 330 FEB. 26, 1968	1.422 SQ. FT.	
3-5	MRS. VICTORIA F. STEPHENSON	RPR 235 DEC. 30, 1949	4717 SQ. FT.	
3-6		C.O.B. 000 FO. 187 AUG. 7, 1949 R/W 852 AUG. 7, 1949	175 SQ. FT.	
3-7	LULING REALTY CO.	C.O.B. 66, FO. 472 AUG. 5, 1-31	968 SQ. FT.	
3-8	ANTHONY W. ROBERT, JR.	C.O.B. 127 FO. 89 JUNE 1, 1972	1.59 SQ. FT.	
3-9	MICHELLE ANN MARCHAND, ET AL	C.O.B. 69 FO. 561 AUG. 31, 1967	605 SQ. FT.	
3-10	HUBERT J. ST. PIERRE	C.O.B. 94 FO. 153 OCT. 31, 1969	71 SQ. FT.	
3-1-1-A-1	LULING INDUSTRIAL PARK, INC.	C.O.B. 140 FO. 21, 22 135 JUNE 8, 1973	0.244 AC.	
3-11	ROBERT P. HYMEL	C.O.B. 184 FO. 434 MAR. 28, 1974	2437 SQ. FT.	

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(3)223	450-37-01	ST. CHARLES	47

124



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TO CONVERT FROM GRID BEARINGS TO TRUE BEARINGS, USE θ + 0°28'51"
TO CONVERT DISTANCES DERIVED FROM COORDINATES SHOWN HEREON TO HORIZONTAL GROUND DISTANCES USE SCALE FACTOR: 1.00007024.
MONUMENTS USED FOR HORIZONTAL CONTROL ARE: U.S.C. & G.S. DAVIS AND L.G.S. B-1605

LEGEND:

R/W & C. of A.	RIGHT OF WAY & CONTROL OF ACCESS
C. of A.	CONTROL OF ACCESS
R/W	RIGHT OF WAY LINE

PARCEL	OWNER	ACQUISITION	AREA	ACQ. STATE OF LA DEPARTMENT OF HIGHWAYS
7-3-C-1			DELETED	
7-3			DELETED	
7-1-3			DELETED	
7-1-2			DELETED	
7-1-1			DELETED	
7-2-C-2			DELETED	
7-2-C-1			DELETED	
7-1-C-2			DELETED	
7-1-C-1			DELETED	
7-2			DELETED	
7-1			DELETED	

DATE	REVISIONS	BY
1-28-74	CORRECTED AREA & TIES ON PARCEL 3-8	
11-24-75	REVISED PARCEL 3-4 & ADDED PARCEL 3-11	
5-19-75	REVISED PARCELS 3-3, 3-4, 3-5 & 3-8, ADDED PARCELS 3-9, 3-10, 3-11, 3-1-A-1 & DELETED PARCEL 3-3-C-1	
2-24-75	ADDED PARCEL 3-1-3, 3-1-2, 3-2, 3-2-C-2	
8-22-74	REVISED OWNERSHIP PARCELS 3-3 & 3-3-C-1	
2-12-74	REVISED PARCELS 3-1-1, 3-1-2, & 3-1-3	
12-21-73	REVISED OWNERSHIP PARCELS 3-2, 3-1-1, 3-1-2, 3-1-3	
11-6-73	Revised Sheet to Reflect Parcels 7-1-1, 7-1-2, 7-1-3, 7-2, 7-2-C-1, 7-2-C-2, 7-3, 7-3-C-1	
10-24-73	Revised all Parcels and C of A	
8-30-73	Changed Parcels 7-1-1, 7-1-2, & 7-1-3 Combined Parcels 7-2-C-1 and 7-2-C-2 Added Parcels 7-3 and 7-3-C-1	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 450-38-03
LAPLACE - BOUTTE HWY.
(SOUTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
F.A.P. I-410-4(46)223
ROUTE I-410
ST. CHARLES PARISH

