F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	1

STATE OF LOUISIANA

DEPARTMENT OF HIGHWAYS

PLANS OF PROPOSED

STATE HIGHWAY

F.A.P. I-310-4(35)223

STATE PROJECT 450-37-02

MISSISSIPPI RIVER BRIDGE (LULING)
MAIN RIVER CROSSING - SUPERSTRUCTURE

ST. CHARLES PARISH

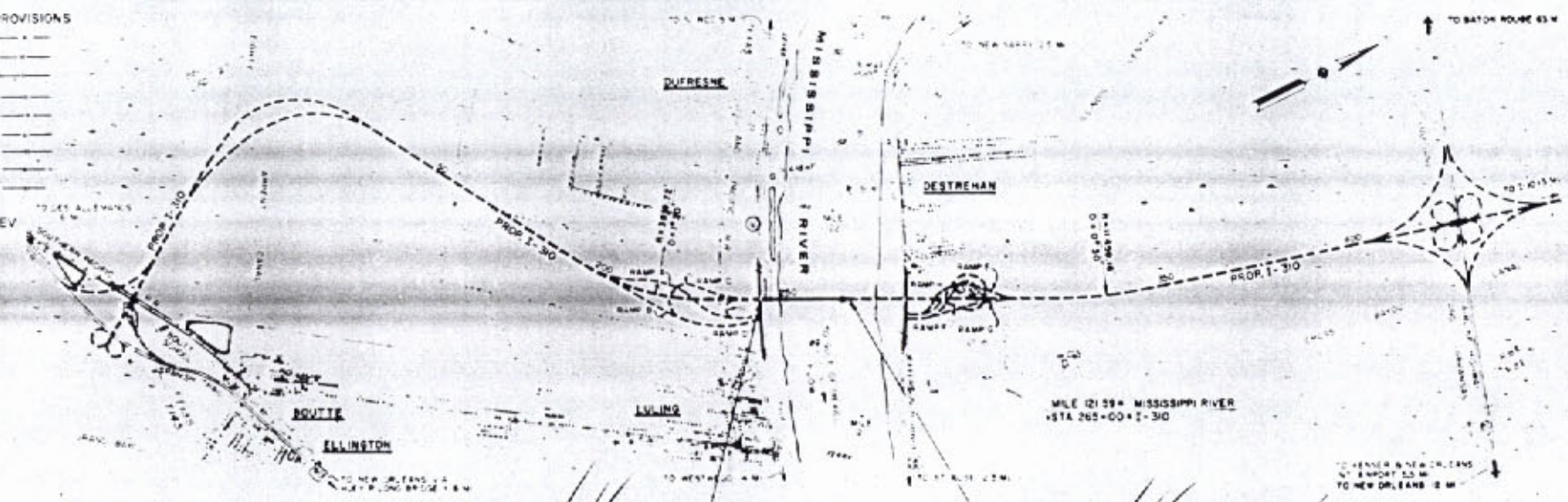
ROUTE NO. I-310

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES
3	SUMMARY OF BRIDGE QUANTITIES
4	SUMMARY OF ESTIMATED QUANTITIES
5-7	GENERAL PLAN & ELEVATION
8-16	GEOMETRIC LAYOUTS AND STRESS SHEETS
17	TOWER ELEVATIONS & SECTIONS
18-19	BASE OF TOWER - TIER I
20-32	TOWER TIERS 2-26
33-38	SADDLES
39	TOWERS-LOWER STRUTS
40	TOWERS-UPPER STRUTS
41-45	TYPICAL DECK SECTIONS
46-51	KEY FRAMING PLAN
52	DETAIL PLAN - SPAN 1M
53-89	CROSS GIRDERS AND CABLE ANCHORAGES
90	ORTHOTROPIC DECK DETAILS
91-92	BOX GIRDER DETAILS
93-94	DIAPHRAGM DETAILS
95	SPAN 3M-FAIRING PLATE DETAILS
96-97	PARAPET & MEDIAN BARRIER DETAILS
98-104	BEARING DETAILS
105-108	EXPANSION JOINTS E1 & E2
109	INSTRUMENTATION CONTROL HOUSE
110-111	ACCESS STAIRWAY DETAILS
112	MISCELLANEOUS DETAILS
113-115	APPROACH DECK SLABS AND CHEEKWALLS AT PIER 1S & 1N
116	TOP OF WEARING SURFACE ELEVATIONS
117-118	ERECTION SCHEME
E1&E2	GENERAL PLAN & ELEVATION, ELECTRICAL PROVISIONS
E2-E6	WIRING DIAGRAMS,
E7-E10	CONDUIT LAYOUT,
E11-E13	TABULATION OF CONDUIT & WIRE,
E14	DETAILS INCOMING SERVICE,
E15-E19	TOWER DETAILS,
E20-E28	DETAILS,
E29-E30	JUNCTION BOX DETAILS,
E30-E32	ELEC. EQUIP. BOX DETAILS,
E33-E34	QUANTITIES,
154	BAR SUPPORTS STANDARD SABS 100
155-157	SIGN & BARRICADE DETAILS STANDARD RS 24 REV
158-184	INFORMATIONAL SHEETS

TOTAL SHEETS IN COMPLETE SET OF PLANS = 185

LIMITS OF STATE PROJECT 450-37-02



STA. 241+80.00
END STATE PROJECT 450-38-04
END F.A.P. I-310-4(29)222
BEGIN STATE PROJECT 450-37-02
BEGIN F.A.P. I-310-4(35)223

STA. 269+25.00
END STATE PROJECT 450-37-02
END F.A.P. I-310-4(35)223
BEGIN STATE PROJECT 450-36-04
BEGIN F.A.P. I-310-4(50)221

SCHEDULE OF REVISIONS

DATE	REVISION	DATE	RECOMMENDED	DATE	APPROVED
10 20 77	[illegible]		[illegible]		[illegible]

NOTE

STANDARD SPECIFICATIONS ADOPTED BY THE DEPARTMENT OF TRANSPORTATION & DEVELOPMENT, OFFICE OF HIGHWAYS, 1977 EDITION, 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: STEEL STRUCTURE
~~ELEVATED STEEL SUPERSTRUCTURE~~ GENERAL CONSTRUCTION

DELIVERY POINTS

TRAFFIC DATA

1998 ADT 23,000
D - 55 %
K - 9 %
T - 11 %
DESIGN SPEED 70 MPH

DATUM USED: MEAN SEA LEVEL

MAG VAR

BEARINGS ARE

TRANSIT BOOKS 102-305, 102-306

LEVEL BOOKS 102-170, 102-264, 102-265, 95-563, 96-567, 97-760

SCALES PLAN 1" = 50'
PROFILE HOR. 1" = 50'
VERT. 1" = 50'

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 TO 269+25	0.00	2745	0.00	2745	~~0.520~~ 0.519	0.00	0.00
TOTAL LENGTH OF BRIDGES				2745	~~0.520~~ 0.519		
TOTAL LENGTH OF ROADWAY						0.00	0.00
TOTAL MILES (NET + GROSS)					0.519 ~~0.520~~		

RECOMMENDED FOR APPROVAL
Richard Tepekulis
DRAINAGE AND SEWERS MIDLEVEL AND MASTERS

RECOMMENDED FOR APPROVAL
Earl T. Lorch
INTERSTATE ENGINEER
DATE

RECOMMENDED FOR APPROVAL
Gerald Cordier
TRAFFIC AND PLANNING ENGINEER
DATE

RECOMMENDED FOR APPROVAL
David S. Hurst
BRIDGE DESIGN ENGINEER
DATE

RECOMMENDED FOR APPROVAL
[illegible]
ROAD DESIGN ENGINEER
DATE

RECOMMENDED FOR APPROVAL
[illegible]
DEP. LOCATION AND DESIGN ENGINEER
DATE

APPROVED
Dempsey D. Wells
CHIEF ENGINEER
DATE 9-22-77

APPROVED

DIVISION ADMINISTRATOR
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

O. W. Hanna

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I- 10-4(35)223	450-37-02	ST. CHARLES	2

3

GENERAL NOTES

DESIGN SPECIFICATIONS

THE 1973 STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, ELEVENTH EDITION, AS AMENDED BY THE 1974, 1975 AND 1976 INTERIM SPECIFICATIONS FOR BRIDGES.

CONSTRUCTION SPECIFICATIONS

STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, 1977 EDITION, EXCEPT AS SUPPLEMENTED OR AMENDED BY THE PLANS AND/OR SPECIAL PROVISIONS.

DESIGN SPEED

I-310 - 70 MPH

WELDING SPECIFICATIONS

WELDING SHALL CONFORM TO THE ANSI D1.1-75 STRUCTURAL WELDING CODE AS MODIFIED BY AASHTO STANDARD SPECIFICATIONS FOR WELDING OF STRUCTURAL STEEL HIGHWAY BRIDGES, SECOND EDITION, 1977 AND THE SPECIAL PROVISIONS.

STRUCTURAL METALWORK

ALL STRUCTURAL METALWORK SHALL BE HIGH STRENGTH, LOW ALLOY ASTM-A588, NO PAINT, UNLESS OTHERWISE NOTED ON THE PLANS.

MATERIAL MARKED A36 SHALL BE STRUCTURAL CARBON STEEL ASTM-A36, AND GALVANIZED OR PAINTED AS SPECIFIED IN THE PLANS. MATERIAL MARKED A514 SHALL BE HIGH YIELD STRENGTH, QUENCHED AND TEMPERED ALLOY STEEEL PLATE SUITABLE FOR WELDING, WITH WEATHERING PROPERTIES SIMILAR TO THAT OF A588. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

SHOP CONNECTIONS SHALL BE MADE BY WELDING OR BY HIGH-STRENGTH BOLTING, UNLESS OTHERWISE DESIGNATED IN THE PLANS. FIELD CONNECTIONS SHALL BE MADE BY HIGH-STRENGTH BOLTING.

ALL WELDS SHALL BE MADE BY MANUAL, METAL-ARC WELDING OR SUBMERGED-ARC WELDING. GROOVE WELDS SHALL BE FULL PENETRATION WELDS UNLESS OTHERWISE NOTED. ALL BOLTED CONNECTIONS SHALL BE MADE WITH HIGH TENSILE STRENGTH BOLTS CONFORMING TO ASTM DESIGNATION A325 (TYPE 3). BOLT SPACING SHALL BE IN ACCORDANCE WITH DESIGN DRAWINGS AND THE REQUIREMENTS OF DESIGN SPECIFICATIONS. UNLESS OTHERWISE SHOWN, BOLTED CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH BOLTS. ONE WASHER WILL BE REQUIRED BENEATH THE TURNING ELEMENT. WASHERS AND NUTS USED WITH THESE BOLTS SHALL HAVE COMPATIBLE ATMOSPHERIC CORROSION RESISTANCE AND WEATHERING CHARACTERISTICS. A325 (TYPE 3) BOLTED CONNECTIONS ARE DESIGNED AS FRICTION TYPE.

ALL STEEL SHALL BE SO POSITIONED IN THE MEMBERS OF SPLICE PLATES AS TO PLACE THE DIRECTION OF FINISH ROLLING PARALLEL TO THE DIRECTION OF PRIMARY STRESS.

INTERMEDIATE AND BEARING DIAPHRAGMS, STIFFENERS, CROSS FRAMES AND GIRDER ENDS SHALL BE DETAILED AND ERECTED NORMAL TO ROADWAY GRADE. CROSS GIRDERS SHALL BE BUILT TANGENT TO THE SAG OF THE CABLE AT FINAL DEADLOAD POSITION. RADII OF RE-ENTRANT CUTS SHALL BE $1\frac{1}{2}$" MINIMUM UNLESS OTHERWISE NOTED.

THOSE MEMBERS WHICH ARE NOT DESIGNATED AS FRACTURE CRITICAL MEMBERS SHALL MEET THE REQUIREMENTS OF CHARPY V-NOTCH TESTING DESCRIBED IN SUBSECTION 1013.01 OF THE SPECIFICATIONS. THOSE MEMBERS INCLUDE:

1. THE ENTIRE DECK PLATE AND THE DECK RIBS.
2. ALL WEBS AND ATTACHED LONGITUDINAL STIFFENERS OF MAIN BOX GIRDERS.
3. THE WEB AND FLANGE OF THE FLOORBEAMS, INTERMEDIATE AND BEARING DIAPHRAGMS.
4. THE BOTTOM TENSION FLANGE, AS DESIGNATED ON THE PLANS, OF THE MAIN BOX GIRDER.
5. THE OUTER PERIMETER PLATES AND THE ATTACHING LONGITUDINAL STIFFENERS ON THE TOWER LEGS FROM TIER 7 THROUGH TIER 25. FOR THE REMAINING TIERS THE OUTER AND INTERIOR PLATES AND THE ATTACHING LONGITUDINAL STIFFENERS.
6. THE WEBS AND FLANGES AND ATTACHING LONGITUDINAL MEMBERS OF THE UPPER AND LOWER TOWER STRUT.
7. ALL BOLTED SPLICE PLATES ON THE ABOVE MENTIONED MEMBERS.

FRACTURE CRITICAL MEMBERS

THE FOLLOWING STEEL COMPONENTS OF THE STRUCTURAL SYSTEM INCLUDED IN THIS PROJECT ARE DESIGNATED AS FRACTURE CRITICAL MEMBERS (SEE SHEET 10A AND THE SPECIAL PROVISIONS FOR REQUIREMENTS CONCERNING THESE MEMBERS).

1. CROSS GIRDER CG1, CG2, CG3, CG4, CG5 AND CG6
2. CABLE ANCHORAGE SADDLES LOCATED IN TOWER TIERS 23, 24, 25.
3. CABLE ANCHORAGE SUPPORT SYSTEMS IN ALL CROSS GIRDERS.
4. BEARING TIE DOWN ASSEMBLIES AT PIERS NO. 1 AND 4.

CONCRETE

ALL SUPERSTRUCTURE CONCRETE TO BE CLASS AA CONCRETE.

ALL SUBSTRUCTURE CONCRETE TO BE CLASS A CONCRETE UNLESS OTHERWISE SPECIFIED IN THE PLANS.

CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4" EXCEPT ALL CORNERS OF BENTS WHICH SHALL BE CHAMFERED 1-1/2" UNLESS OTHERWISE NOTED. NO DEDUCTIONS ARE TO BE MADE IN CONCRETE QUANTITIES FOR CHAMFERS 1-1/2" OR LESS.

CONCRETE AND STEEL IN CONCRETE RAILING TO BE PAID FOR PER LINEAR FOOT OF CONCRETE RAILING INCLUDING No. 5 BARS THAT PROJECT INTO RAILING. ALL CONSTRUCTION JOINTS SHALL BE ALTERNATELY KEYED, EXCEPT THAT TRANSVERSE VERTICAL SLAB JOINTS SHALL HAVE NO KEYS, BUT SHALL BE EPOXY TREATED. ALL CONCRETE TO BE PAID UNDER ITEM 5-101.

DIMENSIONS

ALL DIMENSIONS ARE GIVEN AT NORMAL TEMPERATURES (68°)

REINFORCING STEEL

DIMENSIONS RELATING TO REINFORCING STEEL ARE OUT TO OUT. THE MINIMUM COVERING MEASURED FROM THE SURFACE OF THE CONCRETE TO THE FACE OF ANY DEFORMED REINFORCING BAR SHALL BE NOT LESS THAN THE FOLLOWING:

TOP OF SLAB = 2"
BOTTOM OF SLAB = 1"

ALL OTHER REINFORCING CONCRETE = 2" UNLESS OTHERWISE NOTED ON THE PLANS. SEE STANDARD PLAN S.W.B.S. - 103 FOR BAR SUPPORTS FOR REINFORCING STEEL. REINFORCING STEEL No. 7 AND LARGER SHALL BE 60 GRADE STEEL. ALL BARS SMALLER THAN No. 7, AT THE CONTRACTOR'S OPTION, MAY BE GRADE 40 OR GRADE 60, HOWEVER, IF GRADE 60 IS USED, ALL BENDS MUST BE MADE SATISFACTORILY.

DESIGN CRITERIA

STRUCTURAL ELEMENTS ARE DESIGNED BY THE SERVICE LOAD DESIGN (WORKING STRESS) METHOD.

STRUCTURAL STEEL SHALL CONFORM TO ASTM DESIGNATION A588 WITH THE ALLOWABLE TENSILE STRESS OF 27,000 PSI UNLESS STRUCTURAL STEEL CONFORMING TO ASTM DESIGNATION A36 OR A514 IS CALLED FOR ON PLANS IN WHICH CASE THE BASIC ALLOWABLE TENSILE STRESS IS 20,000 PSI OR 53,000 PSI RESPECTIVELY. ALL STRUCTURAL STEEL CONFORMING TO ASTM A588 AND A514 SHALL BE WEATHERING STEEL REQUIRING NO PAINTING.

CABLE STEEL

STEEL WIRE USED FOR BUTTON-HEADED PREFABRICATED STEEL CABLE STAYS SHALL CONFORM TO ASTM A421 TYPE BA. THE ALLOWABLE TENSILE STRESS FOR THIS WIRE IS 108,000 PSI. ALL CABLE STAYS SHALL BE OF PARALLEL WIRE STRAND TYPE. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

CAMBER

ALL FLEXURAL MEMBERS SHALL BE CAMBERED FOR FULL DEAD LOAD, EXCLUDING FUTURE PAVING ALLOWANCE. TO THIS CAMBER SHALL BE ADDED THE EFFECT OF VERTICAL CURVATURE AND ANY OTHER CAMBER DERIVING FROM THE SELECTED ERECTION PROCEDURE WHICH IS REQUIRED TO SWING THE STRUCTURE IN FINAL POSITION DETERMINED BY THE PLAN GRADE AND CROSS SECTION.

GALVANIZING

WHERE GALVANIZING IS CALLED FOR ON PLANS OR IN THE SPECIAL PROVISIONS, PARTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH SUBSECTION 811.16 OF THE STANDARD SPECIFICATIONS.

DESIGN LOADINGS

D - DEAD LOAD - WEIGHT OF THE COMPLETE STRUCTURE, INCLUDING AN ALLOWANCE OF 19 LBS PER SQUARE FOOT OF ROADWAY DECK AREA FOR FUTURE WEARING SURFACE IN SPANS 1M THROUGH 5M INCLUSIVE (ORTHOTROPIC STEEL SPANS) AND 12 LBS PER SQUARE FOOT IN ADJACENT APPROACH SPANS.

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

W - WIND LOADS - THE WIND LOADS SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATIONS EXCEPT AS NOTED HEREIN.
FOR GROUP II LOADING, THE FOLLOWING WIND LOADS SHALL BE USED IN LIEU OF AASHTO WIND LOADINGS:
WIND ON SUBSTRUCTURE - PIERS 1 TO 4: 50 LBS PER SQUARE FOOT.
WIND ON GIRDERS - PIERS 1S TO 1N: 65 LBS PER SQUARE FOOT.
THESE LOADS SHALL BE APPLIED TO THE SAME AREAS AND IN THE SAME MANNER AS THE CORRESPONDING AASHTO LOADS.

HW - HURRICANE WIND - HURRICANE WIND LOADS SHALL BE APPLIED IN THE SAME MANNER AS THE WIND LOADS FOR GROUP II LOADING.
WIND ON SUBSTRUCTURE - PIERS 1 TO 4: 60 LBS PER SQUARE FOOT.
WIND ON GIRDERS - PIERS 1S TO 1N: 90 LBS PER SQUARE FOOT.
WIND ON TOWERS AND CABLES: 150 LBS PER SQUARE FOOT.
HURRICANE WIND IS TO BE COMBINED WITH DEAD LOAD AS GROUP X LOADING FOR WHICH THE PERMISSIBLE INCREASE OF BASIC DESIGN UNIT STRESS WILL BE 160%.

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

EQ - EARTHQUAKE FORCES - AASHTO 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 STRESS, EXCEPT WHEN THE CALCULATED STRESSES INCLUDE THE EFFECT OF 50 P.S.F. WIND LOAD, IN WHICH CASE THESE STRESSES SHALL NOT EXCEED 140%.

NOTE

I-410 WAS CHANGED TO I-310 AUGUST 1977.

NOTE:

THE CONTRACTOR SHALL EXTEND ONE (1) RIB OF EACH GROUP OF 36 RIBS WITH AN 18" WIDE DECK PLATE A DISTANCE OF 1'-0" AT EACH FIELD SPLICE FOR THE PURPOSE OF TESTING THE RIB TO DECK PLATE FILLET WELD. THE 18" WIDE EXTENDED PLATE MAY BE WELDED TO THE DECK PLATE.

NOTE: FOR LOCATION OF ALL REPORTED HEMS SEE REPORT PREPARED BY DR. SOHN FUNG OF LEHIGH U.

O. W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GENERAL NOTES
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: | DWG NO:
DRAWN BY: | CHKD BY: | IN CHARGE: | APPROVED:

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
13-D-41(M) 223	450-37-02	ST. CHARLES	3

4

SUMMARY OF BRIDGE QUANTITIES

ITEM / LOCATION	730 (1) * ELECTRICAL PROVISIONS	S-101 ** STRUCTURAL METALWORK	S-102 *** CABLE STAYS	S-103 EPOXY ASPHALTIC CONCRETE
UNIT	L.S.	L.S.	L.S.	TON
MAIN RIVER CROSSING SUPERSTRUCTURE	L.S.	L.S.	L.S.	3307
TOTAL	L.S.	L.S.	L.S.	3307

* For Lump Sum breakdown of electrical provisions See Drawings E33 & E34

** See Table on this Drawing for breakdown of Item S-101

*** Includes 1,081,200 lbs. of steel wire, cable socket and all incidental material

BREAKDOWN OF QUANTITIES IN ITEM S-101

ITEM / LOCATION	CLASS AA CONCRETE IN SUPERSTRUCTURES	DEFORMED REINFORCING STEEL	STRUCTURAL CARBON STEEL (A36)	HIGH-STRENGTH LOW-ALLOY STEEL (A588)	HIGH-YIELD-STRENGTH, QUENCHED AND TEMPERED ALLOY STEEL PLATE SUITABLE FOR WELDING (A514)	CONCRETE RAILING (BARRIER)	CONCRETE RAILING (MEDIAN BARRIER)	STEEL RAILING	MODULAR EXPANSION JOINT (6 CELL)	MODULAR EXPANSION JOINT (10 CELL) ****	CLASS A CONCRETE IN BENTS
UNIT	CU. YDS.	POUND	POUND	POUND	POUND	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	CU. YDS.
TOWERS	—	—	48,095	9,311,004	—	—	—	—	—	—	—
BRIDGE DECK	134	10,874	265	26,370,149	672,816	30	15	5,530	94	83	—
CABLES	—	—	—	—	—	—	—	—	—	—	—
SADDLES	—	—	—	419,526	—	—	—	—	—	—	—
BEARINGS	—	—	—	134,408	—	—	—	—	—	—	—
INSTR. SUPPORTS	—	—	—	12,724	—	—	—	—	—	—	—
PIERS	—	—	—	—	—	—	—	—	—	—	112
TOTAL	134	10,874	48,360	36,247,811	672,816	30	15	5,530	94	83	112

**** Includes 7 cells for Southbound Roadway

△ 19,836 Pounds. Plan Change # 23

△ 1,346,341 Pounds. Plan Change # 13

△ 27,593,008 Pounds. Plan Change # 15 & 23

△ 138,808 Pounds. Plan Change # 15

△ 677,138 Pounds. Plan Change # 23

△ 37,098,154 Pounds. Total of △△ and △

△ 2170.342 Tons

△ [illegible]

O. W. Hansen

10-20-77	General Revision	D.O.D.
DATE	DESCRIPTION	BY
REVISIONS		

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SUMMARY OF BRIDGE QUANTITIES
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODLESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-1977 SCALE DWG NO. 3
DRAWN BY J.T. CHKD BY [illegible] IN CHARGE [illegible] APPROVED [illegible]

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351)225	450-37-02	ST. CHARLES	4

5

FINAL

SUMMARY OF ~~ESTIMATED~~ QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY	INCREASE
727 (1)	Mobilization	LS	LS	4,160,000.00
730 (1)	Electrical Provisions	LS	LS	560,000.00
S-101	Structural Metalwork	LS	LS	39,799,390.00
~~S-102~~	Cable Stays	LS	LS	0
S-103	Epoxy Asphalt Concrete R.C. #48	Ton	6207 △	3170.432
~~S-105~~	Trainee Reimbursement	Hrs	10,000 △	49,222.5
202(2)(a)	Fence and Gates R.C. #1	L.F.	16487	
S-1	Debris Minor Steel R.C. #2	LS	LS	400.00
S-2	Steel Pile Tips R.C. #4	LS	LS	7,282.00
S-3	Sub Concrete R.C. #7	LS	LS	360.21
S-7	Fender Piles R.C. #12	LS	LS	1,506.00
S-8	Pile Caps R.C. #13	LS	LS	20,255.14
		LS	LS	
		LS	LS	
S-14(A)	Pedestrian Stairs R.C. #15	LS	LS	811.00
S-15	Pier Fill R.C. #19	LS	LS	22,000.00
S-16	Pier Fill R.C. #20	LS	LS	2,400.00
S-17	Pier Fill R.C. #22	LS	LS	737,851.51
S-18	Pier Fill R.C. #26	LS	LS	9,546.58
S-19	Pier Fill R.C. #28	LS	LS	3,200.00
S-20	Pier Fill R.C. #29	LS	LS	1,851.18
S-21	Pier Fill R.C. #30	LS	LS	10,286.00
S-22	Pier Fill P.C. #34	LS	LS	2,752.11
S-23	Pier Fill R.C. #35	LS	LS	3,171.00
S-24	Pier Fill R.C. #36	LS	LS	26,214.50
S-25	Pier Fill R.C. #37	LS	LS	268.77
S-26	Pier Fill R.C. #38	LS	LS	8,250.28
S-115	Work Under Traffic R.C. #39	L.S.		26,624.25
S-116	Repair Epoxy Asphalt Barriers R.C. #45	L.S.		2,000.00
S-117	Oil Change R.C. #46	L.S.		1,373.33
S-118	Underpass Repairs R.C. #47	LS	LS	1,000.00
S-119	Pier Fill R.C. #48	LS	LS	8,150.63
S-120	Pier Fill R.C. #48	LS	LS	540.00
S-121	Pier Fill R.C. #48	Hrs	34	34.00
S-122	Pier Fill R.C. #49	LS	LS	1,800.00
S-104	Waterproofing Open Joints and Roughening Decks at Deck Drains R.C. #14	Lump Sum		28,000.00
S-123	Replace Fluorescent Poles R.C. #44	Lump Sum		37,500.00
S-122	Paint Select ASTM Material R.C. #47	Lump Sum		4,215.00
S-123	Revised Tower Brackets and Keepers R.C. # 51	Lump Sum		1,000,000.00
S-124	Extra Bolts R.C. #52	Lump Sum		15,000.00
S-125	Revised Requirements for Cable Stays R.C. #53	Lump Sum		78,000.00
	Epoxy Asphalt's Price Adjustment	Lump Sum		154,000.00

△ 3170.432 TONS. DECREASE DUE TO REDUCTION IN THICKNESS FROM 2'2" TO 2'4".

△ ~~40,000~~ HOURS. SEE FINAL PLAN CHANGE

1-31-85

BENCH MARKS FOR PROJECT NO. 450-37-02

Miss. River Bridge (Luling)
Main River Crossing Superstructure Highway St. Charles Parish

Project begins at Sta. 241+80.00 at Pier 1-6
West bank of Mississippi River

Project ends at Sta. 249+25.00 at Pier 1-8
East bank of Mississippi River

Datum N S L

BOOK NO.	PAGE NO.	B.M. NO.	ELEVATION	LOCATION AND DESCRIPTION
108-051	1	1	+10.179	60d nail, pecan tree, 1075' rt. sta. 244+90
108-051	2	1-4	+9.588	3/8" spike in telephone pole 70' rt. sta. 245+00
120-271	11	Pier 1	+11.016	Stainless steel bolt set in east face rt. shaft pier 1
136-550	34	Pier 1-8	+12.122	Top flange lth. beam from east (west approach) at pier 1-8
136-550	71	Pier 3	+171.88	Top of clip angle holding access platform at pier 3 tower.

Note: B.M. elevs not verified by Construction Audit section — 2/4/85

D. W. Hanson
Asst. Construction Engineer

D. W. Hanson

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SUMMARY OF ESTIMATED QUANTITIES
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

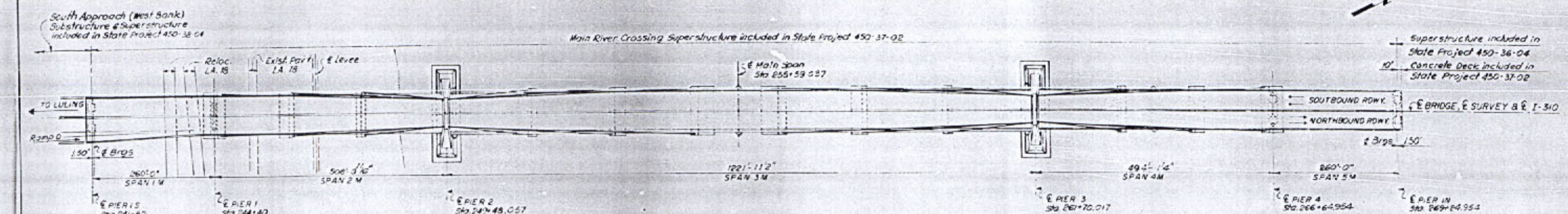
DATE	DESCRIPTION	BY
	REVISIONS	

DATE 5-24-77 SCALE: DWG NO. 4
DRAWN BY: CHKD BY: IN CHARGE: APPROVED:

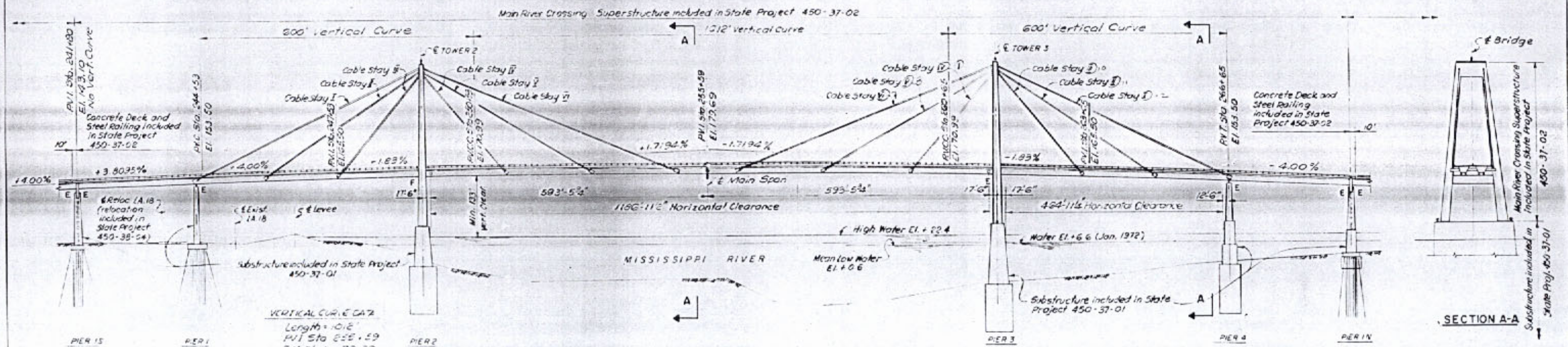
FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351)223	450-37-02	ST CHARLES	5A

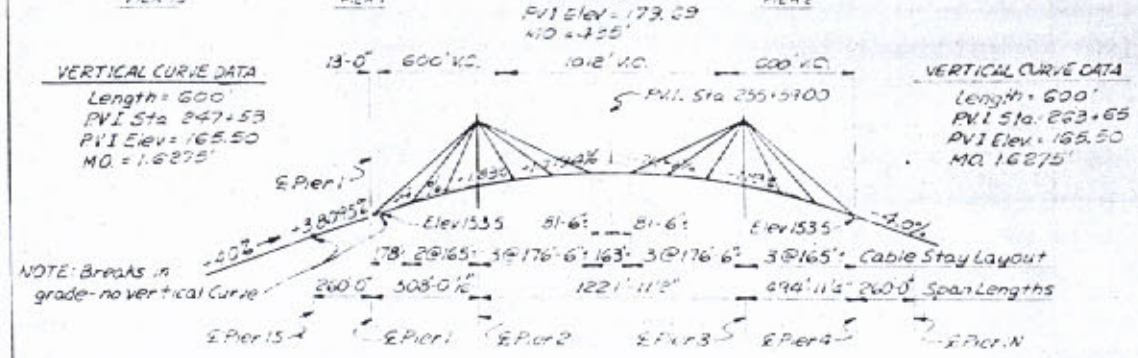
6



PLAN



ELEVATION



VERTICAL ALIGNMENT

O. W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

KEY GENERAL PLAN AND ELEVATION
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

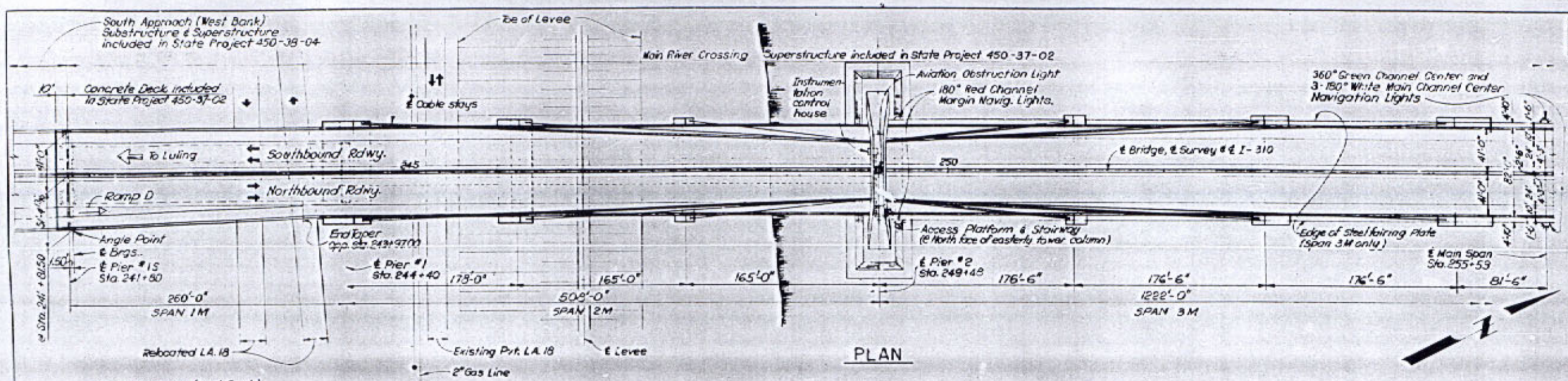
DATE	DESCRIPTION	BY
1-31-78	New Sheet	F.E.L.

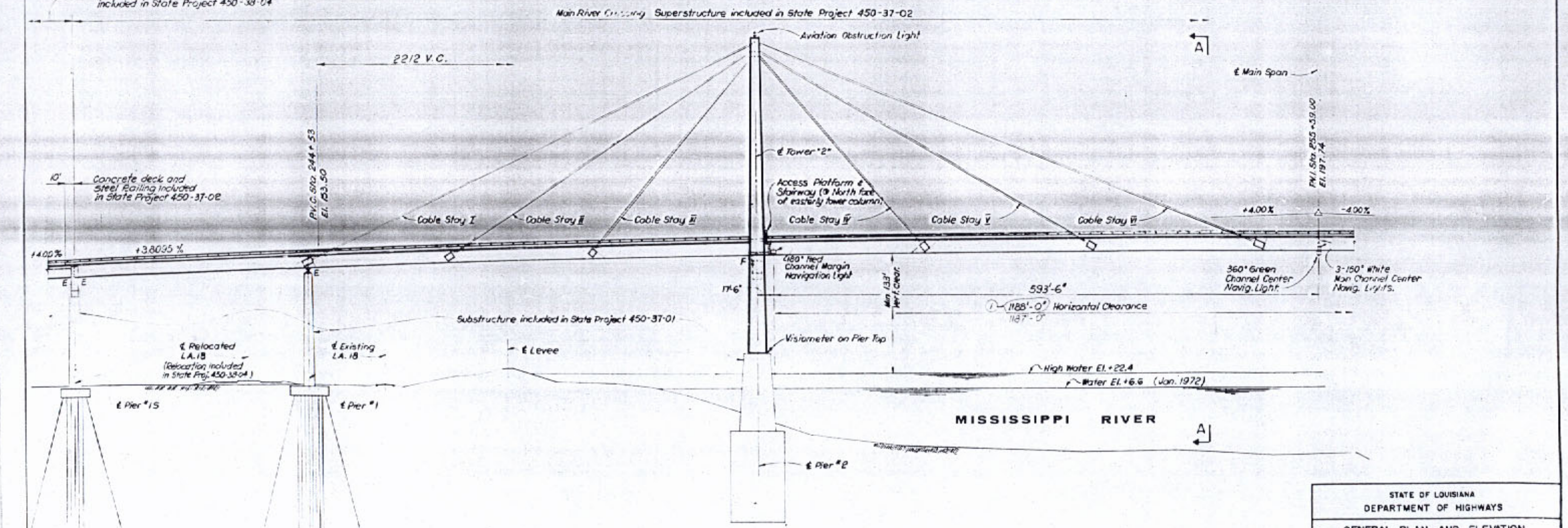
REVISIONS

DATE 3-24-77 | SCALE 1" = 20' | DWG NO. 5A
DRAWN BY W.H. | CHKD BY | IN CHARGE | APPROVED W.M.L.

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	6





STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GENERAL PLAN AND ELEVATION
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

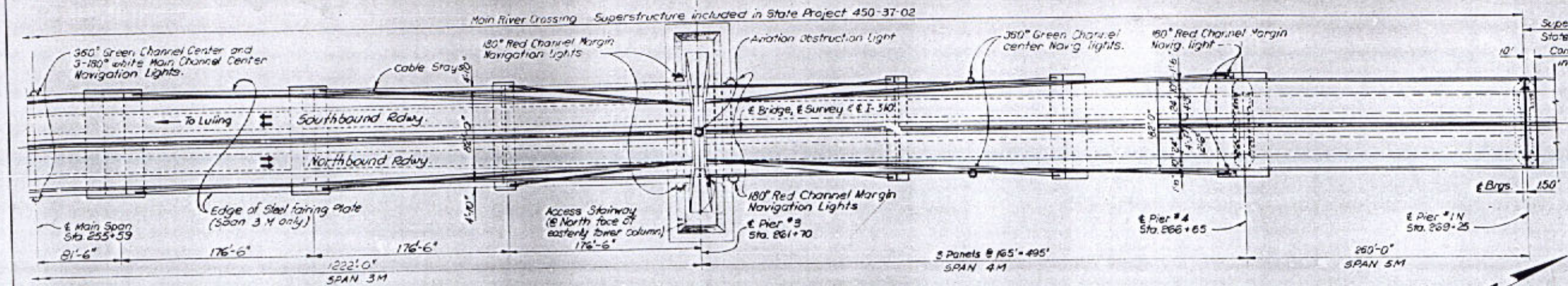
DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: 1"=50' | DWG NO. 6
DRAWN BY: A.N. | CHKD BY: | IN CHARGE: | APPROVED:

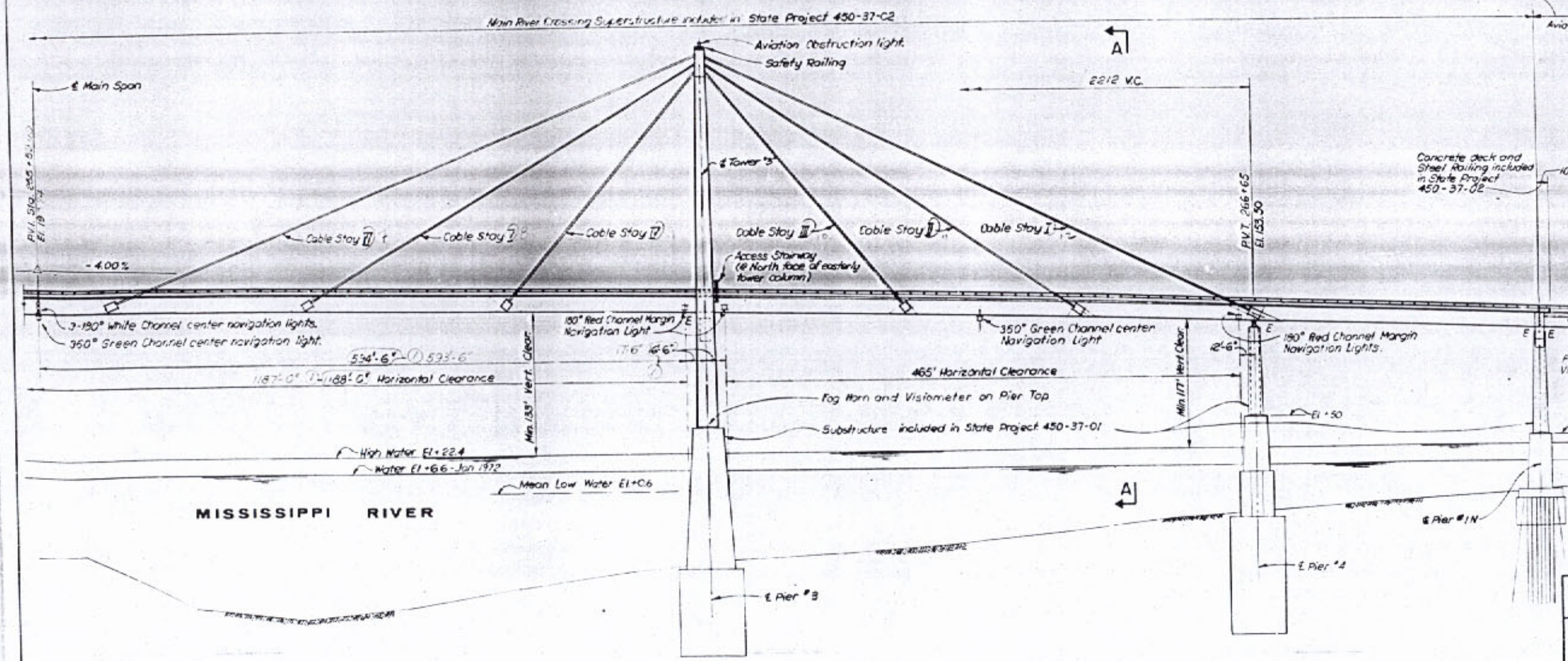
O. W. Hansen

FRAME 1 24x

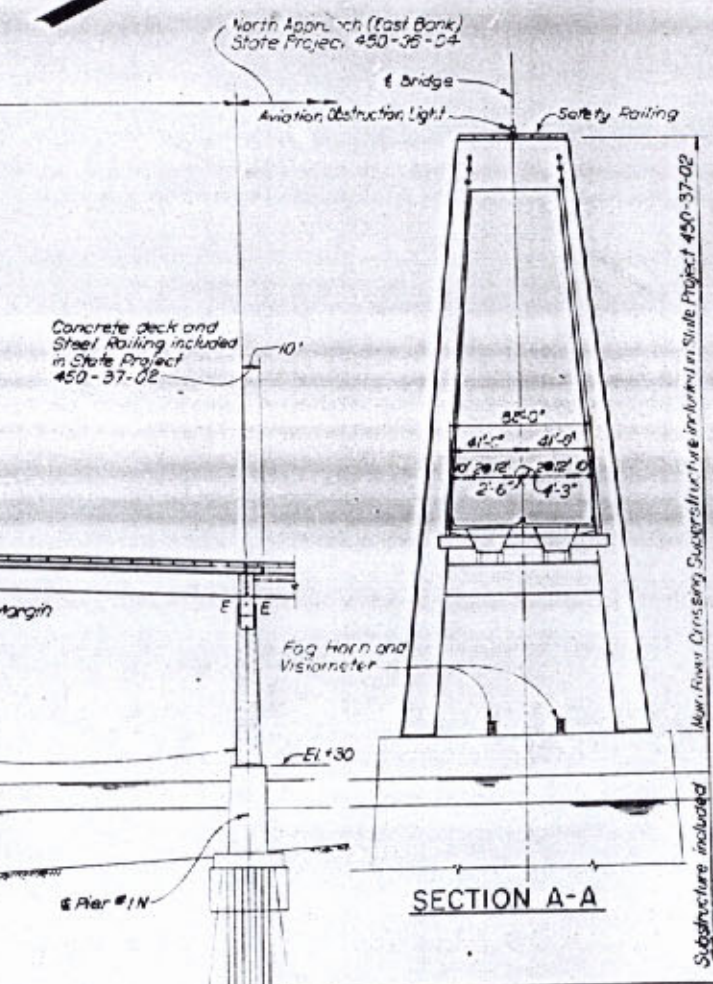
FAP	STATE PROJECT	PARISH	SHEET NO.
0-310-4(35)223	450-37-02	ST. CHARLES	7



PLAN



ELEVATION



SECTION A-A

O. W. Hanza

DATE	DESCRIPTION	BY
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

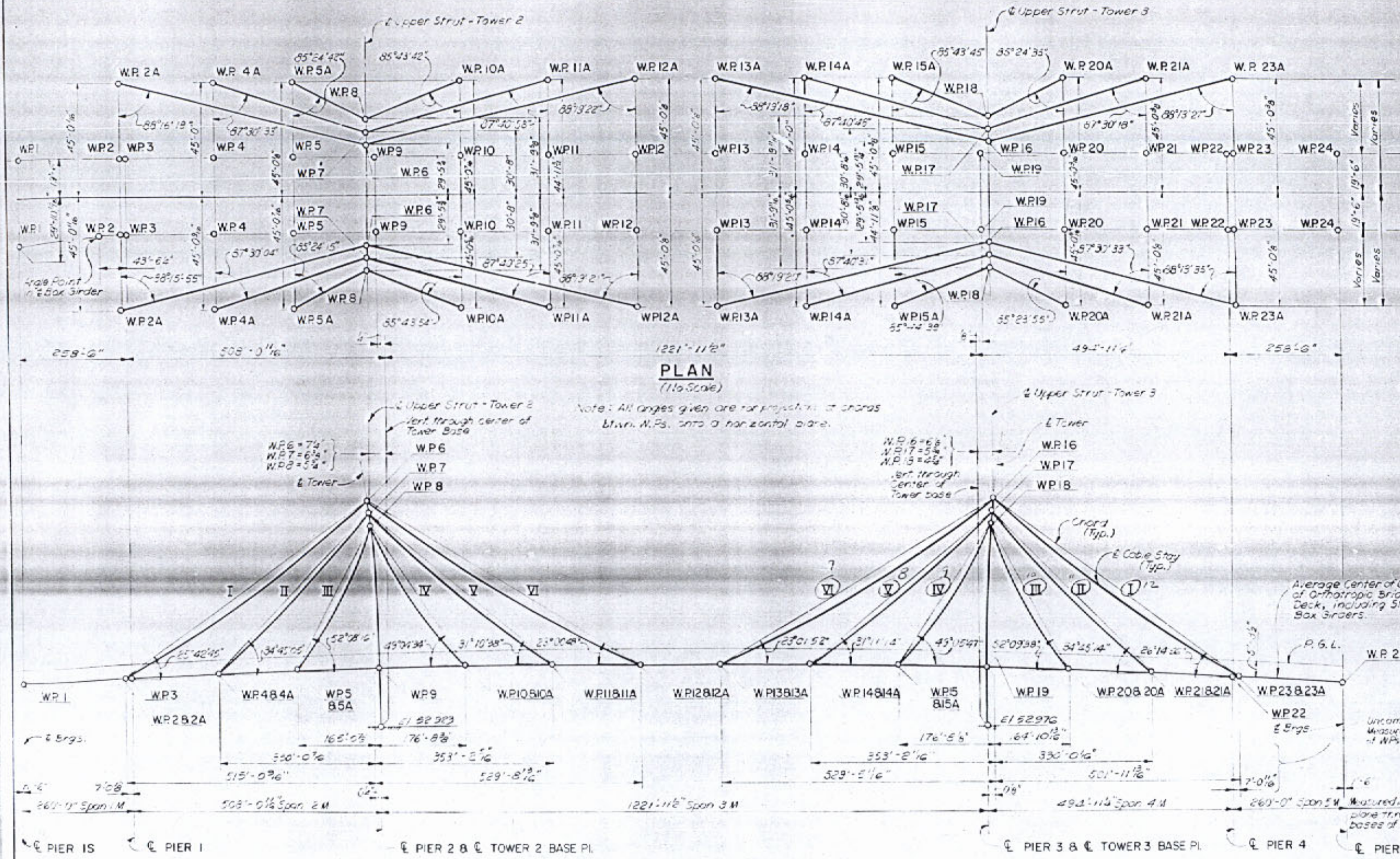
GENERAL PLAN AND ELEVATION
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE 1"=50' | DWG NO. 7
DRAWN BY: A.K. | CHKD. BY R.D. | IN CHARGE S.J. | APPROVED: W.W.L.

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	8A



W. P.	El.	∡ b'twn. tangent to cable and chord b'twn. W.Ps.*
1 (Westerly B.S.)	137.555	
1 (Easterly " ")	137.605	
2 & 2A	147.419	0° 5' 16"
3	147.713	
4 & 4A	154.289	0° 37' 16"
5 & 5A	159.403	0° 17' 56"
6	395.152	
7	332.902	
8	371.150	
9	163.575	
10 & 10A	166.809	0° 29' 02"
11 & 11A	168.883	0° 35' 53"
12 & 12A	163.900	0° 55' 49"
13 & 13A	169.929	0° 55' 37"
14 & 14A	168.900	0° 32' 51"
15 & 15A	166.844	0° 23' 02"
16	355.227	
17	380.276	
18	371.287	
19	163.577	
20 & 20A	159.435	0° 17' 32"
21 & 21A	154.313	0° 37' 36"
22	148.210	
23 & 23A	147.995	0° 55' 36"
24	137.970	

*Measured in a vertical plane passing through W.Ps. at each end of cable. Longit. axis of all cross girder cross sections shall coincide with this tangent.

NOTE:

Dimensions shown on this Dwg. denote positions of W.Ps. after erection of steel, prestressing of cables, placing of 2½" wearing surf. and grouting of cables. These dimensions are [illegible] allowances for the weight of future wearing surface.

ELEVATION WEST SIDE CABLE STAYS

(No Scale)

GEOMETRIC LAYOUT OF CABLE STAYED STRUCTURE

(D.L. POSITION AFTER ERECTION OF ALL STRUCTURAL METALWORK AND PLACING OF 2½" ASPH. WEARING SURFACE)

Unless all angles given are for projections of chords b'twn. W.Ps. into a vertical plane parallel to ℄ bridge

O. W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

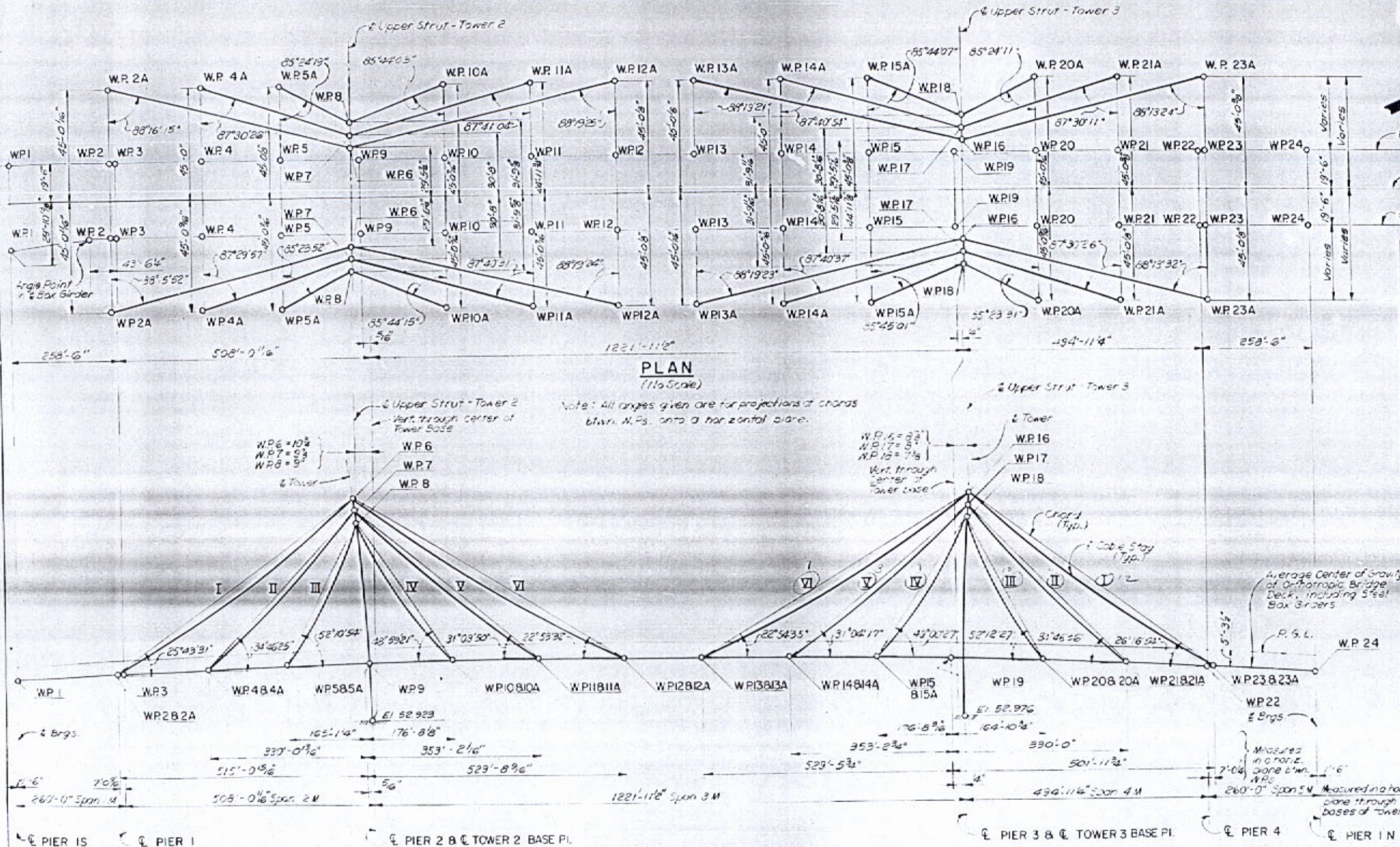
GEOMETRIC LAYOUT - I
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE | SCALE | DWG. NO. 3A
DRAWN BY | CHKD BY | IN CHARGE | APPROVED

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(361)223	450-37-02	ST. CHARLES	8 G.A



W.P.	El.	∡ btwn. tangent to cable and chord btwn. W.Ps.*
1 (Westerly B.G.)	137.565	
1 (Easterly " ")	137.605	
2 & 2A	147.419	0° 52' 13"
3	147.713	
4 & 4A	154.289	0° 37' 16"
5 & 5A	159.389	0° 16' 10"
6	395.172	
7	382.922	
8	371.170	
9	163.588	
10 & 10A	167.178	0° 19' 1"
11 & 11A	169.793	0° 35' 31"
12 & 12A	171.130	0° 54' 46"
13 & 13A	171.159	0° 54' 23"
14 & 14A	169.920	0° 35' 22"
15 & 15A	167.214	0° 19' 11"
16	395.347	
17	382.996	
18	371.247	
19	163.587	
20 & 20A	159.465	0° 16' 18"
21 & 21A	154.303	0° 37' 51"
22	148.210	
23 & 23A	147.935	0° 50' 30"
24	137.870	

*measured in a vertical plane passing through W.Ps. at each end of cable.

NOTE: Dimensions shown on this dwg. denote positions of W.Ps. after completion of all steel work and after prestressing of cables, but prior to placing of 2½ Asph. wearing surface and prior to grouting of cables.

GEOMETRIC LAYOUT OF CABLE STAYED STRUCTURE

(D.L. POSITION AFTER ERECTION OF ALL STRUCTURAL METALWORK AND PRESTRESSING OF CABLE STAYS)

Note: All angles given are for projections of chords btwn. W.Ps. onto a vertical plane parallel to ℄ bridge.

O.W. Hansen

DATE	DESCRIPTION	BY
0	9/30/81 New Sheet - See Sht. 8a	F.B.L.

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

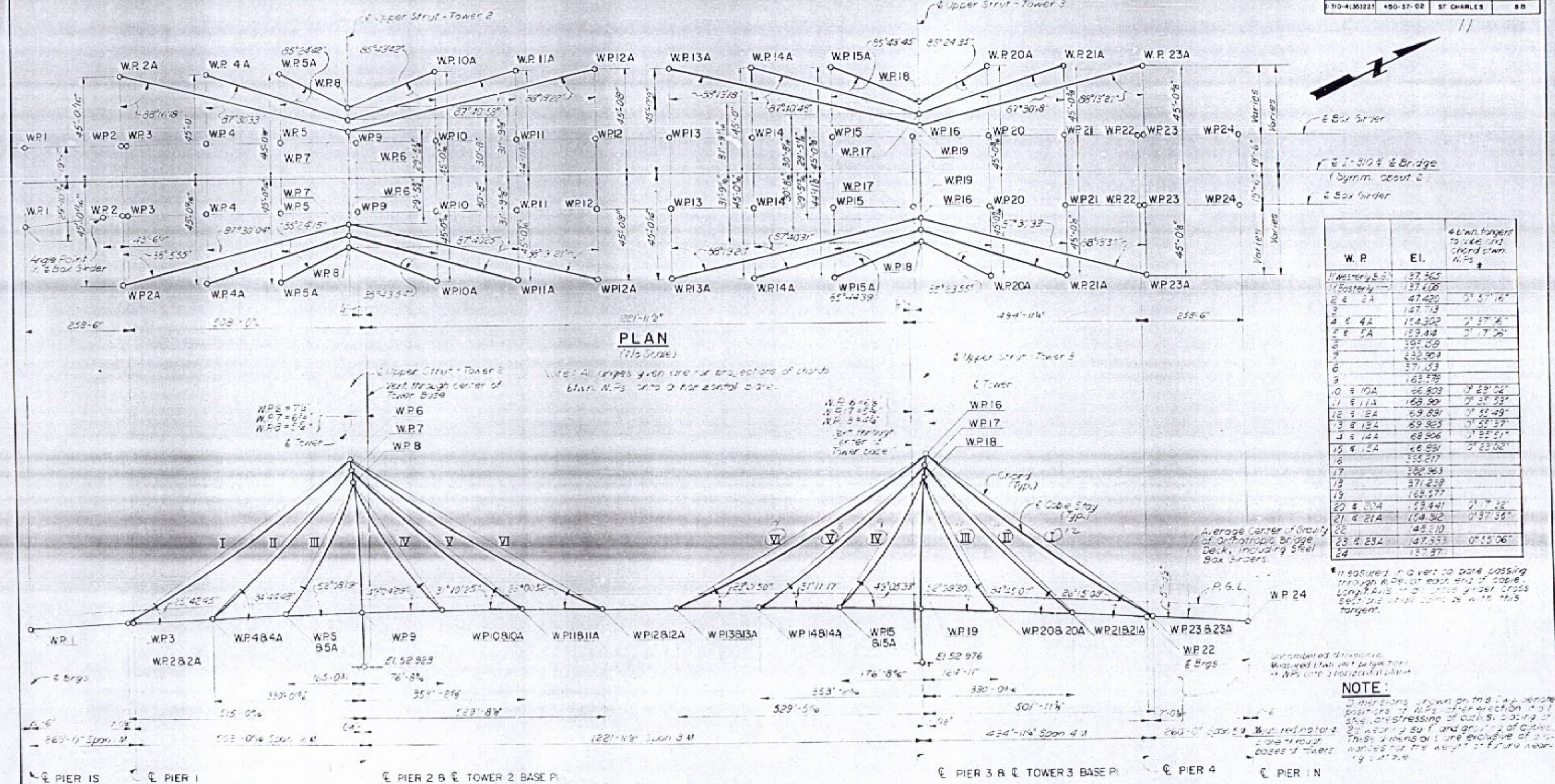
GEOMETRIC LAYOUT - I
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE No Scale | DWG. NO. 8G.A
DRAWN BY S.R. | CHKD BY R.C. | IN CHARGE S.J. | APPROVED M.L.

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351221)	450-57-02	ST. CHARLES	88



W. P.	El.	∠ b'wn. tangent to cable and chord b'wn. W.Ps
1 (Westerly S.S.)	137.565	
1 (Easterly —)	137.606	
2 & 2A	47.420	0° 57' 16"
3	147.713	
4 & 4A	154.302	0° 57' 4"
5 & 5A	159.44	0° 17' 36"
6	385.038	
7	382.909	
8	371.153	
9	163.579	
10 & 10A	66.803	0° 23' 02"
11 & 11A	168.901	0° 35' 53"
12 & 12A	69.891	0° 55' 49"
13 & 13A	69.923	0° 55' 37"
14 & 14A	68.906	0° 55' 51"
15 & 15A	66.891	0° 23' 02"
16	385.217	
17	382.963	
18	371.238	
19	163.577	
20 & 20A	159.441	0° 17' 32"
21 & 21A	154.312	0° 37' 38"
22	148.210	
23 & 23A	147.553	0° 55' 06"
24	157.371	

* Measured vert. to plane passing through W.Ps at each end of cable. Length of cable is the chord length of a straight line joining the W.Ps in this tangent.

NOTE:
Dimensions shown on this drawing denote positions in W.Ps after erection and final stressing of cables, taking into account dead load and grouting of cables. These dimensions are exclusive of allowances for the weight of future wearing surface.

GEOMETRIC LAYOUT OF CABLE STAYED STRUCTURE

(D.L. POSITION AFTER ERECTION OF ALL STRUCTURAL METALWORK AND PLACING OF 2½" ASPH. WEARING SURFACE)

Note: All angles shown are for projections of chords thru W.Ps into a vertical plane parallel to ℄ bridge

O. W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

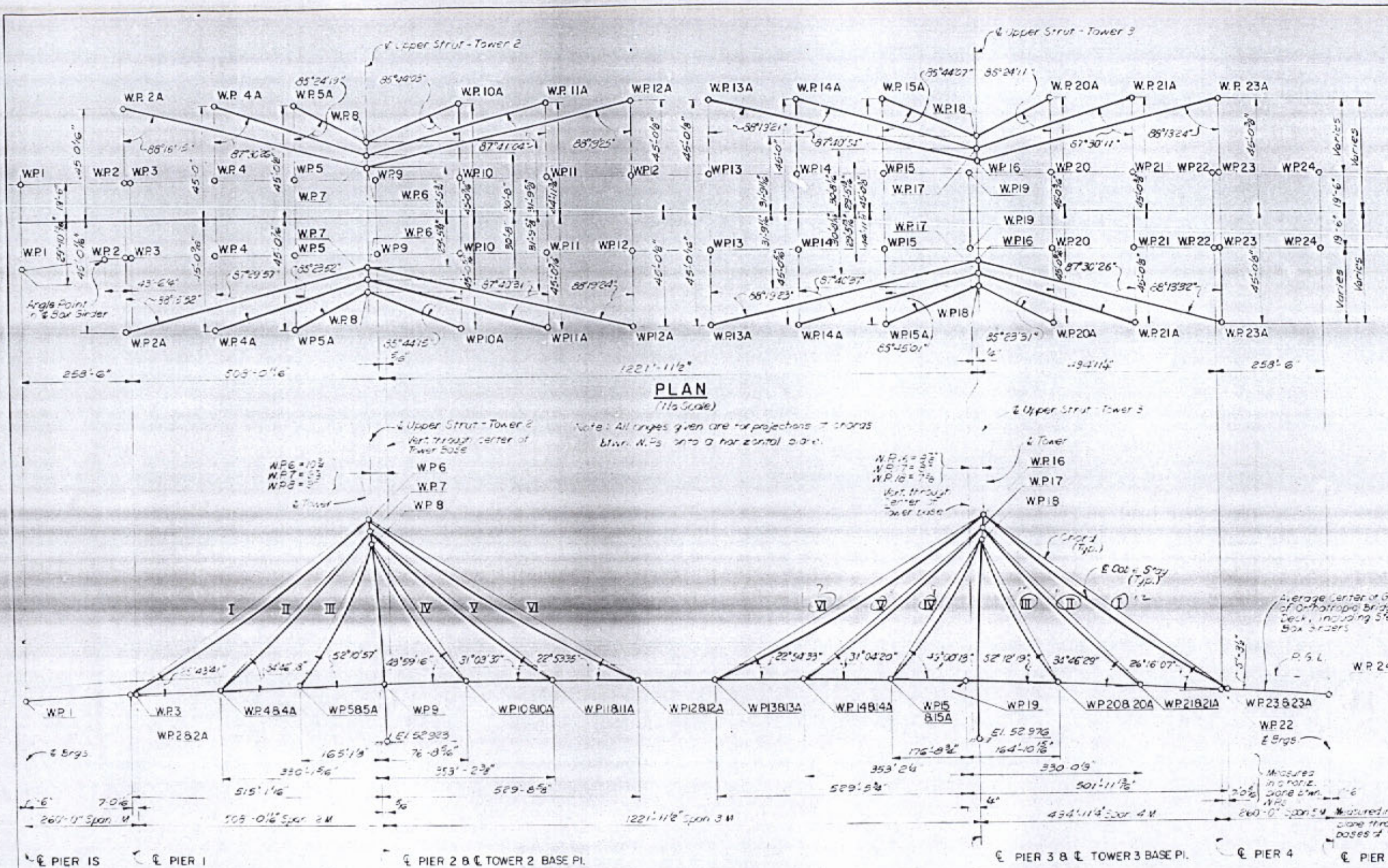
GEOMETRIC LAYOUT - I
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
F-310-4(55)223	450-37-02	ST. CHARLES	8 of 8



W.P.	El.	∡ btwn. tangent to cable and chord btwn. W.Ps
1 (Westerly B.S.)	137.965	
1 (Easterly ")	137.605	
2 & 2A	47.480	0° 52' 19"
3	147.713	
4 & 4A	154.802	0° 37' 16"
5 & 5A	159.394	0° 16' 10"
6	395.178	
7	382.254	
8	371.173	
9	163.588	
10 & 10A	67.173	0° 19' 11"
11 & 11A	163.721	0° 35' 31"
12 & 12A	171.121	0° 54' 46"
13 & 13A	171.155	0° 54' 23"
14 & 14A	169.746	0° 35' 22"
15 & 15A	167.201	0° 19' 11"
16	355.237	
17	382.583	
18	371.258	
19	163.587	
20 & 20A	153.411	0° 16' 19"
21 & 21A	154.302	0° 37' 51"
22	48.210	
23 & 23A	147.883	0° 50' 30"
24	137.970	

* Measured in a vert. pl. bore passing through W.Ps. at each end of cable.

NOTE:
Dimensions shown on this Dwg. denote positions of W.Ps after completion of all steel work and after prestressing of cables, but prior to placing of 2" Asph. Wearing Surface and prior to grouting of cables.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GEOMETRIC LAYOUT - I
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
7-31-78	New Sheet - See Sht 8	FEE

REVISIONS

DATE 5-24-77 | SCALE 1/16" = 1'-0" | DWG NO. 8 of 8
DRAWN BY S.A. | CHKD BY R.C. | IN CHARGE S.J. | APPROVED MMC

GEOMETRIC LAYOUT OF CABLE STAYED STRUCTURE

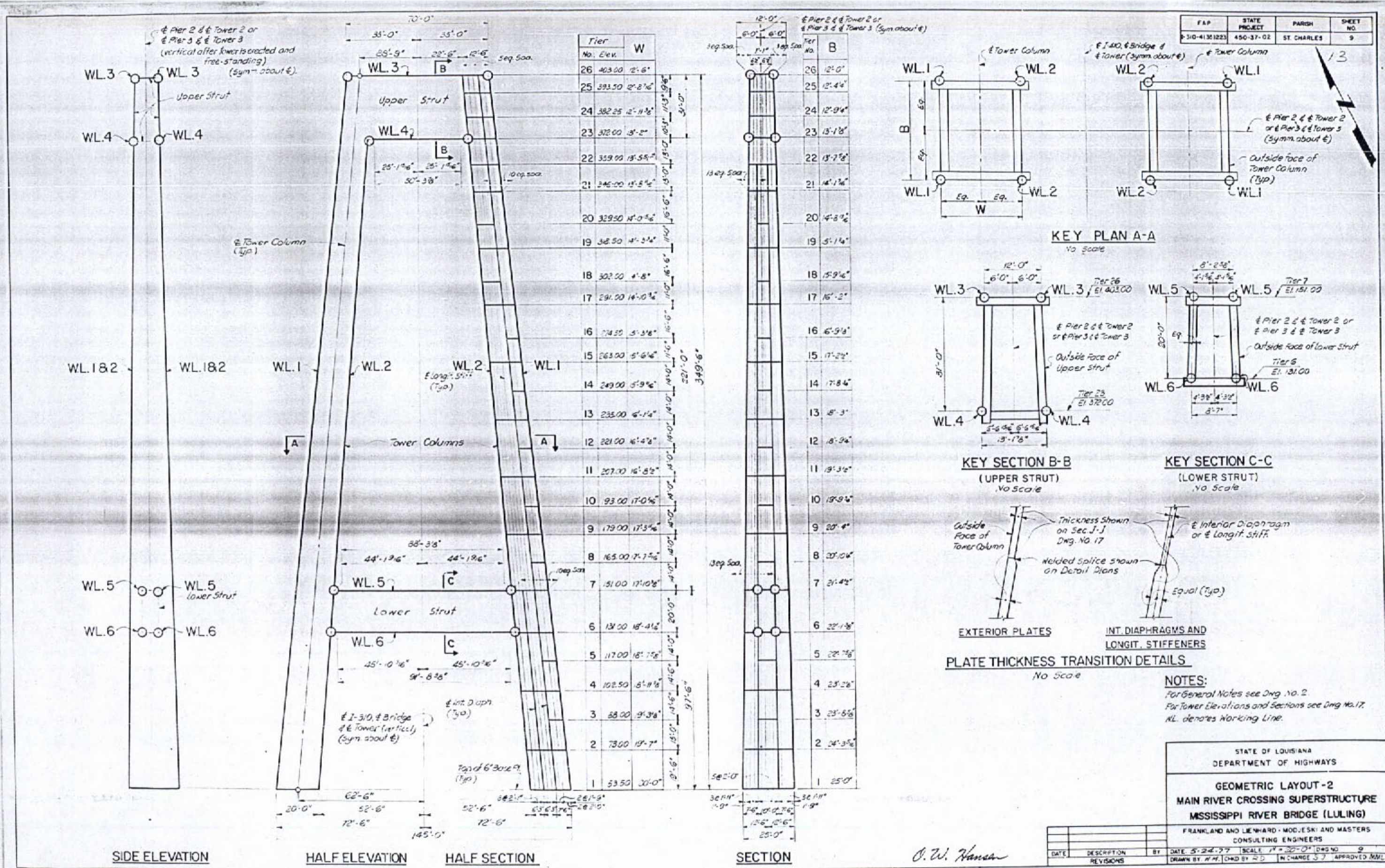
(D.L. POSITION AFTER ERECTION OF ALL STRUCTURAL METALWORK AND PRESTRESSING OF CABLE STAYS)

Note: All angles given are the projections of chords btwn. W.Ps. onto a horizontal plane.

O.W. Hanson

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	9



NOTES:
For General Notes see Dwg. No. 2.
For Tower Elevations and Sections see Dwg. No. 17.
W.L. denotes Working Line.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GEOMETRIC LAYOUT - 2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

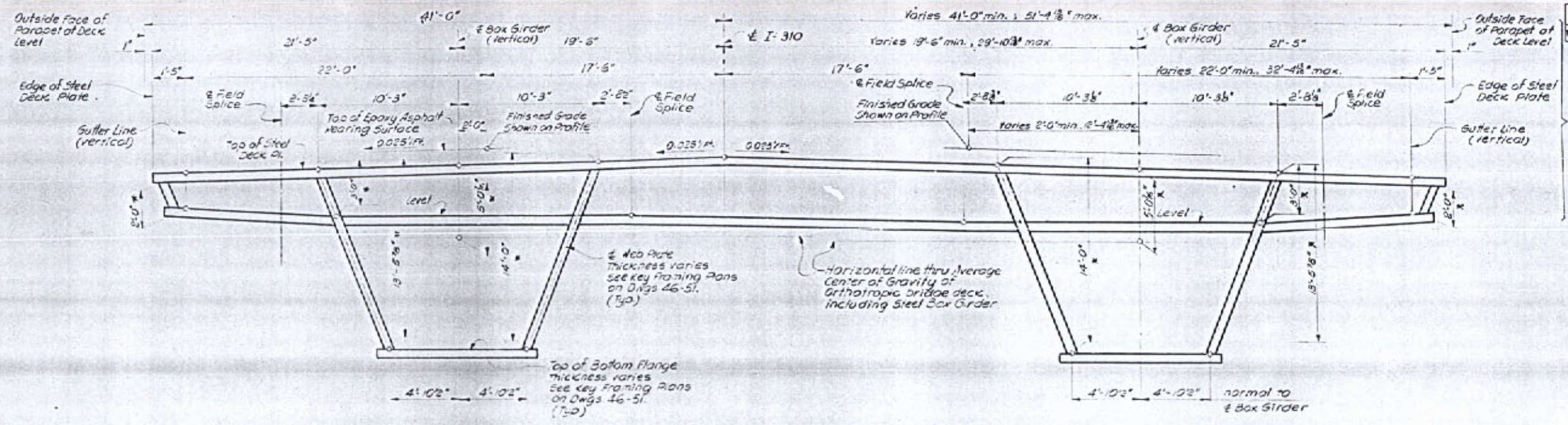
DATE	DESCRIPTION	BY
	REVISIONS	

DATE 5-24-77 SCALE 1" = 20'-0" DWG. NO. 9
DRAWN BY W.H. CHKD BY R.D. IN CHARGE J.J. APPROVED MML

O. W. Hansen

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	10



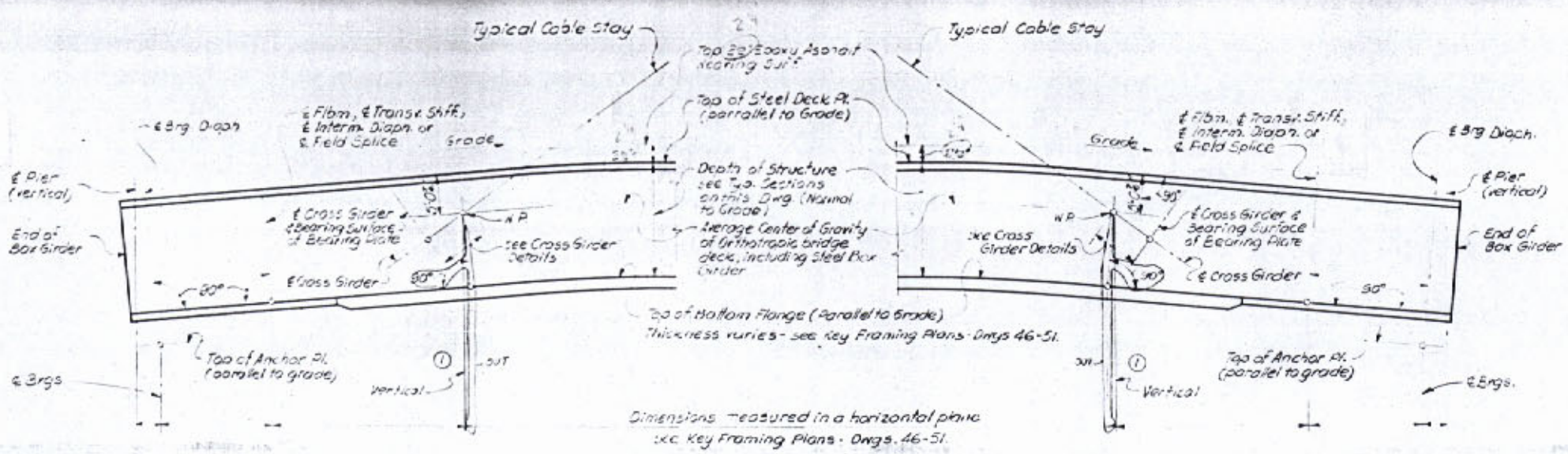
* Denotes dimensions which are normal to roadway grade.

HALF SECTION

Applies to S.B. Rdwy. - Full length of Spans 1M thru 5M and N.B. Rdwy. from angle point (Sta. 243+97) in Span 1M to ℄ Pier 1N in Span 5M.

HALF SECTION

Applies to N.B. Rdwy. in Span 1M from ℄ Pier 1S to Angle point (Sta. 243+97)



ELEVATION SHOWING GEOMETRIC LAYOUT OF BOX GIRDER

O. W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GEOMETRIC LAYOUT - 3
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

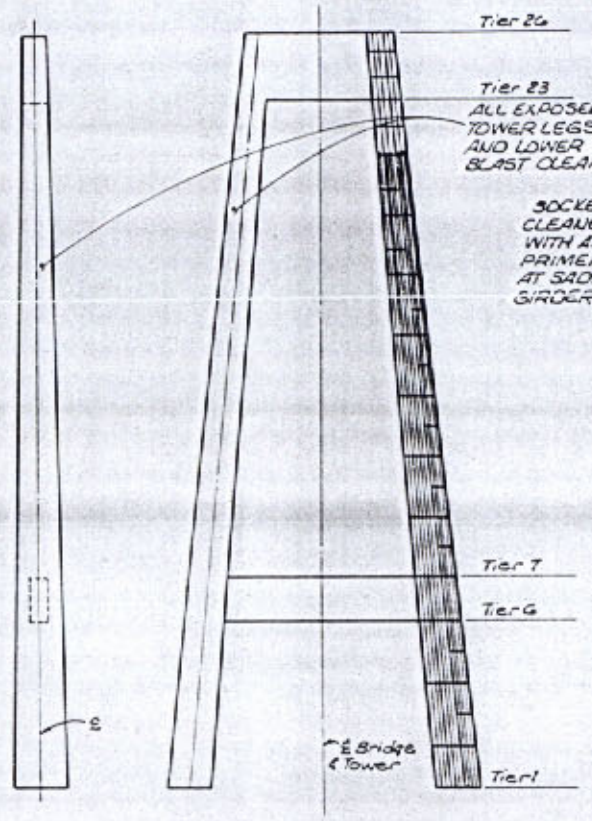
DATE	DESCRIPTION	BY
2/77	Geometric Change	FAL

REVISIONS

DATE 3-24-77 | SCALE No Scale | DWG NO 10
DRAWN BY W. AL | CHKD BY R.D. | IN CHARGE | APPROVED MML

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
F-410-4(50)223	450-37-02	ST. CHARLES	10A



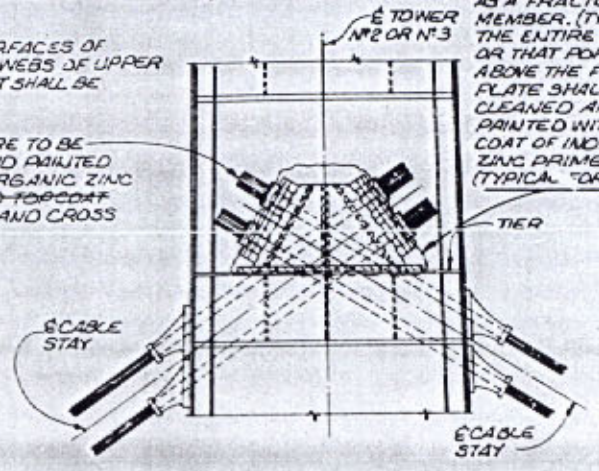
ELEVATION ELEVATION SECTION

TOWER Nº 2 & Nº 3

(1) BEARING BARS TO MEET THE REQUIREMENTS OF CHARPY V-NOTCH TESTING DESCRIBED IN SUB SECTION 1013.01 OF THE SPECIFICATIONS. (TYPICAL FOR SADDLE)

ALL EXPOSED SURFACES OF TOWER LEGS AND WEBS OF UPPER AND LOWER STRUT SHALL BE BLAST CLEANED.

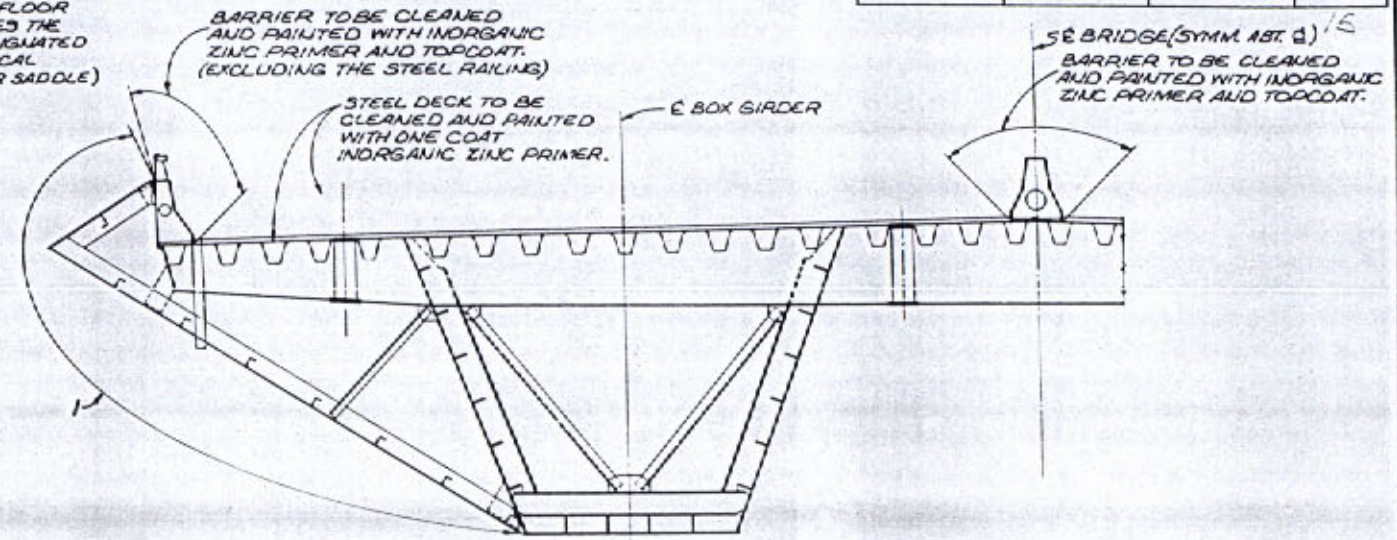
SOCKETS ARE TO BE CLEANED AND PAINTED WITH AN INORGANIC ZINC PRIMER ~~AND TOPCOAT~~ AT SADDLES AND CROSS GIRDERS



THE ENTIRE SADDLE OR THAT PORTION ABOVE THE FLOOR PLATES, BUT EXCLUDES THE BEARING BARS, IS DESIGNATED AS A FRACTURE CRITICAL MEMBER. (TYPICAL FOR SADDLE)

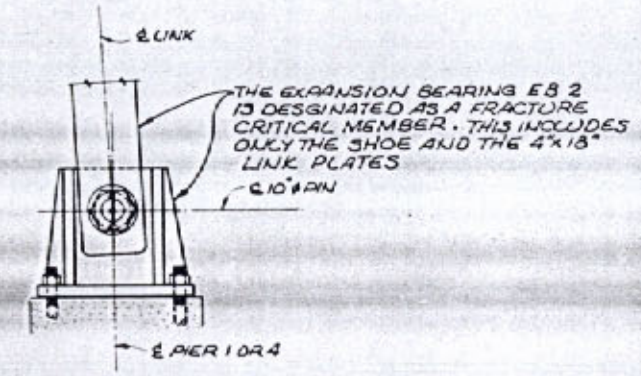
THE ENTIRE SADDLE OR THAT PORTION ABOVE THE FLOOR PLATE SHALL BE CLEANED AND PAINTED WITH ONE COAT OF INORGANIC ZINC PRIMER. (TYPICAL FOR SADDLE)

TYPICAL SECTION @ TIER Nº 23, 24 & 25
(SHOWING SADDLES)



THE FOLLOWING PORTIONS OF THE SPAN SECTION SHALL BE BLAST CLEANED:
1 ~~OUTER SURFACE OF FAIRING PLATE~~

TYPICAL SECTION (SPAN 3M)



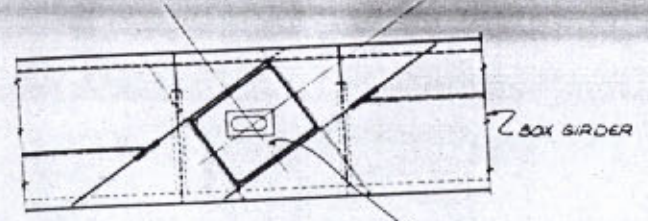
THE EXPANSION BEARING EB 2 IS DESIGNATED AS A FRACTURE CRITICAL MEMBER. THIS INCLUDES ONLY THE SHOE AND THE 4"x18" LINK PLATES

SIDE ELEVATION
EXP. BEARING EB 2

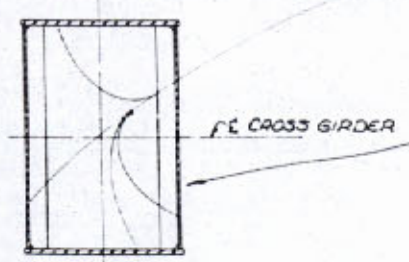
NOTE: THOSE MEMBERS DESIGNATED AS FRACTURE CRITICAL MEMBERS SHALL CONFORM TO THE REQUIREMENTS IN THE SPECIAL PROVISIONS.

NOTE: THOSE MEMBERS DESIGNATED AS "BLAST CLEANED" SHALL BE BLAST CLEANED AFTER FABRICATION IN ACCORDANCE WITH STEEL STRUCTURAL PAINTING COUNCIL SPECIFICATION SP6.

NOTE: ALL PAINTING SHALL BE IN ACCORDANCE WITH SECTION 811 EXCEPT THAT THE COATING SHALL BE AN APPROVED INORGANIC ZINC PRIMER AND TOPCOAT SYSTEM CONFORMING TO SUBSECTION 1008-03 AS MANUFACTURED BY MOBIL CHEMICAL COMPANY OR EXXON CHEMICAL COMPANY (SEE SPECIAL PROVISIONS)



ELEVATION OF BOX GIRDER SHOWING CROSS GIRDER

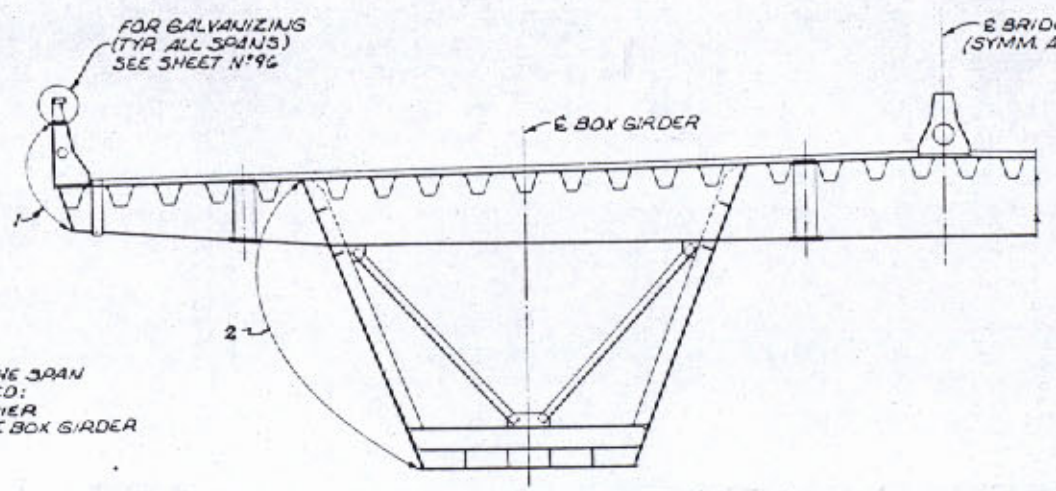


SECTION THRU CROSS GIRDER

THE ENTIRE INTERIOR OF THE CROSS GIRDERS INCLUDING THE WEBS, FLANGES, STIFFENERS AND CABLE ANCHORAGES SHALL BE CLEANED AND PAINTED WITH ONE COAT OF INORGANIC ZINC PRIMER (TYP.) AT THE CONTRACTORS OPTION, BOLTS, SPLICE PLATES AND FAYING SURFACES OF CONNECTIONS MAY NOT BE PAINTED.

THE ENTIRE CROSS GIRDER INCLUDING WEBS, FLANGES, STIFFENERS, SPLICE PLATES AND CABLE ANCHORAGE ASSEMBLIES IS DESIGNATED AS A FRACTURE CRITICAL MEMBER (TYP.)

THE FOLLOWING PORTIONS OF THE SPAN SECTION SHALL BE BLAST CLEANED:
1-OUTER SURFACE OF STEEL BARRIER
2-EXTERIOR WEB OF MAIN LONGIT. BOX GIRDER



TYPICAL SECTION (SPANS OTHER THAN 3M)

C. W. Hansen

(1)	REVISIONS: DATE / DESCRIPTION / BY	
	8-27-82	NOTE ADDED	FEL

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

MISCELLANEOUS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

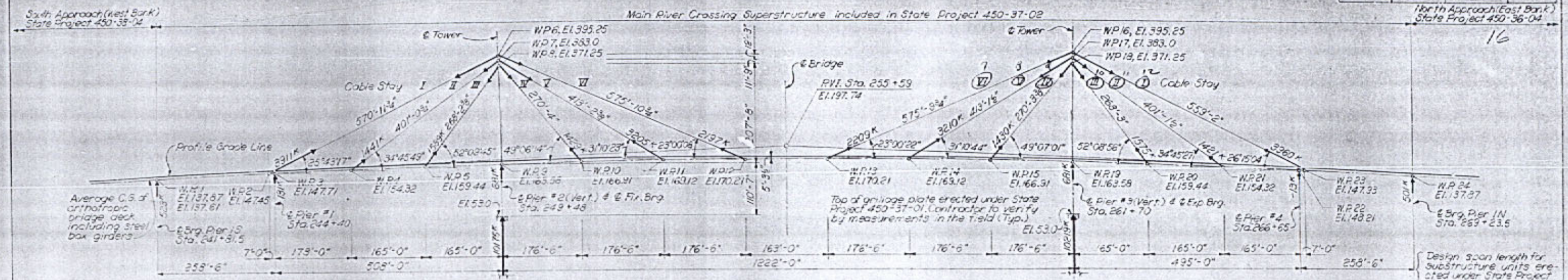
FRANKLAND AND LIENHARD MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE | DWG NO. 10A
DRAWN BY | CHKD BY | IN CHARGE | APPROVED

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
1-310-4(35)223	450-37-02	ST. CHARLES	11 A

16



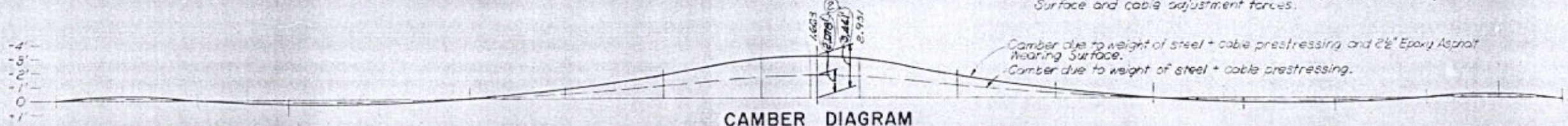
Design span length for substructure units erected under State Project 450-37-01. Contractor to verify by measurements in the field.

REACTIONS AND VERTICAL GEOMETRY OF CABLE STAYED SUPERSTRUCTURE FINAL POSITION OF STRUCTURE UNDER FULL DEAD LOAD *

SCALE : 1" = 100'

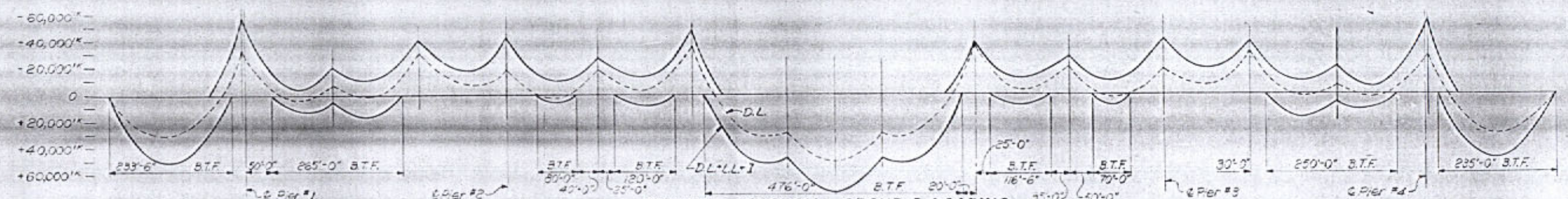
* Includes weight of steel, weight of the Epoxy Asphalt Wearing Surface and cable adjustment forces.

NOTE:
In addition vertical curvature to be added.



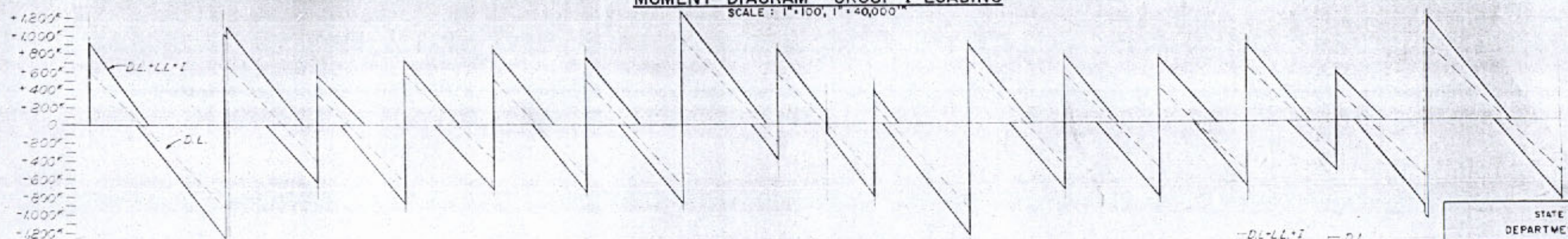
CAMBER DIAGRAM

SCALE : 1" = 100' (HORIZ.), 1" = 4'-0" FOR CAMBER ORDINATES



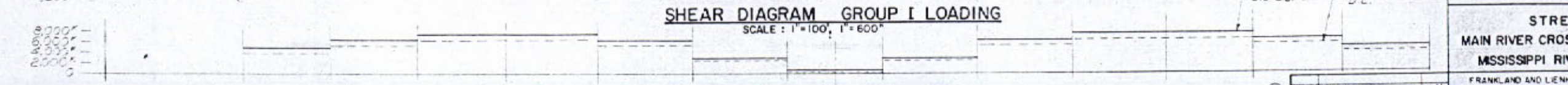
MOMENT DIAGRAM - GROUP I LOADING

SCALE : 1" = 100', 1" = 40,000'K



SHEAR DIAGRAM GROUP I LOADING

SCALE : 1" = 100', 1" = 600"



AXIAL THRUST DIAGRAM

SCALE : 1" = 100', 1" = 10,000'K

O. W. Hansen

NOTES:

For General Notes See Dwg. No. 2.
Stress values shown on this drawing are for one (1) Box girder, one (1) tower column and one (1) plan of cable stays.
Angle values shown are for projections of cable chords btwn. WPs. onto a vertical plane parallel to ℄ Bridge.
Length of Cable Stays shown are measured along the cable chords btwn. WPs.
For Stress and Camber Data see Dwgs. Nos 12-16.
B.T.F. denotes bottom tension flange requiring Charpy V-Notch Test (See Sheet No. 2)

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

STRESS SHEET
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
2	8/08/78 Camber Values	F&L
1	2/27/78 New Sheet (See Sht. 11)	F&L

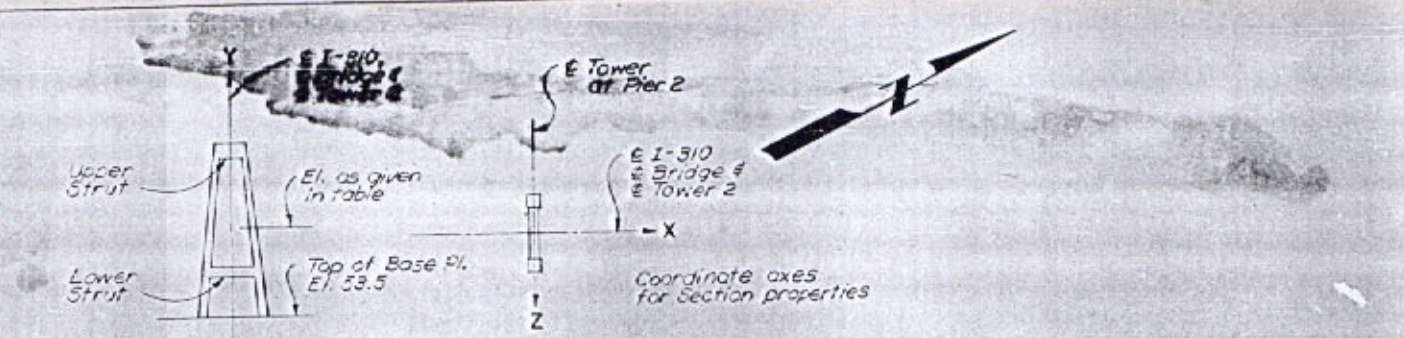
REVISIONS

DATE Dec. 76 | SCALE As shown | DWG. 11 A
DRAWN BY I.T. | CHKD BY G.D. | IN CHARGE S.J. | APPROVED WML

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	12

17



KEY ELEV. KEY PLAN

STRESS DATA FOR TOWER 2

Stresses and Section Properties	Location of Sections	Tower Columns: Section at Base Pl. El. 53.5	Section at El. 131	Section at El. 151	Section at El. 212.5	Section at El. 265	Section at El. 327	Section at El. 359	Lower Strut: Section at ℄ Span ②	Upper Strut: Section at ℄ Span ②
Axial Load in Kips, due to:	Weight of steel *	8,225	8,165	7,668	7,344	7,089	6,874	6,683	Column 263	Column 284
	Weight of 2½" Epoxy Asph. W.S.	1,415	1,415	1,121	1,121	1,121	1,121	1,121	98	40
	Weight of Future W.S. (19 psf.)	856	856	679	678	678	675	673	53	24
	Total Dead Load	11,096	10,437	9,467	9,143	8,887	8,673	8,483	420	348
	Live Load + Impact	1,432	1,495	1,347	1,347	1,507	1,507	1,154	33	20
	Total AASHTO Group I Ldg.	12,588	11,932	10,814	10,430	10,394	10,180	9,642	455	368
	Total AASHTO Group II Ldg.	3,441	10,606	8,742	7,203	7,004	6,654	7,398	770	270
	Total AASHTO Group V Ldg.	8,464	3,522	7,806	6,436	6,234	5,941	7,142	1005	256
	Group X (D.L. + Hurricane)	7,532	9,148	7,293	5,607	5,437	5,184	7,407	729	208
Bend. Mom. Mxx in Foot Kips, due to:	Weight of steel *	-2,415	-9,069	1,483	-1,245	-1,821	-1,127	-390	7,580	4,109
	Weight of 2½" Epoxy Asph. W.S.	-2,012	-4,436	-845	-550	-316	-25	-114	5,342	635
	Weight of Future W.S. (19 psf)	-1,217	-2,727	-512	-332	-192	-52	-69	3,232	384
	Total Dead Load	-5,644	-15,235	132	2,127	-2,329	-1,265	-573	16,154	5,128
	Live Load + Impact	-936	-2,436	-305	-218	-415	-138	8	10,407	617
	Total AASHTO Group I Ldg.	-6,640	-18,721	-173	-2,345	-2,744	-1,403	-565	26,561	5,745
	Total AASHTO Group II Ldg.	-25,287	-28,374	-16,645	1,080	-3,628	-3,431	-11,337	48,126	13,158
	Total AASHTO Group V Ldg.	-41,524	-24,295	-17,871	2,339	-4,271	-6,561	-10,872	47,577	12,795
	Group X (D.L. + Hurricane)	-25,674	-28,864	-17,780	1,563	-3,363	-9,574	-4,136	47,203	12,648
Bend. Mom. Myy in Foot Kips, due to:	Weight of steel *								370	718
	Weight of 2½" Epoxy Asph. W.S.								-256	-126
	Weight of Future W.S. (19 psf.)								-155	-77
	Total Dead Load								-41	515
	Live Load + Impact								2,973	26
	Total AASHTO Group I Ldg.								2,938	541
	Total AASHTO Group II Ldg.								6,730	1,239
	Total AASHTO Group V Ldg.								8,653	1,017
	Group X (D.L. + Hurricane)								9,300	1,195
Bend. Mom. Mzz in Foot Kips, due to:	Weight of steel *	-28,603	26,318	-26,634	-23,281	-20,638	-18,017	15,763		
	Weight of 2½" Epoxy Asph. W.S.	16,396	-11,527	12,116	7,786	4,403	1,050	1,855		
	Weight of Future W.S. (19 psf.)	9,932	-7,228	7,311	4,713	2,664	633	1,114		
	Total Dead Load	-2,275	7,163	-7,247	-10,782	-13,571	-16,334	18,712		
	Live Load + Impact	40,074	-28,435	29,031	19,037	7,663	8,714	7,437		
	Total AASHTO Group I Ldg.	37,799	-21,266	21,684	7,845	-5,903	-13,620	26,149		
	Total AASHTO Group II Ldg.	-112,474	-7,779	4,339	-15,260	-18,395	-16,574	19,678		
	Total AASHTO Group V Ldg.	-105,900	-6,739	8,106	-13,624	-16,964	-14,870	17,674		
	Group X (D.L. + Hurricane)	-121,226	11,658	13,337	-13,339	-16,547	-13,833	20,514		
Torsional Mom. in Foot Kips, due to:	Weight of steel *								-282	-3
	Weight of 2½" Epoxy Asph. W.S.								125	-1
	Weight of Future W.S. (19 psf.)								75	0
	Total Dead Load								-82	-4
	Live Load + Impact								0	46
	Total AASHTO Group I Ldg.								-82	42
	Total AASHTO Group II Ldg.								-7,870	494
	Total AASHTO Group V Ldg.								-6,532	444
	Group X (D.L. + Hurricane)								-8,512	526
Section Properties	Area in Sq. In.	1,704	1,567	810	759	712	655	705	782	1,055
	Ixx in In⁴	10,822,550	8,316,910	6,464,830	5,171,490	4,149,870	3,141,100	2,837,950	5,914,750	17,102,400
	Iyy in In⁴								1,667,530	5,173,500
	Izz in In⁴	16,974,630	12,100,580	8,298,085	6,384,000	4,000,000	3,302,610	2,745,900		
	Torsional Constant in In⁴	13,416,190	9,725,180	6,004,100	5,200,060	4,707,070	3,276,290	3,421,440	3,231,758	10,533,200

Note:
Stresses are reduced by group coefficients as follows:
Group I = 1.00 Group IV = 1.40
Group II = 1.25 Group X = 1.60

* Includes Cable Prestressing

②

Section at El. 131	Section at El. 151
8,207	7,624
1,423	1,115
860	674
10,491	9,413
1,536	1,387
12,027	10,800
8,950	7,550
8,010	7,000
7,160	5,950
-7,563	-113
-3,749	64
-2,268	39
-13,580	-10
-3,620	310
-17,200	300
-15,800	10,010
-20,300	11,800
-13,800	10,200

②

-23,862	-28,666
10,814	12,997
6,548	7,869
-6,500	-7,800
23,700	8,100
23,500	19,500
23,500	-2,800
20,700	-2,600
24,900	-2,950

D.L. CAMBER DATA FOR TOWER 2 *

	Location of Section	Axial Camber of Tower Columns due to Axial Loads: Section at Base of Tower	Section at El. 141	Section at El. 212.5	Section at El. 265	Section at El. 327	Section at El. 371	Camber due to Bend. Mxx: Lower strut: Section at ℄ Span	Upper strut: Section at ℄ Span
Camber in feet due to	Weight of steel	0	.02	.04	.06	.07	.09	.03	.00
	Weight of 2½" Epoxy Asph. W.S.	0	.00	.01	.01	.01	.02	.01	.00
	Total Dead Load Camber	0	.02	.05	.07	.08	.11	.04	.00

* Includes effects of cable prestressing.