FRANK B. CHACHERE
REG. LAND SURVEYOR

JAMES R. WHEAT
REG. LAND SURVEYOR

DATE 7-6-73 | DRAWN BY | SHEET
SCALE 1"=100' | COMPUTER

RIGHT OF WAY PLAN - 2

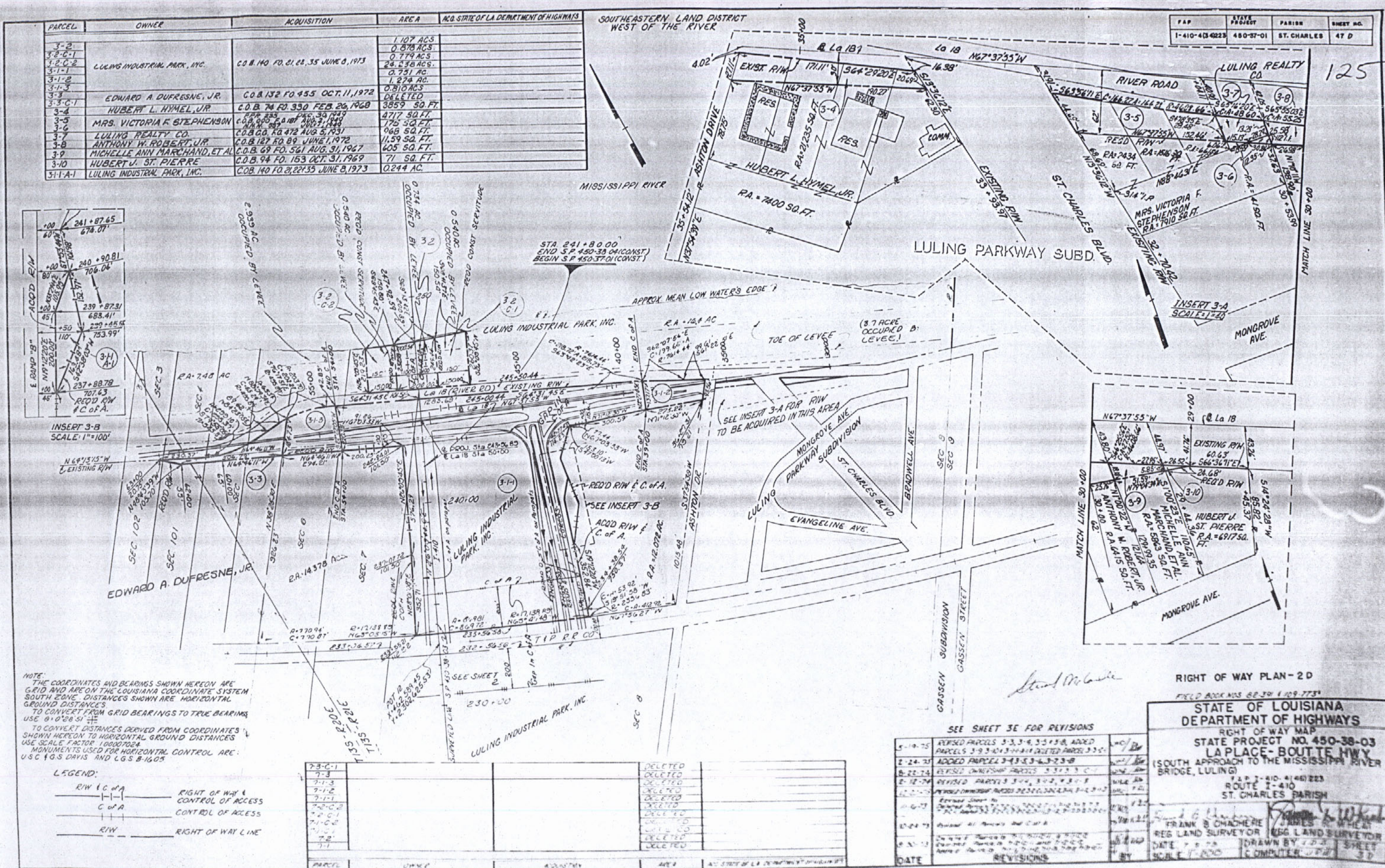
FIELD BOOK NOS. 82-391 & 109-773

AS BUILT

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(34223)	450-37-01	ST. CHARLES	47 D

125

PARCEL	OWNER	ACQUISITION	AREA	A.C.O. STATE OF LA. DEPARTMENT OF HIGHWAYS
3-2	LULING INDUSTRIAL PARK, INC.	C.O.B. 140 F.O. 21, 22, 35 JUNE 8, 1973	1.107 ACS.	
3-2-C-1			0.878 ACS.	
3-2-C-2			0.779 ACS.	
3-1-1			24.238 ACS.	
3-1-2			0.731 AC.	
3-1-3			1.274 AC.	
3-3	EDWARD A. DUFRESNE, JR.	C.O.B. 132 F.O. 455 OCT. 11, 1972	0.810 ACS.	
3-3-C-1			DELETED	
3-4	HUBERT L. HYMEL, JR.	C.O.B. 74 F.O. 350 FEB. 26, 1968	3859 SQ. FT.	
3-5	MRS. VICTORIA F. STEPHENSON	F.P.R. 235 DEC. 30, 1949; C.O.B. 100 P.O. 187 AUG. 31, 1949; M.M.M. 889 NOV. 7, 1949	4717 SQ. FT.	
3-6			175 SQ. FT.	
3-7	LULING REALTY CO.	C.O.B. 00, F.O. 472 AUG. 5, 1931	068 SQ. FT.	
3-8	ANTHONY W. ROBERT, JR.	C.O.B. 127 F.O. 89 JUNE 1, 1972	11.59 SQ. FT.	
3-9	MICHELLE ANN MARCHAND, ET AL	C.O.B. 69 F.O. 561 AUG. 31, 1967	605 SQ. FT.	
3-10	HUBERT J. ST. PIERRE	C.O.B. 94 F.O. 153 OCT. 31, 1969	71 SQ. FT.	
3-1-1-A-1	LULING INDUSTRIAL PARK, INC.	C.O.B. 140 F.O. 21, 22, 35 JUNE 8, 1973	0.244 AC.	



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TO CONVERT FROM GRID BEARINGS TO TRUE BEARINGS USE 0°0'28.51" ±
TO CONVERT DISTANCES DERIVED FROM COORDINATES SHOWN HEREON TO HORIZONTAL GROUND DISTANCES USE SCALE FACTOR 1.00007024
MONUMENTS USED FOR HORIZONTAL CONTROL ARE: USC & GS DAVIS AND LGS 8-1605

LEGEND:

R/W & C. of A.	RIGHT OF WAY & CONTROL OF ACCESS
C. of A.	CONTROL OF ACCESS
R/W	RIGHT OF WAY LINE

PARCEL	OWNER	ACQUISITION	AREA	A.C. STATE OF LA. DEPARTMENT OF HIGHWAYS
7-3-C-1			DELETED	
7-3			DELETED	
7-1-3			DELETED	
7-1-2			DELETED	
7-1-1			DELETED	
7-2-C-2			DELETED	
7-2-C-1			DELETED	
7-1-C-2			DELETED	
7-1-C-1			DELETED	
7-2			DELETED	
7-1			DELETED	

SEE SHEET 3E FOR REVISIONS

DATE	REVISIONS	BY
5-19-75	REVISED PARCELS 3-3, 3-4, 3-5 & 3-8, ADDED PARCELS 3-9, 3-10 & 3-11, DELETED PARCEL 3-3-C-1	
2-24-75	ADDED PARCEL 3-4, 3-5, 3-6, 3-7 & 3-8	
8-22-74	REVISED OWNERSHIP PARCELS 3-3, 3-3-C-1	
2-12-74	REVISED PARCELS 3-1-4, 3-1-2, & 3-1-3	
[illegible]	REVISED OWNERSHIP PARCELS 3-2, 3-2-C-1, 3-2-C-2, 3-1-1, 3-1-2, 3-1-3	
[illegible]	REVISED SHEET 1D	
10-24-73	REVISED ALL PARCELS AND C.O.A.	
[illegible]	REVISED PARCELS 7-1, 7-1-1, & 7-1-2; REVISED PARCELS 7-2, 7-2-C-1, 7-2-C-2, 7-3, 7-3-C-1; ADDED PARCELS 7-1-3, 7-2-C-2, 7-3-C-1; DELETED PARCEL 7-1-C-1	

RIGHT OF WAY PLAN - 2D

FIELD BOOK NOS. 82-391 & 109-773

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
RIGHT OF WAY MAP
STATE PROJECT NO. 450-38-03
LA PLACE - BOUTTE HWY.
(SOUTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
F.A.P. I-410-4(46)223
ROUTE I-410
ST. CHARLES PARISH

FRANK B. CHACHERE
REG. LAND SURVEYOR
DATE [illegible]
SCALE 1"=100'

JAMES R. WHEAT
REG. LAND SURVEYOR
DRAWN BY [illegible]
COMPUTED [illegible]

SHEET 3D

AS BUILT

STATE PROJECT	PARISH	SHEET NO.
[illegible]	[illegible]	20A

ADVANCE ROAD CONSTRUCTION SIGN

The Advance Road Construction sign is intended for use in advance of road construction projects and generally for warning of possible obstructions or restrictions due to road work. It carries the legend ROAD CONSTRUCTION followed by 1500 FT., 1000 FT., 500 FT., or AHEAD. Following its direction at 1,500 feet, it may be erected sign at 1,000 feet and at 500 feet, or the more specific messages of other Construction Approach Warning signs may be used as may be appropriate.