O. W. Hansen

②	2-27-78	General revision
	2-22-77	General revision
	DATE	DESCRIPTION
		REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

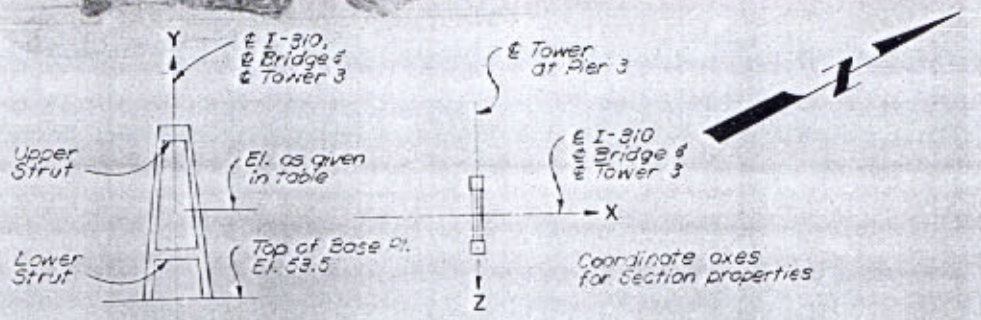
STRESS DATA SHEET - I
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-23-77 SCALE NO SCALE SHEET 12
DRAWN BY S.P. CHKD BY N.D. IN CHARGE S.J. APPROVED

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST CHARLES	12 O



KEY ELEV. **KEY PLAN**

STRESS DATA FOR TOWER 3

Stresses and Section Properties	Location of Sections	Tower Columns: Section at Base Pl. El. 53.5	Section at El. 131	Section at El. 151	Section at El. 212.5	Section at El. 265	Section at El. 327	Section at El. 359	Lower Strut: Section at ℄ Column	Upper Strut: Section at ℄ Column
Axial Load in Kips, due to:	Weight of steel *	5,560	5,201	3,774	7,580	7,134	6,510	6,725	265	286
	Weight of 2½" Epoxy Asph. W.S.	1,423	1,423	1,123	1,123	1,123	1,123	1,123	98	40
	Weight of Future W.S. (19 psf.)	861	861	633	683	683	683	682	55	24
	Total Dead Load	11,144	10,485	8,574	9,131	8,936	8,721	8,536	420	350
	Live Load + Impact	1,586	1,607	1,240	173	1,618	926	1,179	187	28
	Total AASHTO Group I Ldg.	12,729	12,146	10,701	9,364	10,554	9,647	9,715	607	378
	Total AASHTO Group II Ldg.	10,134	8,940	7,914	7,698	7,494	7,322	7,174	766	278
	Total AASHTO Group V Ldg.	9,098	8,032	7,083	6,891	6,703	6,555	6,383	1,000	229
	Group X (D.L. + Hurricane)	8250	7,118	6273	6,104	5,944	5,810	5,695	724	211
Bend. Mom. Mxx in Foot Kips, due to:	Weight of steel *	-2,392	-2,259	-1,454	-1,245	-1,821	-1123	-390	7,572	4,039
	Weight of 2½" Epoxy Asph. W.S.	-2,003	-1,487	-844	-549	-316	-85	-113	5,331	632
	Weight of Future W.S. (19 psf.)	-1,212	-2,712	-511	-332	-191	-52	-69	3,225	383
	Total Dead Load	-5,607	-6,261	132	-2126	-2,328	-1,265	-572	16,128	5,114
	Live Load + Impact	-470	-1,925	-445	-546	-555	-214	227	10,235	617
	Total AASHTO Group I Ldg.	-6,077	-15,675	-435	-2,672	-2,883	-1,479	-345	26,363	5,731
	Total AASHTO Group II Ldg.	-45,598	-23,286	-15,737	-6,324	1,450	7,404	10,470	47,833	13,134
	Total AASHTO Group V Ldg.	-59,601	-25,336	-16,908	-3,768	2,280	6,709	9,991	47,246	12,770
	Group X (D.L. + Hurricane)	-47,023	-21,747	-16,414	-6,122	-4,926	7,991	11,053	46,899	12,624
Bend. Mom. Myy in Foot Kips, due to:	Weight of steel *								-1	-655
	Weight of 2½" Epoxy Asph. W.S.								56	99
	Weight of Future W.S. (19 psf.)								58	60
	Total Dead Load								153	-496
	Live Load + Impact								-12	60
	Total AASHTO Group I Ldg.								141	-436
	Total AASHTO Group II Ldg.								-227	-195
	Total AASHTO Group V Ldg.								-265	11
	Group X (D.L. + Hurricane)								-269	-99
Bend. Mom. Mzz in Foot Kips, due to:	Weight of steel *	22,204	20,388	20,337	18,914	17,752	16,599	15,608	0	0
	Weight of 2½" Epoxy Asph. W.S.	-13,887	3,487	3,436	-5,925	-3,109	-918	-2,083	0	0
	Weight of Future W.S. (19 psf.)	-8,451	5,733	5,745	-3,595	-1,831	-132	-1,260	0	0
	Total Dead Load	-84	29,162	5,144	9,404	12,761	16,089	13,951	0	0
	Live Load + Impact	-36,776	-25,729	-20,354	3,786	-5,616	2,973	8,791		
	Total AASHTO Group I Ldg.	-36,821	-20,939	-14,544	13,190	7,144	19,063	27,742		
	Total AASHTO Group II Ldg.	-21,080	1,969	10,805	5,272	10,368	13,962	14,359		
	Total AASHTO Group V Ldg.	1,207	15,242	22,083	13,914	15,500	15,771	13,477		
	Group X (D.L. + Hurricane)	-22,047	1,082	10,106	3,488	7,771	11,188	11,011		
Torsional Mom. in Foot Kips, due to:	Weight of steel *								0	0
	Weight of 2½" Epoxy Asph. W.S.								0	0
	Weight of Future W.S. (19 psf.)								0	0
	Total Dead Load								0	0
	Live Load + Impact								-184	-477
	Total AASHTO Group I Ldg.								-184	-477
	Total AASHTO Group II Ldg.								229	306
	Total AASHTO Group V Ldg.								204	273
	Group X (D.L. + Hurricane)								292	486
Section Properties	Area in Sq. In.	1,704	1,567	810	759	712	655	705	782	1,055
	Ixx in In.⁴	10,822,550	8,316,910	6,404,830	5,171,490	4,149,870	3,141,100	2,837,950	5,914,750	17,102,400
	Iyy in In.⁴								1,667,530	5,173,500
	Izz in In.⁴	16,974,630	12,100,580	8,295,085	6,384,000	4,600,000	3,302,610	2,746,900		
	Torsional Constant in In.⁴	13,416,190	9,725,180	8,004,100	5,200,000	4,707,070	3,276,290	3,421,440	3,231,758	10,533,200

Section at El. 131	Section at El. 151
8,243	7,660
1,430	1,122
865	679
10,539	9,461

-7,660	112
-3,794	-64
-2,296	-38
-13,750	10

18,918	23,017
-8,803	-10,721
-5,325	-6,486
4,790	5,810

Note:
Stresses are reduced by group coefficients as follows:
Group I = 1.00 Group V = 1.40
Group II = 1.25 Group X = 1.60

* Includes Cable Prestressing

D.L. CAMBER DATA FOR TOWER 3 *

Location of Section		Axial Camber of Tower Columns due to Axial Load: Section at Base of Tower	Section at El. 141	Section at El. 212.5	Section at El. 265	Section at El. 327	Section at El. 371	Camber due to Band. Mxx: Lower strut: Section at ℄ Span	Upper strut: Section at ℄ Span
Camber in feet, due to	Weight of steel	.00	.02	.04	.06	.07	.09	.03	.00
	Weight of 2½" Epoxy Asph. W.S.	.00	.00	.01	.01	.01	.02	.01	.00
	Total Dead Load Camber	.00	.02	.05	.07	.08	.11	.04	.00

* Includes effects of cable prestressing.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

STRESS DATA SHEET - 1a
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

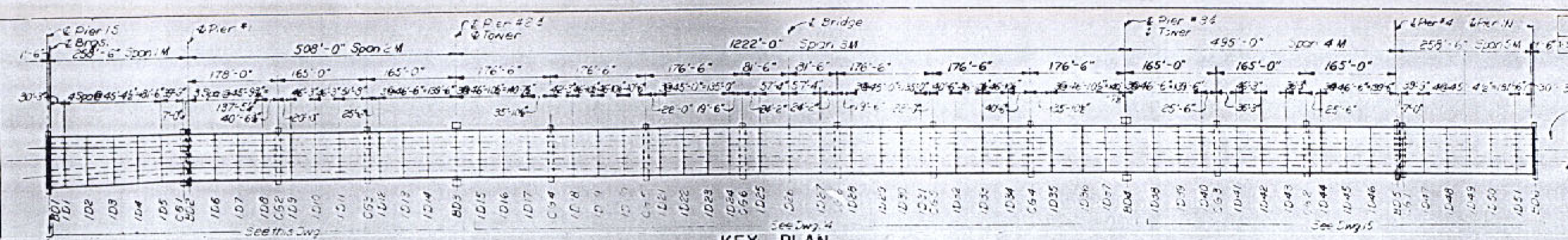
DATE	DESCRIPTION	BY
2	General revision	
1	Revised Stress F	

REVISIONS

DATE 5-24-77 SCALE NO SCALE DWG NO 12 2
DRAWN BY S.P. CHKD BY N.D. IN CHARGE S.J. APPROVED

O. W. Hansen

FRAME 1 24x



KEY PLAN

STRESS AND CAMBER DATA FOR DECK STRUCTURE

SPAN 1 M — EASTERLY BOX GIRDER

Stresses and Section Properties / Location of Deck Section	BD1	1D1	1D2	1D3	1D4	1D5	CG1	BD2
Reaction in Kips, due to:								
Weight of steel	358							354
—"— 2½" Epoxy Asph.W.S.	13							131
Cable Adjustment	8							-235
Subtotal Dead Load	525							250
Weight of Future W.S.(19psf)	75							80
Total Dead Load	603							330
Live Load+Impact	357							950
Total AASHTO Group I Ldg.	960							1280
Max. Shear in Kips, due to:								
Weight of steel	390	269	35	[illegible]	-233	-322	-666	533
—"— 2½" Epoxy Asph.W.S.	129	89	29	-29	-51	-141	151	141
Cable Adjustment	8	8	8	5	8	8	8	-32
Subtotal Dead Load	527	366	132	-30	-311	-526	-667	651
Weight of Future W.S.(19psf)	79	54	18	-17	-52	-57	-115	91
Total Dead Load	606	420	150	-107	-363	-613	-962	742
Live Load + Impact	336	211	117	87	-176	-292	-509	414
Total AASHTO Group I Ldg.	942	631	367	94	-539	-905	-1471	1226
Axial Force in Kips, due to:								
Weight of steel							2734	2747
—"— 2½" Epoxy Asph.W.S.							503	514
Cable Adjustment							444	435
Subtotal Dead Load							3681	3696
Weight of Future W.S.(19psf)							309	311
Total Dead Load							3995	4007
Live Load + Impact							959	[illegible]
Total AASHTO Group I Ldg.							4954	4966
Bend. Mom. in Ft.K. due to:								
Weight of steel	7	9345	12803	18313	11468	-4235	-23456	-41713
—"— 2½" Epoxy Asph.W.S.	7	3242	5366	5969	3362	-1407	-8347	-9142
Cable Adjustment	7	237	591	941	1315	1655	2011	3430
Subtotal Dead Load	7	12474	22744	25734	16659	-2247	-23616	-2425
Weight of Future W.S.(19psf)	7	2008	3647	1963	2045	-1571	-5073	[illegible]
Total Dead Load	12	15482	28415	27336	16744	-3518	-34685	-3383
Live Load + Impact	6	7920	15092	20227	11726	-13225	-24501	-26242
Total AASHTO Group I Ldg	12	23368	44507	47623	28472	-16743	[illegible]	-57645
Section Properties								
Area in Sq.in.	708	704	721	716	713	711	1727	1727
Izz in in⁴	2016870	2500140	[illegible]	3100350	3071180	[illegible]	5823[illegible]	5823[illegible]
Torsional Constant in in⁴	2734[illegible]	2730[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dist. in Inches from neutral axis to: Top fiber	50.5	50.3	57.9	58.3	58.5	57.0	72.6	72.6
Dist. in Inches from neutral axis to: Bott. fiber	120.7	120.4	113.9	113.4	112.9	114.3	98.6	98.6
Camber in Ft. due to:								
Weight of steel	-	.181	.163	.194	-.157	-.079	.003	-
—"— 2½" Epoxy Asph.W.S.	-	-.024	.055	.056	.045	-.019	-.002	-
Cable Adjustment	-	-.004	-.010	.013	.014	.010	-.012	-
Total Dead Load Camber	-	.119	.229	.263	.214	.157	.015	-
Deflection due to F.W.S.(19 psf) **	-	.015	-.031	-.035	.027	-.012	.001	-

SPAN 1 M — WESTERLY BOX GIRDER

Stresses and Section Properties / Location of Deck Section	BD1	1D1	1D2	1D3	1D4	1D5	CG1	BD2
Reaction in Kips, due to:								
Weight of steel	395							332
—"— 2½" Epoxy Asph.W.S.	130							118
Cable Adjustment	8							-232
Subtotal Dead Load	533							218
Weight of Future W.S.(19psf)	80							74
Total Dead Load	613							292
Live Load+Impact	357							950
Total AASHTO Group I Ldg.	970							1242
Max. Shear in Kips, due to:								
Weight of steel	393	659	93	-7	-267	-387	-661	528
—"— 2½" Epoxy Asph.W.S.	130	31	28	-30	-57	-137	-24	147
Cable Adjustment	8	7	8	8	8	7	7	-32
Subtotal Dead Load	53	366	129	-92	308	-517	-373	643
Weight of Future W.S.(19psf)	77	54	19	-18	-52	-55	-114	89
Total Dead Load	[illegible]	420	147	-110	-360	-602	-352	732
Live Load + Impact	258	212	197	-103	-189	-257	-358	414
Total AASHTO Group I Ldg.	868	632	284	-213	-543	-859	-1310	1146
Axial Force in Kips, due to:								
Weight of steel							2738	2751
—"— 2½" Epoxy Asph.W.S.							510	515
Cable Adjustment							444	435
Subtotal Dead Load							3692	3701
Weight of Future W.S.(19psf)							309	312
Total Dead Load							4001	4013
Live Load + Impact							942	942
Total AASHTO Group I Ldg.							4943	4955
Bend. Mom. in Ft.K. due to:								
Weight of steel	0	10047	16272	18774	11322	-2693	-22948	-2417
—"— 2½" Epoxy Asph.W.S.	0	3314	5379	5941	5290	1795	-4141	[illegible]
Cable Adjustment	0	347	611	974	1344	1719	2013	3416
Subtotal Dead Load	0	13612	24862	25631	16556	-2169	-23945	-25938
Weight of Future W.S.(19psf)	0	2026	3658	3672	2080	-1157	-5005	-4935
Total Dead Load	0	15638	28530	27343	18616	-3226	-34121	-36551
Live Load + Impact	0	9340	14951	14758	17768	-13032	-21003	-22232
Total AASHTO Group I Ldg	0	25175	43451	46061	35684	-16258	-55131	-53113
Section Properties								
Area in Sq.in.	708	704	721	716	709	711	1727	1727
Izz in in⁴	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5823[illegible]	5823[illegible]
Torsional Constant in in⁴	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dist. in Inches from neutral axis to: Top fiber	50.6	50.3	57.8	58.3	58.5	57.0	72.6	72.6
Dist. in Inches from neutral axis to: Bott. fiber	120.7	120.4	113.9	113.4	112.9	114.3	98.6	98.6
Camber in Ft. due to:								
Weight of steel	-	-.06	.168	.184	.116	-.077	-.003	-
—"— 2½" Epoxy Asph.W.S.	-	-.024	.056	-.056	.045	-.019	-.002	-
Cable Adjustment	-	-.004	.010	-.013	-.014	-.010	-.012	-
Total Dead Load Camber	-	.13	.224	-.263	.213	.106	.015	-
Deflection due to F.W.S.(19 psf) **	-	.015	-.031	-.034	.026	-.012	-.001	-

SPAN 2 M — EASTERLY & WESTERLY BOX GIRDER

Stresses and Section Properties / Location of Deck Section	1D6	1D7	1D8	CG2	1D9	1D10	1D11	CG3	1D12	1D13	1D14	BD3
Reaction in Kips, due to:												
Weight of steel												1058
—"— 2½" Epoxy Asph.W.S.												286
Cable Adjustment												-565
Subtotal Dead Load												779
Weight of Future W.S.(19psf)												173
Total Dead Load												952
Live Load+Impact												679
Total AASHTO Group I Ldg.												1631
Max. Shear in Kips, due to:												
Weight of steel	209	83	-83	-285	151	-13	-177	153	24	145	-315	559
—"— 2½" Epoxy Asph.W.S.	95	41	13	-61	35	1	-53	47	20	-54	-88	144
Cable Adjustment	-31	-31	-30	-30	55	-55	-55	327	328	323	330	-231
Subtotal Dead Load	313	93	-126	376	150	-67	-285	529	372	150	73	463
Weight of Future W.S.(19psf)	57	25	-8	-37	33	[illegible]	-32	30	12	-21	-53	87
Total Dead Load	370	118	-134	-413	183	-66	-317	559	384	129	-126	550
Live Load + Impact	318	220	-165	-228	136	59	130	161	87	37	-233	347
Total AASHTO Group I Ldg.	688	338	-299	-641	319	-125	447	720	471	166	-359	897
Axial Force in Kips, due to:												
Weight of steel	2747	2747	2747	3829	3829	3829	3823	4425	4425	4425	4425	4520
—"— 2½" Epoxy Asph.W.S.	514	514	514	730	730	730	730	[illegible]	854	854	864	880
Cable Adjustment	435	435	435	335	335	395	395	709	[illegible]	709	709	635
Subtotal Dead Load	3696	3696	3696	4954	4954	4954	4954	5998	5998	5998	5998	6035
Weight of Future W.S.(19psf)	311	311	311	442	442	442	442	523	523	523	523	536
Total Dead Load	4007	4007	4007	5396	5396	5396	5396	6521	6521	6521	6521	6537
Live Load + Impact	959	959	959	1153	1153	1153	1153	1212	1212	1212	1212	1237
Total AASHTO Group I Ldg.	4966	4966	4966	6549	6549	6549	6549	7733	7733	7733	7733	7774
Bend. Mom. in Ft.K. due to:												
Weight of steel	-3730	3739	3654	-3820	642	3475	-1673	-6843	-4655	-17654	-25550	-47857
—"— 2½" Epoxy Asph.W.S.	-2523	575	1173	-314	1152	2313	1172	-3253	-2332	-773	-5648	-11032
Cable Adjustment	1933	463	-374	2213	3393	5978	8533	-11220	3011	2236	27540	42437
Subtotal Dead Load	-4530	4375	3572	-6353	1624	142	-8546	-3452	-30065	-3188	-1568	-1964
Weight of Future W.S.(19psf)	560	519	703	-201	634	1595	649	-1967	-1447	-1672	-3415	-1010
Total Dead Load	-3940	5094	4576	-4554	-258	1365	-7621	-3419	-31512	-9860	-10673	-21135
Live Load + Impact	12178	1558	11251	12705	12155	16316	-9976	10210	10236	-11112	-13551	23542
Total AASHTO Group I Ldg	-15118	12752	15227	-19251	3435	17661	-17567	-43665	-31748	-20373	-23164	46477
Section Properties												
Area in Sq.in.	728	728	718	1437	729	729	729	1336	932	728	748	733
Izz in in⁴	[illegible]	[illegible]	[illegible]	4960880	[illegible]	[illegible]	[illegible]	4857080	[illegible]	[illegible]	[illegible]	3740100
Torsional Constant in in⁴	[illegible]	[illegible]	[illegible]	4805909	[illegible]	[illegible]	[illegible]	4853400	[illegible]	2875560	2753560	2811474
Dist. in Inches from neutral axis to: Top fiber	62.7	62.7	62.7	74	62.7	62.7	62.7	79.5	65.2	62.7	62.7	77.4
Dist. in Inches from neutral axis to: Bott. fiber	108.3	108.3	108.3	92.5	108.3	108.3	108.3	78	103.4	108.3	105.2	102.5
Camber in Ft. due to:												
Weight of steel	.138	.062	.074	.130	.147	.137	.233	.278	.284	.258	.171	-.029
—"— 2½" Epoxy Asph.W.S.	.103	-.001	.015	.05	.105	.101	.129	.124	.129	.032	.025	.006
Cable Adjustment	.015	.037	.060	.078	.085	.094	.092	.037	.003	.061	.183	.007
Total Dead Load Camber	.157	.015	.149	.203	.227	.280	.326	.339	.316	.229	.113	-.028
Deflection due to F.W.S.(19 psf) **	.002	[illegible]	-.002	-.003	.005	.001	.006	.015	.018	.019	.015	-.014

* Amount of camber required in order to obtain closure of structure in conformance with plan grade. Does not include camber due to vertical curvature.

** Represents anticipated deflection of the structure under future wearing surface of 19 psf.

NOTE:
Stresses given in table represent maximum values occurring at joints under governing loading conditions.

O. W. Hanea

DATE	DESCRIPTION REVISIONS	BY
[illegible]	New sheet [illegible]	[illegible]

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

STRESS DATA – SHEET 2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

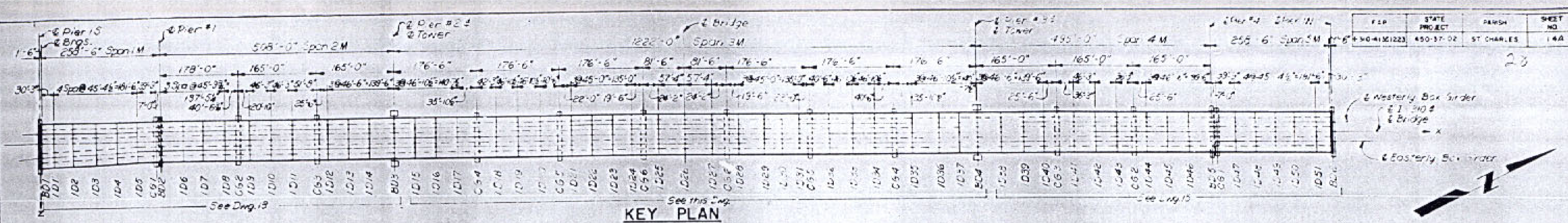
FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-23-[illegible] · SCALE · DRAWN BY · CHECKED BY · APPROVED

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(30)123	450-37-32	ST. CHARLES	13A

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
90-41(223)	450-37-02	ST. CHARLES	14A



KEY PLAN

STRESS AND CAMBER DATA FOR DECK STRUCTURE

SPAN 3 M

EASTERLY & WESTERLY BOX GIRDER

Stresses and Section Properties / Location of Deck Section		1D15	1D16	1D17	CG4	1D18	1D19	1D20	CG5	1D21	1D22	1D23	1D24	CG6	1D25	1D26
Reaction in Kips, due to:	Weight of steel															
	2½" Epoxy Asph. W.S.															
	Cable Adjustment															
	Subtotal Dead Load															
	Weight of Future W.S. (19psf)															
	Total Dead Load															
	Live Load + Impact															
	Total AASHTO Group I Ldg.															
Max. Shear in Kips, due to:	Weight of steel	233	161	-33	448	215	21	-174	815	140	443	292	84	396	233	0
	2½" Epoxy Asph. W.S.	90	36	-9	100	31	-4	-58	179	33	100	-47	-6	97	69	0
	Cable Adjustment	-230	-229	-228	-89	46	-87	-86	-113	-112	-111	-111	-110	-6	-5	-5
	Subtotal Dead Load	23	42	285	459	173	-70	-313	881	631	433	208	-32	487	302	-5
	Weight of Future W.S. (19psf)	34	21	-11	60	30	-2	-35	164	93	60	28	-4	59	42	0
	Total Dead Load	252	-21	296	513	208	-72	-353	989	724	493	236	-36	546	344	-5
	Live Load + Impact	237	142	-48	250	182	-38	-152	303	251	163	92	-12	271	190	-110
	Total AASHTO Group I Ldg.	459	41	-324	763	390	-32	-505	1292	1011	661	335	-145	817	534	-115
Axial Force in Kips, due to:	Weight of steel	4519	4519	4519	4519	3324	3324	3324	3324	1398	1393	1395	1395	1399	134	-134
	2½" Epoxy Asph. W.S.	880	880	880	880	746	746	746	746	285	285	285	285	285	11	11
	Cable Adjustment	606	606	606	606	430	430	430	430	534	534	534	534	534	294	294
	Subtotal Dead Load	6005	6005	6005	6005	5060	5060	5060	5060	2217	2217	2217	2217	2217	143	143
	Weight of Future W.S. (19psf)	532	532	532	532	451	451	451	451	173	173	173	173	173	-7	-7
	Total Dead Load	6537	6537	6537	6537	5511	5511	5511	5511	2390	2390	2390	2390	2390	142	142
	Live Load + Impact	1237	1237	1237	1237	1042	1042	1042	1042	454	454	454	454	454	90	90
	Total AASHTO Group I Ldg.	7774	7774	7774	7774	6553	6553	6553	6553	2844	2844	2844	2844	2844	232	232
Bend. Mom. in Ft.K. due to	Weight of steel	-27932	-16567	-14081	-15923	-5047	317	-3420	-15561	423	24879	41064	49038	49384	57068	63947
	2½" Epoxy Asph. W.S.	-5666	-2765	-2467	-3835	-702	35	-1125	-4470	-522	486	[illegible]	9060	[illegible]	576	2200
	Cable Adjustment	22839	22006	222	3001	-72	-4836	8901	23982	-14854	19883	24872	29822	-31955	-32098	-32444
	Subtotal Dead Load	-6?5	2674	-5266	-12775	6480	4154	13446	32413	-15253	9857	24347	28276	26140	35678	44193
	Weight of Future W.S. (19psf)	-3428	-1672	-456	-2331	-424	221	-620	-2704	-446	2942	4936	5483	5272	6486	[illegible]
	Total Dead Load	-4096	[illegible]	-6722	-22106	[illegible]	-3933	-14126	35117	-15749	12799	29223	33759	31412	42164	51878
	Live Load + Impact	-3986	1549	-5922	-9608	10051	11880	-10129	-11056	[illegible]	15646	20030	9455	19422	19345	22532
	Total AASHTO Group I Ldg.	-16025	-10547	-16644	-32??	15955	7947	24255	-46213	-24862	28445	49313	53254	49834	61509	74402
Section Properties	Area in Sq. in.	728	728	728	1326	724	725	728	1713	882	[illegible]	721	766	1419	927	725
	Izz in In⁴	3,108,950	[illegible]	3,109,950	4,857,080	[illegible]	[illegible]	[illegible]	6,916,800	4,681,860	[illegible]	3,032,490	3,163,740	[illegible]	4,228,940	[illegible]
	Torsional Constant in In⁴	2,975,960	[illegible]	[illegible]	4,553,200	[illegible]	[illegible]	[illegible]	5,942,300	3,466,700	[illegible]	[illegible]	3,187,166	[illegible]	3,707,470	[illegible]
	Dist. in Inches from neutral axis to: Top fiber	62.7	62.7	62.7	73.5	62.7	62.7	62.7	76.1	64.6	60.9	60.3	58.4	72.5	75.6	[illegible]
	Bott. fiber	108.9	108.9	108.9	98.0	108.9	108.3	108.3	95.8	107.3	113.3	103.3	113.2	[illegible]	95.9	105.9
Camber in Ft. due to: *	Weight of steel	-.402	-.654	-1.421	.860	-2.406	3.025	-3.047	4.196	4.504	3.125	-5.58	-6.687	-6.?24	-6.366	6.52
	2½" Epoxy Asph. W.S.	-.018	-.173	-.279	-.366	-.474	-.596	-.717	-.825	-.686	1.010	1.1?3	-1.201	-1.228	-1.256	-1.2?8
	Cable Adjustment	.269	.665	.138	1.527	.913	2.307	3.064	3.412	3.4??	3.622	4.354	4.663	4.656	4.766	4.858
	Total Dead Load Camber	-.211	.550	-.362	-.699	-.887	-1.184	-.360	.609	.7	2.81	2.435	2.575	-2.768	2.546	2.551
Deflection due to F.W.S. (19 psf) **		-.047	-.105	-.169	.281	-.287	-.361	.434	.499	.536	[illegible]	-.677	-.727	.743	-.760	-.779

Stresses and Section Properties / Location of Deck Section		1D27	CG6	1D28	1D29	1D30	1D31	CG5	1D32	1D33	1D34	CG4	1D35	1D36	1D37	BD4
Reaction in Kips, due to:	Weight of steel															1579
	2½" Epoxy Asph. W.S.															136
	Cable Adjustment															-560
	Subtotal Dead Load															855
	Weight of Future W.S. (19psf)															173
	Total Dead Load															273
	Live Load + Impact															679
	Total AASHTO Group I Ldg.															1657
Max. Shear in Kips, due to:	Weight of steel	-238	-334	-79	-266	-443	64	-868	188	-12	-336	-39	39	-148	-396	-562
	2½" Epoxy Asph. W.S.	-68	-97	7	-36	-29	-52	-178	60	5	-49	-100	20	-35	-89	-45
	Cable Adjustment	-4	4	105	106	107	108	108	88	89	90	90	237	237	238	239
	Subtotal Dead Load	-310	495	33	-206	435	-678	-878	330	82	165	49	296	54	-1??	-168
	Weight of Future W.S. (19psf)	41	-58	4	28	-50	-36	104	36	3	30	-60	12	-21	-54	-66
	Total Dead Load	-351	-553	37	-234	435	-770	986	366	85	-195	-109	308	33	-243	-556
	Live Load + Impact	-30	-271	12	100	63	-237	303	52	58	182	-250	82	-42	-230	347
	Total AASHTO Group I Ldg.	-341	-824	143	-334	653	-1007	1289	518	143	-377	-359	396	-109	-477	-903
Axial Force in Kips, due to:	Weight of steel	-134	1397	1397	1397	1397	1397	3813	3813	3813	3813	4502	4502	4502	4502	4502
	2½" Epoxy Asph. W.S.	11	284	284	284	284	284	744	744	744	744	878	878	878	878	878
	Cable Adjustment	294	547	547	547	547	547	512	512	512	512	634	634	634	634	634
	Subtotal Dead Load	143	2228	2228	2228	2228	2228	5069	5069	5069	5069	6014	6014	6014	6014	6014
	Weight of Future W.S. (19psf)	-7	172	172	172	172	172	450	450	450	450	531	531	531	531	531
	Total Dead Load	142	2400	2400	2400	2400	2400	5519	5519	5519	5519	6545	6545	6545	6545	6545
	Live Load + Impact	90	520	520	520	520	520	1071	1071	1071	1071	1242	1242	1242	1242	1242
	Total AASHTO Group I Ldg.	232	2920	2920	2920	2920	2920	6590	6590	6590	6590	7787	7787	7787	7787	7787
Bend. Mom. in Ft.K. due to	Weight of steel	57100	49461	43170	41359	25348	1075	-14785	-2594	1247	-4015	-17790	-13144	-15880	-27402	-48817
	2½" Epoxy Asph. W.S.	4765	[illegible]	[illegible]	[illegible]	5055	[illegible]	2202	-936	555	-509	-3659	-2238	-2628	-5564	-11046
	Cable Adjustment	-32804	-32852	-30771	-24056	-21301	-16505	-4146	10624	-6509	-2354	1427	9907	21033	32680	48435
	Subtotal Dead Load	35175	25442	27544	23572	9052	-16079	-33214	-14154	4707	-6878	-20602	-5475	2525	-757	-16060
	Weight of Future W.S. (19psf)	6616	5314	5533	5003	5027	-394	-2592	-567	335	-308	-2214	-1354	1590	-3366	-6683
	Total Dead Load	41891	30756	33077	28575	12079	-16473	-35806	14721	-4372	-7186	-22236	-6829	935	-4125	-22743
	Live Load + Impact	19345	18622	9495	20030	15646	-5913	-11096	-10129	11880	-9051	9108	-9622	-11549	-13928	-23842
	Total AASHTO Group I Ldg.	61?26	49178	53572	18603	27725	-25586	-46902	24850	7506	-16237	-31344	-16751	-10614	-18061	-46585
Section Properties	Area in Sq. in.	927	1419	766	721	721	882	1713	728	728	728	1396	728	728	728	793
	Izz in In⁴	4,228,940	4,958,400	3,163,740	3,032,490	3,032,490	4,681,860	6,916,800	[illegible]	[illegible]	3,108,950	4,857,080	[illegible]	3,109,980	3,108,950	3,740,100
	Torsional Constant in In⁴	3,707,470	4,960,320	3,187,166	[illegible]	[illegible]	3,466,700	[illegible]	[illegible]	[illegible]	[illegible]	4,853,600	[illegible]	2,975,960	2,975,960	3,111,474
	Dist. in Inches from neutral axis to: Top fiber	75.6	72.5	58.4	50.9	60.9	64.6	76.1	62.7	62.7	62.7	73.5	62.7	62.7	62.7	71.4
	Bott. fiber	95.9	99.1	113.2	[illegible]	[illegible]	[illegible]	95.8	108.3	108.3	108.3	98.0	108.3	108.3	108.3	100.5
Camber in Ft. due to: *	Weight of steel	6.380	-6.244	6.112	-5.405	-5.468	-4.553	-4.247	-3.701	-3.079	-2.357	-1.306	1.460	.543	.417	-.029
	2½" Epoxy Asph. W.S.	1.259	-1.232	1.206	-1.156	-.919	-.856	.836	-.728	-.601	-.464	-.375	.287	.179	.081	-.006
	Cable Adjustment	4.734	4.723	4.651	4.420	4.162	3.713	3.565	3.100	2.602	2.561	1.614	1.201	.92	.754	.206
	Total Dead Load Camber	2.645	2.753	2.467	2.411	2.285	2.136	1.578	1.329	1.564	.560	-.677	[illegible]	.380	.214	-.029
Deflection due to F.W.S. (19 psf) **		.762	.744	-.730	-.681	.677	.542	.474	.441	.361	.293	-.287	-.174	.108	.049	-.016

* Amount of camber required in order to obtain closure of structure in conformance with prof. grade. Does not include camber due to vertical curvature.

** Represents anticipated deflection of the structure under future wearing surface of 19 psf

NOTE:
Stresses given in table represent maximum values occurring at joints under governing loading conditions

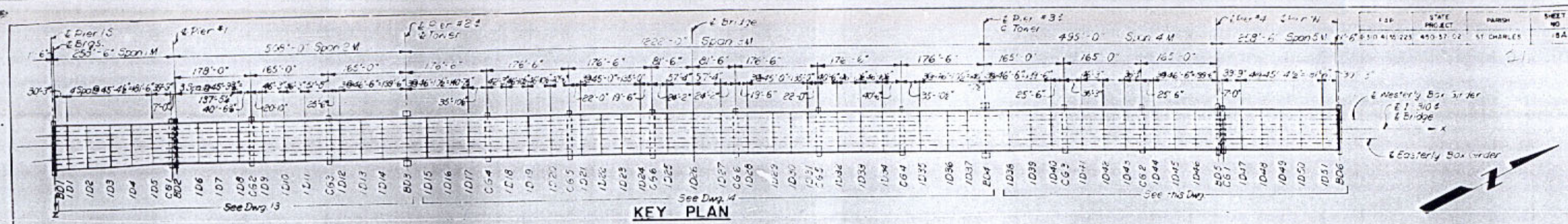
O.W. Vance

①	7/6/73	New sheet - See 14	F.E.C.
DATE		DESCRIPTION REVISIONS	BY

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

STRESS DATA - SHEET 3
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRAME 1 | 24x



KEY PLAN

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
8.510 4(16)223	450-37-02	ST. CHARLES	18A

STRESS AND CAMBER DATA FOR DECK STRUCTURE

SPAN 4 M — SPAN 5 M

EASTERLY & WESTERLY BOX GIRDER

Stresses and Section Properties \ Location of Deck Section	1038	1039	1040	C63	1041	1042	1043	C62	1044	1045	1046	805	C61	1047	1048	1049	1050	1051	806
Reaction in Kips, due to:																			
Weight of steel												225							374
—"— 2½" Epoxy Asph. W.S.												34							120
Cable Adjustment												-193							1
Subtotal Dead Load												115							495
Weight of Future W.S. (19psf.)												57							73
Total Dead Load												172							568
Live Load + Impact												905							330
Total AASHTO Group I Ldg.												1077							898
Max. Shear in Kips, due to:																			
Weight of steel	326	143	-35	429	241	75	-92	265	145	-21	-167	-256	641	-165	208	53	124	-225	-374
—"— 2½" Epoxy Asph. W.S.	89	35	-19	112	71	17	-37	59	29	-20	-80	-41	179	132	78	24	-30	-64	-120
Cable Adjustment	-318	-317	-316	51	51	52	53	11	12	13	14	-165	-1	-1	-1	-1	-1	-1	-1
Subtotal Dead Load	97	-139	-365	592	363	144	-76	355	126	-28	-233	-462	619	446	286	76	-135	-350	-495
Weight of Future W.S. (9psf.)	54	21	-12	68	43	10	-22	35	17	-16	-46	-25	108	80	47	14	-18	-51	-73
Total Dead Load	151	-112	-377	660	406	154	-98	390	203	-56	-361	-507	727	526	333	90	-153	-401	-568
Live Load + Impact	233	-37	-87	-161	130	59	-136	228	165	-220	-318	476	318	298	178	97	-154	-235	-330
Total AASHTO Group I Ldg.	384	-149	-464	499	536	213	-234	618	368	-276	679	-953	1245	974	511	187	-307	-636	-868
Axial Force in Kips, due to:																			
Weight of steel	4473	4473	4473	4473	3878	3878	3878	3878	2735	2735	2735	2735	2735						
—"— 2½" Epoxy Asph. W.S.	871	871	871	871	756	756	756	756	523	523	523	523	523						
Cable Adjustment	646	646	646	646	344	344	344	344	407	407	407	407	407						
Subtotal Dead Load	5990	5990	5990	5990	4960	4960	4960	4960	3665	3665	3665	3665	3665						
Weight of Future W.S. (9psf.)	527	527	527	527	447	447	447	447	317	317	317	317	317						
Total Dead Load	6522	6522	6522	6522	5407	5407	5407	5407	4242	4242	4242	4242	4242						
Live Load + Impact	1231	1231	1231	1231	1180	1180	1180	1180	970	970	970	970	970						
Total AASHTO Group I Ldg.	7753	7753	7753	7753	6587	6587	6587	6587	5212	5212	5212	5212	5212						
Bend. Mom. in Ft.K. due to:																			
Weight of steel	-23553	-17953	-15201	-17766	-5765	1436	231	-5595	-151	2624	-2328	-11132	-17782	234	12268	12218	18053	5671	0
—"— 2½" Epoxy Asph. W.S.	-5702	-2594	-2532	-1415	-111	1833	1356	728	161	211	-2065	-1032	-7199	314	3242	1870	6701	1733	0
Cable Adjustment	28372	3266	224	3661	2221	4364	-2471	-577	277	293	835	1528	231	124	123	111	69	25	0
Subtotal Dead Load	-3870	-17281	-17507	-15520	-3655	-1267	-884	-5417	-67	2838	-2458	-2636	-26250	-756	15636	14198	23823	7429	
Weight of Future W.S. (9psf.)	-3450	-1733	-1532	-2066	-68	1139	838	-451	218	252	-1247	-4265	-4477	734	2145	3540	3450	1875	0
Total Dead Load	-9420	-19014	-20039	-22234	-3723	-128	64	-5868	151	3085	-3705	-6901	-31427	-520	19111	28214	27273	14673	0
Live Load + Impact	13551	11119	10236	10216	-9376	16396	-12188	-12705	11251	7555	12178	-26142	24501	-4415	16527	15645	14673	6511	0
Total AASHTO Group I Ldg.	-22971	-13253	-13535	-12018	-23021	15930	-11544	-28073	11402	11243	6925	-53872	-55928	-15635	35636	46367	41946	21244	0
Section Properties:																			
Area in Sq. In.	728	728	729	1356	728	728	728	1637	728	728	728	1727	1727	721	567	567	669	562	662
Izz in In.⁴	3,103,350	3,103,350	3,103,350	6,215,269	3,103,350	3,103,350	3,103,350	7,436,[illegible]	3,103,350	3,103,350	3,103,350	7,436,[illegible]	7,436,[illegible]	3,103,350	2,284,540	2,284,540	2,984,532	2,983,350	2,983,350
Torsional Constant in In.⁴	3,375,960	3,375,960	3,375,960	[illegible]	3,375,960	3,375,960	3,375,960	[illegible]	3,375,960	3,375,960	3,375,960	[illegible]	[illegible]	3,375,960	2,793,440	2,793,440	3,307,192	2,793,440	2,793,440
Dist. in inches from Top fiber	62.7	62.7	62.7	[illegible]	62.7	62.7	62.7	49	62.7	62.7	62.7	[illegible]	72.6	59.3	58.4	58.4	58.4	44	54.2
neutral axis to: Bott. fiber	108.3	108.3	108.3	96.0	98.3	108.3	108.3	115	108.3	108.3	108.3	96.6	96.6	114.3	113.2	113.2	113.2	116.1	114.9
Camber in Ft. due to:																			
Weight of steel	.186	.267	.323	.321	.297	.243	.203	.163	.42	.114	.042	-	-.145	-.253	.163	.199	-.170	-.181	-
—"— 2½" Epoxy Asph. W.S.	.026	.038	.038	.034	.025	.014	.009	.006	.007	.008	.006	-	-.002	-.021	.044	.055	-.043	-.024	-
Cable Adjustment	-.006	-.005	-.006	-.007	.004	.002	.004	.001	.007	.009	.003	-	0	-.001	-.002	-.002	-.001	-.001	-
Total Dead Load Camber	.206	.300	.305	.348	.326	.285	.236	.167	.146	.133	.041	-	-.147	-.135	.204	.257	-.220	.106	-
Deflection due to F.W.S. (19 psf.)**	.017	.025	.023	.021	.015	.009	.006	.005	.014	.014	.004	-	-.001	.012	.027	.034	.030	-.014	-

* Amount of camber required in order to obtain closure of structure in conformance with grade. Does not include camber due to vertical curvature.

** Represents anticipated deflection of the structure under future wearing surface of 19 psf.

O. W. Hanson

NOTE:
Stresses given in table represent maximum values occurring at points under governing loading conditions.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

STRESS DATA – SHEET 4
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

3/1/68	New Sheet-Sec. 15	F.E.C.	
DATE	DESCRIPTION	BY	
REVISIONS			

FRANKLAND AND EBHARD, MOLESH AND MASTERS
CONSULTING ENGINEERS

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO
310-4(351)223	480-37-02	ST CHARLES	168

CABLE GEOMETRY (EAST SIDE)

Cable No.		Elevations Deck W.P. (Feet)	Elevations Tower W.P. (Feet)	Vertical Distance Between W.P.'s (Feet)	Longitudinal Offset of Tower W.P. from Vertical Line through ℄ of Tower Base ① (Feet)	Horizontal (Longit.) Distance Between W.P.'s (Feet)	Distance ℄ Bridge to ℄ of W.P.'s (Transverse) Deck (Feet)	Distance ℄ Bridge to ℄ of W.P.'s (Transverse) Tower (Feet)	Transverse Distance between W.P.'s (Feet)	Straight Line Length of Cable from Deck W.P. to Tower W.P. (Feet)	Distance from W.P. to Face of Socket Deck (Feet)	Distance from W.P. to Face of Socket Tower ⑤ (Feet)	Total Straight Length from Deck Socket to Tower Socket (Feet)	Cable No.	
1		2	3	4	5 & 6	7 & 8	9	10	11	12 & 13	14	15	16 & 17	18	
Pier 2 Tower	I	147.42	395.16	247.74	-60	514.47	45.06	29.48	15.53	571.23	5.67	3.68	580.58	I	Pier 2 Tower
	II	154.30	382.30	228.00	-53	329.57	45.05	30.67	14.38	401.35	4.58	3.84	409.77	II	
	III	159.41	371.15	211.74	48	164.61	45.04	31.80	13.24	263.52	3.42	4.77	276.71	III	
	IV	166.80	371.15	204.35	-48	177.17	45.03	31.80	13.22	270.78	3.42	4.64	278.84	IV	
	V	168.90	388.50	219.60	-53	353.73	45.04	30.67	14.37	413.63	4.58	3.71	421.37	V	
	VI	169.89	395.16	225.27	-59	530.33	45.01	29.48	15.53	576.40	5.67	3.36	585.43	VI	
Pier 3 Tower	I	147.88	395.22	247.33	51	501.49	45.01	29.48	15.53	554.33	5.67	3.67	568.72	I	Pier 3 Tower
	II	154.31	382.36	228.05	45	329.58	45.01	30.67	14.34	401.38	4.58	3.84	409.30	II	
	III	159.44	371.24	211.80	40	164.53	45.05	31.81	13.24	263.76	3.42	4.77	276.71	III	
	IV	166.33	371.24	204.91	40	177.11	44.99	31.81	13.18	270.76	3.42	4.64	278.84	IV	
	V	168.91	382.36	214.05	45	353.42	45.03	30.67	14.36	414.61	4.58	3.71	421.50	V	
	VI	169.88	395.22	225.34	51	529.97	45.01	29.48	15.53	576.75	5.67	3.36	585.11	VI	

CABLE FORCES (EAST SIDE)

Cable No.		Dead Load I ② (Kips)	Dead Load E ③ (Kips)	Cable Adjustment Load ㉔ (Kips)	Future Paving Load (Kips)	Final D.L. without Future Paving ⑥ (Kips)	Final L.L. with Future Paving (Kips)	Live Load Plus Impact Max. (Kips)	Live Load Plus Impact Min. (Kips)	Temperature Loads +60°F (Kips)	Temperature Loads -60°F (Kips)	Design Loads D.L.+L.L.+I. Max. (Kips)	Design Loads D.L.+L.L.+I. Min. (Kips)
19		20	21	22	23	24	25	26	27	28	29	30	31
Pier 2 Tower	I	3016	555	484	333	4050	4383	1076	-305	-3	3	5459	4078
	II	1306	257	-48	155	1515	1670	409	-42	-3	3	2079	1628
	III	959	211	494	127	1664	1791	353	-76	0	0	2144	1715
	IV	1098	209	153	127	1490	1617	398	-93	8	8	2015	1524
	V	2875	542	-51	325	3366	3694	759	-20	1	-1	4458	3674
	VI	1683	322	262	195	2867	2462	583	62	-11	11	3545	2400
Pier 3 Tower	I	3078	564	454	341	4096	4437	1084	-313	-33	33	5521	4124
	II	1328	255	-76	155	1487	1642	409	-38	-25	25	2051	1604
	III	967	210	476	127	1653	1780	358	-75	-11	11	2138	1705
	IV	1087	208	181	126	1482	1612	402	-98	12	-12	2014	1514
	I	2862	541	-40	327	3363	3690	755	-21	10	-10	4445	3669
	VI	1683	322	275	195	2253	2475	578	-59	-4	4	3053	2416

CABLE PROPERTIES (EAST SIDE)

Cable No.		No. of 6" wires per Strand	No. of Strands per Cable	Approx. Diam. of Strand (wires only) (Inches)	Approx. outside Diam. of Socket (Inches)	Area of Cable (wire only) (Sq. In.)	Max. Tensile Stress under Des. Load D.L.+L.L.+I. (KSI)	Approx. Weight of Cable (Incl. Helix Wire Grout & PE Pipe) ⑦ (Lbs/Ft)	Average D.L. in Cable (without Future Paving) (Kips)	Cable Sag under Final D.L. Condit. (without Future Paving) ④ (Feet)	Fabricated Length of Strand from Deck Socket to Face of Tower Socket (Feet)
19		32	33	34	35	36	37	38	39	40 *	41 *
Pier 2 Tower	I	271	4	4.25	11.25	53.18	103	2.68	4216	2.53	579.04
	II	211	2	3.80	10	20.70	100	1.02	1502	1.17	415.72
	III	211	2	3.80	10	20.70	104	1.02	1648	0.36	275.72
	IV	103	4	2.75	7.5	20.21	100	1.13	1473	3.49	278.12
	V	211	4	3.50	10	41.41	108	2.03	3342	1.16	420.76
	VI	307	2	4.90	12	30.12	101	1.43	2249	2.51	583.50
Pier 3 Tower	I	271	4	4.25	11.25	53.18	104	2.68	4062	2.33	567.20
	II	211	2	3.50	10	20.70	99	1.02	1474	1.13	408.77
	III	211	2	3.50	10	20.70	103	1.02	1637	0.37	275.93
	IV	103	4	2.85	7.5	20.21	100	1.13	1469	1.63	278.12
	I	211	4	3.50	10	41.41	107	2.03	3339	1.16	420.63
	VI	307	2	4.90	12	30.12	101	1.43	2262	2.43	583.57

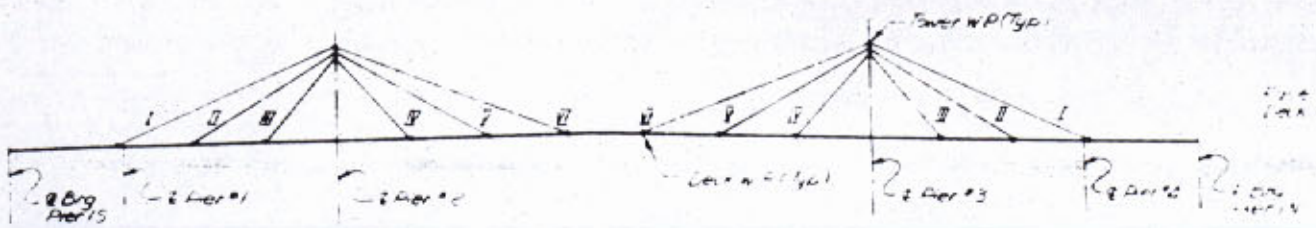
* Values are average length required in ℄ cable stays and given for information only. Exact values for each strand shall be computed by the Contractor in conformance with the location of individual strands with respect to the E of a given cable stay.

NOTES:

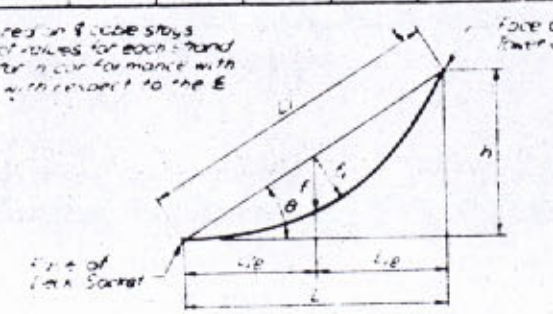
FOR GENERAL NOTES, SEE DWG. Nº 2.
FOR CABLE DETAILS, SEE DWG Nº 89.
"W.P." DENOTES WORKING POINT.
"D.L." DENOTES DEAD LOAD.
ALL VALUES SHOWN IN CABLE GEOMETRY TABULATION CONFORM TO GEOMETRIC DEAD LOAD POSITION AS SHOWN ON DWG Nº 8.
FABRICATED LENGTHS OF STRANDS (COL. 41) ARE COMPUTED BASED ON THE CABLE LOADS IN COL. 24. IT IS INTENDED THAT WHEN ALL WORK POINTS ARE IN GEOMETRIC POSITION, THE CABLE LOADS WILL BE AS SHOWN IN COL. 24.

TABULATION FOOTNOTES:

① SIGN CONVENTION USED REFERS TO OFFSET OF THE W.P. TO THE RIGHT (+) AND TO THE LEFT (-) AS VIEWED IN THE KEY ELEVATIONS.
② CABLE FORCES CAUSED BY ALL DEAD LOADS EXCEPT DECK PAVING, FUTURE WEARING SURFACE AND CABLE GROUT.
㉔ THE SUMS OF CORRESPONDING VALUES IN COL. 20 & COL. 22 WILL RESULT IN CABLE LOADS COMPATIBLE WITH GEOMETRY SHOWN ON DWG. Nº 8a.
③ CABLE FORCES CAUSED BY DECK PAVING AND CABLE GROUT, EXCLUSIVE OF FUTURE WEARING SURFACE.
④ VALUES COMPUTED AT NORMAL TEMPERATURE.
⑤ DIMENSIONS ARE APPROXIMATE, AND SHOULD BE REVISED TO ACTUAL DIMENSIONS WHEN FINAL STRAND LENGTHS ARE COMPUTED FOR FABRICATION.
⑥ VALUES ARE TOTAL OF COLS. 20, 21 AND 22. CABLE FORCES ARE COMPATIBLE WITH GEOMETRY SHOWN ON DRAWING Nº 8.
⑦ WEIGHTS ARE ESTIMATED, AND SHOULD BE REVISED TO ACTUAL WEIGHTS WHEN THE FINAL STRAND LENGTHS ARE COMPUTED FOR FABRICATION.



KEY ELEVATION

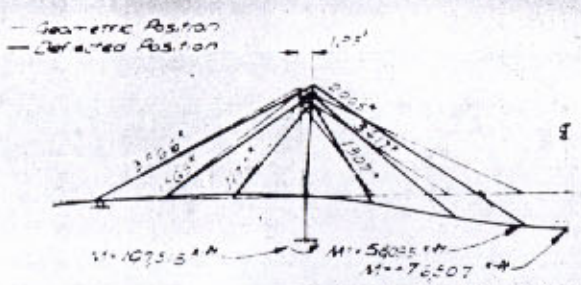


$f_1 = f \cdot \cos\theta$

CABLE GEOMETRY

w = weight of Cable, Column 38
L1 = Column 17
T = Average Cable Tension, Column 39
h = vertical distance
L = $\sqrt{(\text{Transverse Dist})^2 + (\text{Longitudinal Dist})^2}$
A = Cable Area, Column 36
E = 28000 KSI *

$f = \frac{wL^2}{8T}$ $\quad L_{cable} = L\left[1 + \frac{8}{3}\left(\frac{f}{L}\right)^2\right] - \frac{T_{avg} L}{A \cdot E}$ = Column 41



COMPUTED FULL DEAD LOAD FORCES AND MOMENTS WITHOUT CABLE ADJUSTMENT AND FUTURE PAVING

* NOTE: The Contractor should use the actual 'E' for computing the cable fabrication length. The above table was prepared using E = 28000 K.S.I.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CABLE DATA SHEET (EAST SIDE)
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE 5-4-77 | SCALE | DWG NO 165
DRAWN BY | CHKD BY | IN CHARGE | APPROVED

O.W. Hansen

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO
F-310-4(38)SHEET	460-37-03	ST CHARLES	18C

CABLE GEOMETRY (WEST SIDE)

Cable No.		Elevations Deck W.P. Feet	Elevations Tower W.P. Feet	Vertical Distance Between W.P.'s Feet	Longitudinal Offset of Tower W.P. from Vertical Line through ℄ of Tower Base ① Feet	Horizontal (Longit.) Distance Between W.P.'s Feet	Distance ℄ Bridge to ℄ of W.P.'s (Transverse) Deck Feet	Distance ℄ Bridge to ℄ of W.P.'s (Transverse) Tower Feet	Transverse Distance Between W.P.'s Feet	Straight Line Length of Cable from Deck W.P. to Tower W.P. Feet	Distance from W.P. to Face of Socket Deck Feet	Distance from W.P. to Face of Socket Tower ⑤ Feet	Total Straight Length from Deck Socket to Tower Socket Feet	Cable No.	
1		2	3	4	5 & 6	7 & 8	9	10	11	12 & 13	14	15	16 & 17	A9	
Pier 2 Tower	I	147.42	395.15	247.73	-.60	514.46	45.00	23.48	15.52	571.21	5.67	3.68	580.56	I	Pier 2 Tower
	II	154.29	382.90	228.61	-.53	329.53	45.00	30.67	14.33	402.32	4.58	3.54	409.74	II	
	III	159.40	371.15	211.75	-.48	164.32	45.01	31.80	13.21	268.53	3.42	4.79	276.72	III	
	IV	166.81	371.15	204.34	-.48	177.16	45.03	31.80	13.23	270.77	3.42	4.64	278.83	IV	
	V	168.88	382.90	214.02	-.53	353.70	44.98	30.67	14.31	413.22	4.58	3.71	421.35	V	
	VI	168.90	395.15	225.25	-.60	530.32	45.01	23.48	15.53	576.88	5.67	3.36	585.41	VI	
Pier 3 Tower	I	147.34	395.23	247.89	.51	501.48	45.03	23.48	15.55	559.33	5.67	3.67	568.10	I	Pier 3 Tower
	II	154.32	382.93	228.61	.45	329.57	45.03	30.67	14.36	401.38	4.58	3.53	409.80	II	
	III	159.44	371.23	211.79	.40	164.50	45.02	31.81	13.21	268.5[illegible]	3.42	4.77	276.70	III	
	IV	166.35	371.23	204.88	.40	177.[illegible]	45.03	31.81	13.22	270.[illegible]	3.42	4.64	278.80	IV	
	V	168.90	382.93	214.03	.45	353.66	45.00	30.67	14.33	413.35	4.58	3.71	421.84	V	
	VI	168.93	395.23	225.30	.51	529.37	45.01	23.48	15.53	576.23	5.67	3.36	585.11	VI	

CABLE FORCES (WEST SIDE)

Cable No.		Dead Load 1 ② Kips	Dead Load 2 ③ Kips	Cable Adjustment Load ④ Kips	Future Paving Load Kips	Final D.L. without Future Paving ⑤ Kips	Final D.L. with Future Paving Kips	Live Load Plus Impact Max. Kips	Live Load Plus Impact Min. Kips	Temperature Loads +60°F Kips	Temperature Loads 60°F Kips	Design Loads D.L.+L.L.+I. Max. Kips	Design Loads D.L.+L.L.+I. Min. Kips
19		20	21	22	23	24	25	26	27	28	29	30	31
Pier 2 Tower	I	3016	550	454	333	4050	4383	1076	-305	-3	3	5459	4078
	II	1306	257	-48	155	1515	1670	409	-42	-3	3	2078	1628
	III	959	211	-494	127	1664	1791	353	-76	0	0	2144	1715
	IV	1098	203	93	127	1450	1217	338	93	0	-0	2015	1524
	V	2875	542	-51	329	3366	3694	153	20	1	-1	4453	3674
	VI	1683	222	262	195	2267	2462	583	62	-11	11	3045	2400
Pier 3 Tower	I	3078	561	434	341	4096	4437	1084	-313	-19	35	5521	4124
	II	1308	215	76	155	1487	1642	409	38	-25	25	2051	1604
	III	967	210	4[illegible]	127	1653	1780	358	-75	-11	11	2138	1705
	IV	1087	205	[illegible]	126	1486	1612	412	-96	-12	-12	2024	1514
	V	2862	541	40	327	3369	3690	145	21*	10	-10	4423	3669
	VI	1688	[illegible]	15	195	2280	2475	578	-59	4	4	3053	2416

CABLE PROPERTIES (WEST SIDE)

Cable No.		No. of 6" dia. wires per Strand	No. of Strands per Cable	Approx. Diam. of Strand (wires only) Inches	Approx. outside Diam. of Socket Inches	Area of Cable (wire only) Sq. In.	Max. Tensile Stress under Des. Load D.L.+L.L.+I. KSI	Approx. ⑦ Weight of Cable (incl. wire, grout, left in place) Lbs/Ft	Average D.L. in Cable (without future paving) Kips	Cable Sag under final D.L. Condit. (without future paving) ④ Feet	Fabricated Length of Strand from Faced Deck Socket to Tower Socket Feet
		32	33	34	35	36	37	38	39	40 *	41 *
Pier 2 Tower	I	27	4	4.25	11.25	53.18	103	168	4016	2.53	579.02
	II	211	2	3.50	10	20.70	100	102	1502	1.17	408.63
	III	211	2	3.00	10	20.70	104	102	1648	0.36	275.93
	IV	103	4	2.85	7.5	20.21	100	113	1473	0.49	279.11
	V	211	4	3.80	10	41.41	138	203	3340	1.16	420.74
	VI	307	2	4.30	12	30.12	101	145	2249	2.51	583.88
Pier 3 Tower	I	271	4	4.25	11.25	53.18	104	168	4062	2.39	567.15
	II	211	2	3.50	10	20.70	99	102	1474	1.13	408.17
	III	211	2	3.50	10	20.70	103	102	1637	0.37	275.92
	IV	103	4	2.85	7.5	20.21	100	113	1469	0.49	278.08
	V	211	4	3.80	10	41.41	137	203	3339	1.16	420.73
	VI	307	2	4.30	12	30.12	101	145	2262	2.43	583.57

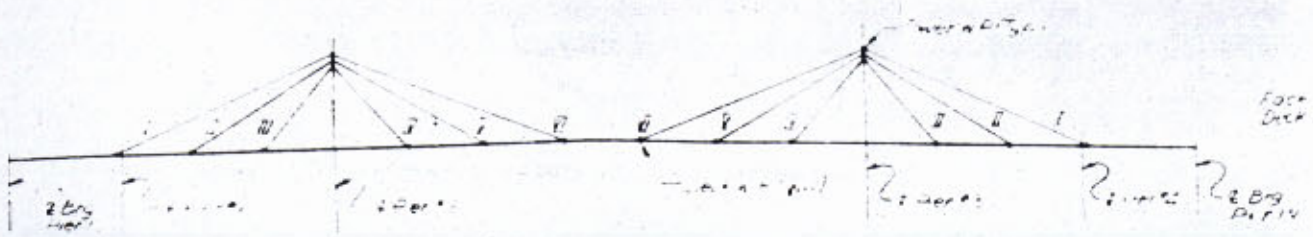
* Values are average length measures and are given for information only. Exact values and shop dimensions should be computed by the Contractor in conformance with the actual location of each strand with respect to the ℄ of a given cable.

NOTES:

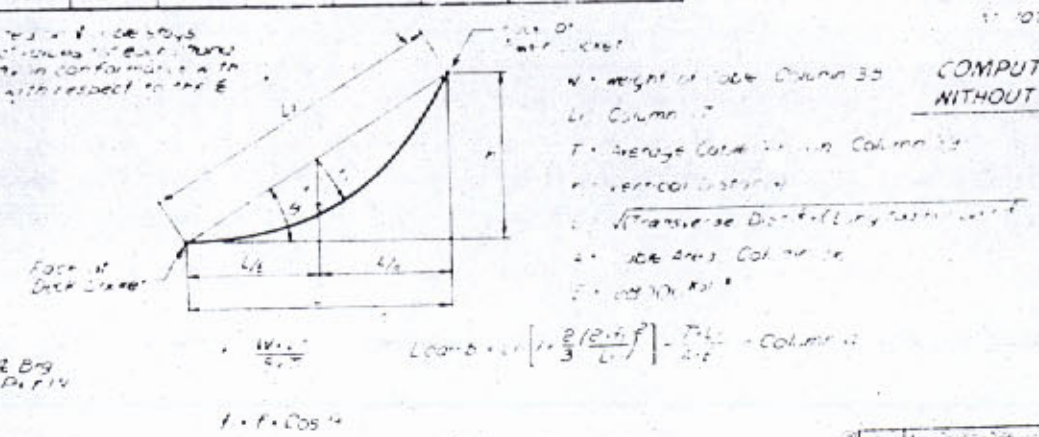
FOR GENERAL NOTES, SEE DWG. No. 2.
FOR CABLE DETAILS, SEE DWG. No. 89.
"W.P." DENOTES WORKING POINT.
"D.L." DENOTES DEAD LOAD.
ALL VALUES SHOWN IN CABLE GEOMETRY TABULATION CONFORM TO GEOMETRIC DEAD LOAD POSITION AS SHOWN ON DWG. No. 8.
FABRICATED LENGTHS OF STRANDS (COL. 41) ARE COMPUTED BASED ON THE CABLE LOADS IN COL. 24. IT IS INTENDED THAT WHEN ALL WORK POINTS ARE IN GEOMETRIC POSITION, THE CABLE LOADS WILL BE AS SHOWN IN COL. 24.

TABULATION FOOTNOTES:

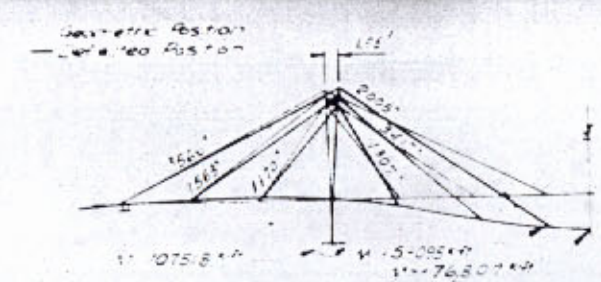
① SIGN CONVENTION USED REFERS TO OFFSET OF THE W.P. TO THE RIGHT (+) AND TO THE LEFT (-) AS VIEWED IN THE KEY ELEVATIONS.
② CABLE FORCES CAUSED BY ALL DEAD LOADS EXCEPT DECK PAVING, FUTURE WEARING SURFACE AND CABLE GROUT.
④ THE SUMS OF CORRESPONDING VALUES IN COL. 20 & COL. 22 WILL RESULT IN CABLE LOADS COMPATIBLE WITH GEOMETRY SHOWN ON DWG. No. 8a.
③ CABLE FORCES CAUSED BY DECK PAVING AND CABLE GROUT, EXCLUSIVE OF FUTURE WEARING SURFACE.
④ VALUES COMPUTED AT NORMAL TEMPERATURE.
⑤ DIMENSIONS ARE APPROXIMATE, AND SHOULD BE REVISED TO ACTUAL DIMENSIONS WHEN FINAL STRAND LENGTHS ARE COMPUTED FOR FABRICATION.
⑥ VALUES ARE TOTAL OF COLS. 20, 21 AND 22. CABLE FORCES ARE COMPATIBLE WITH GEOMETRY SHOWN ON DRAWING No. 8.
⑦ WEIGHTS ARE ESTIMATED, AND SHOULD BE REVISED TO ACTUAL WEIGHTS WHEN THE FINAL STRAND LENGTHS ARE COMPUTED FOR FABRICATION.



KEY ELEVATION



CABLE GEOMETRY



COMPUTED FULL DEAD LOAD FORCES AND MOMENTS WITHOUT CABLE ADJUSTMENT AND FUTURE PAVING

* NOTE: The Contractor should use the actual 'E' for computing the cable fabrication length [illegible] 28.[illegible]

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CABLE DATA SHEET (WEST SIDE)
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LEINHARD MOUSER AND MASTERS
CONSULTING ENGINEERS

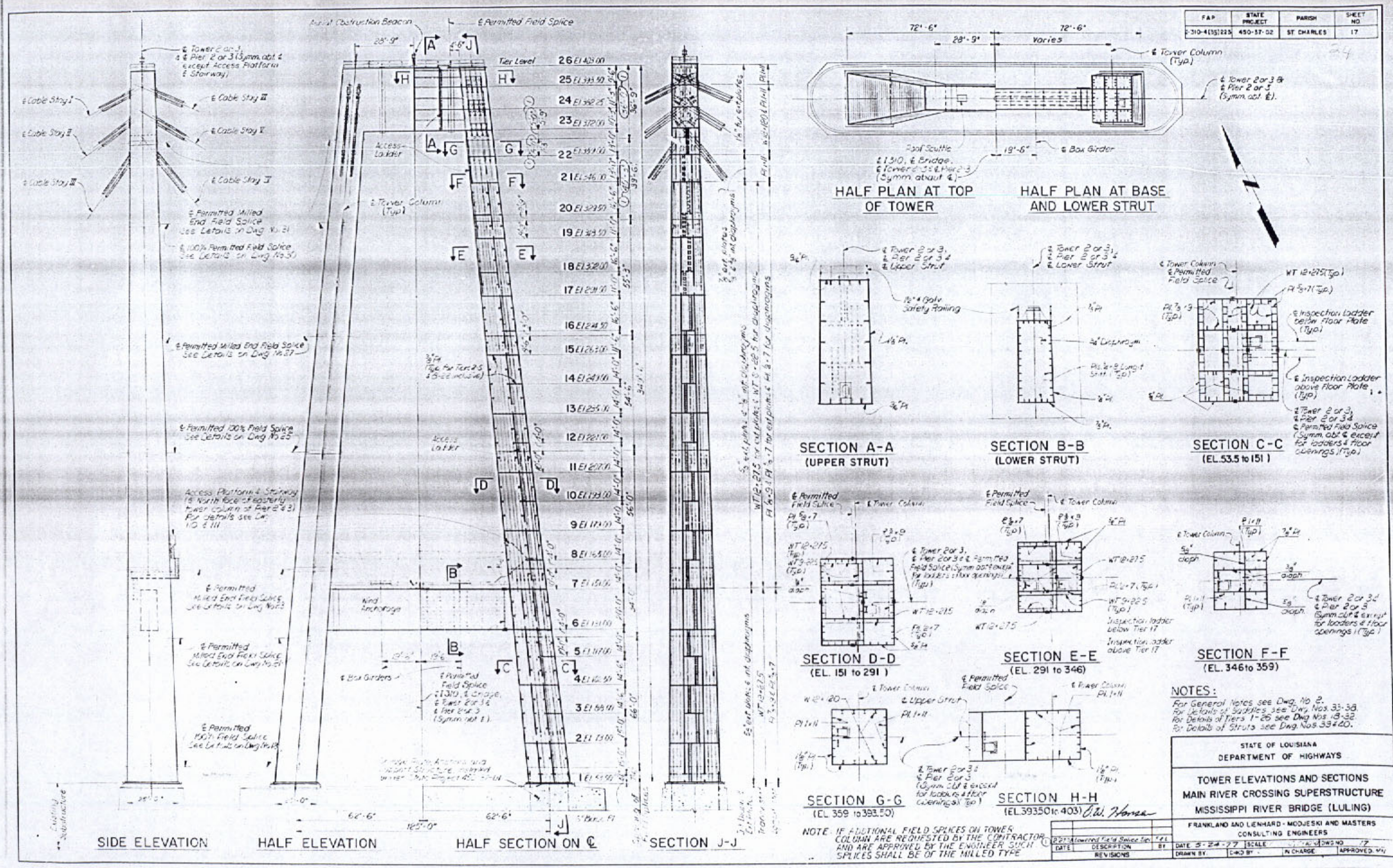
REVISIONS			
DATE	DESCRIPTION	BY	

DATE 5-4-73 SCALE NONE
DRAWN BY CHKD BY IN CHARGE APPROVED

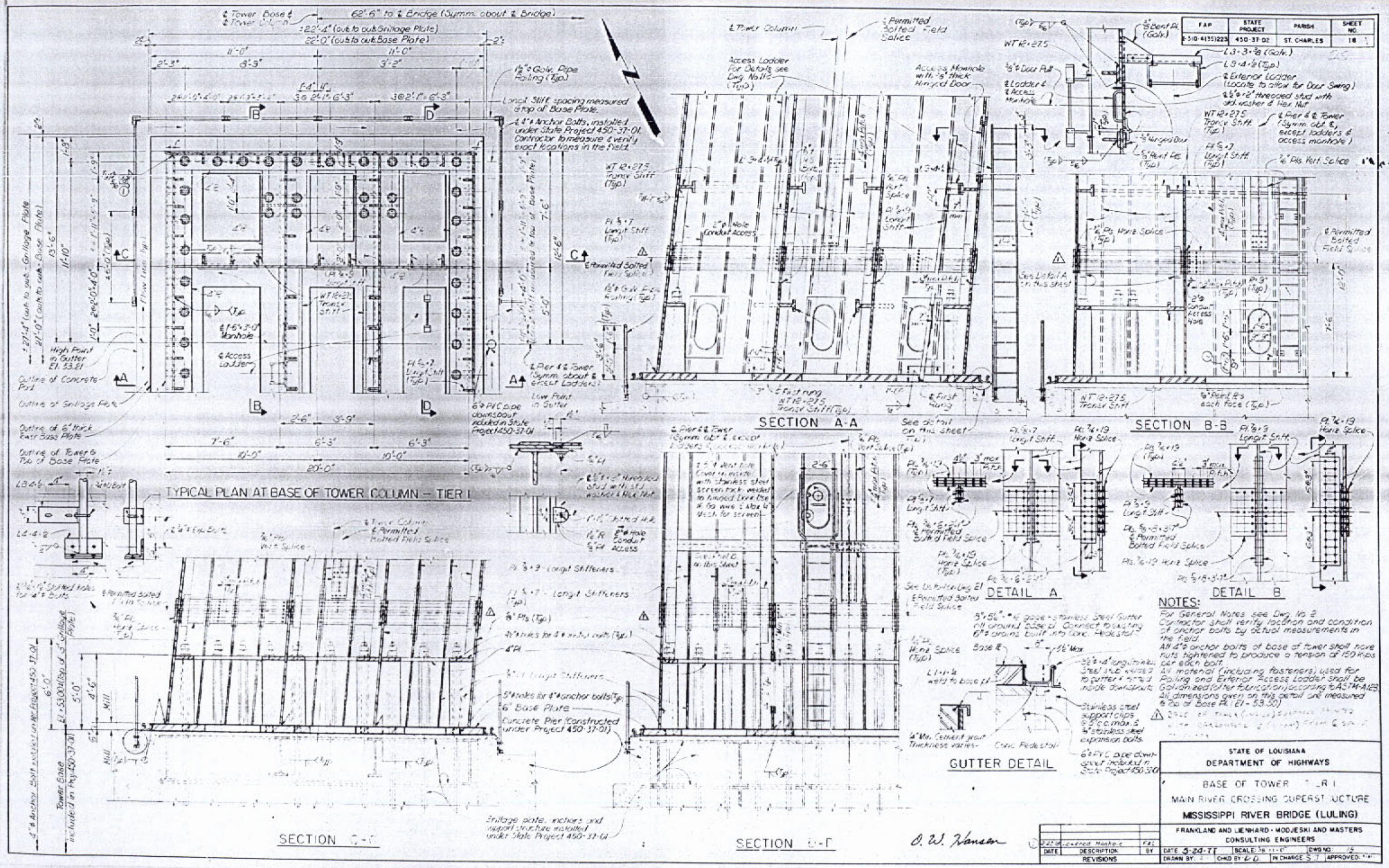
O. W. Hansen

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO
C-310-4(35)223	450-37-02	ST CHARLES	17



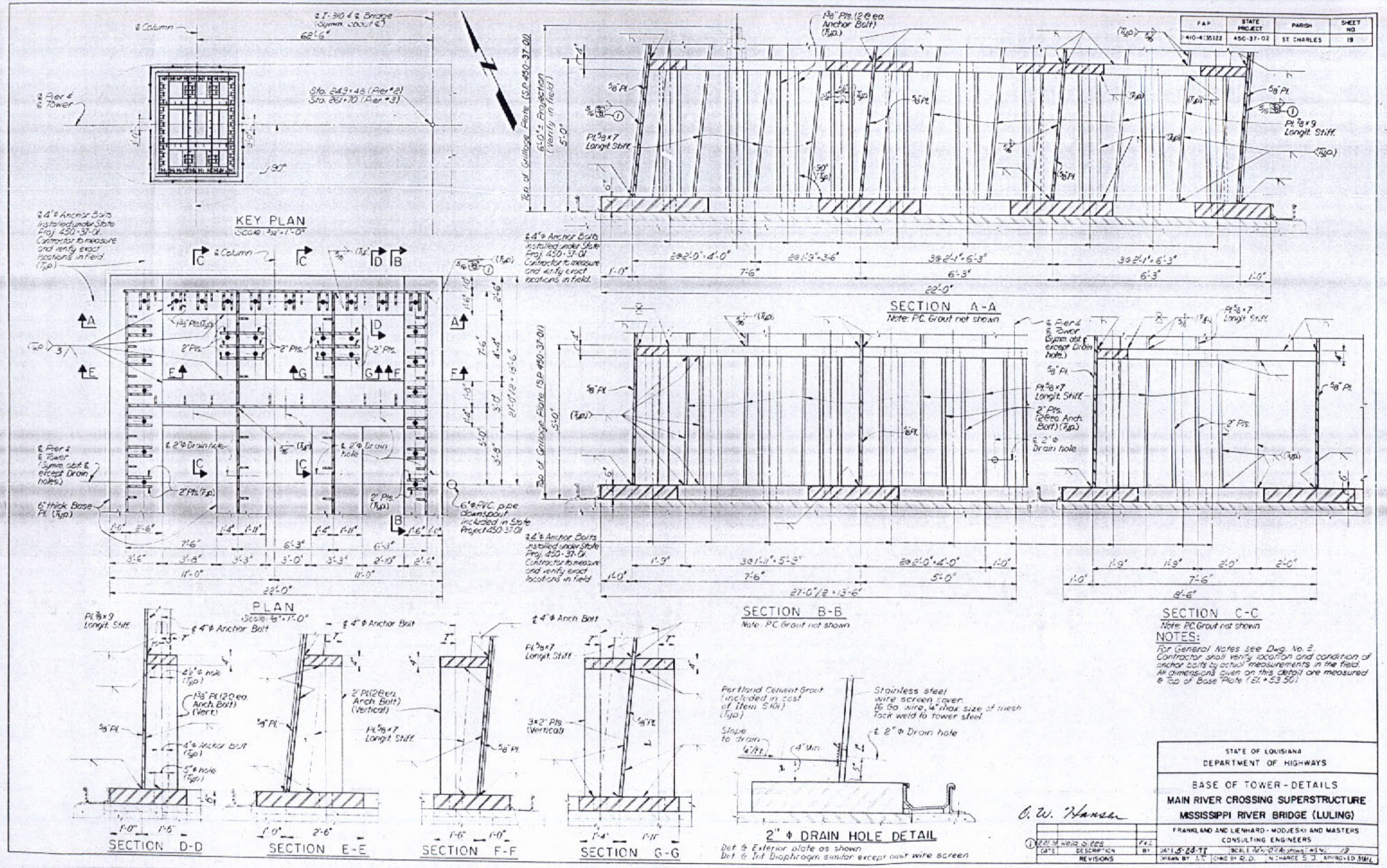
FRAME 1 24x



FAP
STATE PROJECT
PARISH
SHEET NO.
E-510-4(35)223
450-37-02
ST. CHARLES
18
TYPICAL PLAN AT BASE OF TOWER COLUMN – TIER I
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
DETAIL A
DETAIL B
GUTTER DETAIL
NOTES:
For General Notes see Dwg. No. 2
Contractor shall verify location and condition of anchor bolts by actual measurements in the field.
All 4"ø anchor bolts of base of tower shall have nuts tightened to produce a tension of 150 kips per each bolt.
All material (including fasteners) used for Railing and Exterior Access Ladder shall be Galvanized (after fabrication) according to ASTM-A123.
All dimensions given on this detail are measured @ Top of Base Pl. (El. - 53.50)
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
BASE OF TOWER TIER I
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS
DATE 5-24-77
SCALE: 3/8"=1'-0"
DWG NO. 15
DRAWN BY
CHKD BY
IN CHARGE
APPROVED
DATE
DESCRIPTION
BY
REVISIONS
O. W. Hansen

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)22	450-37-02	ST. CHARLES	19



NOTES:

For General Notes see Dwg. No. 2.
Contractor shall verify location and condition of anchor bolts by actual measurements in the field. All dimensions given on this detail are measured @ Top of Base Plate (El. + 53.50)

O. W. Hansen

1	2-21-74	HEIG. G. REG.
DATE	DESCRIPTION	BY
REVISIONS		

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

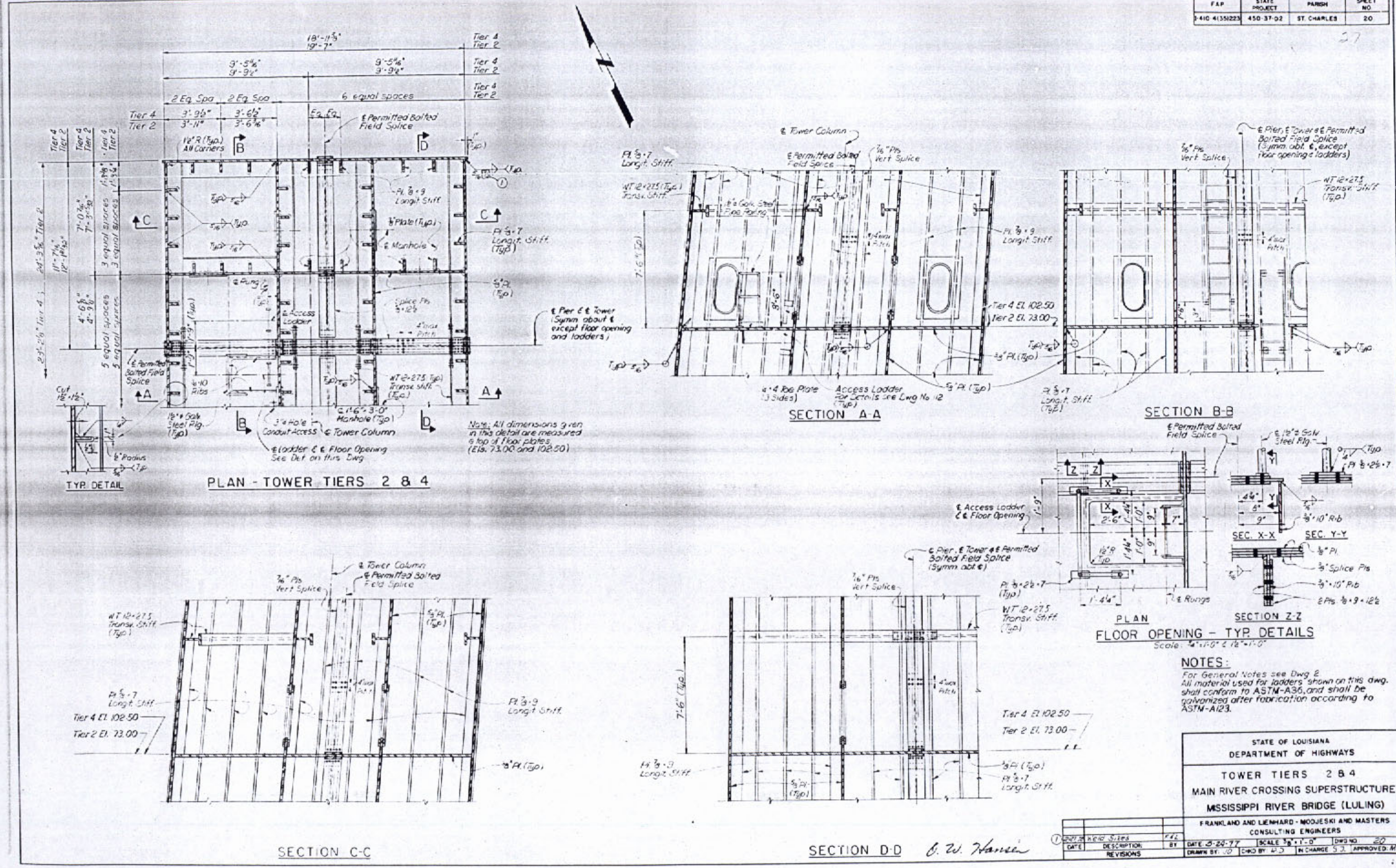
BASE OF TOWER - DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-71 | SCALE 3/8" = 1'-0" | SHEET NO. 19
DRAWN BY J.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MHL

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-02	ST. CHARLES	20



NOTES:

For General Notes see Dwg 2.
All material used for ladders shown on this dwg. shall conform to ASTM-A36, and shall be galvanized after fabrication according to ASTM-A123.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER TIERS 2 & 4
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
1	Weld Sizes	F&L

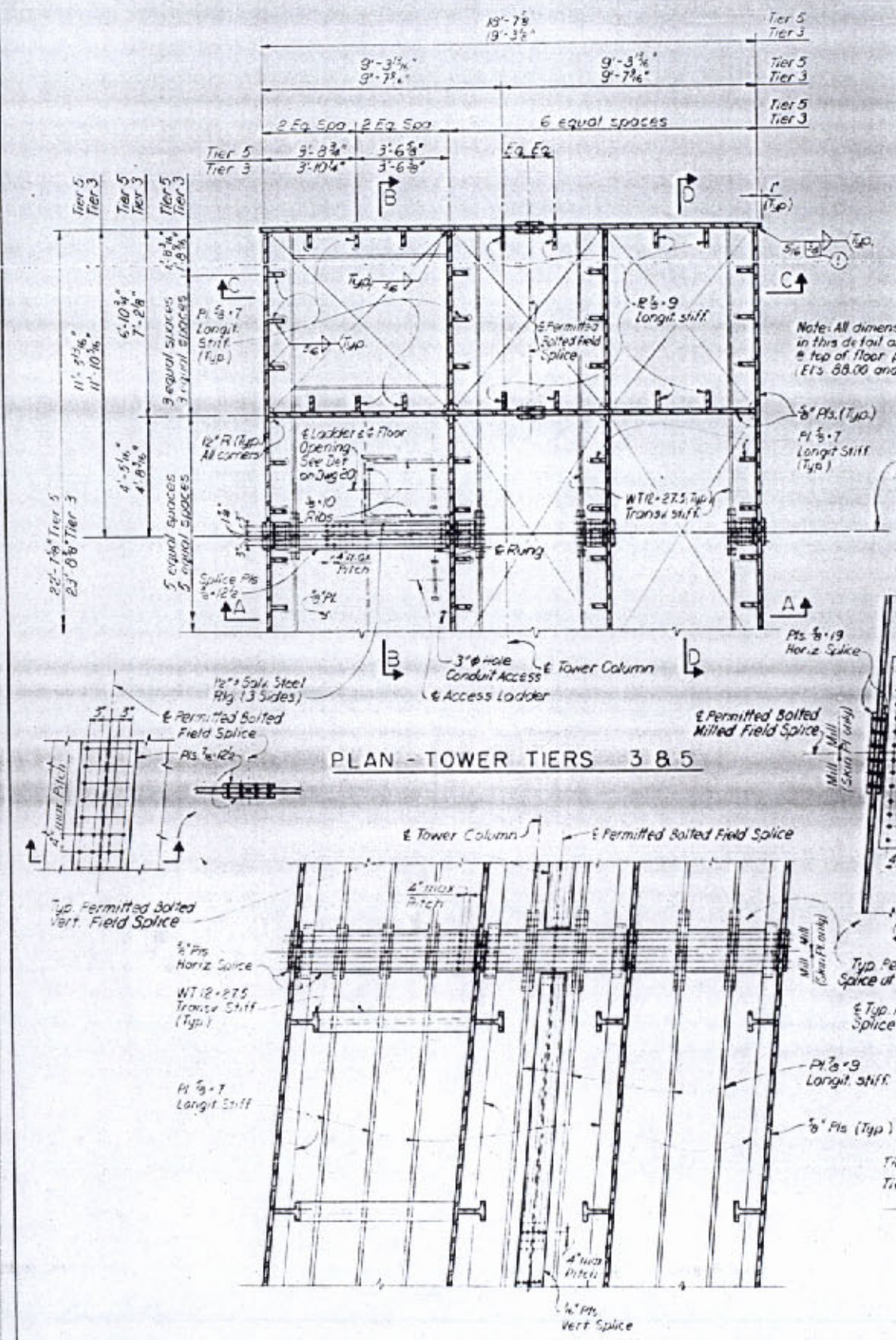
REVISIONS

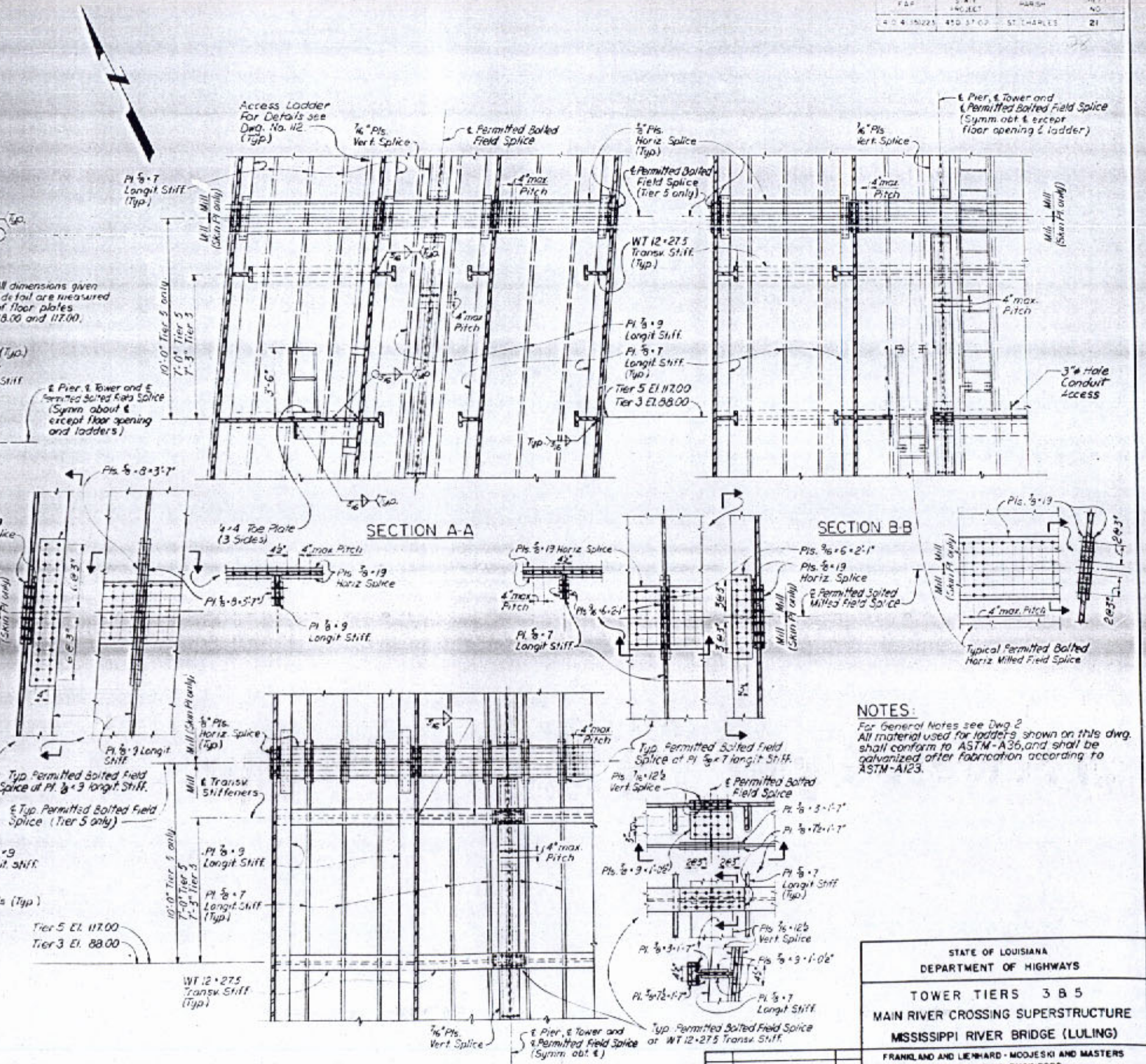
DATE: 5-29-77 | SCALE: 3/8" = 1'-0" | DWG NO. 20
DRAWN BY: JD | CHKD BY: R.D. | IN CHARGE: S.J. | APPROVED: MMJ

O. W. Hansen

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
A.D.4.(50225)	450.07.03	ST. CHARLES	21





NOTES:

For General Notes see Dwg 2
All material used for ladders shown on this dwg. shall conform to ASTM-A36, and shall be galvanized after fabrication according to ASTM-A123.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER TIERS 3 & 5
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
1	2-27-78 Add Sizes	KEL

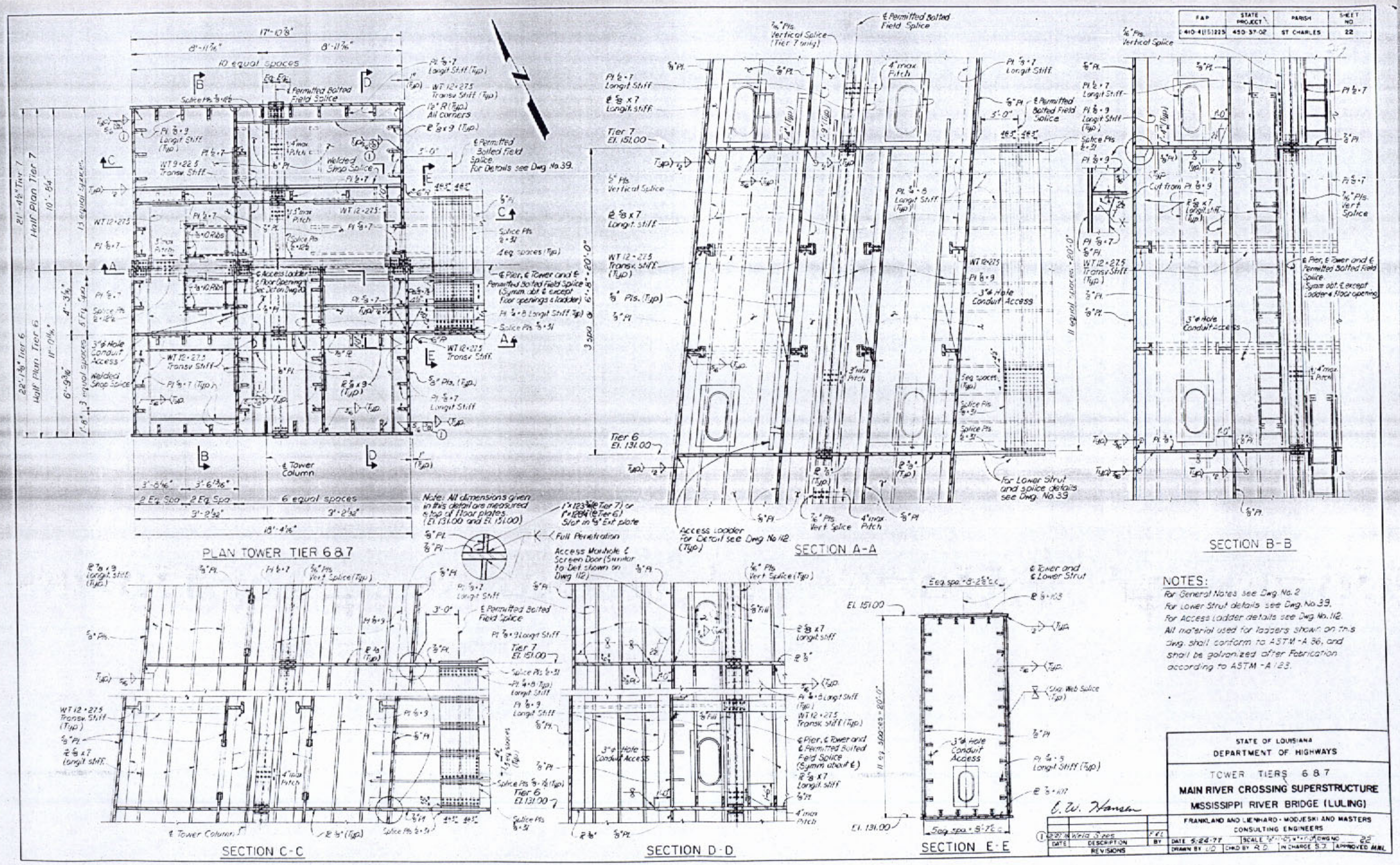
REVISIONS

DATE 5-24-77 | SCALE 3/8" = 1'-0" | DWG. NO. 21
DRAWN BY LD | CHKD BY R.D. | IN CHARGE S.J. | APPROVED: MML

O. W. Hansen

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
410-4(35)225	450-37-02	ST CHARLES	22



NOTES:

For General Notes see Dwg. No. 2
For Lower Strut details see Dwg. No. 39.
For Access Ladder details see Dwg. No. 112.
All material used for ladders shown on this dwg. shall conform to ASTM-A 36, and shall be galvanized after Fabrication according to ASTM-A 123.

C. W. Hansen

DATE	DESCRIPTION	BY
2-27-78	Weld Sizes	F.E.L.

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

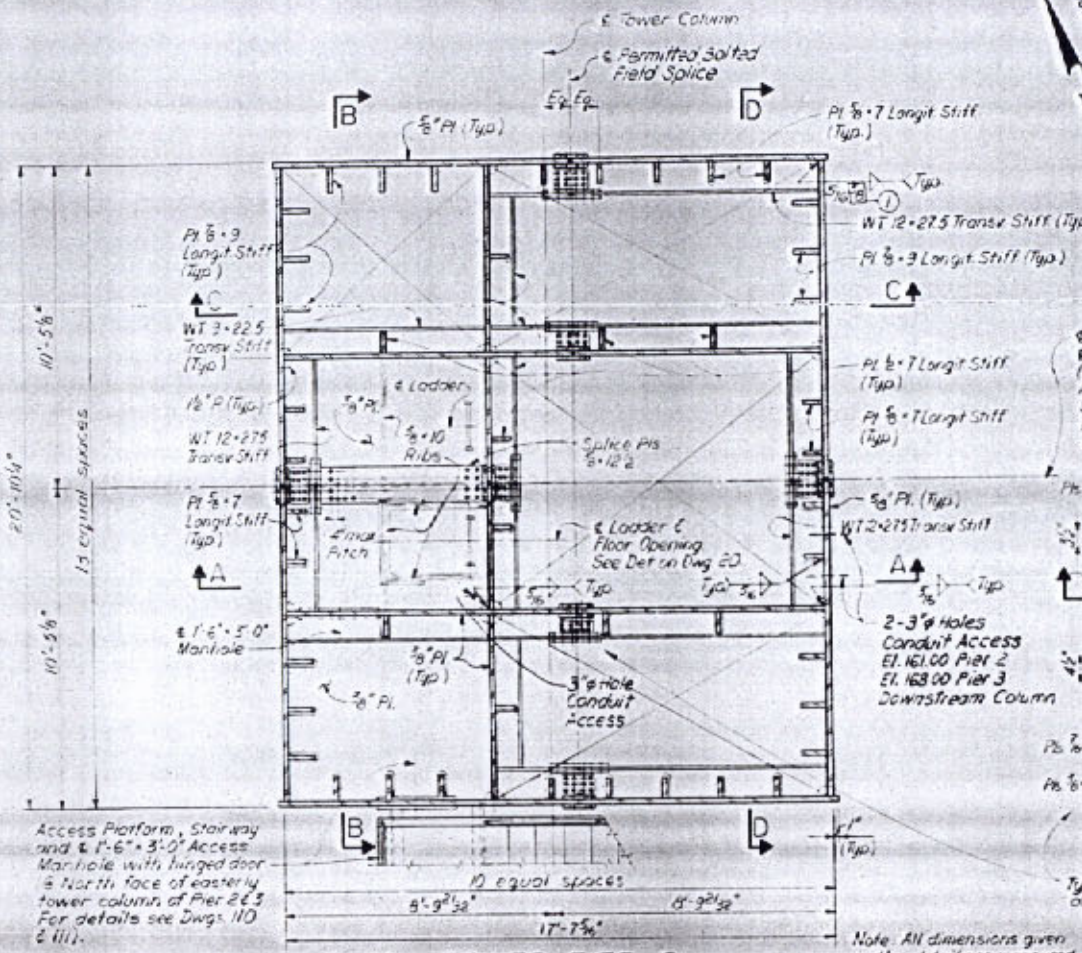
TOWER TIERS 6 & 7
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

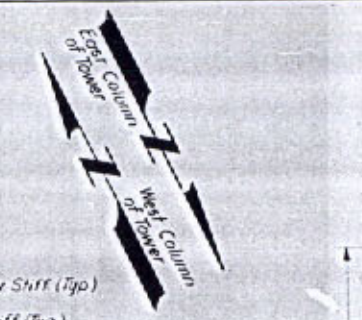
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

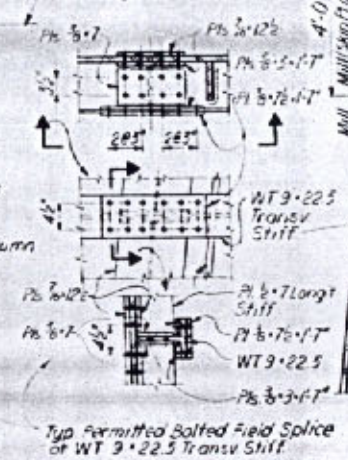
DATE 5-24-77 | SCALE 3/8"=1'-0", 1/4"=1'-0" | DWG NO 22
DRAWN BY UD | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MML

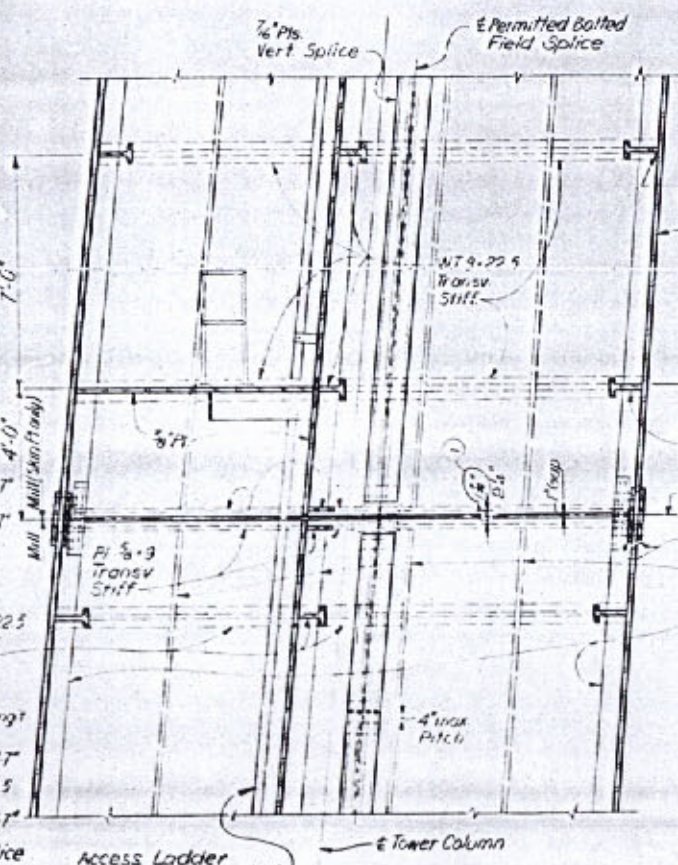
FRAME 1 24x

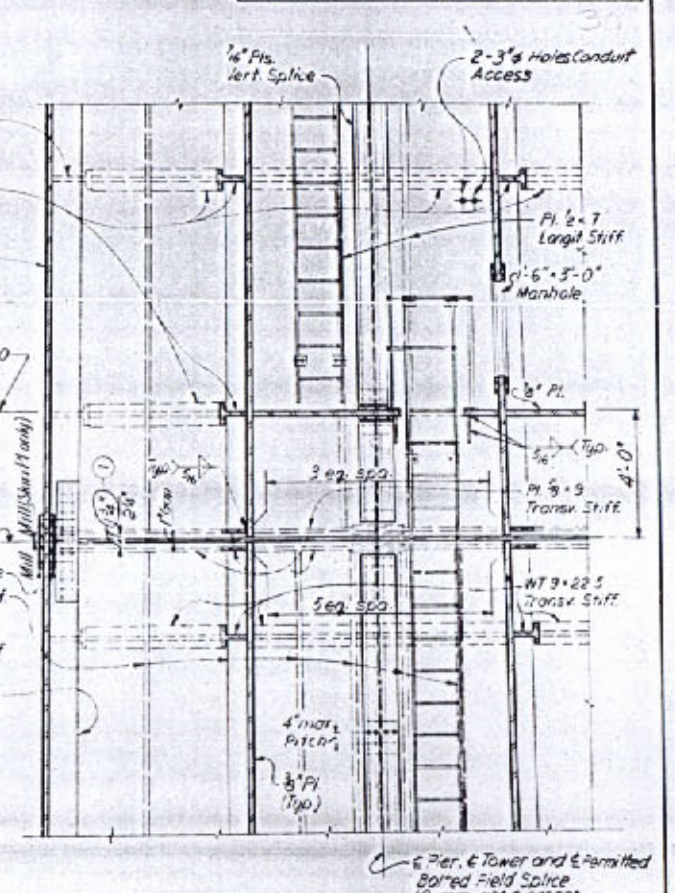
FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-02	ST. CHARLES	23

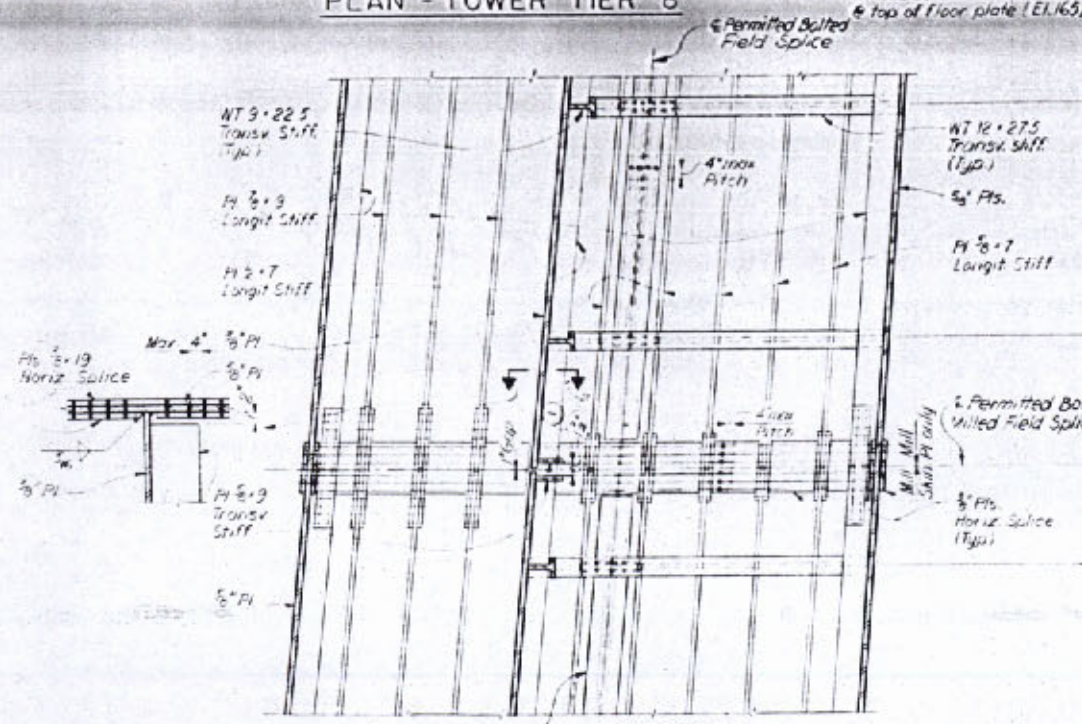


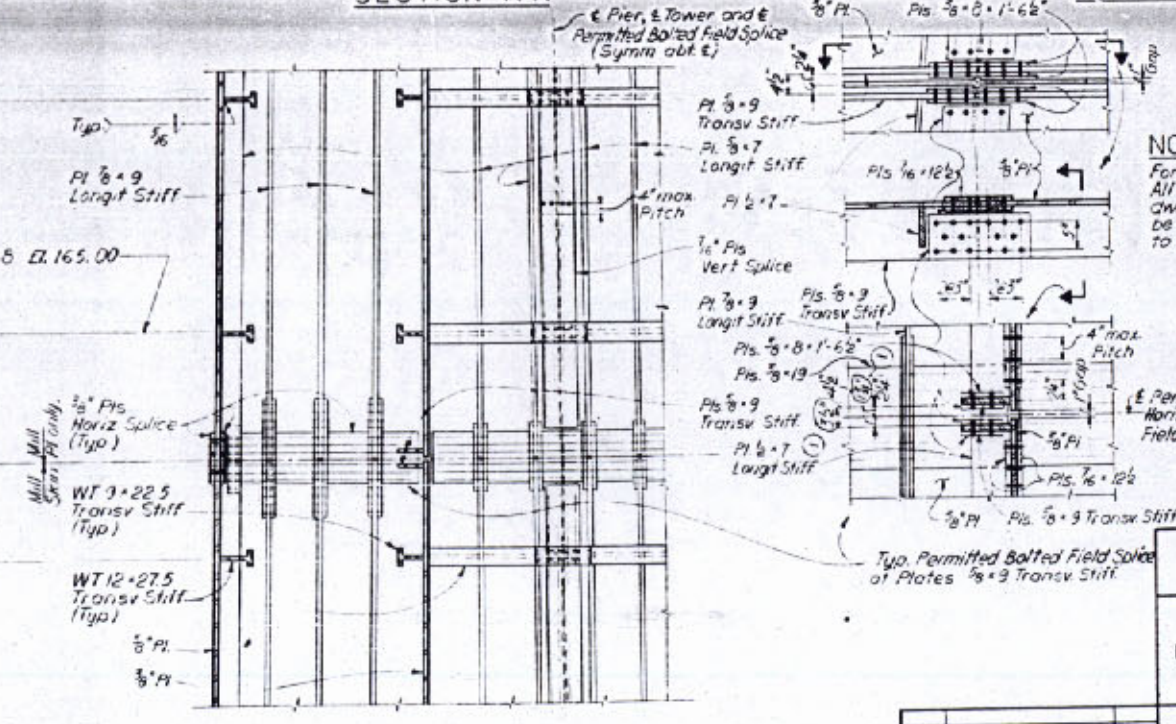












NOTES:

For General Notes see Dwg 2

All material used for ladders shown on this dwg. shall conform to ASTM-A36, and shall be galvanized after fabrication according to ASTM-A123.

O.W. Hansen

1	2-27-78	Minor Revision	F.A.C.
	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

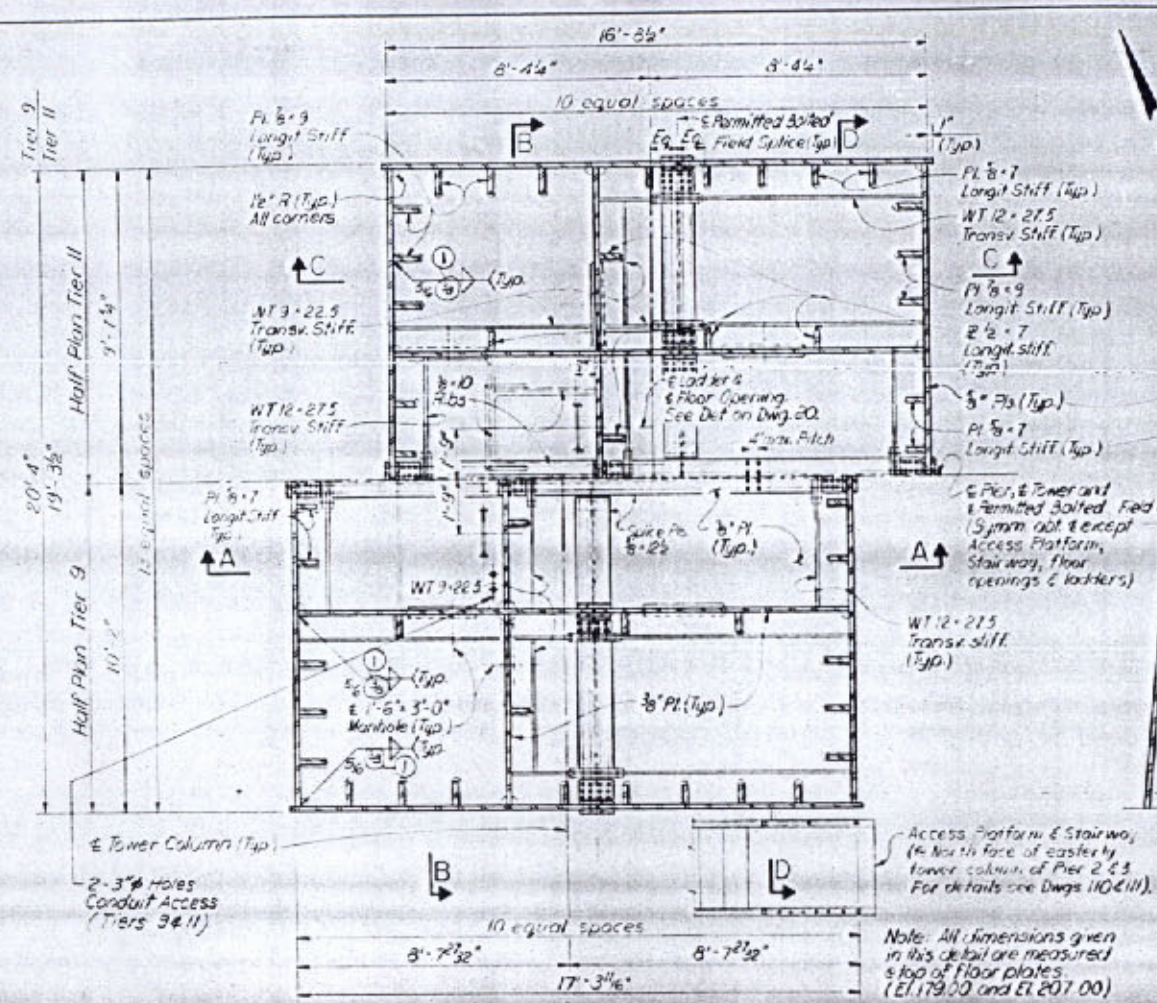
TOWER TIER 8
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

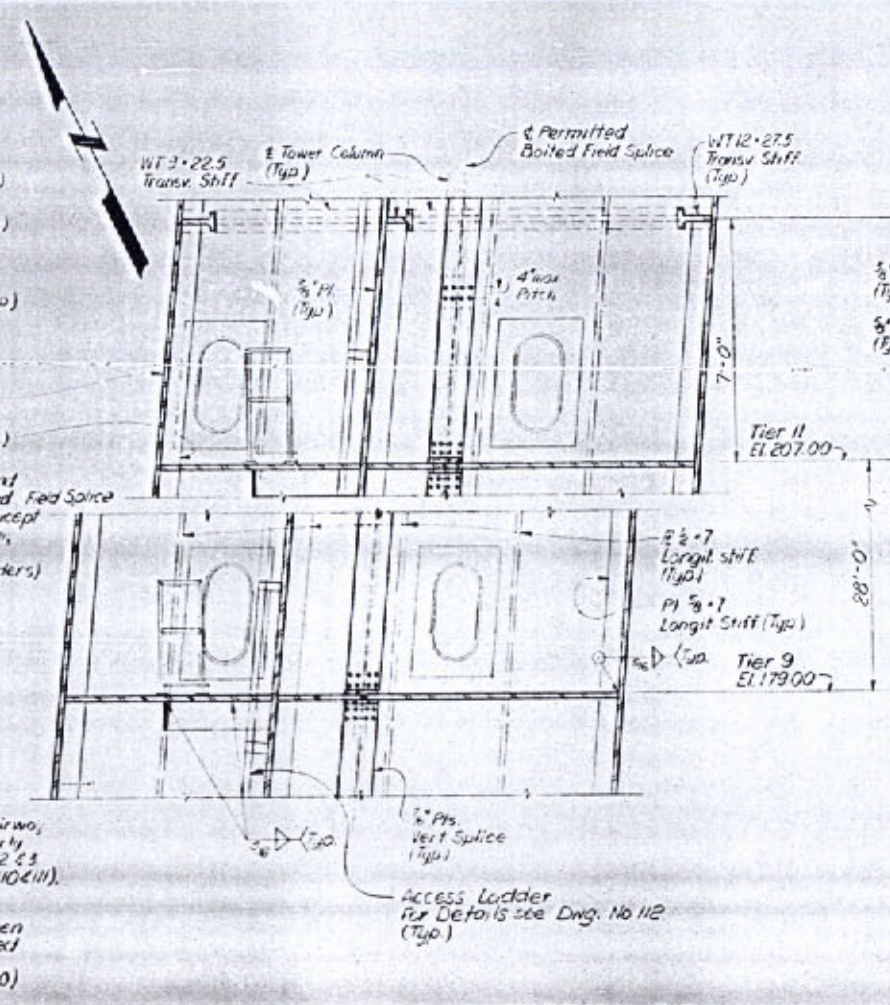
DATE 5-24-77 | SCALE ⅜" = 1'-0" | DWG NO 23
DRAWN BY: U.D. | CHKD BY: R.D. | IN CHARGE S.J. | APPROVED JMM

FRAME 1 24x

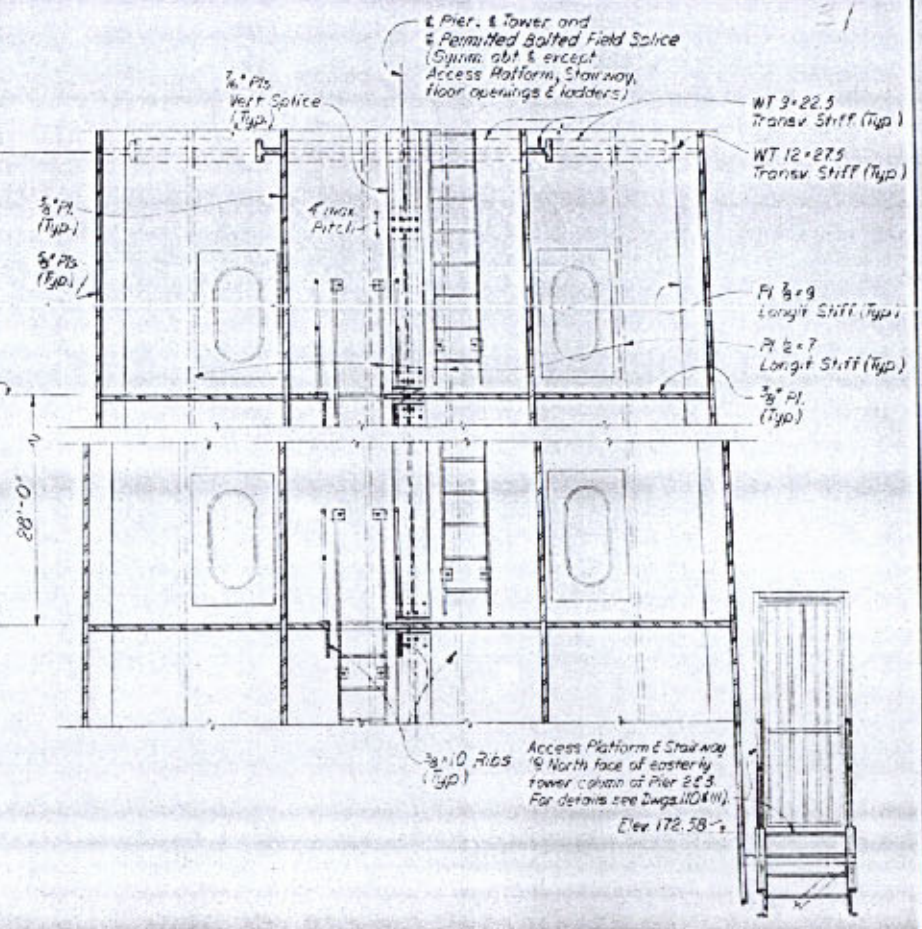
F.A.P.	STATE PROJECT	PARISH	SHEET NO.
2-410 41351223	450-37-02	ST CHARLES	24



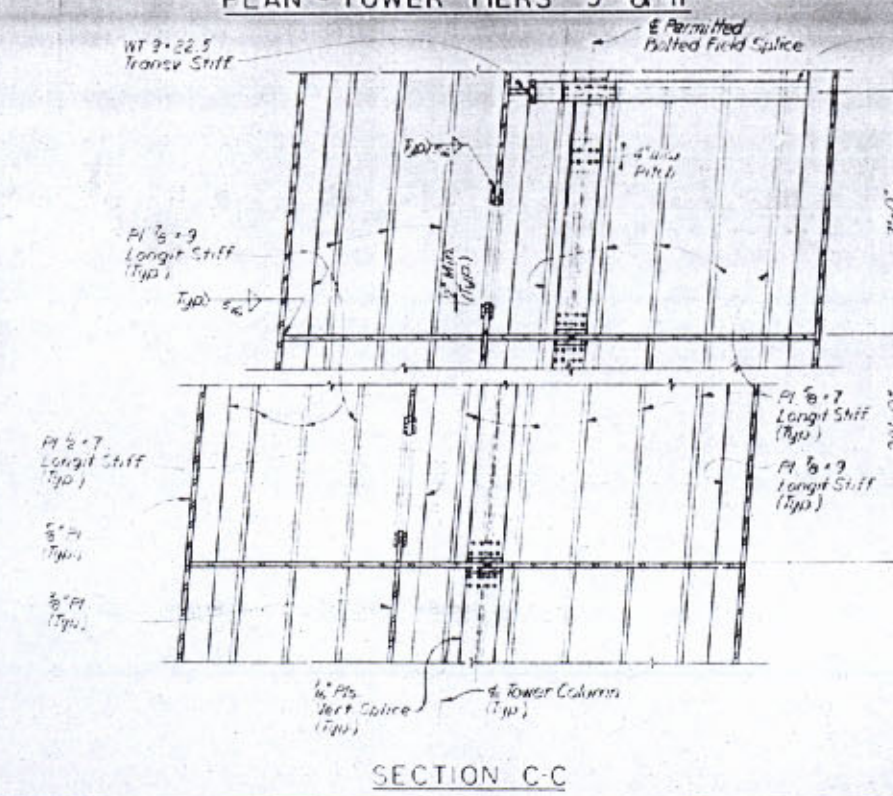
PLAN - TOWER TIERS 9 & 11



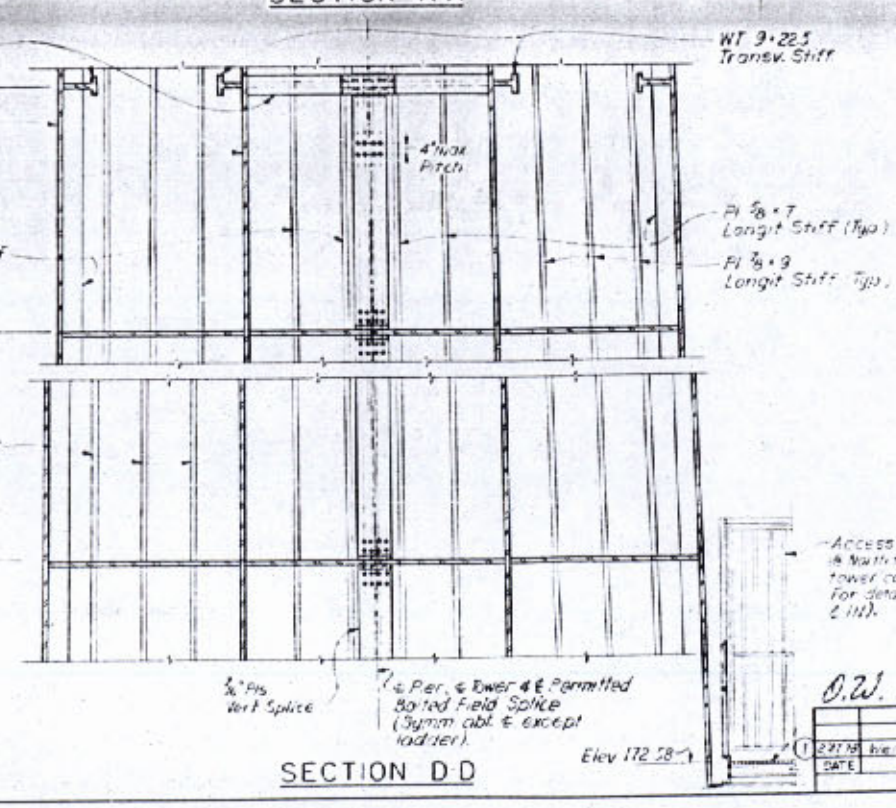
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

Access Platform & Stairway (℄ North face of easterly tower column of Pier 2 & 3. For details see Dwgs. 110 & 111).

NOTES:

For General Notes see Dwg. 2.
All material used for ladders shown on this dwg. shall conform to ASTM-A36, and shall be galvanized after fabrication according to ASTM-A123.

O.W. Hanes

2-27-78	Incl. Sh. 2&3	F.A.C.
DATE	DESCRIPTION	BY
REVISIONS		

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

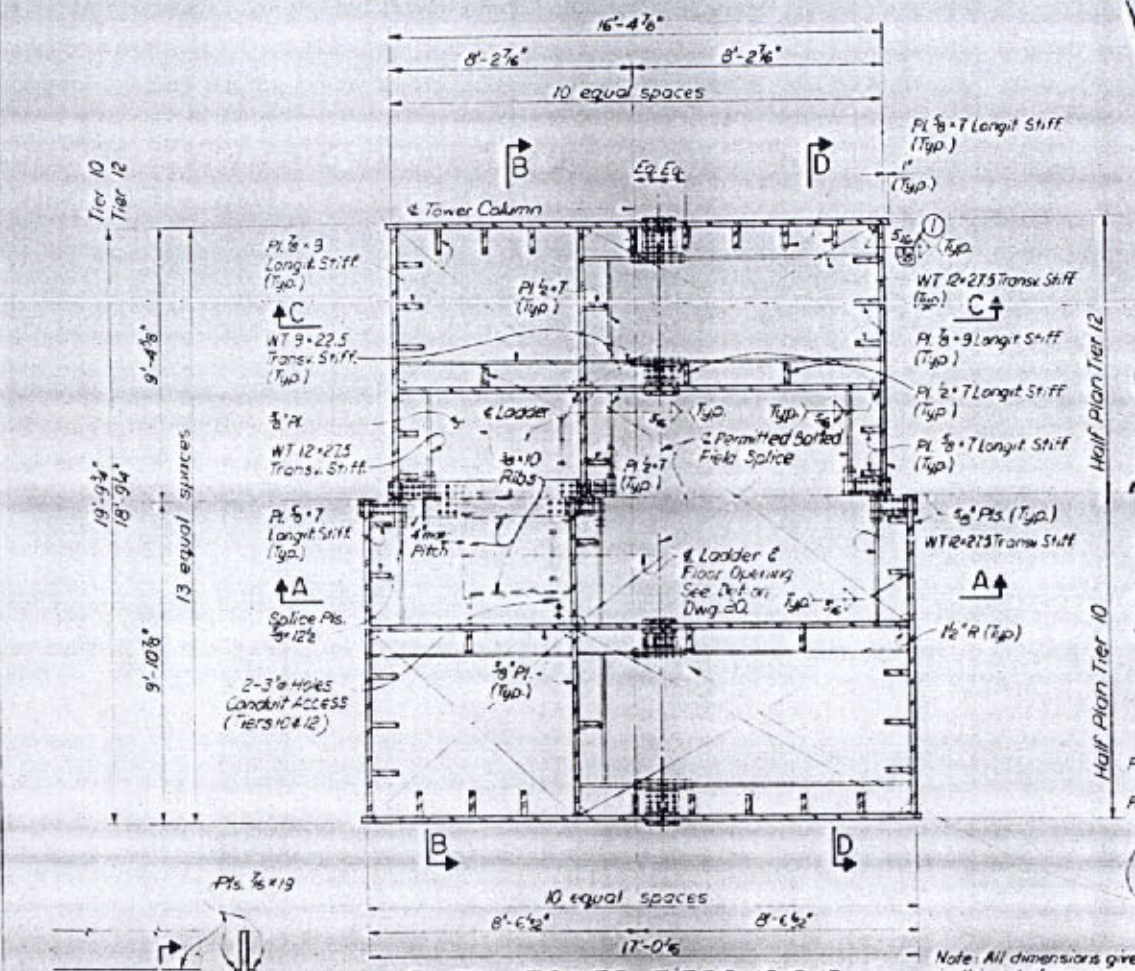
TOWER TIERS 9 & 11
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

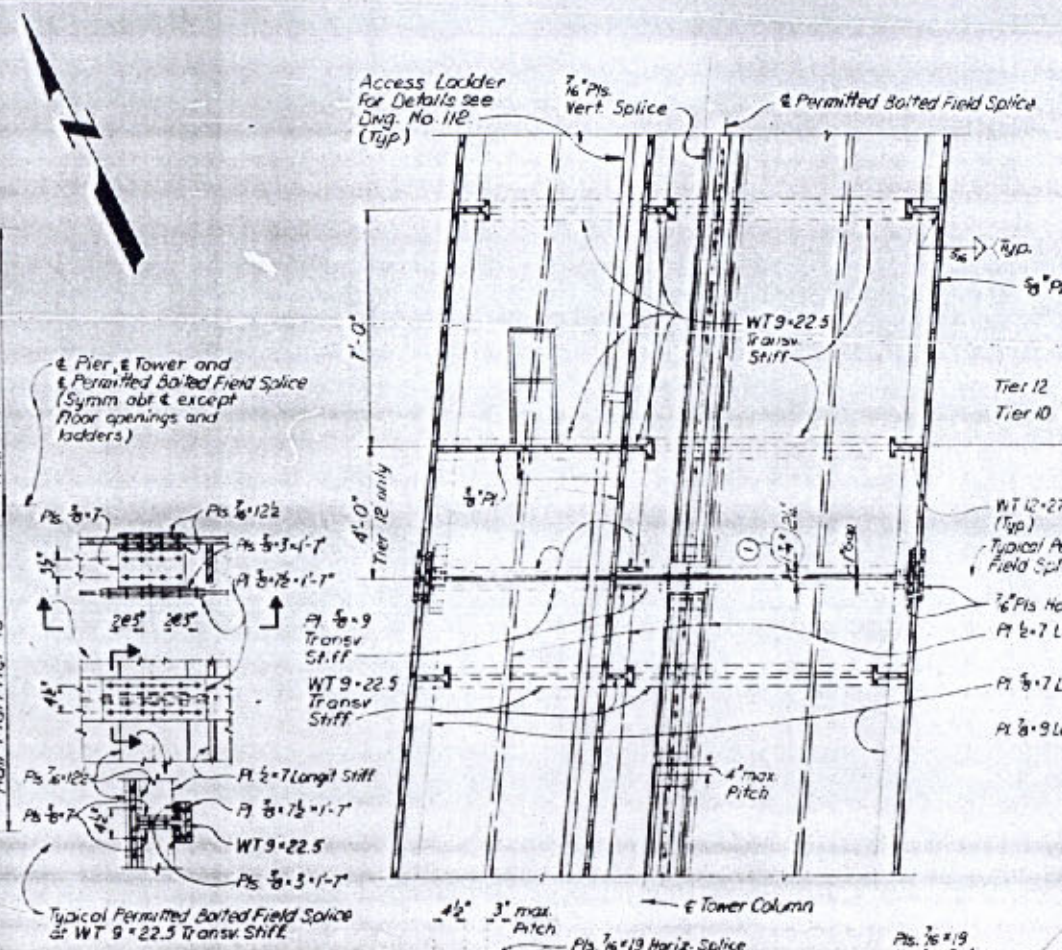
DATE 5-24-77 | SCALE ⅜" = 1'-0" | DWG NO. 24
DRAWN BY W.D. | CHKD BY A.D. | IN CHARGE S.J. | APPROVED MML

FRAME 1 24x

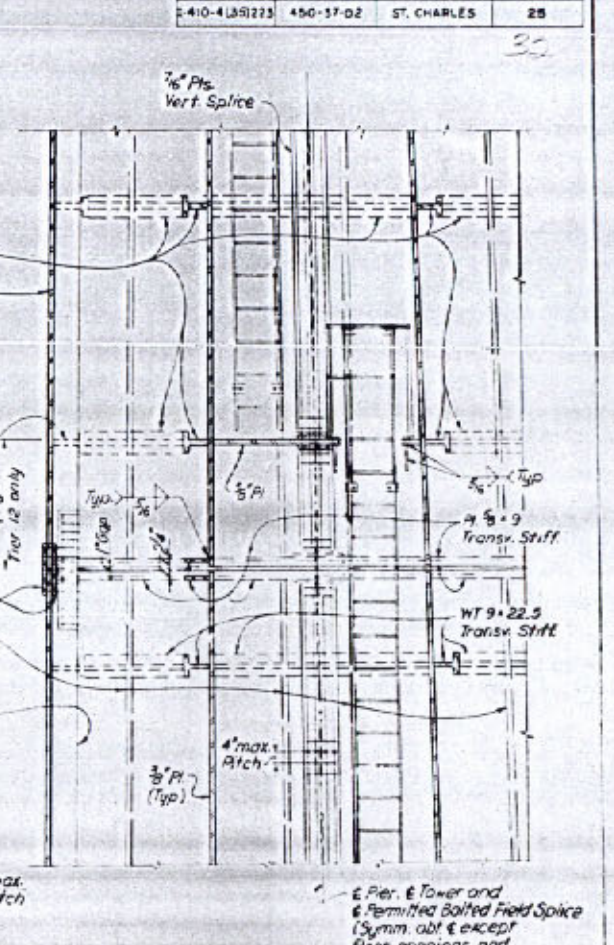
FAP	STATE PROJECT	PARISH	SHEET NO
2-410-4(35)223	450-57-02	ST. CHARLES	25



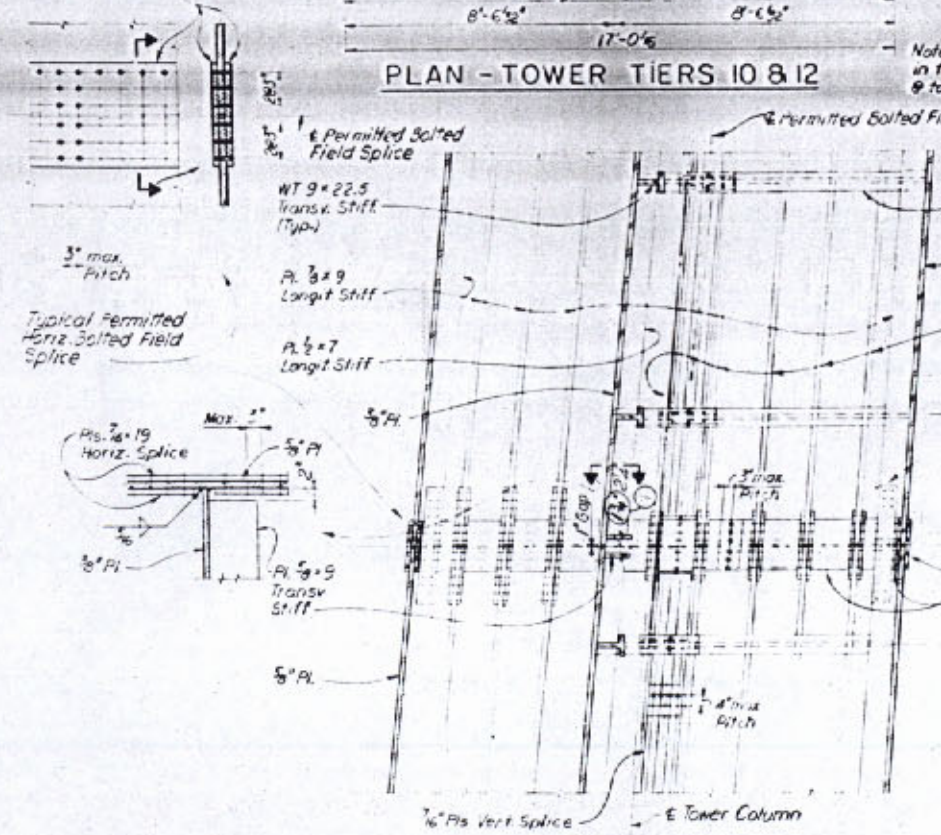
PLAN - TOWER TIERS 10 & 12



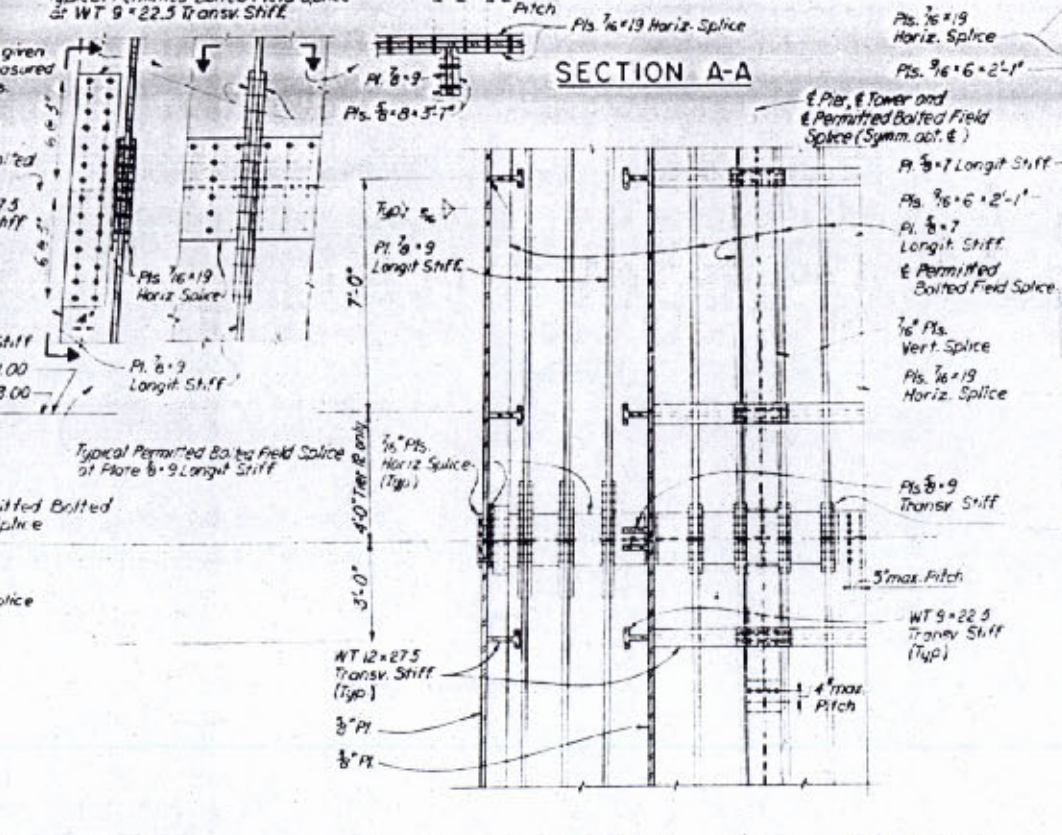
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTES:

For General Notes see Dwg. 2
All material used for ladders shown on this dwg. shall conform to ASTM-A36, and shall be galvanized after Fabrication according to ASTM-A123.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER TIERS 10 & 12
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
1	Minor Revisions	FEL

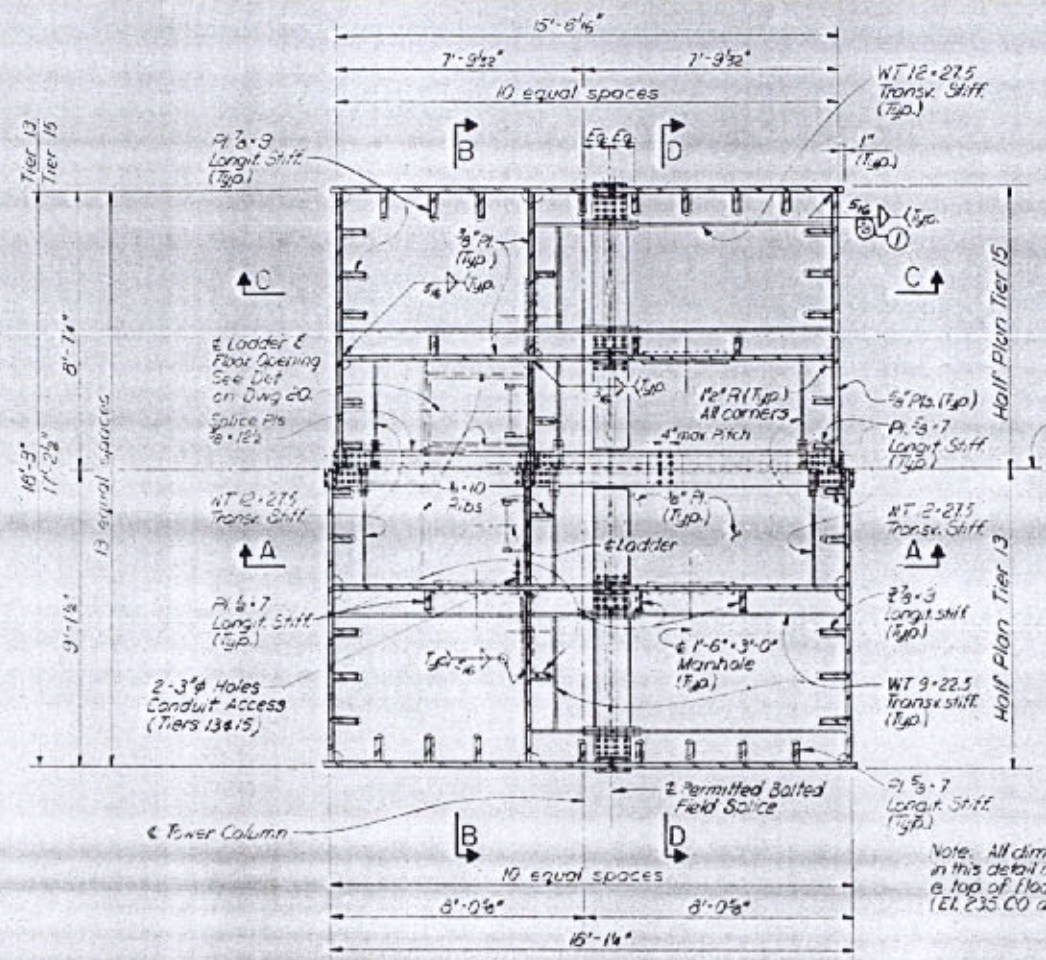
REVISIONS

DATE: 5-24-77 | SCALE 3/8" = 1'-0" | DWG NO. 25
DRAWN BY: GB | CHKD BY: RD | IN CHARGE: S.J. | APPROVED: MML

O. W. Hansen

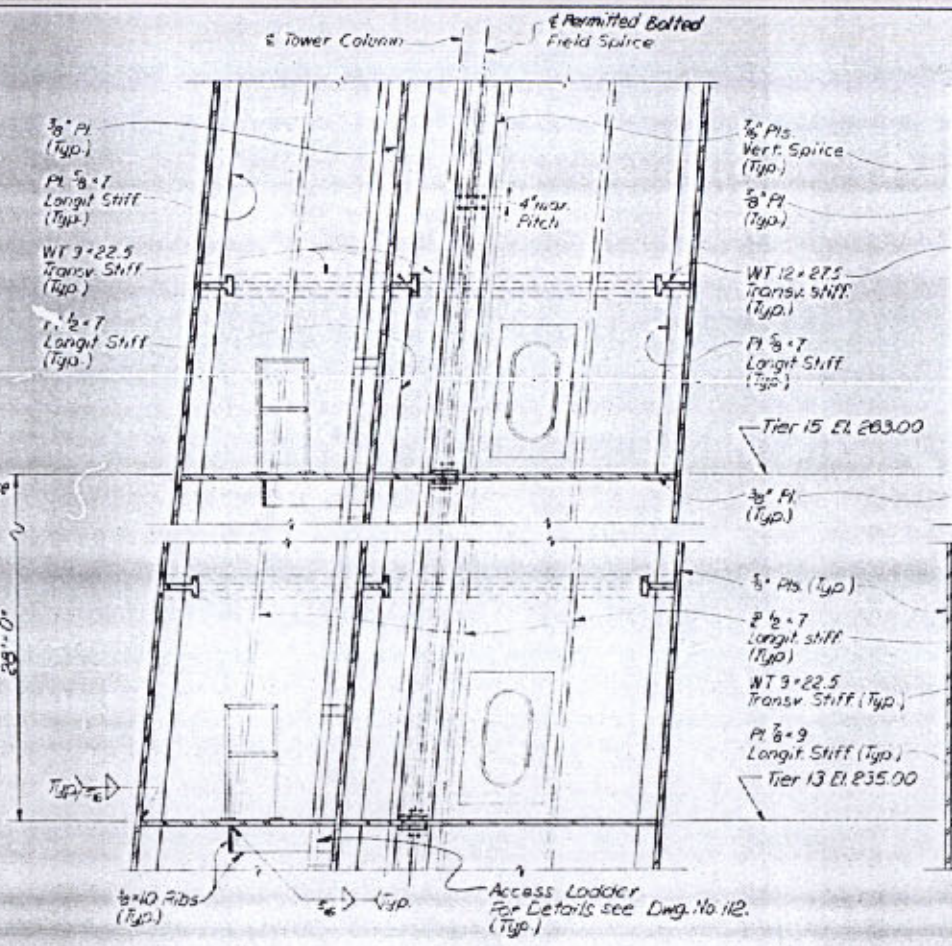
FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO
I-410-4(35)223	450-37-02	ST. CHARLES	26

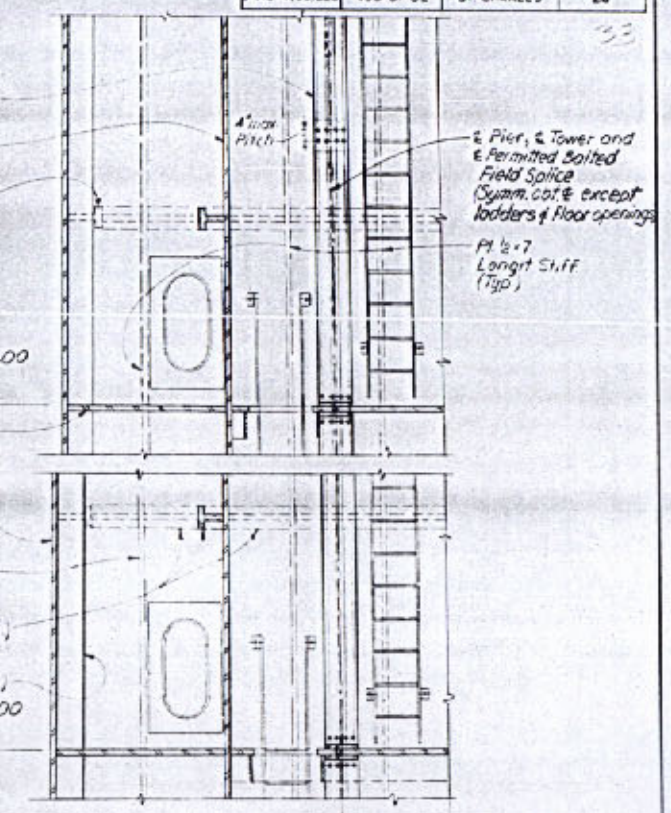


PLAN - TOWER TIERS 13 & 15

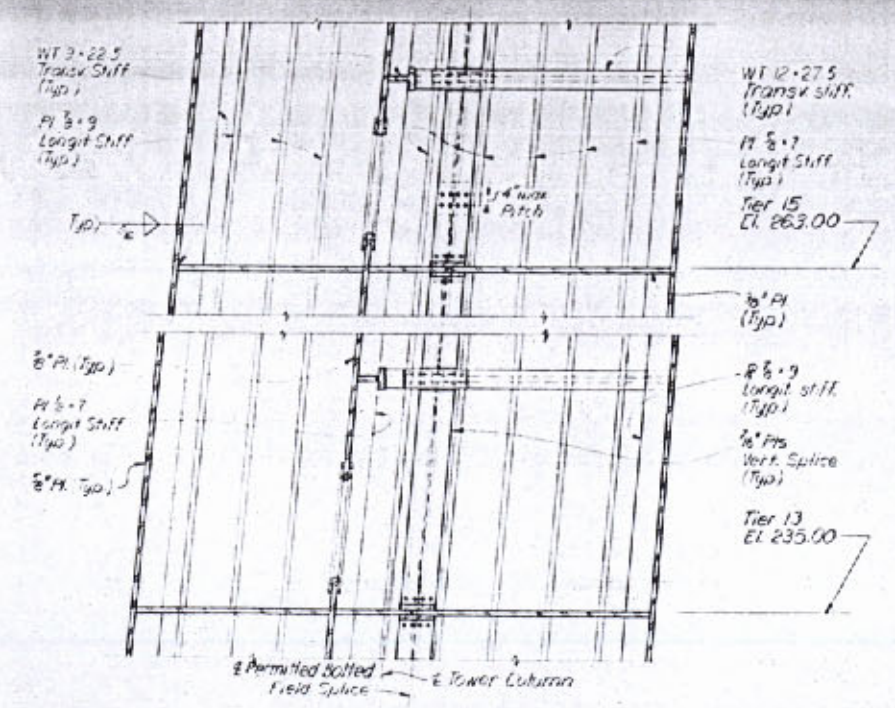
Note: All dimensions given in this detail are measured @ top of floor plates. (El. 235.00 and El. 263.00)



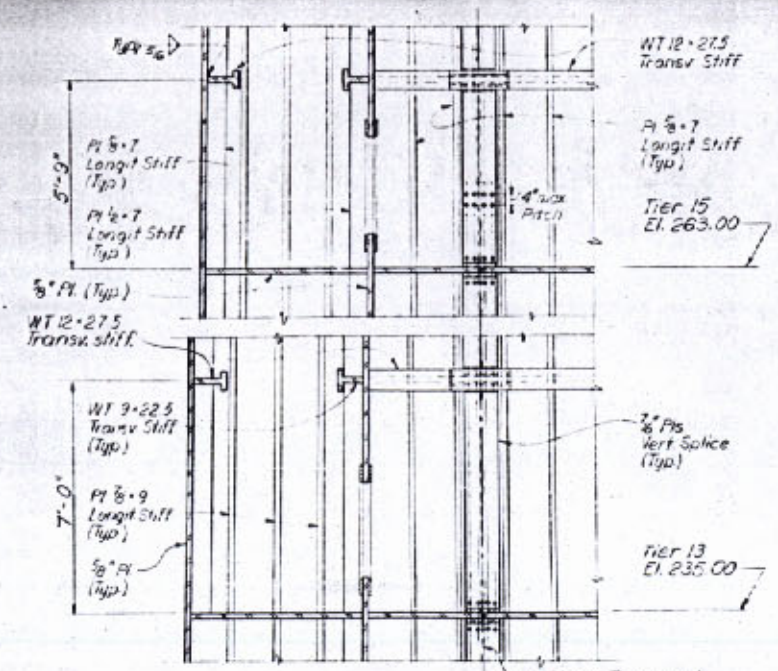
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

O. W. Hansen

NOTES:

For General Notes see Dwg. 2.
All material used for ladders shown on this dwg. shall conform to ASTM-A36, and shall be galvanized after fabrication according to ASTM-A123.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER TIERS 13 & 15
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
1 8-27-78	Weld Sizes	RLL

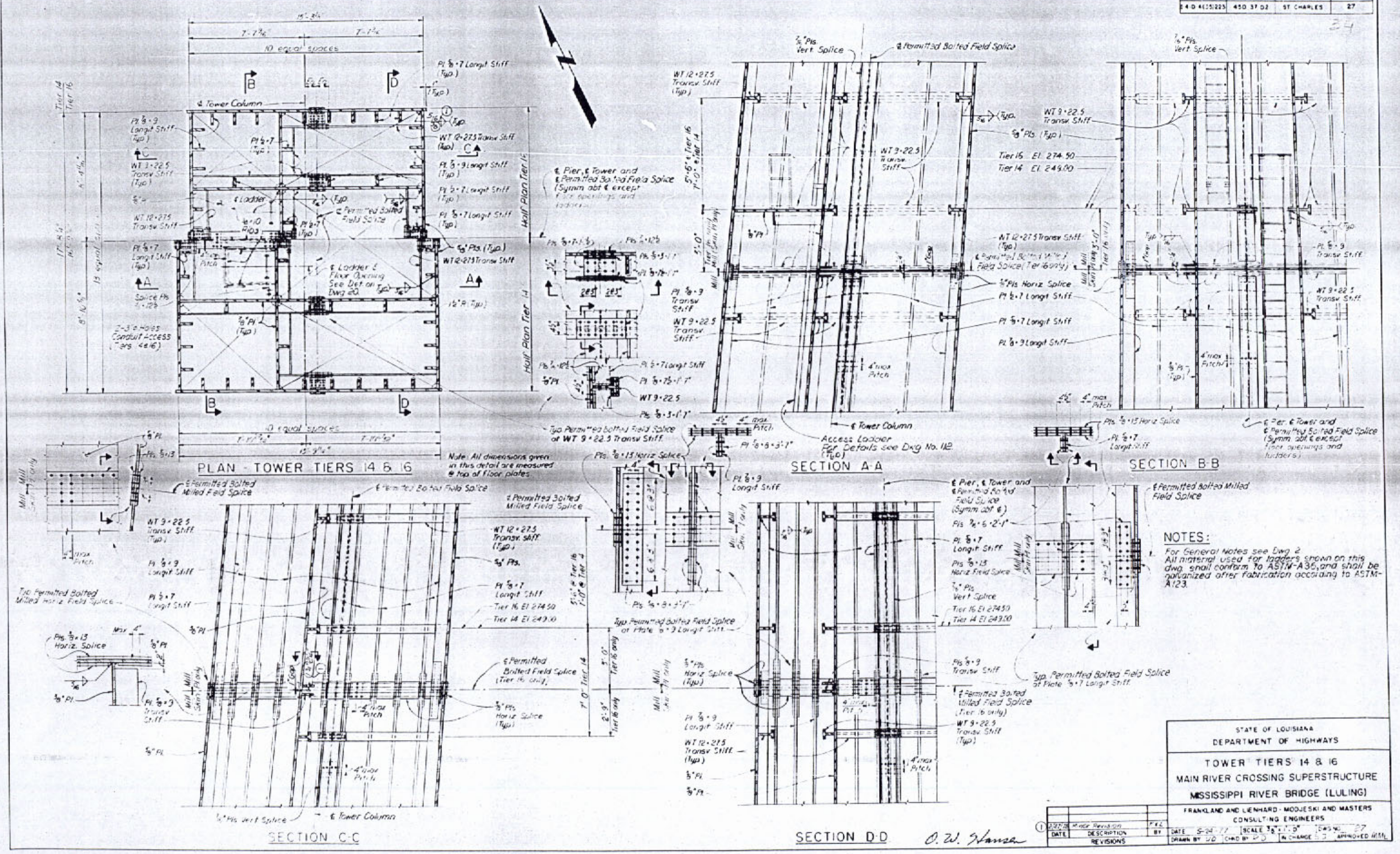
REVISIONS

DATE -77 | SCALE 3/8"=1'-0" | DWG NO. 26
DRAWN BY UD | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MML

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO
24 D 4(125)225	450 37 02	ST CHARLES	27

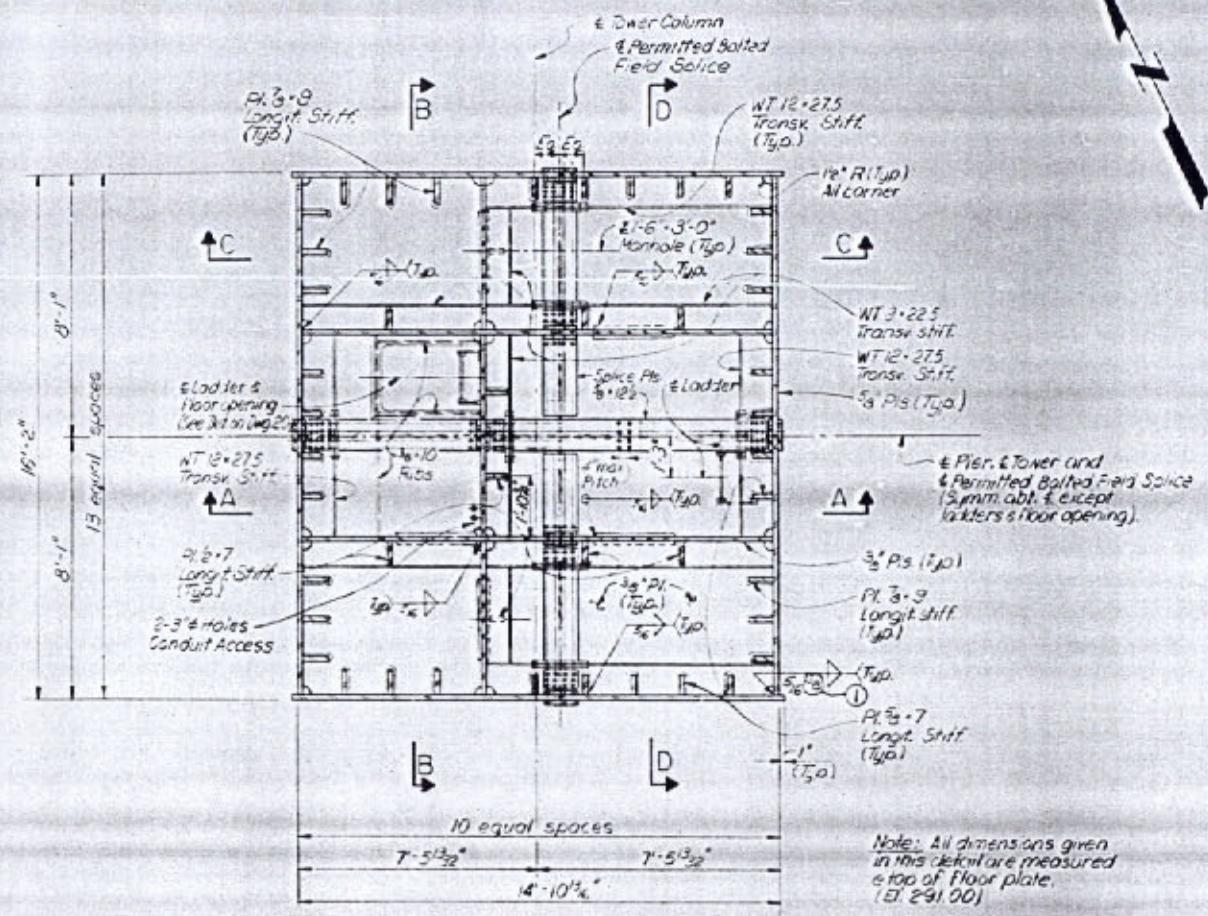
24



FRAME 1 24x

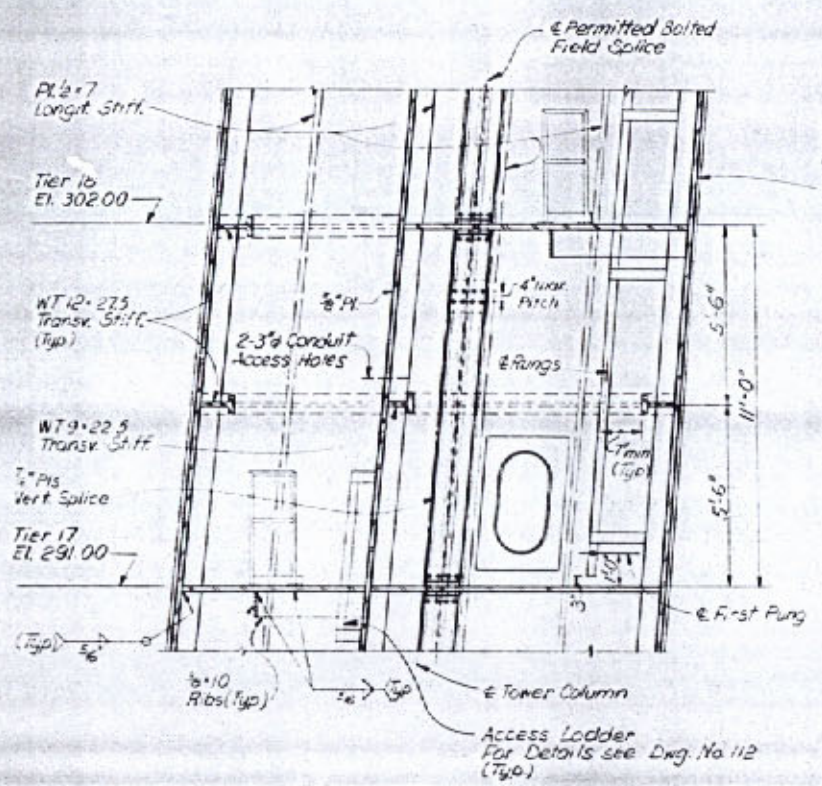
F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-410 4(35)223	450-37-02	ST. CHARLES	28

35

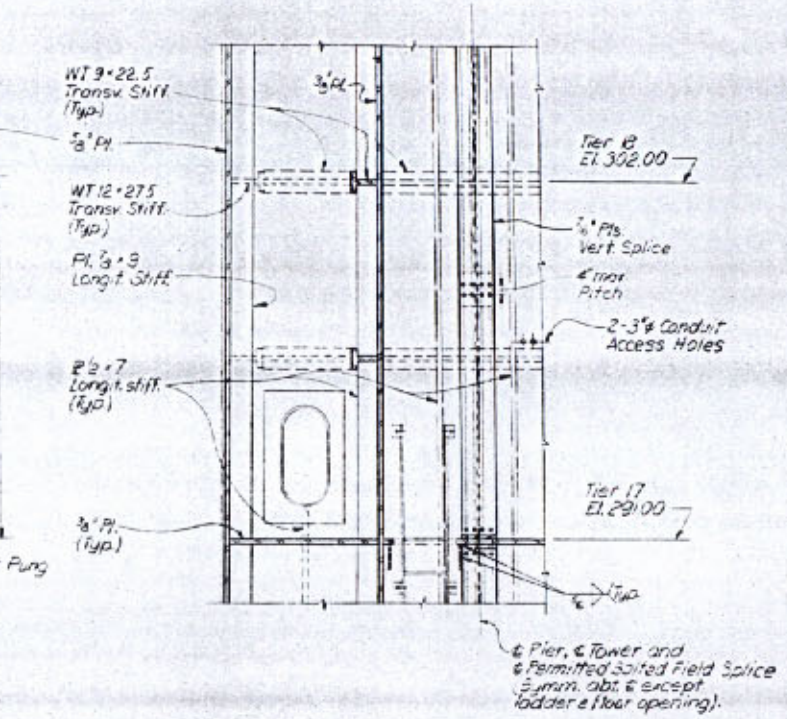


Note: All dimensions given in this detail are measured @ top of floor plate. (El. 291.00)

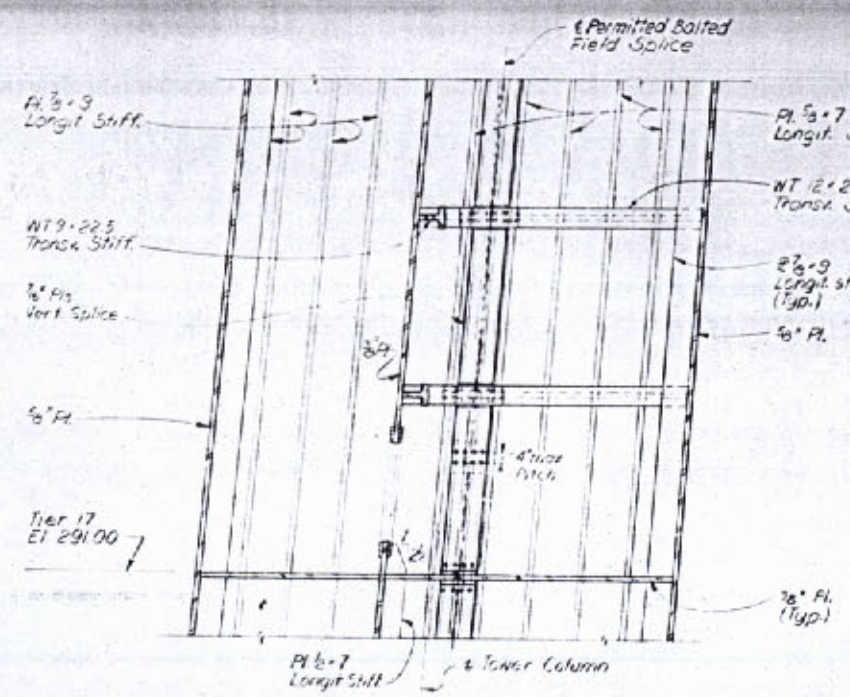
PLAN - TOWER TIER 17



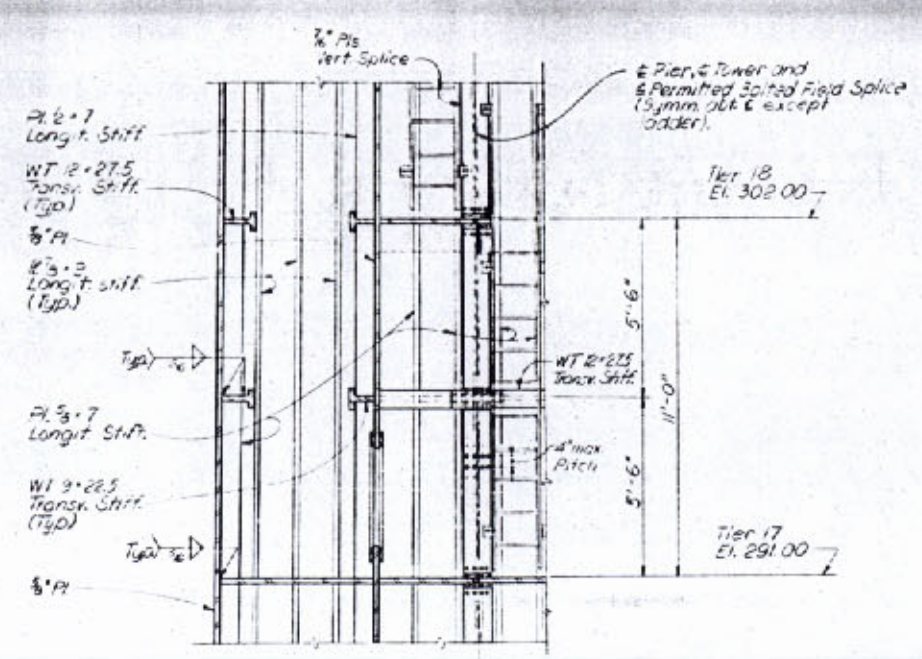
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

O. W. Hansen

NOTES:

For General Notes see Dwg. 2.
For Details of Tier 18 see Dwg. 30.
All material used for ladders shown on this dwg. shall conform to ASTM-A36, and shall be galvanized after fabrication according to ASTM-A123.

1	2-27-78	Weld Sizes	F.E.C.
	DATE	DESCRIPTION	BY
		REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

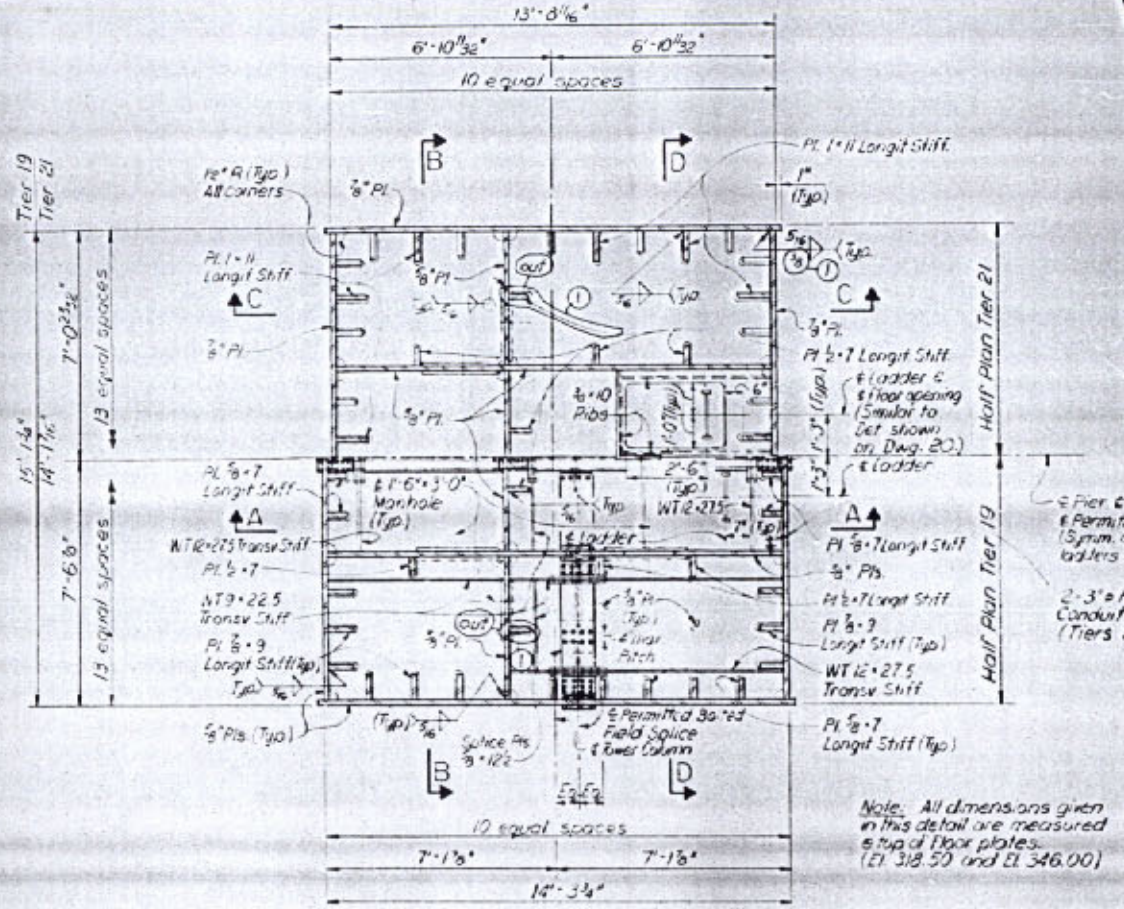
TOWER TIER 17
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

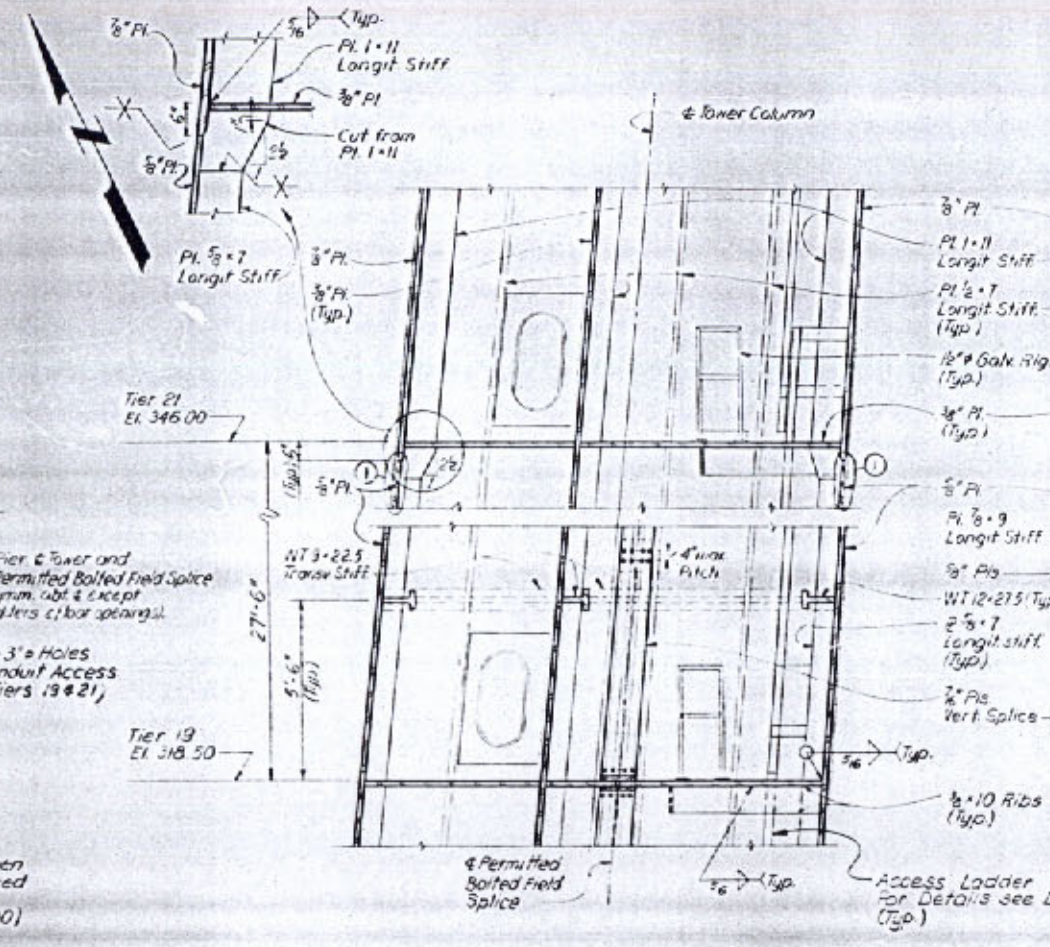
DATE: 5-31-77 | SCALE: 3/8" = 1'-0" | DWG NO. 25
DRAWN BY: WO | CHKD BY: RD | IN CHARGE: SJ | APPROVED: MML

FRAME 1 24x

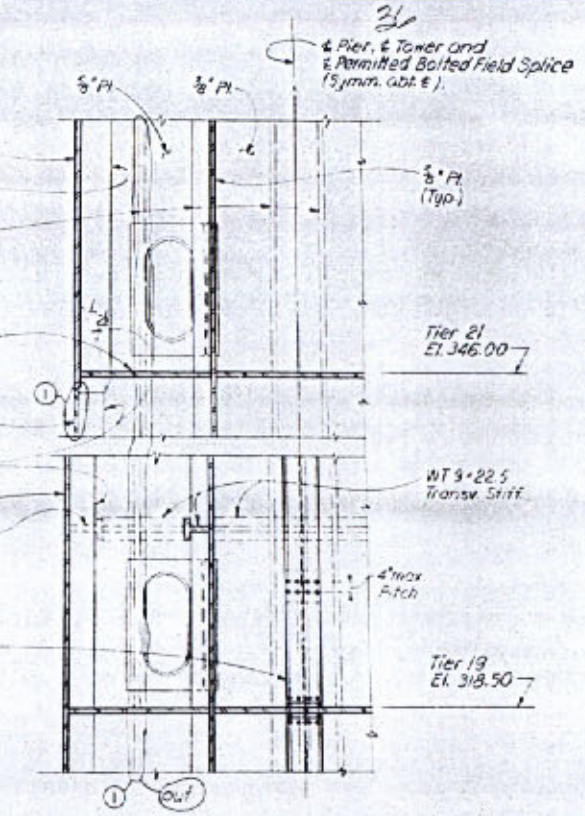
FAP	STATE PROJECT	PARISH	SHEET NO
2-4(D-4(35)225	450-37-02	ST CHARLES	28



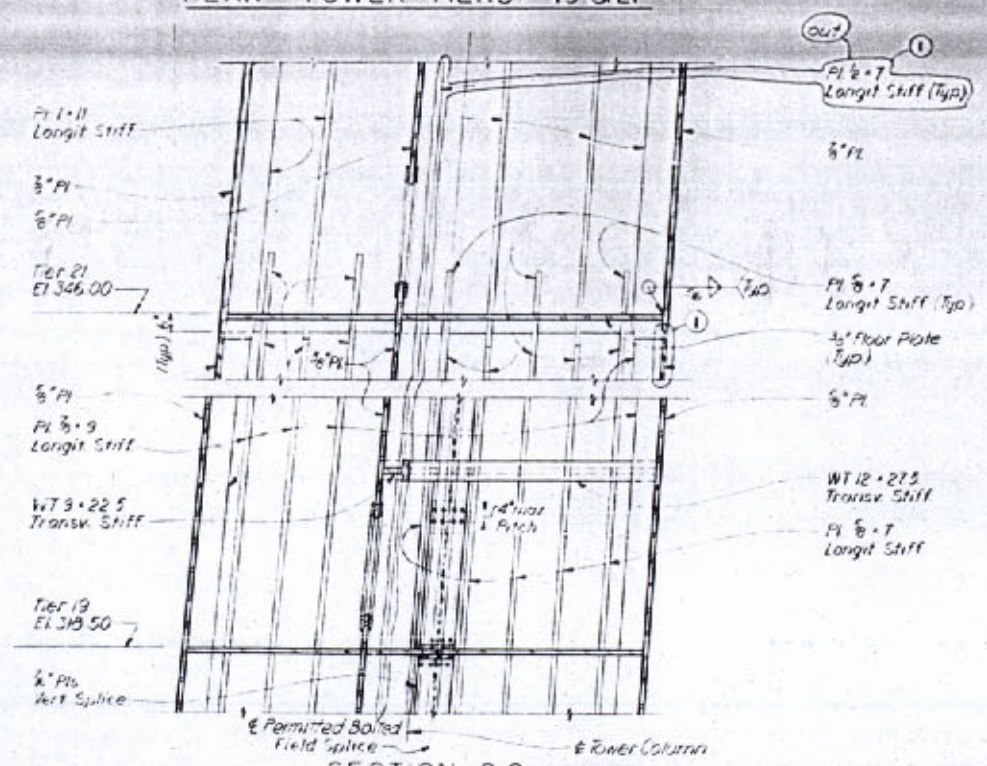
PLAN - TOWER TIERS 19 & 21



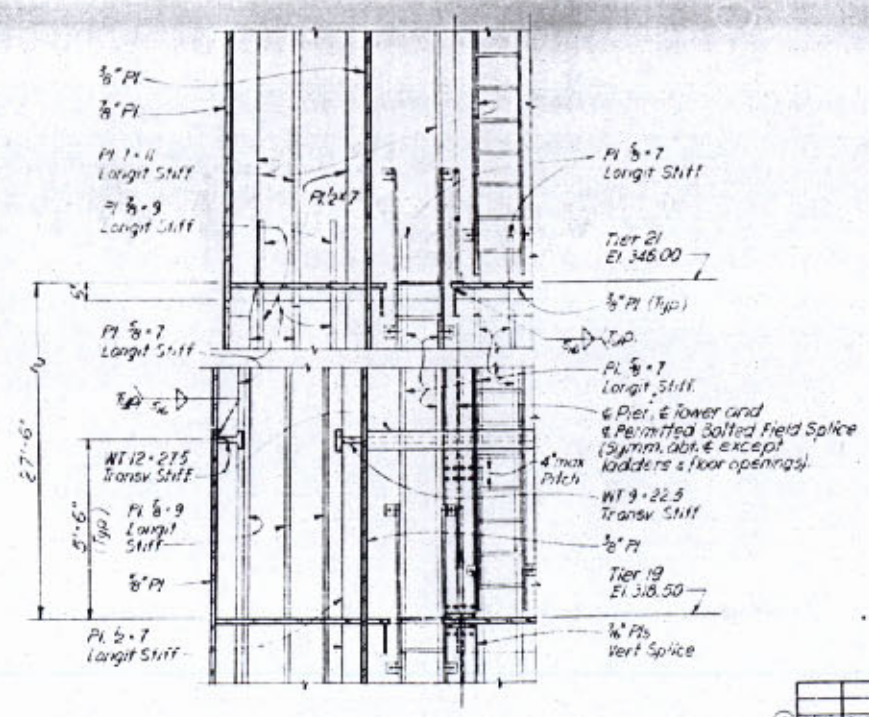
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

O.W. Hansen

NOTES:

For General Notes see Dwg. 2.
All material used for ladders shown on this dwg. shall conform to ASTM-A36, and shall be galvanized after Fabrication according to ASTM-A123.

DATE	DESCRIPTION	BY
2-27-78	Shift Approach & Min Rev.	FBL

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER TIERS 19 & 21
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

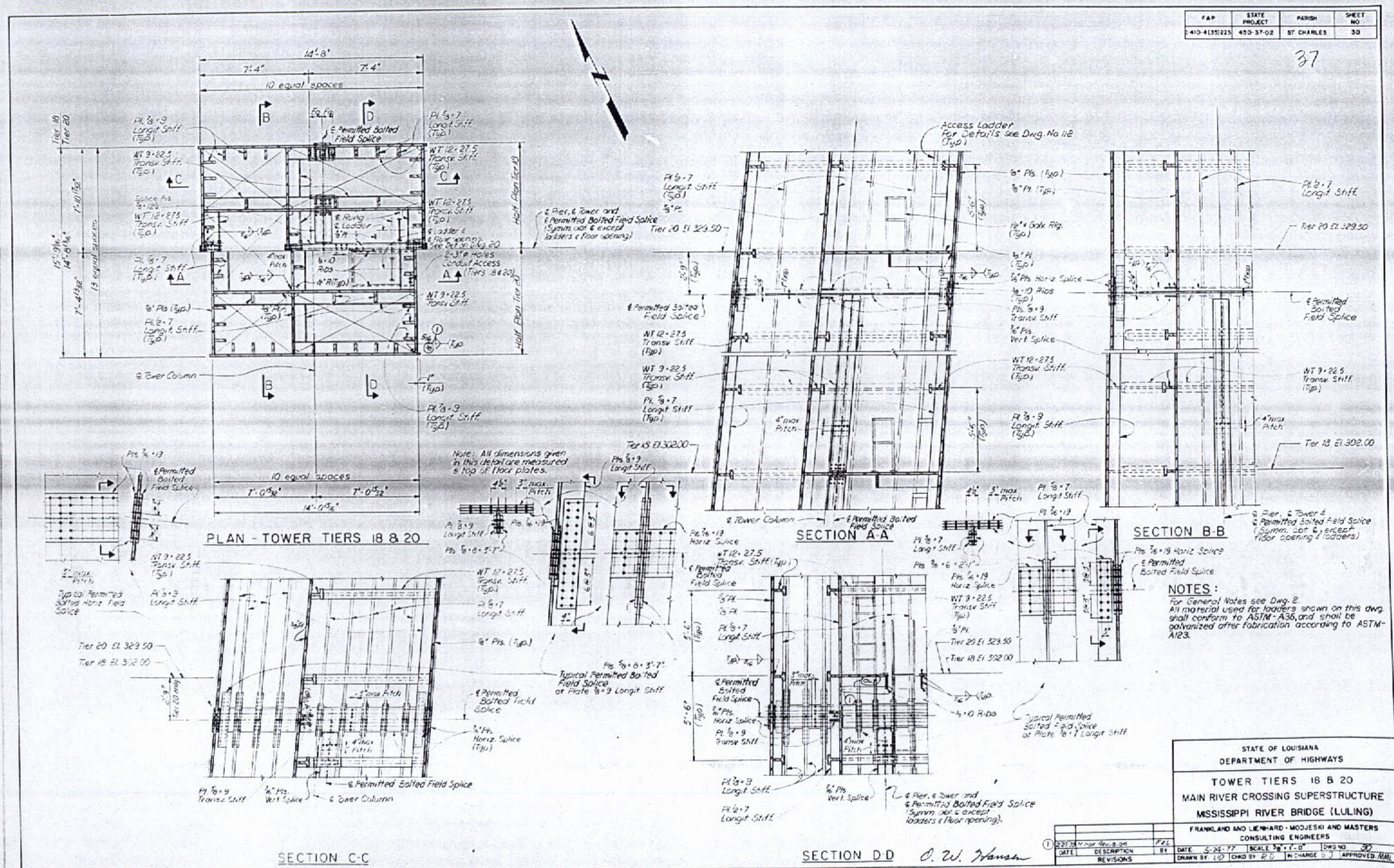
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-30-77 | SCALE 3/8"=1'-0" | DWG NO 22
DRAWN BY JD | CHKD BY JD | IN CHARGE S.J. | APPROVED

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-02	ST CHARLES	30

37



NOTES:

For General Notes see Dwg. 2.
All material used for ladders shown on this dwg. shall conform to ASTM-A36, and shall be galvanized after fabrication according to ASTM-A123.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER TIERS 18 & 20
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
1 2-21-78	Minor Revision	F&L

REVISIONS

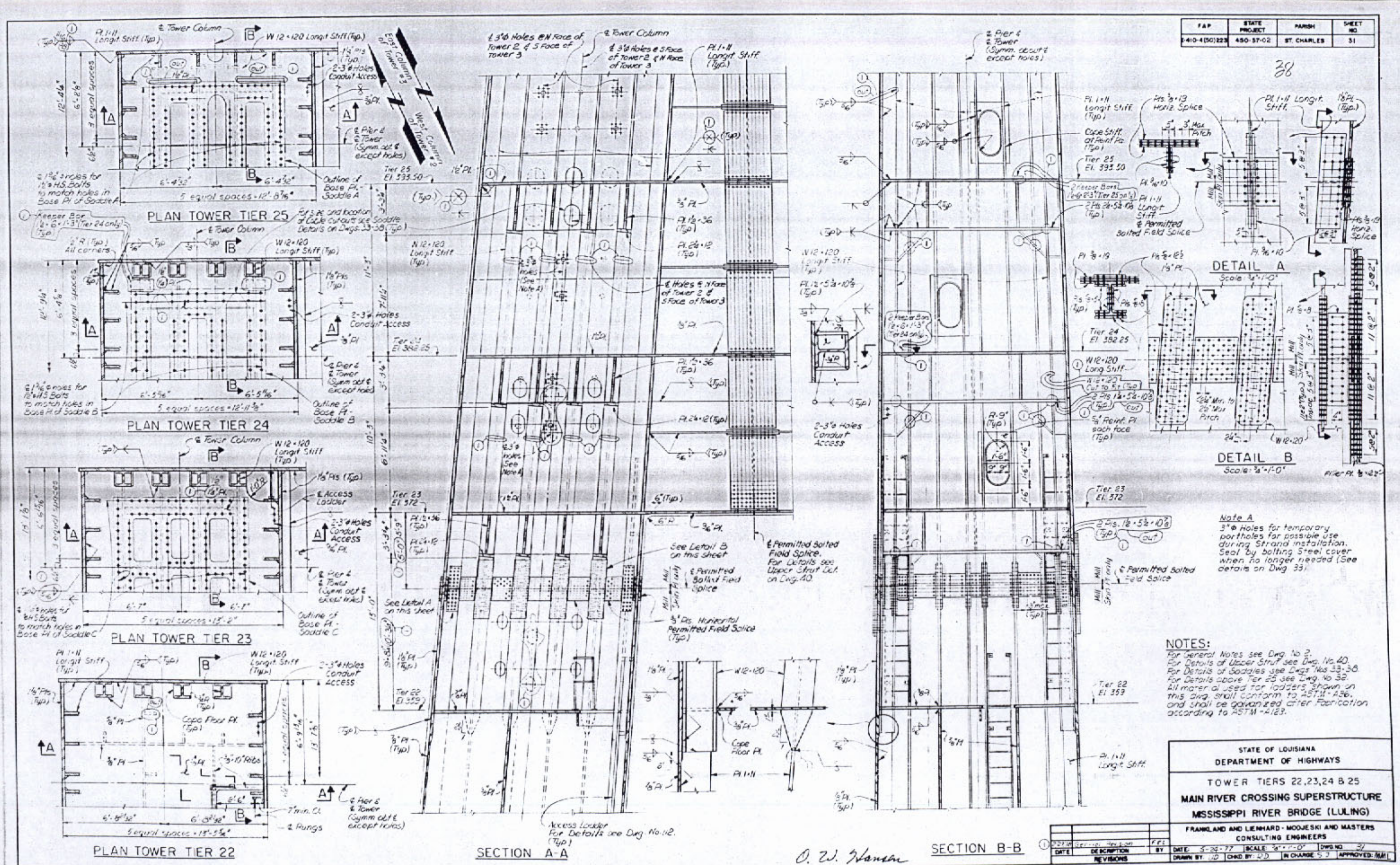
DATE 5-24-77 | SCALE 3/8" = 1'-0" | DWG NO. 30
DRAWN BY LID | CHKD BY RD | IN CHARGE GJ | APPROVED MML

O. W. Hansen

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO
E-410-4(50)223	450-57-02	ST. CHARLES	31

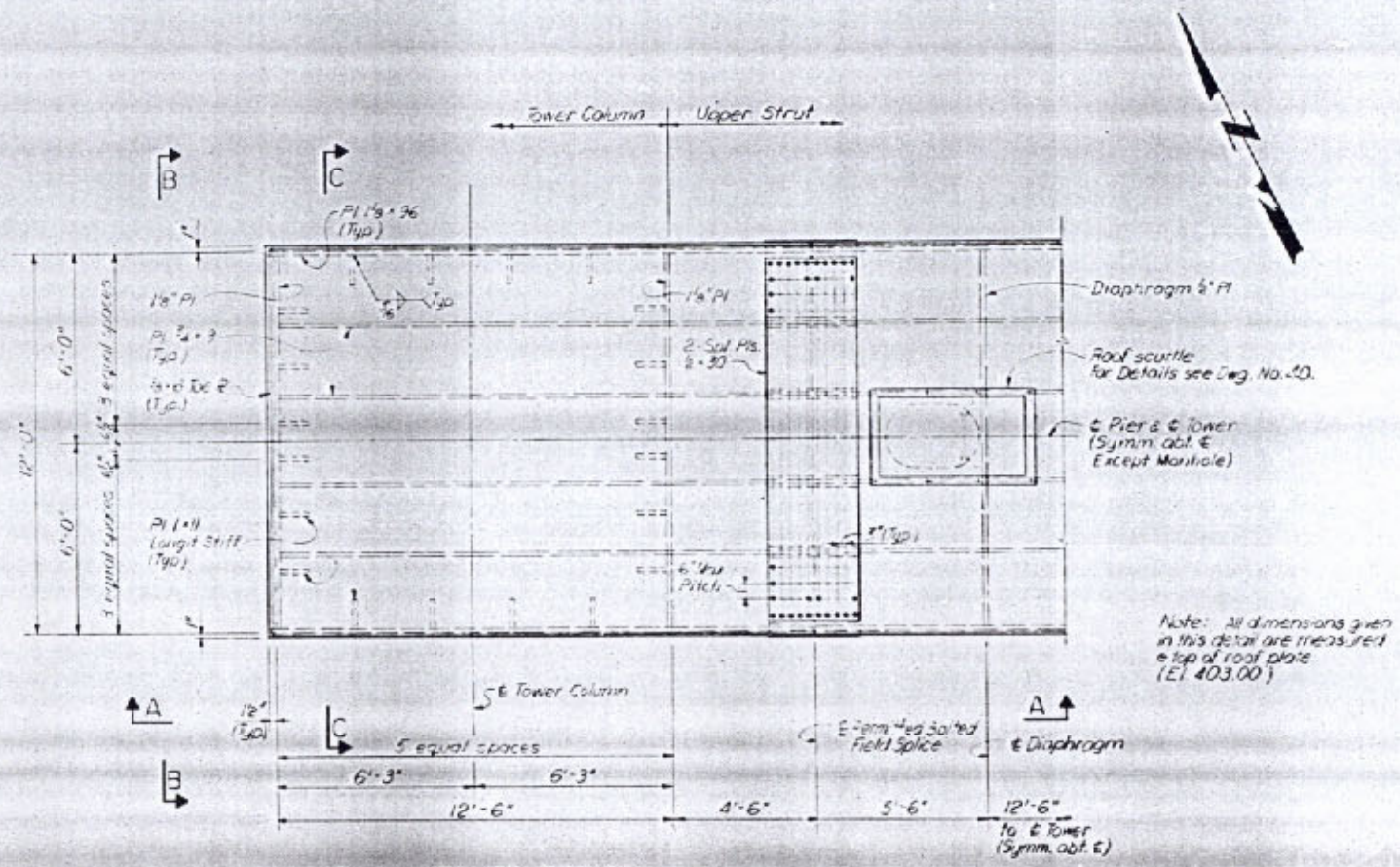
28



FRAME 1 24x

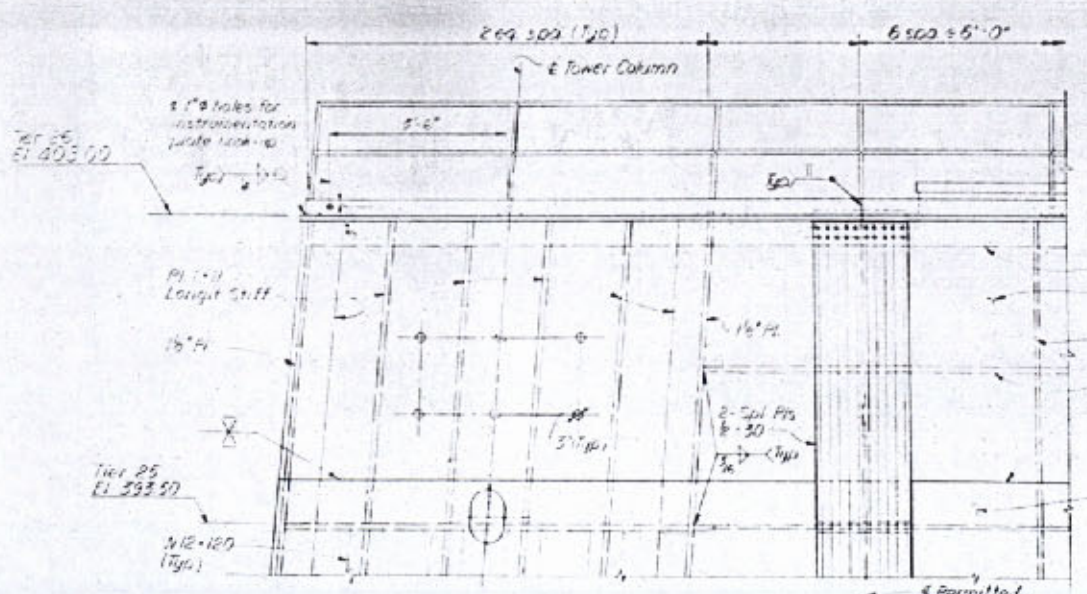
FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-02	ST. CHARLES	32

39

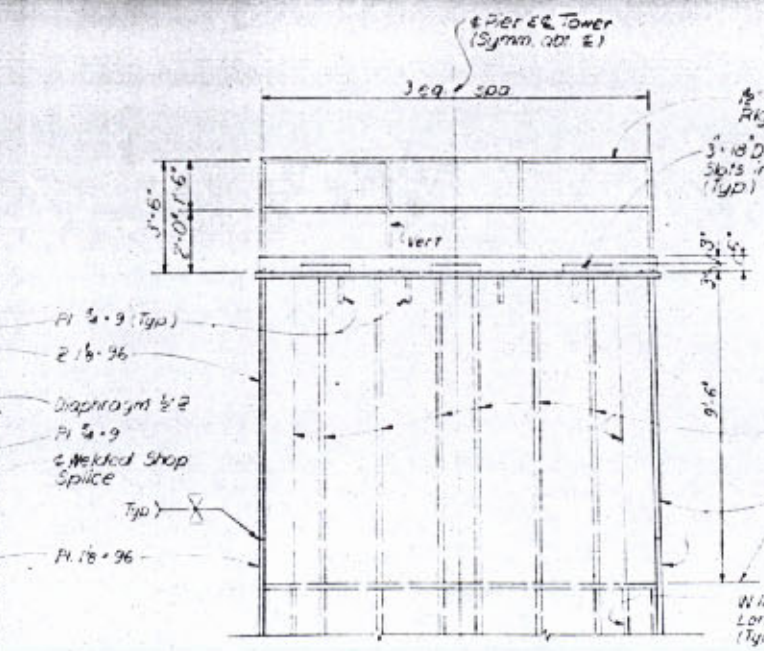


Note: All dimensions given in this detail are measured @ top of roof plate (El. 403.00)

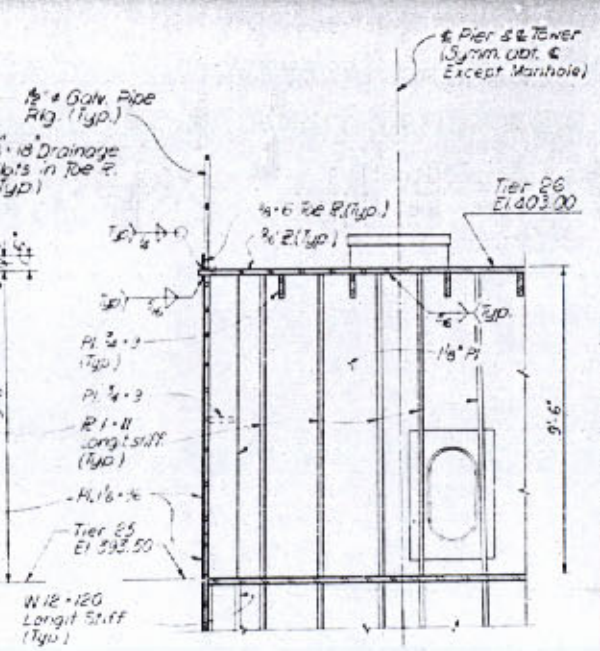
PLAN - TOWER TIER 26



ELEVATION A-A



ELEVATION B-B



SECTION C-C

NOTES:

For General Notes see Dwg. No. 2.
For Details of Upper Strut see Dwg. No. 40.
For Details of Tier 25 see Dwg. No. 31.
All material used for ladders shown on this dwg. shall conform to ASTM-A36, and shall be galvanized after Fabrication according to ASTM-A123.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER TIER 26
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

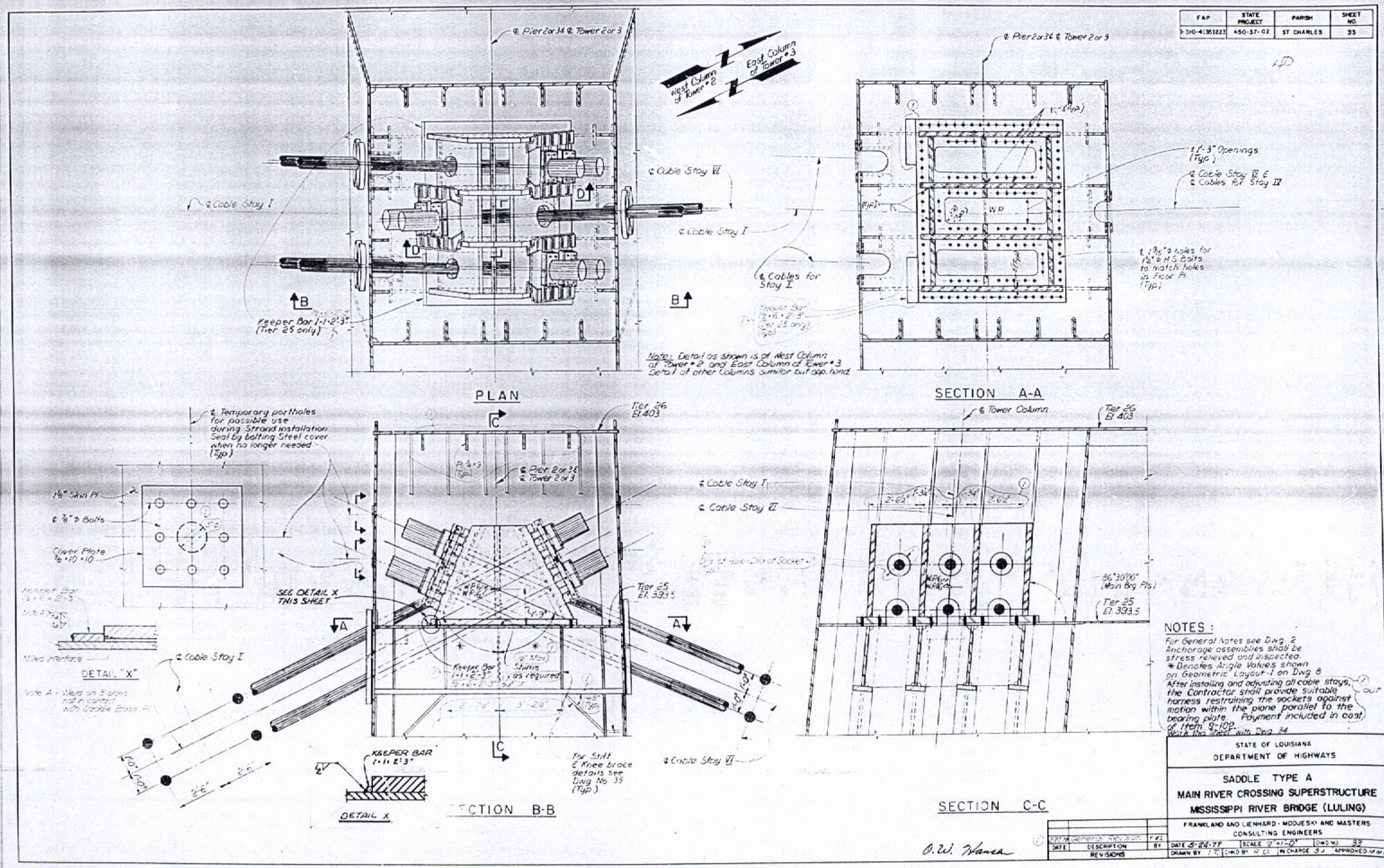
DATE	DESCRIPTION	BY
	REVISIONS	

DATE 5-24-77 | SCALE 3/8" = 1'-0" | DWG NO. 32
DRAWN BY UD | CHKD BY RD | IN CHARGE S.J. | APPROVED JMM

O. W. Hansen

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST CHARLES	33



NOTES:

For General Notes see Dwg. 2
Anchorage assemblies shall be stress relieved and inspected.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg 8
After installing and adjusting all cable stays, the Contractor shall provide suitable harness restraining the sockets against motion within the plane parallel to the bearing plate. Payment included in cost of Item 9-102.
Work this Sheet with Dwg 34

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SADDLE TYPE A
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
3-27-78	General Revision	F.&L.