ADVANCE ROAD CLOSED SIGN

The Advance Road Closed sign is intended for use in advance of a point at which a section of road is closed to all traffic or to all but local traffic. It carries the legend ROAD CLOSED followed by 1500 FT., 1000 FT., 500 FT. or AHEAD. It will normally be used in conjunction with other Construction Approach Warning signs, and should be placed in advance of provisions for a detour wherever provided in all other instances. In a few cases it may be required that the last approaching intersection be closed to provide the local traffic only access.

ADVANCE ONE LANE ROAD SIGN

The Advance One Lane Road sign is intended for use only in advance of a point where traffic is restricted to one lane of a single lane. It carries the legend ONE LANE ROAD, followed by 1500 FT., 1000 FT., 500 FT. or AHEAD. It may be used in repetition or in series with other Construction Approach Warning signs.

ADVANCE LANE CLOSED SIGN

The Advance Lane Closed sign is intended for use where traffic is in advance of a point where one lane is closed to traffic. It carries the legend LEFT LANE CLOSED followed by 1500 FT., 1000 FT., 500 FT. or AHEAD. This sign may be used in repetition or in series with other Construction Approach Warning signs.

ADVANCE FLAGMAN SIGN

The Advance Flagman sign shall be used in advance of any point at which a flagman has been stationed to control traffic through a construction or maintenance project. It carries the legend FLAGMAN, followed by 1500 FT., 1000 FT., 500 FT., or AHEAD. It will normally be preceded by other Construction Approach Warning signs, but may be repeated at any or all of the indicated distances.

LOCAL TRAFFIC ONLY SIGN

The Local Traffic Only sign shall be used where through traffic must detour to avoid a closed section of the road, construction or maintenance job, but where the highway is open for traffic up to the point of closure. It carries the legend ROAD CLOSED 10 MILES AHEAD - LOCAL TRAFFIC ONLY. It should be erected at the right of the roadway on a portable barricade in the center of the roadway if permit with permits. Normally it will be accompanied by a Detour Arrow sign indicating the proper detour for through traffic. The words THROUGH ONLY may be substituted for LOCAL TRAFFIC ONLY where applicable. Where the sign faces through traffic it shall be preceded by an Advance Road Closed sign with the secondary legend AHEAD. If applicable, an Advance Detour sign.

DETOUR ARROW SIGN

The Detour Arrow sign is used at points where a detour has been established. Normally it will be used in conjunction with a Road Closed sign or the Local Traffic Only sign.

END ROAD WORK SIGN

At points where work operations such as Men Working, Road Work Ahead, etc. are in progress, an END ROAD WORK sign should be used in a manner similar to the End Construction sign, within the work zone. Upon completion of the operations, or notice such as at a railroad crossing, where the work will usually be done overnight.

END CONSTRUCTION SIGN

The END CONSTRUCTION sign shall be erected approximately 500 feet beyond the end of a major construction or maintenance job to indicate the limit of any restrictions or special precautions that have been imposed. Unless it will suffice to place this sign on the back of the warning sign set up facing the opposite direction of traffic or on the back of a stop line sign, where appropriate, the legend END ROADWORK may be used.

LENGTH OF CONSTRUCTION SIGN

The Length of Construction guide sign shall be erected at the limit of any major road construction or maintenance job of more than 2 miles in extent, where traffic is maintained through the job.

It carries the legend ROAD CONSTRUCTION NEXT (5) MILES. It can be effectively mounted on a wing barricade.

ONE WAY SIGN

The ONE WAY sign shall be used to indicate streets or roadways upon which vehicular traffic is allowed to travel in one direction only. The sign shall be either (a) a white arrow on a black horizontal rectangle of standard size, minimum size of 36 inches by 12 inches, with the words ONE WAY centered in the arrow, or (b) a vertical rectangle of standard size, and minimum size 36 inches by 24 inches, with black lettering and arrow on a white background. The vertical rectangle is necessary where limited space is available. Both designs must be made in rights and lefts.