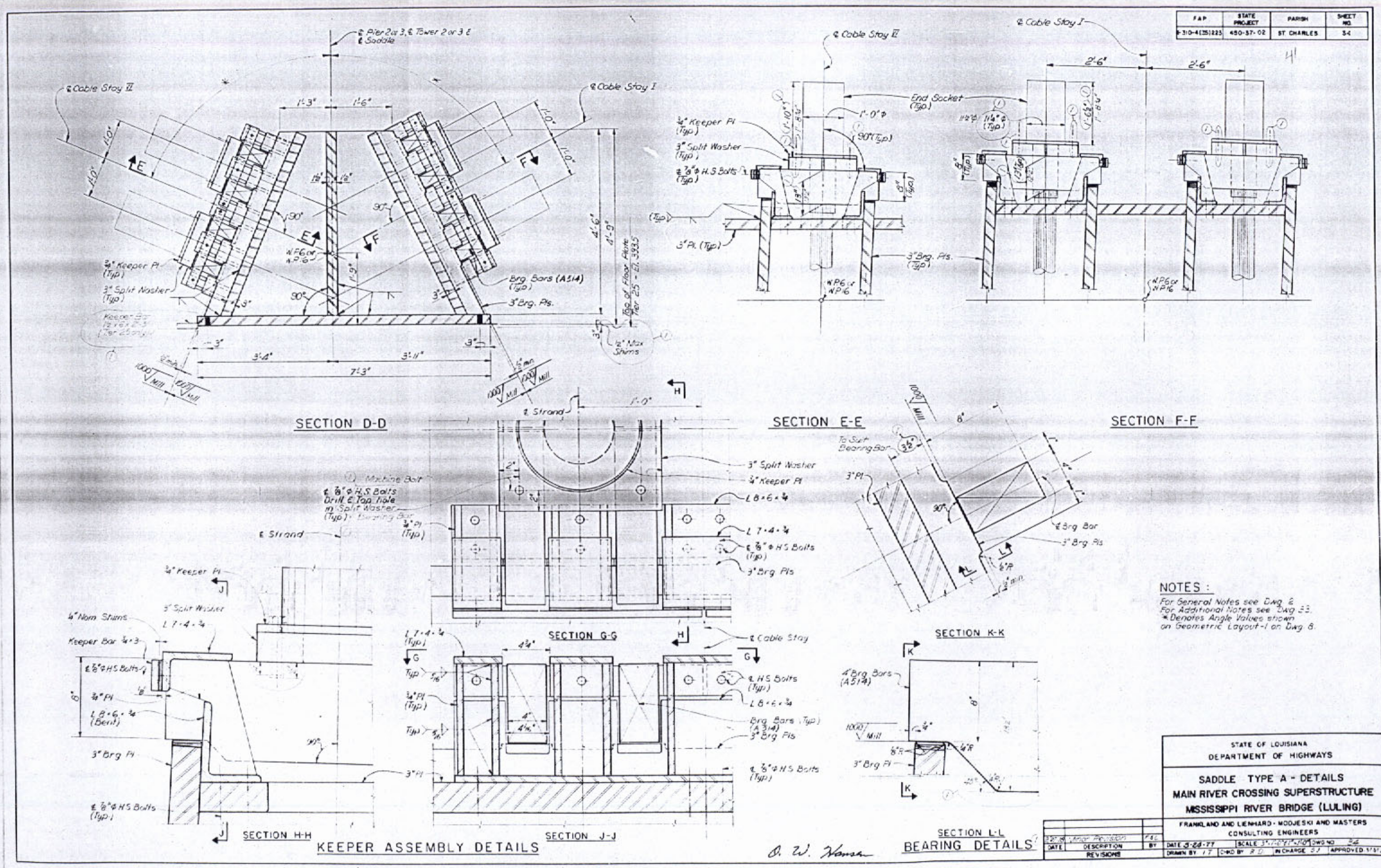
REVISIONS

DATE 5-24-77 | SCALE 1/2"=1'-0" | DWG NO 33
DRAWN BY I.T. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED M.M.L.

O.W. Hansen

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	34



NOTES :
For General Notes see Dwg. 2
For Additional Notes see Dwg. 33.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SADDLE TYPE A - DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
3-20-78	Minor Revision	F&L

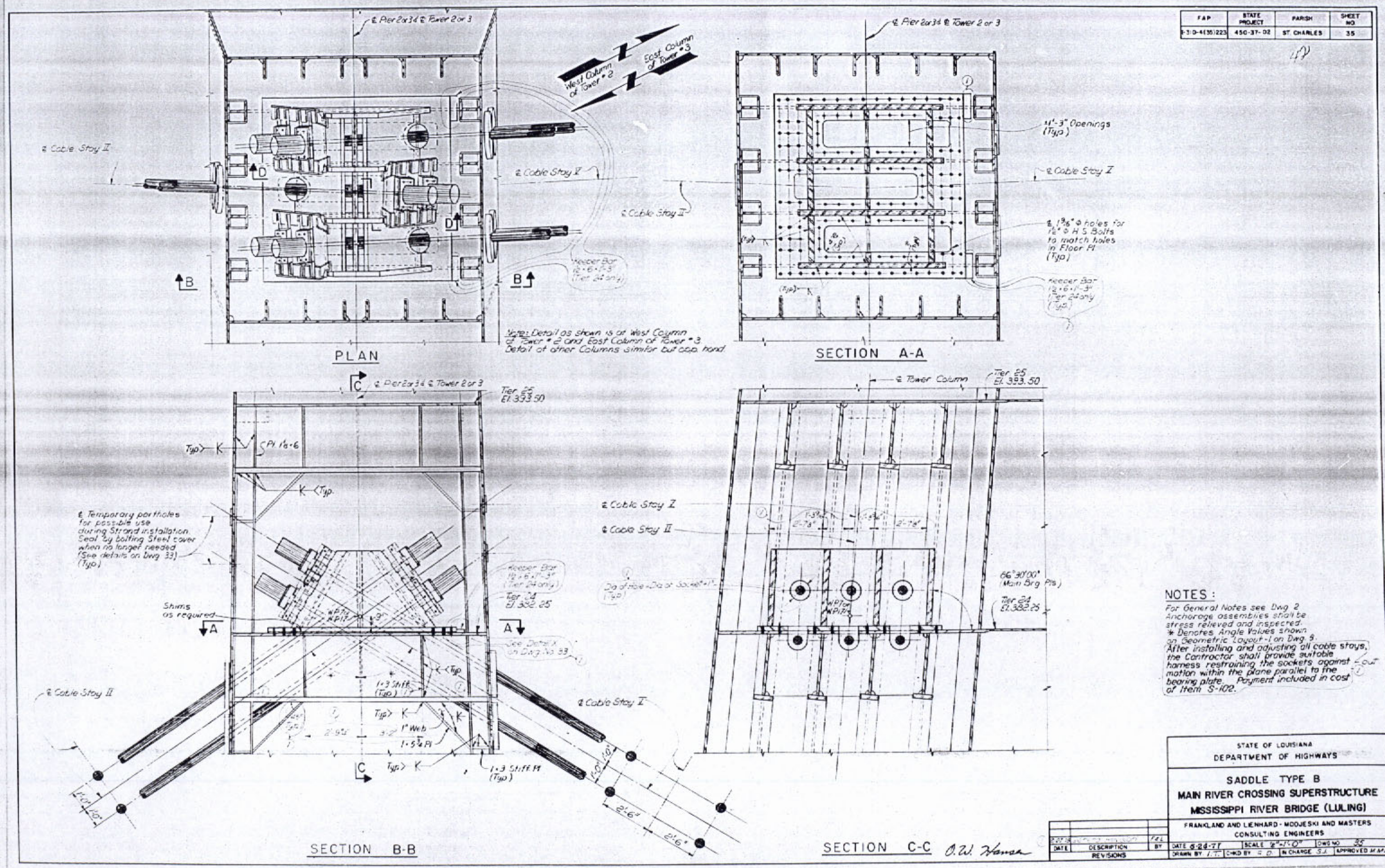
REVISIONS

DATE 5-24-77 | SCALE 3"=1'-0" & 1"=1'-0" | DWG NO. 34
DRAWN BY I.T. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED

O. W. Hansen

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
1-310-4(35)223	450-37-02	ST. CHARLES	35



NOTES:

For General Notes see Dwg. 2. Anchorage assemblies shall be stress relieved and inspected.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8.
After installing and adjusting all cable stays, the Contractor shall provide suitable harness restraining the sockets against motion within the plane parallel to the bearing plate. Payment included in cost of Item S-102.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SADDLE TYPE B
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
2-27-78	[illegible]	F&L

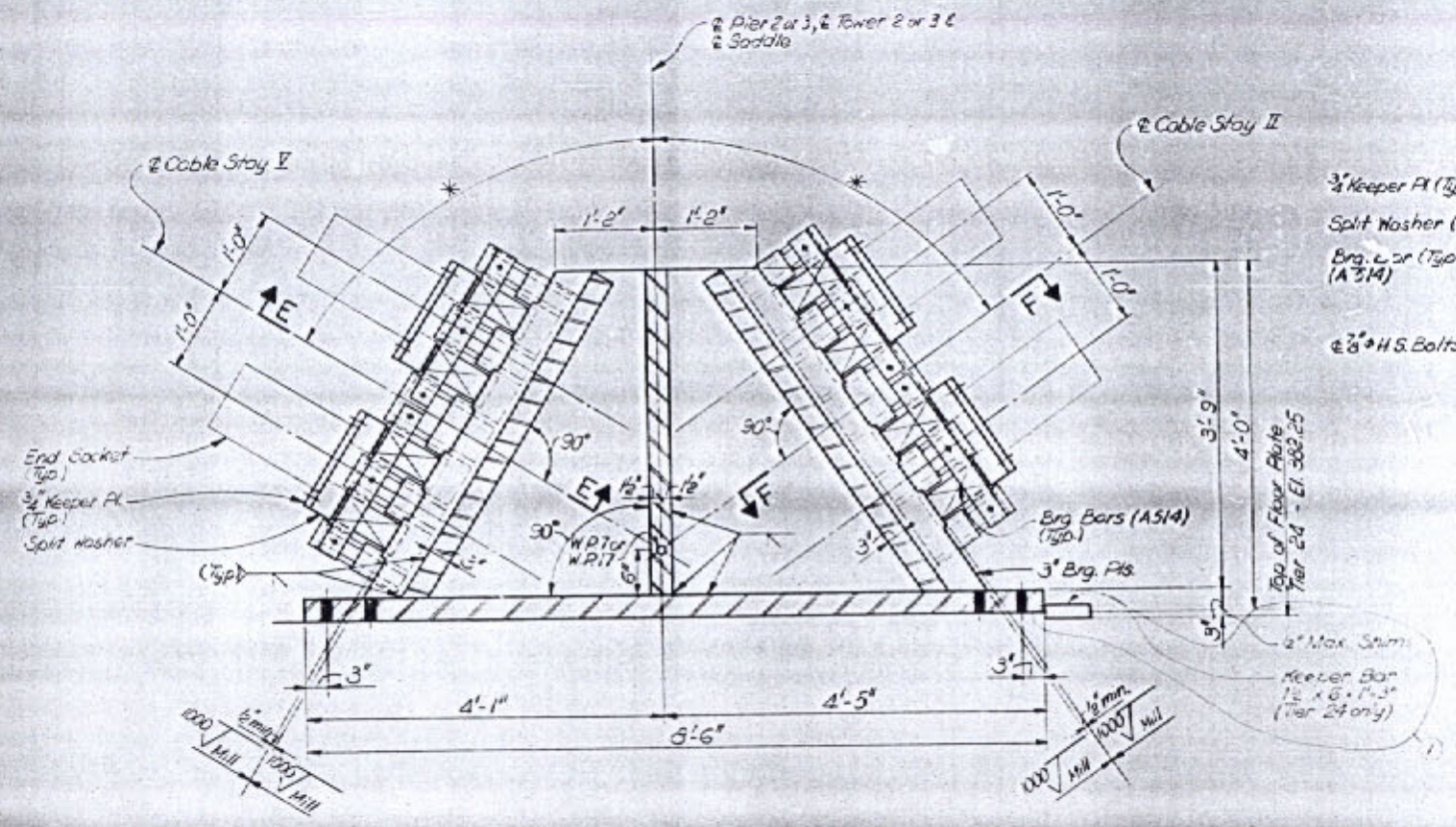
REVISIONS

DATE 6-24-77 | SCALE 1/2"=1'-0" | DWG NO. 35
DRAWN BY I.T. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED M.M.L.

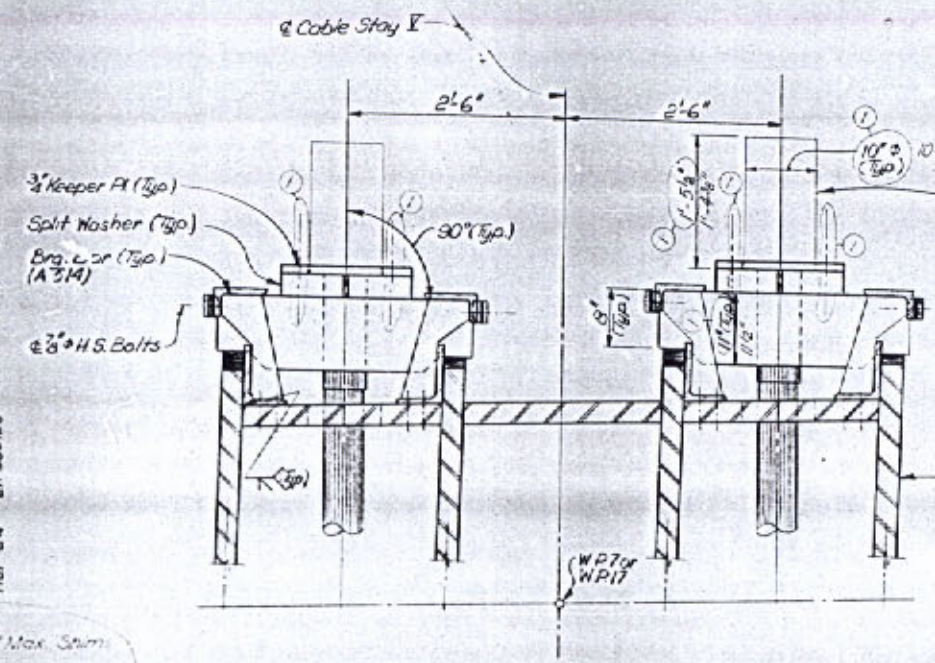
FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
1-310-4(35)223	450-37-02	ST. CHARLES	36

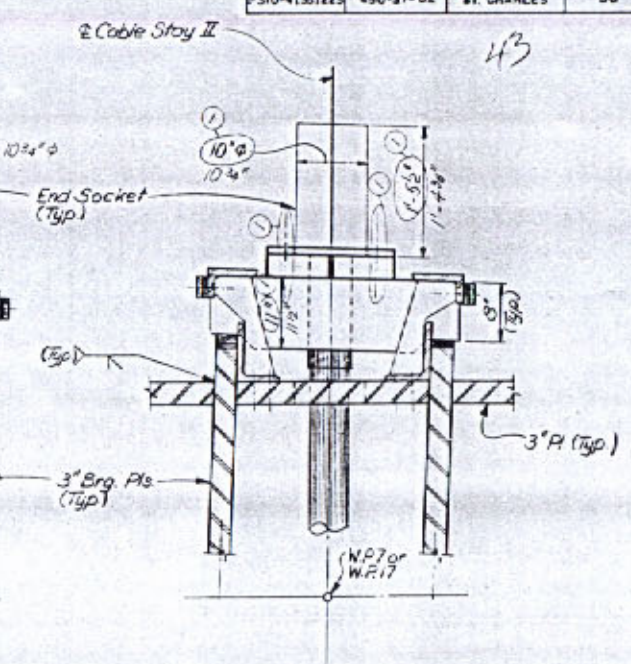
43



SECTION D-D



SECTION E-E



SECTION F-F

NOTES:

For General Notes see Dwg. 2.
For Additional Notes see Dwg. 35.
*Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8
For Keeper Assembly Details see Dwg. No. 34.
For Bearing Details see Dwg. No. 34.

O. W. Hansen

DATE	DESCRIPTION	BY
2-27-75	Minor Revision	F.E.L.
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

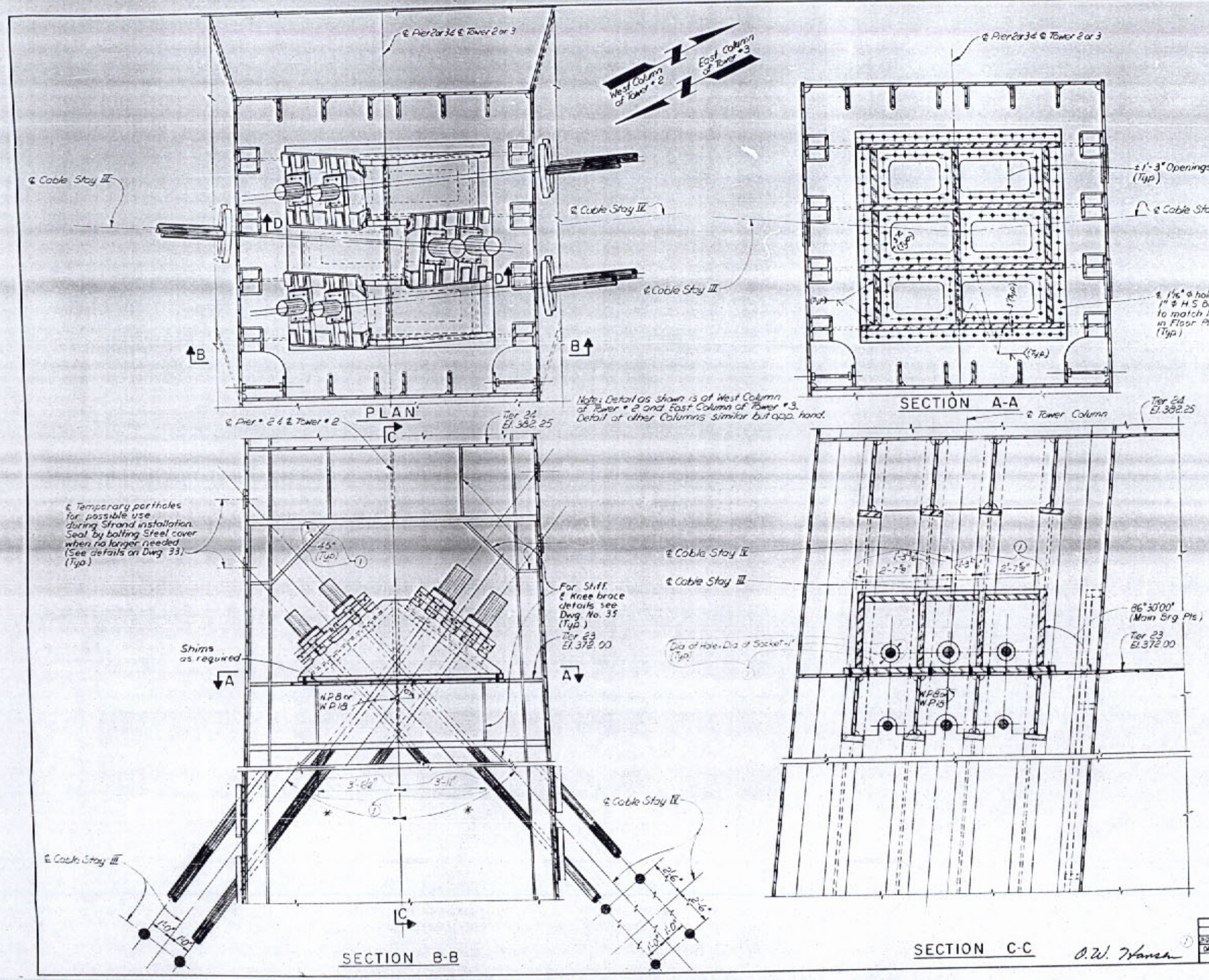
SADDLE TYPE B - DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1" = 1'-0" | DWG NO. 36
DRAWN BY J.T. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MNL

FRAME 1 24x

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	37



NOTES:

For General Notes see Dwg. 2
Anchorage assemblies shall be stress relieved and inspected.
* Denotes Angle Values shown on Geometric Layout - 1 on Dwg. 8.
(1)-out - After installing and adjusting all cable stays, the Contractor shall provide suitable harness restraining the sockets against motion within the plane parallel to the bearing plate. Payment included in cost of Item S-102.

O.W. Hansen

DATE	DESCRIPTION	BY
2/27/76	General Revision	F.E.L.

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

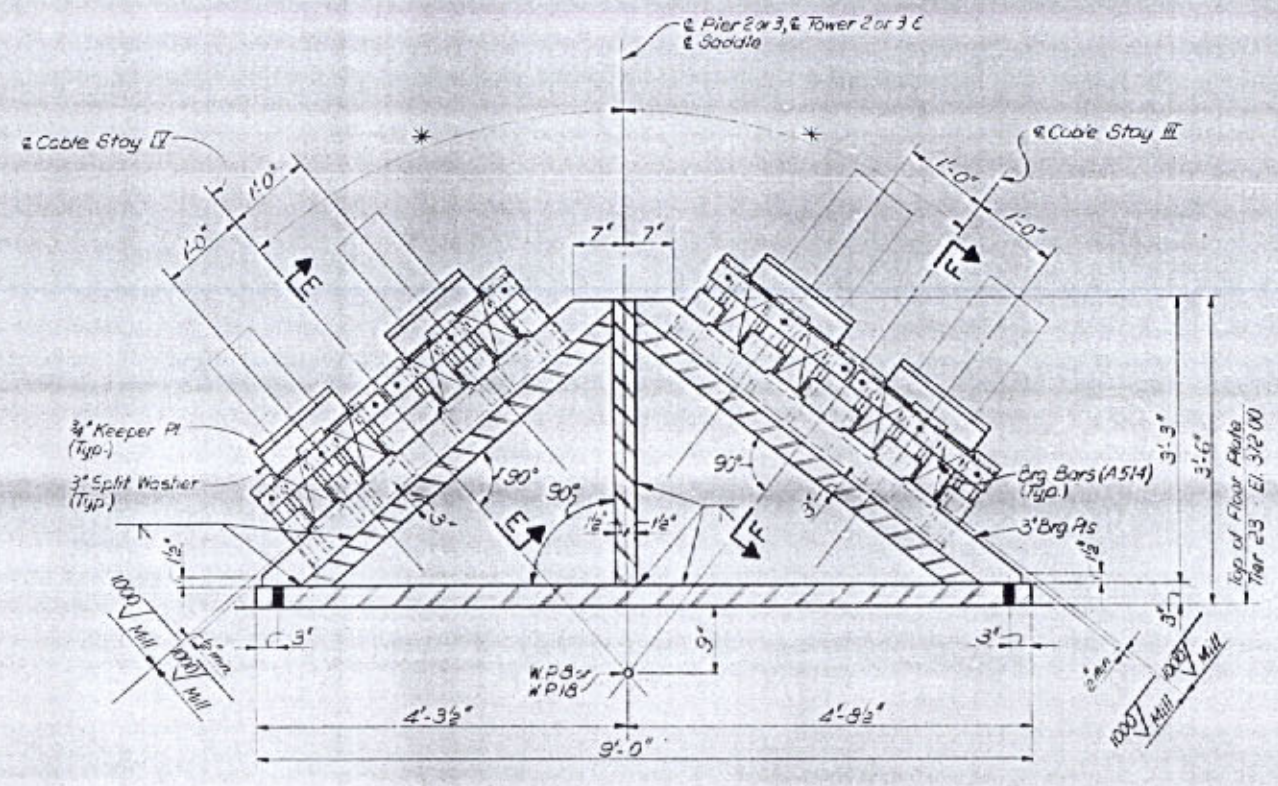
SADDLE TYPE C
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

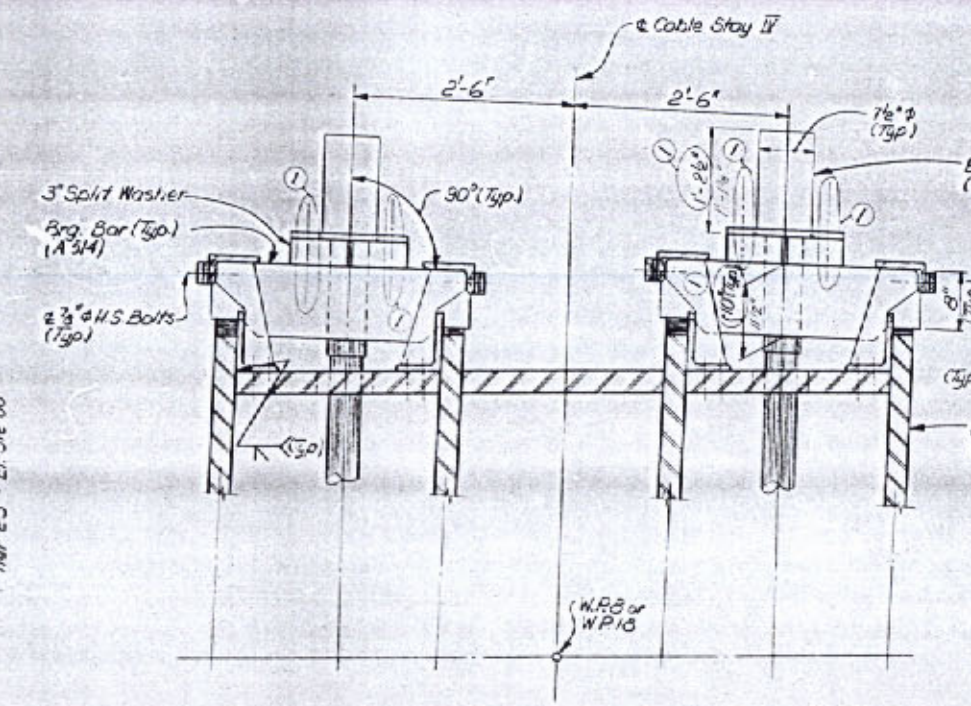
DATE 5-24-77 | SCALE 1/2" = 1'-0" | DWG NO. 37
DRAWN BY I.T. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED M.M.L.

FRAME 1 24x

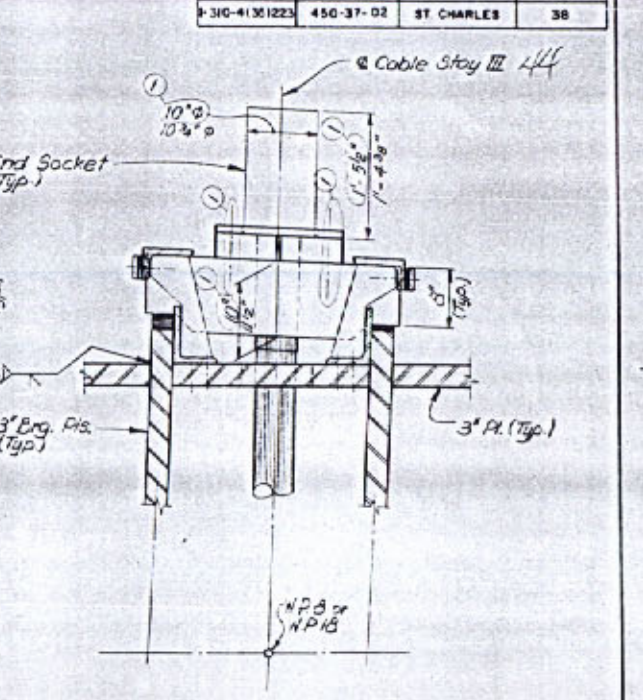
FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351223)	450-37-02	ST. CHARLES	38



SECTION D-D



SECTION E-E



SECTION F-F

NOTES :

For General Notes see Dwg. 2.
For Additional Notes see Dwg. 37.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8
For Keeper Assembly Details see Dwg. No. 34.
For Bearing Details see Dwg. No. 34.

O. W. Hansen

DATE	DESCRIPTION	BY
2-27-78	Minor Revision	F&L

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SADDLE TYPE C - DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

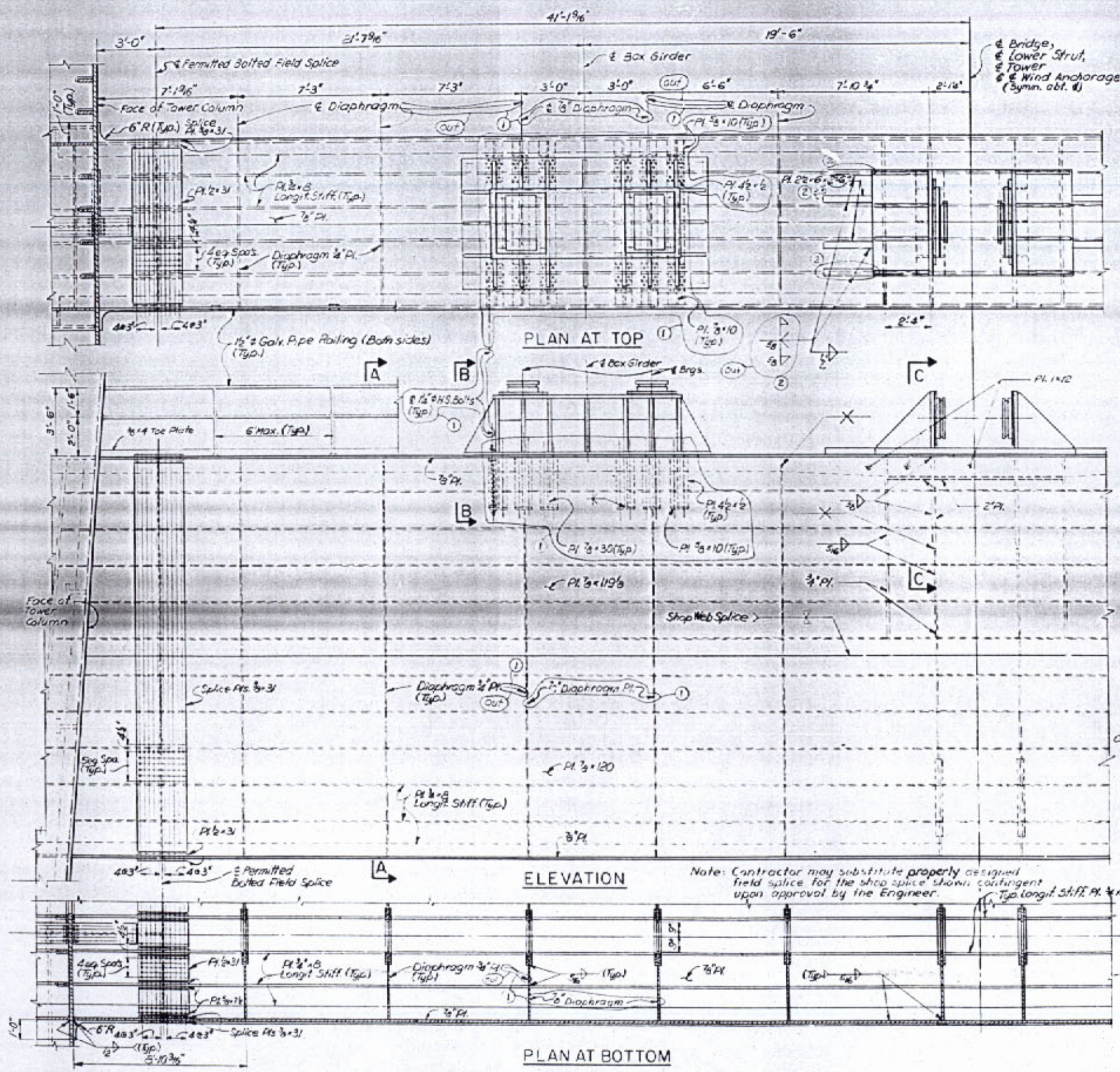
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

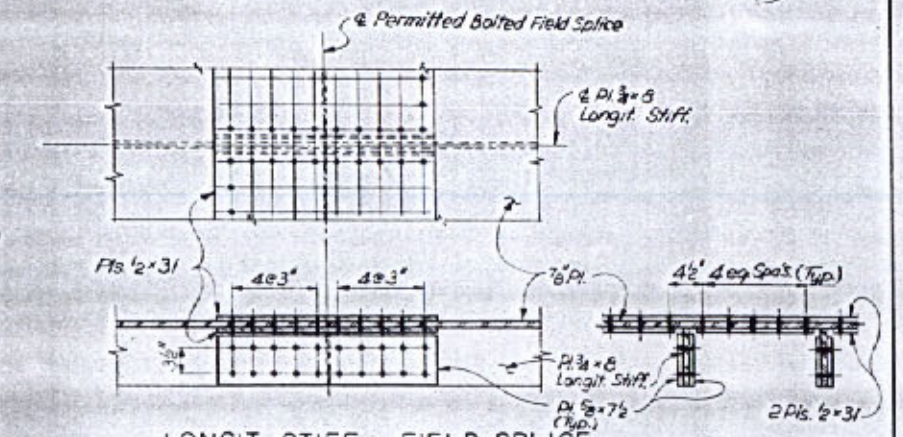
DATE: 5-24-77 | SCALE: 1"=1'-0" | DWG NO. 38
DRAWN BY: I.T. | CHKD BY: R.D. | IN CHARGE: S.J. | APPROVED: M.M.L.

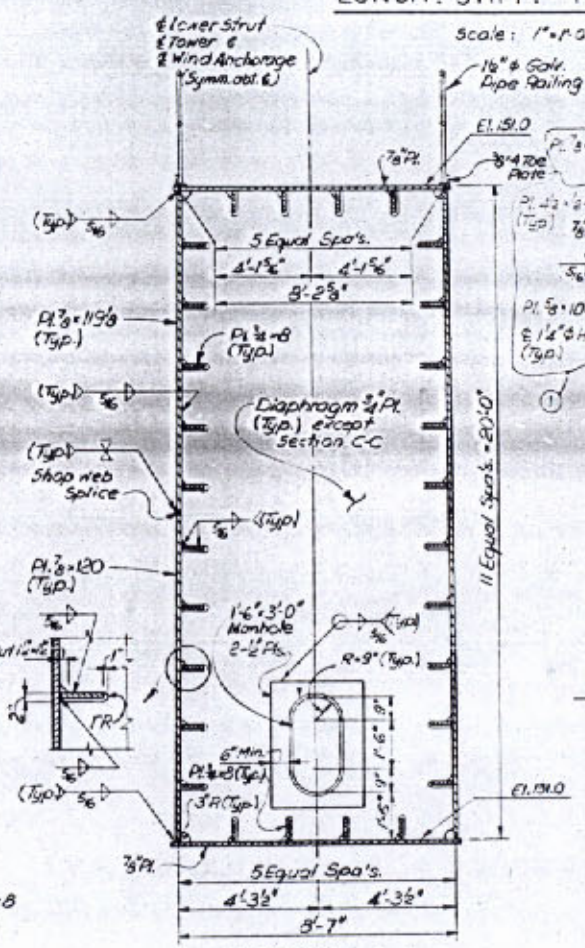
FRAME 1 24x

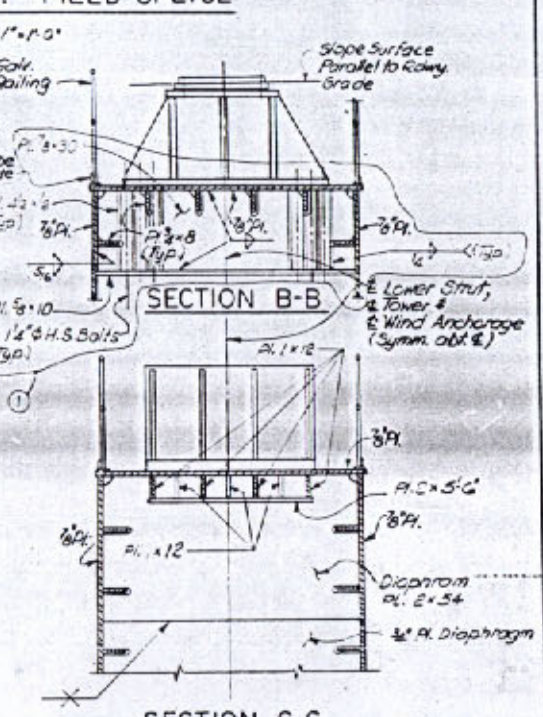
F.A.P.	STATE PROJECT	PARISH	SHEET NO.
F-310-4(35)223	450-37-02	ST. CHARLES	39

45









NOTES:
For General Notes see Dwg. No. 2.
For Towers Elevation and Sections see Dwg. No. 17.
All Bolts in Field Splices to be 7/8" H.S. Bolts.

For additional Details in area of Wind Shear Lock, see Dwg. Nos. 96, 100 & 102.

(out) (1)

DATE	DESCRIPTION	BY
5-24-77	Revised "Lower" Pls.	[illegible]
8-29-78	Brgs. Support added	F.A.L.

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWERS - LOWER STRUT

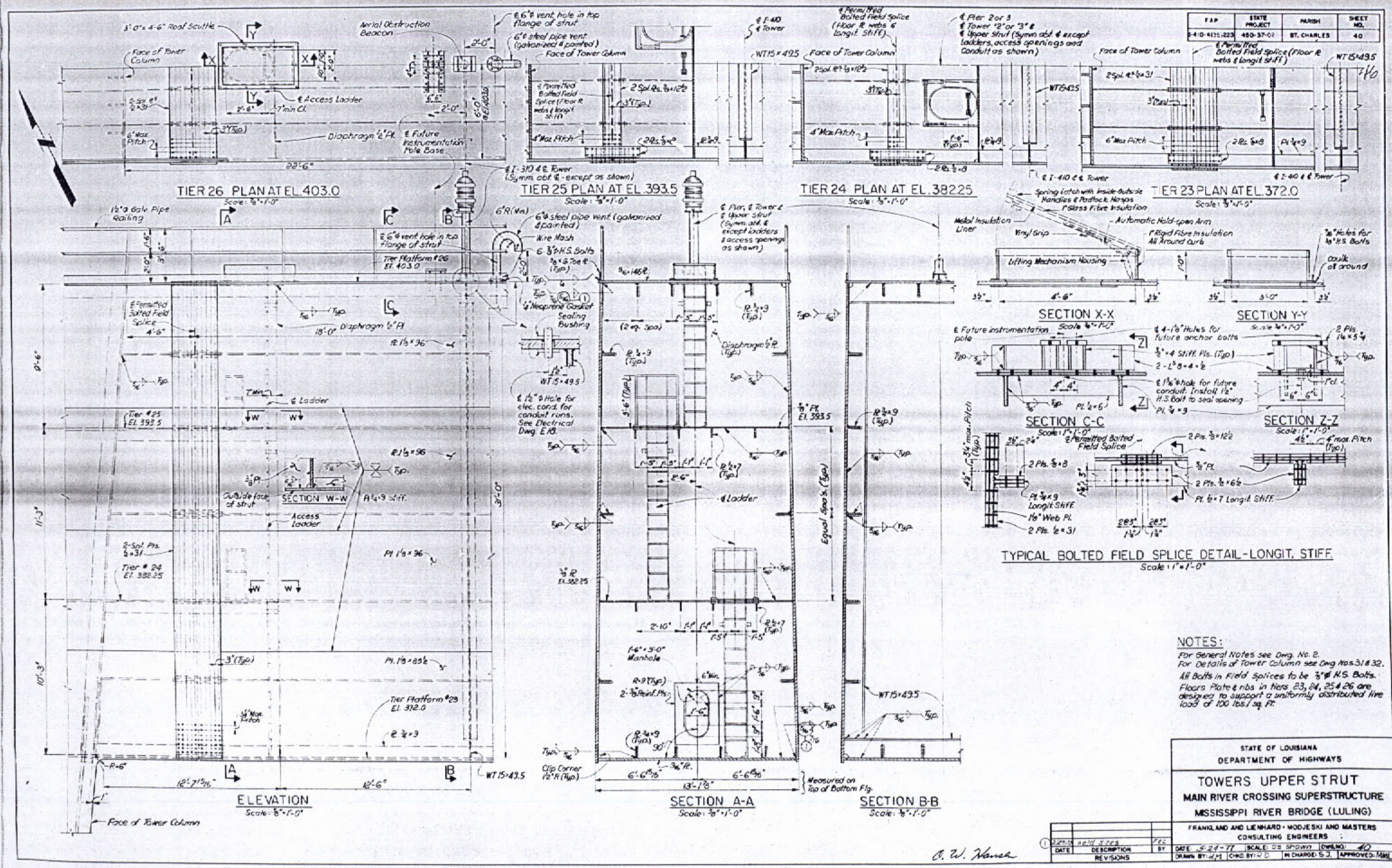
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: 1/8"=1'-0", 1"=1'-0" | DWG. NO. 39
DRAWN BY: R.H. | CHKD. BY: R.C. | IN CHARGE: S.A. | APPROVED: N.M.L.

O. W. Hansen

FRAME 1 24x



FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4135:223	450-37-02	ST. CHARLES	40

NOTES:

For General Notes see Dwg. No. 2.
For Details of Tower Column see Dwg Nos. 31 & 32.
All Bolts in Field Splices to be 7/8"ø H.S. Bolts.
Floors Plate & ribs in tiers 23, 24, 25 & 26 are designed to support a uniformly distributed live load of 100 lbs./sq. Ft.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWERS UPPER STRUT
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
1	Field Sizes	FEC

REVISIONS

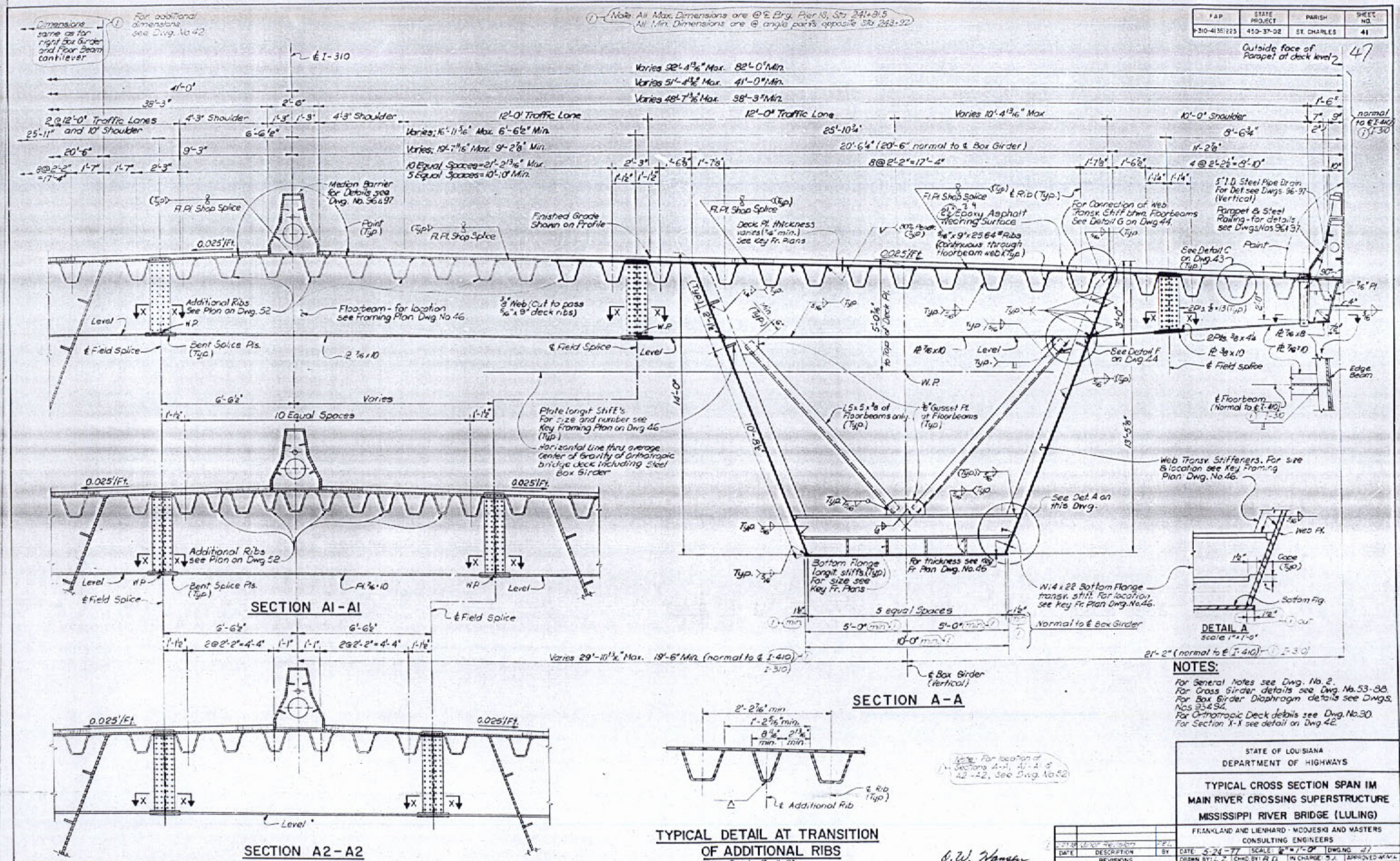
DATE: 5-24-77 | SCALE: as shown | DWG. NO.: 40
DRAWN BY: W.M. | CHKD. BY: R.D. | IN CHARGE: S.J. | APPROVED: MML

O. W. Hansen

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	41

47



NOTES:

For General Notes see Dwg. No. 2.
For Cross Girder details see Dwg. No. 53-88.
For Box Girder Diaphragm details see Dwgs. Nos. 93 & 94.
For Orthotropic Deck details see Dwg. No. 30.
For Section X-X see detail on Dwg. 42.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TYPICAL CROSS SECTION SPAN IM
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
5-23-78	Update revision	RFL

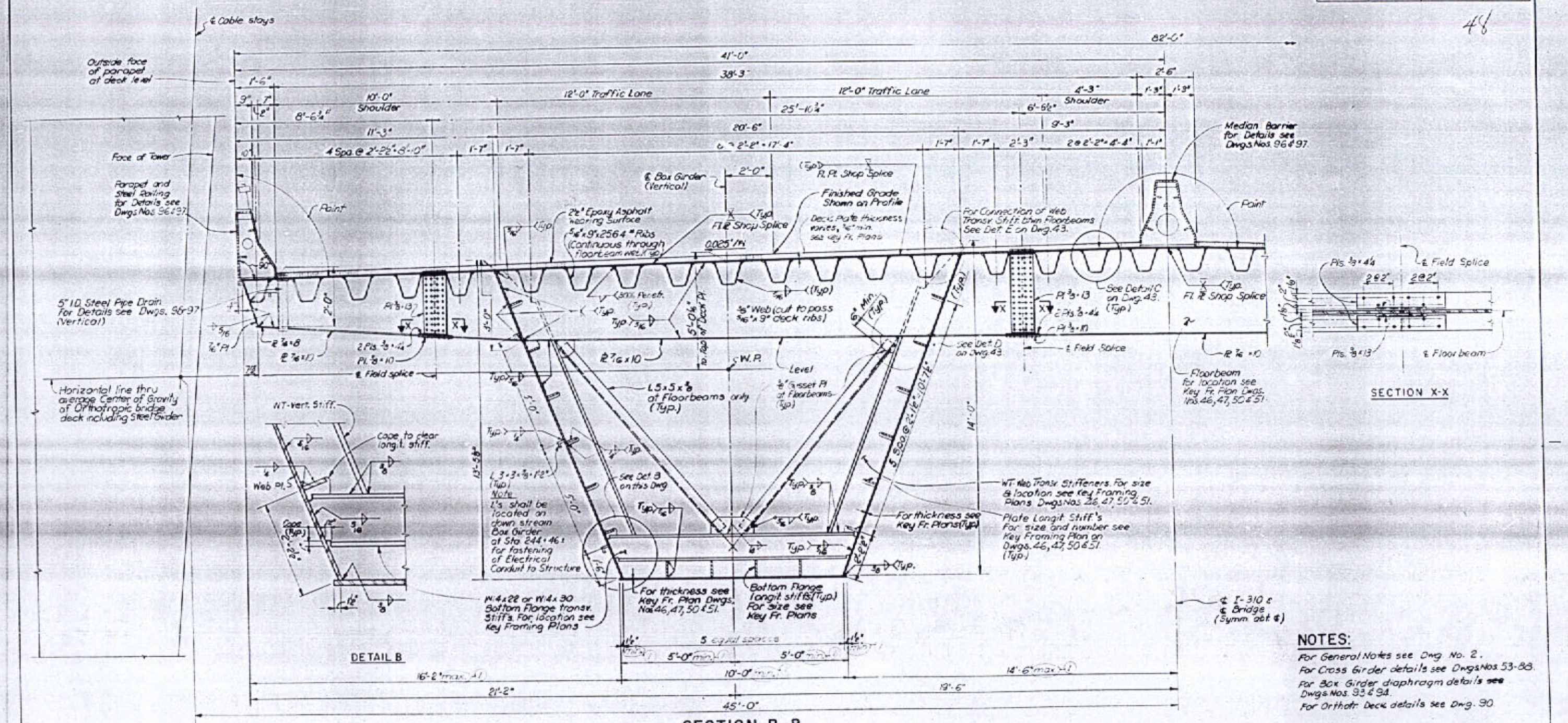
REVISIONS

DATE: 5-24-77 | SCALE: 3/8" = 1'-0" | DWG. NO. 47
DRAWN BY: L.Z. | CHKD BY: R.D. | IN CHARGE: S.J. | APPROVED: W.W.L.

D. W. Hansen

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310 4(35)225	450-37-02	ST. CHARLES	42



NOTES:

For General Notes see Dwg. No. 2.
For Cross Girder details see Dwgs. Nos. 53-88.
For Box Girder diaphragm details see Dwgs. Nos. 93 & 94.
For Orthotr. Deck details see Dwg. 90.

DATE	DESCRIPTION	BY
2-21-78	Minor Revision	FBL

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TYPICAL CROSS SECTION SPAN 1M, 2M, 4M & 5M
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

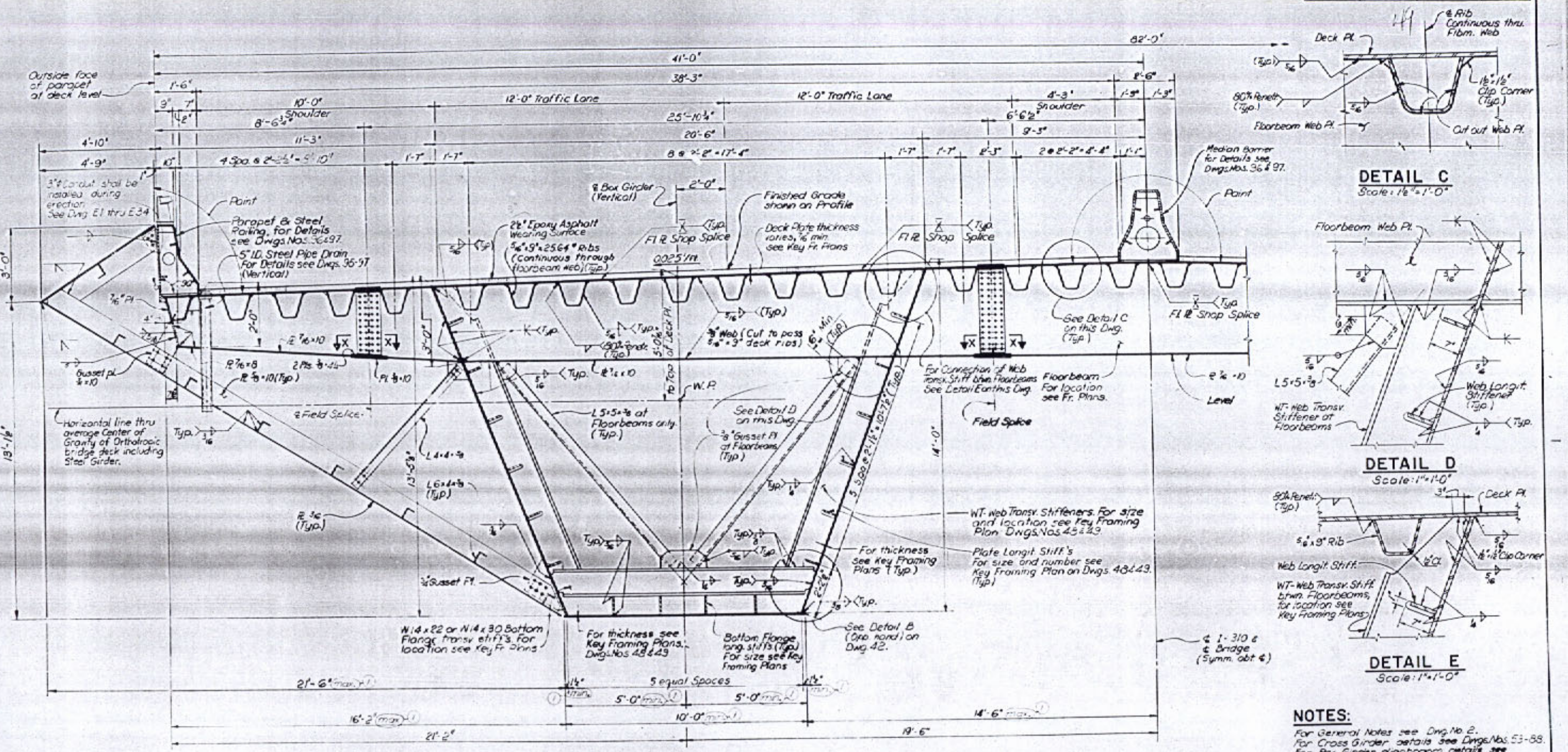
FRANKLAND AND LIENHARD - MODLESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1/8" = 1'-0" | DWG NO. 42
DRAWN BY R.R. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED M.M.L.

O. W. Hansen

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310 41351223	450-37-02	ST. CHARLES	43



SECTION C-C

DETAIL C
Scale: 1½" = 1'-0"

DETAIL D
Scale: 1" = 1'-0"

DETAIL E
Scale: 1" = 1'-0"

NOTES:

For General Notes see Dwg. No. 2.
For Cross Girder details see Dwgs. Nos. 53-88.
For Box Girder diaphragm details see Dwgs. Nos. 93 & 94.
For Orthotr. Deck detail see Dwg. No. 90.
For Section X-X see detail on Dwg. 42.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TYPICAL CROSS SECTION SPAN 3M
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
2-27-78	Minor Revisions	FEL

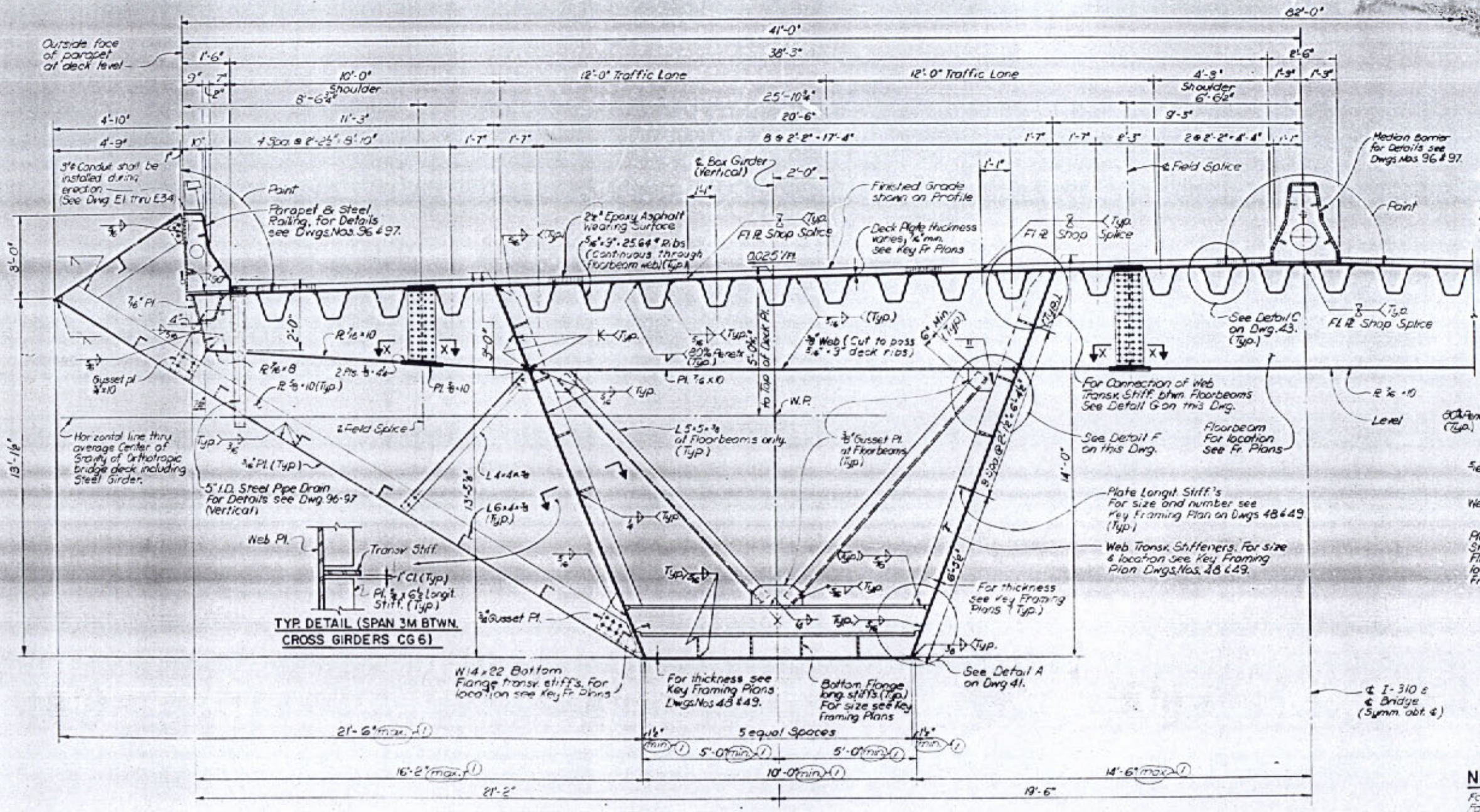
REVISIONS

DATE 5-24-77 | SCALE: ½" = 1'-0" | DWG NO. 43
DRAWN BY A.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MM

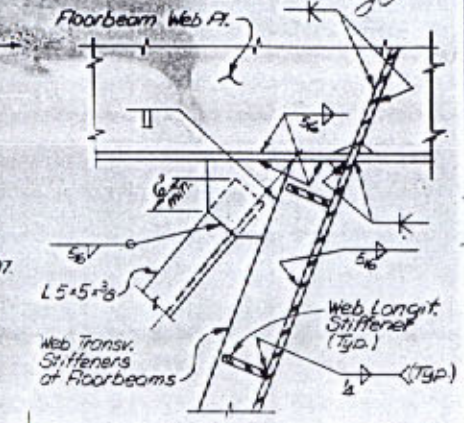
O. W. Hansen

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	44

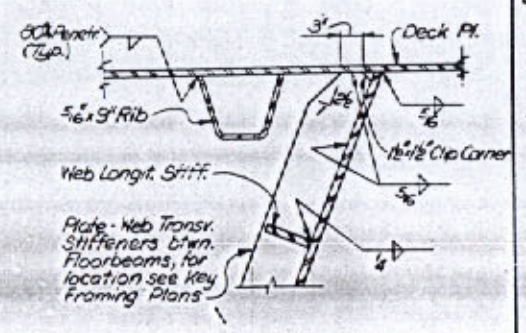


SECTION D-D



DETAIL F

Scale: 1" = 1'-0"



DETAIL G

Scale: 1" = 1'-0"

NOTES:

For General Notes see Dwg. No. 2.
For Cross Girder details see Dwg. No. 53-88.
For Box Girder diaphragm details see Dwgs. Nos. 93 & 94.
For Orthotr. Deck detail see Dwg. No. 90
For location of Section D-D see Key Framing Plan on Dwg. Nos. 48 & 49.
For Section A-A see detail on Dwg. 42.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TYPICAL CROSS SECTION SPAN 3M
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
1	2-27-78 Minor Revision	F.E.L.

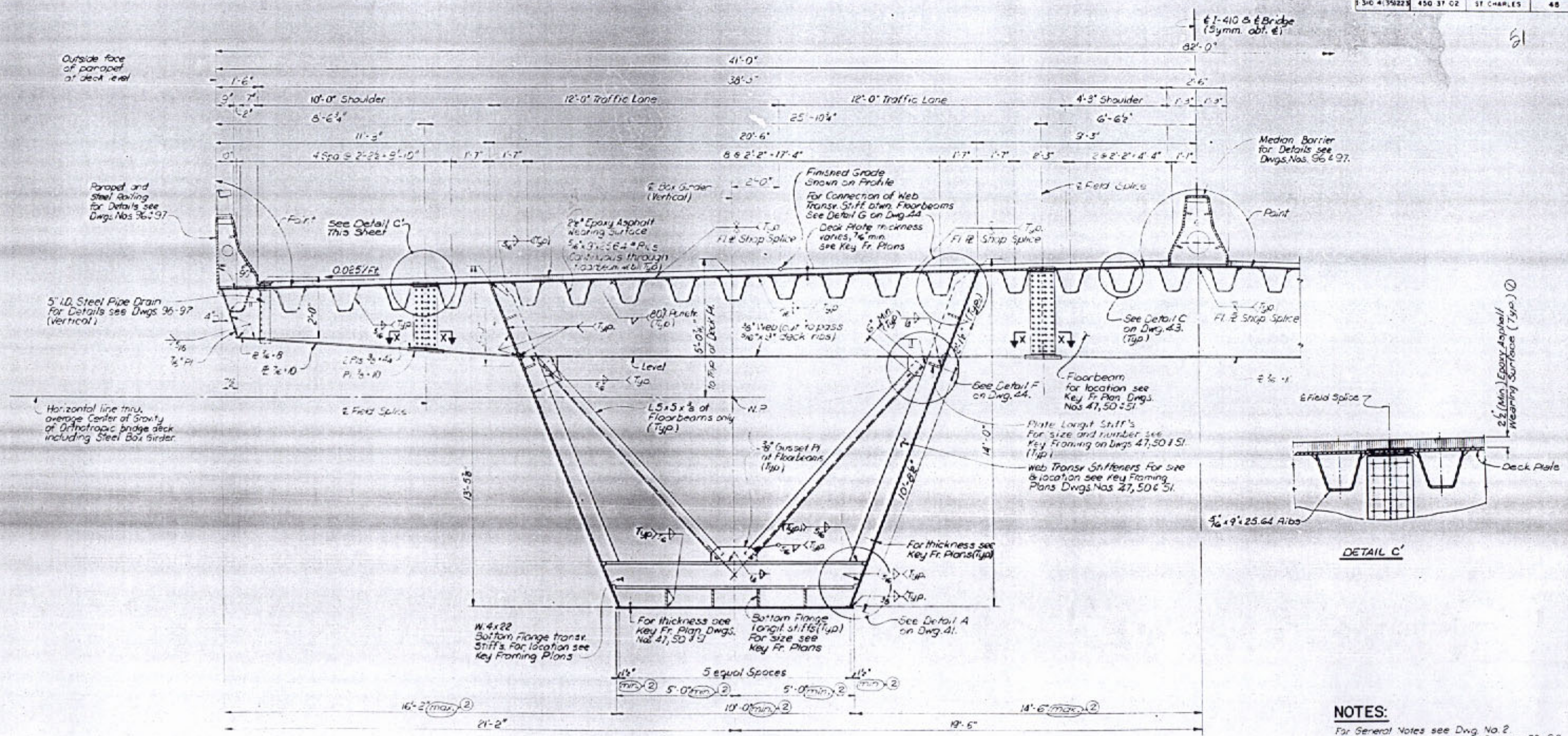
REVISIONS

DATE 5-24-77 | SCALE ½" = 1'-0" | DWG NO. 44
DRAWN BY A.C. | CKD BY P.D. | IN CHARGE | APPROVED

O. W. Hansen

FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310 4(35)223	450 37 02	ST CHARLES	48



DETAIL C'

SECTION E-E

NOTES:

For General Notes see Dwg. No. 2.
For Cross Girder details see Dwgs. Nos. 53-88.
For Box Girder Diaphragm details see Dwgs. Nos. 93 & 94.
For Orthotropic Deck details see Dwg. No. 90.
For Section X-X see detail on Dwg. 42

O. W. Hansen

DATE	DESCRIPTION	BY
2/27/78	Minor Revision	FEL
10/24/77	General Revision	DOTD

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

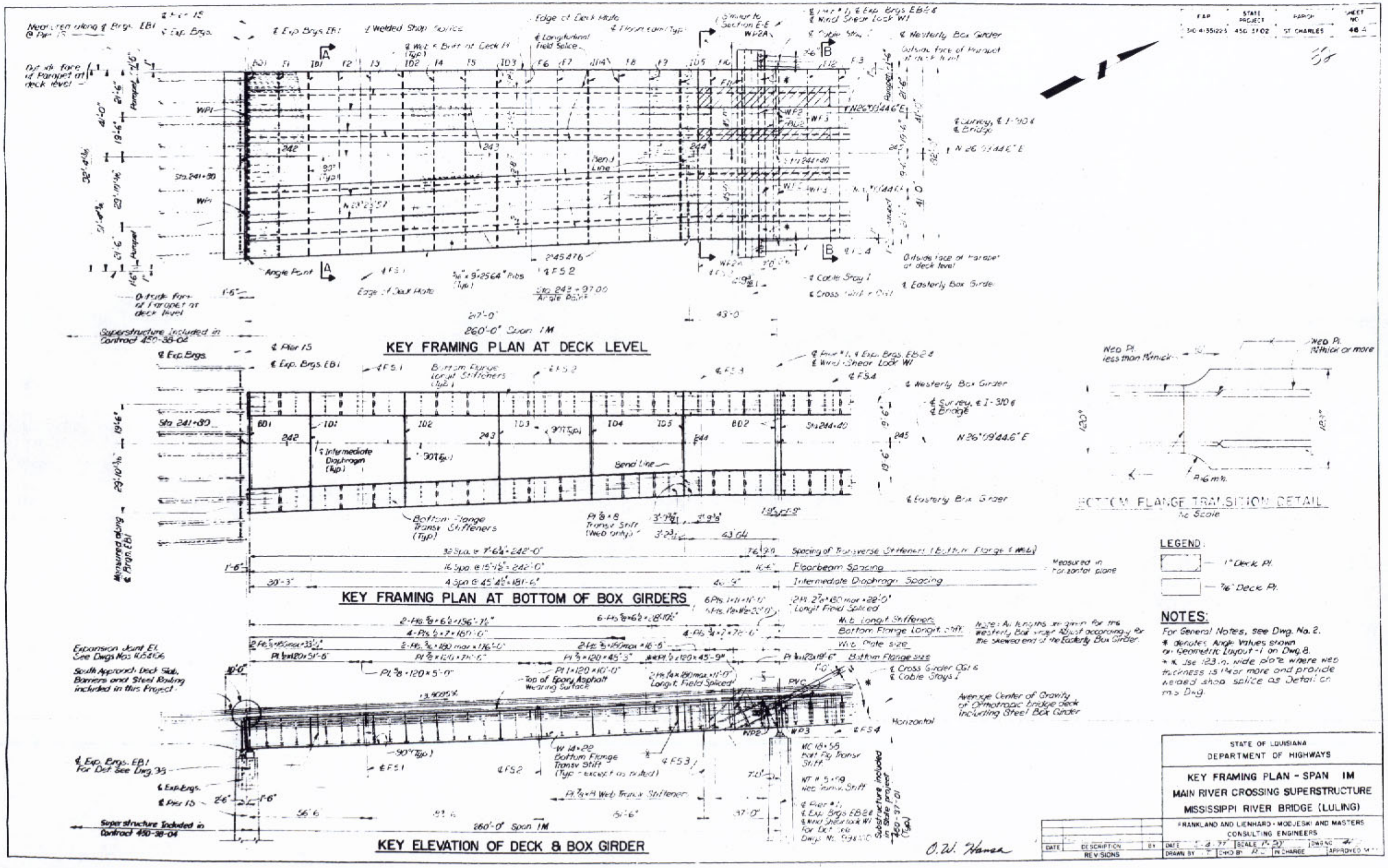
TYPICAL CROSS SECTION SPAN 2M, 4M & 5M
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

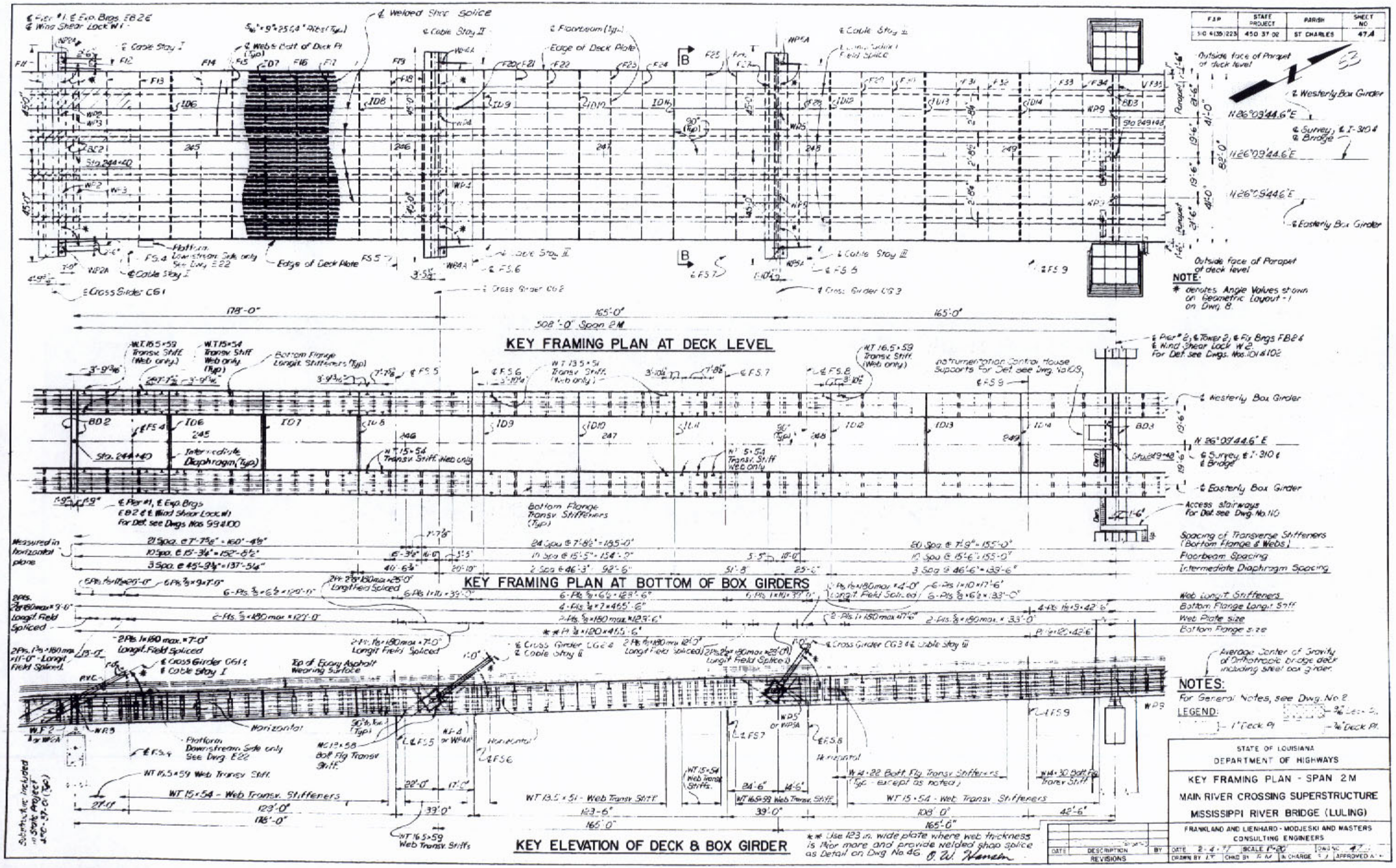
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 SCALE 2" & 1" = 1'-0" DWG. NO. 45
DRAWN BY: E.Z. CHKD. BY: R.D. IN CHARGE: S.J. APPROVED: M.W.

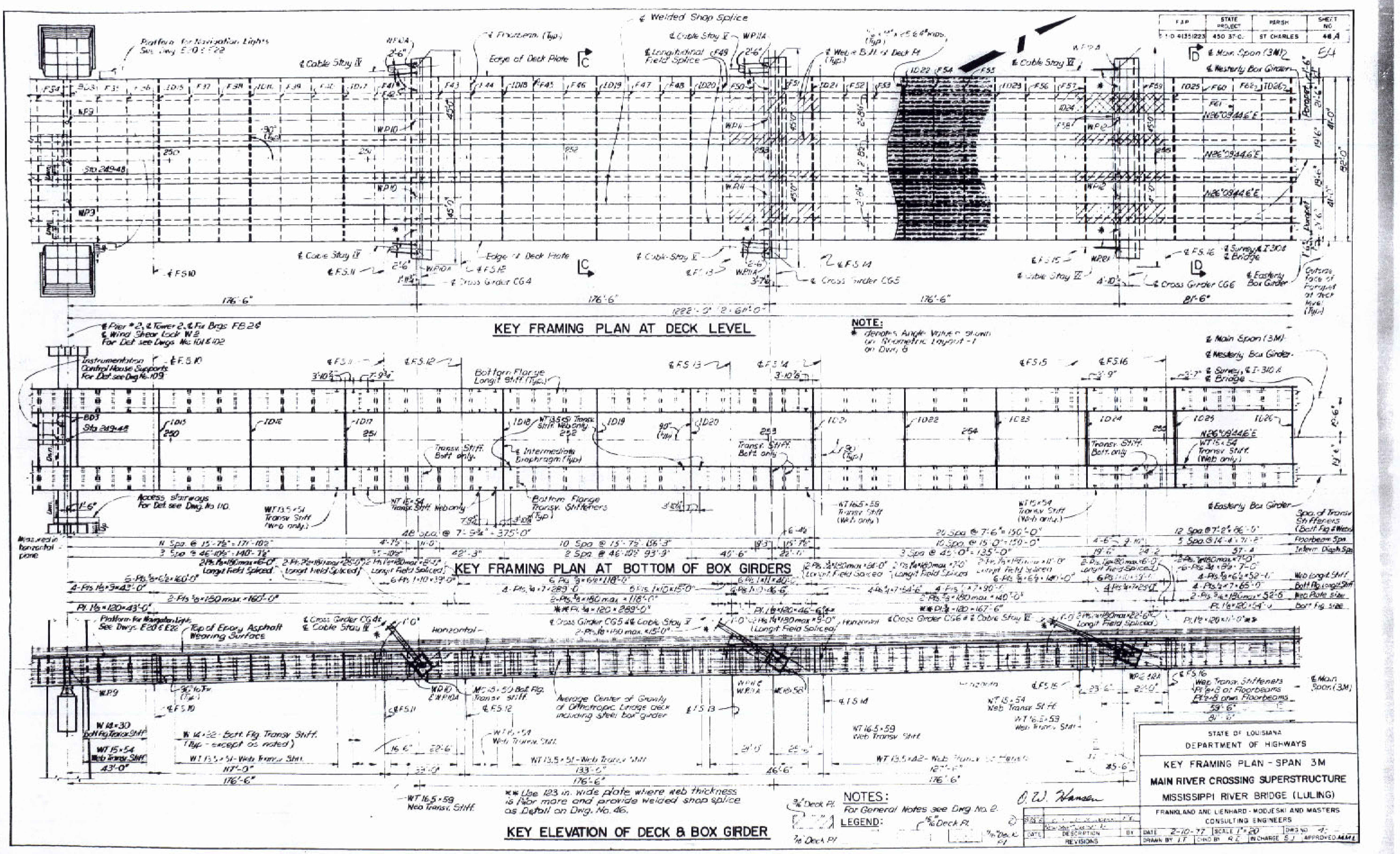
FRAME 1 24x

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
340-4-351223	450-37-02	ST. CHARLES	48-A

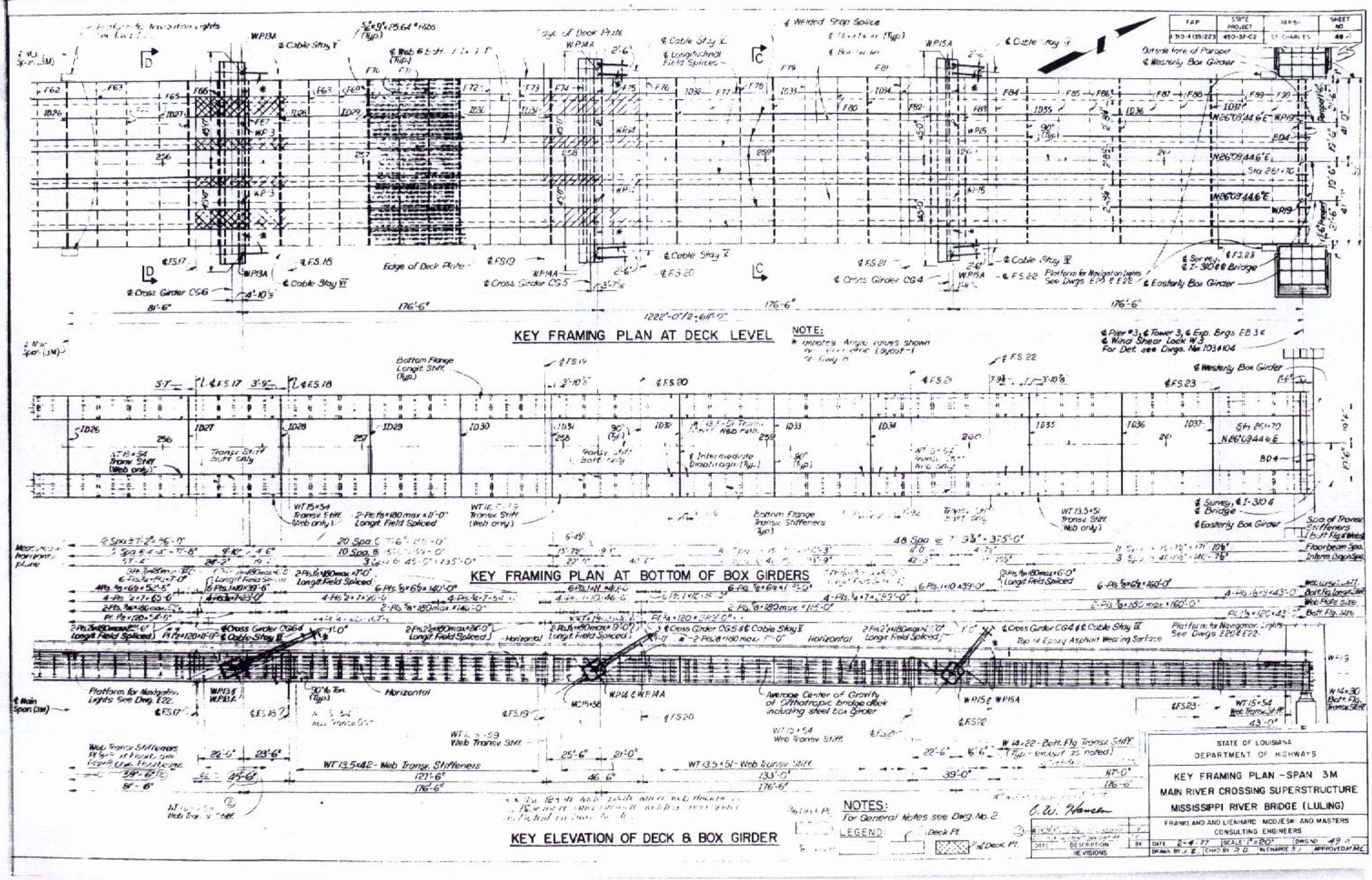




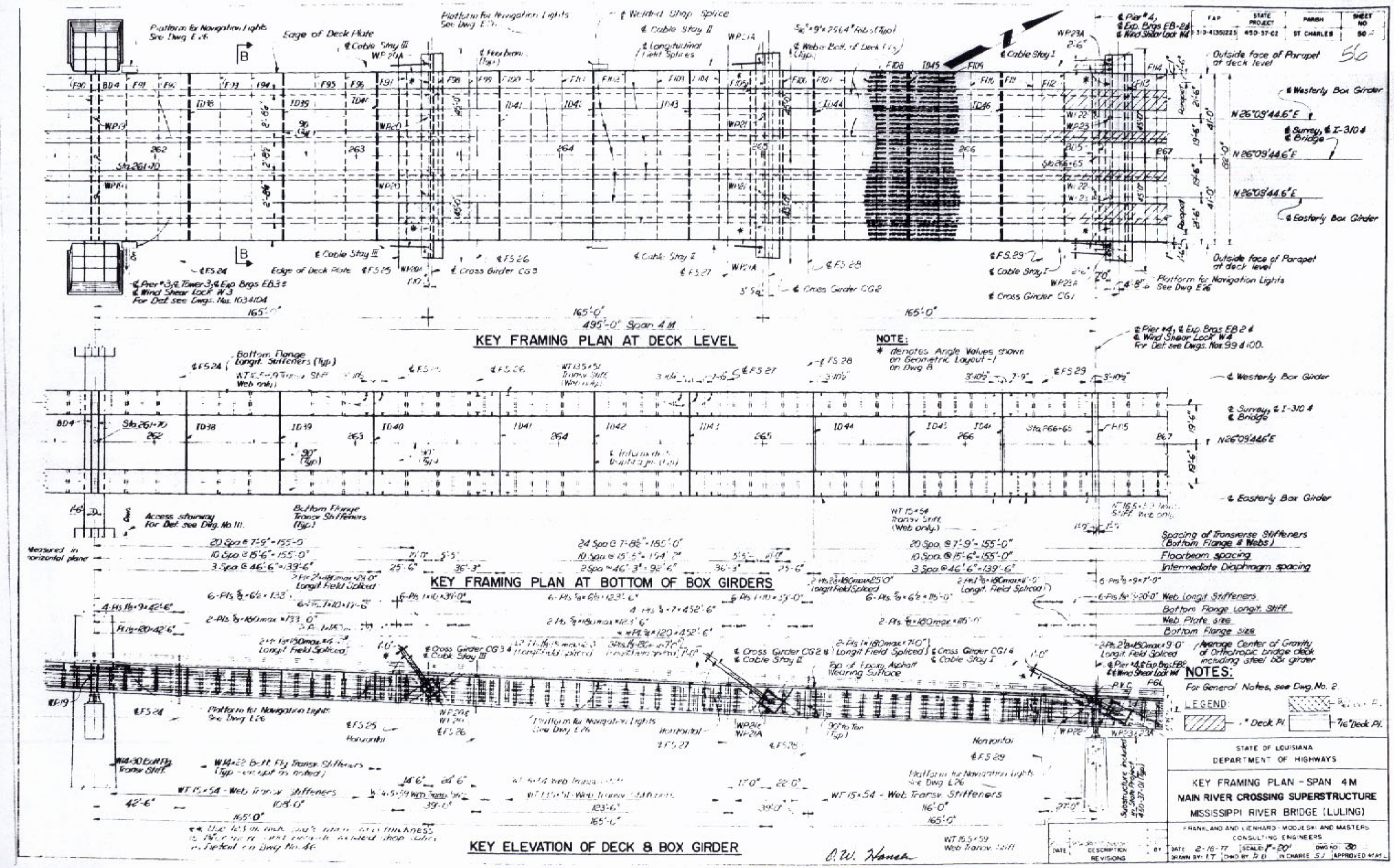
FAP
STATE PROJECT
PARISH
SHEET NO
510 4(35)223
450 37 02
ST CHARLES
47A
KEY FRAMING PLAN AT DECK LEVEL
KEY FRAMING PLAN AT BOTTOM OF BOX GIRDERS
KEY ELEVATION OF DECK & BOX GIRDER
NOTE:
* denotes Angle Values shown on Geometric Layout - 1 on Dwg. 8.
NOTES:
For General Notes, see Dwg. No. 2
LEGEND:
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
KEY FRAMING PLAN - SPAN 2M
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS
DATE 2-4-77
SCALE 1"=20'
DWG NO 47
DRAWN BY LT
CHKD BY R.M.
IN CHARGE
APPROVED
REVISIONS
DATE
DESCRIPTION
BY



KEY FRAMING PLAN AT DECK LEVEL
KEY FRAMING PLAN AT BOTTOM OF BOX GIRDERS
KEY ELEVATION OF DECK & BOX GIRDER
NOTE:
* denotes Angle Values shown on Geometric Layout -1 on Dwg. 6
** Use 123 in. wide plate where web thickness is 7/8" or more and provide welded shop splice as Detail on Dwg. No. 46.
NOTES:
For General Notes see Dwg No. 2.
LEGEND:
3/4" Deck Pl.
5/8" Deck Pl.
7/8" Deck Pl.
Platform for Navigation Lights See Dwg. E20 & E22
℄ Welded Shop Splice
Edge of Deck Plate
℄ Cable Stay IV
℄ Cable Stay V
℄ Cable Stay VI
℄ Main Span (3M)
℄ Westerly Box Girder
℄ Easterly Box Girder
℄ Survey, ℄ I-310 & ℄ Bridge
℄ Cross Girder CG4
℄ Cross Girder CG5
℄ Cross Girder CG6
℄ Pier #2, ℄ Tower 2, ℄ Fix Brgs. FB 2¢
℄ Wind Shear Lock W2
For Det. see Dwgs. No. 101 & 102
Instrumentation Control House Supports For Det. see Dwg. No. 109
Access Stairways For Det. see Dwg. No. 110
Bottom Flange Longit. Stiff (Typ.)
Bottom Flange Transv. Stiffeners (Typ.)
℄ Intermediate Diaphragm (Typ.)
Top of Epoxy Asphalt Wearing Surface
Average Center of Gravity of Orthotropic Bridge Deck including steel box girder
176'-6"
1222'-0" = 2-611'-0"
81'-6"
82'-0"
41'-0"
19'-6"
21'-6"
Parapet
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
KEY FRAMING PLAN - SPAN 3M
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS
DATE 2-10-77
SCALE 1"=20'
F.A.P. I-10-4(135)223
STATE PROJECT 450-37-C.
PARISH ST CHARLES
SHEET NO. 48A
REVISIONS



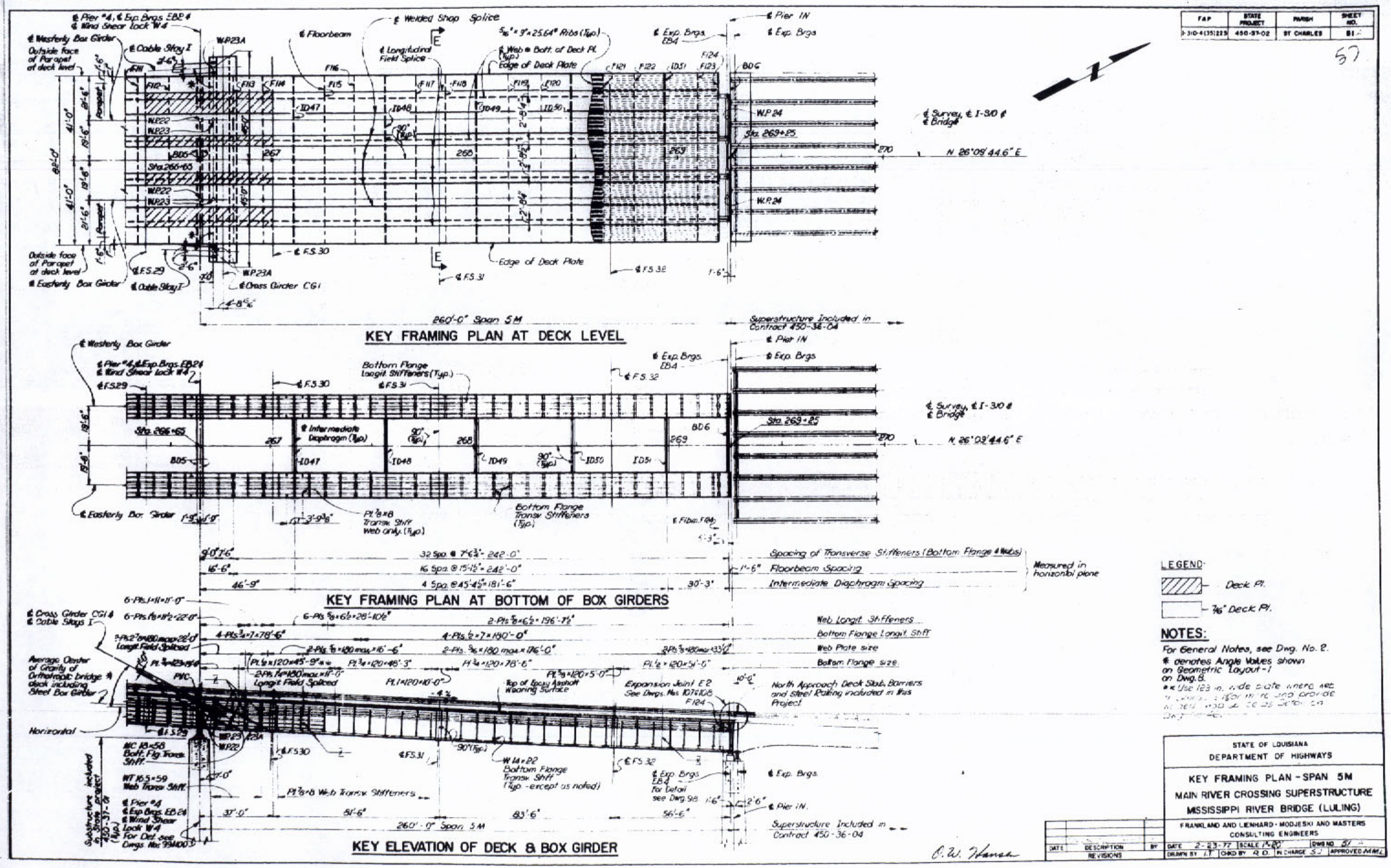
FAP
STATE PROJECT
PARISH
SHEET NO
1-310-4(135)223
450-37-02
ST. CHARLES
49
KEY FRAMING PLAN AT DECK LEVEL
NOTE:
KEY FRAMING PLAN AT BOTTOM OF BOX GIRDERS
KEY ELEVATION OF DECK & BOX GIRDER
NOTES:
For General Notes see Dwg. No. 2
LEGEND:
Deck Pt.
Deck Pt.
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
KEY FRAMING PLAN - SPAN 3M
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD MODJESKI AND MASTERS
CONSULTING ENGINEERS
DATE 2-4-77
SCALE 1"=20'
DWG NO 49
DRAWN BY J. Z.
CHKD BY R. D.
IN CHARGE S. J.
APPROVED M.M.L.
REVISIONS
DATE
DESCRIPTION
BY



KEY FRAMING PLAN AT DECK LEVEL
KEY FRAMING PLAN AT BOTTOM OF BOX GIRDERS
KEY ELEVATION OF DECK & BOX GIRDER
NOTE:
* denotes Angle Values shown on Geometric Layout-1 on Dwg 8
NOTES:
For General Notes, see Dwg. No. 2
LEGEND:
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
KEY FRAMING PLAN - SPAN 4M
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS
DATE 2-18-77
SCALE: 1" = 20'
DWG NO. 30
DRAWN BY: LT
CHKD BY: R.D.
IN CHARGE SJ
APPROVED MML
O.W. Hansen

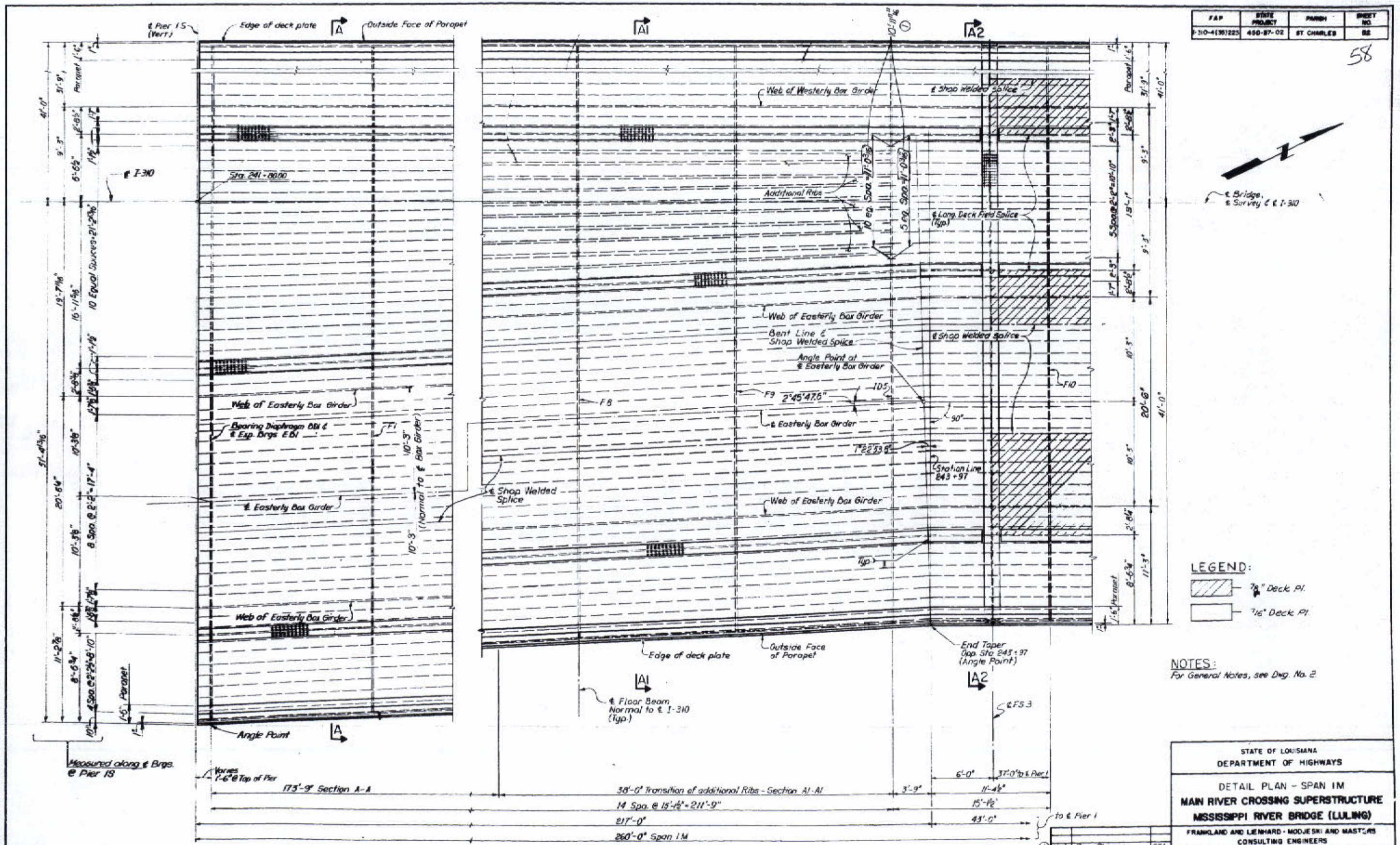
FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST CHARLES	81

57



FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-57-02	ST. CHARLES	52

58



PLAN AT DECK LEVEL

O.W. Hansen

LEGEND:

- 7/8" Deck Pl.
- 7/16" Deck Pl.

NOTES:
For General Notes, see Dwg. No. 2

DATE	DESCRIPTION	BY
1 8/27/78	Dim. Change	FEL

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

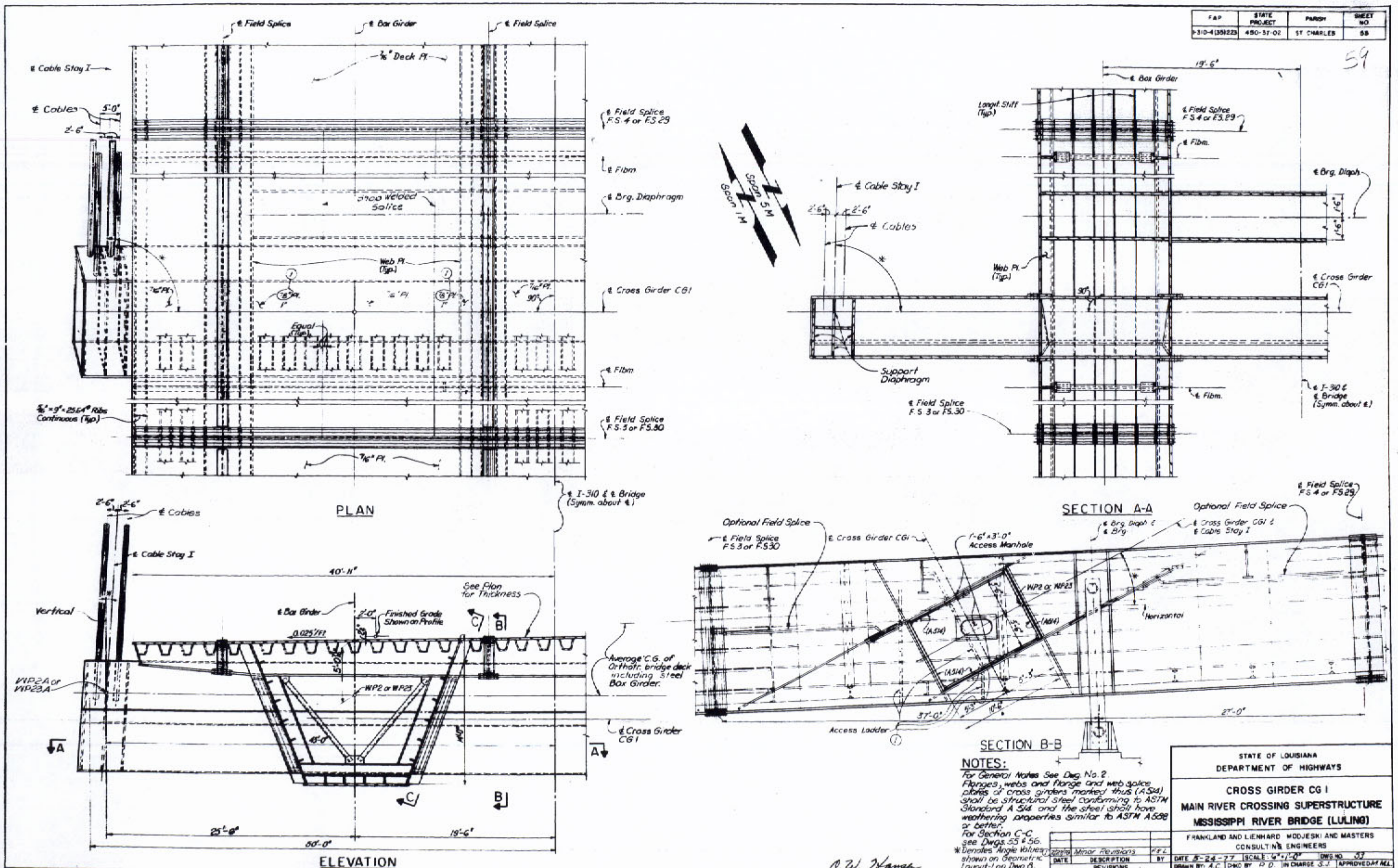
DETAIL PLAN - SPAN 1M
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1/4"=1'-0" | DWG NO. 52
DRAWN BY F.T. | CHKD BY R.D. | IN CHARGE | APPROVED

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	58

59



NOTES:

For General Notes See Dwg. No. 2.
Flanges, webs and flange and web splice plates of cross girders marked thus (A514) shall be structural steel conforming to ASTM Standard A 514 and the steel shall have weathering properties similar to ASTM A588 or better.
For Section C-C see Dwgs. 55 & 56.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg 8.