SPEED LIMITS

SPEED LIMITS have been approved for sections of highways under construction. These limits have been set at 45 mph throughout the entire zone of construction with a reduction to 40 mph through and 35 mph within each of each portion of points within the limits of the project where construction activity requires such reduction in the discretion of the project engineer. Regulatory 45 MPH speed limit signs shall be placed at intervals throughout the section of the project where work is being done at the time. When the work area moves out of the immediate section, the regulatory signs shall be covered or removed.

THE SPEED ZONE AHEAD sign shall be erected in advance of each authorized speed zone within a construction area.

DO NOT PASS SIGN

The DO NOT PASS sign is intended for use where a roadway, normally used for one-way traffic, is temporarily being used for traffic in both directions, to remind drivers not to pass. It shall be installed on both sides of the roadway within such a section, at intervals of 1000-1500 feet for the entire length of the section.

WEIGHT LIMIT SIGN

The Weight Limit sign shows the maximum gross weight of a vehicle that can safely be permitted on a road surface or bridge. Weight restrictions should not be imposed without the approval of the authority having jurisdiction over the highway, and a reasonable effort should be made to provide temporary facilities capable of carrying the traffic normally using the highway.

ROAD MACHINERY AHEAD SIGN

The ROAD MACHINERY AHEAD sign shall be used in areas where heavy road equipment, such as a grader, is operating in or closely adjacent to the roadway.

FRESH OIL SIGN

The FRESH OIL or FRESH TAR sign shall be used in areas notorious that resurfacing operations have rendered the surface of the pavement temporarily hazardous, and that objectionable splashing on vehicles may occur.

SHOULDER WORK AHEAD SIGN

The SHOULDER WORK AHEAD sign is intended for use in advance of minor maintenance or minor reconstruction operations in the shoulder, where the travelled way is not obstructed.

SURVEY PARTY SIGN

SURVEY PARTY sign is intended for use in advance of a point where a surveying party is working in or closely adjacent to the roadway.

ROAD WORK AHEAD SIGN

The ROAD WORK AHEAD sign is intended for use in advance of maintenance or minor reconstruction operations in the roadway.

MEN WORKING SIGN

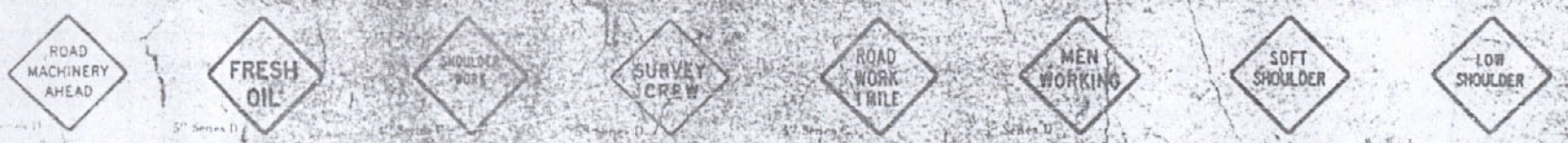
The MEN WORKING sign shall be used in conjunction with minor maintenance and public utility operations for the protection of men working on or near the roadway.

SOFT SHOULDERS SIGN

The SOFT SHOULDERS and/or LOW SHOULDERS sign shall be used when in the opinion of the project engineer the shoulder of the highway under construction becomes dangerous to traffic.

TWO WAY TRAFFIC SIGN

The TWO WAY TRAFFIC sign is intended for use where a roadway designed or normally used for one-way traffic is temporarily being used for traffic in both directions, or under any other circumstances it may be necessary to convey notice that they are traveling on a two-way roadway. The sign should be placed at intervals of about one-half mile, but not exceeding one mile. Special care must be taken to place it at or just beyond any important access points.



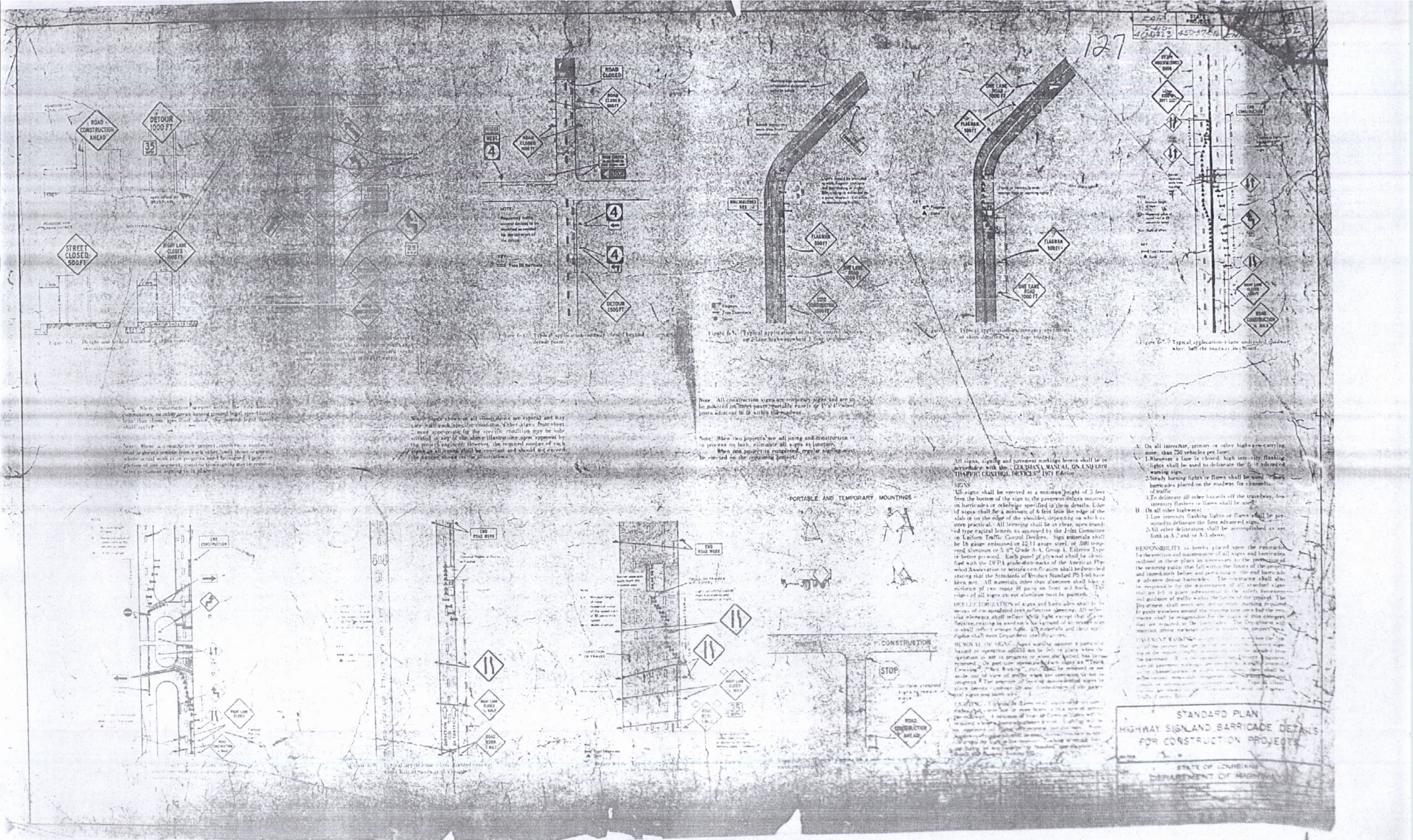
PILOT CAR FOLLOW ME

UNDER CONSTRUCTION

STANDARD PLAN
HIGHWAY SIGN AND BARRICADE DETAILS
FOR CONSTRUCTION PROJECTS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

AS BUILT


ROAD CONSTRUCTION AHEAD
DETOUR 1000 FT
35 MPH
STREET CLOSED 500 FT
RIGHT LANE CLOSED 1000 FT
ROAD CLOSED
ROAD CLOSED 500 FT
ROAD CLOSED 1000 FT
DETOUR 1500 FT
FLAGMAN 500 FT
ONE LANE ROAD 1000 FT
ONE LANE ROAD 500 FT
END CONSTRUCTION
END ROAD WORK
RIGHT LANE CLOSED 1 MILE
ROAD CONSTRUCTION 1 MILE
STOP
PORTABLE AND TEMPORARY MOUNTINGS
STANDARD PLAN
HIGHWAY SIGNS AND BARRICADE DETAILS
FOR CONSTRUCTION PROJECTS
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

AS BUILT

STATE PROJECT #			

1/78

TYPE I BARRICADE

TYPE II BARRICADE

TYPE III BARRICADE

DESIGN OF BARRICADES

APPLICATION OF BARRICADES

BARRICADE CLOSING A ROAD

STANDARD

FENCE

WARNING BARRICADE

Protecting line or cut for widening operations

WIRE BARRICADES

NOTE: Confine wires as other wires shown on details.