O. W. Hansen

DATE	DESCRIPTION	BY
	Minor Revisions	F.E.L.

REVISIONS

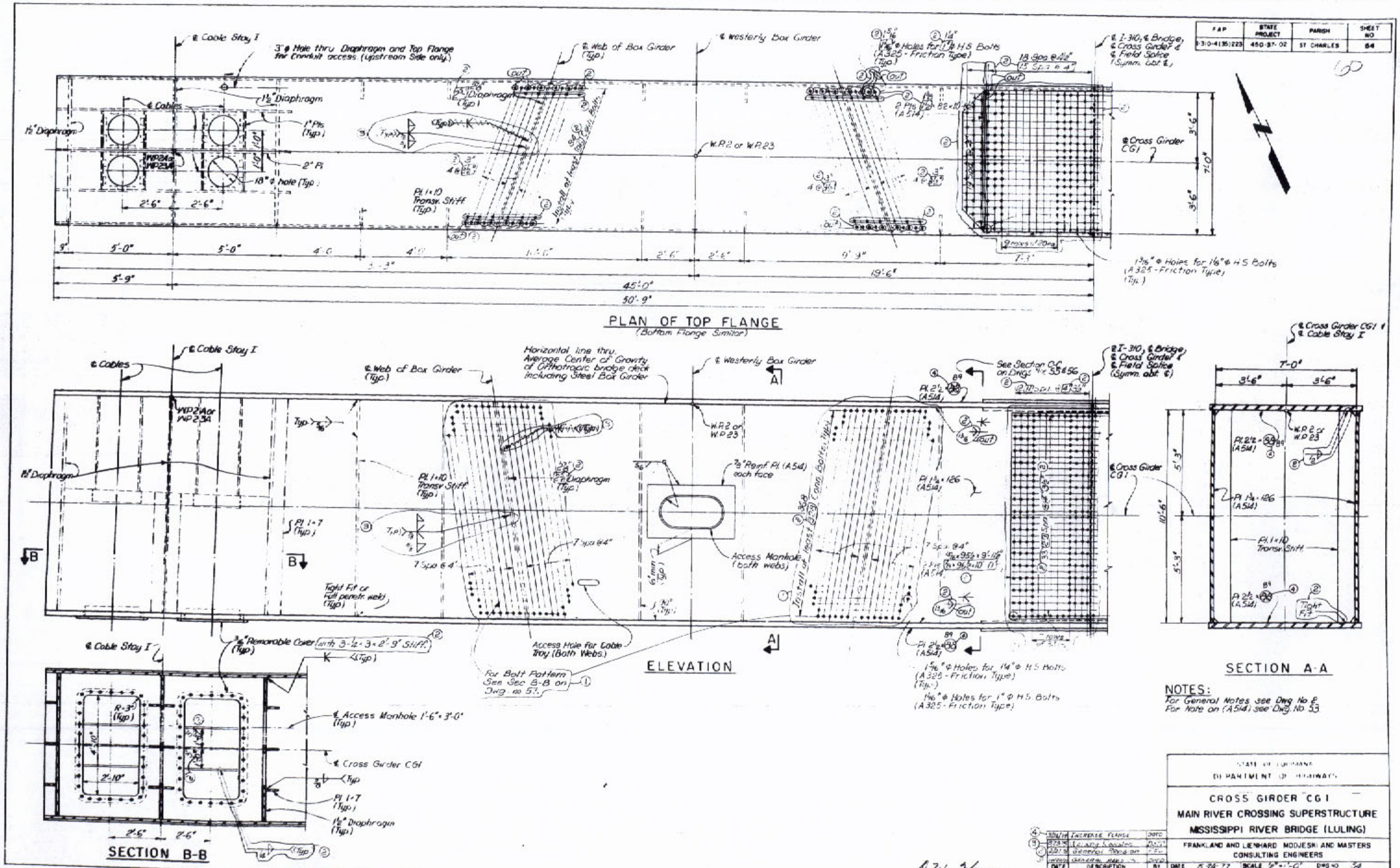
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG I
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE: 6"=1'-0" | DWG. NO. 53
DRAWN BY: A.C. | CHKD BY: R.D. | IN CHARGE: S.J. | APPROVED: M.M.L.

FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(35)223	450-37-02	ST CHARLES	54



NOTES:
For General Notes see Dwg. No. 2
For Note on (A514) see Dwg. No. 53

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG1
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD MODJESKI AND MASTERS
CONSULTING ENGINEERS

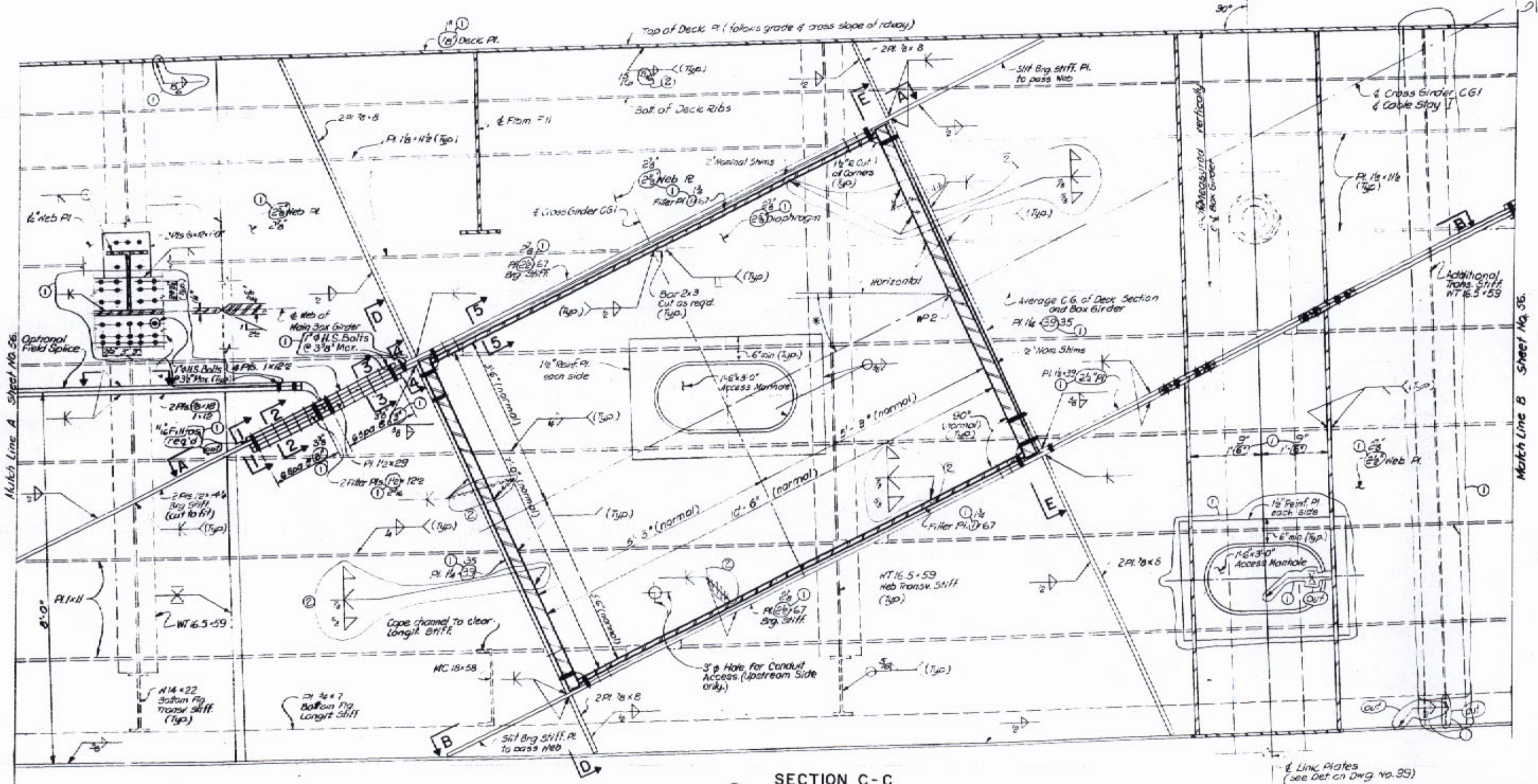
DATE	DESCRIPTION	BY
3/26/79	INCREASE FLANGE	DOTD
3/29/78	Lulling Location	DOTD
2/27/78	General Revision	DOTD
1/27/78	GENERAL REVISION	DOTD

REVISIONS

DATE 5-24-77 SCALE 1/2"=1'-0" DWG NO 54
DRAWN BY I.T. CHKD BY R.D. IN CHARGE S.J. APPROVED M.M.L.

O.W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
3-310-4(56)223	450-37-02	ST CHARLES	55



Note: Dimensions and Angle Values marked thus: (Normal) are given in a vertical plane.

NOTES:
For General Notes see Dwg. No. 2
*Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8.

O. W. Hansen

DATE	DESCRIPTION	BY
8/28/78	Welding Revision	DCFD
2/27/78	General Revision	FEL

REVISIONS

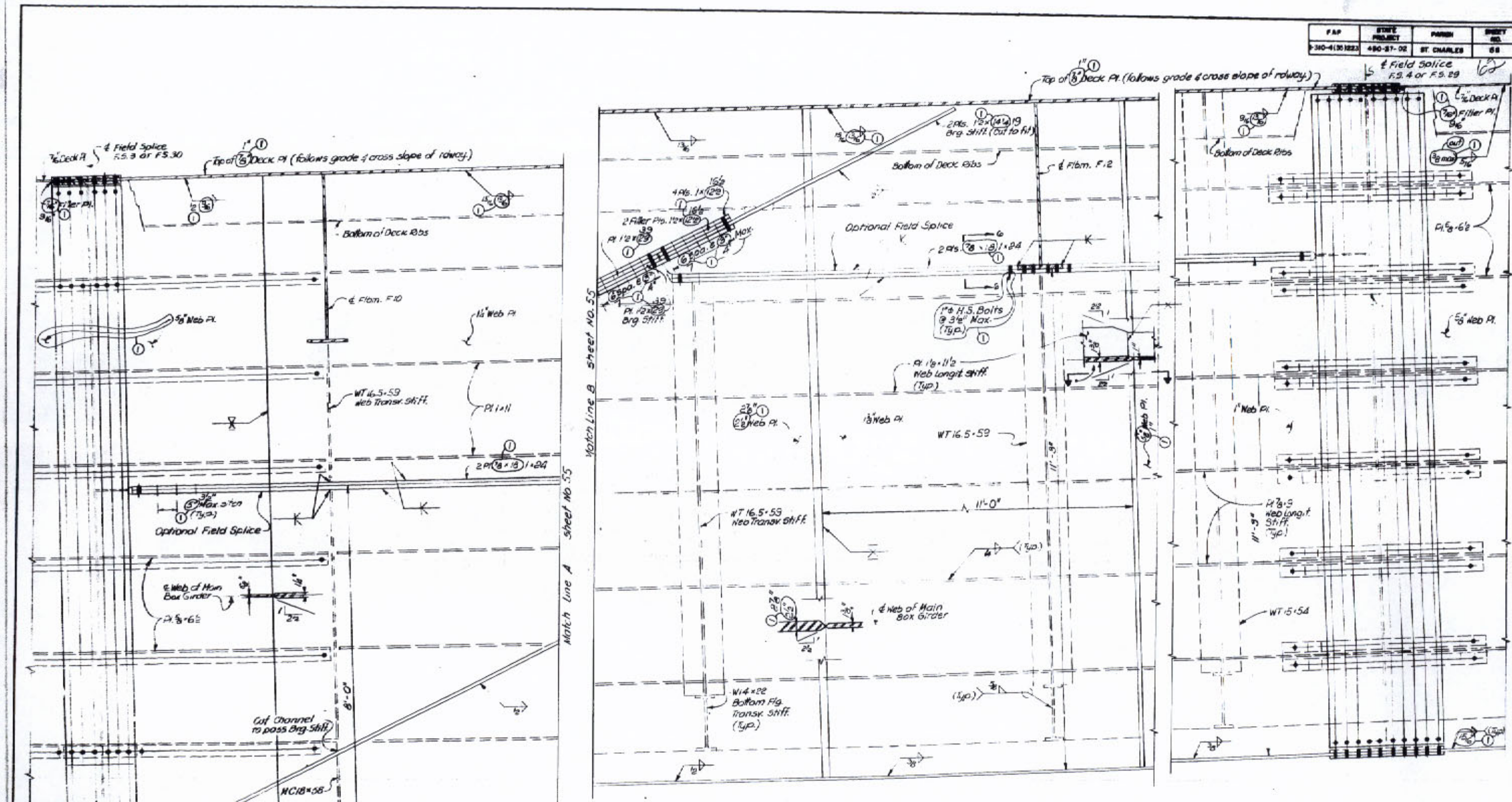
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG1
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1"=1'-0" | DWG NO. 55
DRAWN BY N.M. | CHKD. BY R.D. | IN CHARGE S.D. | APPROVED MAN

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
1-310-4(35)223	490-27-02	ST. CHARLES	68



NOTES:
For General Notes see Dwg. No. 2.

O. W. Hansen

DATE	DESCRIPTION	BY
2-27-78	General Revision	FEL

REVISIONS

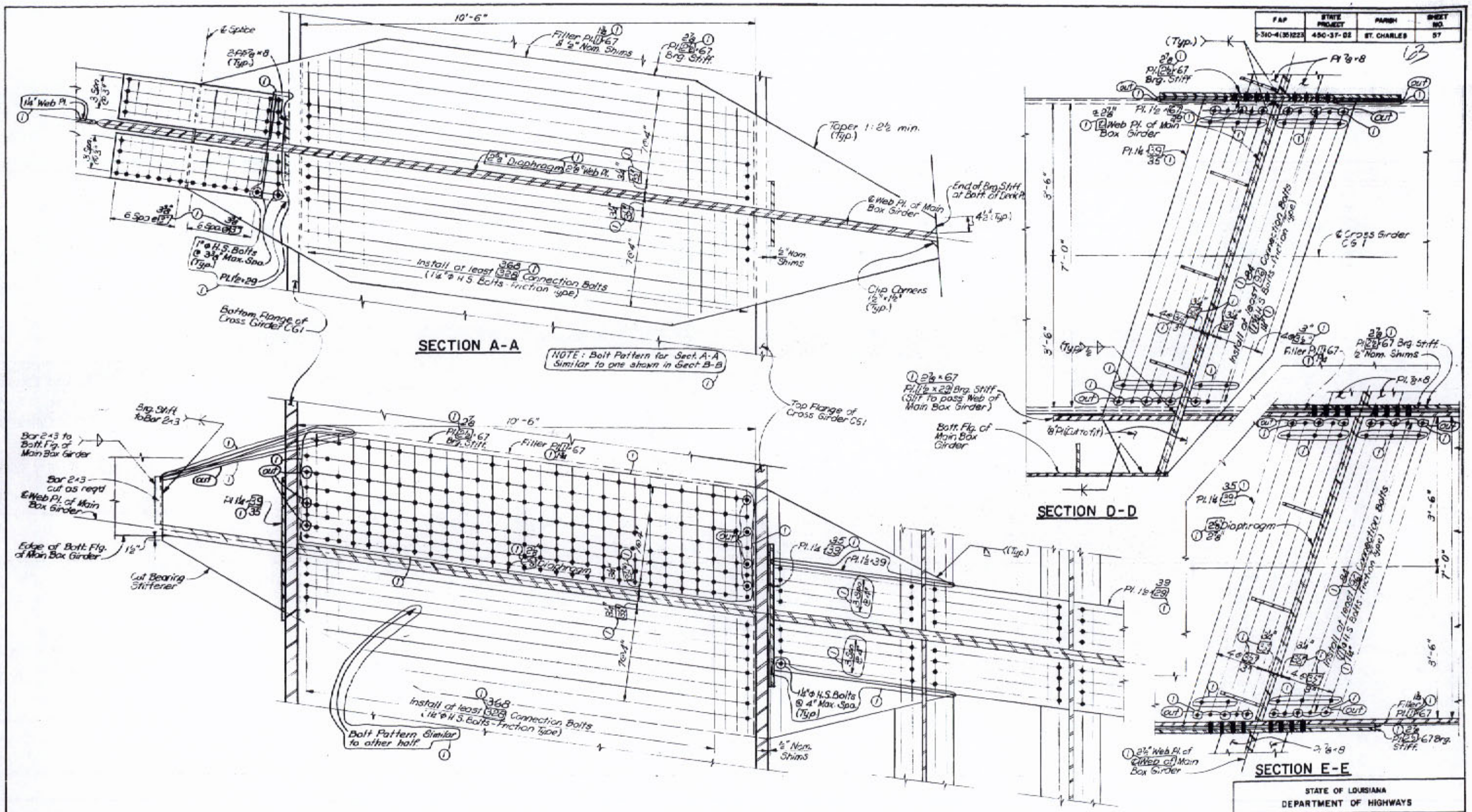
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG1
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1" = 1'-0" | DWG. NO. 56
DRAWN BY W.M. | CHKD. BY R.D. | IN CHARGE S.J. | APPROVED M.M.

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351)223	450-37-02	ST. CHARLES	57



NOTES:

For General Notes see Dwg. No. 2

For Location of Sections A-A thru E-E see Dwg. No. 55

O. W. Hansen

DATE	DESCRIPTION	BY
2-27-78	General Revision	

REVISIONS

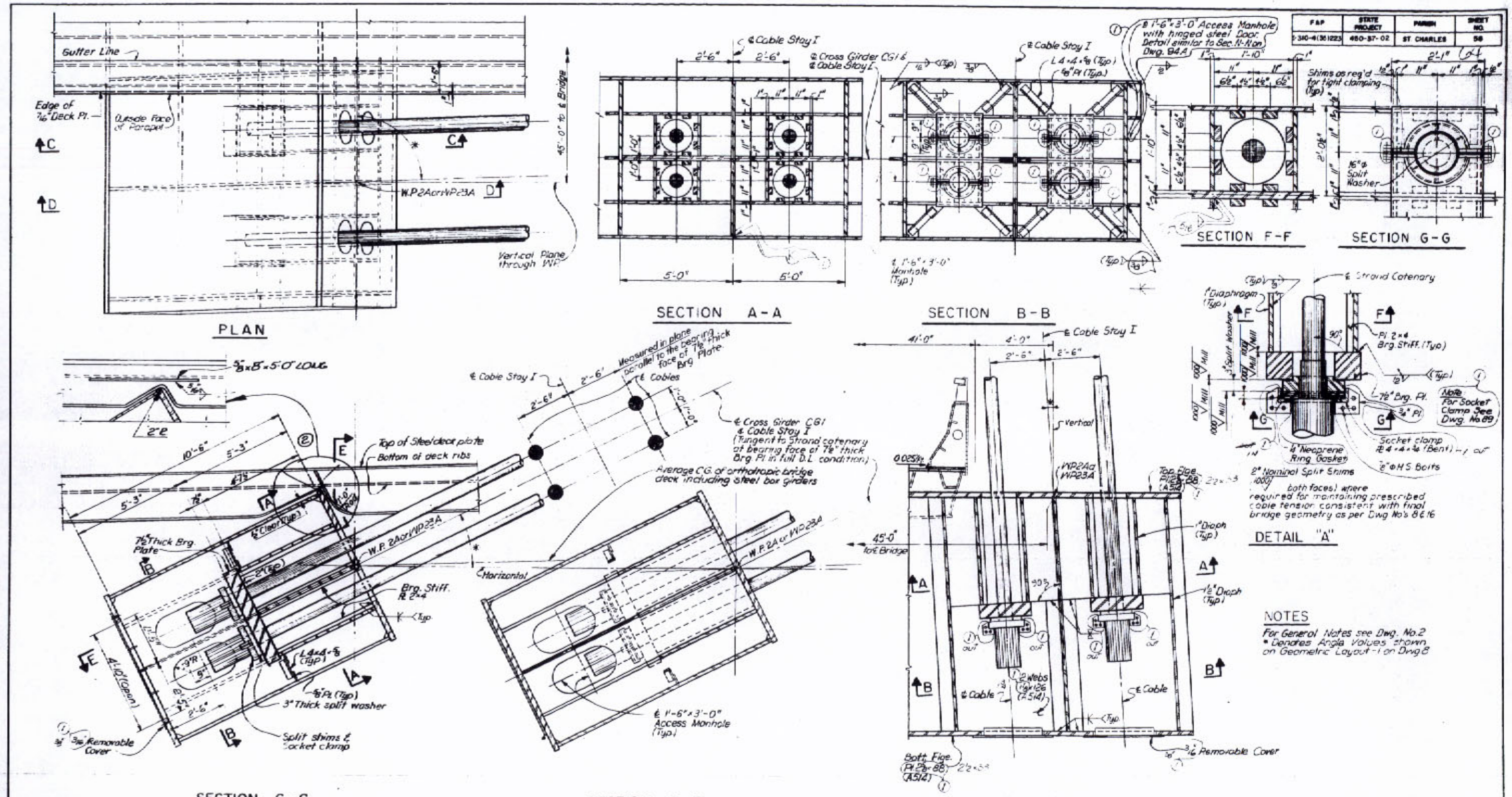
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG I
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: 1"=1'-0" | DWG NO. 57
DRAWN BY: W.M. | CHKD. BY: A.D. | IN CHARGE: S.J. | APPROVED: [illegible]

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
S-340-4(36)223	450-37-02	ST CHARLES	58



STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CABLE ANCHORAGE C I

MAIN RIVER CROSSING SUPERSTRUCTURE

MISSISSIPPI RIVER BRIDGE (LULING)

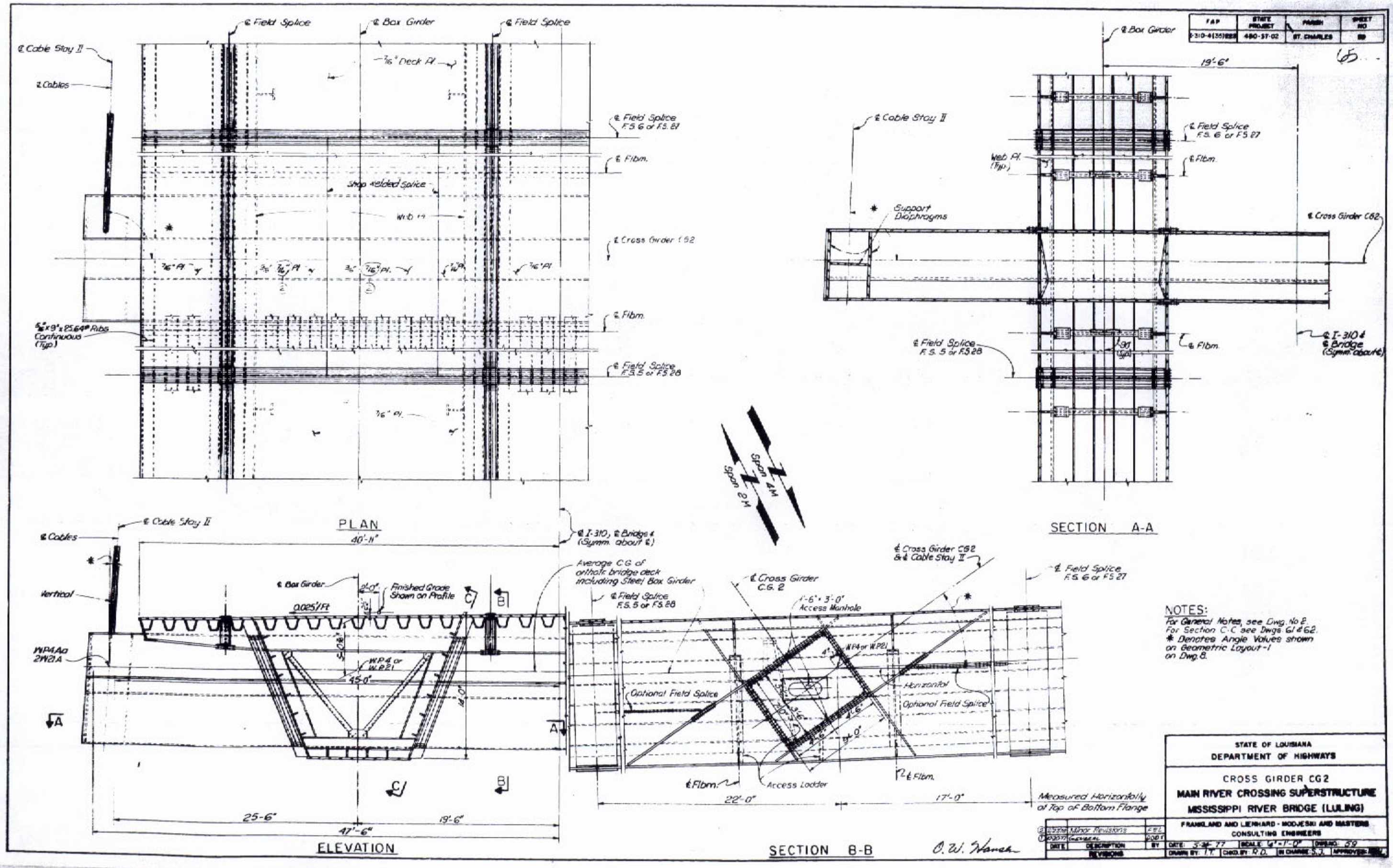
FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
3/6/78	Rev. Edge Beam	DOTL
2/27/78	Rev. 2'-0" O. to 1'-10" O.	F.E.L.

REVISIONS

DATE 5-24-77 | SCALE 1/8"=1'-0" U.N. | DWG NO. 58
DRAWN BY: A.C.T. | CHKD BY: R.D. | IN CHARGE: S.J. | APPROVED: H.M.

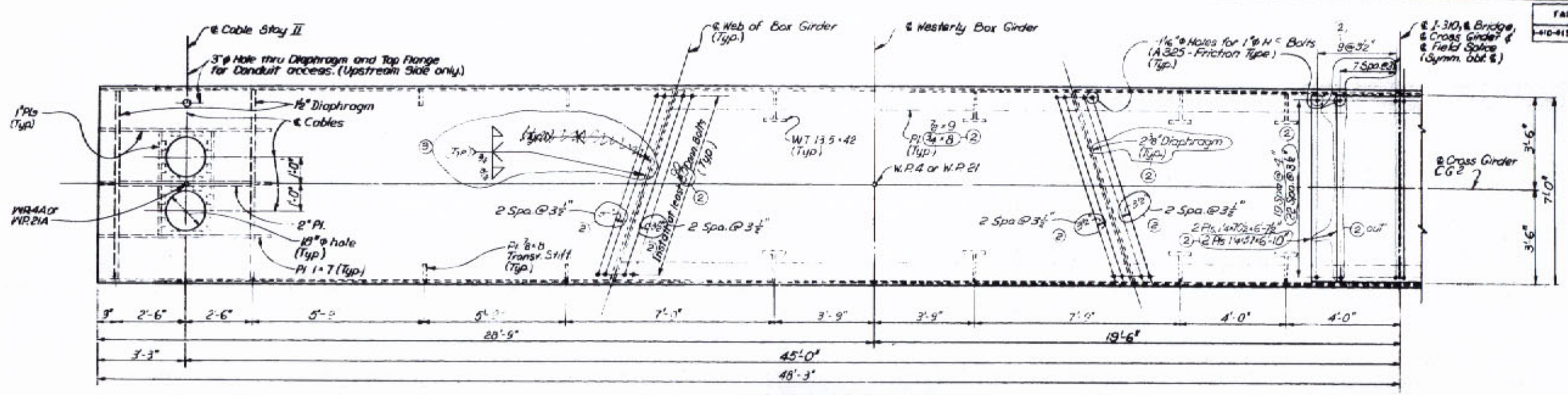
O. W. Hansen



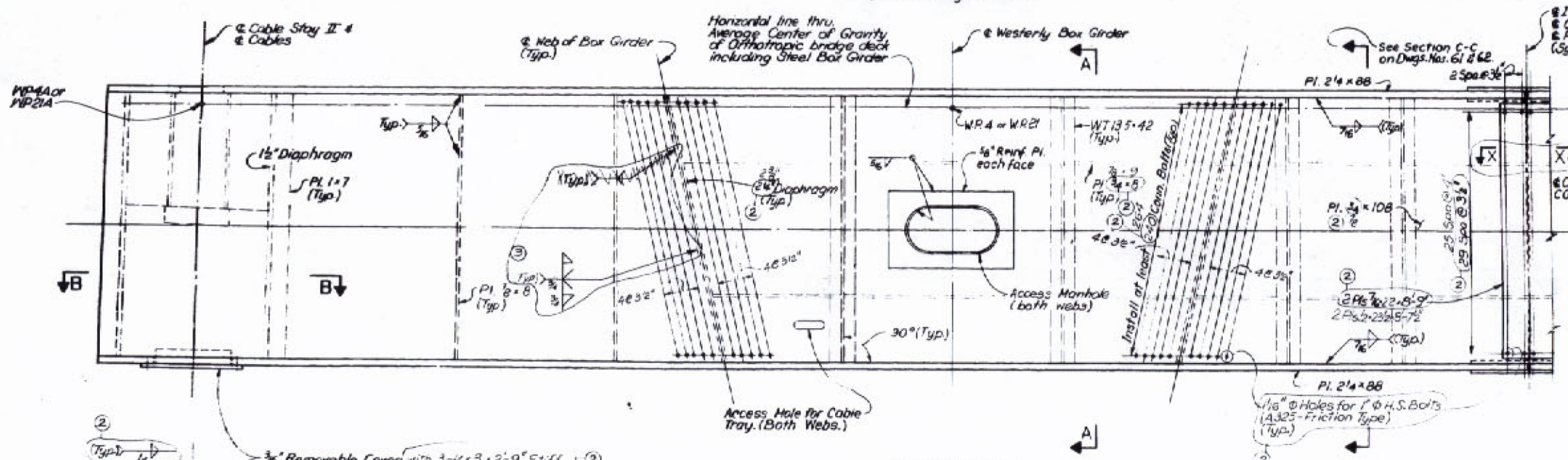
FAP
STATE PROJECT
PARISH
SHEET NO
480-37-02
ST. CHARLES
65
℄ Field Splice
℄ Box Girder
℄ Cable Stay II
℄ Cables
7/16" Deck Pl.
℄ Field Splice F.S. 6 or F.S. 27
℄ Flbm.
Shop Welded Splice
Web Pl.
℄ Cross Girder CG2
7/16" Pl.
5/16" x 9" x 25.64# Ribs Continuous (Typ.)
℄ Field Splice F.S. 5 or F.S. 28
PLAN
40'-11"
℄ I-310, ℄ Bridge & (Symm. about ℄)
Span 4M
Span 2M
19'-6"
Web Pl. (Typ.)
Support Diaphragms
℄ Cross Girder CG2
℄ I-310 & ℄ Bridge (Symm. about ℄)
SECTION A-A
Vertical
WP4Aa 2W21A
Finished Grade Shown on Profile
0.025'/Ft
W.P.4 or W.P.21
45'-0"
25'-6"
19'-6"
47'-6"
ELEVATION
Average C.G. of orthotr. bridge deck including Steel Box Girder
℄ Cross Girder C.G. 2
1'-6" x 3'-0" Access Manhole
℄ Cross Girder CG2 & ℄ Cable Stay II
Optional Field Splice
Horizontal
Access Ladder
22'-0"
17'-0"
Measured Horizontally at Top of Bottom Flange
SECTION B-B
O. W. Hansen
NOTES:
For General Notes, see Dwg. No 2.
For Section C-C see Dwgs. 61 & 62.
* Denotes Angle Valves shown on Geometric Layout-1 on Dwg. 8.
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
CROSS GIRDER CG2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS
Minor Revisions
REVISIONS
DATE: 5-24-77
SCALE: 1/4"=1'-0"
DWG. NO.: 59
DRAWN BY: I.T.
CHKD. BY: R.D.
IN CHARGE: S.J.

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-57-02	ST. CHARLES	60

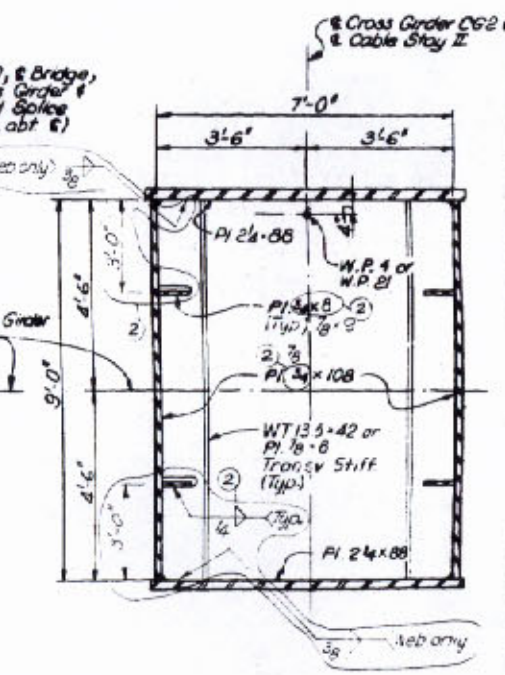
66



PLAN OF TOP FLANGE
(Bottom Flange Similar)

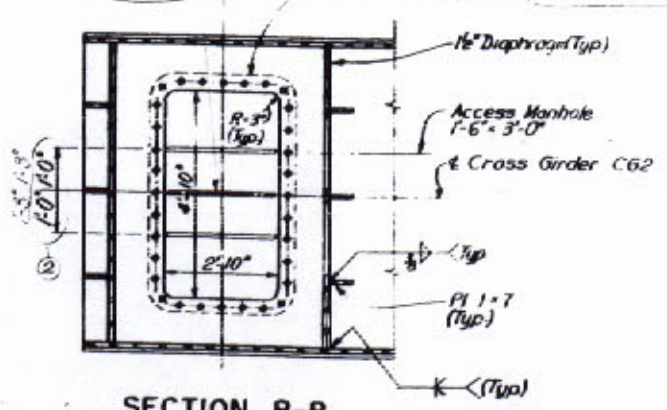


ELEVATION

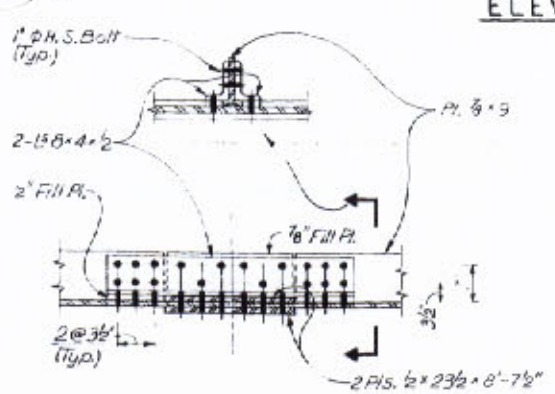


SECTION A-A

NOTES:
For General Notes see Dwg. No. 2.



SECTION B-B



SECTION X-X

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG 2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

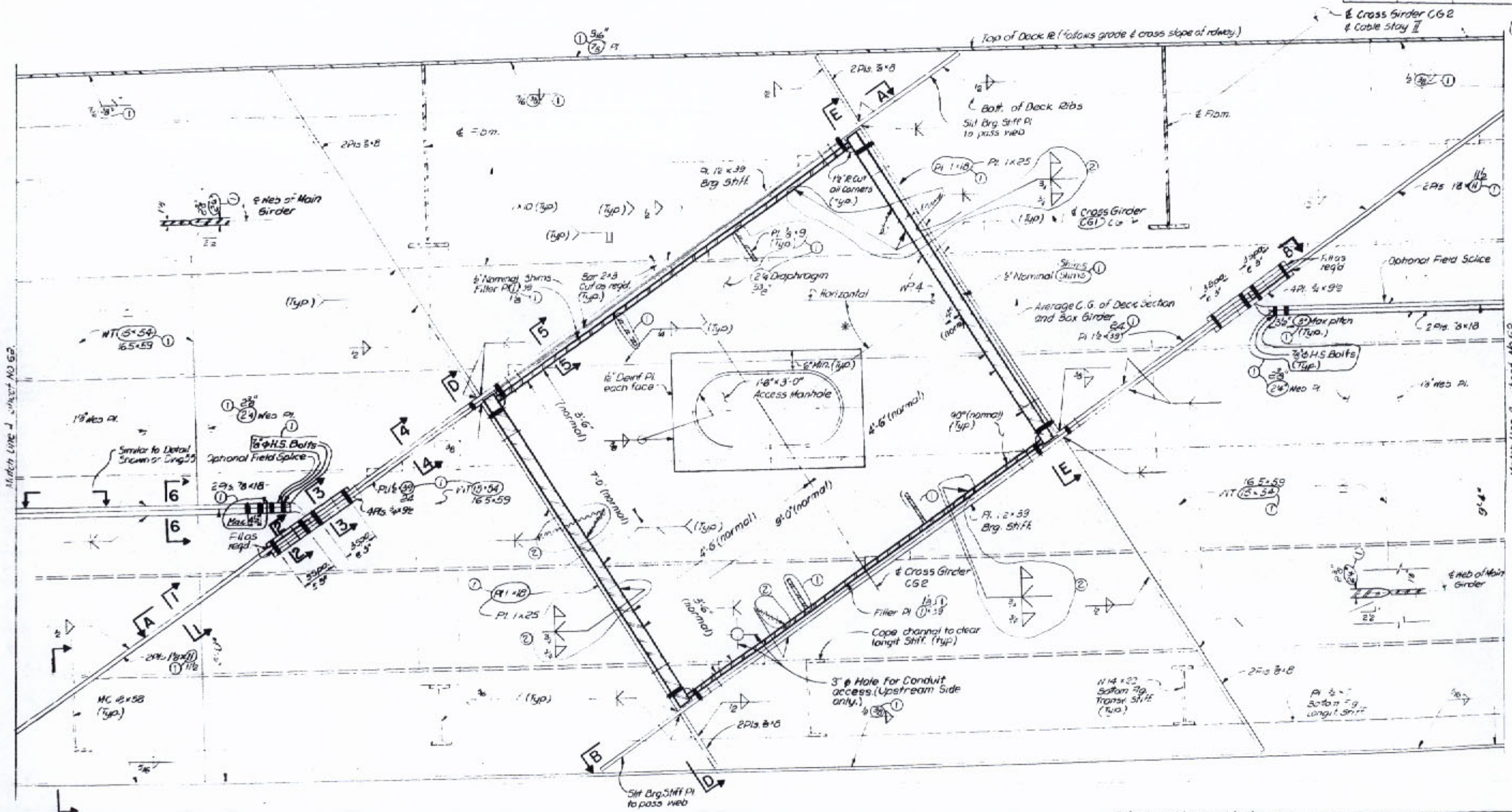
DATE	DESCRIPTION	BY
3-16-79	Revised Per Field	DAV
2-27-78	General Revision	FEL
4-29-77	General Revision	DAV

REVISIONS

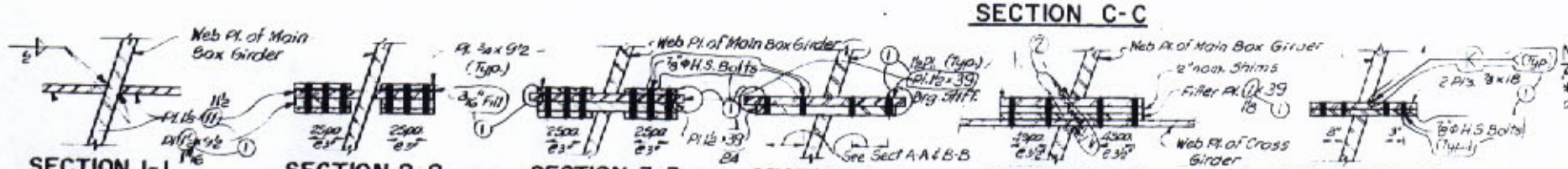
DATE 5-26-77 | SCALE: ½"=1'-0" | DWG NO. 62
DRAWN BY: I.T. | CHKD BY: R.D. | IN CHARGE: S.J. | APPROVED: W.M.L.

R. W. Hanna

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(38)223	450-37-02	ST CHARLES	61



SECTION C-C



SECTION 1-1 SECTION 2-2 SECTION 3-3 SECTION 4-4 No Scale SECTION 5-5 No Scale SECTION 6-6

Note: Dimensions and Angle values marked thus: (normal) are given in a vertical plane

NOTES:
For General Notes see Dwg. No. 2.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8

E. W. Hanse

DATE	DESCRIPTION	BY
8-24-77	Adding Roulier	
2-27-76	General Revision	

REVISIONS

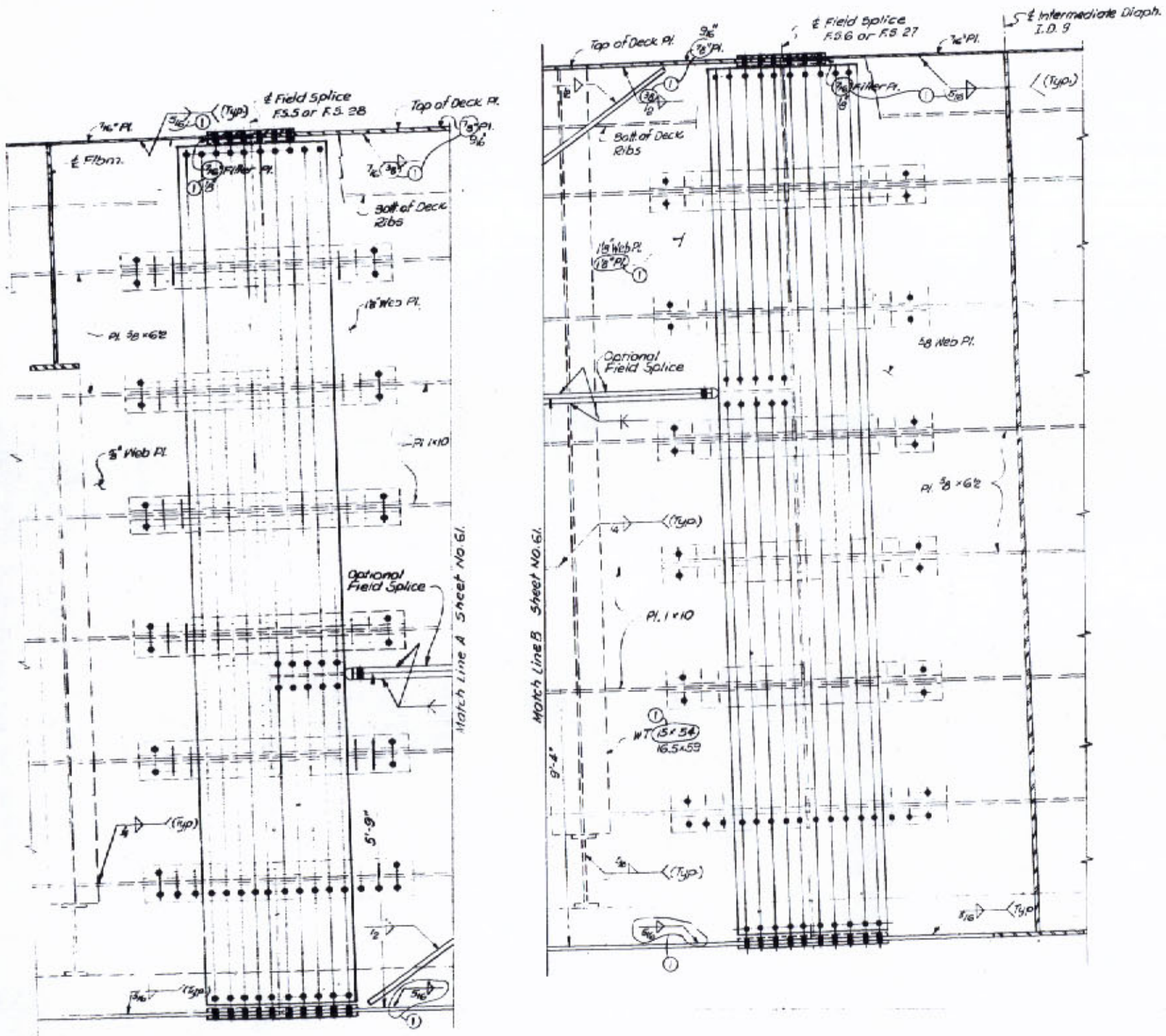
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE: 1" = 1'-0" | DWG NO. 61
DRAWN BY W.M. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED N.M.L.

FAP	STATE PROJECT	PARISH	SHEET NO.
1-310-4(35)225	460-57-02	ST. CHARLES	62



SECTION C-C

NOTES:
For General Notes see Dwg No 2

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

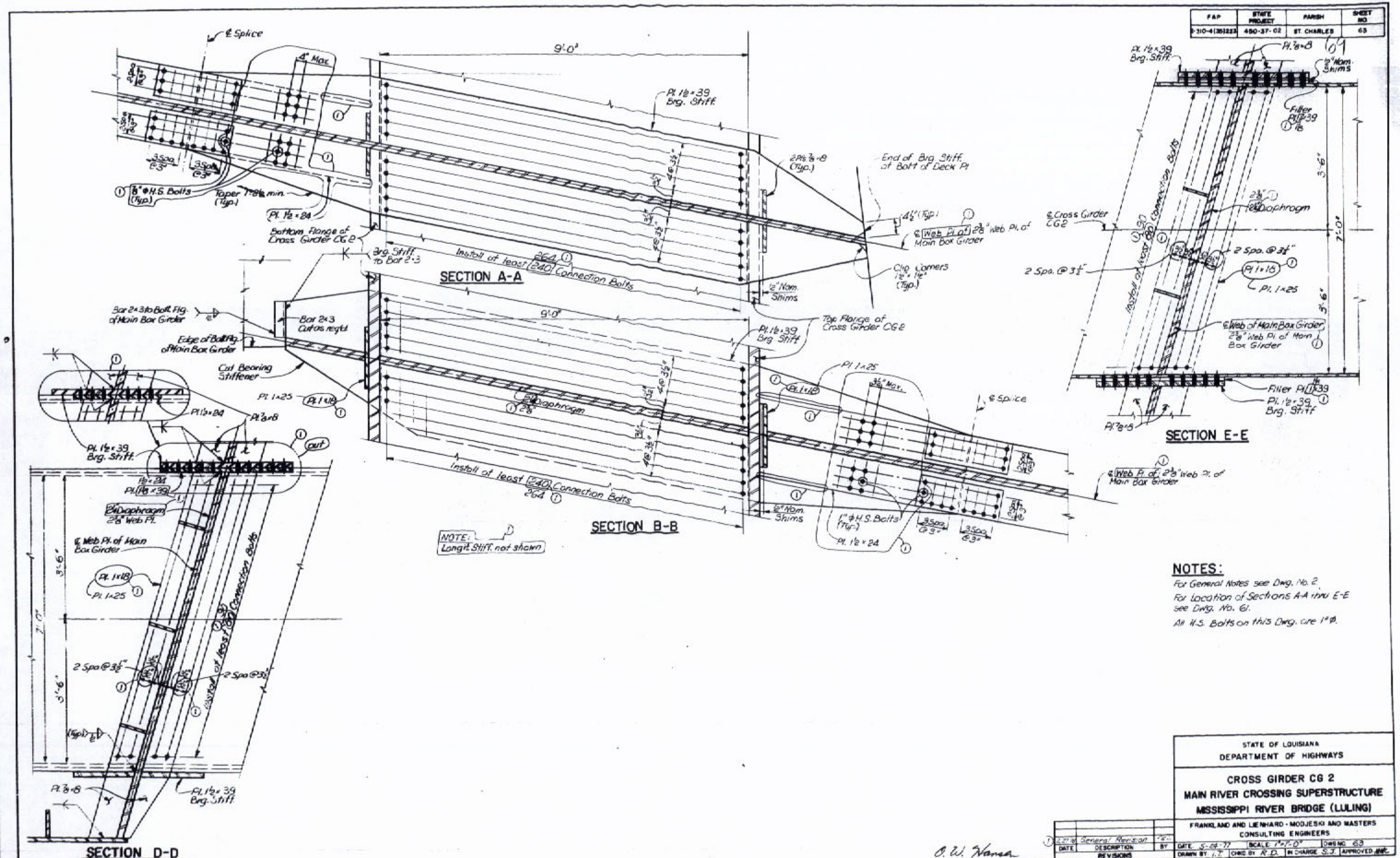
DATE	DESCRIPTION	BY
2-23-76	General Revision	FEL

REVISIONS

DATE: 5-24-77 | SCALE: 1" = 1'-0" | DWG NO. 62
DRAWN BY: W.M. | CHKD BY: R.D. | IN CHARGE: S.J. | APPROVED: M.M.

O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
F-310-4(35)223	450-37-02	ST. CHARLES	63



NOTES:

For General Notes see Dwg. No. 2.
For Location of Sections A-A thru E-E see Dwg. No. 61.
All H.S. Bolts on this Dwg. are 1" ϕ.

O. W. Hanna

DATE	DESCRIPTION	BY
2-27-78	General Revision	"G"

REVISIONS

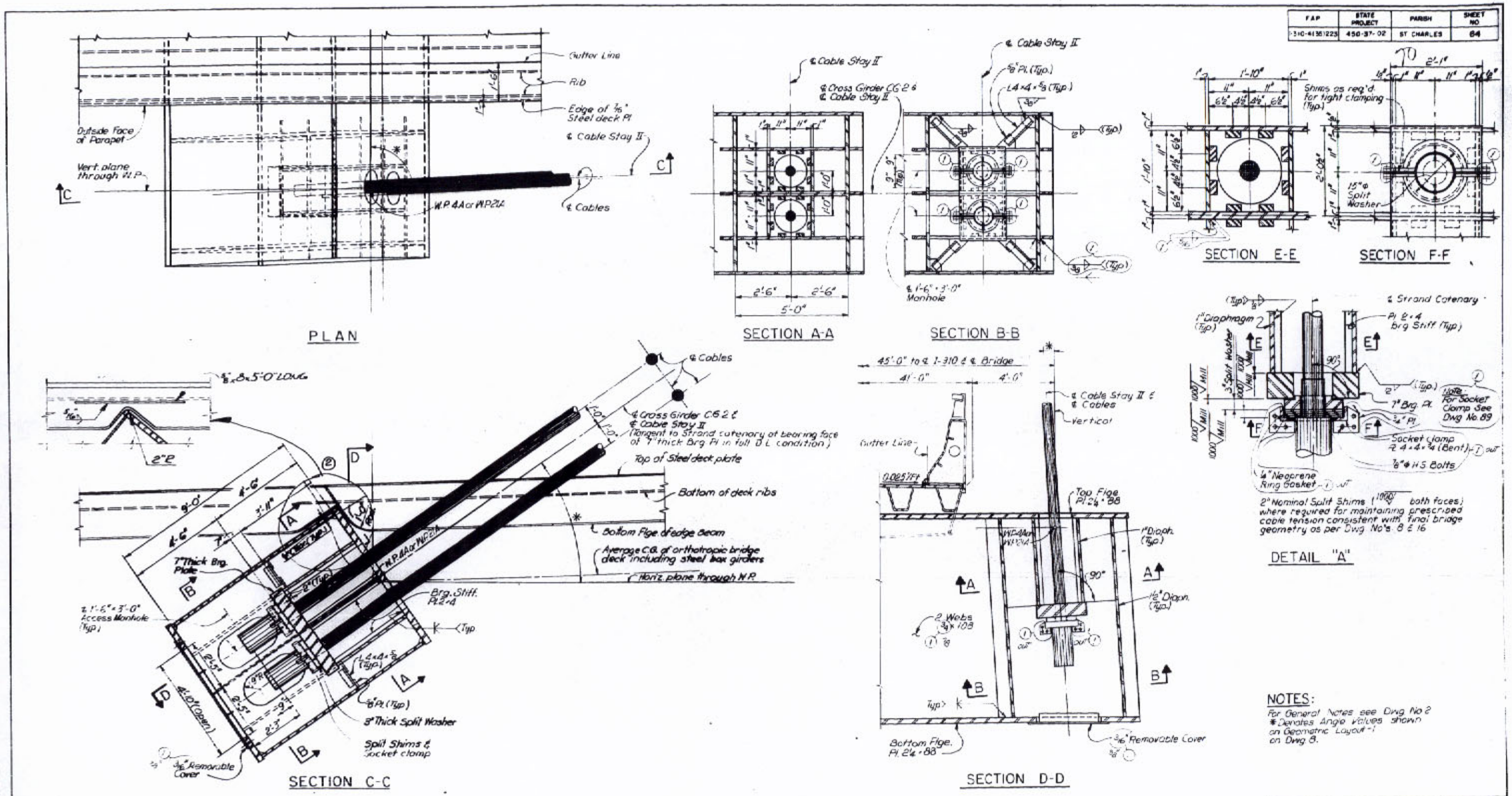
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG 2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1"=7'-0" | DWG NO. 63
DRAWN BY I.T. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED

FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(351)223	450-37-02	ST CHARLES	64



NOTES:
For General Notes see Dwg No 2
* Denotes Angle Values shown on Geometric Layout-1 on Dwg 8.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CABLE ANCHORAGE C2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
3-16-79	Rev. Edge Beam	DOTD
2-27-78	General Revisions	FEL

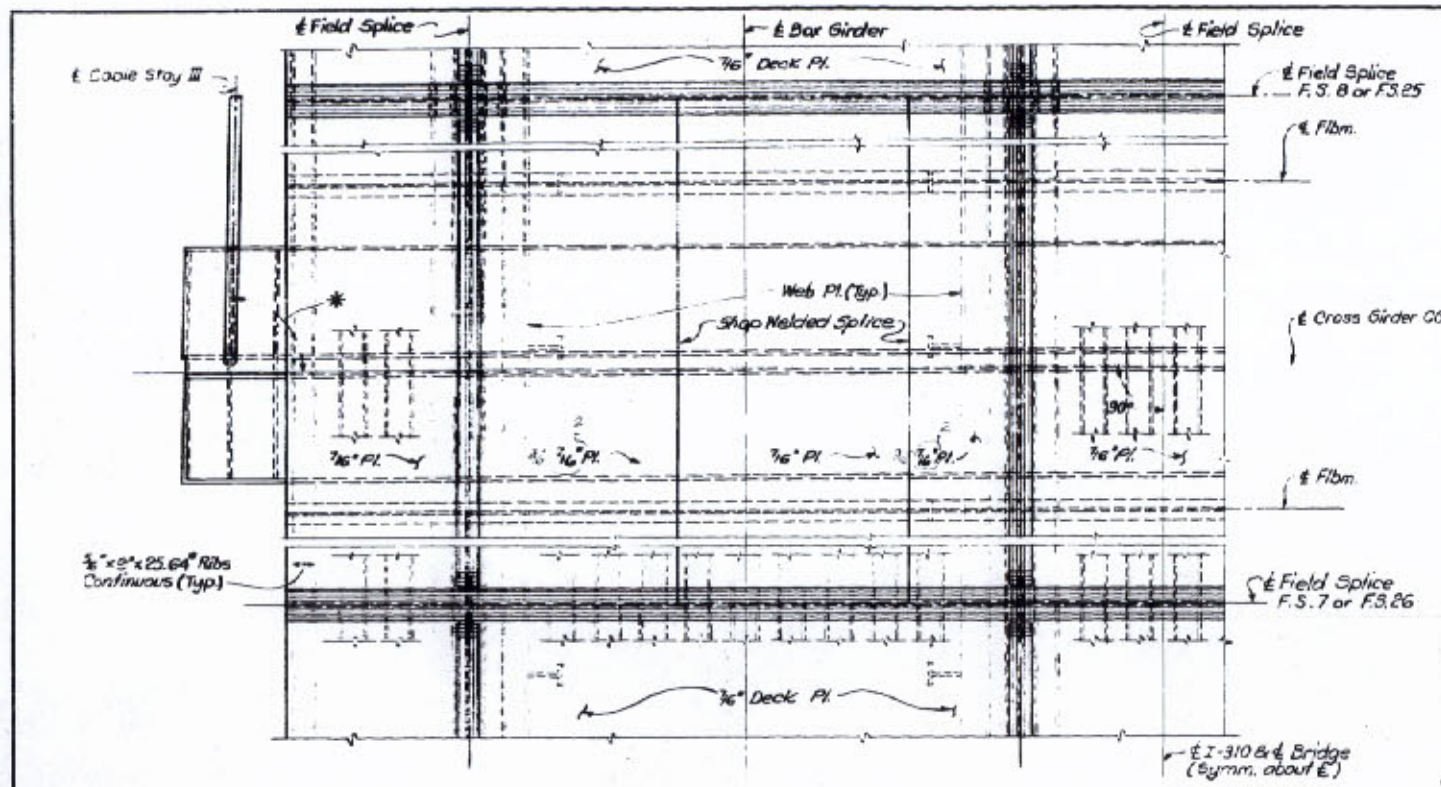
REVISIONS

DATE 5-24-77 | SCALE ½" & 1"=1'-0" | DWG No. 64
DRAWN BY A.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MML

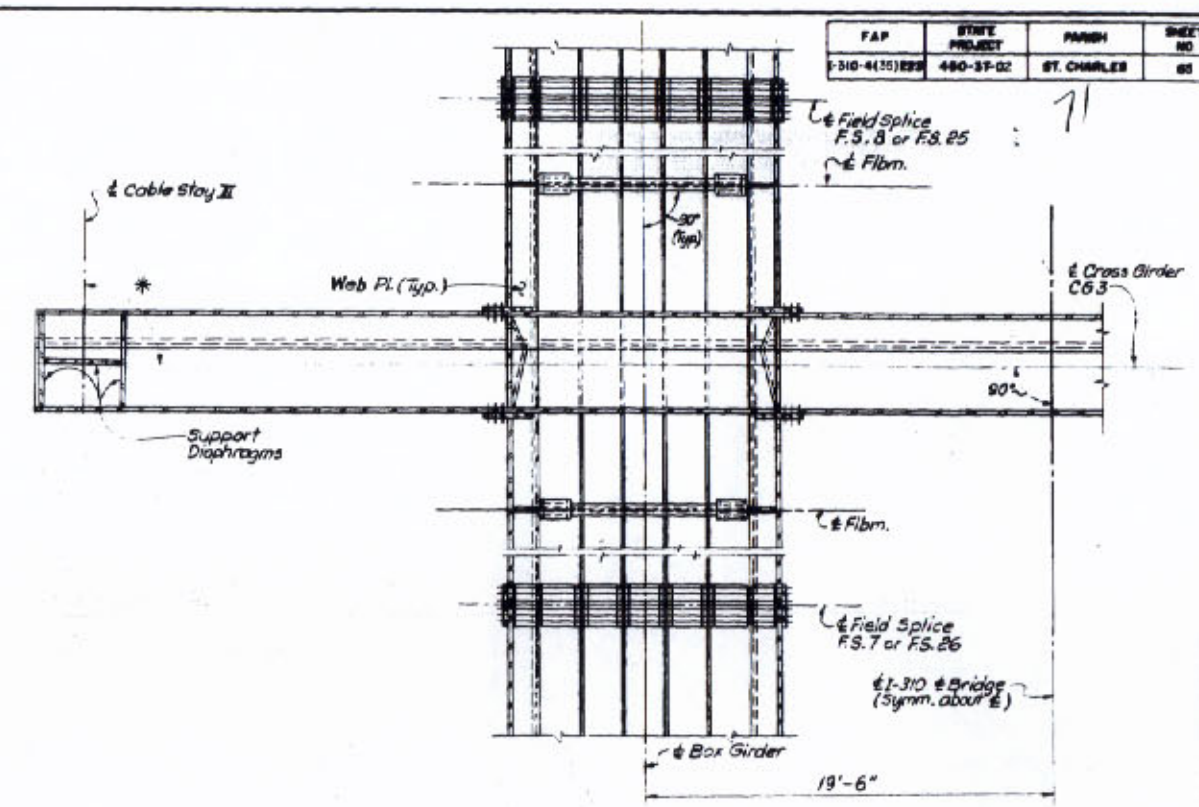
O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(35)223	460-37-02	ST. CHARLES	65

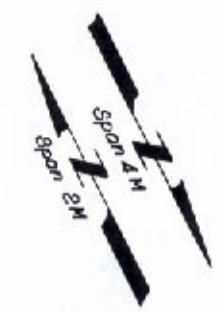
71

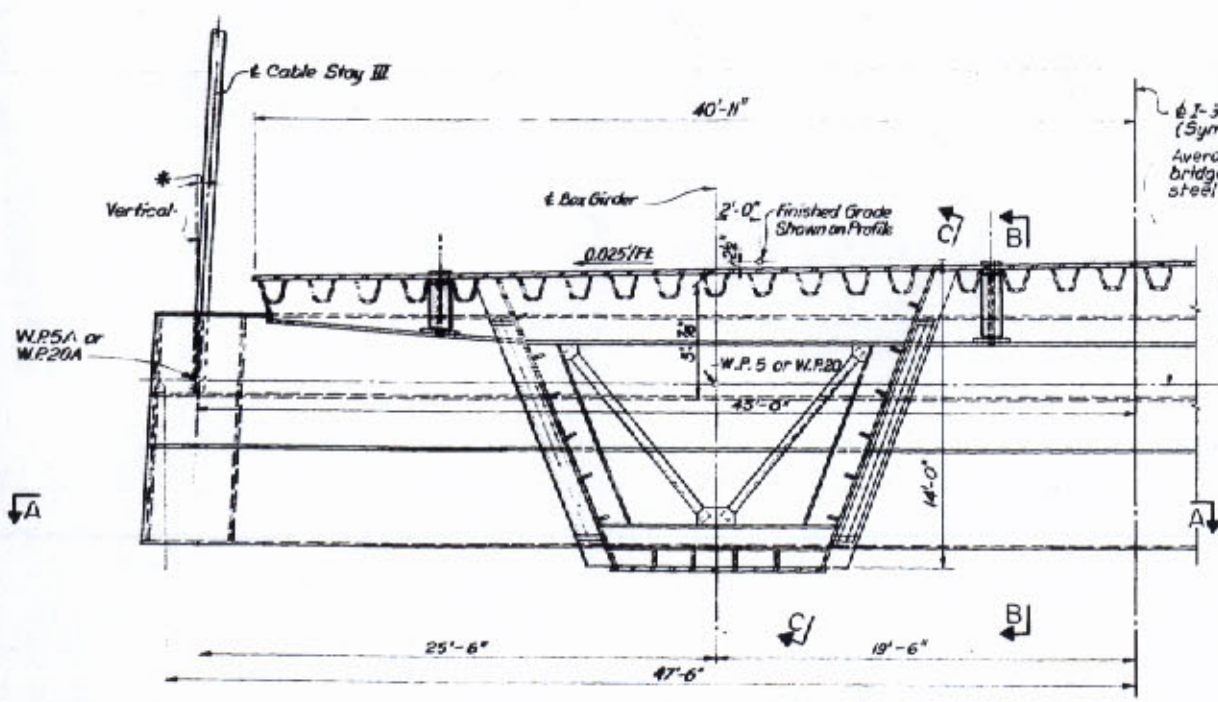


PLAN

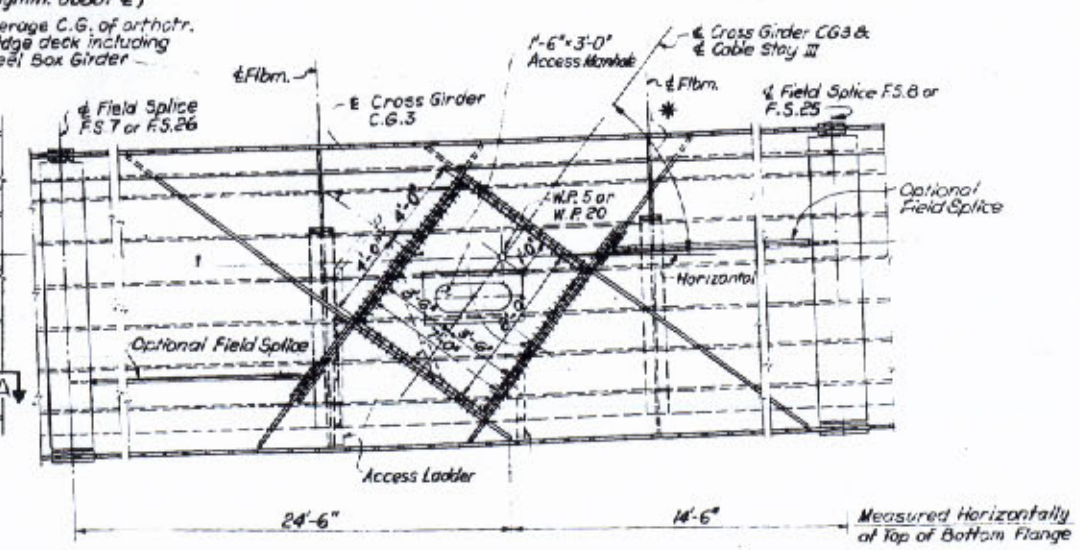


SECTION A-A





ELEVATION



SECTION B-B

NOTES:

For General Notes, see Sheet No. 2.
For Section C-C see Dwgs. 67 & 68.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8.

O. W. Hansen

DATE	DESCRIPTION	BY
2 2-7-78	Minor Revisions	Fe
1 10-20-77	General	DDT

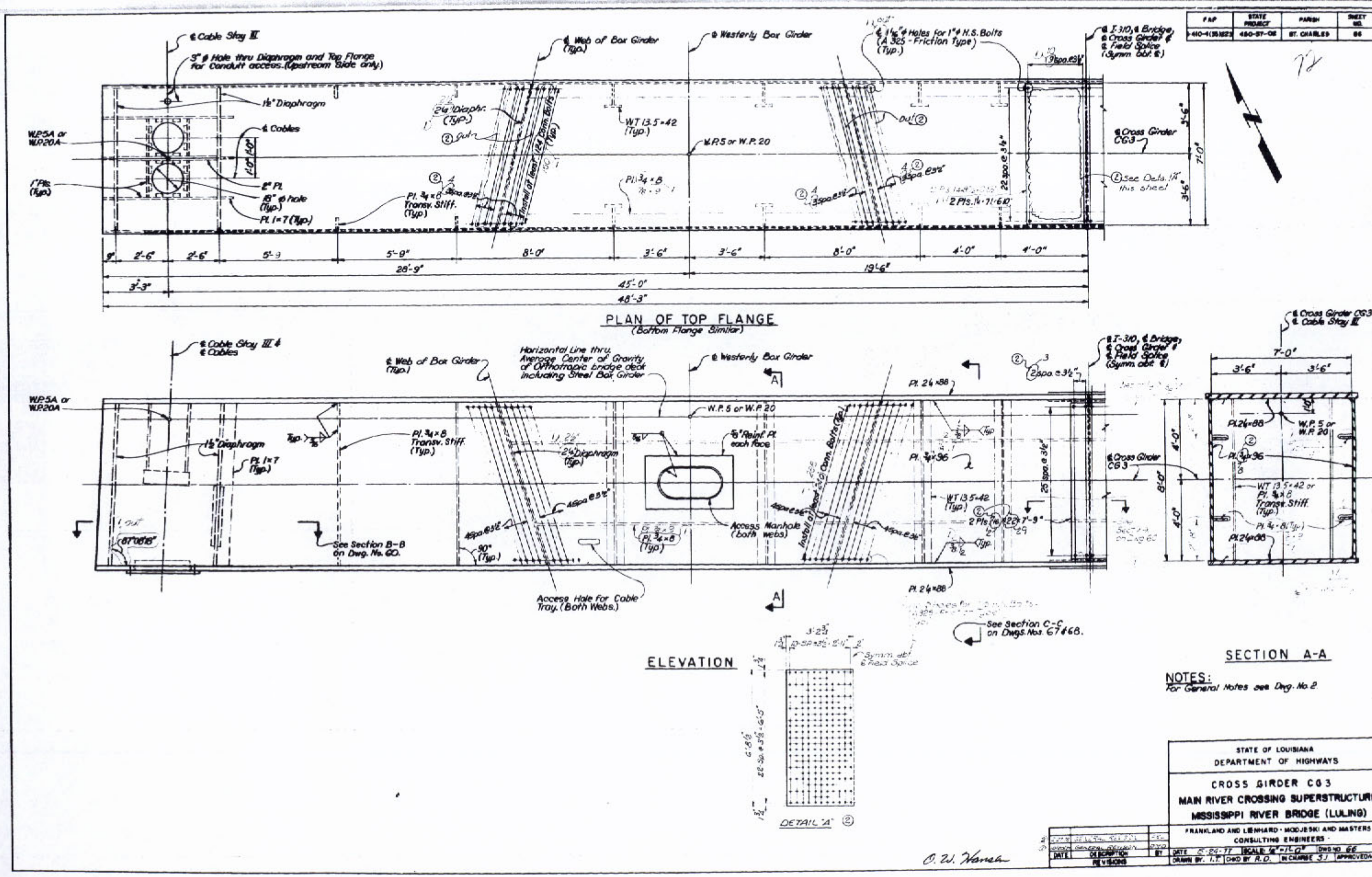
REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG3
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

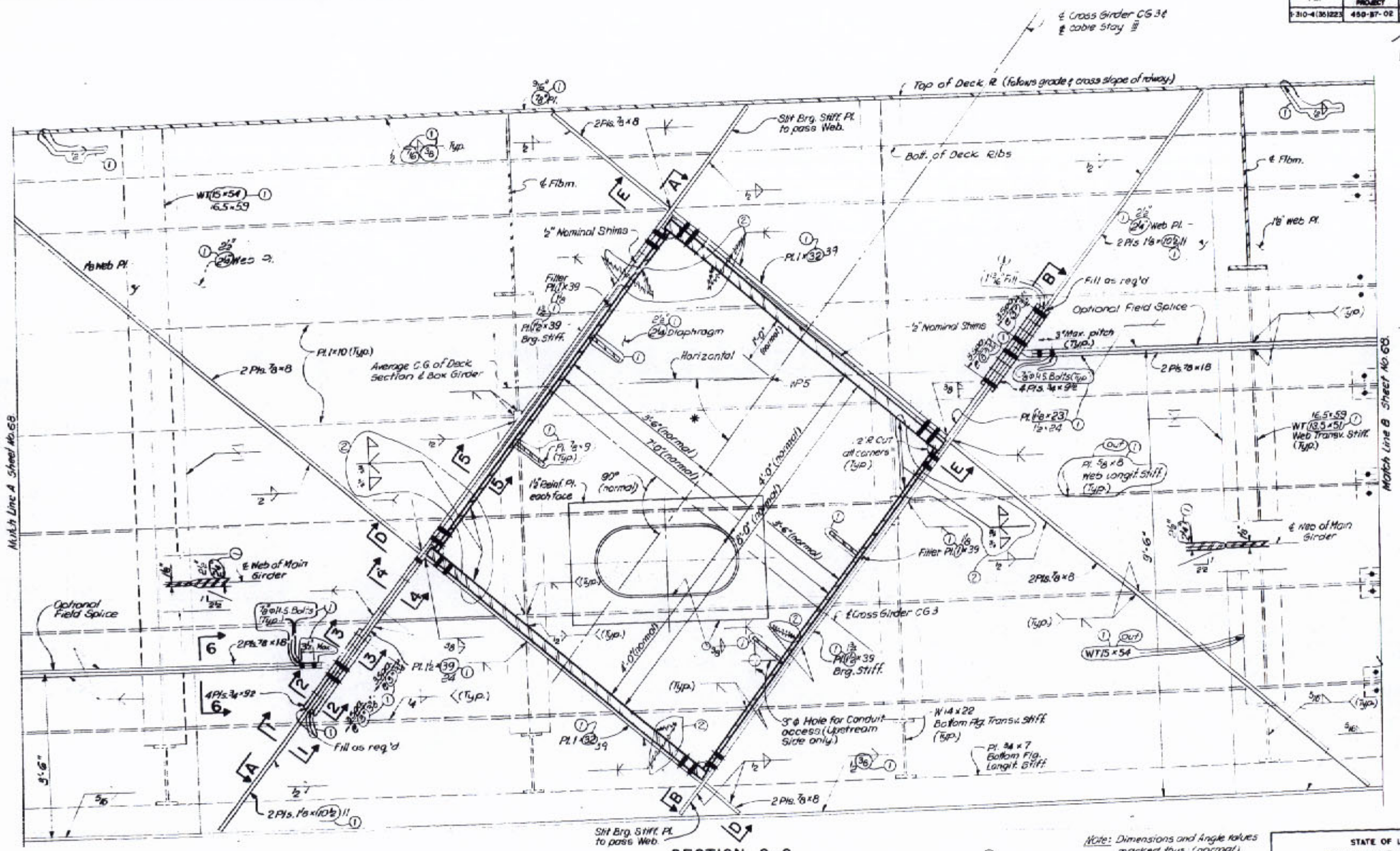
DATE: 5-24-77 | SCALE: 1/4" = 1'-0" | DWG. NO. 65
DRAWN BY: A.C. | CHKD BY: R.D. | IN CHARGE: S.J. | APPROVED: MML



PLAN OF TOP FLANGE
(Bottom Flange Similar)
ELEVATION
SECTION A-A
DETAIL "A"
NOTES:
For General Notes see Dwg. No. 2
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
CROSS GIRDER CG3
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS
DATE 5-24-77
SCALE 1/2"=1'-0"
DWG NO 66
DRAWN BY I.T.
CHKD BY R.D.
IN CHARGE S.J.
APPROVED M.M.L.
O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(36)223	450-37-02	ST. CHARLES	67

73



Note: Dimensions and Angle values marked thus: (normal) are given in a vertical plane.

NOTES:
For General Notes see Dwg. No. 2.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8.

DATE	DESCRIPTION	BY
2/27/78	General Revision	
8/24/78	Lighting Revision	

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG3

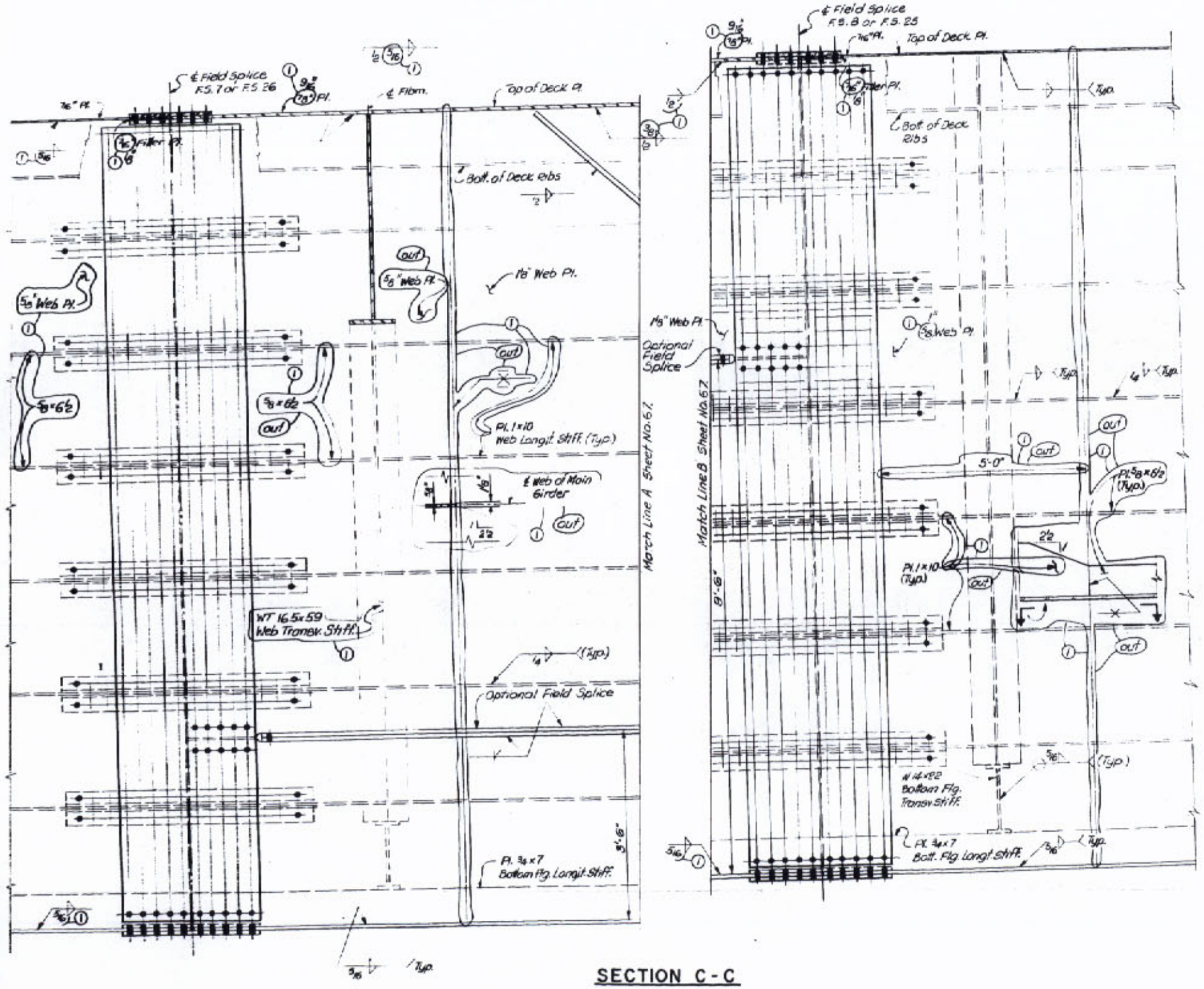
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: 1" = 1'-0" | DWG NO. 67
DRAWN BY: W.M. | CHKD BY: R.D. | IN CHARGE: S.T. | APPROVED: [illegible]

FAP	STATE PROJECT	PARISH	SHEET NO
1-310-4(35)223	450-37-02	ST CHARLES	68

74



SECTION C-C

NOTES:
For General Notes see Dwg. No. 2.

O. W. Hansen

DATE	DESCRIPTION	BY
2-23-78	General Revision	FEL

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

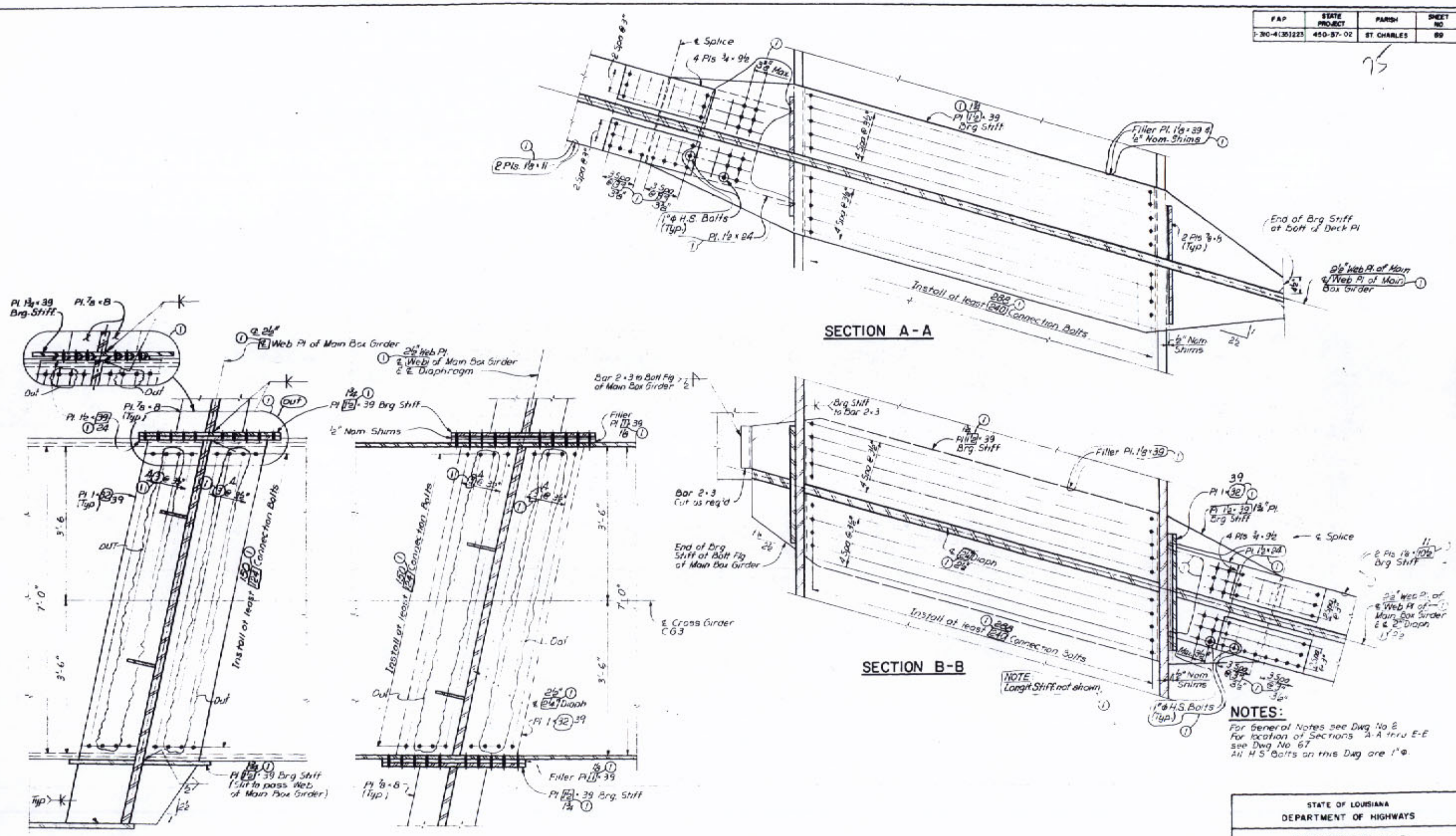
CROSS GIRDER CG3
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1"=1'-0" | DWG NO 68
DRAWN BY W.M. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED [illegible]

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-57-02	ST. CHARLES	69

75



NOTES:

For General Notes see Dwg No 2
For location of Sections A-A thru E-E see Dwg No 67
All H.S. Bolts on this Dwg are 1" ϕ.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG 3
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

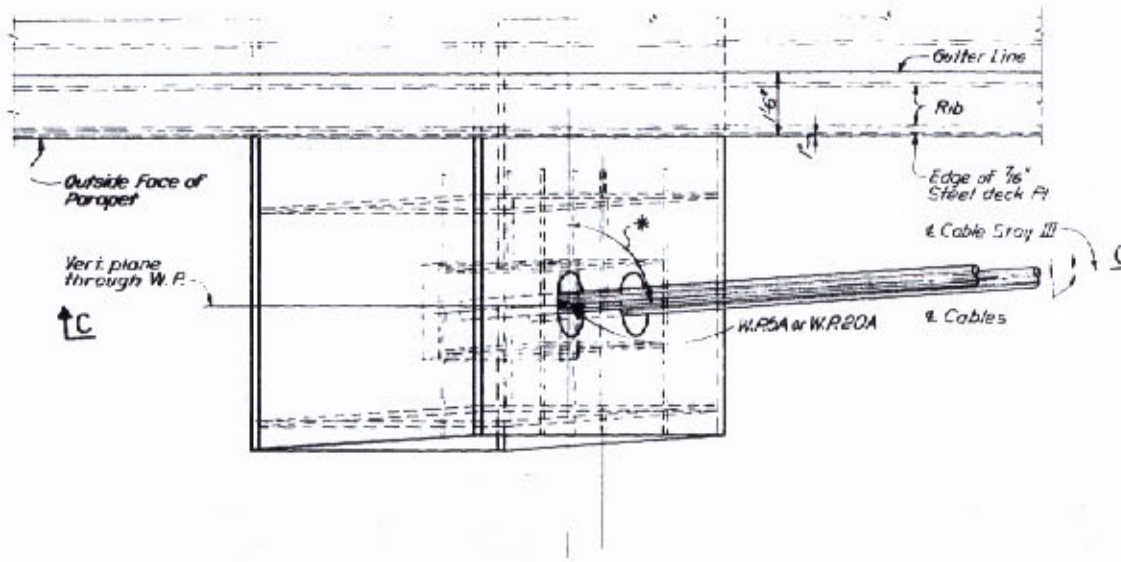
DATE	DESCRIPTION	BY
2-27-78	General Revision	

REVISIONS

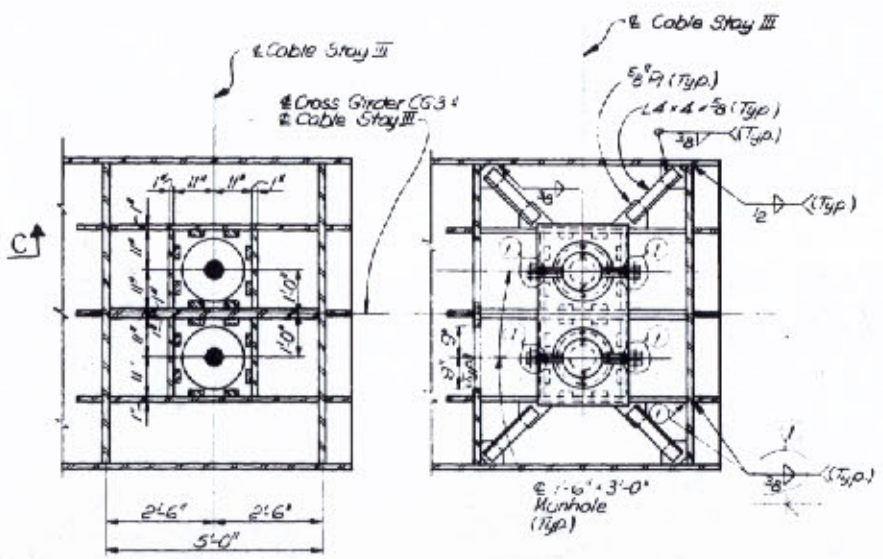
DATE 5-24-77 | SCALE 1" = 1'-0" | DWG NO 69
DRAWN BY A.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MML

O. W. Hanse

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST CHARLES	70

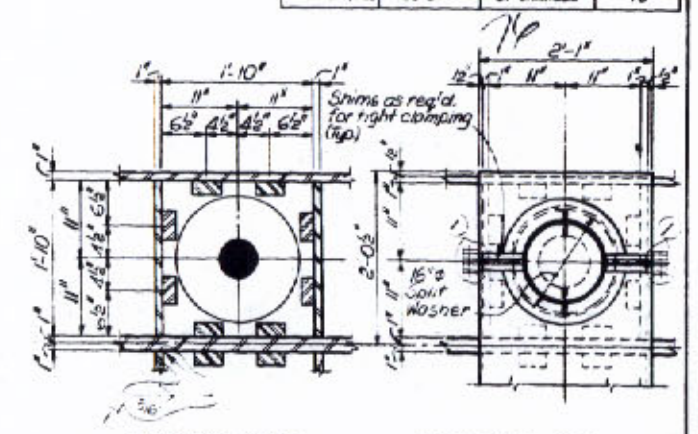


PLAN



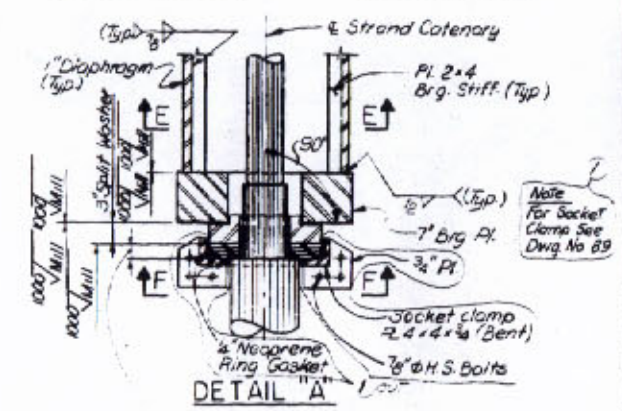
SECTION A-A

SECTION B-B



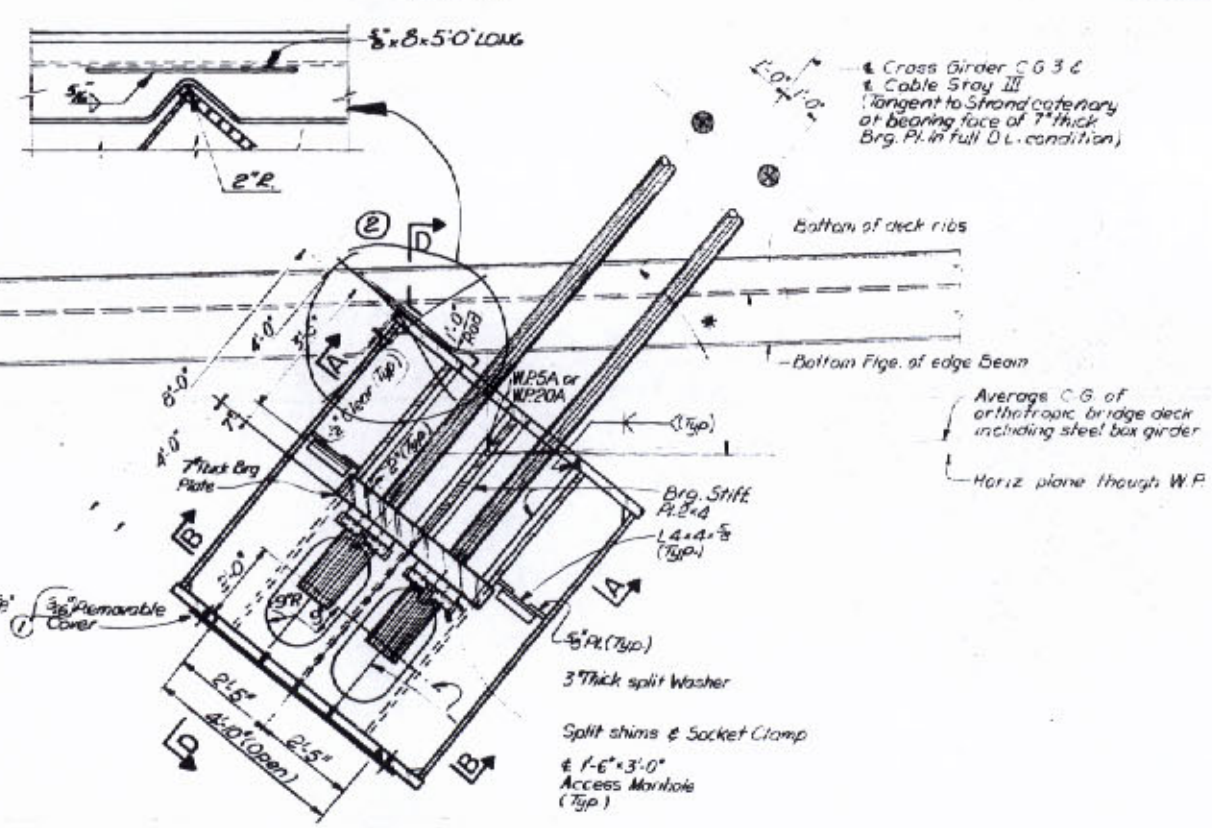
SECTION E-E

SECTION F-F

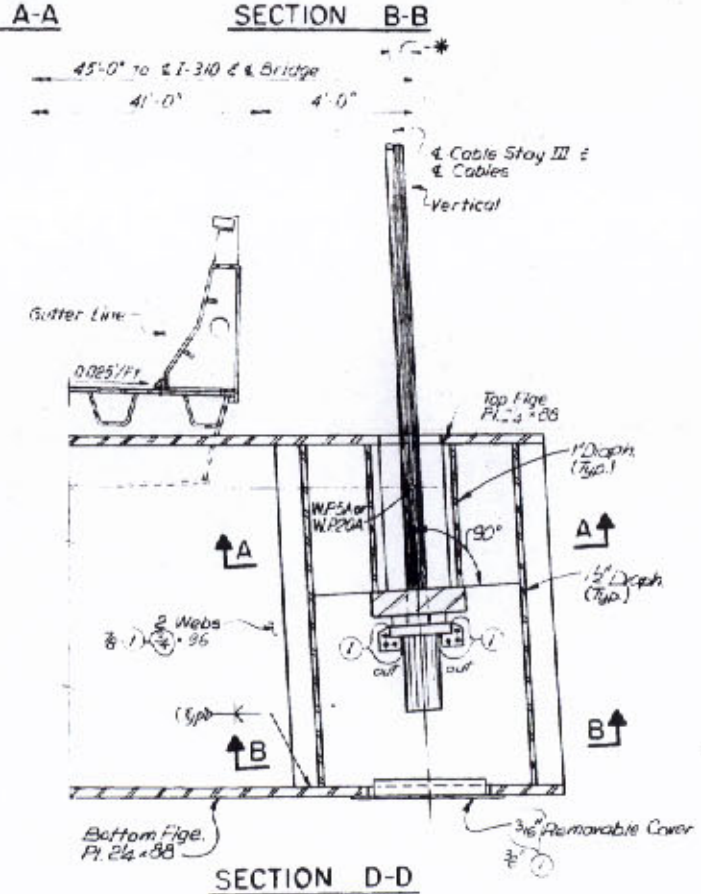


DETAIL "A"

℄ Nominal Split Shims (.000" both faces) where required for maintaining prescribed cable tension consistent with final bridge geometry as per Dwg. No's. 8 & 16.



SECTION C-C



SECTION D-D

NOTES

For General Notes see Dwg. No 2.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8.

O. W. Hansen

DATE	DESCRIPTION	BY
9-6-79	Rev. Cable Beam	DOTD
2-27-78	General Revision	[illegible]

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

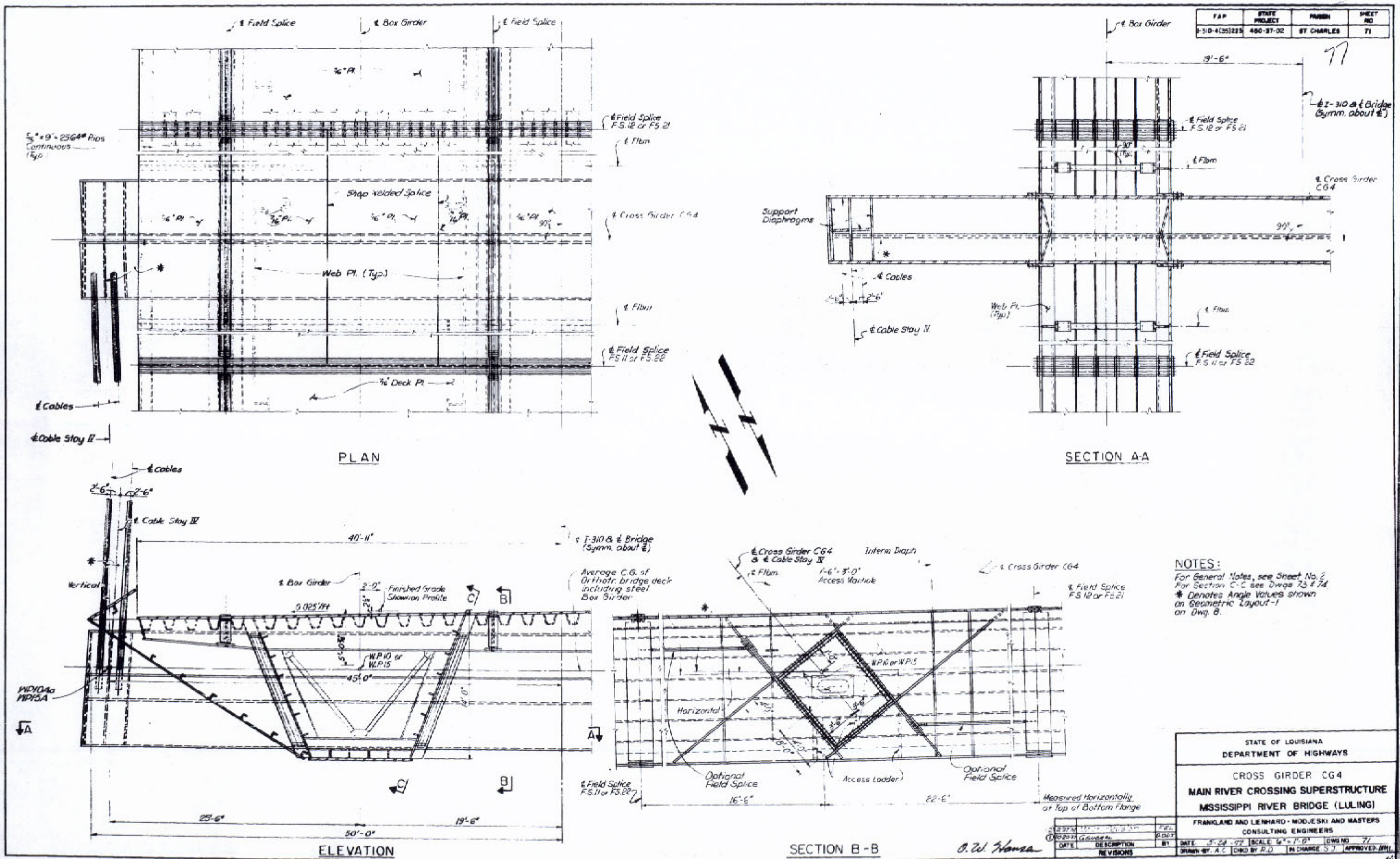
CABLE ANCHORAGE C3
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1/4" & 1"=1'-0" | DWG NO 72
DRAWN BY A.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED [illegible]

FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(35)223	450-37-02	ST CHARLES	71

77



NOTES:

For General Notes, see Sheet No. 2
For Section C-C see Dwgs 73 & 74
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8.

O. W. Hansen

DATE	DESCRIPTION	BY
2-27-76	[illegible]	FEL
10-20-77	General	P.O.D.T.

REVISIONS

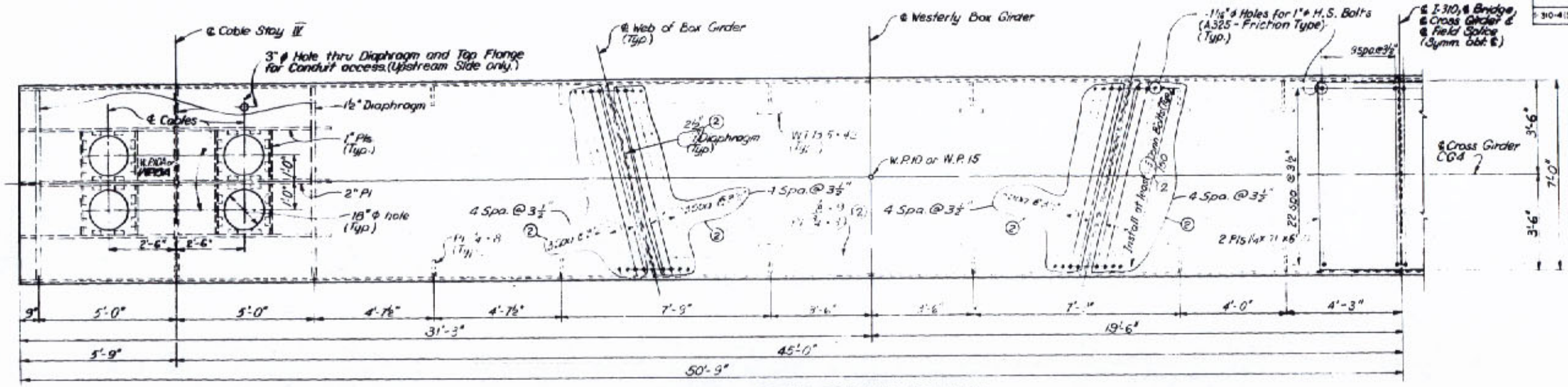
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG4
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

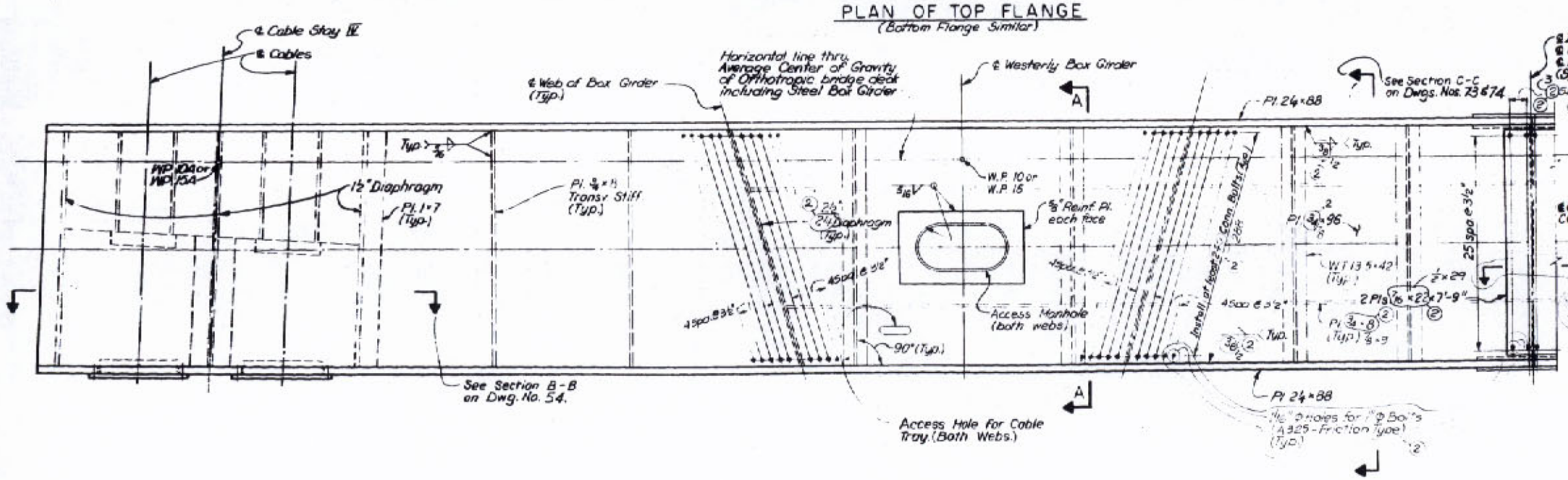
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 6" = 1'-0" | DWG NO 71
DRAWN BY A.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED NML

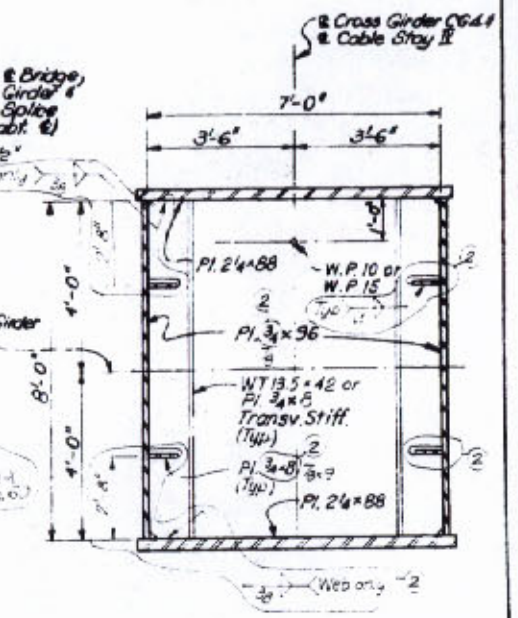
F.A.P.	STATE PROJECT	PARISH	SHEET NO.
5-310-4(36)223	450-37-02	ST. CHARLES	72



PLAN OF TOP FLANGE
(Bottom Flange Similar)



ELEVATION



SECTION A-A

NOTES:
For General Notes see Dwg. No. 2

O. W. Hansen

DATE	DESCRIPTION	BY
2	GENERAL REVISION	
1	GENERAL REVISION	

REVISIONS

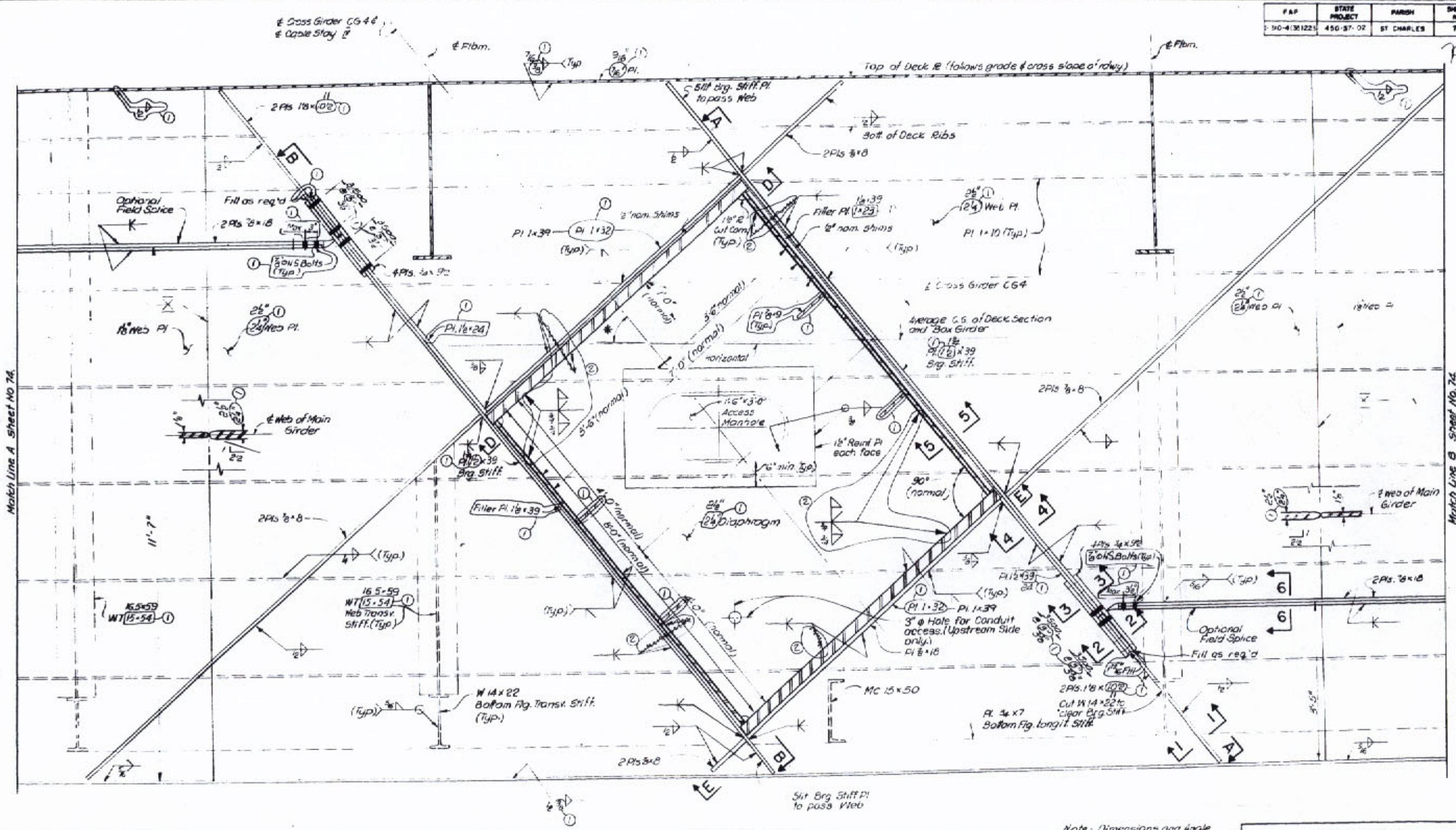
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG4
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE ½"=1'-0" | DWG NO. 72
DRAWN BY I.T. | CHKD. BY R.D. | IN CHARGE S.J. | APPROVED M.M.

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
S-390-4(36)122S	450-37-02	ST. CHARLES	73



Note: Dimensions and Angle values marked thus (normal) are given in a vertical plane.

NOTES:
For General Notes see Dwg. No. 2
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8.

DATE	DESCRIPTION	BY
8-22-74	Widening Revision	
2-27-76	General Revision	

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG4

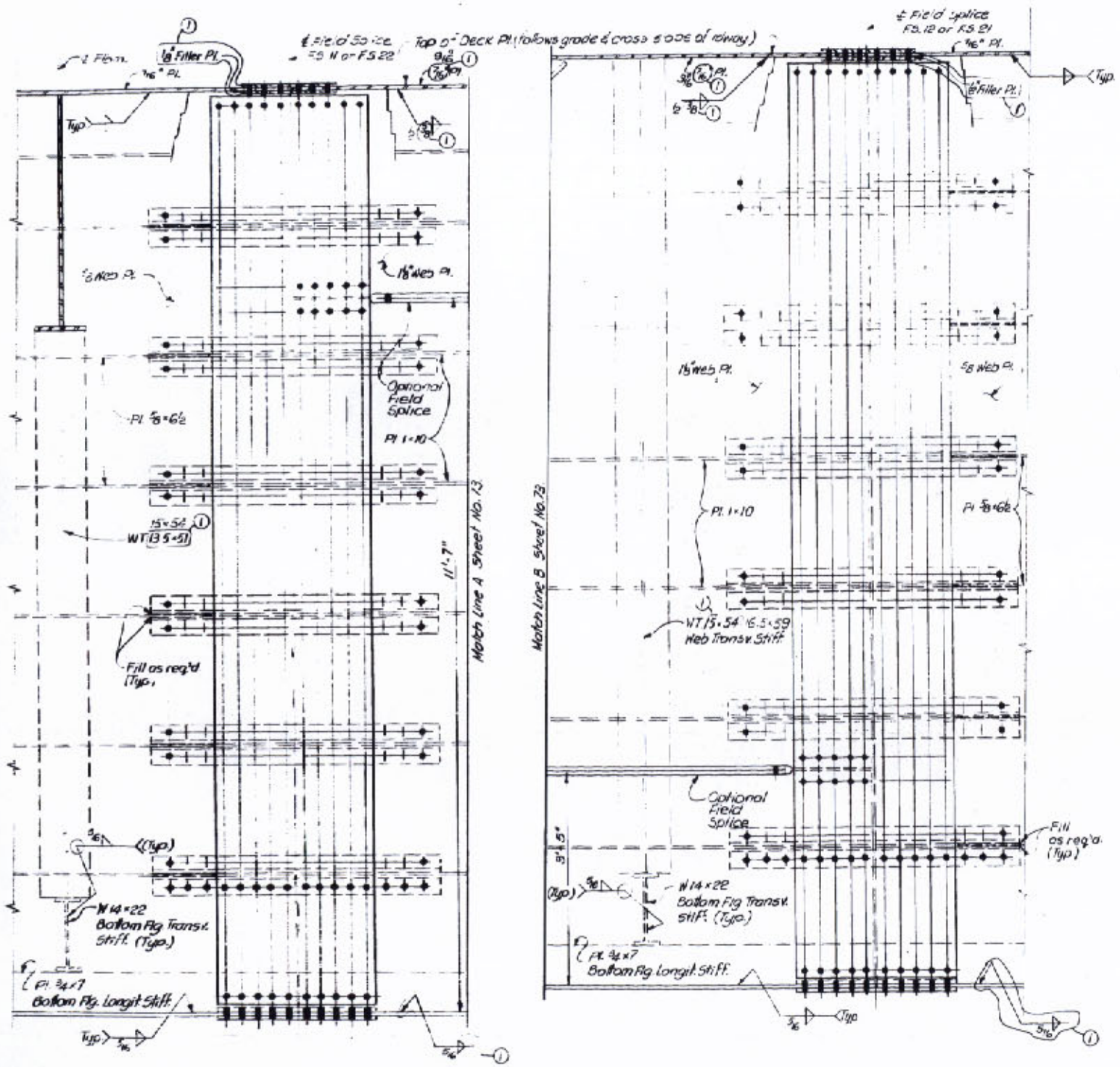
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-22-77 | SCALE 1"=1'-0" | DWG NO. 73
DRAWN BY W.M. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED W.M.

FAP	STATE PROJECT	PARISH	SHEET NO.
F-310-4(351223)	450-57-02	ST CHARLES	74

D



SECTION C-C

NOTES:
For General Notes see Dwg. No 2.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG4
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

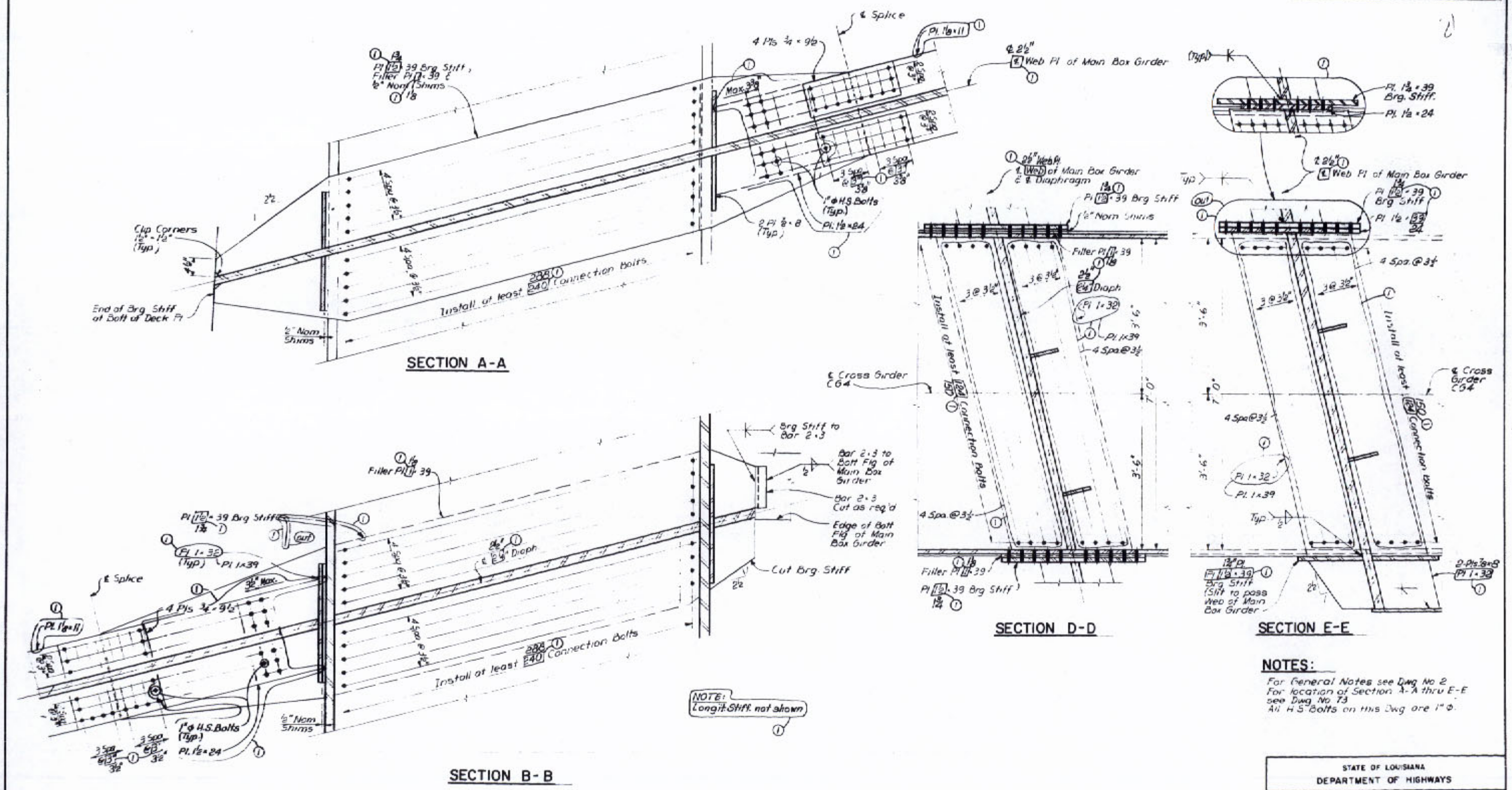
DATE	DESCRIPTION	BY
2-27-78	General Revision	FEL

REVISIONS

DATE 5-24-77 | SCALE 1" = 1'-0" | DWG NO 74
DRAWN BY W.M. | CHKD BY W.D. | IN CHARGE S.J. | APPROVED A.M.L.

O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO
1-310-4(36)223	450-57-02	ST CHARLES	75



NOTES:

For General Notes see Dwg No 2
For location of Section A-A thru E-E see Dwg No 73
All H.S. Bolts on this Dwg are 1" ϕ.

O.W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG 4
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

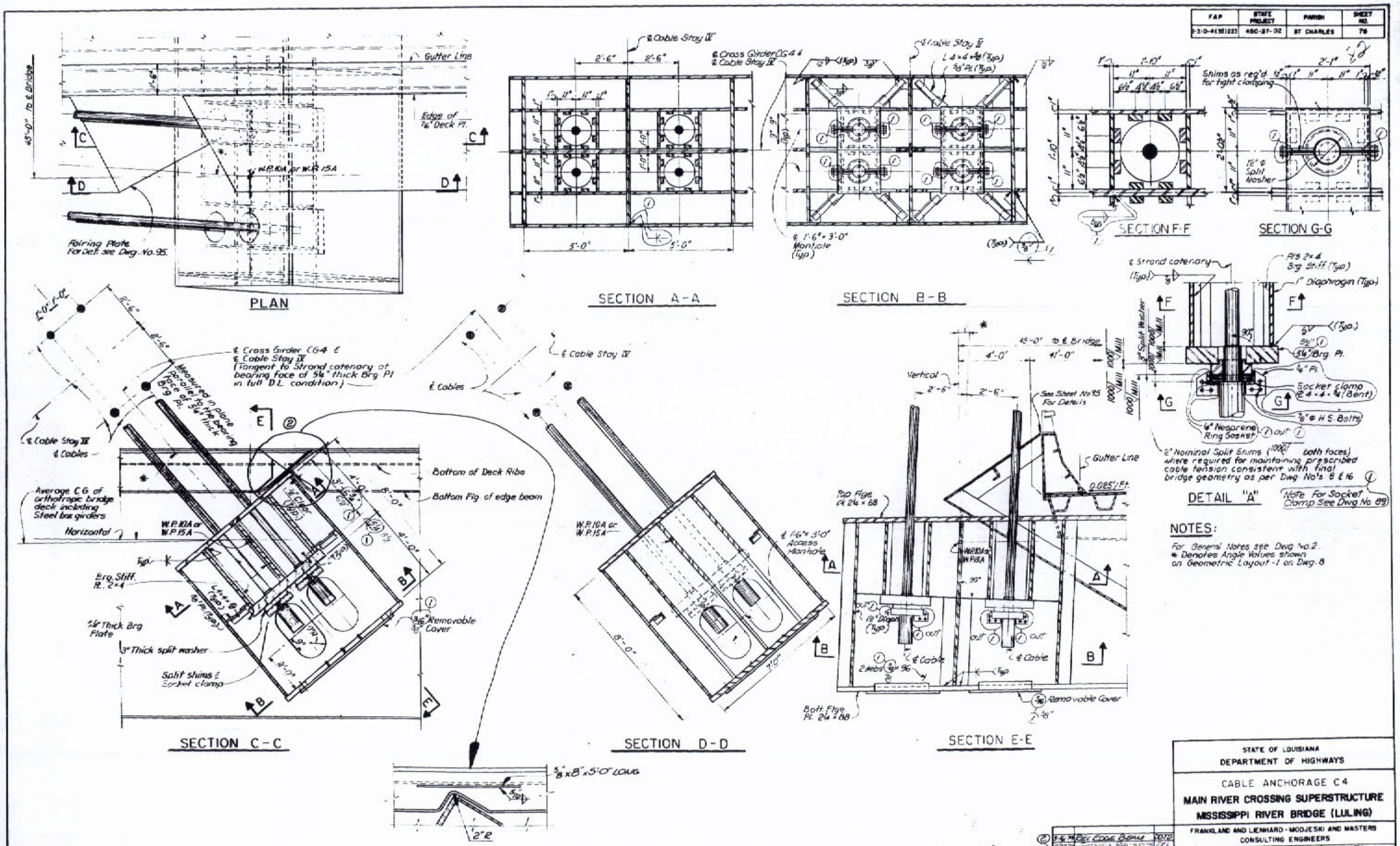
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
2/27/78	General Revision	FEL

REVISIONS

DATE 5-24-77 | SCALE 1" = 1'-0" | DWG NO 75
DRAWN BY A.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MML

FAP	STATE PROJECT	PARISH	SHEET NO.
F-310-4(36)223	450-37-02	ST CHARLES	78



NOTES:

For General Notes see Dwg. No. 2.
* Denotes Angle Values shown on Geometric Layout -1 on Dwg. 8

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CABLE ANCHORAGE C4

MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

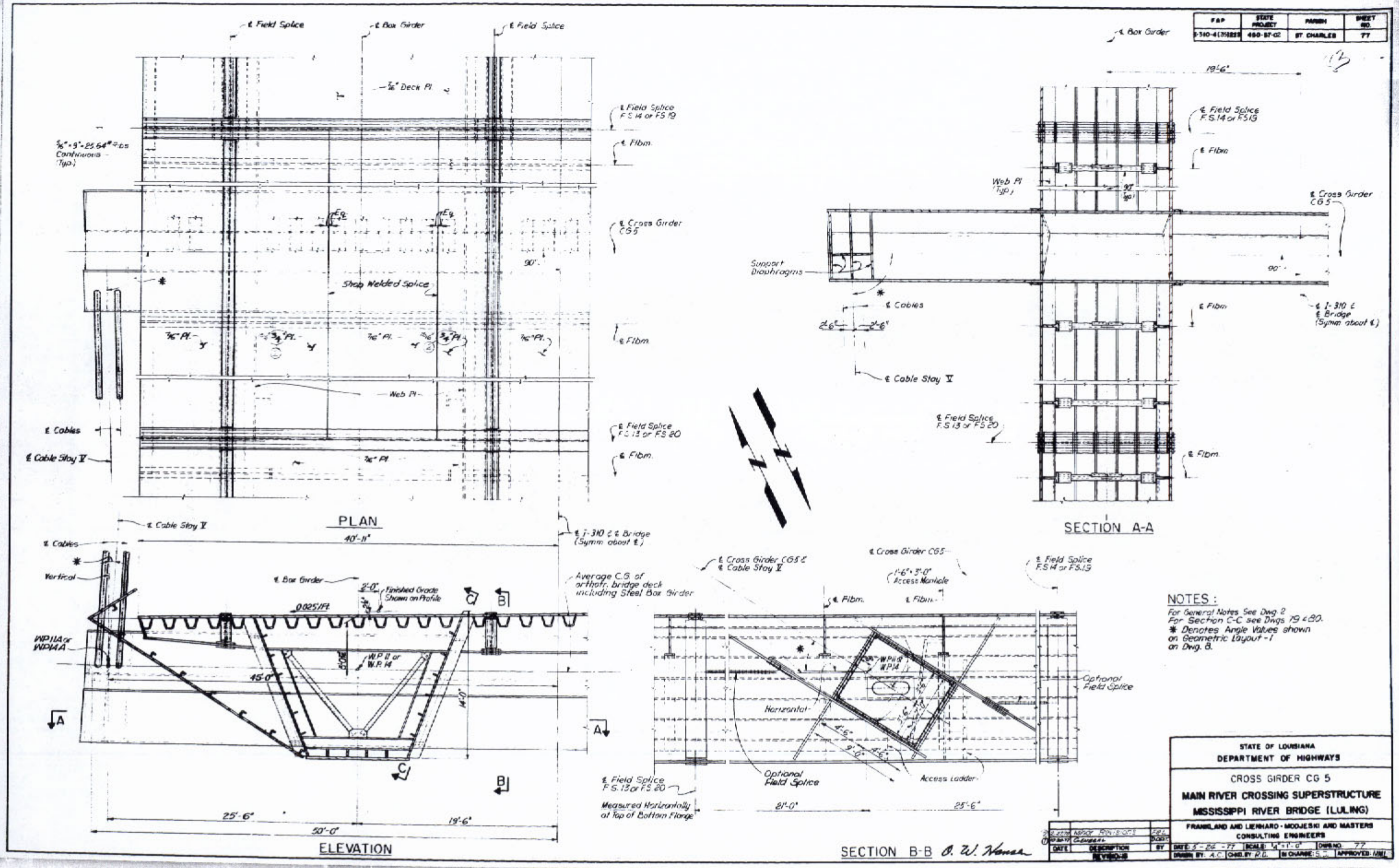
DATE	DESCRIPTION	BY
5/16/77	Rev. Code Bent	DOTD
8/27/78	Cancel Transition Pl.	

REVISIONS

DATE 5-24-77 | SCALE 1/4" = 1'-0" | DWG NO. 78
DRAWN BY A.C.N. | CHKD BY N.D. | IN CHARGE S.J. | APPROVED MHL

O.W. Hansen

F&P	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	460-57-02	ST. CHARLES	77



NOTES:
For General Notes See Dwg. 2
For Section C-C see Dwgs 79 & 80.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG 5
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

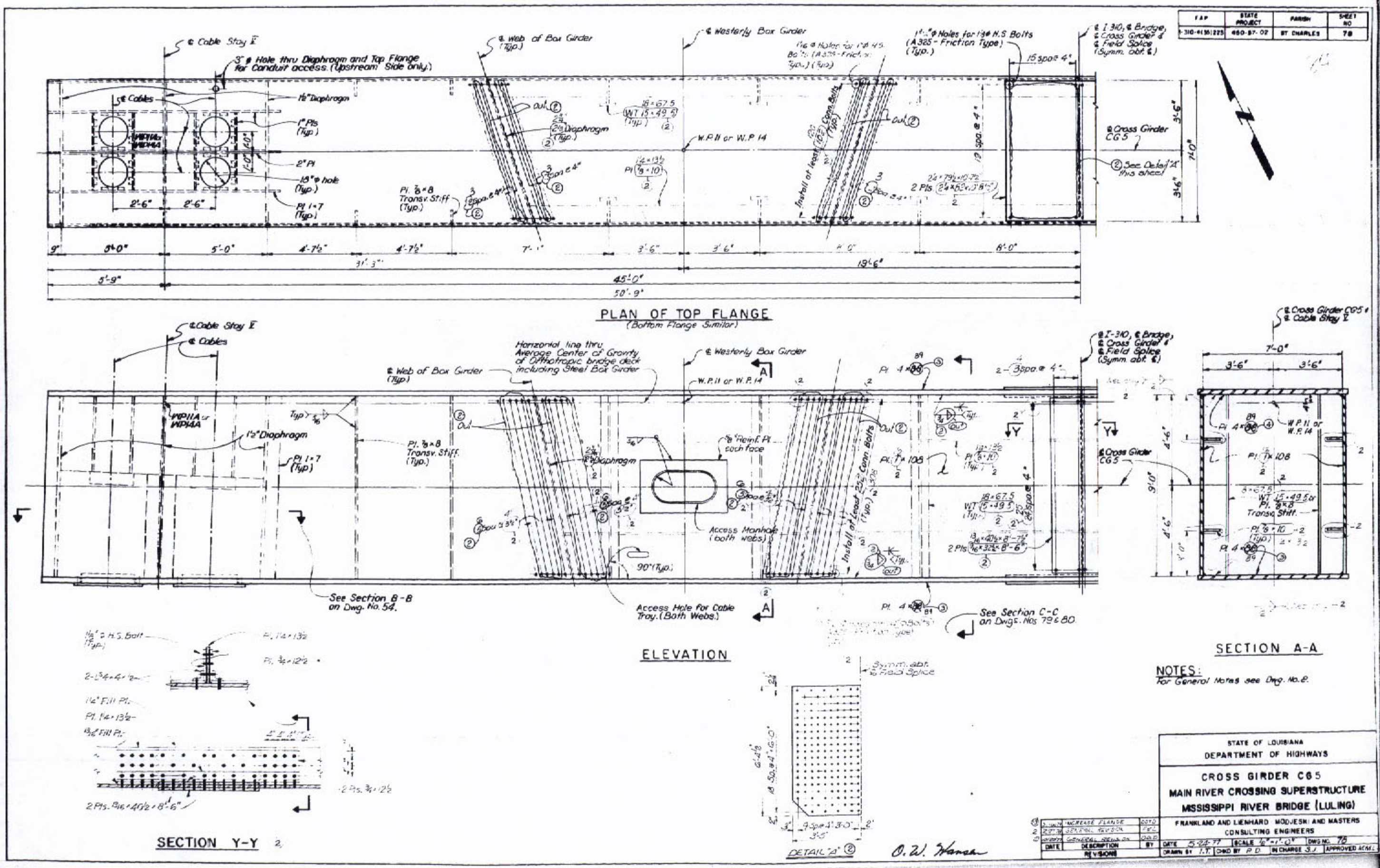
FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
2	Minor Revisions	F.R.L.
1	General	D.O.R.T.

REVISIONS

DATE: 5-26-77 | SCALE: 1/4"=1'-0" | DWG. NO. 77
DRAWN BY: A.C. | CHKD. BY: R.D. | IN CHARGE: S.D. | APPROVED: MML

FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(35)225	460-87-02	ST CHARLES	78



NOTES:
For General Notes see Dwg. No. 2.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG5
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

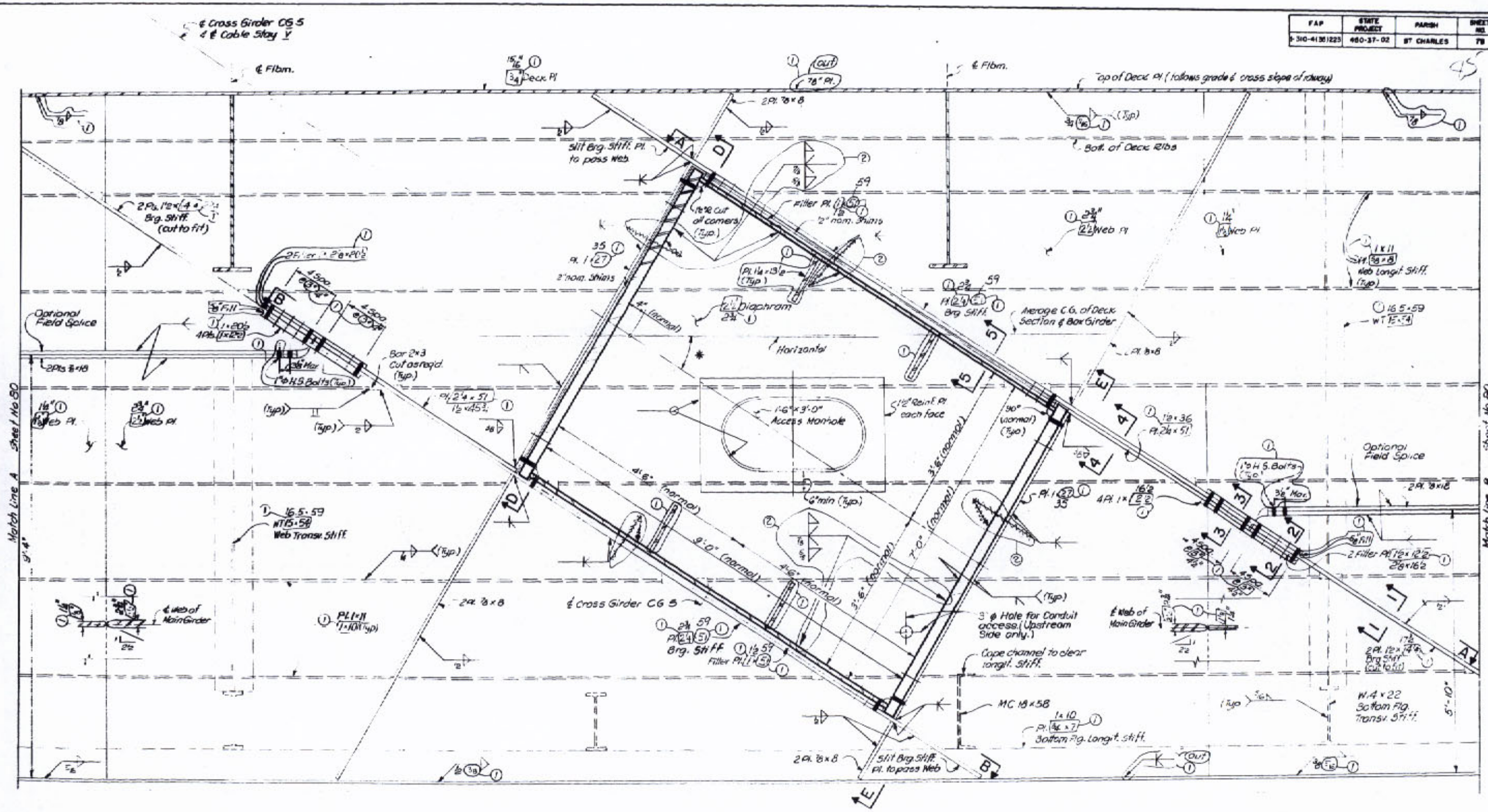
FRANKLAND AND LIENHARD MODJESKI AND MASTERS
CONSULTING ENGINEERS

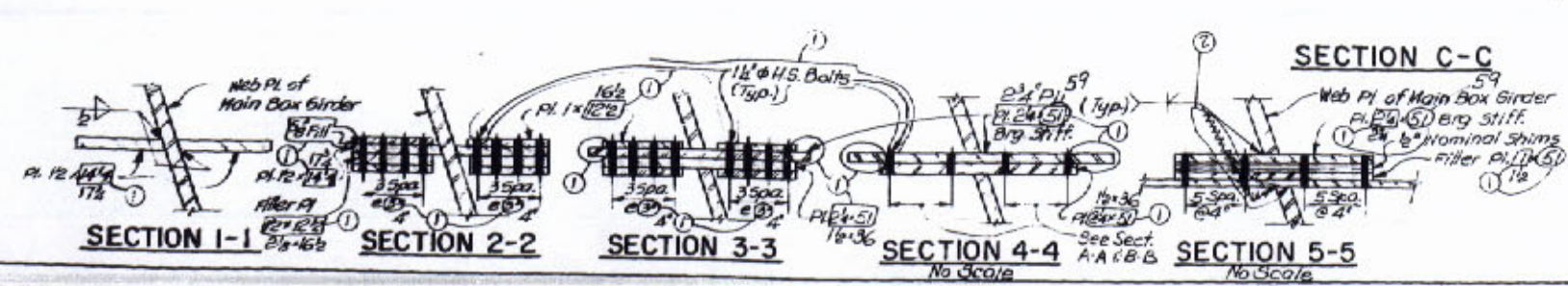
DATE	DESCRIPTION	BY
3	INCREASE FLANGE	DOTD
2	GENERAL REVISION	FEL
1	GENERAL REVISION	DAD

REVISIONS

DATE 5-24-77 | SCALE 1/8"=1'-0" | DWG NO. 78
DRAWN BY I.T. | CHKD BY P.D. | IN CHARGE S.J. | APPROVED ACME

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(36)225	460-37-02	ST CHARLES	78





Note: Dimensions and Angle values marked thus: (normal) are given in a vertical plane.

NOTES:
For General Notes see Dwg. No. 2.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 3.

O. W. Hansen

DATE	DESCRIPTION	BY
8-24-78	Welding Revision	
2-27-78	General Revision	

REVISIONS

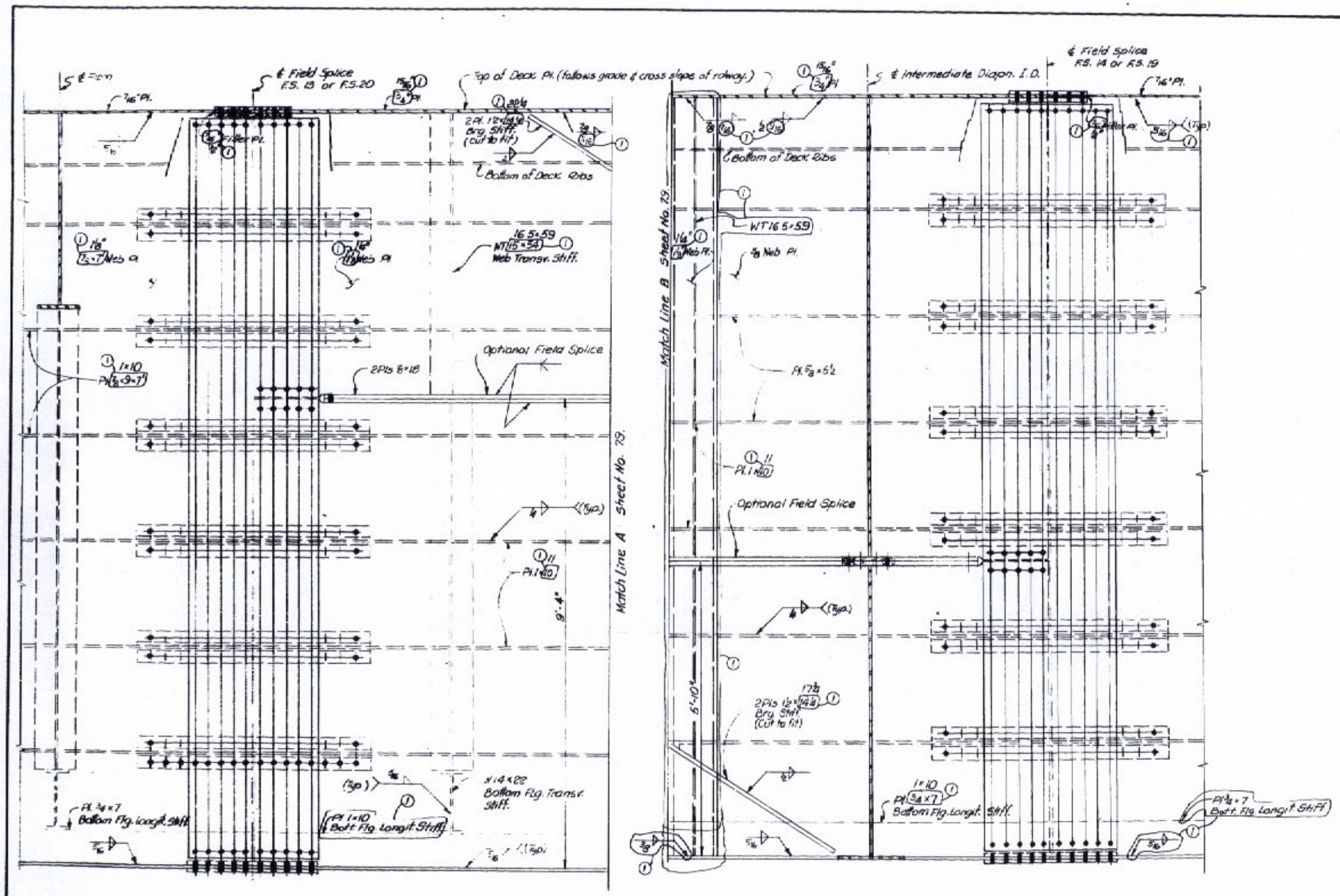
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG5
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1" = 1'-0" | DWG NO. 79
DRAWN BY WM | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MML

FAP	STATE PROJECT	PARISH	SHEET NO.
F-310-4(35)225	480-37-02	ST. CHARLES	80



SECTION C-C

NOTES:
For General Notes see Dwg. No. 2.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG5
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

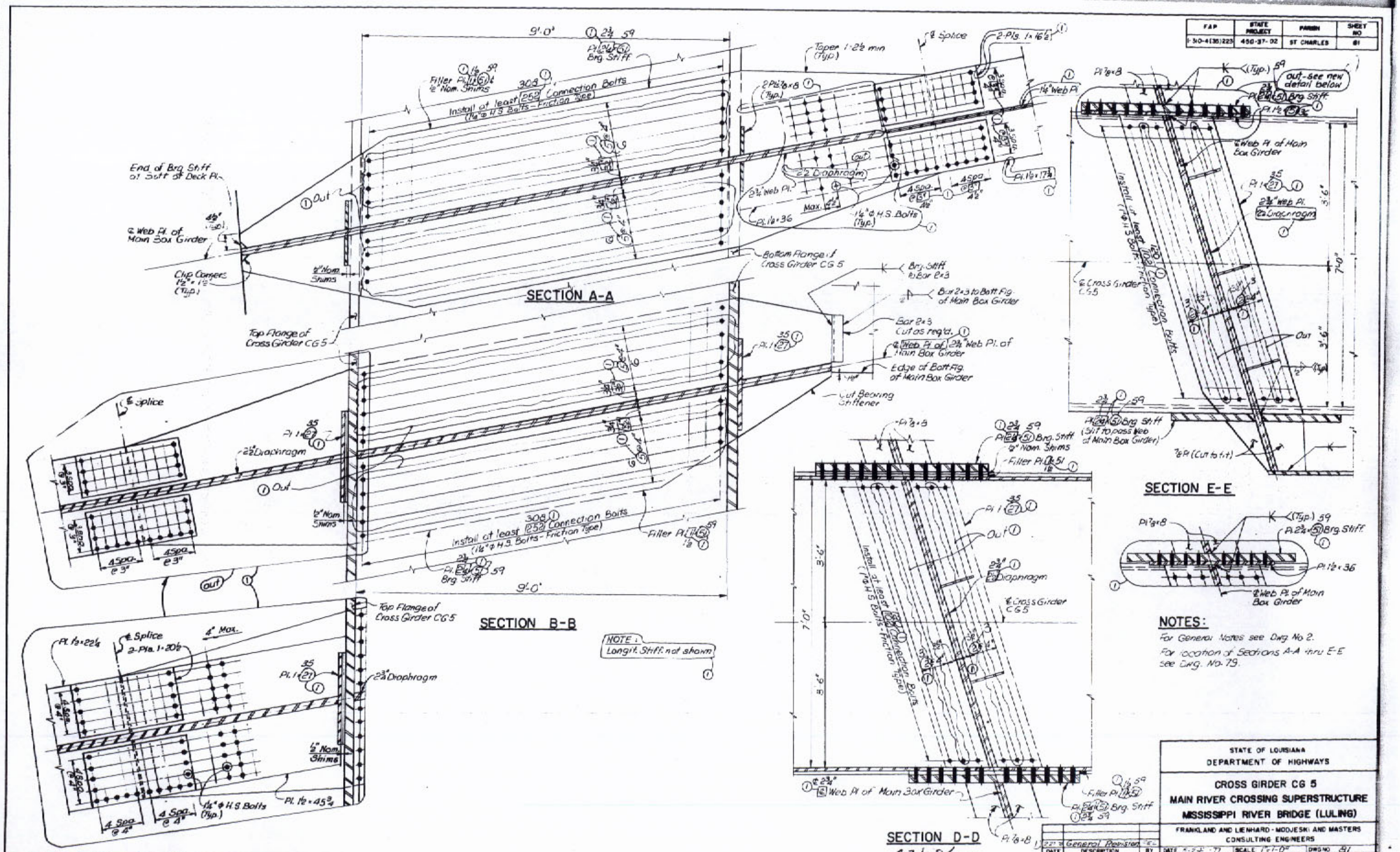
DATE	DESCRIPTION	BY
2-27-78	General Revision	FEL

REVISIONS

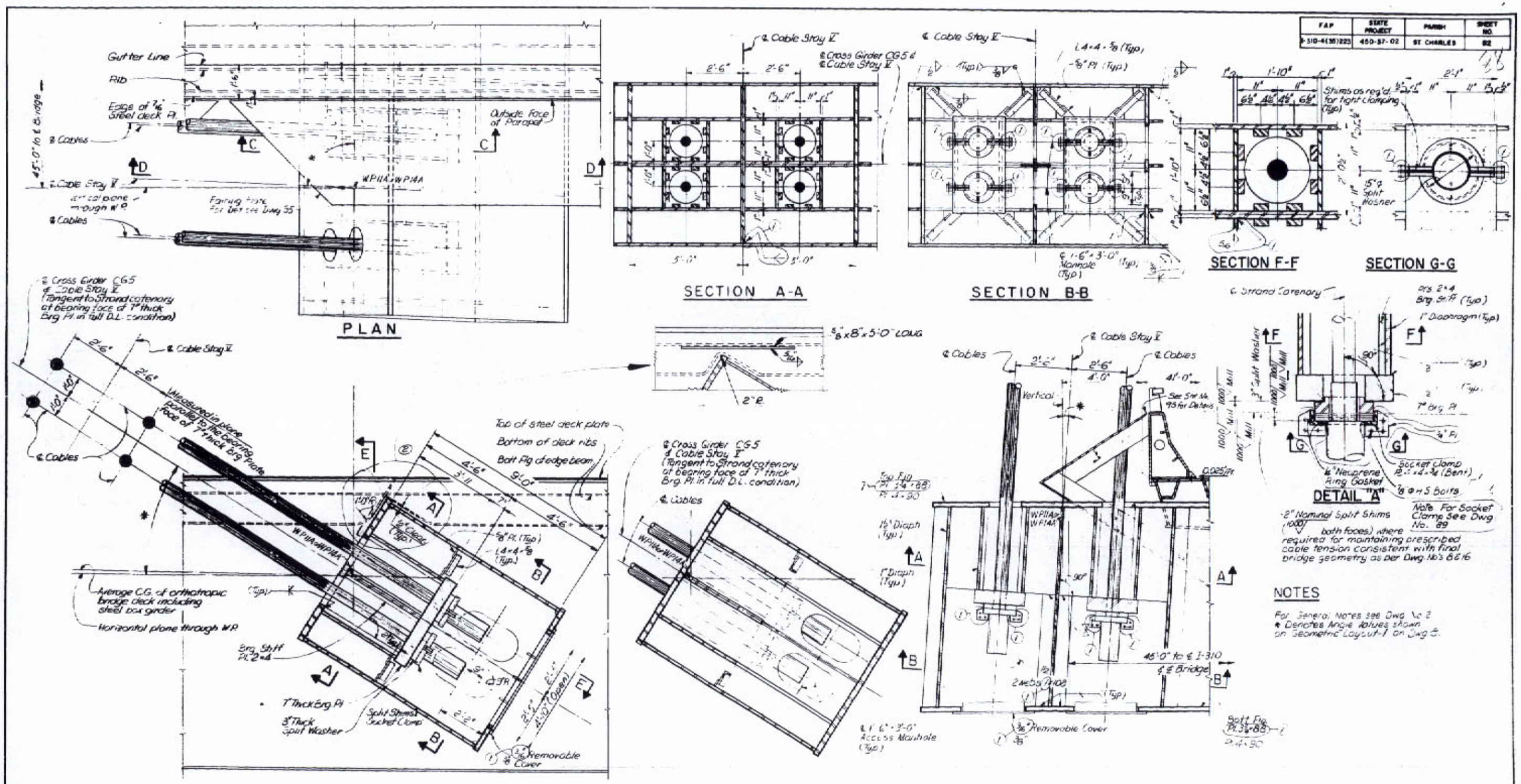
DATE 3-24-77 | SCALE 1" = 1'-0" | DWG NO. 80
DRAWN BY W.M. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED AML

O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(35)223	450-37-02	ST CHARLES	81



FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(36)223	450-57-02	ST. CHARLES	82



STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CABLE ANCHORAGE C5
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

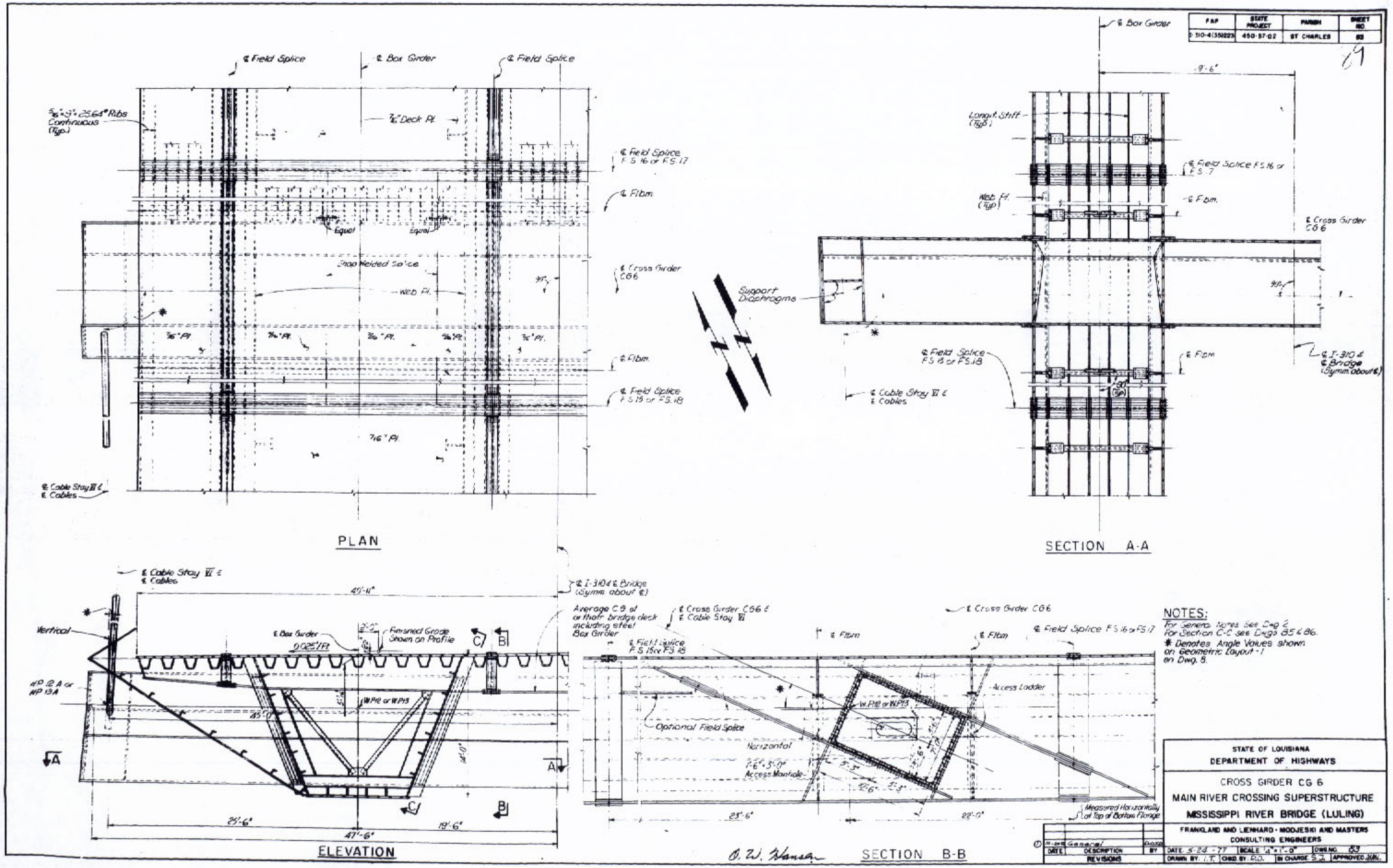
DATE	DESCRIPTION	BY
1-24-78	Revised Cable Beam	R.C.W.
8-21-78	General Revisions	R.C.

REVISIONS

DATE 4-23-77 | SCALE 1/4"=1'-0" | DWG NO. 82
DRAWN BY T. | CHKD BY O.D. | IN CHARGE S.J. | APPROVED M.M.

O. W. Hanak

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351)223	450-57-02	ST CHARLES	83



NOTES:
For General Notes See Dwg 2.
For Section C-C see Dwgs 85 & 86.
* Denotes Angle Values shown on Geometric Layout - 1 on Dwg. 8.

17	Note General		Chord
DATE	DESCRIPTION	BY	
	REVISIONS		

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

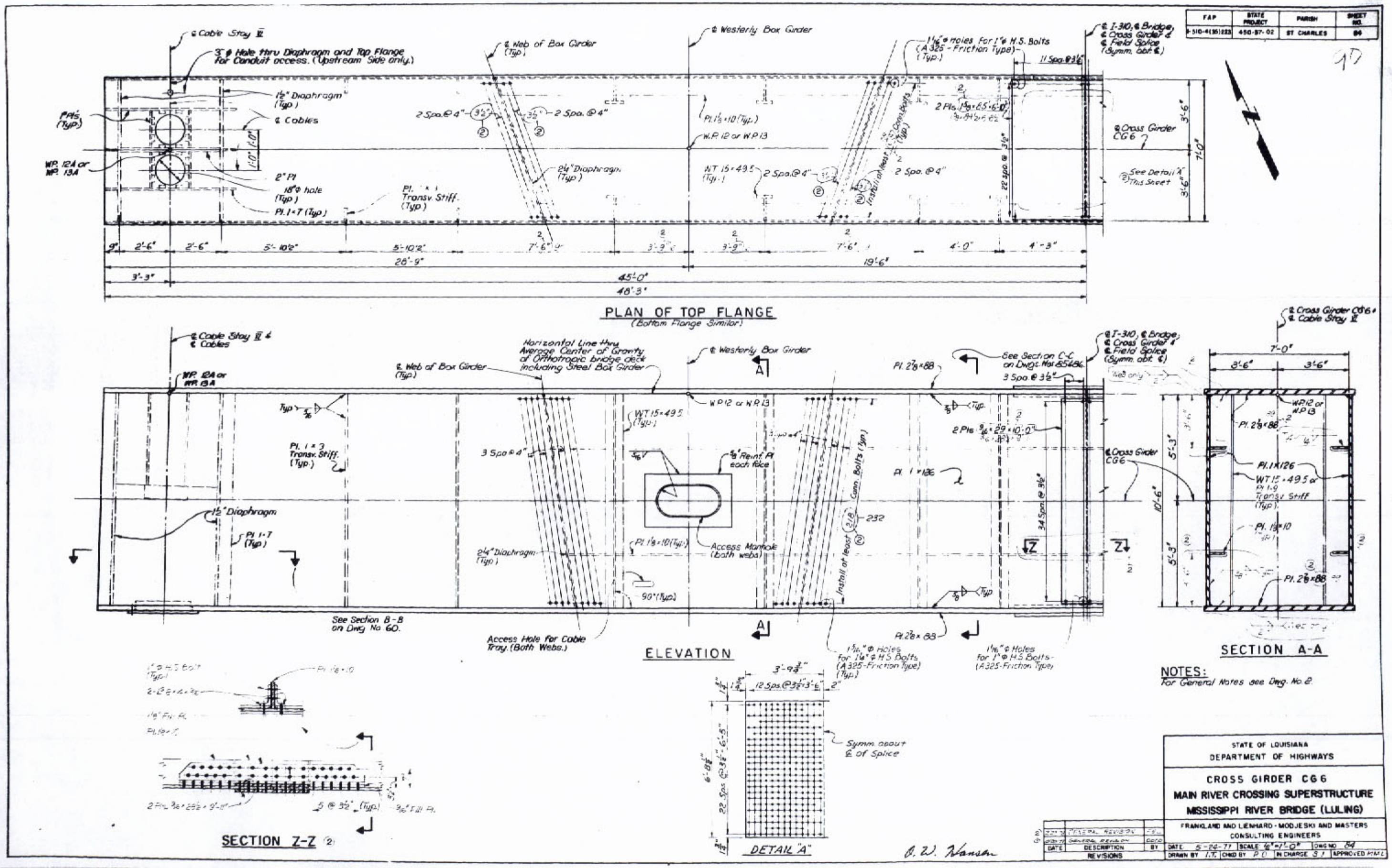
CROSS GIRDER CG 6
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1/4"=1'-0" | DWG NO. 63
DRAWN BY: J.T. | CHKD. BY: R.D. | IN CHARGE S.J. | APPROVED J.M.

O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
F-510-4(35)223	450-57-02	ST CHARLES	64



NOTES:
For General Notes see Dwg. No. 2.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG6
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LEONARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
2-23-77	GENERAL REVISION	CEW
2-23-77	GENERAL REVISION	CEW

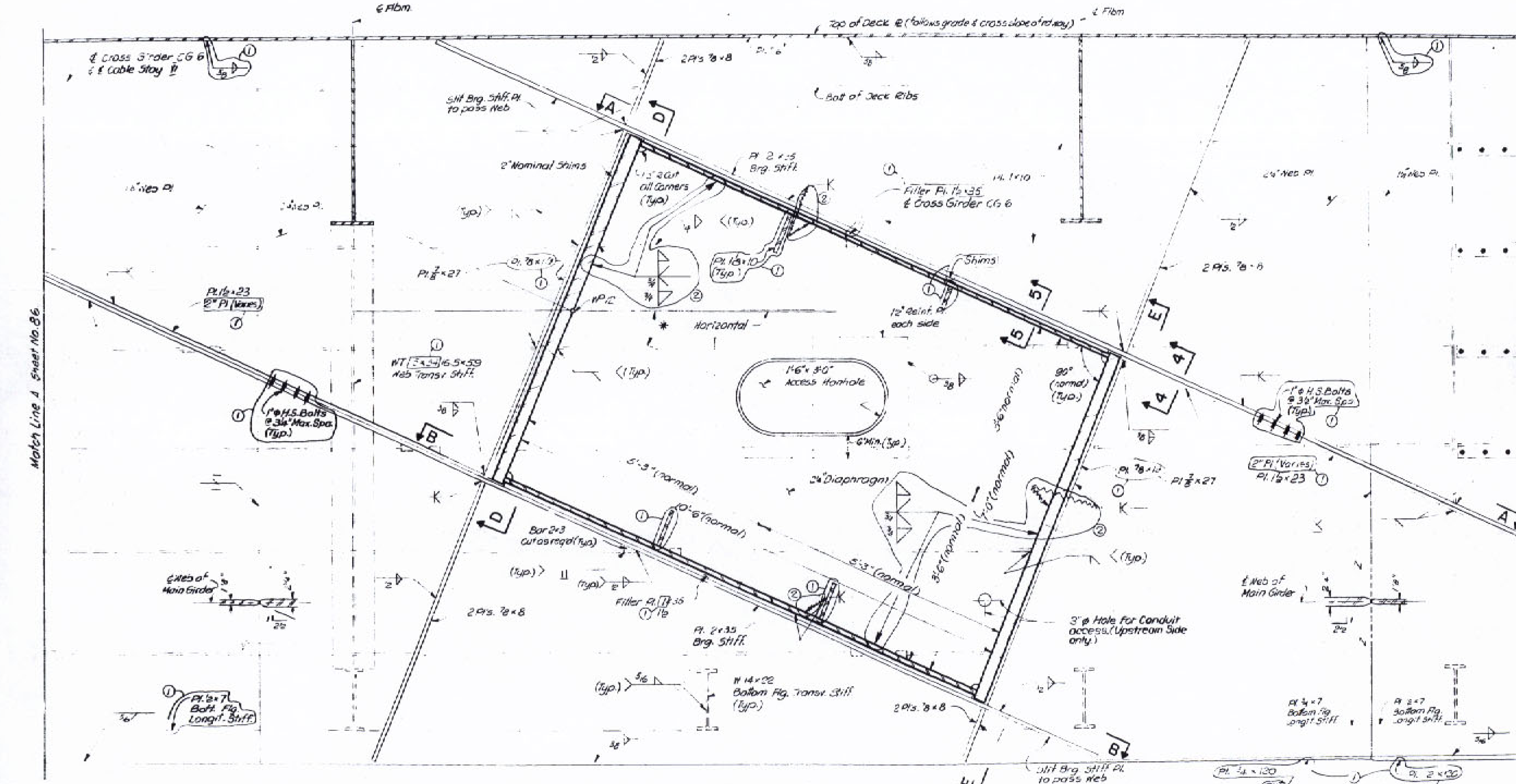
REVISIONS

DATE 5-24-77 | SCALE ½"=1'-0" | DWG NO. 64
DRAWN BY I.T. | CKD BY P.O. | IN CHARGE S.T. | APPROVED H.M.L.

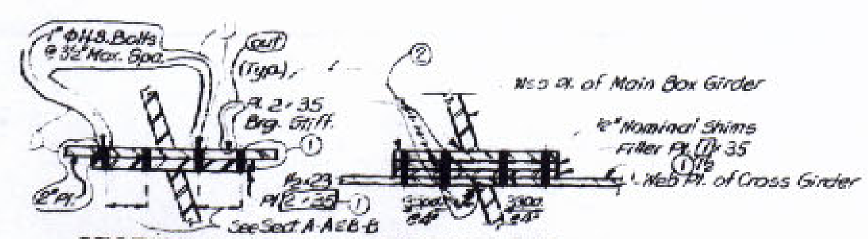
O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	88

91



SECTION C-C



SECTION 4-4
No Scale

SECTION 5-5
No Scale

Note: Dimensions and Angle Values marked thus: (Normal) are given in a vertical plane

NOTES:
For General Notes see Dwg. No 2.
* Denotes Angle Values shown on Geometric Layout-1 on Dwg. 8.

O. W. Hansen

	DATE	DESCRIPTION	BY
2		Design Revision	
1	2-27-78	General Revision	
		REVISIONS	

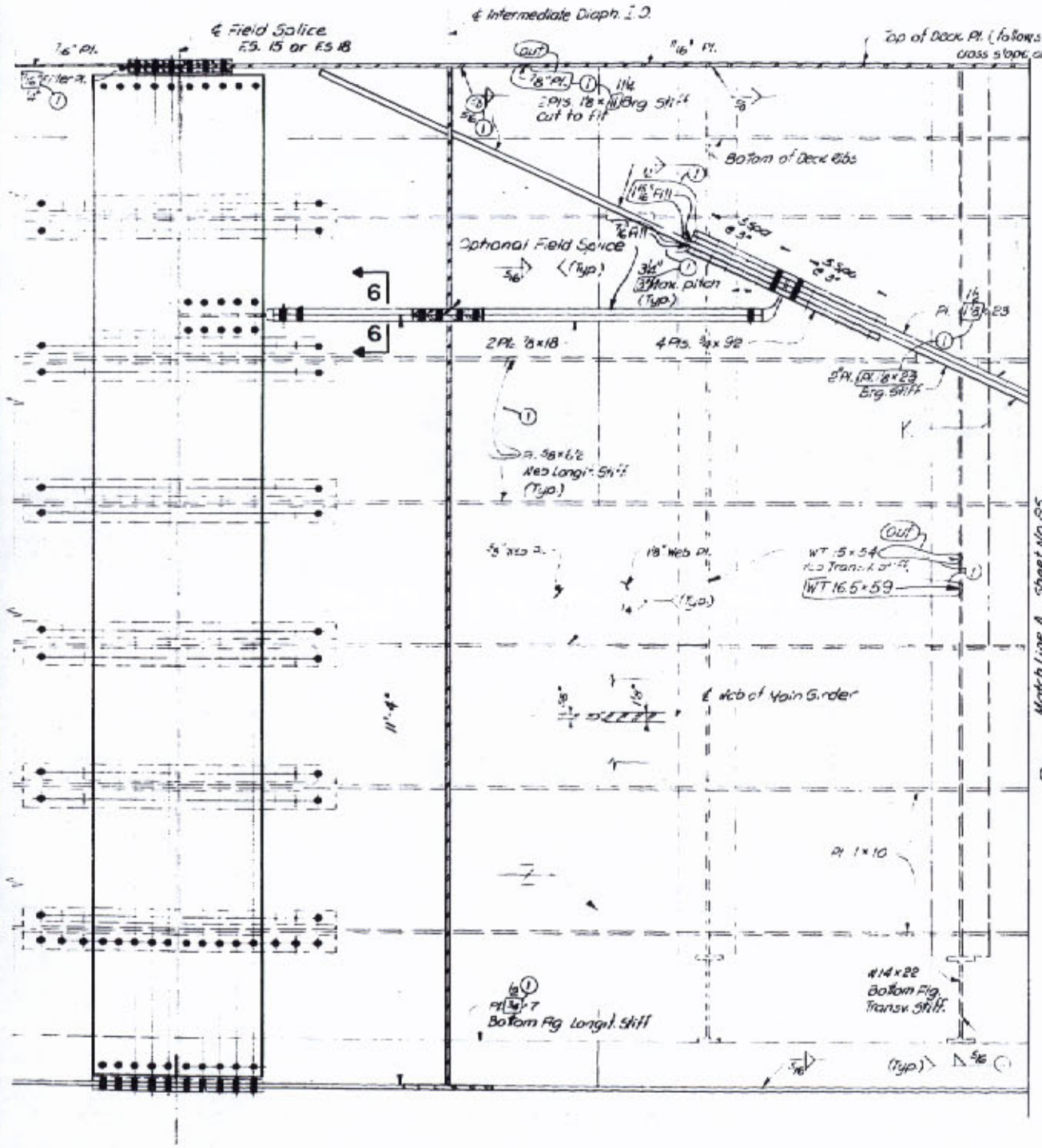
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

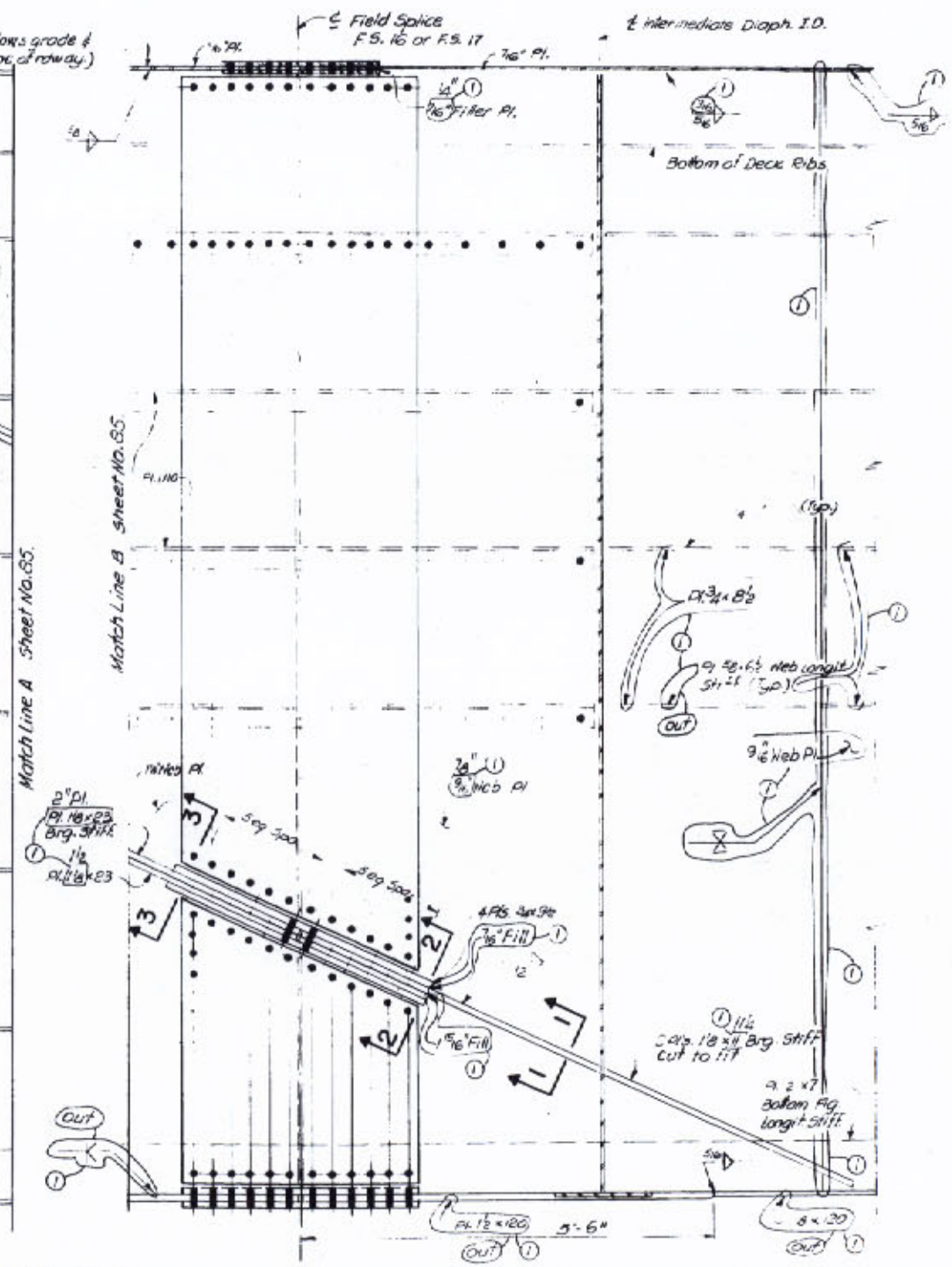
CROSS GIRDER CG6
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

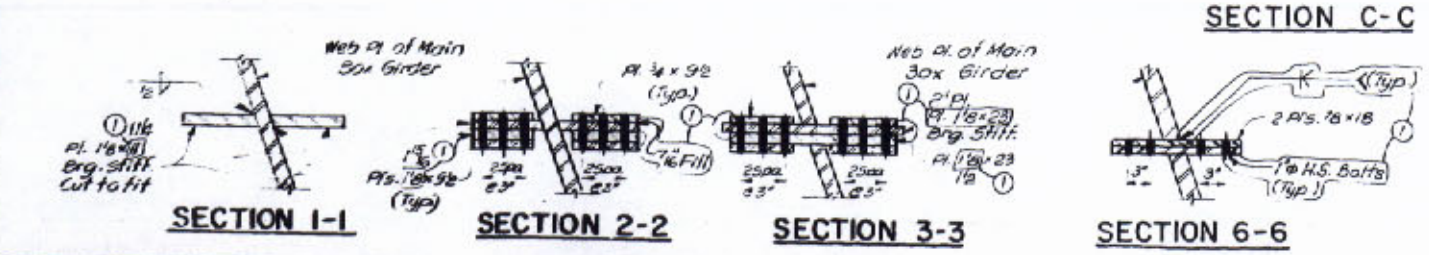
DATE 5-24-77 | SCALE 1" = 1'-0" | DWG NO. 85
DRAWN BY W.W. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED M.M.

FAP	STATE PROJECT	PARISH	SHEET NO.
F-340-4(351223)	450-87-02	ST. CHARLES	66





NOTES:
For General Notes see Dwg. No. 2.



O. W. Hansen

DATE	DESCRIPTION	BY	REV.
2-7-78	General Revision		1

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

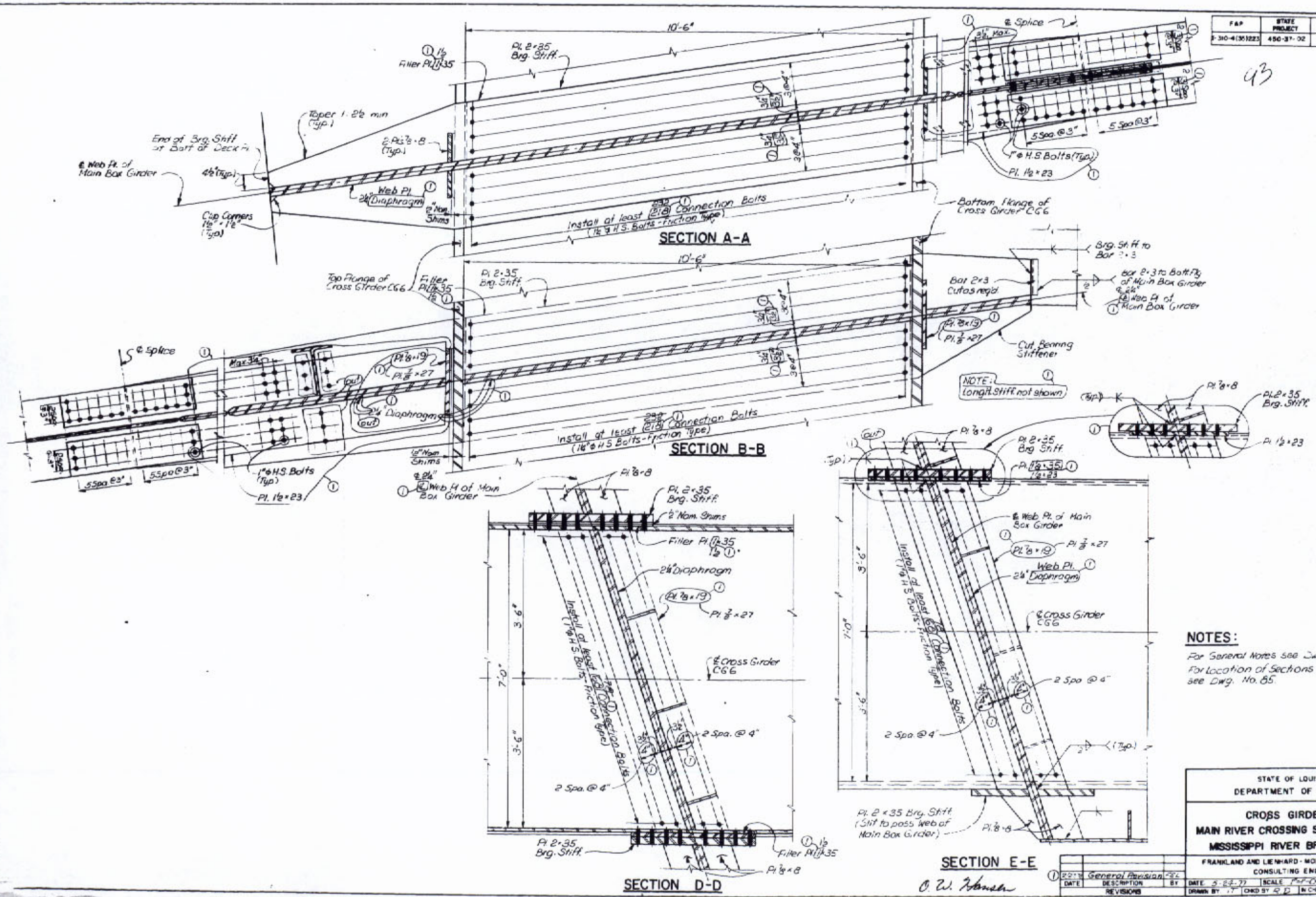
CROSS GIRDER CG 6
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-22-77 | SCALE 1"=1'-0" | DWG NO. 66
DRAWN BY: W.W. | CHKD BY: P.D. | IN CHARGE: S.J. | APPROVED: JML

F&P	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST CHARLES	67

93



NOTES:

For General Notes see Dwg. No. 2.
For Location of Sections A-A thru E-E see Dwg. No. 85.

O. W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CROSS GIRDER CG 6
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

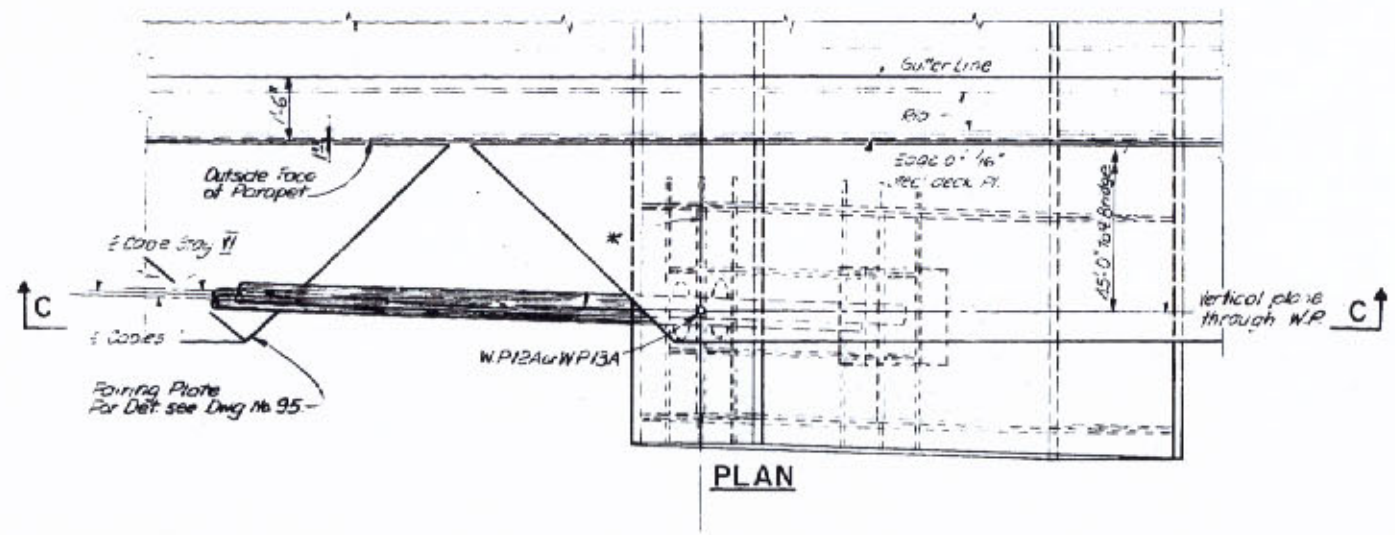
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
2-27-78	General Revision	FEL

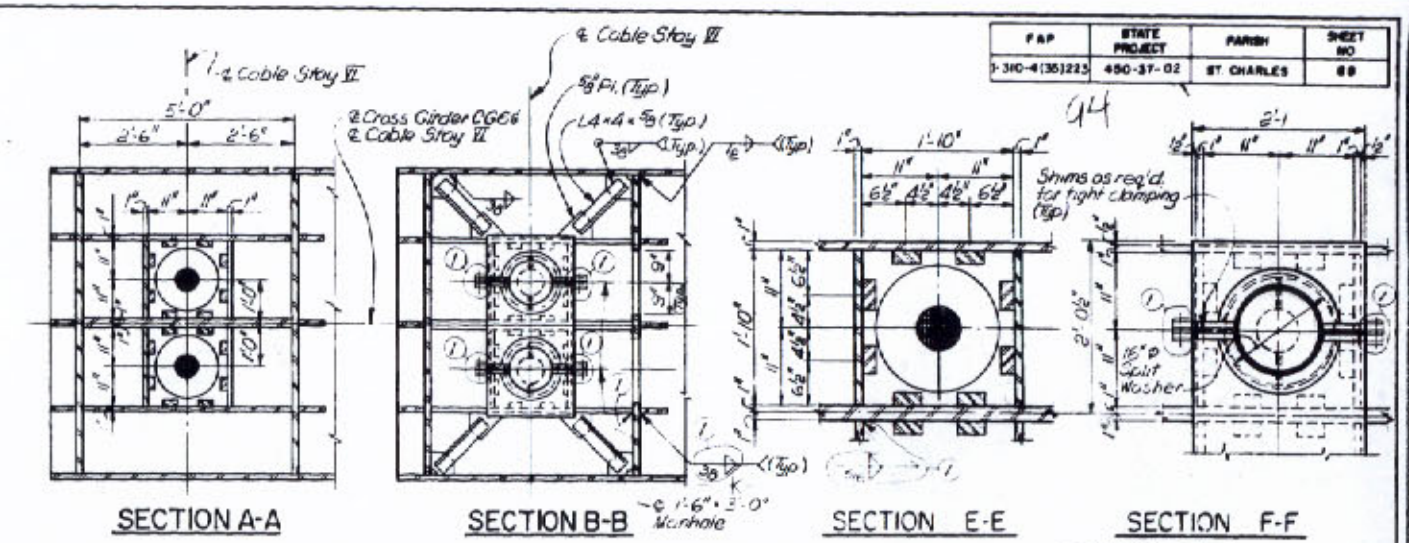
REVISIONS

DATE 5-24-77 | SCALE 1"=1'-0" | DWG NO. 5
DRAWN BY T | CHKD BY R.D. | IN CHARGE S.J. | APPROVED ASHL

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	88



PLAN

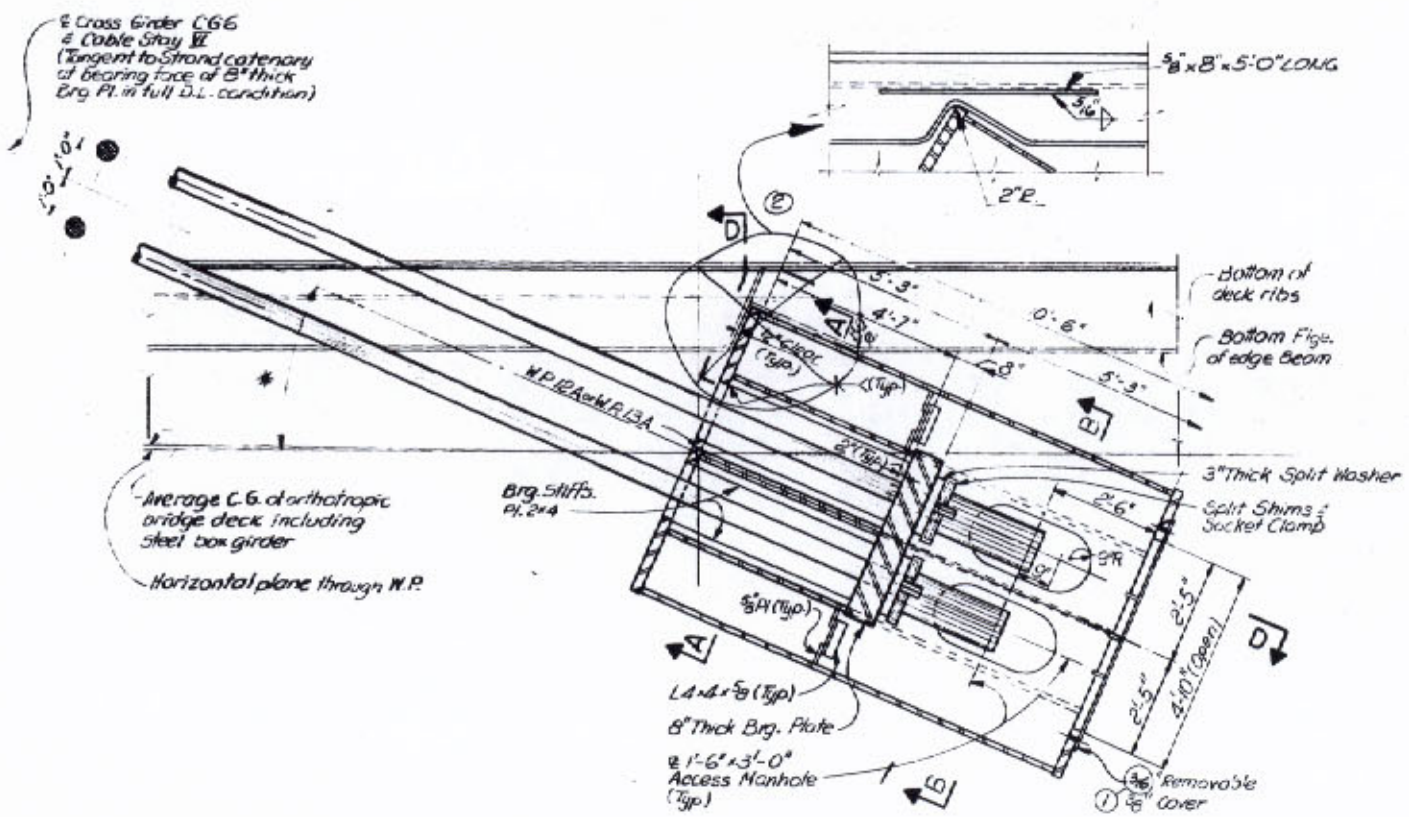


SECTION A-A

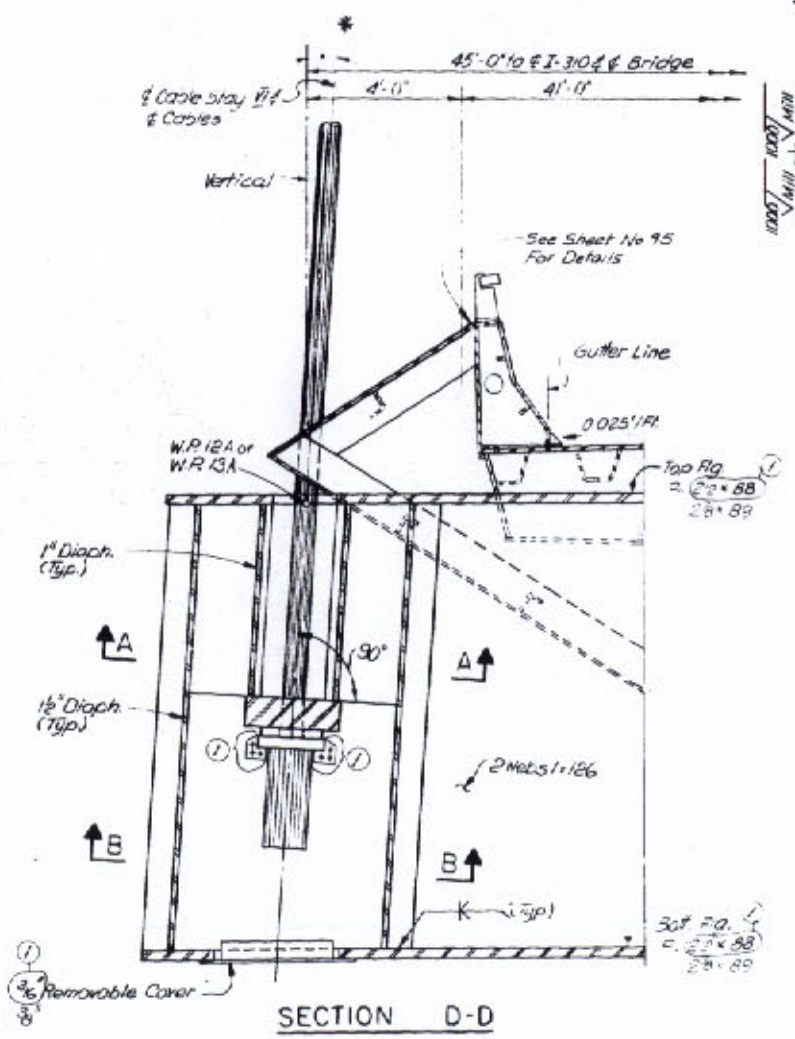
SECTION B-B

SECTION E-E

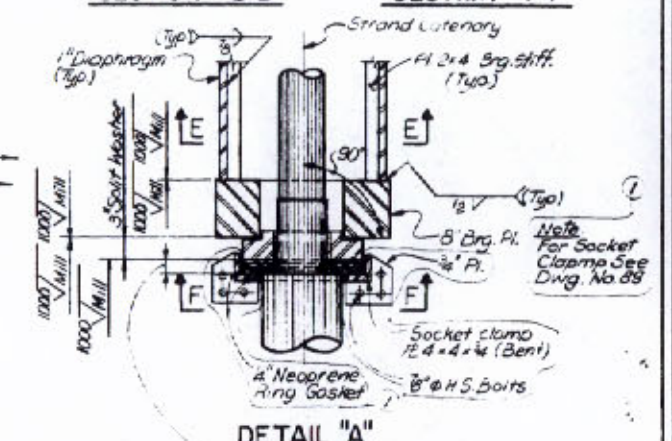
SECTION F-F



SECTION C-C



SECTION D-D



DETAIL "A"

2" Nominal Split Shims (both faces) where required for maintaining prescribed cable tension consistent with final bridge geometry as per Dwg. Nos. 86-16.

NOTES

For General Notes see Dwg. No. 2
* Denotes Angle values shown on Geometric Layout-1 on Dwg. 5

REVISIONS			
DATE	DESCRIPTION	BY	
3-16-79	Rev. Edge Beam	DOTD	
2-27-79	Alignment Revisions	FEC	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CABLE ANCHORAGE C6

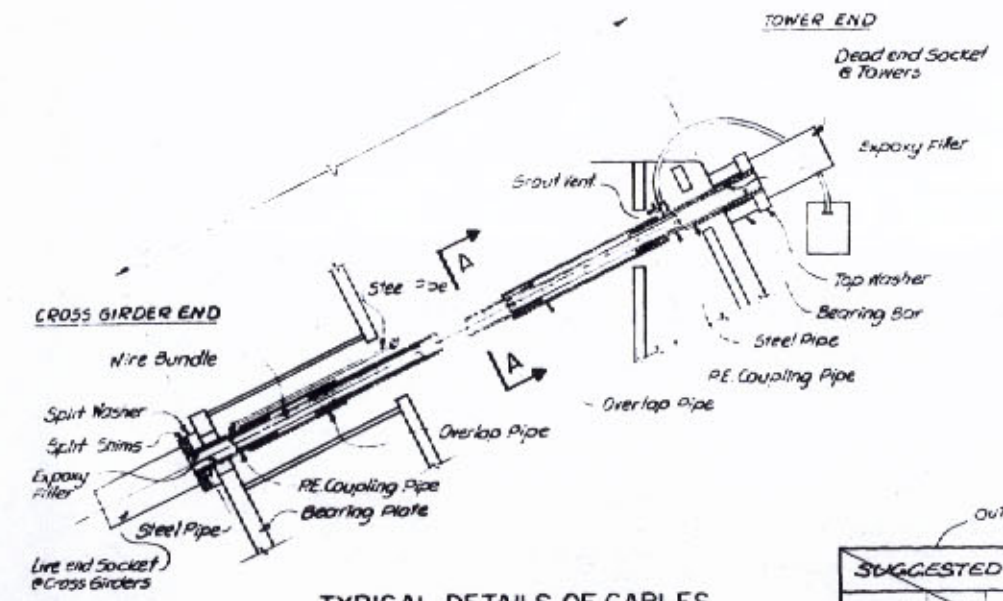
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 8-24-77	SCALE 3/8" = 1'-0"	DWG NO. 86
DRAWN BY W.K.	CHKD BY	IN CHARGE	APPROVED MBL

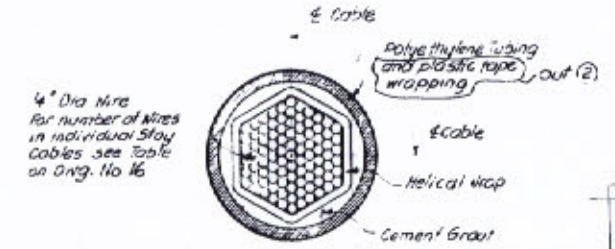
FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(351223)	450-37-02	ST CHARLES	69

45



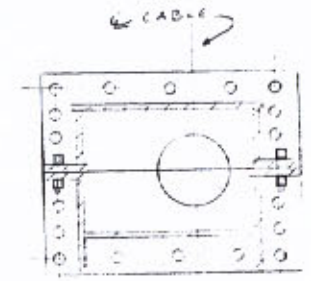
TYPICAL DETAILS OF CABLES

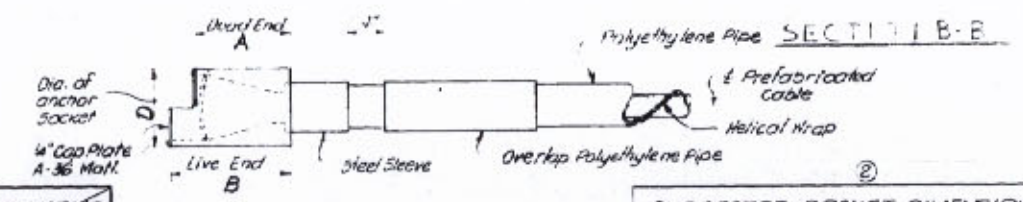
Note: See Special provisions for description of materials.



SECTION A-A

No Scale





SECTION B-B

ANCHOR SOCKET DETAILS

Note: Details & diam. as shown refer to Prescon Corp. standards used for detailing associated elements on this Project.

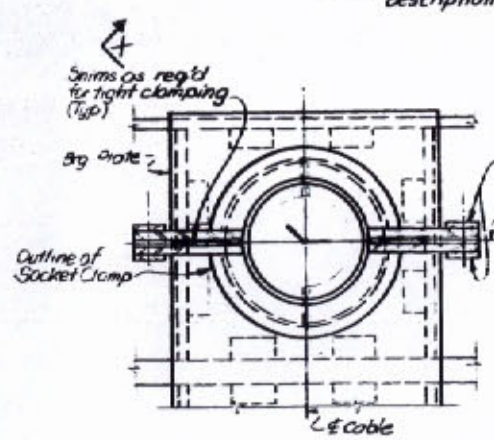
out (2)

SUGGESTED SOCKET DIMENSIONS						
Cable Stay	I	II	III	IV	V	VI
A (in)	18½	17½	17½	14½	17½	22
B (in)	22½	21	21	16½	21	28
D (in)	11¼	10	10	7½	10	12

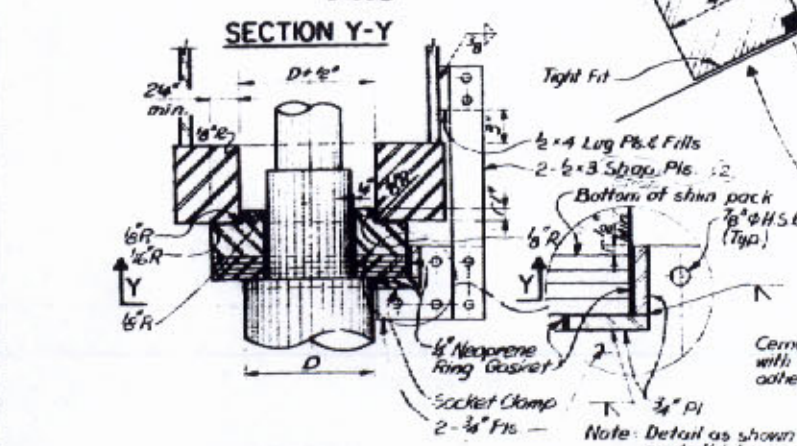
(2)

SUGGESTED SOCKET DIMENSIONS						
Cable Stay	I	II	III	IV	V	VI
A (in)	20¾	16⅜	16⅜	13⅜	16⅜	20¾
B (in)	27½	22	22	17½	22	27½
D (in)	11½	10¾	10¾	7½	10¾	(X) (3)

12½



SECTION Y-Y

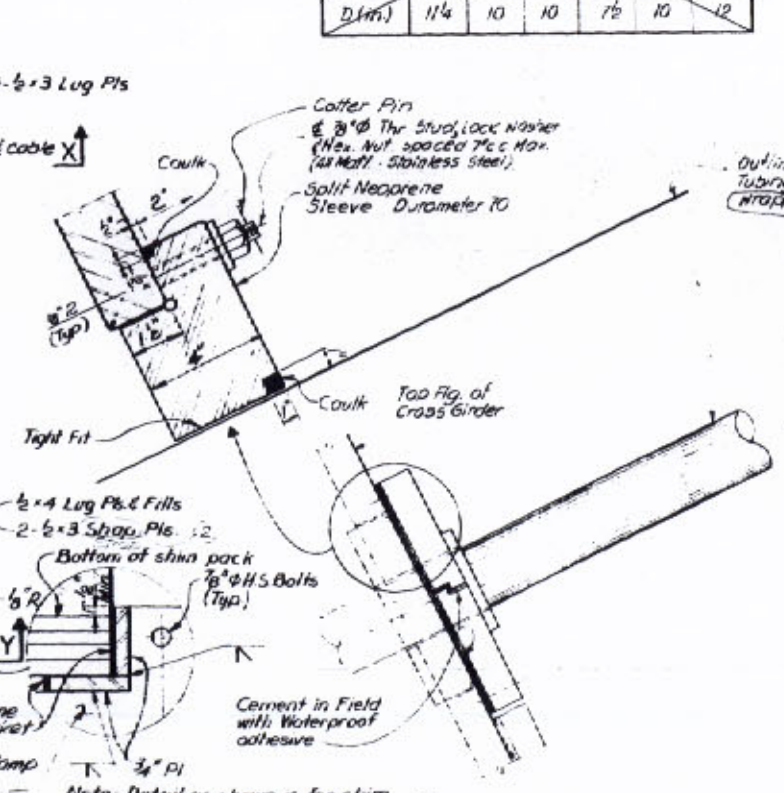


SECTION X-X

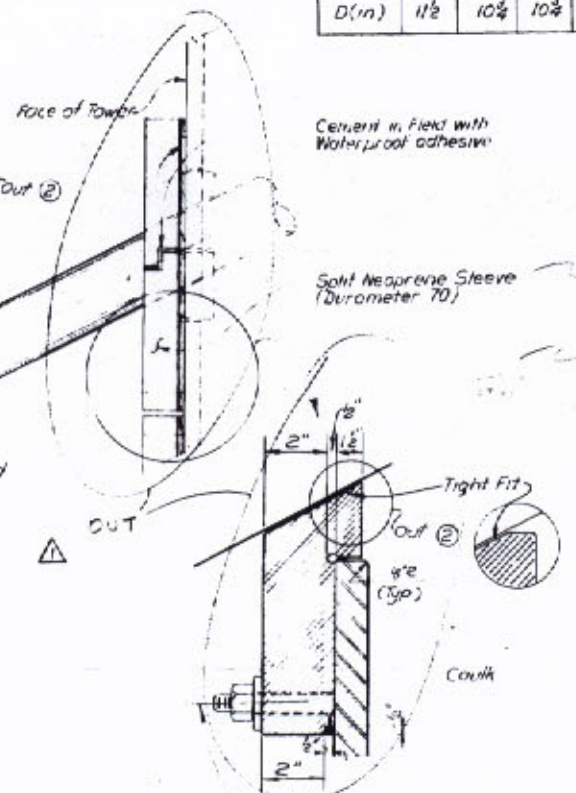
Note: Detail as shown is for shim pack thickness not exceeding 3". If 3" is exceeded by the contractor the thicker shim pack shall be stabilized by appropriate means.

SHIM & SPLIT WASHER RESTRAINT DETAILS

Scale 12" = 1'-0"



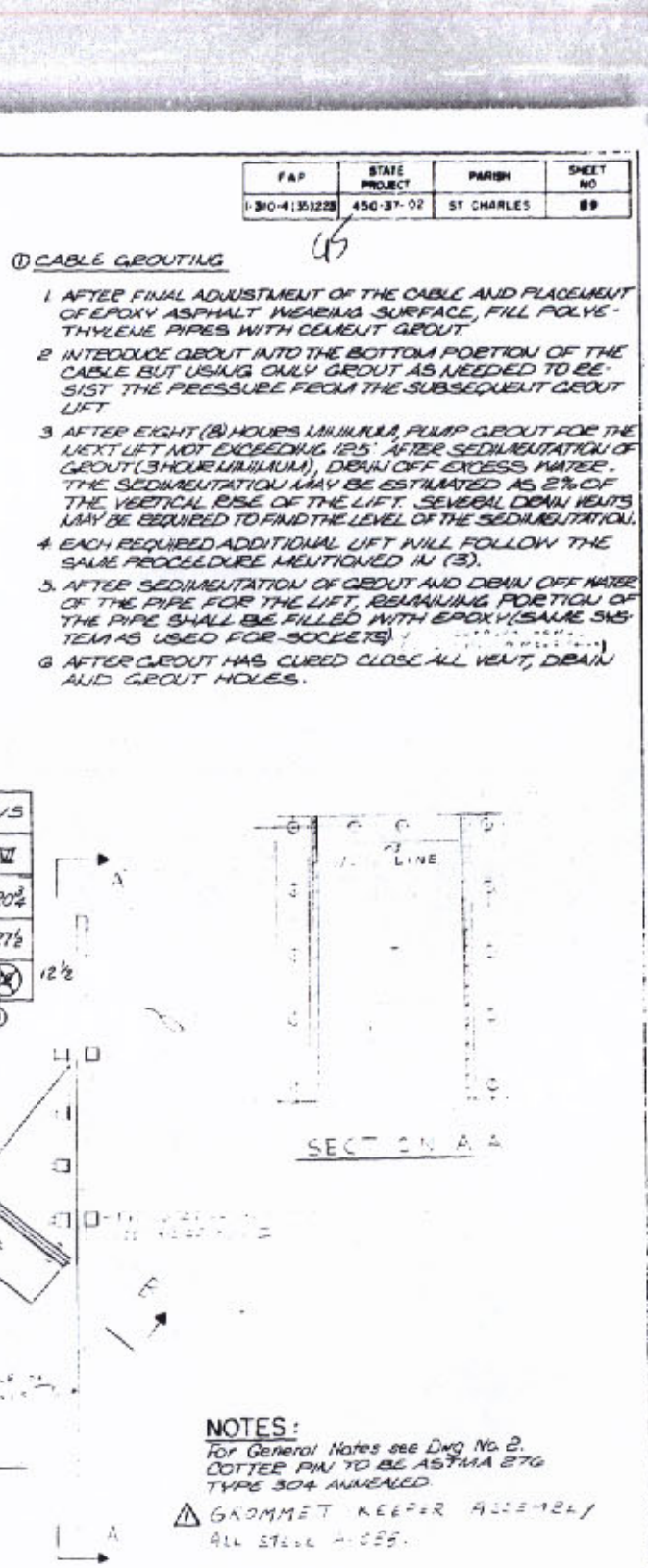
CROSS GIRDER END



TOWER END

NEOPRENE SLEEVE DETAILS

Scale ½" = 1'-0", 3" = 1'-0"



① CABLE GROUTING

1. AFTER FINAL ADJUSTMENT OF THE CABLE AND PLACEMENT OF EPOXY ASPHALT WEARING SURFACE, FILL POLYETHYLENE PIPES WITH CEMENT GROUT.
2. INTRODUCE GROUT INTO THE BOTTOM PORTION OF THE CABLE BUT USING ONLY GROUT AS NEEDED TO RESIST THE PRESSURE FROM THE SUBSEQUENT GROUT LIFT.
3. AFTER EIGHT (8) HOURS MINIMUM, PUMP GROUT FOR THE NEXT LIFT NOT EXCEEDING 12.5' AFTER SEDIMENTATION OF GROUT (3 HOUR MINIMUM), DRAIN OFF EXCESS WATER. THE SEDIMENTATION MAY BE ESTIMATED AS 2% OF THE VERTICAL RISE OF THE LIFT. SEVERAL DRAIN VENTS MAY BE REQUIRED TO FIND THE LEVEL OF THE SEDIMENTATION.
4. EACH REQUIRED ADDITIONAL LIFT WILL FOLLOW THE SAME PROCEDURE MENTIONED IN (3).
5. AFTER SEDIMENTATION OF GROUT AND DRAIN OFF WATER OF THE PIPE FOR THE LIFT, REMAINING PORTION OF THE PIPE SHALL BE FILLED WITH EPOXY (SAME SYSTEM AS USED FOR SOCKETS).
6. AFTER GROUT HAS CURED CLOSE ALL VENT, DRAIN AND GROUT HOLES.