ELEVATION

STAND

Figure 15

4" x Variable

Yellow white-yellow (1) stripes reflectorized with non-specialized reflective sheeting.

NOTE: Orange and white striping may be used as an alternate.

Black strips or black post

TRAVEL WAY

TRENCH

To be used on all trenching operations adjacent to travelway at 200' intervals on tangent and 100' maximum intervals on curves. "Drive in new concrete or in trench along side of existing slab.

Figure 16

ALIGNMENT DELINEATOR

ALIGNMENT DELINEATOR

The ALIGNMENT DELINEATOR shall be used to protect all trenching operations adjacent to travelways whether on the shoulder of the roadway or in the median, or in any other area to protect trenching operations and to keep drivers directly into the trench. The delineator should be placed as close to the trench as possible and as close to the roadway as practicable at maximum intervals of 200' on tangent sections and 100' on curves, the interval to be reduced as desired or necessary on 200' tangent sections of roadway to keep all traffic clearly delineated.

The 8" x 8" x 8' post should be set in place in advance of the trenching operation.

Figure 17

2.5" MACHINE BOLTS AND WASHERS

4" x 4" x 16" BLOCK

MACHINE BOLTS

STAND

STOP

Red background
White borders
and legend
To be made of
.08 aluminum
Or .04 tempered
aluminum

SLOW

15" X 15"

Yellow orange fluorescent background
Black legend
To be made of .08 aluminum
Or .04 tempered aluminum

DETAILS OF HAND SIGN

PADDLE

To stop traffic

To slow traffic

To alert traffic

BARRICADES: All barricade rails on TYPE I and TYPE II barricades shall be constructed of either, clear, sound S-4-S dimensioned lumber or of 3/8" Grade A-C, Group 1 Exterior Type or better plywood. Each panel of plywood used shall be identified with the DFPA grade-trademark of the American Association or written certification shall be furnished stating that the Standards of Product Standard PS 1-66 have been met.

All other barricade components shall be constructed of sound, sound S-4-S dimensioned lumber, fabricated as shown in these details. They shall be of first class workmanship and shall be given a minimum of two coats of an approved paint. TYPE II barricades used as portable flasher supports may be fabricated of either wood or metal. Diagonal striping on all barricade rails shall conform in dimension, direction of slope and angle to the details shown, and shall be refloctorized with reconstituted lens reflective sheeting. Black areas are not reflectorized. Both sides of all signs.

PAINT used shall meet the approved specifications of the Department as to both color and composition.

USUAL STRIPING

STRIPING FOR SKEWED PANEL

Reflective stripes shall be fabricated with non-specialized lens reflective sheeting.

Stripes should slope in opposite direction on the two panels.

All panels. Black areas are not reflectorized.

DETAILS OF STRIPING

FLAGMAN using a hand signal shall be used during construction operations on roadways that are reduced to a single lane, where moving equipment enters, crosses or leaves the travelway, and where any of the signs or any other hazardous operation requiring the adjustment of traffic. Hand signal shall be consistent and illuminated. For night operations, all flagmen shall be equipped with the proper red light. Flagmen have a legal responsibility for the welfare of motorists, both alert and intelligent and courteous, and should be used and paid should be responsible for the following functions:

(a) Stand to one side of traffic, out of the advance of the operation or [illegible]

(b) Keep a group of workmen to [illegible] traffic to permit [illegible] traffic with the least [illegible] traffic.

(c) To stop traffic [illegible] horizontally in the direction [illegible] the part of the coming vehicle with the [illegible] traffic.

(d) To stop traffic at night, use a bright red light [illegible] traffic.

(e) To slow traffic, use a bright red light [illegible] traffic.

(f) To alert traffic, use a bright red light [illegible] traffic.

STANDARD PLAN
HIGHWAY SIGN AND BARRICADE DETAILS
FOR CONSTRUCTION PROJECT

STATE OF LOUISIANA
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