NOTES:

For General Notes see Dwg. No. 2.
COTTER PIN TO BE ASTM A 276 TYPE 304 ANNEALED.
⚠ GROMMET KEEPER ASSEMBLY ALL STEEL HOSE.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CABLE ANCHORAGE - MISCELLANEOUS DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

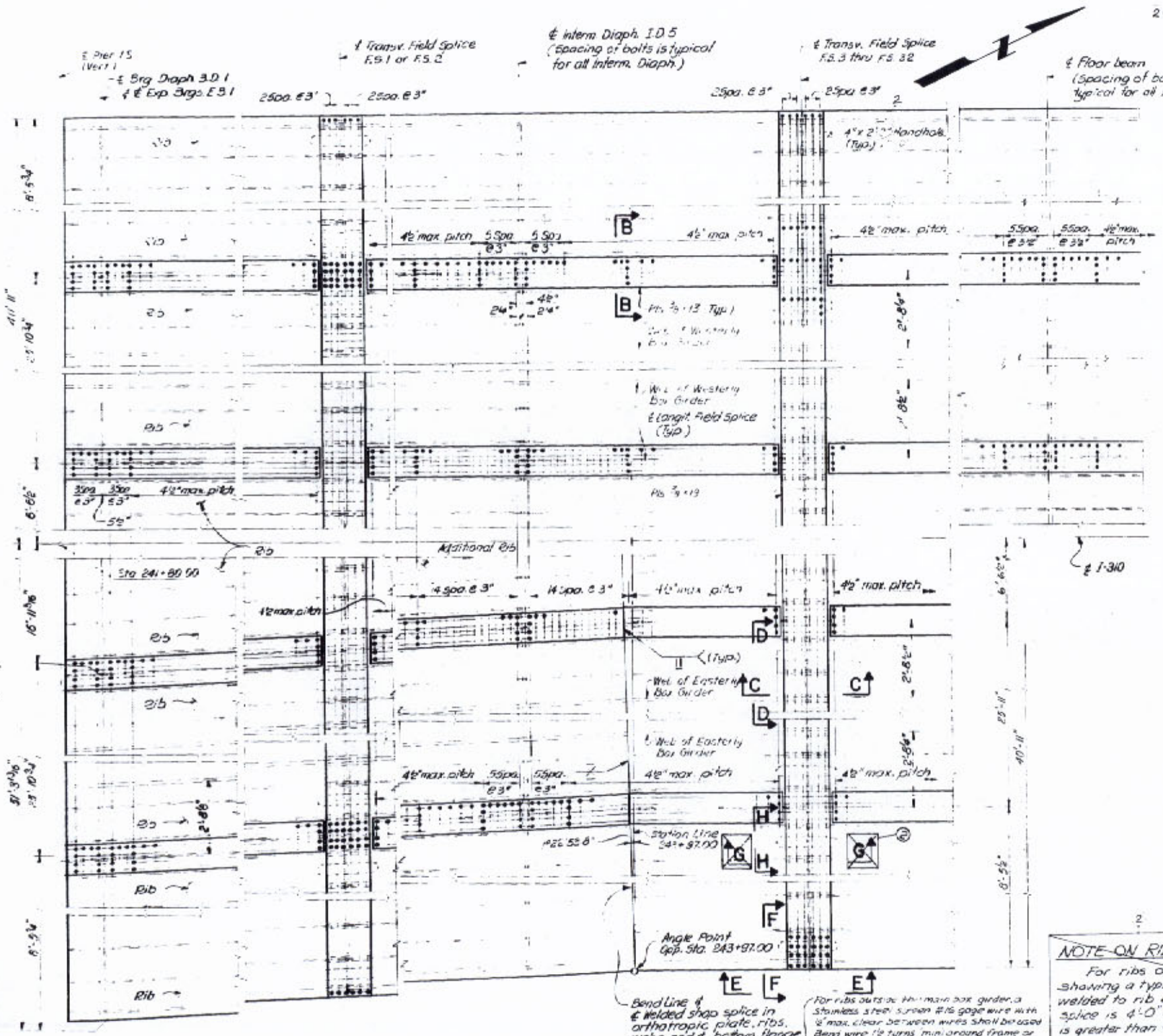
DATE	DESCRIPTION	BY
	Minor Revision	
	GENERAL REVISION	

REVISIONS

DATE 5-24-77 | SCALE AS SHOWN | DWG. NO. 69
DRAWN BY W.M. | CHKD. BY R.D. | IN CHARGE S.J. | APPROVED R.W.L.

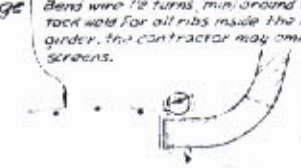
O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-57-02	ST CHARLES	90

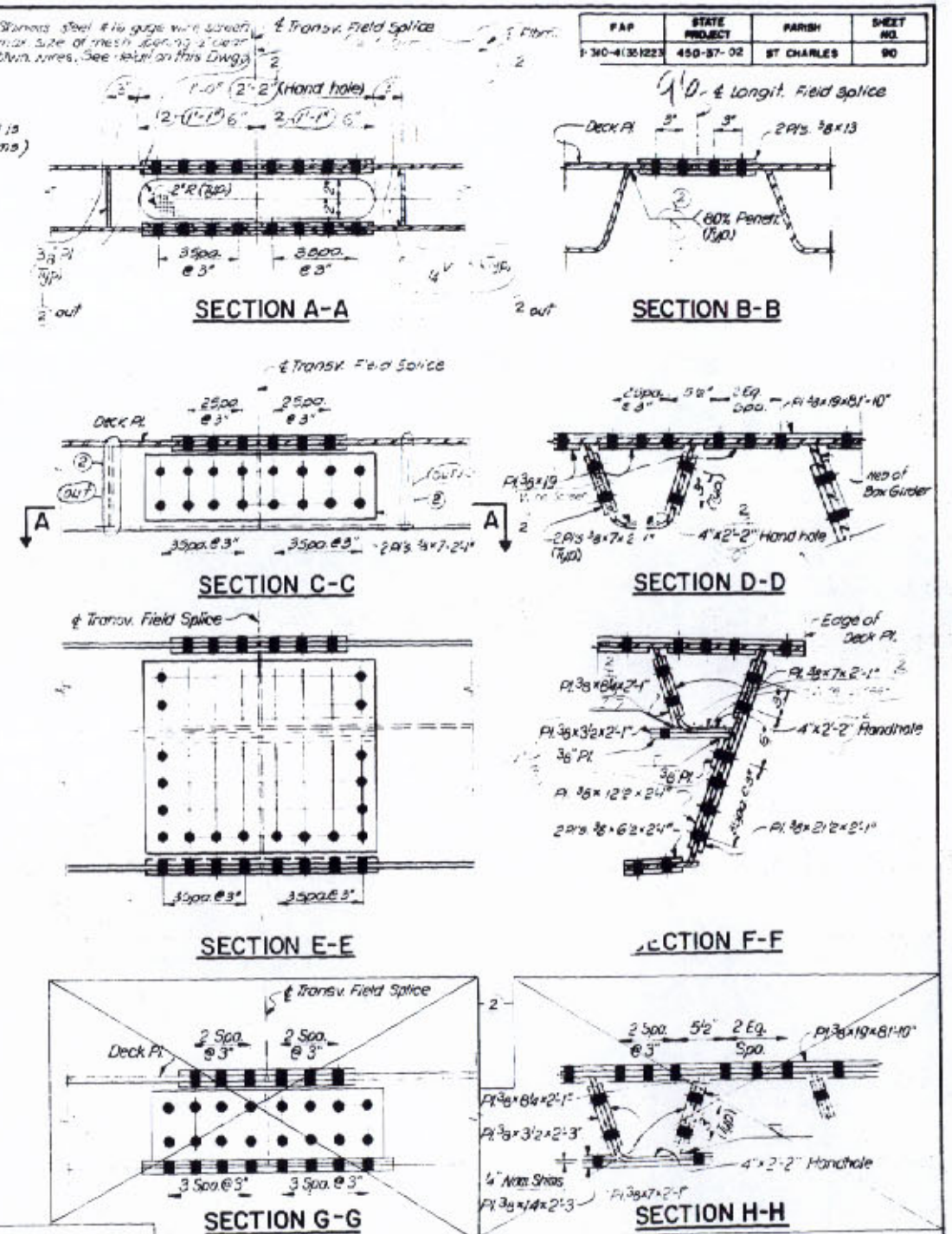


PLAN AT TOP OF DECK PLATE

For ribs outside the main box girder, a Stainless steel screen #16 gage wire with ½" max. clear between wires shall be used. Bend wire 1½ turns, min. around frame or tack weld for all ribs inside the main box girder, the contractor may omit steel screens.



2 SCREEN DETAIL
NO SCALE



NOTE ON RIB SPLICES:

For ribs outside the Main Box Girders, sections A-A, C-C and D-D, showing a typical rib splice with open hand holes and sealing diaphragms welded to rib and deck plate, shall be used where the transverse deck field splice is 4'-0" or less from an adjacent floorbeam. If the splice distance is greater than 4'-0", then sections G-G and H-H shall be used.

For all ribs inside the Main Box Girders, sections A-A, C-C and D-D shall be used, however, the contractor may omit the sealing diaphragms.

NOTES:

For General Notes see Dwg. 2

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

ORTHOTROPIC DECK DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

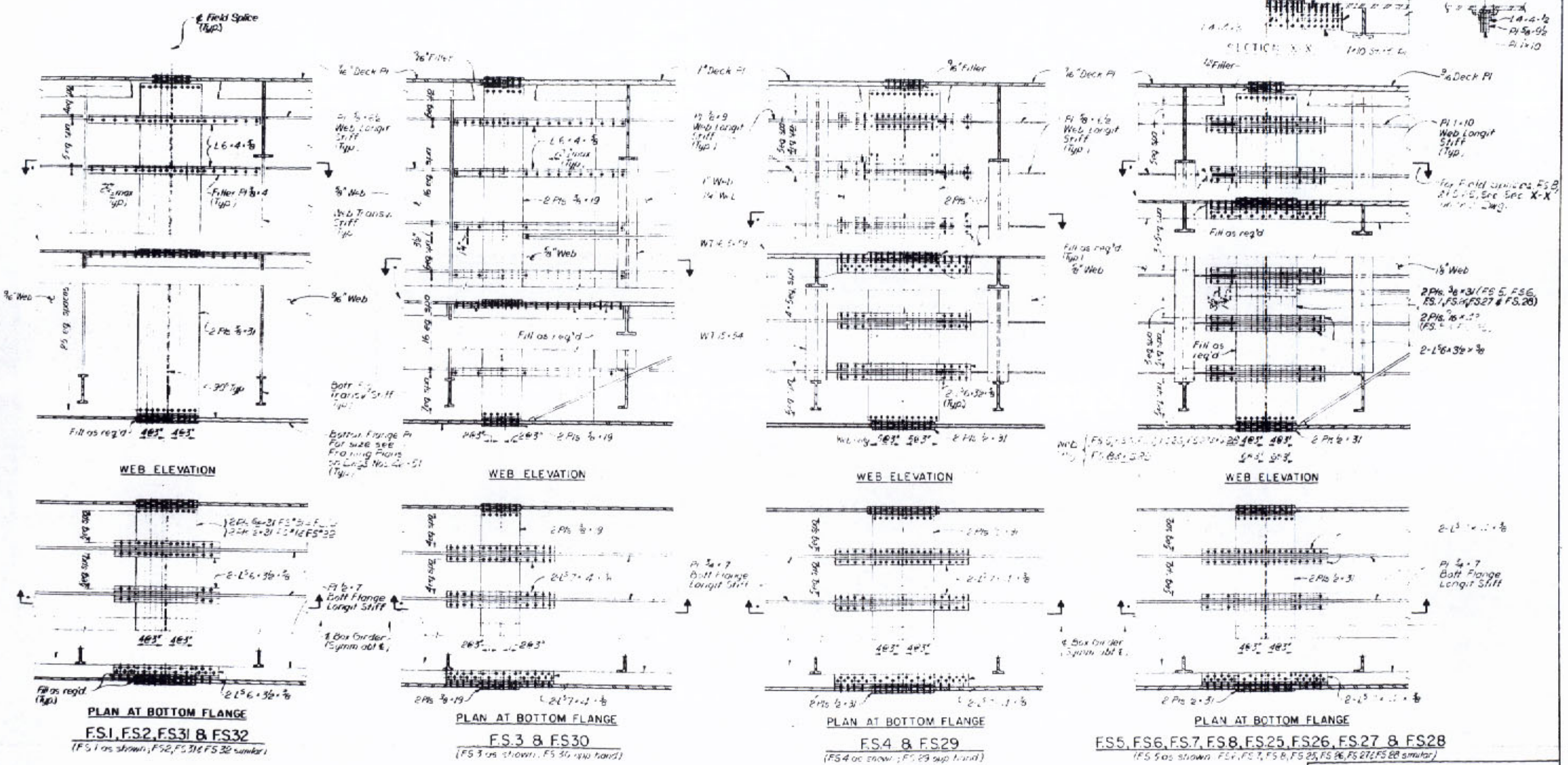
DATE	DESCRIPTION	BY
2) 2-2-78	General Revision	
1) 12-20-77	Deck Pl.	

REVISIONS

DATE 5-24-77 | SCALE 3/4" = 1'-0" | DWG NO. 90
DRAWN BY A.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MNL

O. W. Homes

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-510-4(5)1223	450-37-02	ST. CHARLES	91



NOTES:
For General Notes see Dwg. 2

TRANSVERSE FIELD SPLICE DETAILS

O. W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

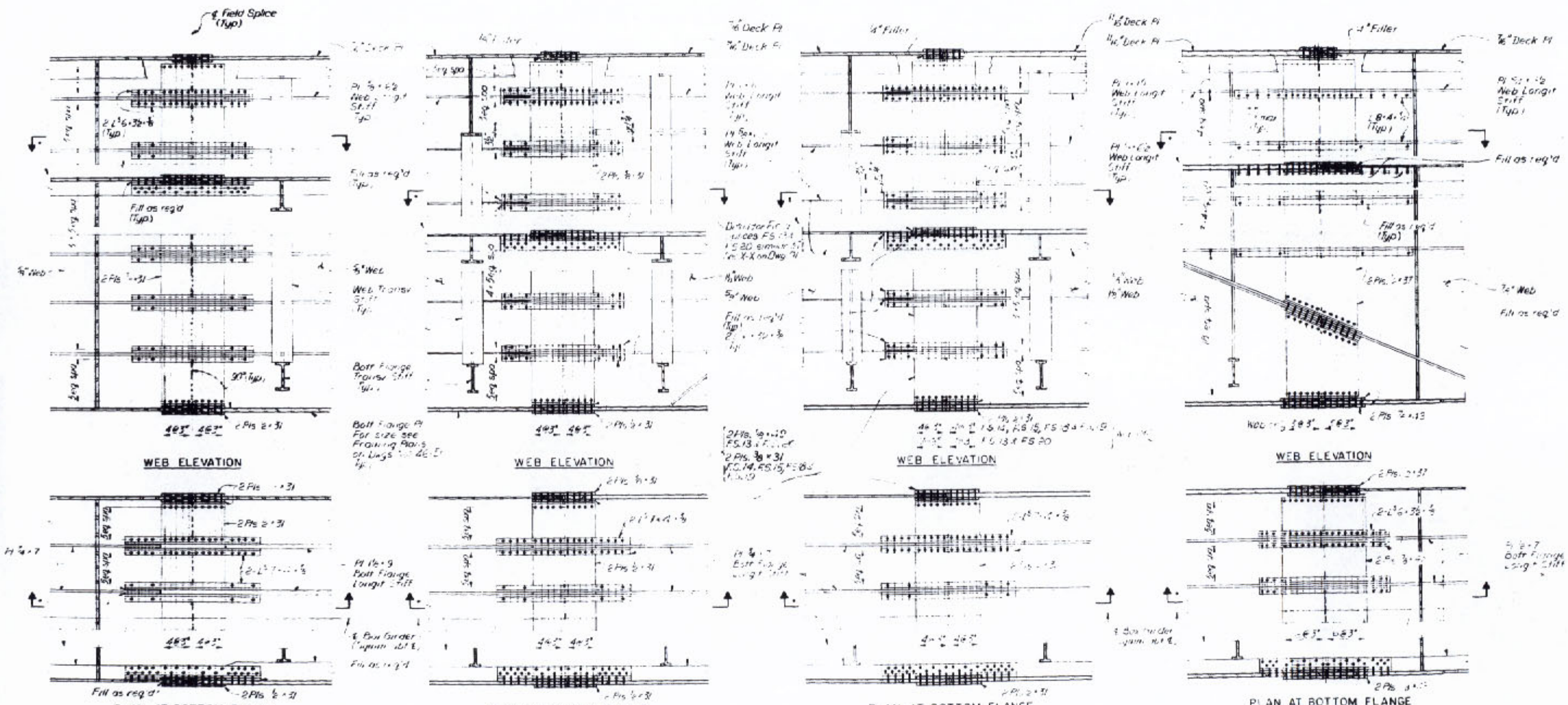
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

BOX GIRDER DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 4-13-77 | SCALE | DWG NO. | DRAWN BY A.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MM.

FAP	STATE PROJECT	PARISH	SHEET NO
[illegible]	450 37 [illegible]	ST CHARLES	92



NOTES:

TRANSVERSE FIELD SPLICE DETAILS

O.W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

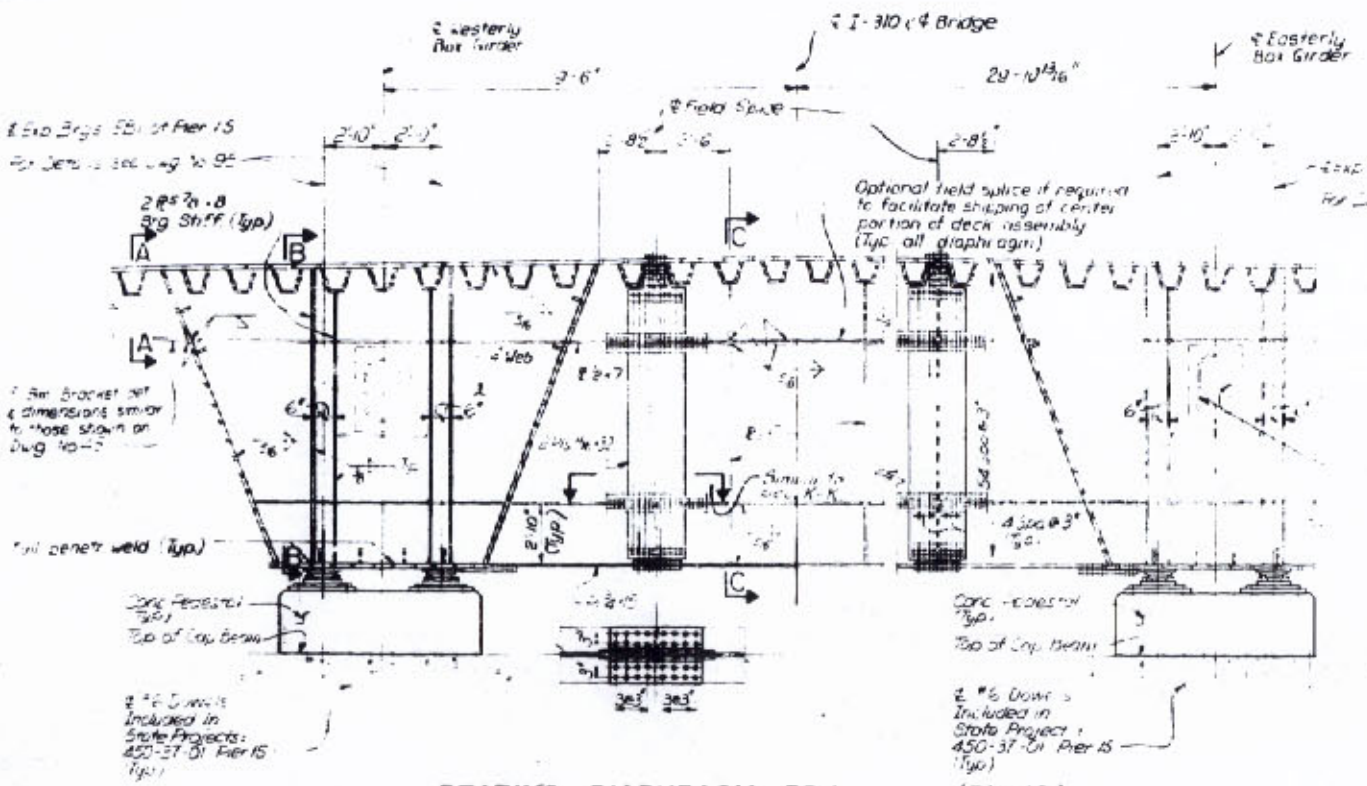
BOX GIRDER DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

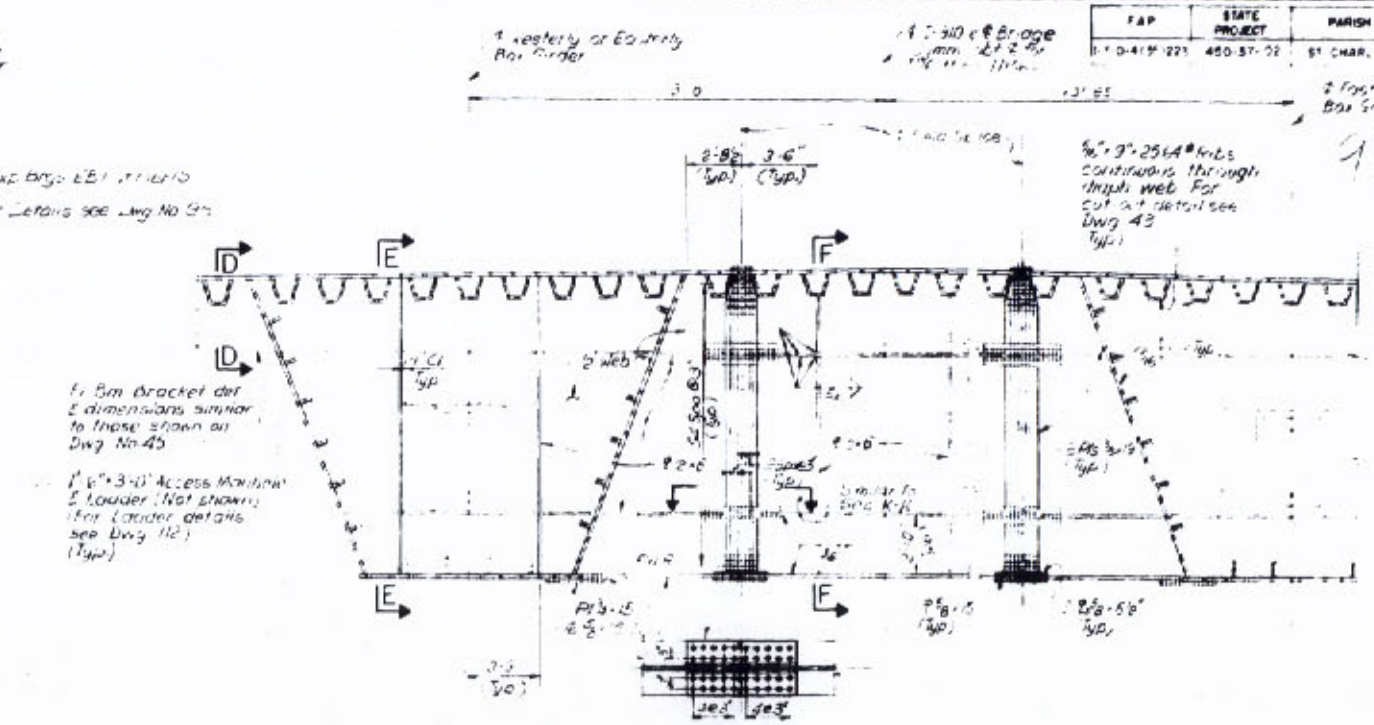
DATE	DESCRIPTION	BY
	REVISIONS	

DATE 4-23-77 | SCALE 2" = 1'-0" | DWG NO 92
DRAWN BY A.C. | CHKD BY R.D. | IN CHARGE [illegible] | APPROVED MML

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-10-4(15)223	450-37-02	ST. CHARLES	93



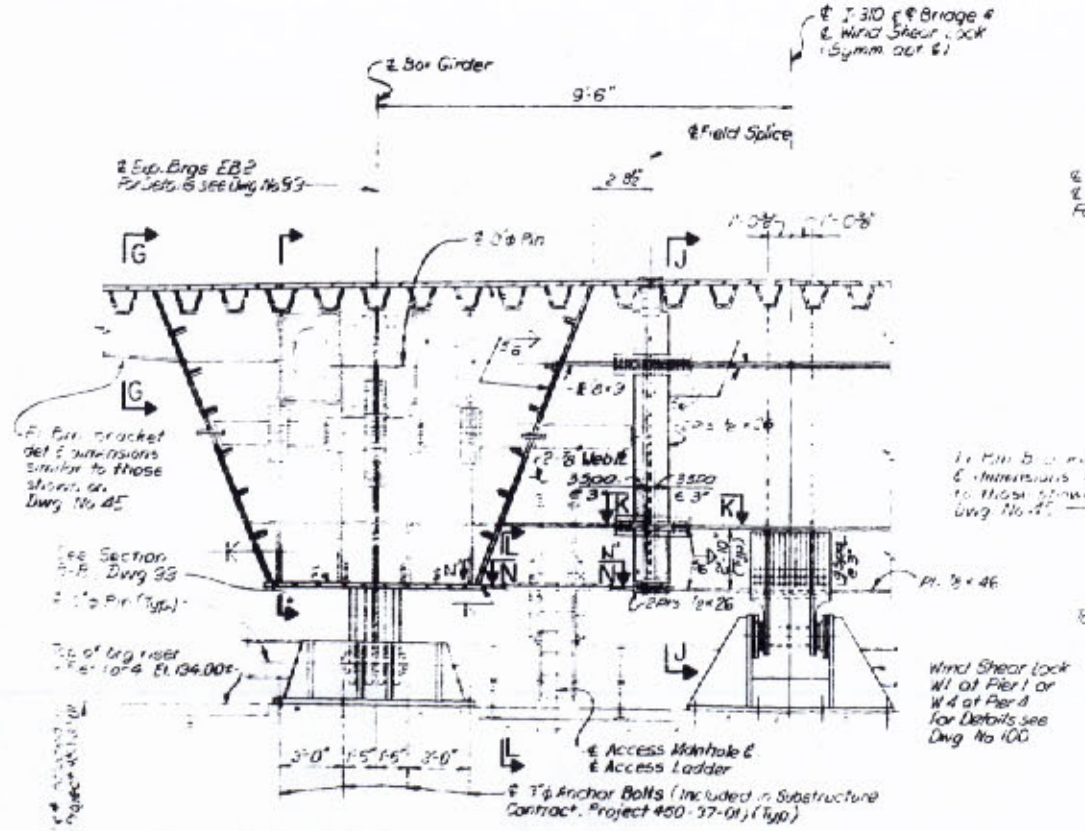
BEARING DIAPHRAGM BD 1 (Pier 1S)



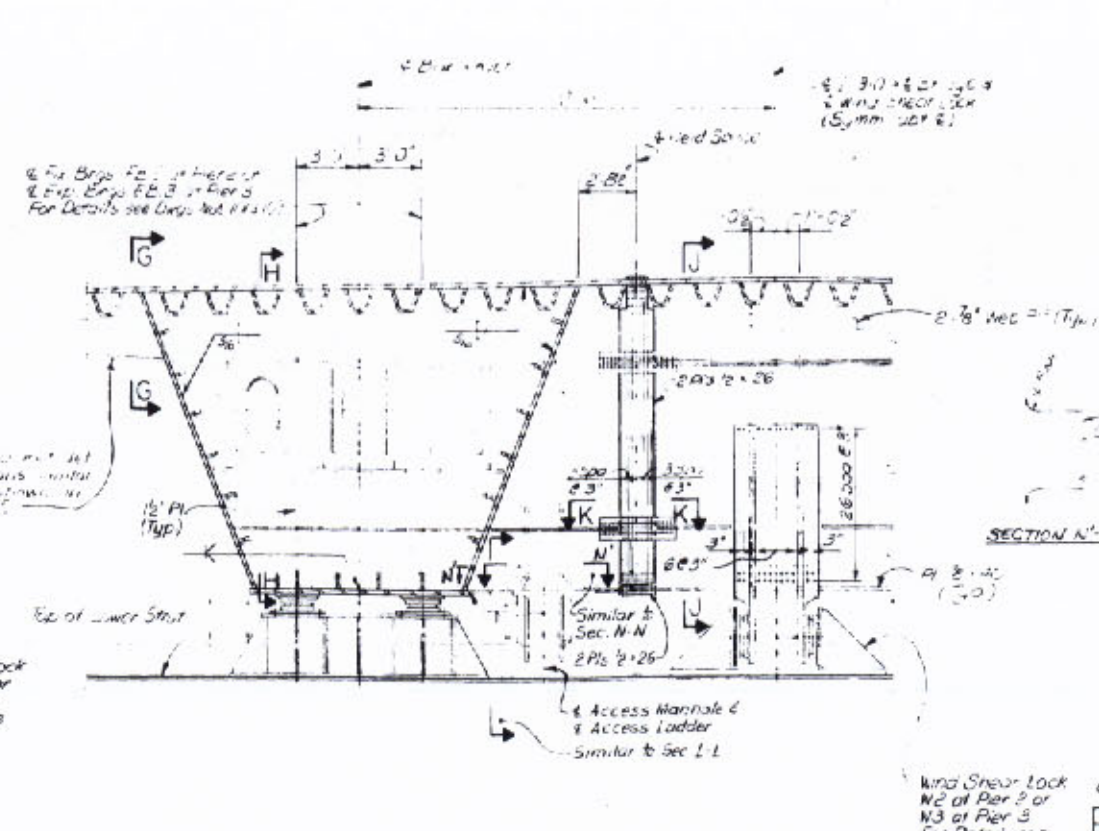
HALF ELEV. OF ID 6 - ID 56 OR WESTERLY PORTION OF ID 1 - ID 5

ELEV. OF EASTERLY PORTION OF ID 1 - ID 5

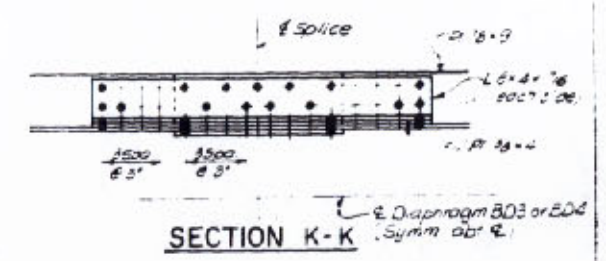
INTERMEDIATE DIAPHRAGM



BEARING DIAPHRAGM BD 2 & BD 5 (Pier #1 & #4)



BEARING DIAPHRAGM BD 3 & BD 4 (Pier #2 & #3)



SECTION K-K

SECTION N'-N'

NOTES

For General Notes see Dwg No 2

For Location of deck diaphragms see Key Framing Plans Dwg No's 4-5

Wind Shear Lock W1 at Pier 1 or W4 at Pier 4 For Details see Dwg No 100

Wind Shear Lock W2 at Pier 2 or W3 at Pier 3 For Details see Dwgs Nos 102 & 104

O.W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

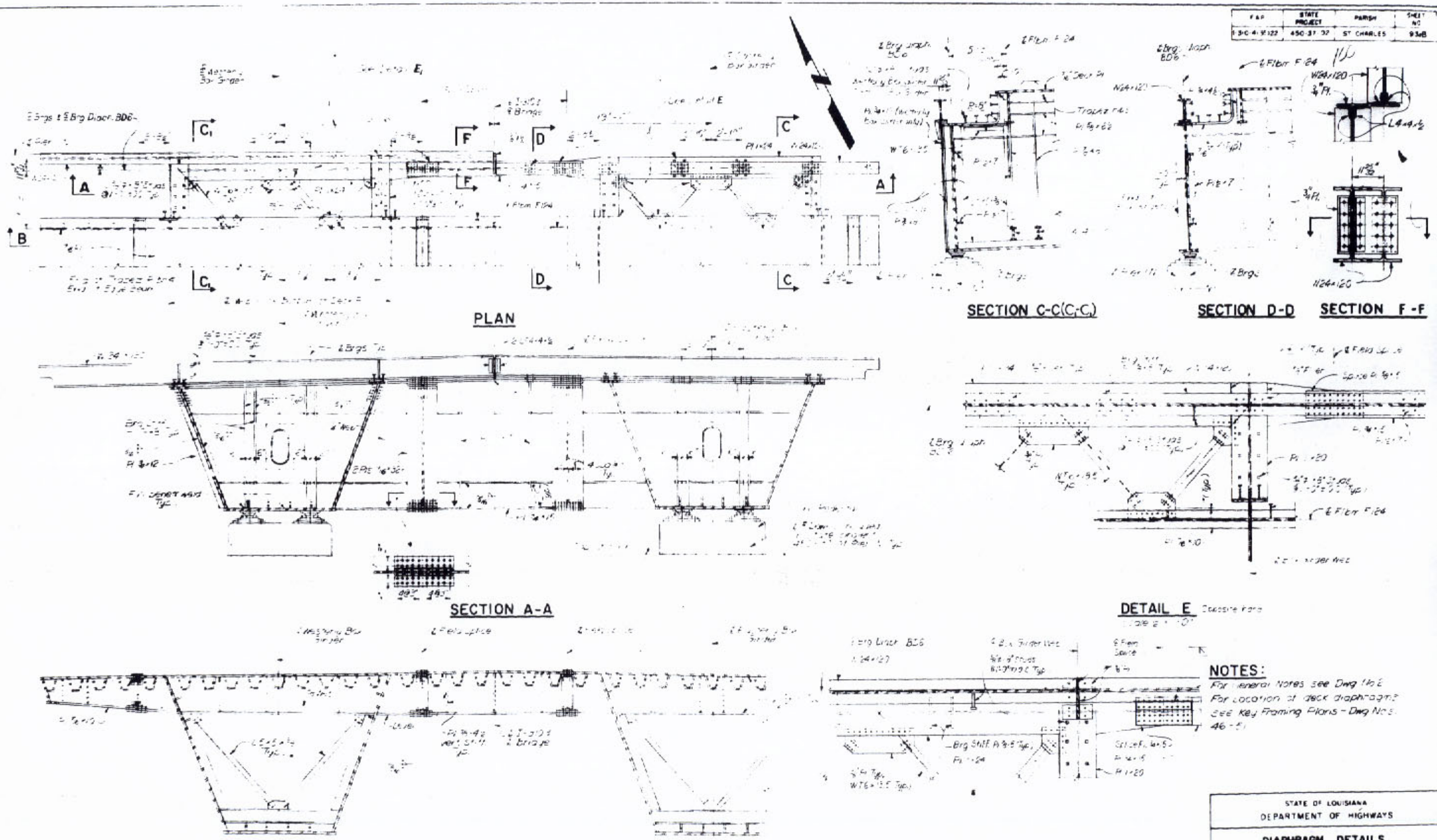
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DIAPHRAGM DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

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

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
1-310-4(35)122	450-37-32	ST. CHARLES	93aB



NOTES:

For General Notes see Dwg No. 2

For Location of deck diaphragms see Key Framing Plans - Dwg Nos. 46-51

O. W. Hansen

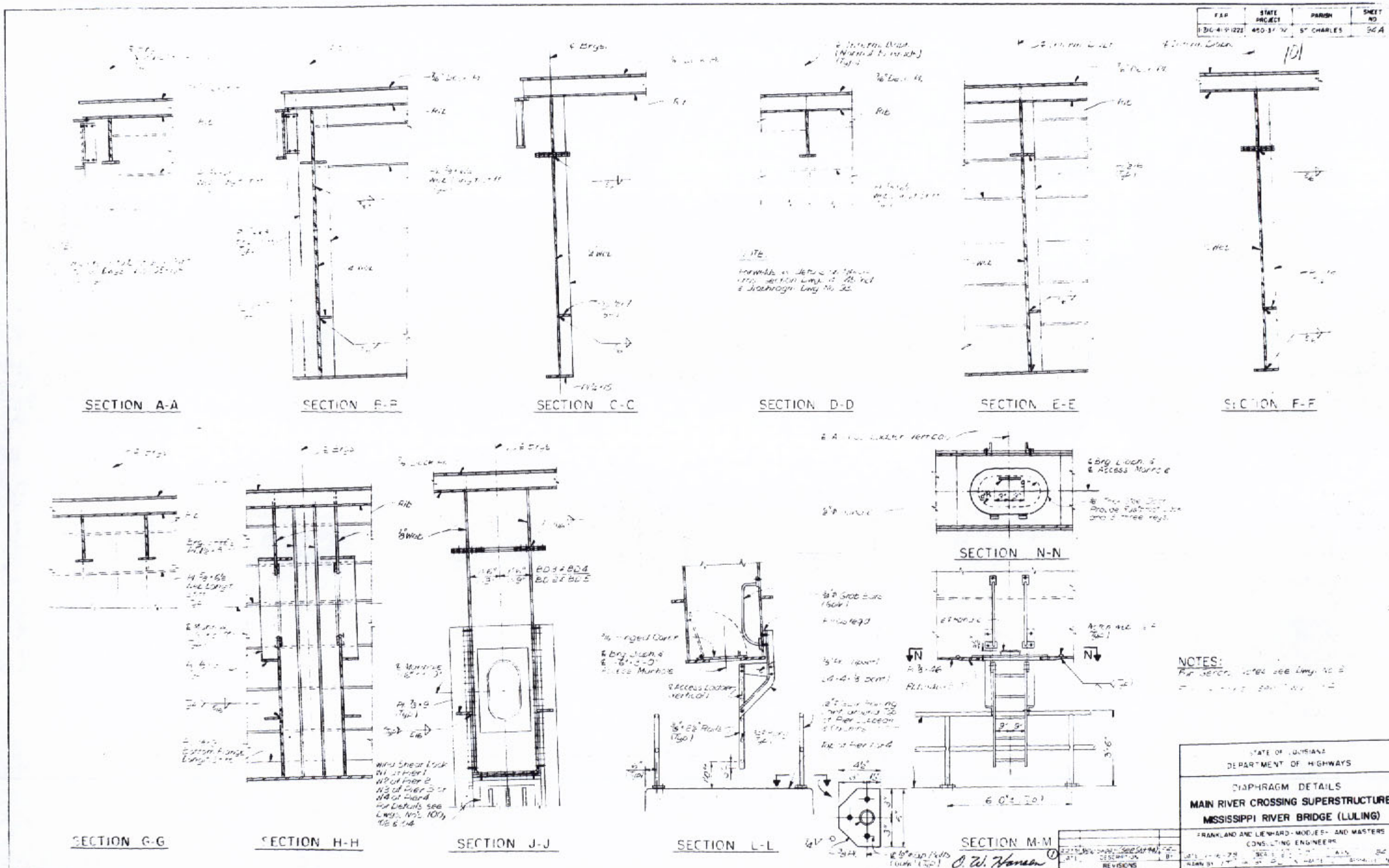
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DIAPHRAGM DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTER
CONSULTING ENGINEERS

DATE	SCALE 1/4"=1'-0"	DWG No. 93aB
DRAWN BY	CHKD BY	IN CHARGE S.J.	APPROVED

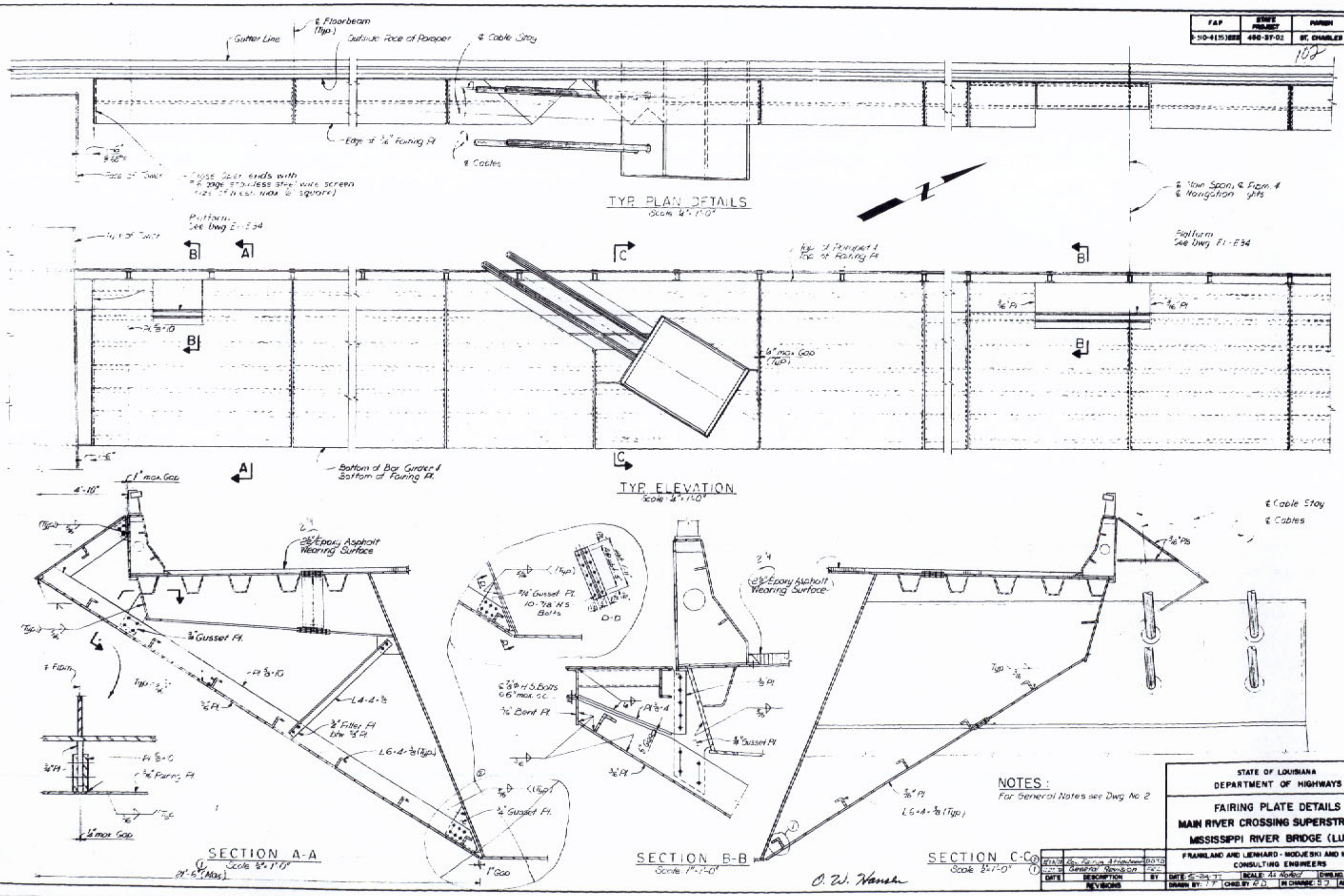
REVISIONS



F.A.P.
STATE PROJECT
PARISH
SHEET NO.
ST. CHARLES
94A
101
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
SECTION F-F
SECTION G-G
SECTION H-H
SECTION J-J
SECTION L-L
SECTION M-M
SECTION N-N
NOTES:
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
DIAPHRAGM DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS
REVISIONS
O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
F-310-4(35)[illegible]	450-37-02	ST. CHARLES	98

102



DATE	DESCRIPTION	BY
8/14/78	Rev. Fairing & Hardware	DOTD
5-24-77	General Revision	FAC

REVISIONS

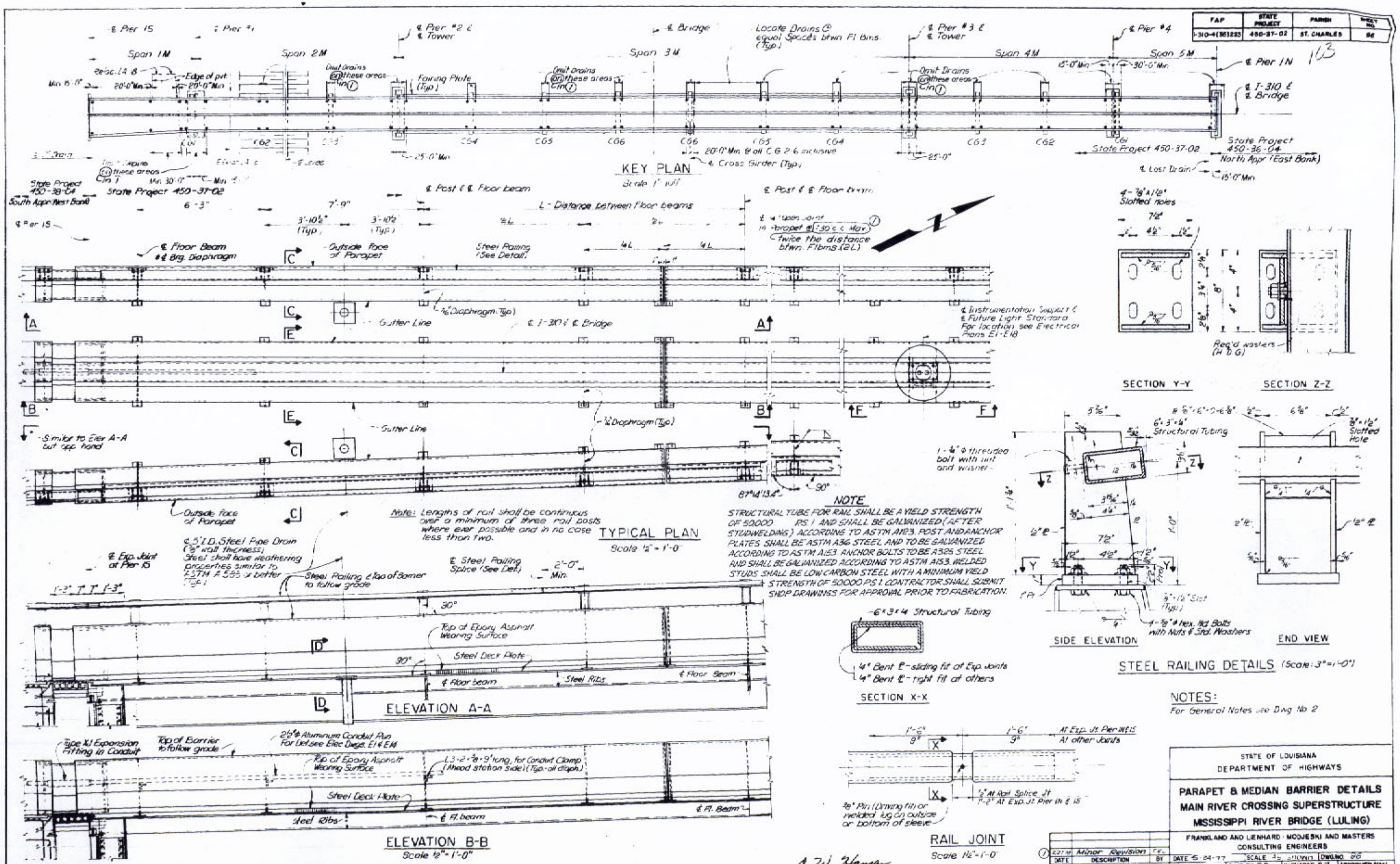
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

FAIRING PLATE DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

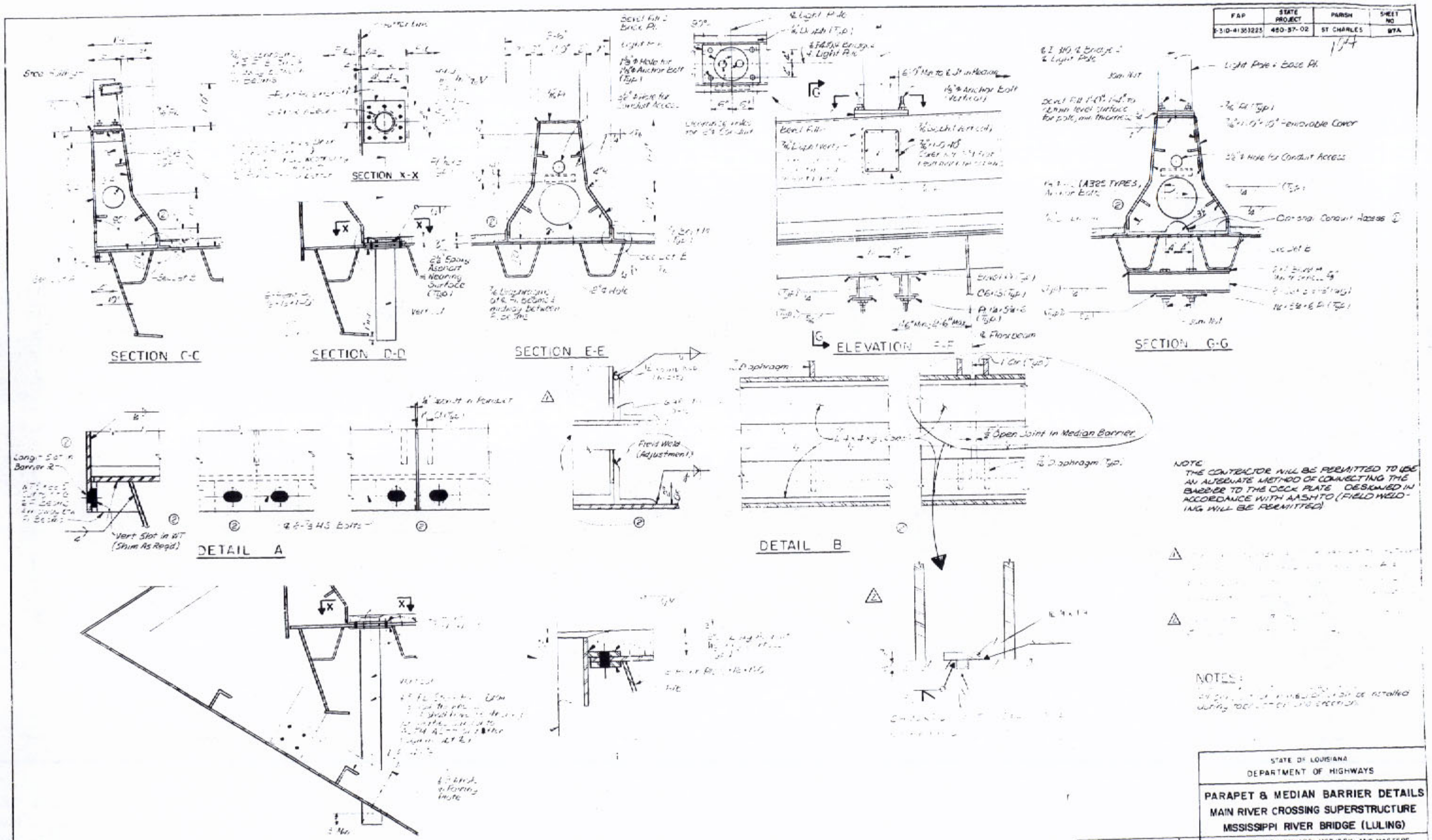
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: As Noted | DWG. NO. 92
DRAWN BY: T.F. | CHKD. BY: R.D. | IN CHARGE: S.J. | APPROVED: M.M.

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351)223	450-37-02	ST. CHARLES	96



FAP	STATE PROJECT	PARISH	SHEET NO
6-310-41351223	450-37-02	ST CHARLES	87A



NOTE
THE CONTRACTOR WILL BE PERMITTED TO USE AN ALTERNATE METHOD OF CONNECTING THE BARRIER TO THE DECK PLATE DESIGNED IN ACCORDANCE WITH AASHTO (FIELD WELDING WILL BE PERMITTED)

NOTES:

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PARAPET & MEDIAN BARRIER DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY

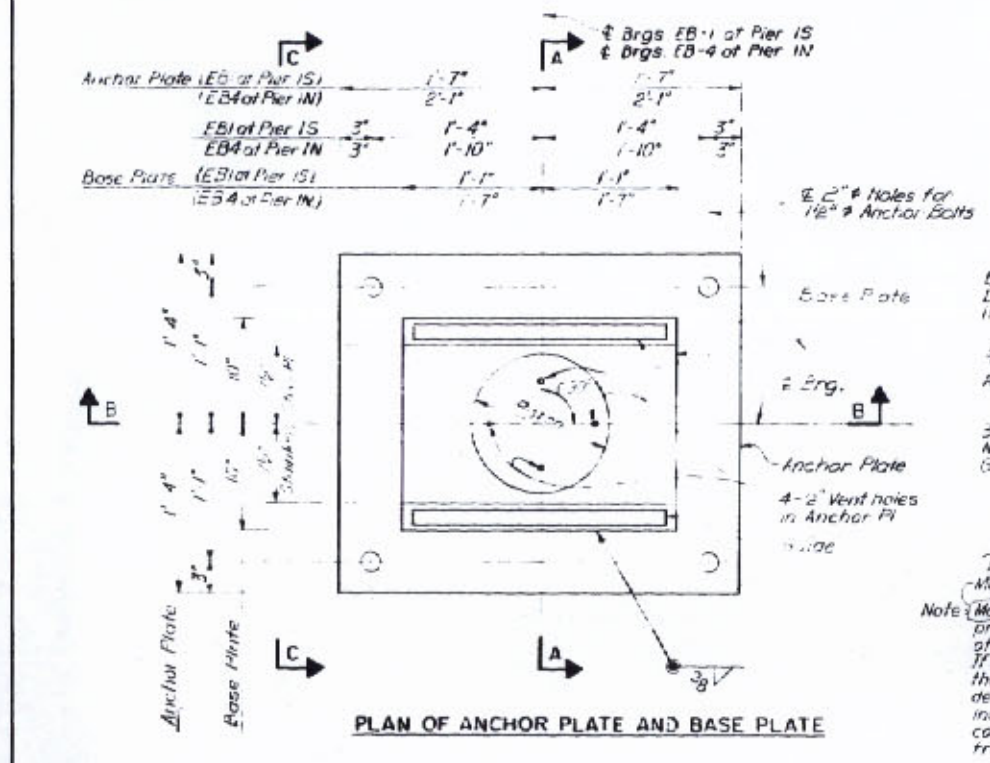
REVISIONS

DATE 5-24-77 SCALE 1/4"=1'-0" DWG NO. 6
DRAWN BY T CHKD BY R IN CHARGE APPROVED A

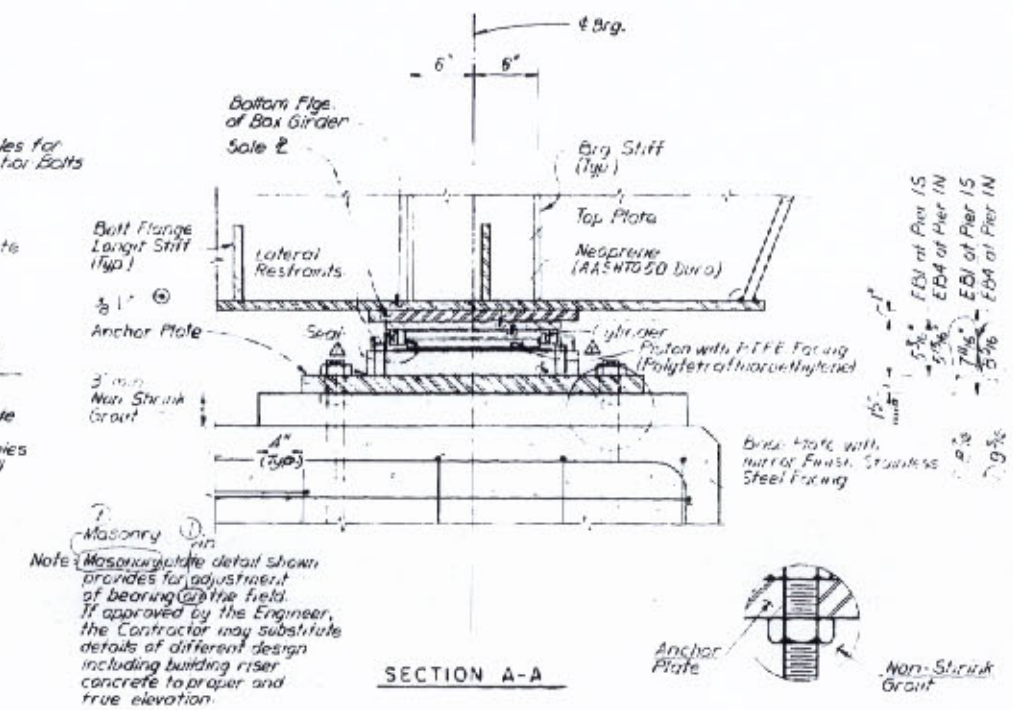
O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
F 310-4(38)225	450-37-02	ST. CHARLES	98

105

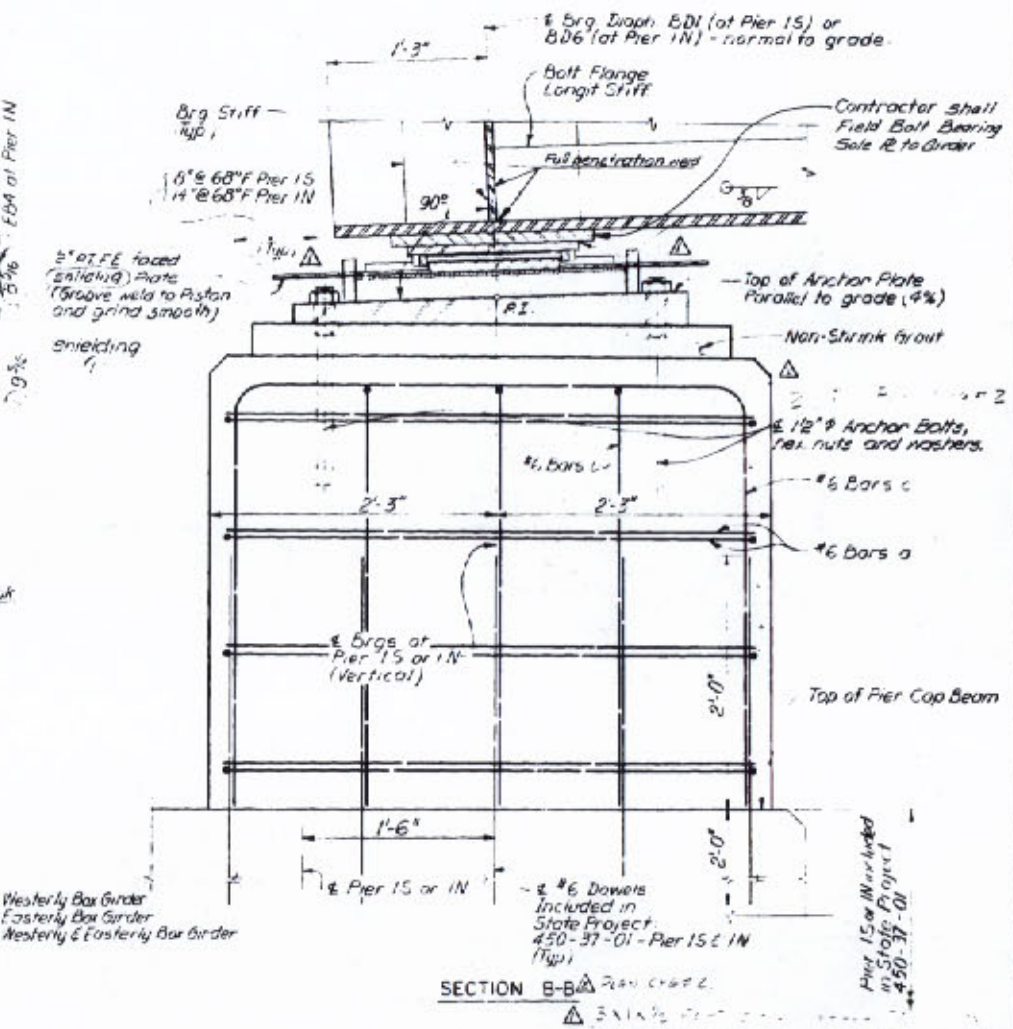


PLAN OF ANCHOR PLATE AND BASE PLATE

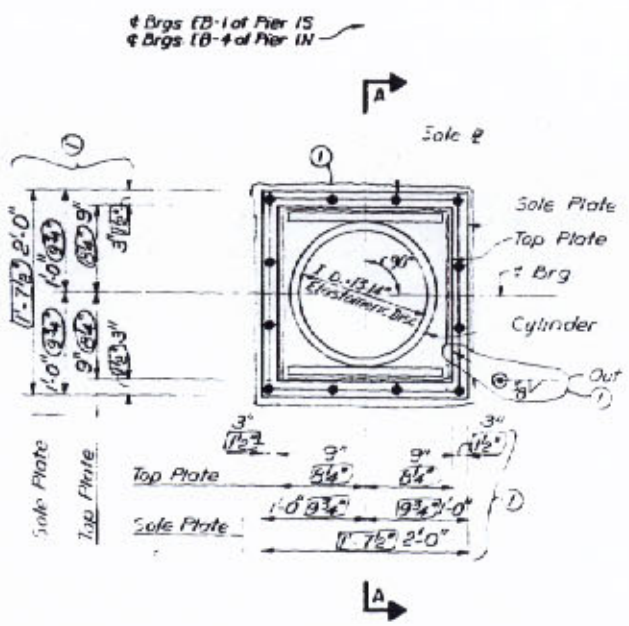


Note: Masonry plate detail shown provides for adjustment of bearing in the field. If approved by the Engineer, the Contractor may substitute details of different design including building riser concrete to proper and true elevation.

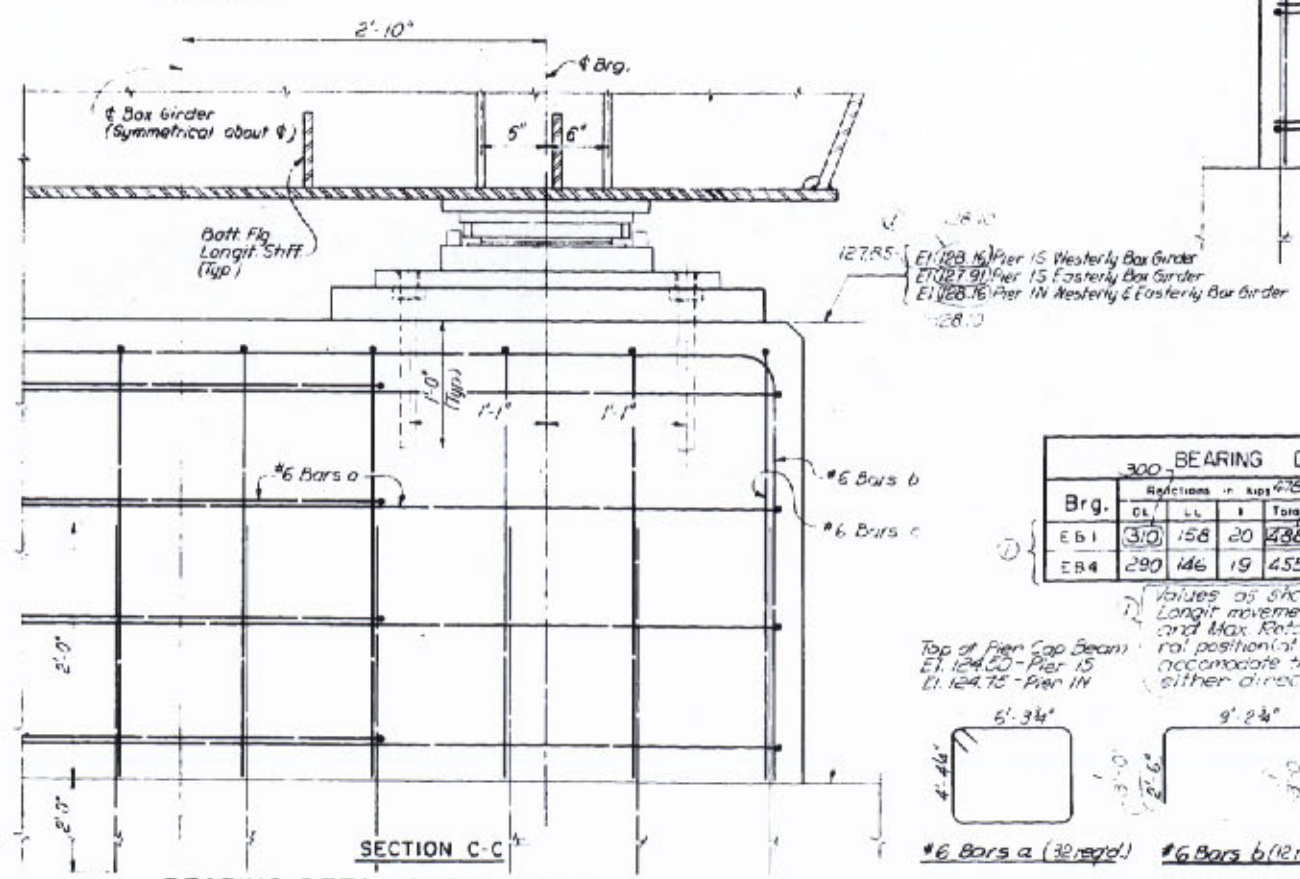
SECTION A-A



SECTION B-B



PLAN OF SOLE PLATE (INVERTED)



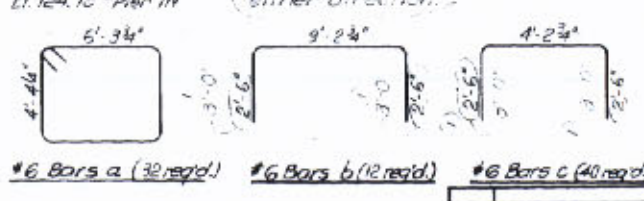
SECTION C-C

BEARING DETAILS EB1 & EB4
(At Pier 1S and 1N)

BEARING DATA

Brg.	Reactions in kips CL	LL	I	Total	Horiz Force in kips	Max Long Movement in inches	Max Lat Movement in inches	Max Rotation in degrees
EB1	310	158	20	488	62¾	7½ - 9	0¼	0.14
EB4	290	146	19	455	72 79	13¼ - 10	0¼	0.14

Values as shown in the table for Max Longit movement, Max Lat movement and Max Rotation are from the neutral position (at 68°F). Bearings shall accomodate these movements in either direction.



NOTES

For General Notes see Dwg No. 2.

Contractor shall verify pier seat elevations and anchor bolt location prior to fabrication of bearings and shall adjust dimensions accordingly if variance from design dimensions is found.

All material for bearings shall be A 588 steel of weathering quality, except Stainless Steel and teflon facing.

Bearing design shown are for the fully erected bridge. If loads shown in the table are exceeded during erection, the contractor shall [illegible] bearing design in conformance with manufacturer's requirements for increased erection loads and rotations.

DATE	DESCRIPTION	BY
	General Revision	

REVISIONS

O. W. Hansen

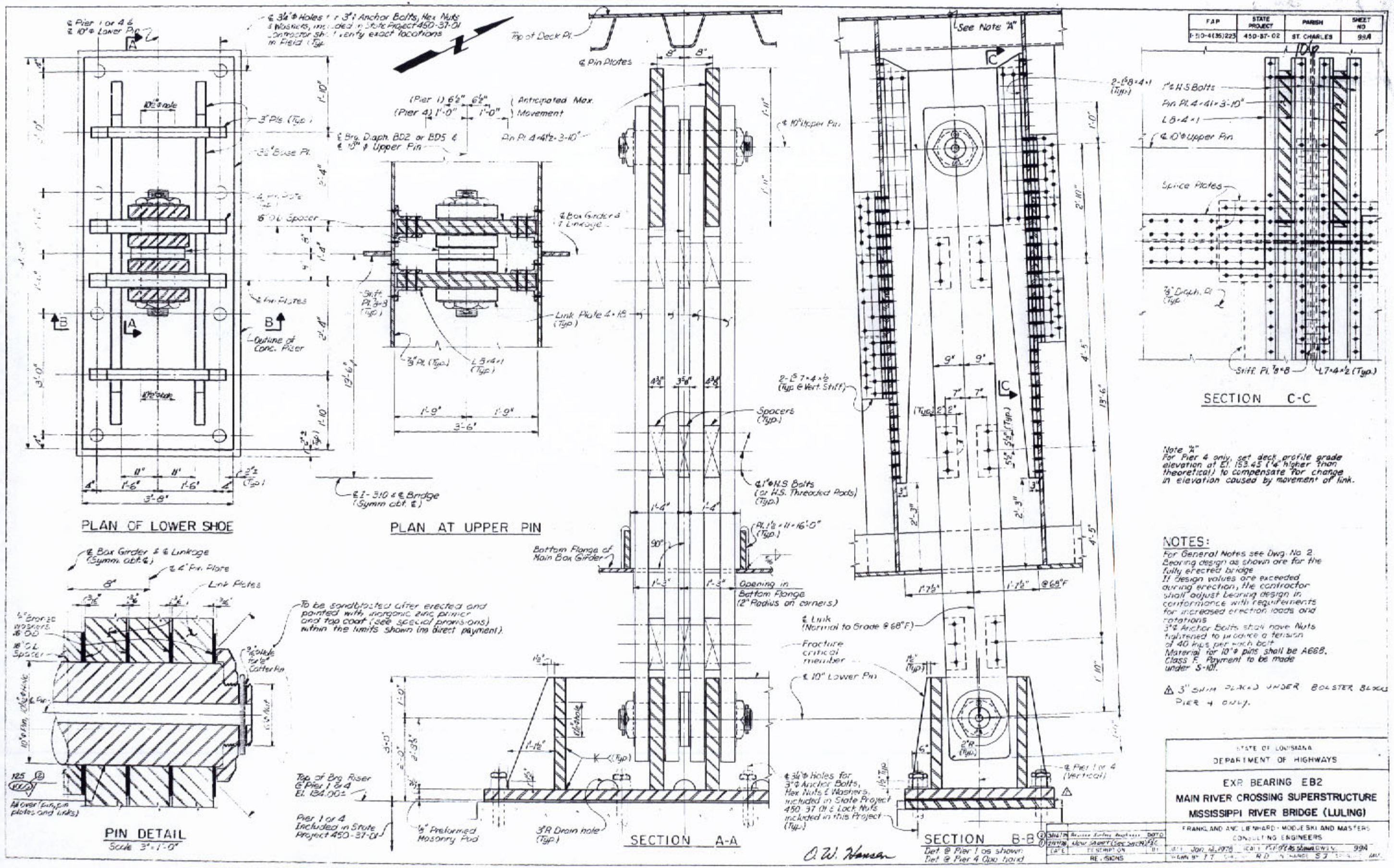
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

BEARING DETAILS EB1 & EB4
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

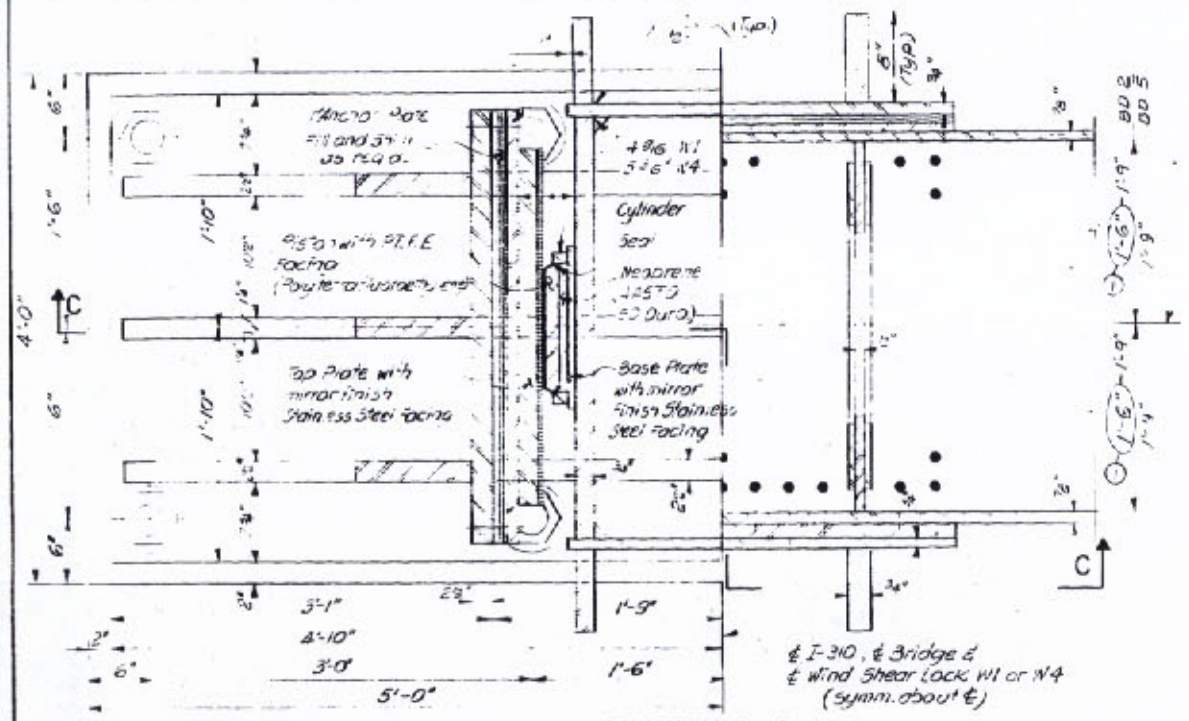
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1½" = 1'-0" | DWG NO. 38
DRAWN BY JZ | CHKD BY RD | IN CHARGE SJ | APPROVED MWL

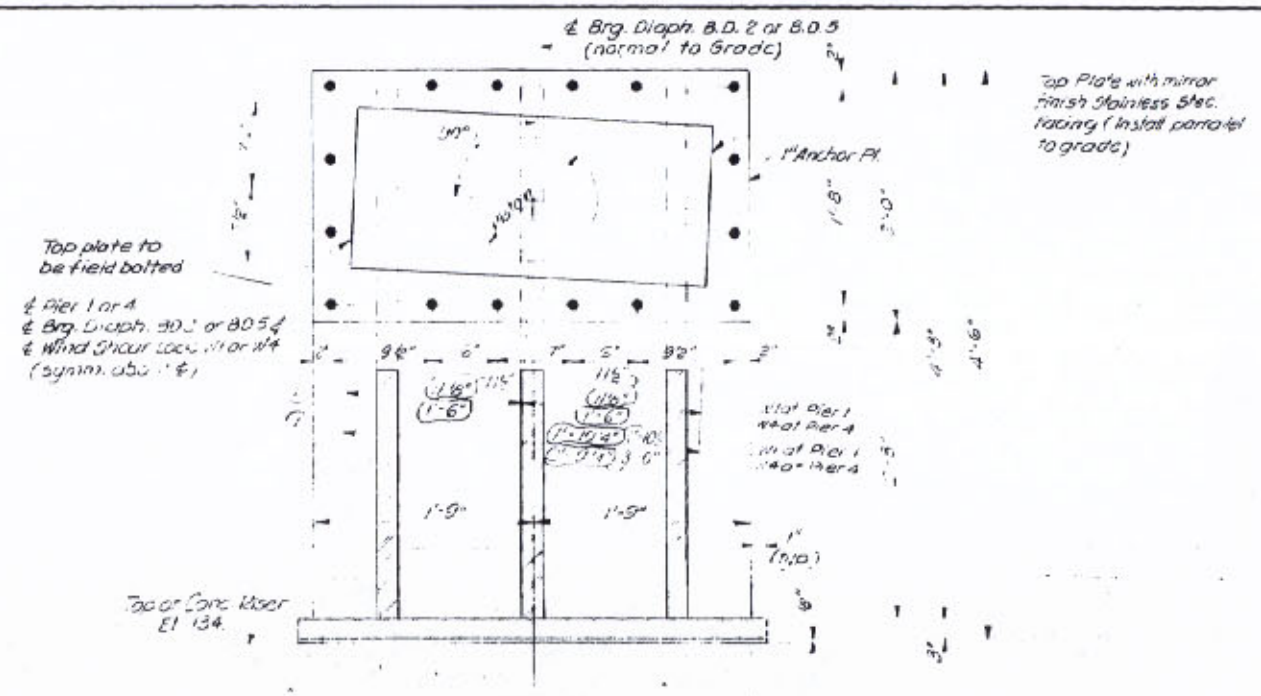
FAP	STATE PROJECT	PARISH	SHEET NO
F-210-4(35)223	450-37-02	ST. CHARLES	99A



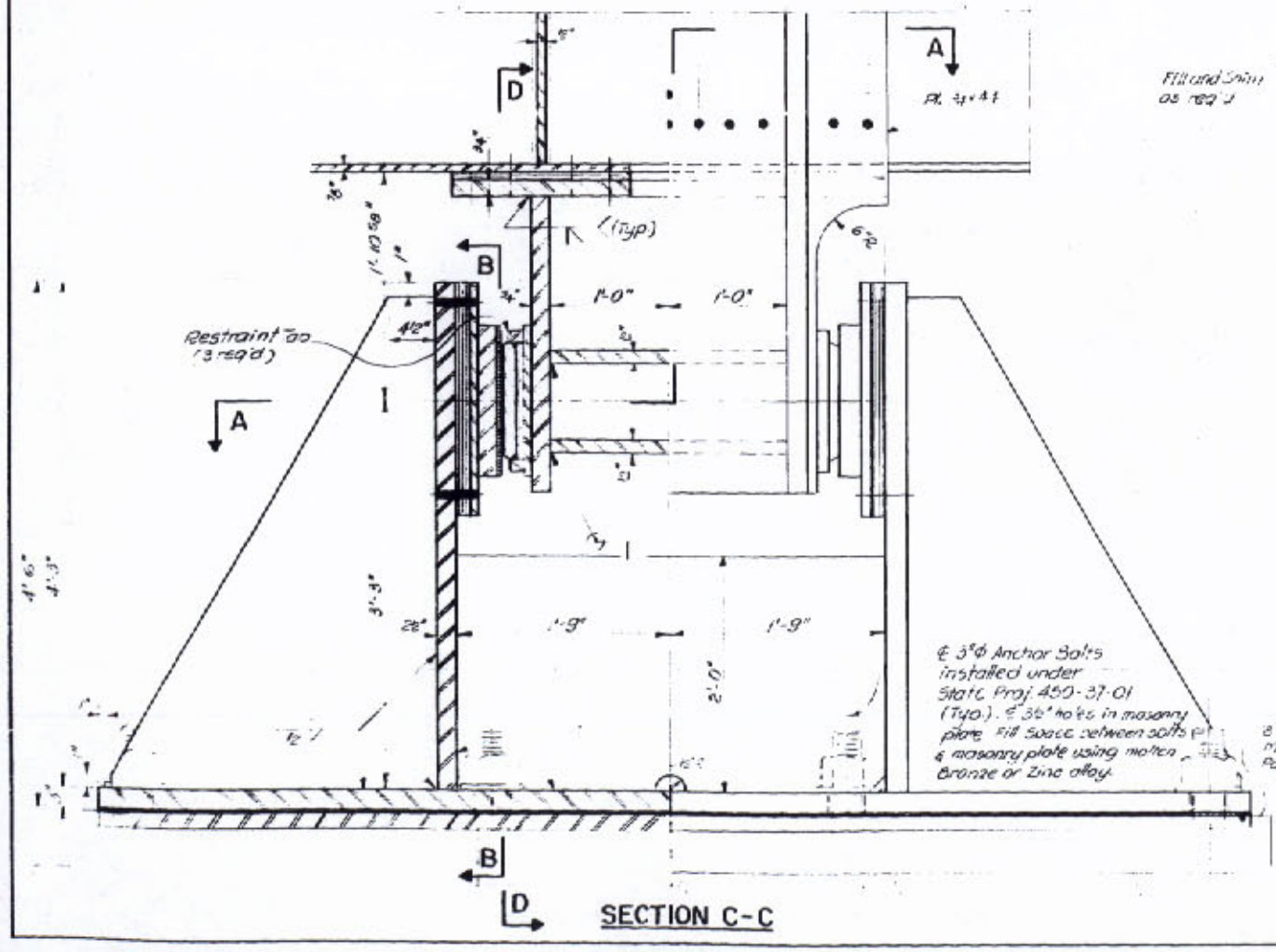
FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(35)223	450-37-02	ST CHARLES	100



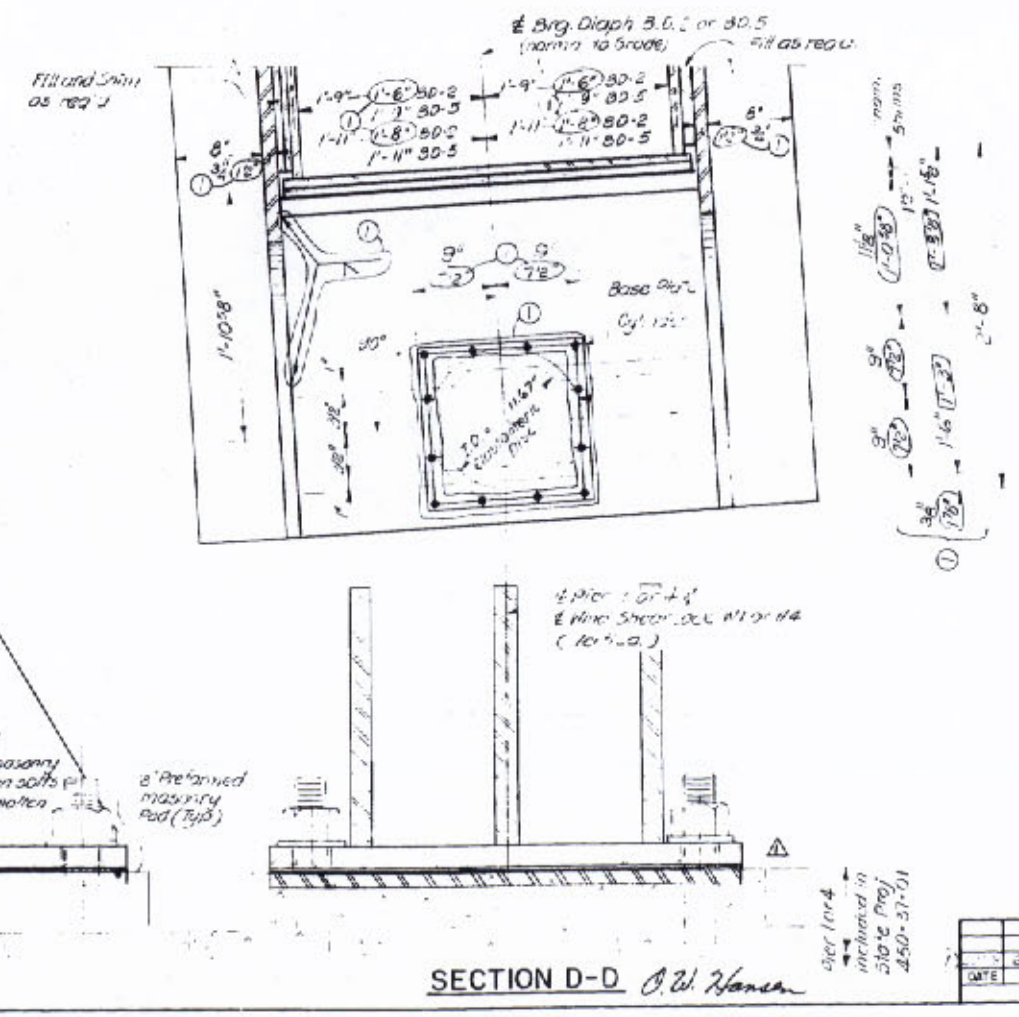
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

O.W. Hansen

△ 3" SHIM PLATES [illegible]

BEARING DATA					
Brg.	Reaction in kips GROUP X (Hurricane Wind)	Longit. Force in kips	Max Long. Movement in inches	Max Lat. Movement in inches	Max. Rotation in degrees
W1	244	0	6 3/8 5	Negl.	.027
W4	183	0	12 3/8 9	Negl.	.029

Values as shown on in the table for Max Longit. movement, Max. Lat. movement and Max. Rotation are from the neutral position (at 68°F). Bearings shall accommodate these movements in either direction.

NOTES

For General Notes see Dwg No. 2.

Contractor shall verify pier riser elevations and anchor bolt location prior to fabrication of bearings and shall adjust dimensions accordingly if variance from design dimensions is found.

Bearing design shown are for the fully erected bridge. If values shown in the table are exceeded during erection, the contractor shall adjust bearing design in conformance with manufacturer's requirements for increased erection loads and rotations.

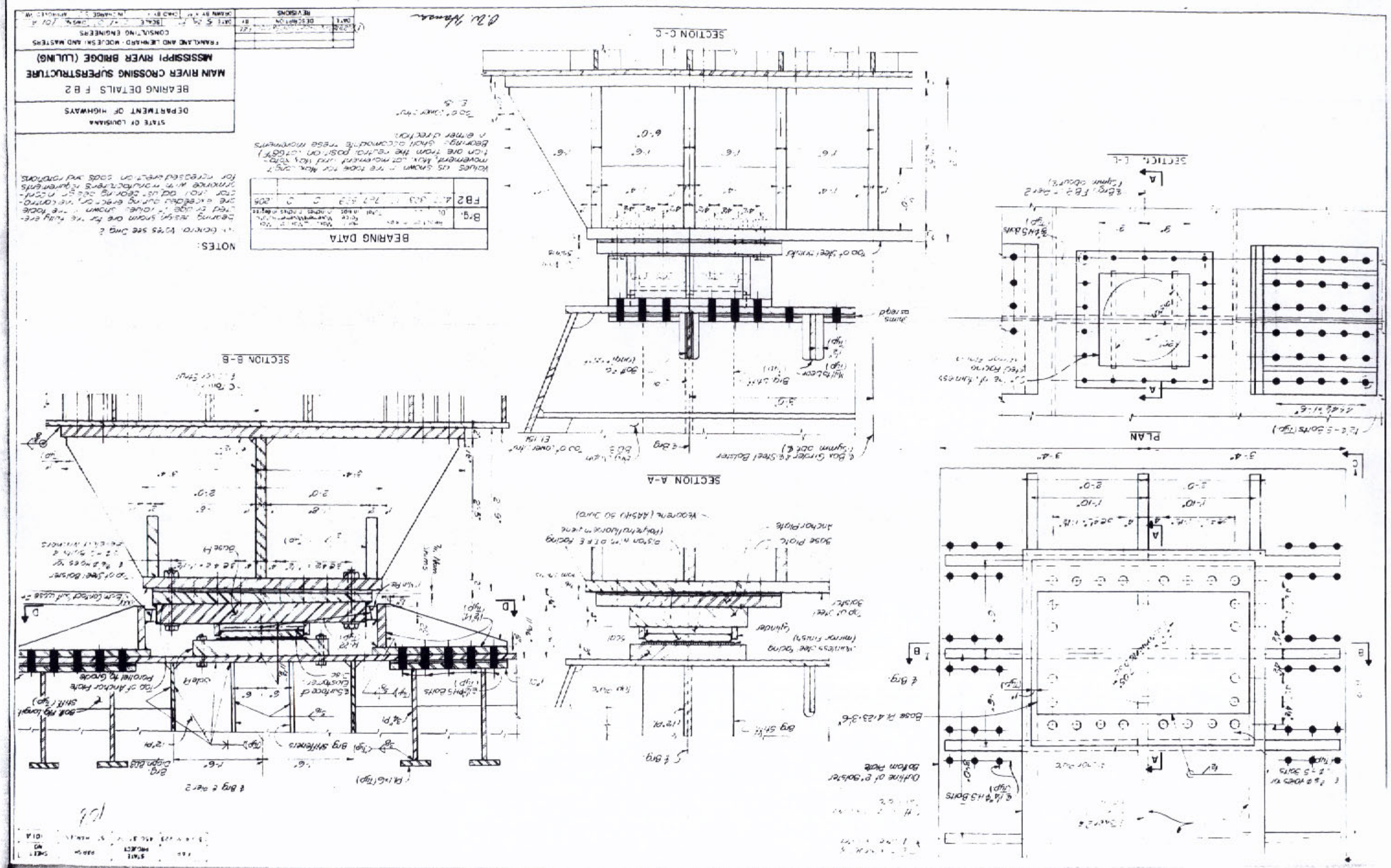
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

WIND SHEARLOCK W1, W4 - DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

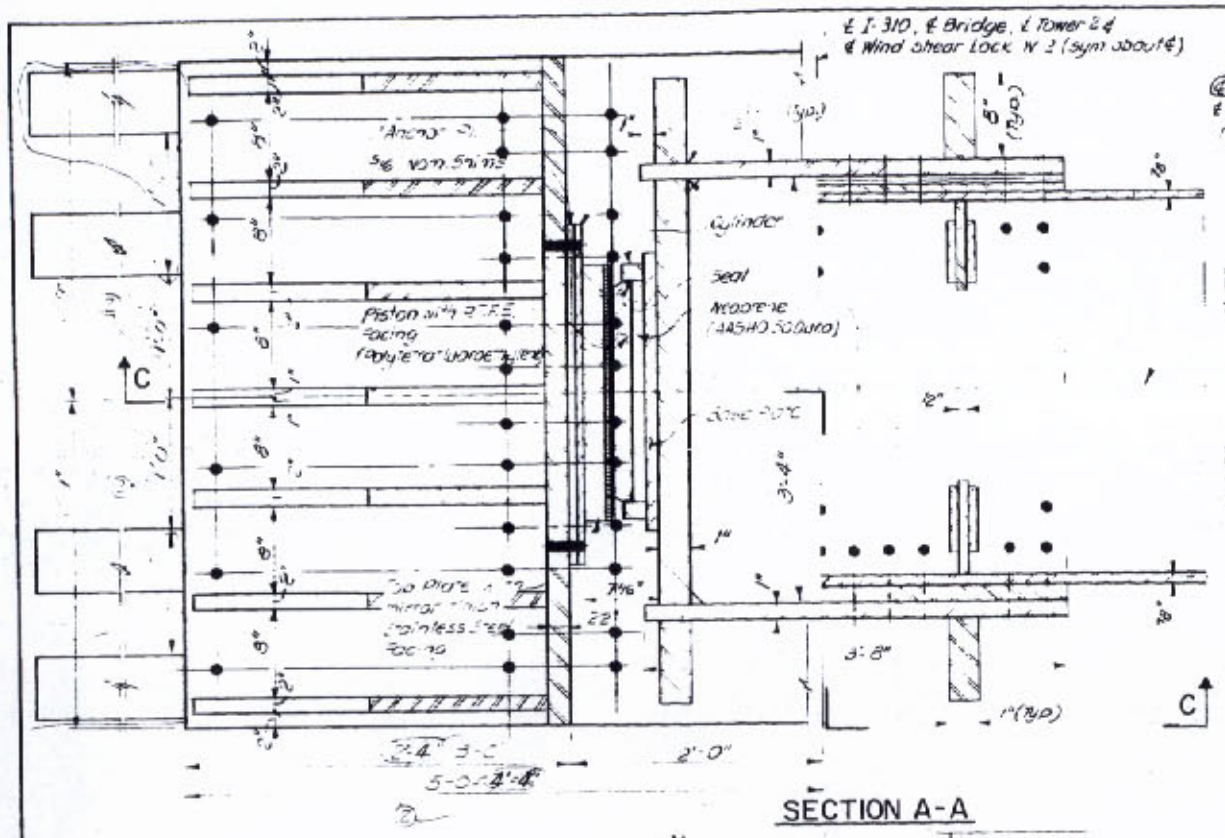
DATE	DESCRIPTION	BY
	General Revision	
	REVISIONS	

DATE 5-24-77 | SCALE 1/2" = 1'-0" | DWG NO [illegible]
DRAWN BY [illegible] | CHKD BY [illegible] | IN CHARGE [illegible] | APPROVED [illegible]

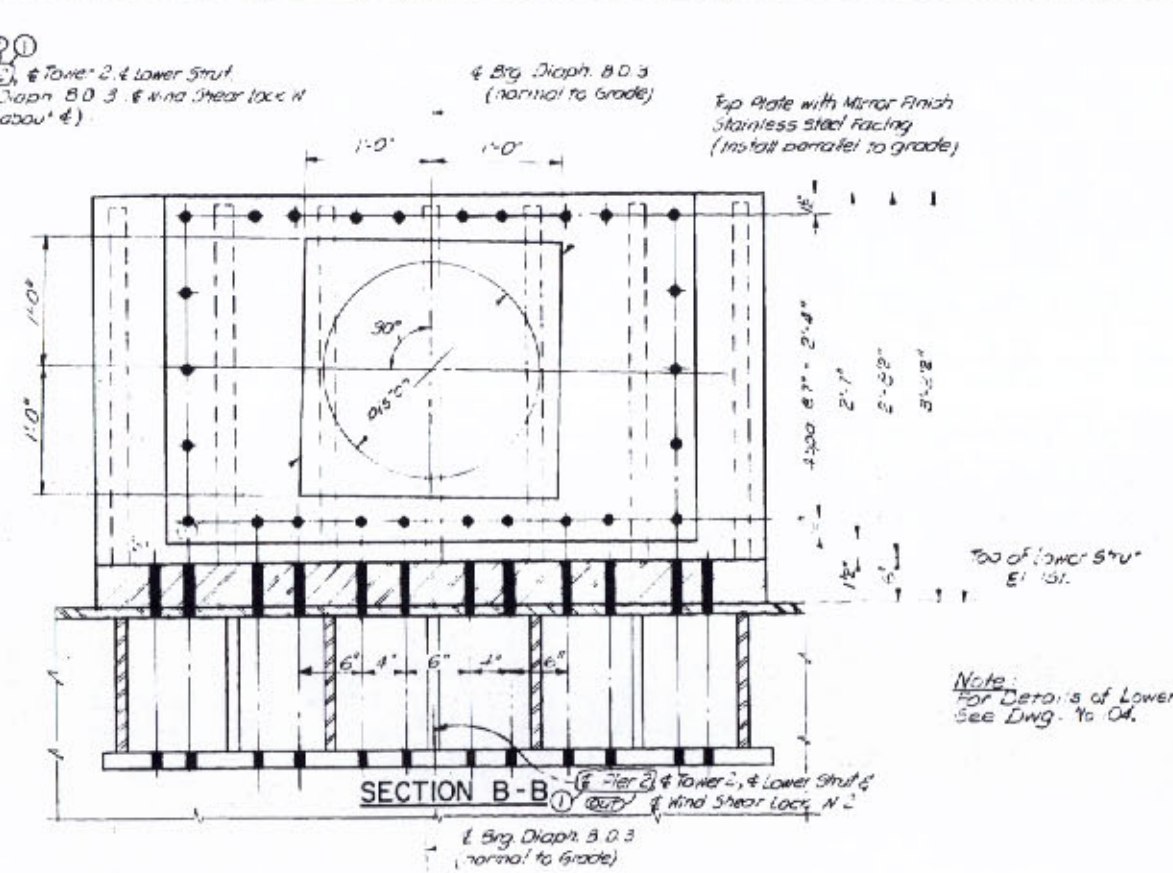

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
BEARING DETAILS F B 2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LEINHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS
NOTES:
BEARING DATA
SECTION C-C
SECTION B-B
SECTION A-A
SECTION E-E
PLAN

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
310-4(3).223	450-37-72	ST. CHARLES	102

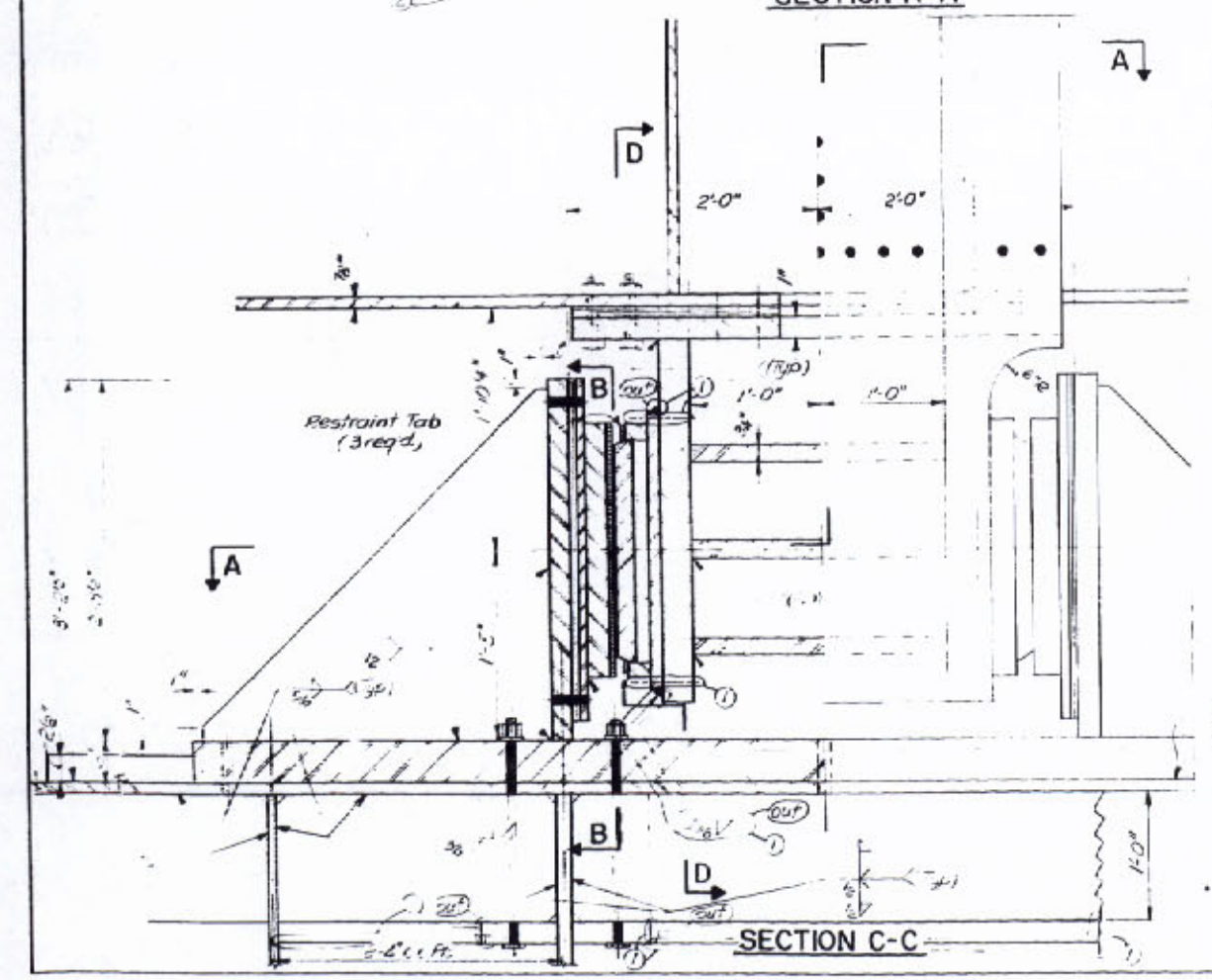
109



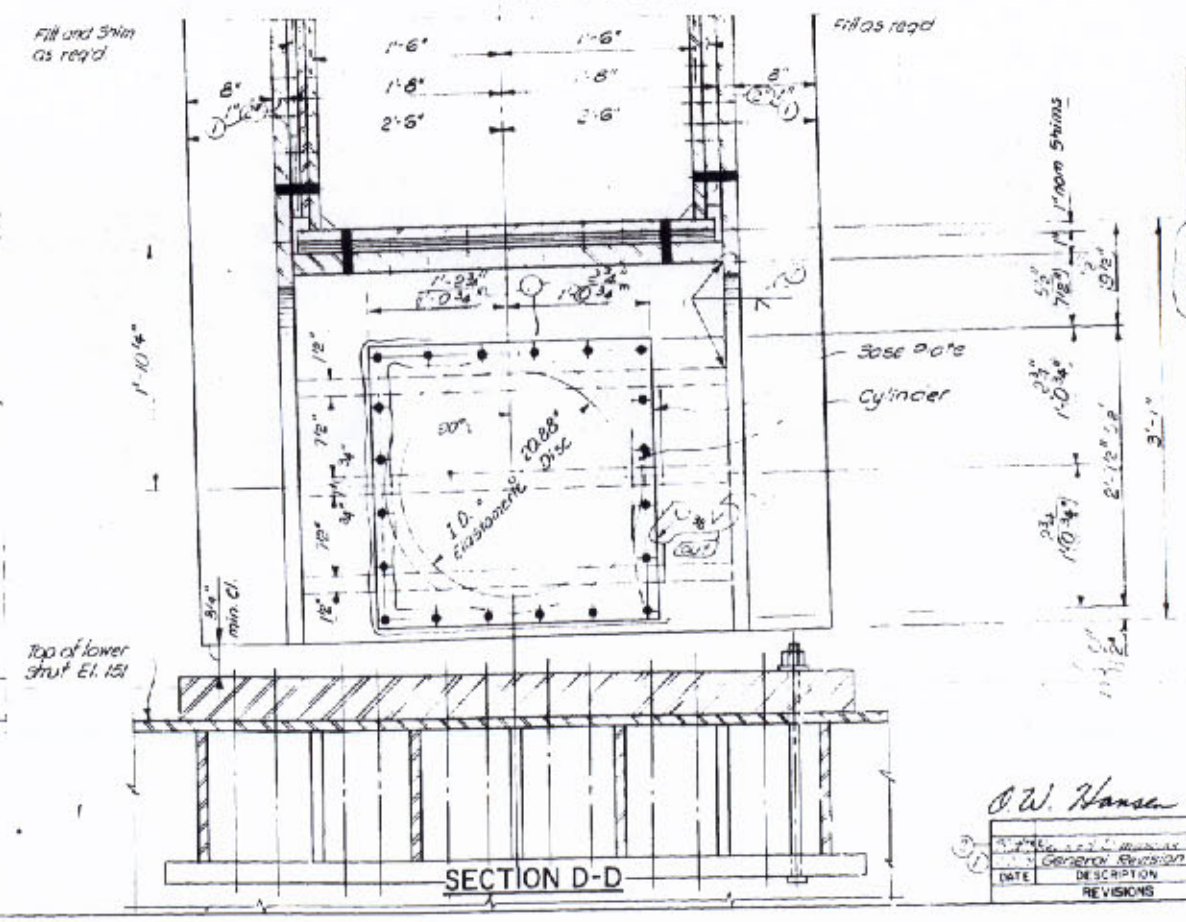
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

BEARING DATA

Brg.	Reaction in kips GROUP 2 (Hurricane Wind)	Longit. force in kips	Max Long. Movement in inches	Max Lat. Movement in inches	Max Rotation in radians
W 2	1009	0	0	Negl.	.032

Values as shown in the table for Max. Longit. movement, Max. Lat. movement and Max. Rotation are from the neutral position (at 68°F.). Bearings shall accomodate these movements in either direction. ①

NOTES:

For General Notes see Dwg. 2

Bearing design shown are for the fully erected bridge. If values shown in the table are exceeded during erection, the contractor shall adjust bearing design in conformance with manufacturer's requirements for increased erection loads and rotations. ②

O.W. Hansen

DATE	DESCRIPTION	BY
	General Revision	

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

WIND SHEAR LOCK W2 - DETAILS

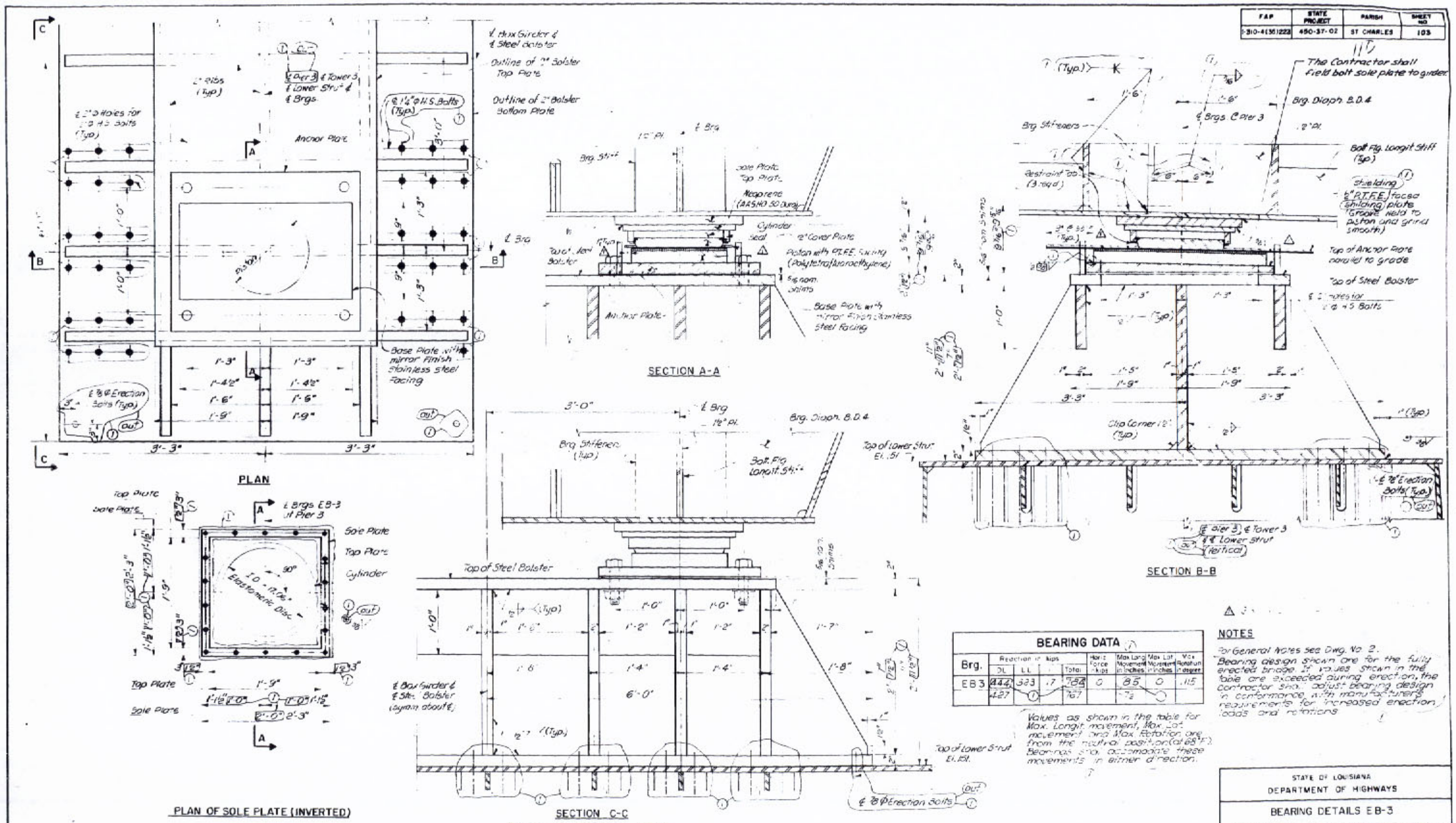
MAIN RIVER CROSSING SUPERSTRUCTURE

MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1/2" = 1'-0" | DWG NO. 26
DRAWN BY WAF | CHKD BY R.D. | IN CHARGE S.J. | APPROVED: WHL

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)222	450-37-02	ST CHARLES	103



BEARING DATA								
Brg.	Reaction in kips				Horiz. Force in kips	Max. Long. Movement in inches	Max. Lat. Movement in inches	Max. Rotation in degrees
	DL	LL		Total				
EB3	444	323	.7	784	0	85	0	.115
	427			767		72		

Values as shown in the table for Max. Longit. movement, Max. Lat. movement and Max. Rotation are from the neutral position (at 68°F). Bearings shall accomodate these movements in either direction.

NOTES

For General Notes see Dwg. No. 2.

Bearing design shown are for the fully erected bridge. If values shown in the table are exceeded during erection, the contractor shall adjust bearing design in conformance with manufacturer's requirements for increased erection loads and rotations.

E. W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

BEARING DETAILS EB-3

MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

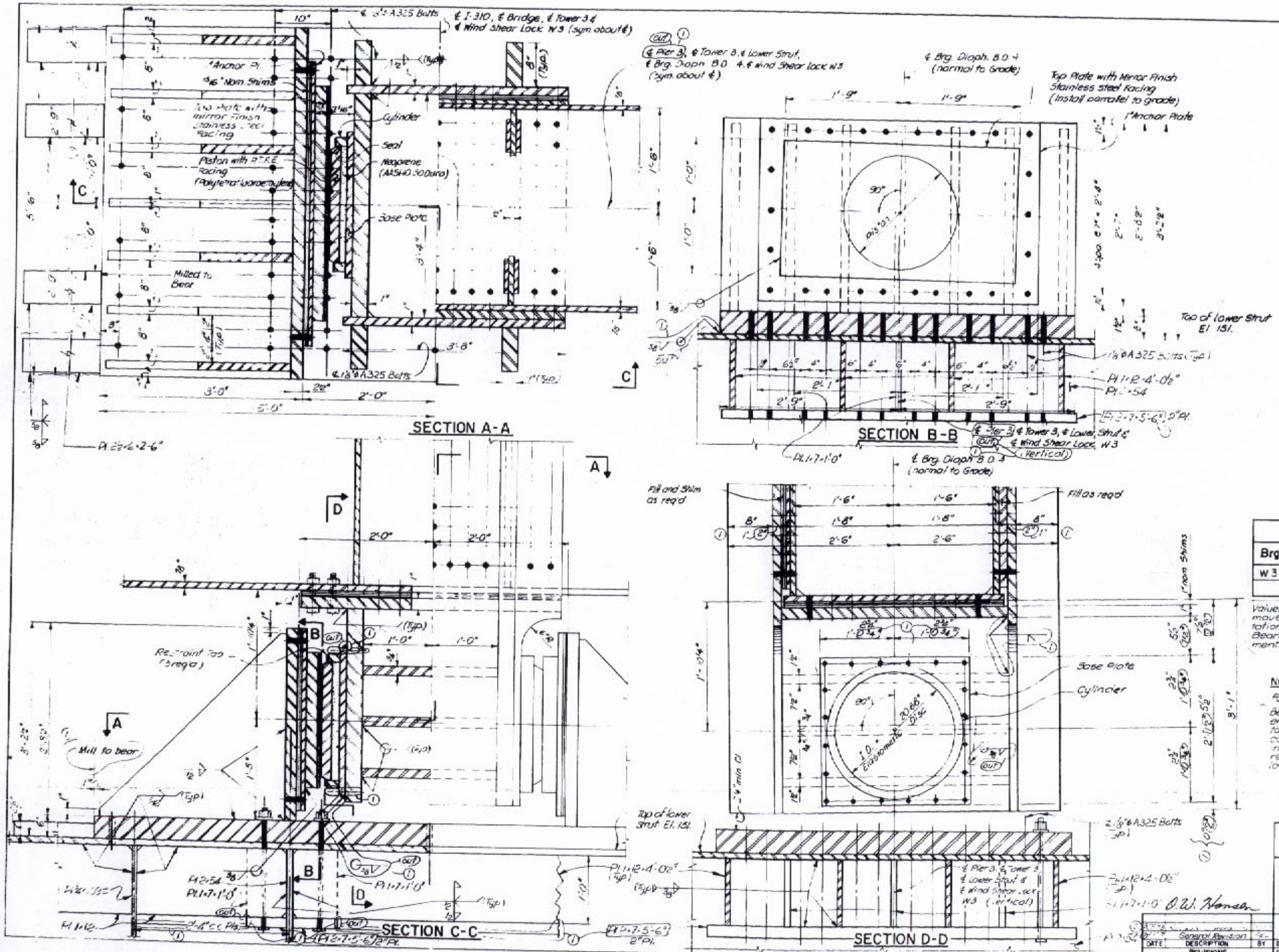
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	General Revision	

REVISIONS

DATE 5-24-77 | SCALE 2" = 1'-0" | DWG NO. 103
DRAWN BY N.M. | CHKD BY R.D. | IN CHARGE: S.J. | APPROVED: MM

FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(35)223	450-37-02	ST CHARLES	104



BEARING DATA

Brg.	Reaction in kips GROUP X (Hurricane Wind)	Longit. Force in kips	Max Long Movement in inches	Max Lat Movement in inches	Max Rotation in degrees
W 3	1040	0	2½ / 7½	Negl.	Negl

Values as shown in the table for Max Longit. movement, Max. Lat movement and Max. Rotation are from the neutral position (at 68°F). Bearings shall accomodate these movements in either direction.

NOTES:

For General Notes see Dwg 2

Bearing design shown are for the fully erected bridge. If values shown in the table are exceeded during erection, the contractor shall adjust bearing design in conformance with manufacturer's requirements for increased erection loads and rotations.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

WIND SHEAR LOCK W3-DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

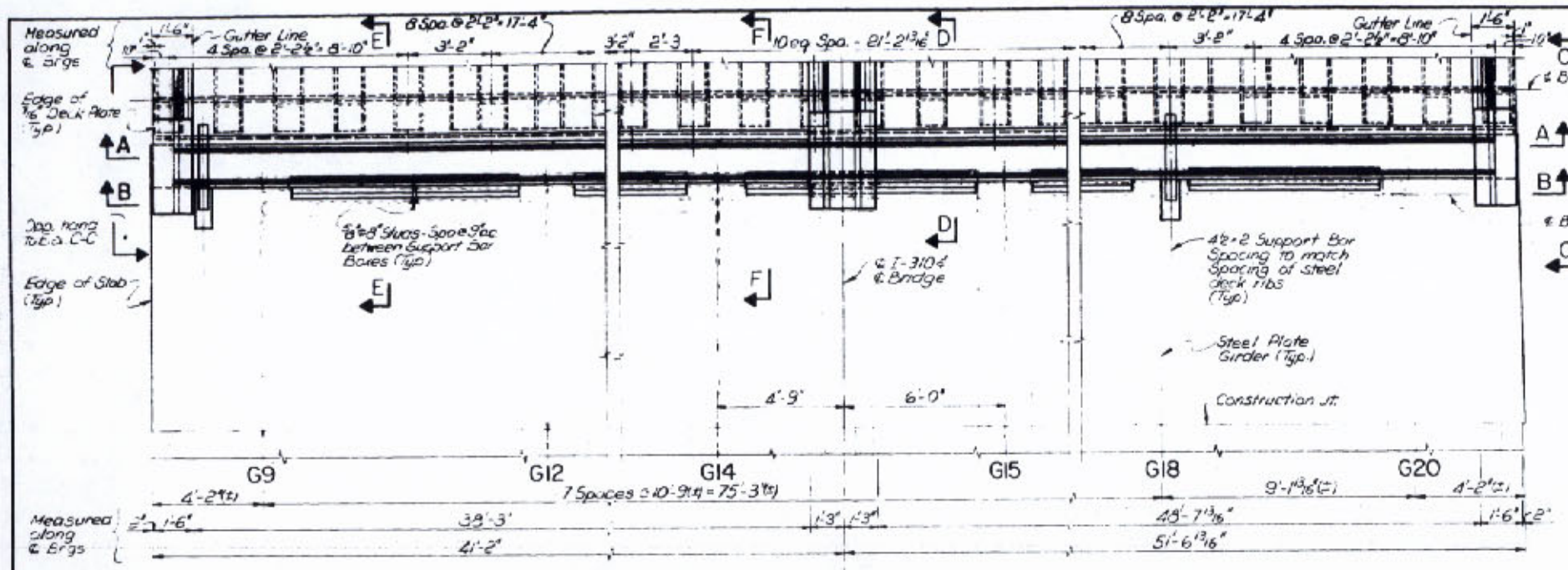
DATE	DESCRIPTION	BY
	General Revision	

REVISIONS

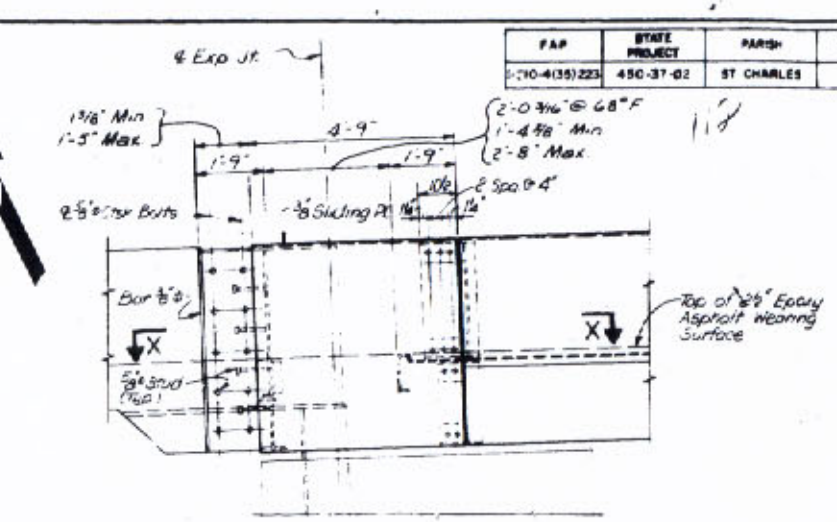
DATE 5-24-77 SCALE: 1/2" = 1'-0" DWG.NO. 104
DRAWN BY: W.M. CHKD.BY R.D. IN CHARGE S.J. APPROVED M.M.L.

O.W. Hansen

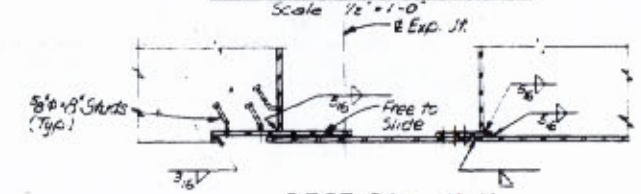
FAP	STATE PROJECT	PARISH	SHEET NO
2-(10-4(35)223)	450-37-02	ST CHARLES	105



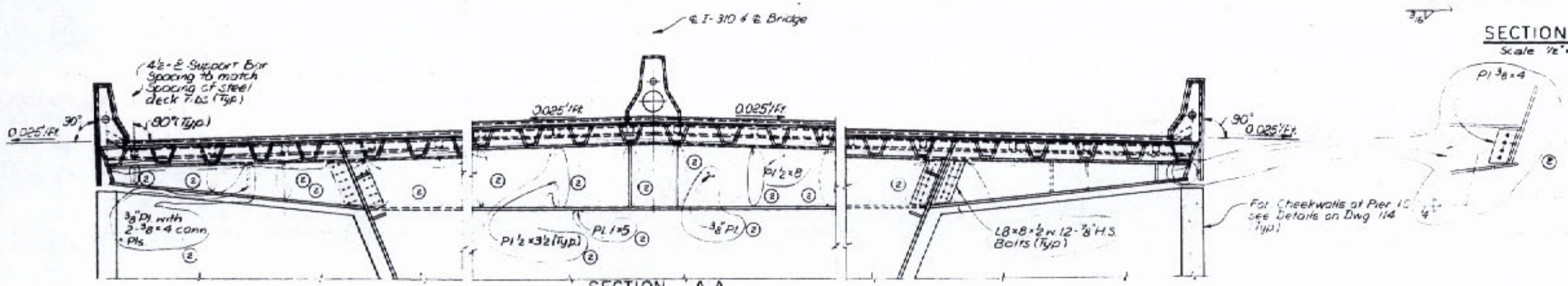
PLAN
Scale: ⅛" = 1'-0"



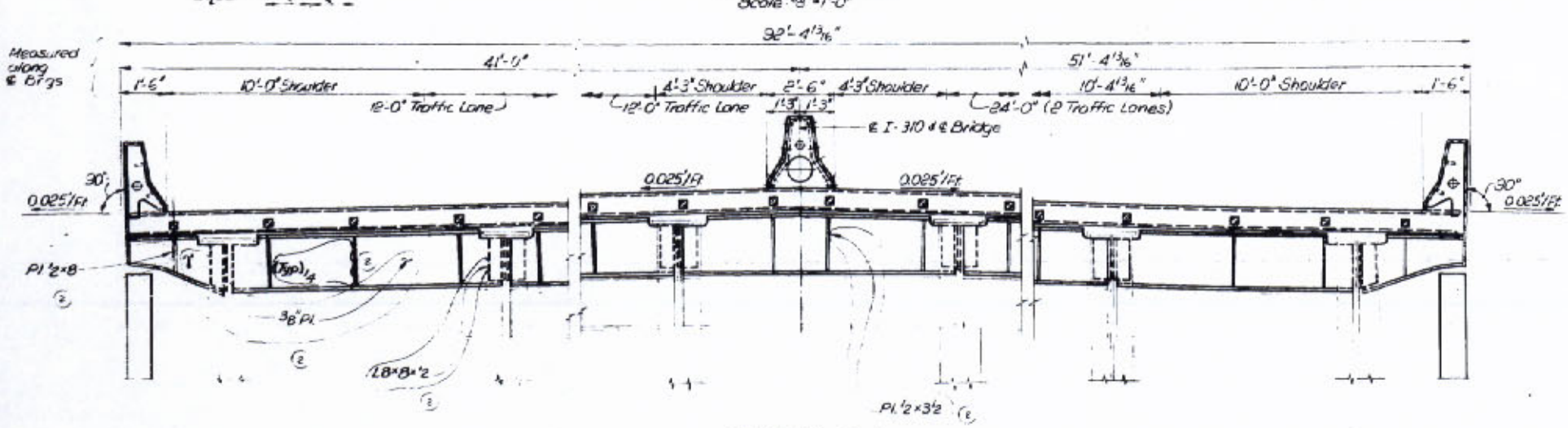
ELEVATION C-C (As shown)
ELEVATION D-D (Similar)
Scale ½" = 1'-0"



SECTION X-X
Scale ½" = 1'-0"



SECTION A-A
Scale: ⅜" = 1'-0"



SECTION B-B
Scale: ¼" = 1'-0"

NOTES:
For General Notes, see Sheet No. 2
For Joint Installation and Miscellaneous Joint Details, see Dwg. No. 106.
Expansion Joint as shown on this plan is as manufactured by ACME Highway Prod.
No alternates will be allowed for this joint

O. W. Hansen

DATE	DESCRIPTION	BY
3-12-79	General	F.O.L.
10-31-79	General	D.A.T.O.

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

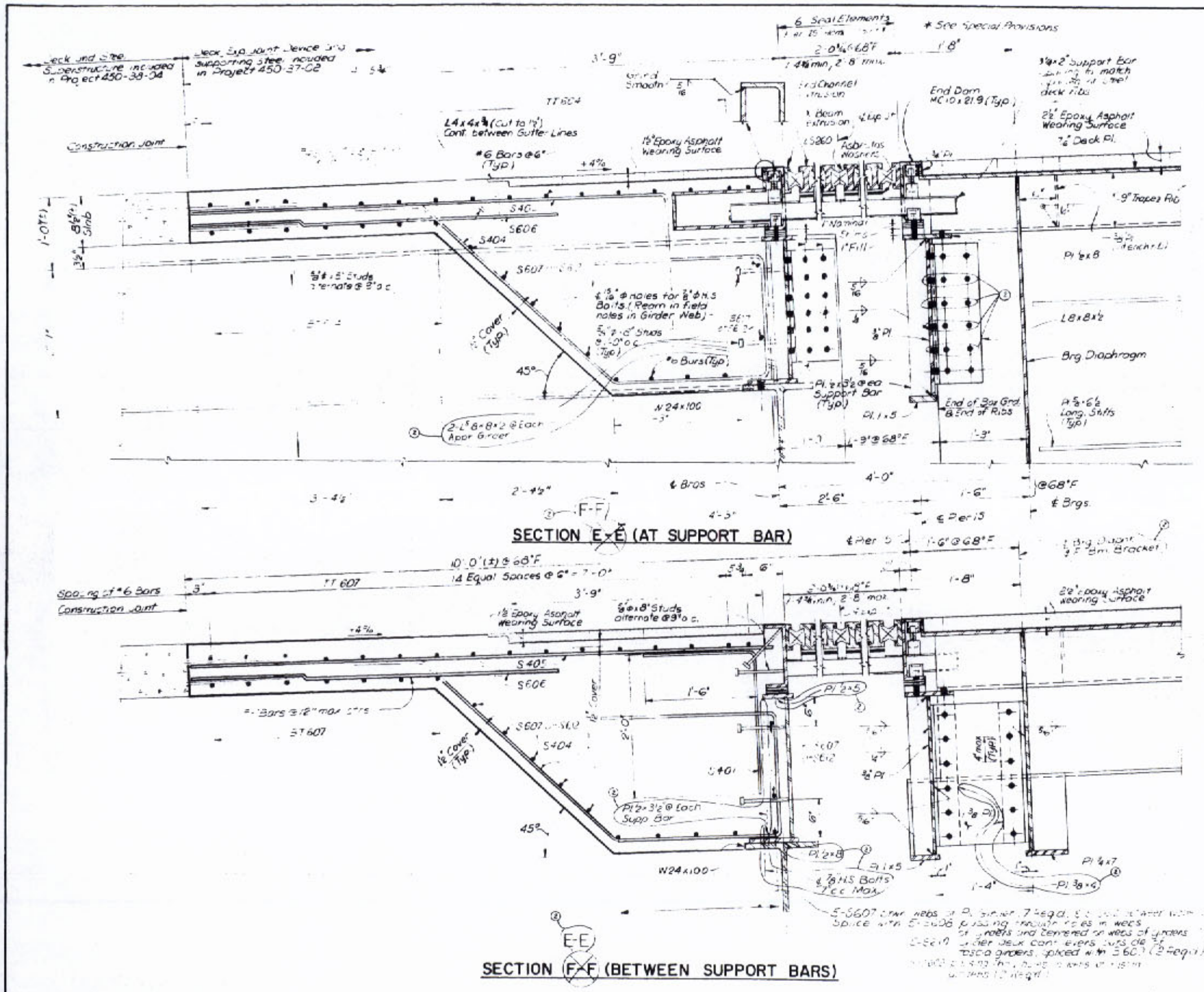
EXPANSION JOINT E1
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE As Shown | DWG NO. 105
DRAWN BY A.D. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED M.H.

FAP	STATE PROJECT	PARISH	SHEET NO
3-510-4(35)223	450-37-02	ST CHARLES	108 B

13



NOTES:
For General Notes see Dwg. No 2.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

EXPANSION JOINT E1
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

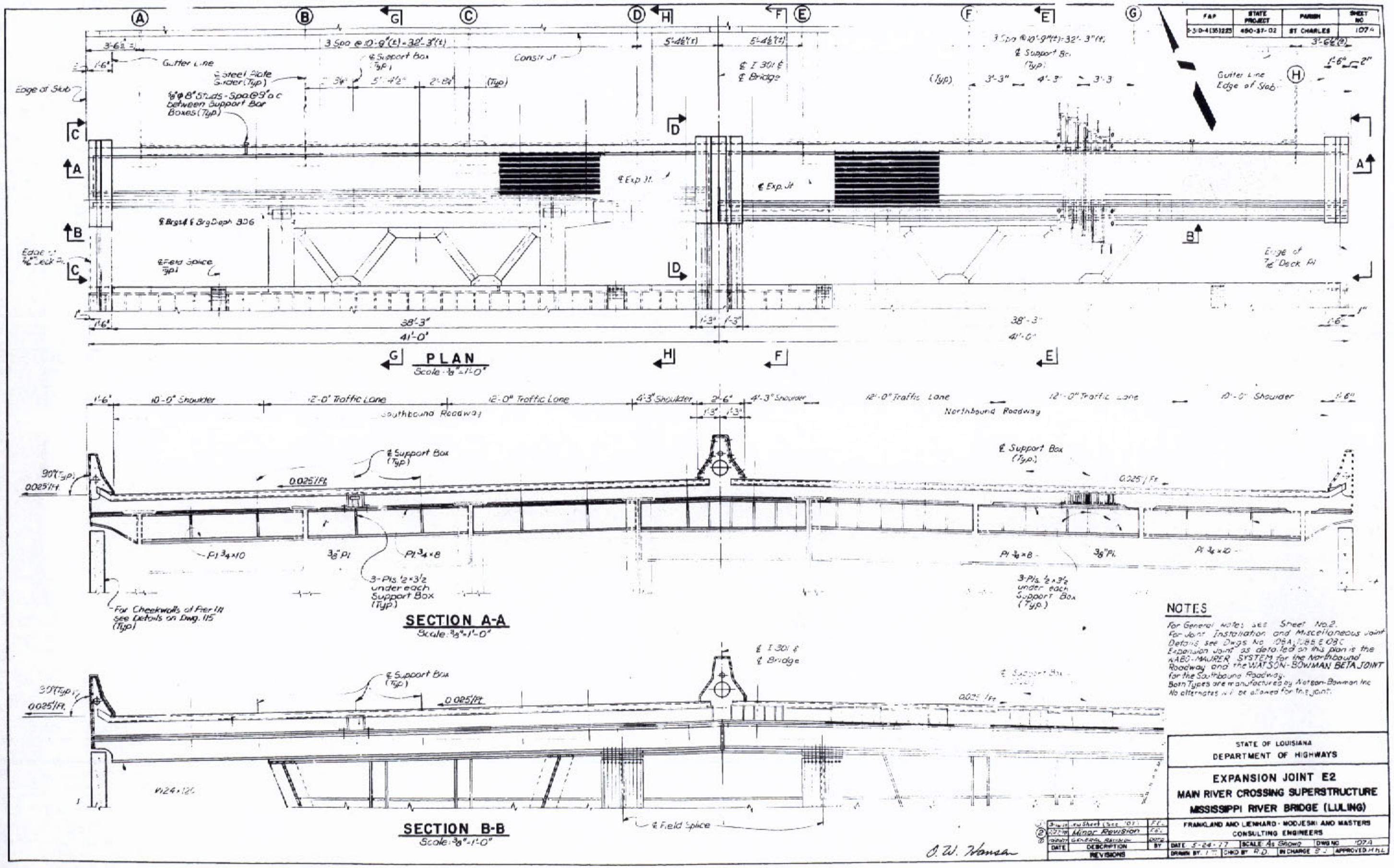
FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE 5-23-77 | SCALE 1/2" = 1'-0" | DWG NO. 26B
DRAWN BY F.T. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED MFL

O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(351)225	450-37-02	ST CHARLES	107A



NOTES

For General Notes see Sheet No. 2.
For Joint Installation and Miscellaneous Joint Details see Dwgs No. 108A, 108B & 108C.
Expansion Joint as detailed on this plan is the WABO-MAURER SYSTEM for the Northbound Roadway and the WATSON-BOWMAN BETA JOINT for the Southbound Roadway.
Both Types are manufactured by Watson-Bowman Inc.
No alternates will be allowed for this joint.

O. W. Hansen

No.	DATE	DESCRIPTION	BY
3	3-16-78	New Sheet Last '07'	F.E.L.
2	2-27-78	Minor Revision	F.E.L.
1	10/1/77	General Revision	[illegible]

REVISIONS

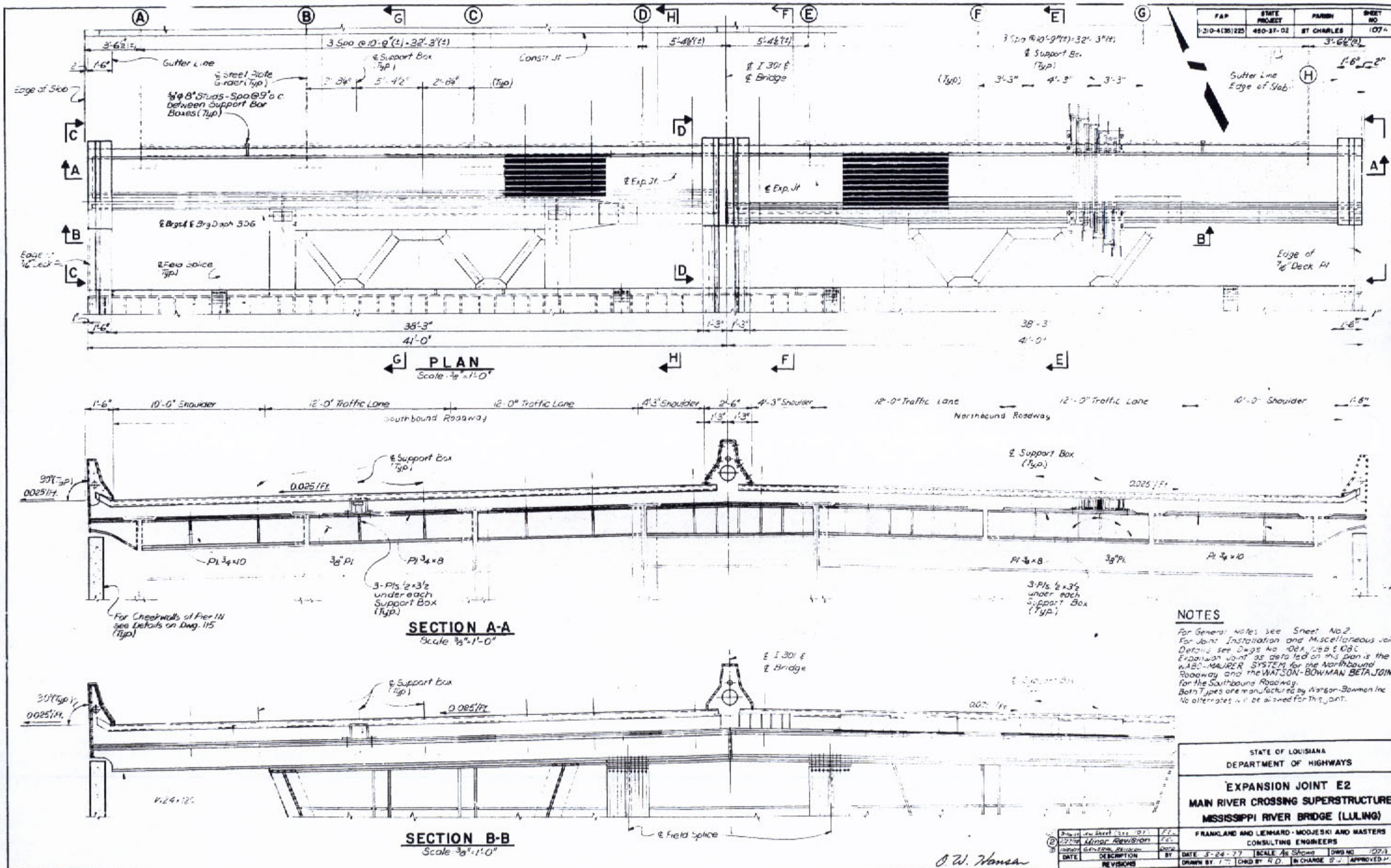
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

EXPANSION JOINT E2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE: As Shown | DWG NO 107A
DRAWN BY: I.T. | CHKD BY: R.D. | IN CHARGE: S.J. | APPROVED: H.H.L.

FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(35)225	450-37-02	ST CHARLES	107-A



NOTES

For General Notes see Sheet No. 2.
For Joint Installation and Miscellaneous Joint Details see Dwgs. No. 108A, 108B & 108C.
Expansion Joint as detailed on this plan is the WABO-MAURER SYSTEM for the Northbound Roadway and the WATSON-BOWMAN BETA JOINT for the Southbound Roadway.
Both Types are manufactured by Watson-Bowman Inc.
No alternates will be allowed for this joint.

O. W. Hansen

NO.	DATE	DESCRIPTION	BY
1	3-16-77	Sheet (See 107)	F.C.
2	12-7-76	Minor Revision	F.C.
3	10-8-71	General Revision	ROOF

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

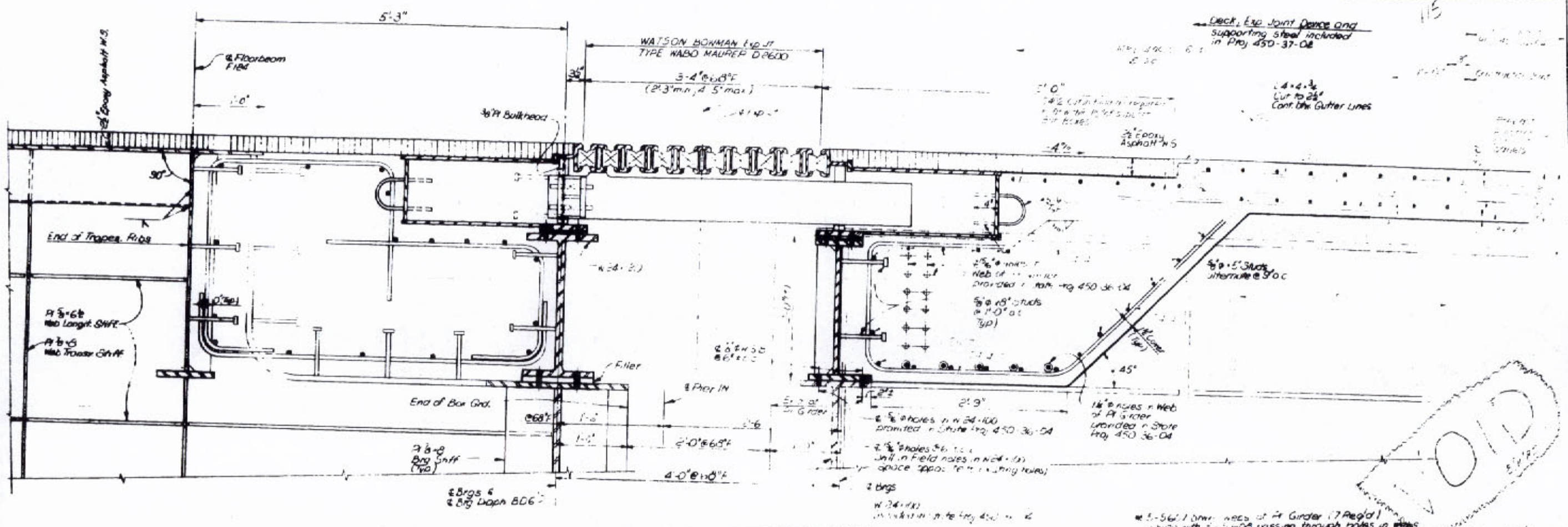
EXPANSION JOINT E2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

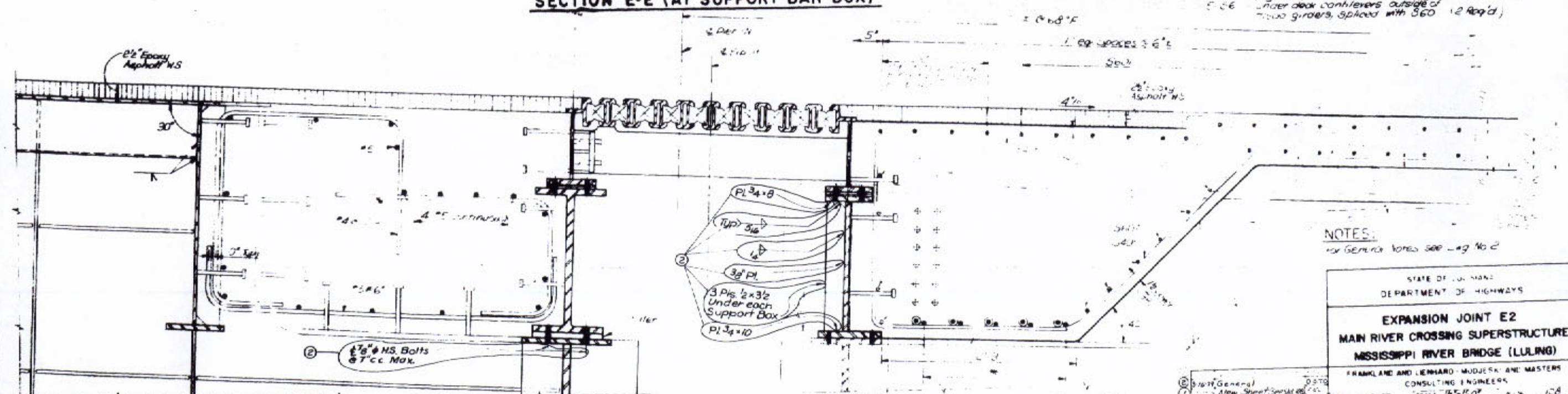
DATE 5-24-77 | SCALE As Shown | DWG NO 107-A
DRAWN BY F.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED H.N.L.

REFILM

FAP	STATE PROJECT	PARISH	SHEET NO
1-310-4(351)229	450-37-02	ST CHARLES	108B



SECTION E-E (AT SUPPORT BAR BOX)



SECTION F-F (BETWEEN SUPPORT BARS)

NOTES:
For General Notes see Dwg No 2

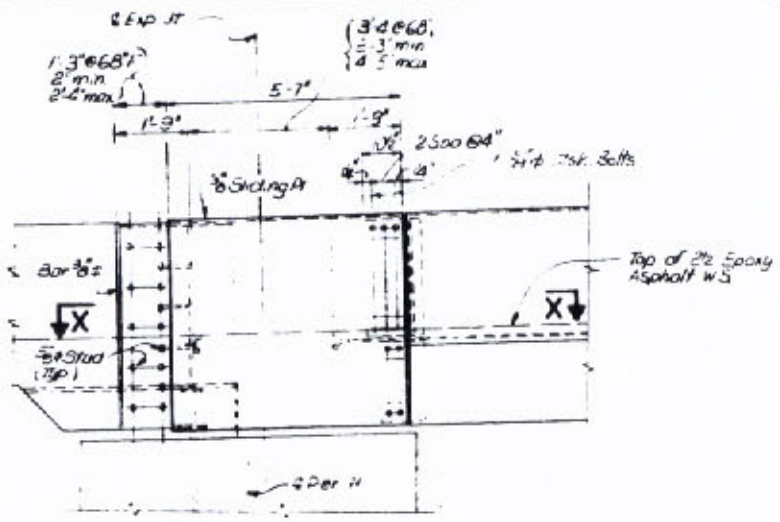
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

EXPANSION JOINT E2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

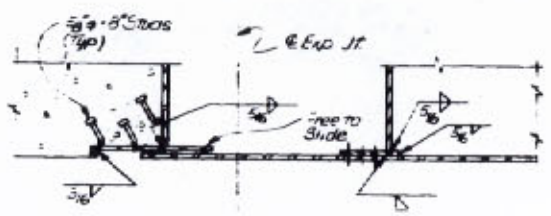
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
F 310-4(351)225	450-87-02	ST CHARLES	100 C



ELEVATION C-C (As shown)
ELEVATION D-D (Similar)
Scale ½"=1'-0"



SECTION X-X
Scale ½"=1'-0"

O. W. Hanson

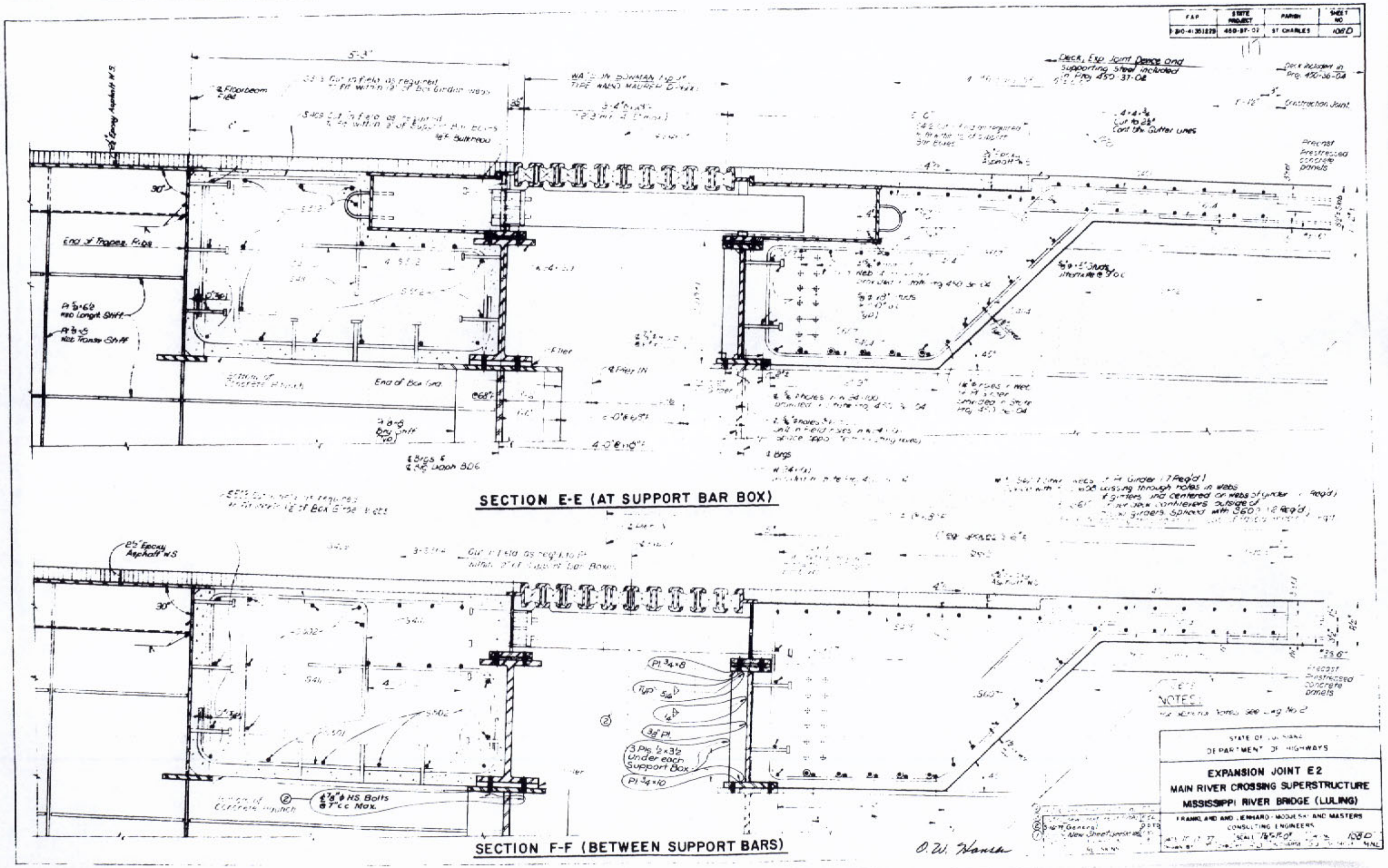
DATE	DESCRIPTION	BY
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

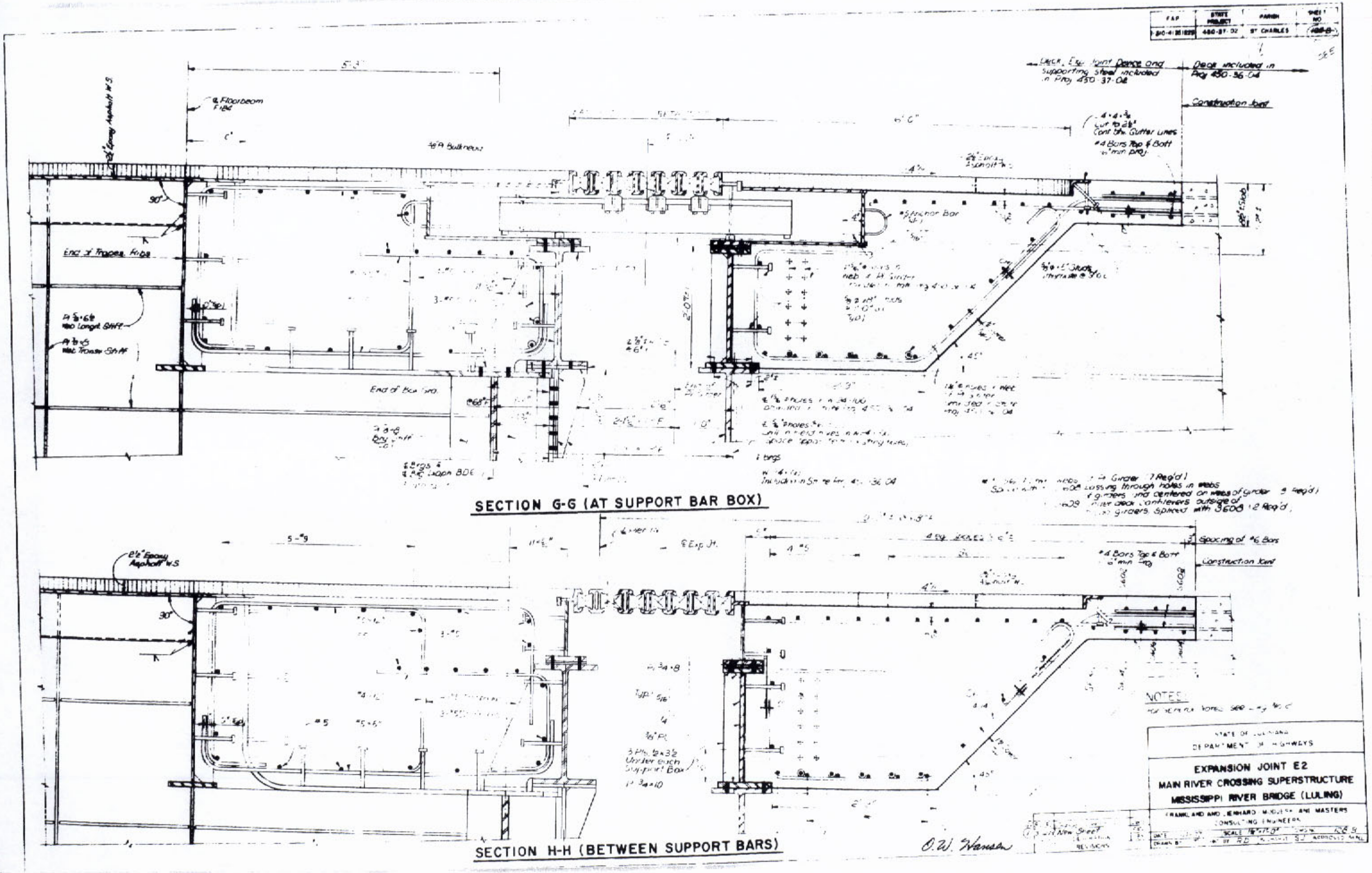
EXPANSION JOINT E2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE | SCALE As Shown | DWG NO | DRAWN BY | CHKD BY | IN CHARGE | APPROVED

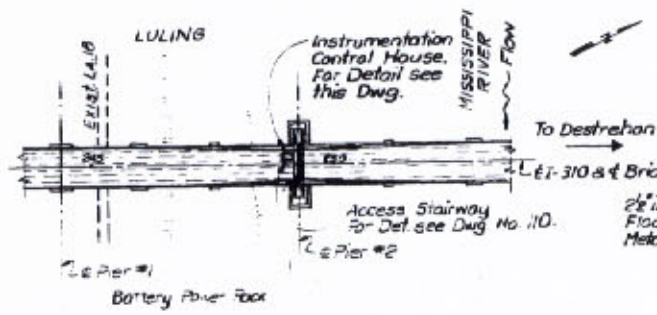


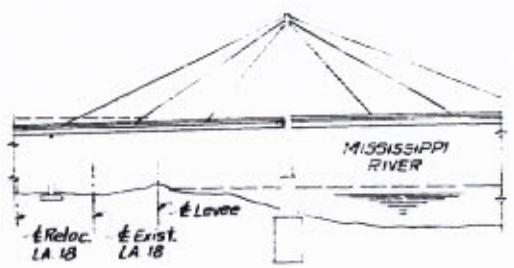
FAP
STATE PROJECT
PARISH
SHEET NO
ST CHARLES
108D
Deck, Exp Joint Dence and Supporting Steel included in Proj 450-37-02
Construction Joint
Precast Prestressed concrete panels
End of Trapez. Ribs
End of Box Gird.
SECTION E-E (AT SUPPORT BAR BOX)
2½" Epoxy Asphalt W.S.
Pl. ¾×8
Pl. ¾×10
3 Pls. ½×3½ Under each Support Box
¾"⌀ H.S. Bolts @ 7" c.c. Max.
SECTION F-F (BETWEEN SUPPORT BARS)
NOTES:
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
EXPANSION JOINT E2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS
O. W. Hansen



FAP
STATE PROJECT
PARISH
SHEET NO.
450-37-02
ST CHARLES
Deck, Exp. Joint Dence and Supporting Steel included in Proj. 450-37-02
Deck included in Proj. 450-36-04
Construction Joint
Floorbeam
End of Trapez. Ribs
End of Box Gra.
SECTION G-G (AT SUPPORT BAR BOX)
Spacing of #6 Bars
Construction Joint
SECTION H-H (BETWEEN SUPPORT BARS)
NOTES:
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
EXPANSION JOINT E2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD MODJESKI AND MASTERS
CONSULTING ENGINEERS
O.W. Hansen

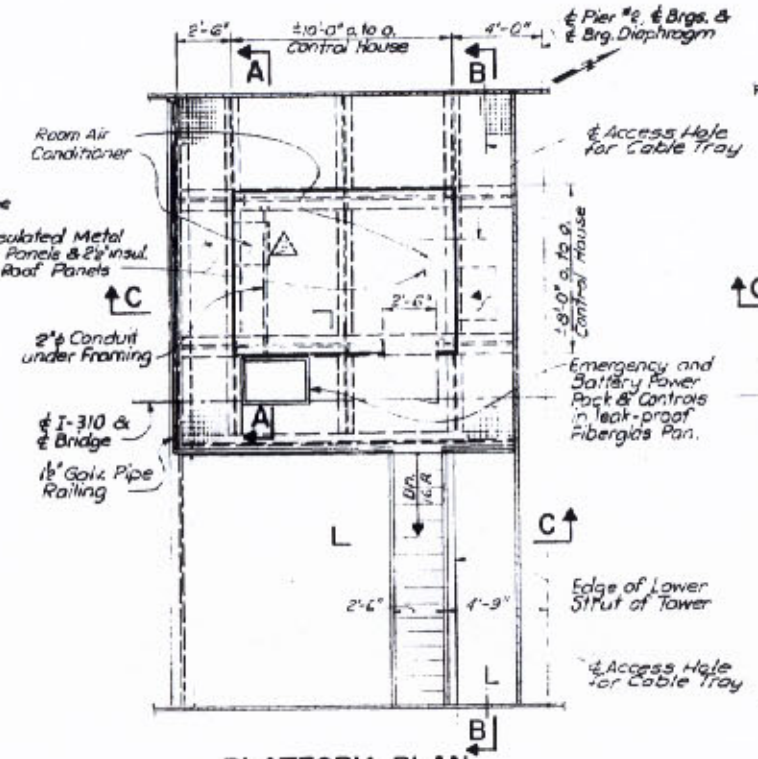
FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)225	460-57-02	ST CHARLES	109



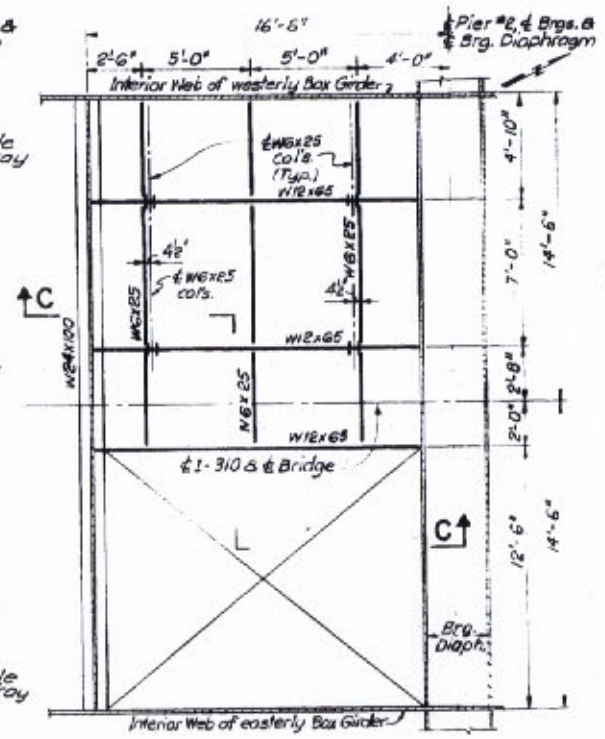


KEY PLAN & ELEVATION

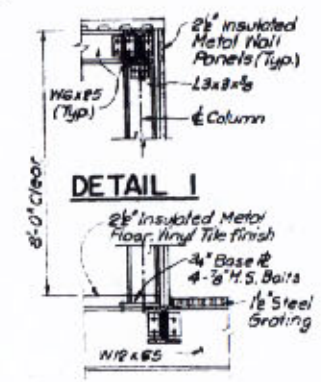
Scale: 1" = 200'



PLATFORM PLAN

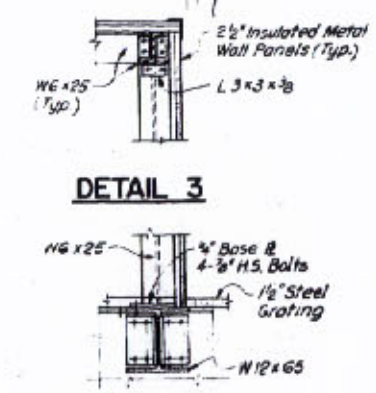


PLATFORM FRAMING PLAN



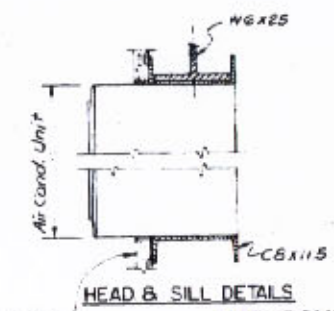
DETAIL 1

DETAIL 2

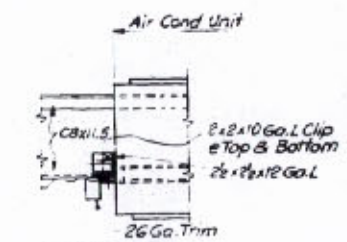


DETAIL 3

DETAIL 4

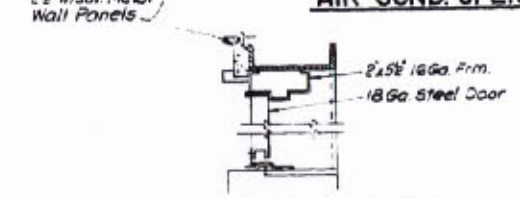


HEAD & SILL DETAILS



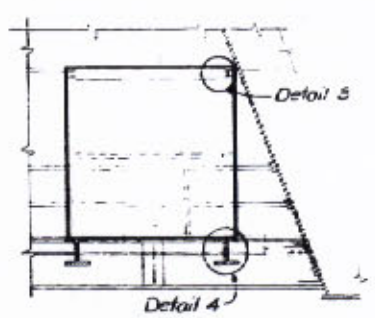
JAMB DETAIL

AIR COND. OPENING

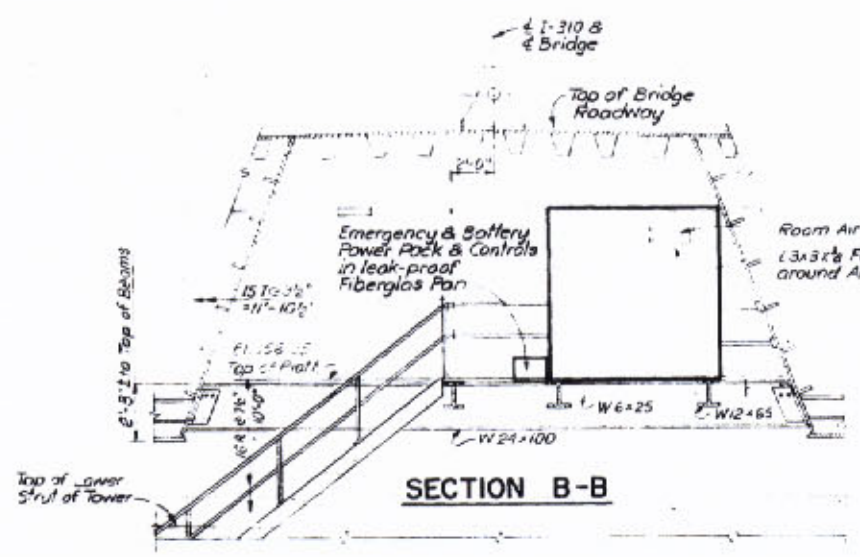


ENTRANCE DOOR DETAILS

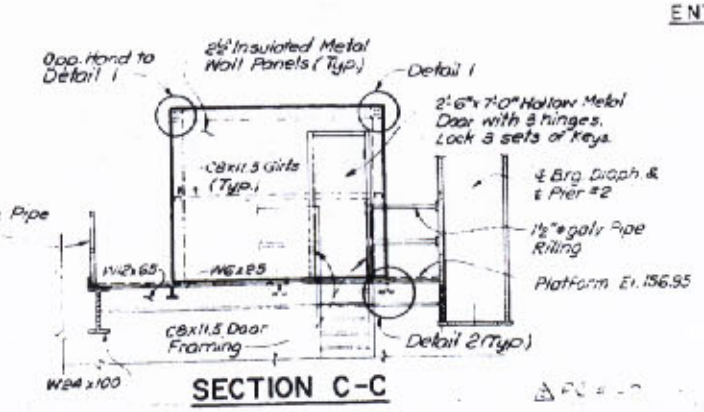
DOOR DETAILS



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

For General Notes, see Dwg. No. 2.

For Instrumentation Details and Electrical Details, see Dwg. No. E-1 thru E-34.

Unless otherwise shown, all Structural Steel connections to be Std. AISC.

Finish color of metal wall panels to match weathering Steel of Box Girders. All Structural Steel & the Platform Grating to be unpainted weathering Steel conforming to ASTM A588.

O. W. Hansen

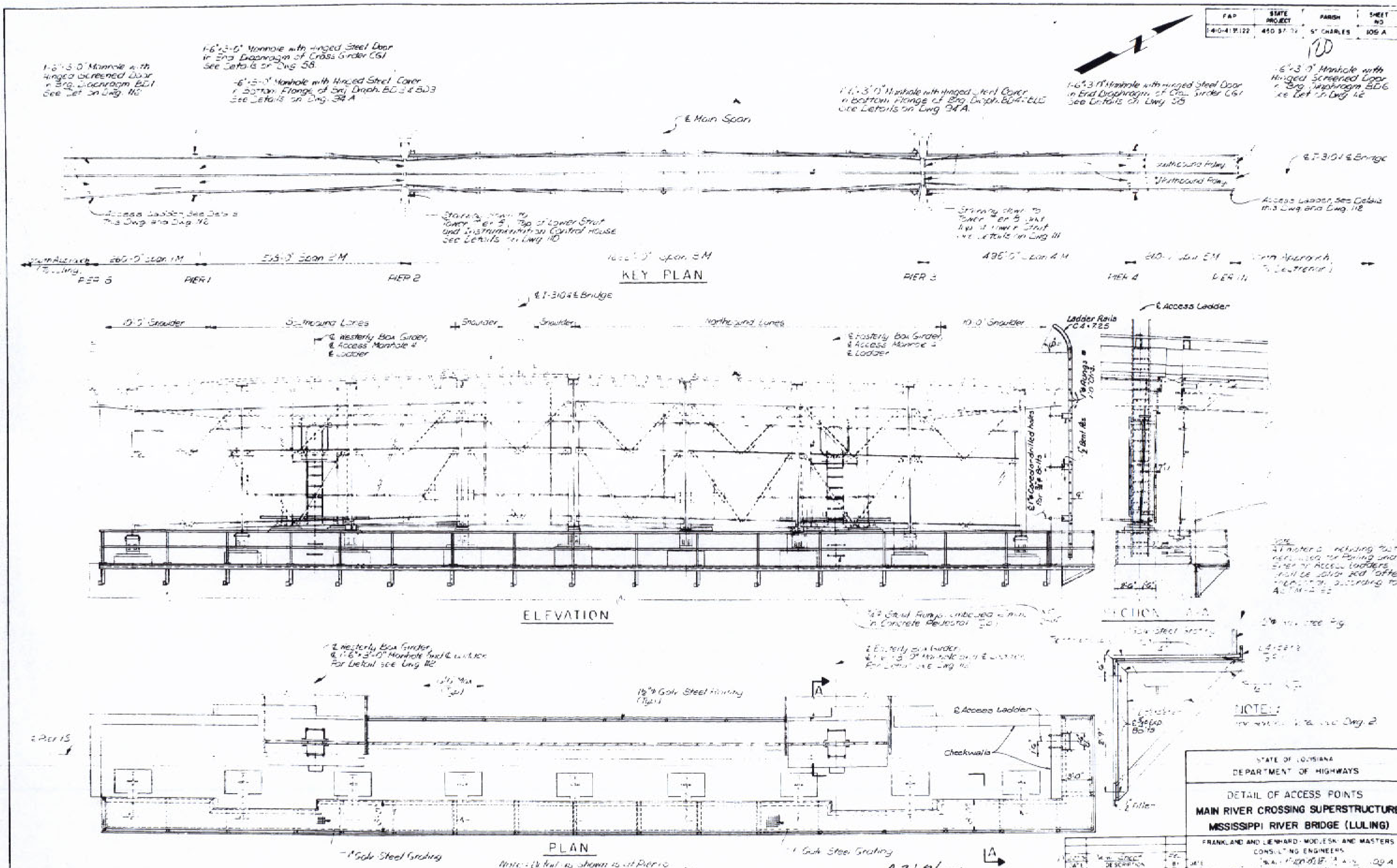
DATE	DESCRIPTION	BY
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

INSTRUMENTATION CONTROL HOUSE
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1/4 & 3/4" = 1'-0" | DWG NO. 109
DRAWN BY K.T. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED W.M.I.



FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(1)122	450-37-??	ST. CHARLES	109 A

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

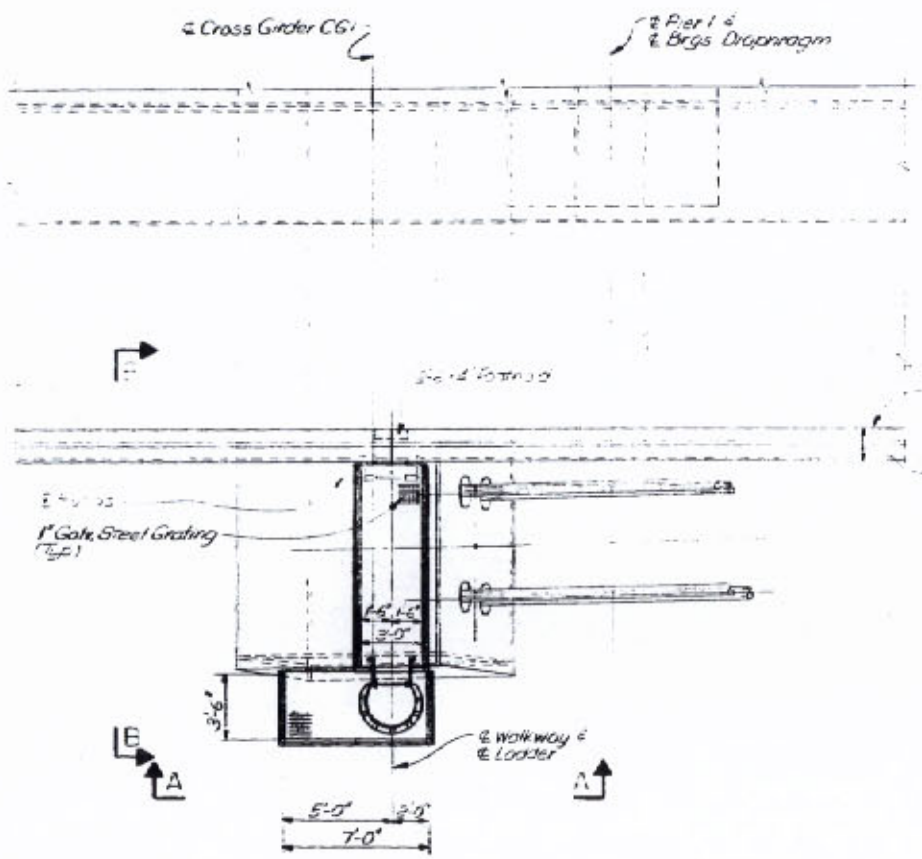
DETAIL OF ACCESS POINTS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

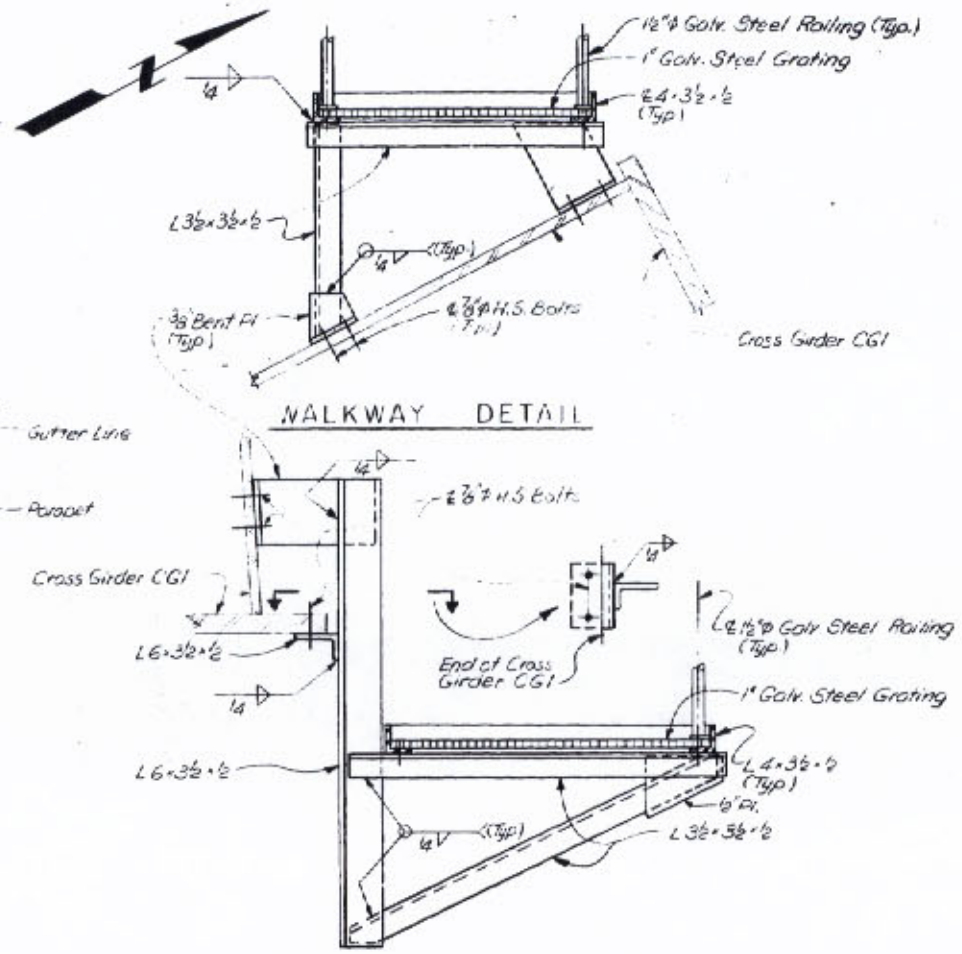
REVISIONS

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351)228	450-37-02	ST CHARLES	109 B

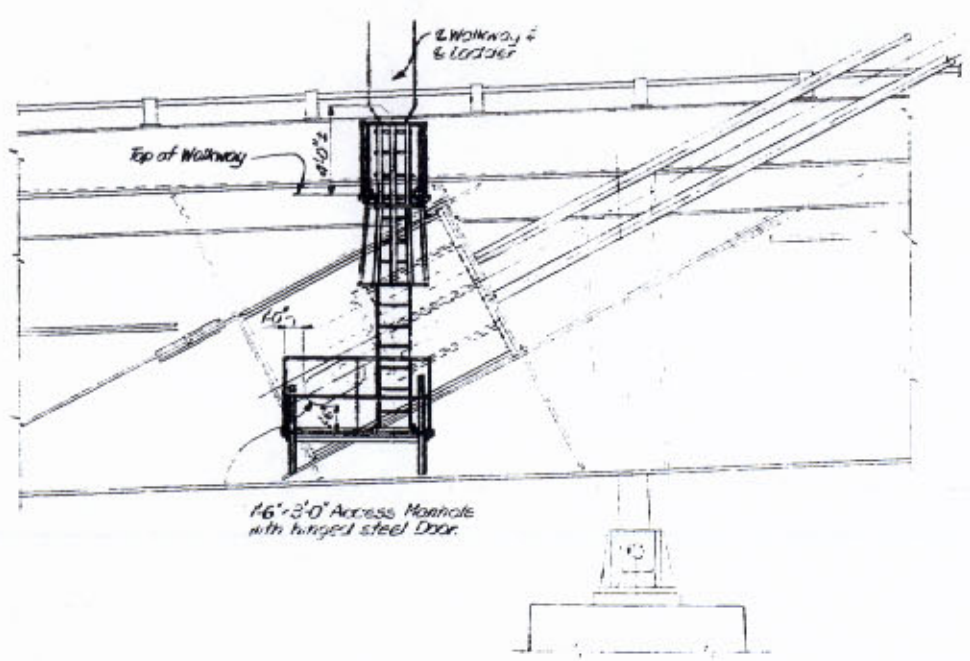
121



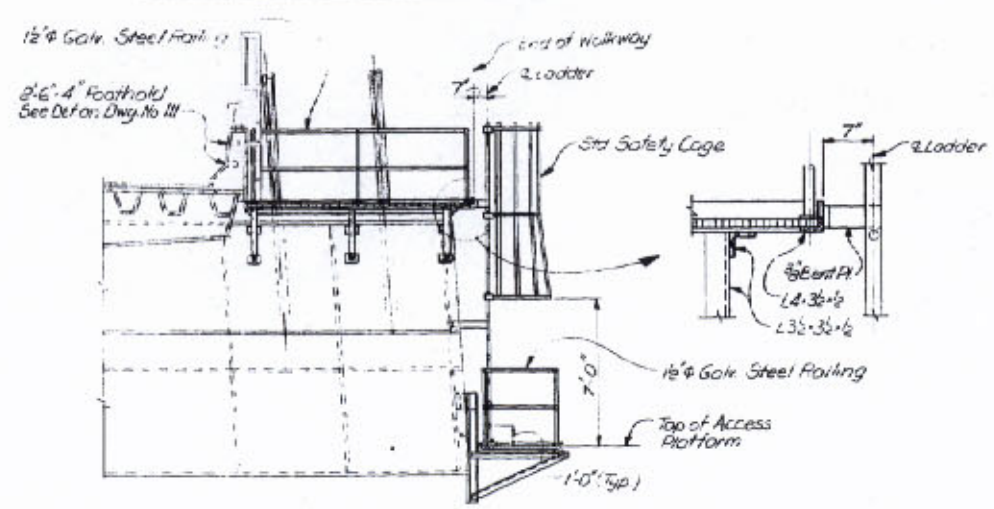
PLAN



ACCESS PLATFORM DETAIL



SECTION A-A



SECTION B-B

NOTES:

Additional Notes: See Dwg. No. 2

Ladder, Walkway and Platform Req'd. at Each End of Cross Girders CG 1.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

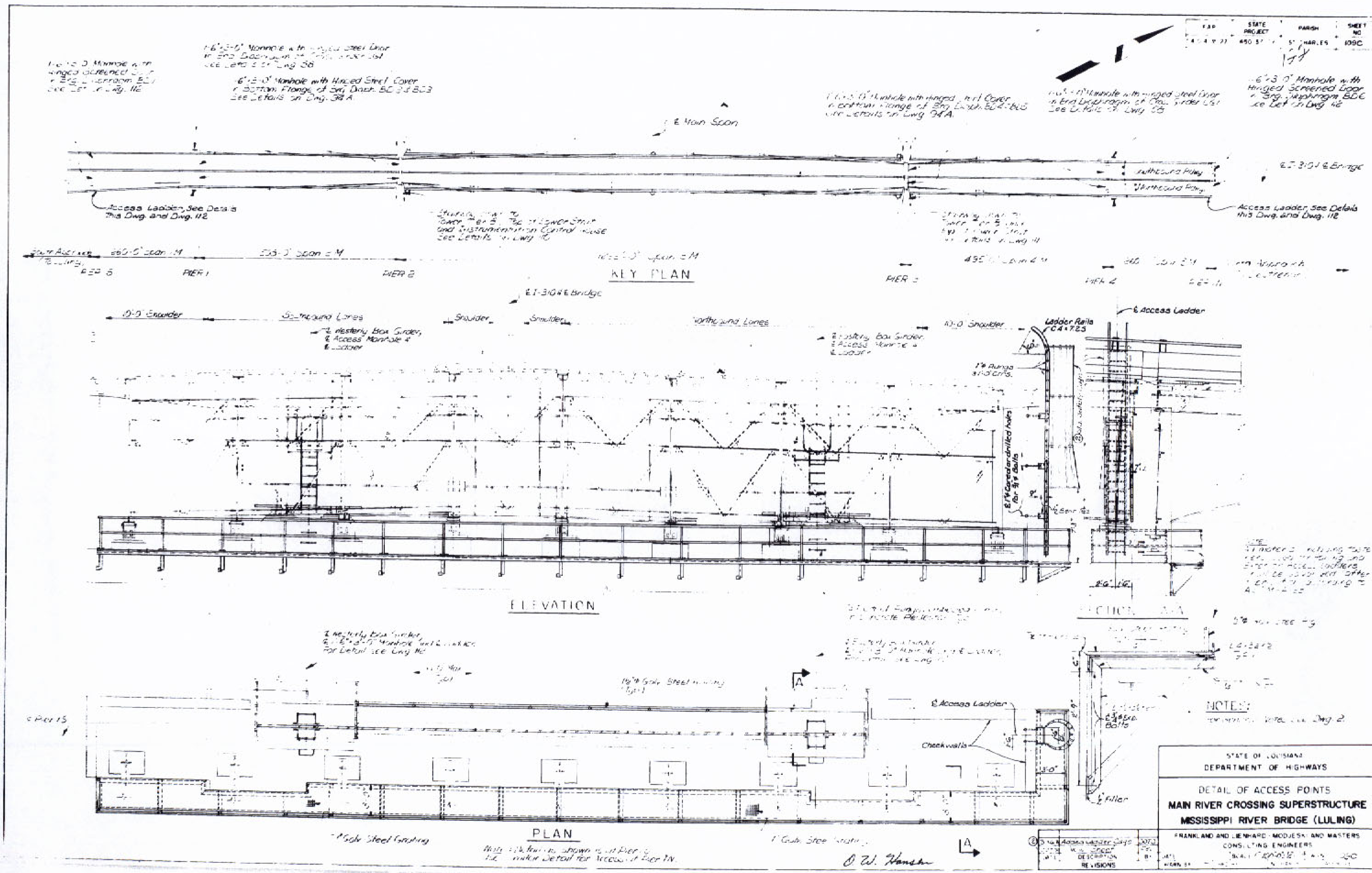
ACCESS AT CROSS GIRDER CG1
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

TRANSLANE AN ... MODLIN AN ... ENGINEERS

2/27/70	4'-0"x1'-4"-0"			109 B
W.T.	R.D.	S.J.		MNL

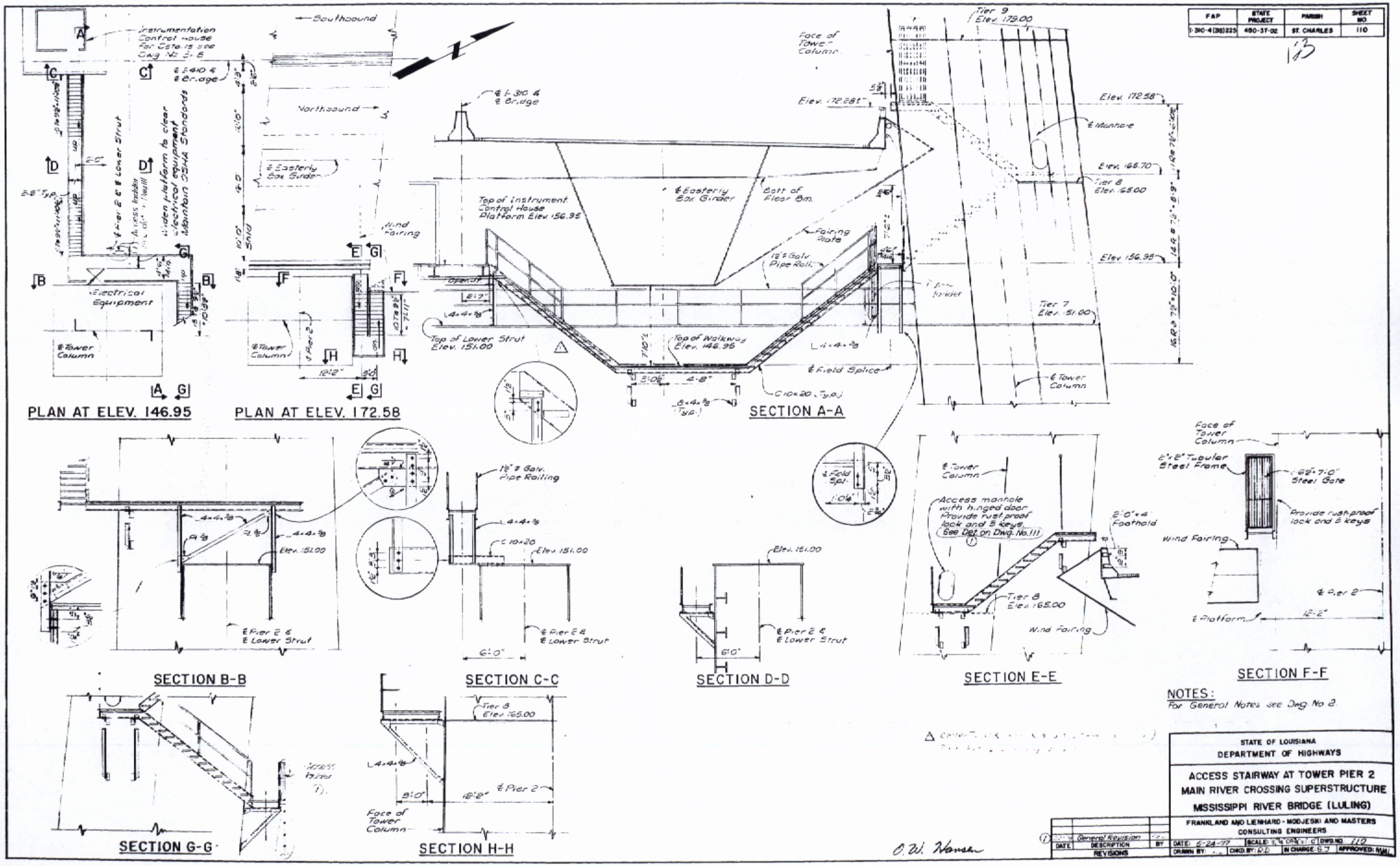
O. W. Hansen

Signed New Sheet


KEY PLAN
ELEVATION
PLAN
SECTION A-A
NOTES:
E.I-310 ℄ Bridge
℄ Main Span
Access Ladder, See Details This Dwg. and Dwg. 112
PIER 1
PIER 2
PIER 3
PIER 4
10'-0" Shoulder
Southbound Lanes
Northbound Lanes
Shoulder
Southbound Rdwy
Northbound Rdwy
℄ Westerly Box Girder, ℄ Access Manhole 4 ℄ Ladder
℄ Easterly Box Girder ℄ Access Manhole 4 ℄ Ladder
Ladder Rails C4×7.25
1" ϕ Rungs @ 1'-0" Ctrs.
℄ Access Ladder
8-1" ϕ Cored or drilled holes for 3/4" ϕ Bolts
Checkwalls
1/2" Filler
3'-0"
2'-9"
2'-6"
6"
19/16" ϕ Galv. Steel Grating
1" Galv. Steel Grating
6'×3'-0" Manhole with Hinged Screened Door in Brg. Diaphragm BDC See Det. on Dwg. 112
6'×3'-0" Manhole with Hinged Steel Cover in Bottom Flange of Brg. Diaph. BD 2 & BD 3 See Details on Dwg. 38A
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
DETAIL OF ACCESS POINTS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS
REVISIONS
DESCRIPTION
F.A.P.
STATE PROJECT
450-37
PARISH
ST. CHARLES
SHEET NO.
109C

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(38)225	450-37-02	ST. CHARLES	110

13



NOTES:
For General Notes see Dwg. No 2.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

ACCESS STAIRWAY AT TOWER PIER 2
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	General Revision	

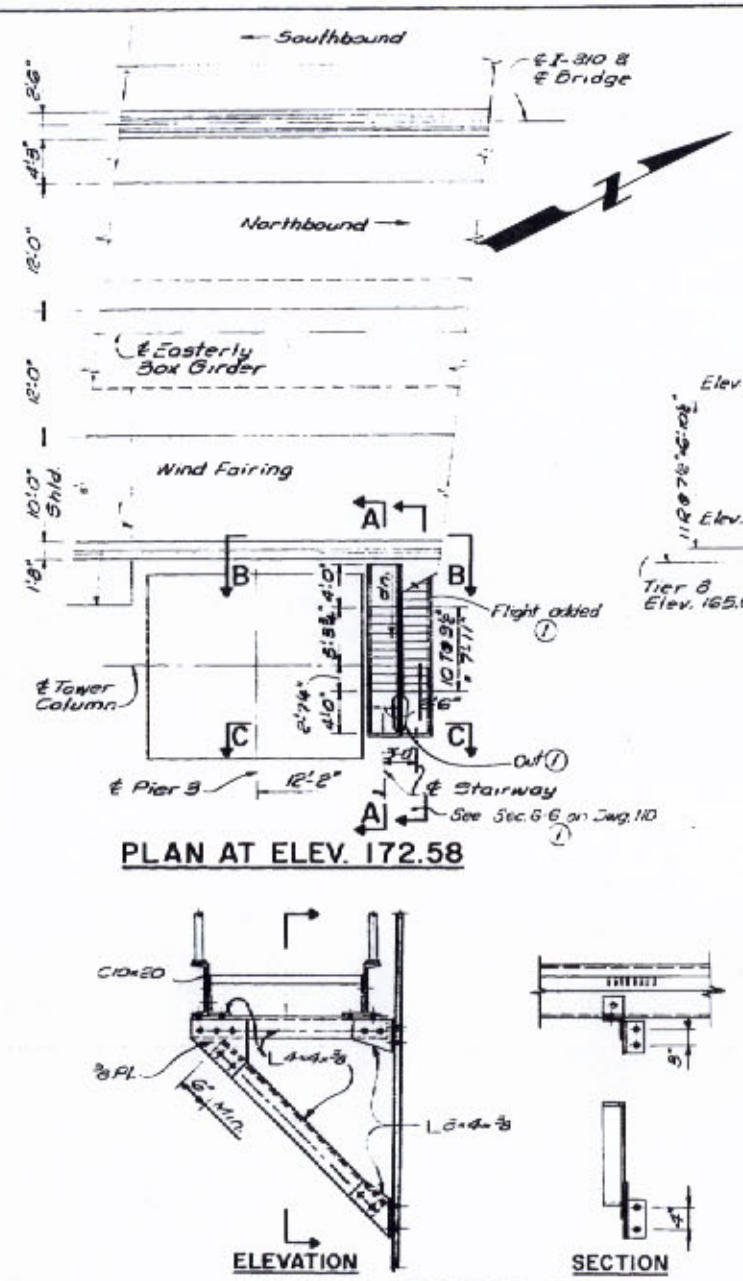
REVISIONS

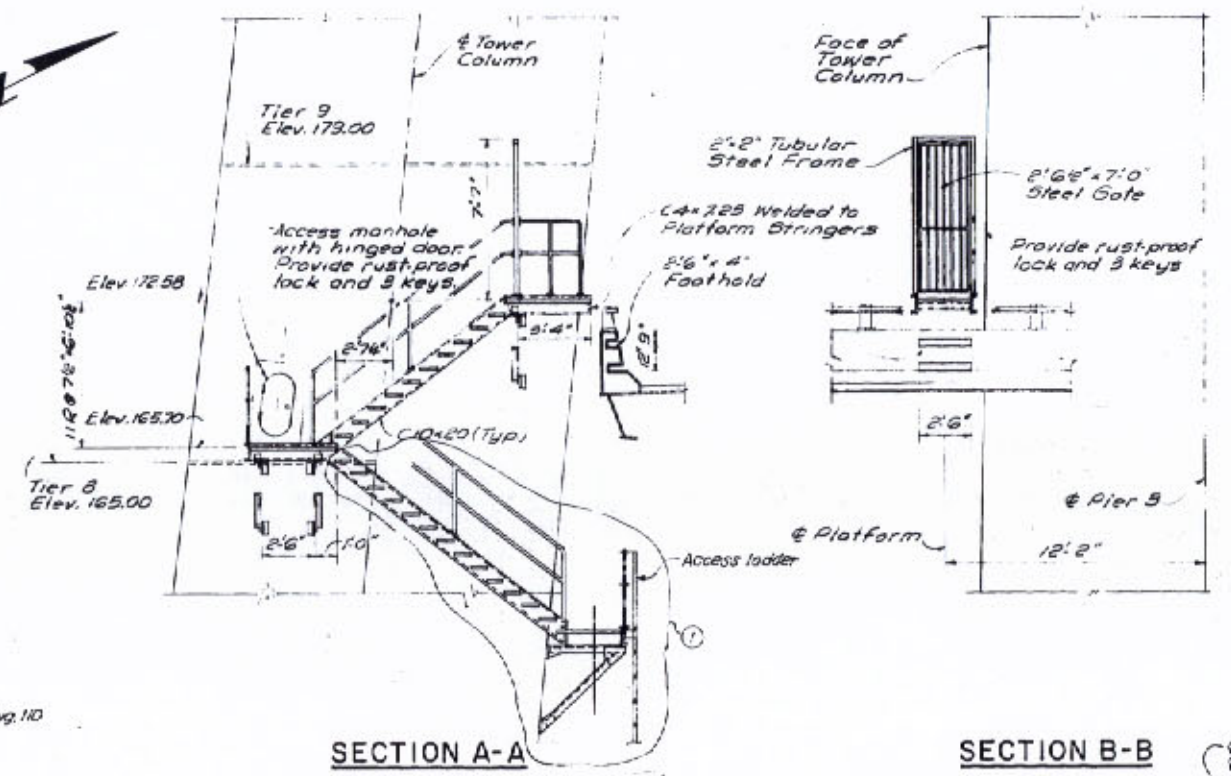
DATE: 5-24-77 | SCALE: 3/4" = 1'-0" | DWG. NO. 110
DRAWN BY: | CHKD. BY: R.D. | IN CHARGE: G.J. | APPROVED: MML

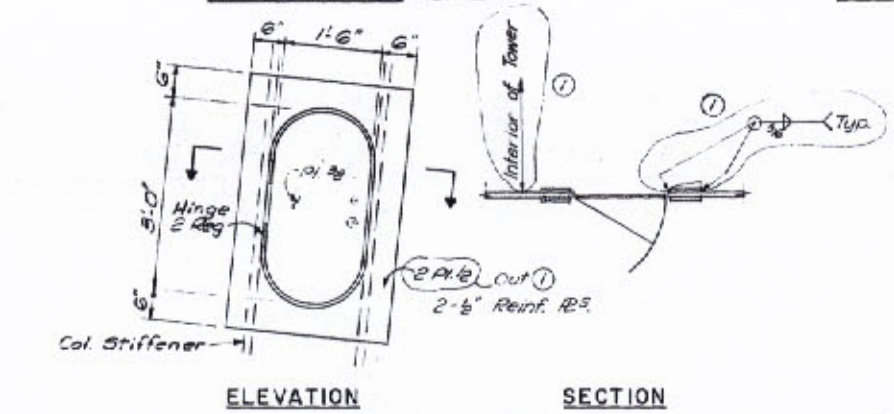
O. W. Hansen

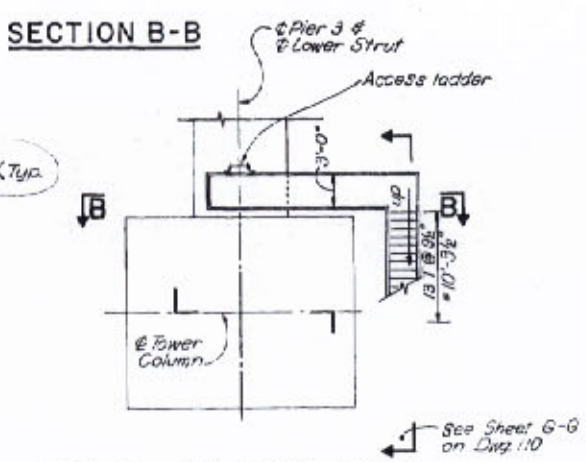
FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351)225	450-37-02	ST CHARLES	111

124

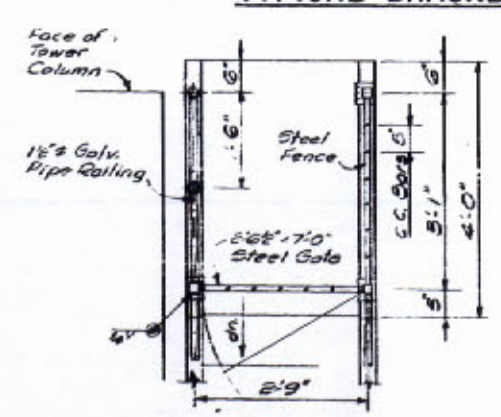


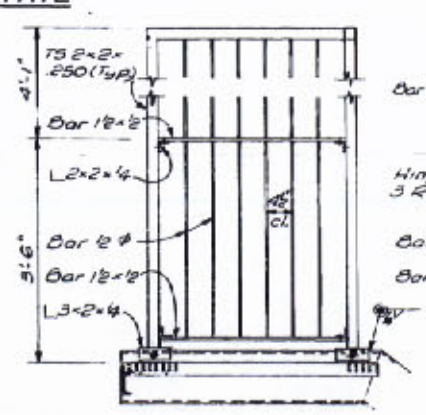


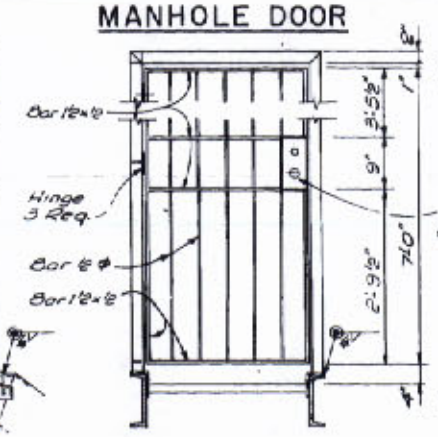


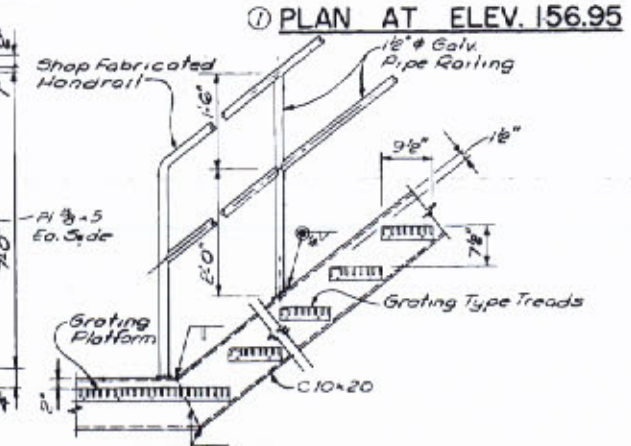


NOTES:
For General Notes see Dwg. No. 2.









O. W. Hansen

DATE	DESCRIPTION	BY
5-27-78	General Revision	FEL

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

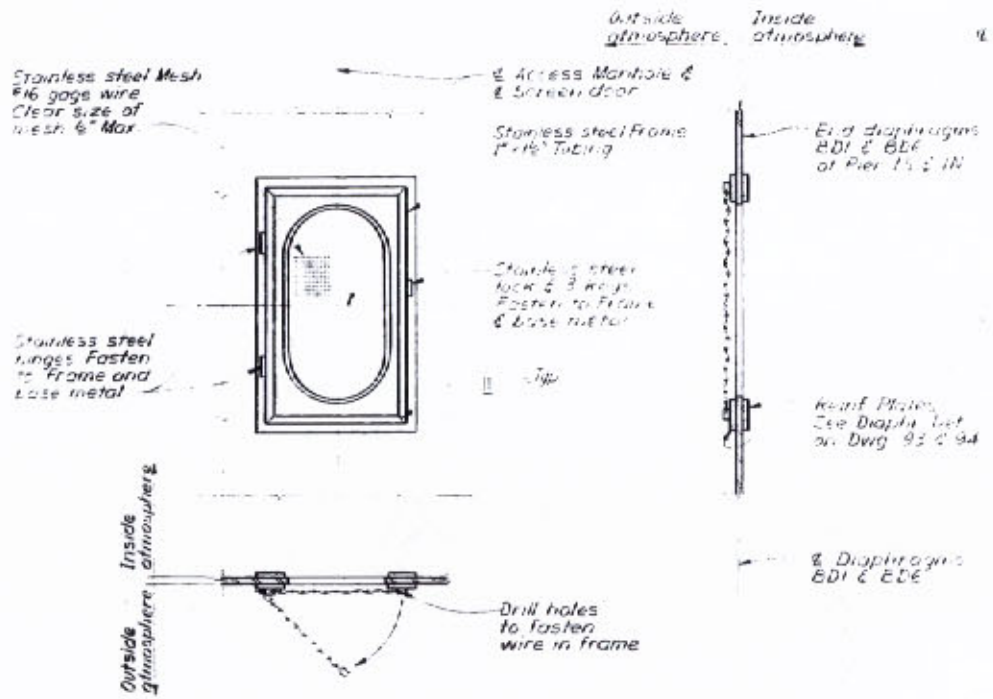
ACCESS STAIRWAY AT TOWER PIER 3
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

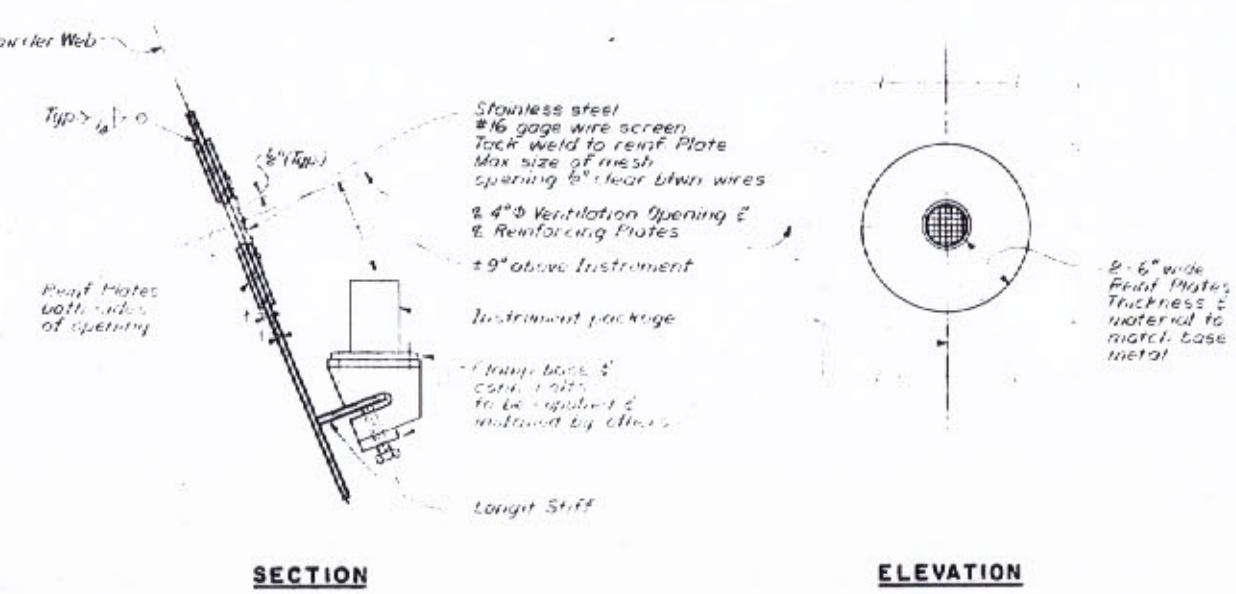
DATE 5-24-77 | SCALE ½" = 1'-0" | DWG NO. 111
DRAWN BY J.S. | CHKD BY D.D. | IN CHARGE S.J. | APPROVED AMM

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)228	450-37-02	ST. CHARLES	112

125



TYP. CLOSURE OF ACCESS MANHOLES TO BOX GIRDER AT PIER 1S & 1N

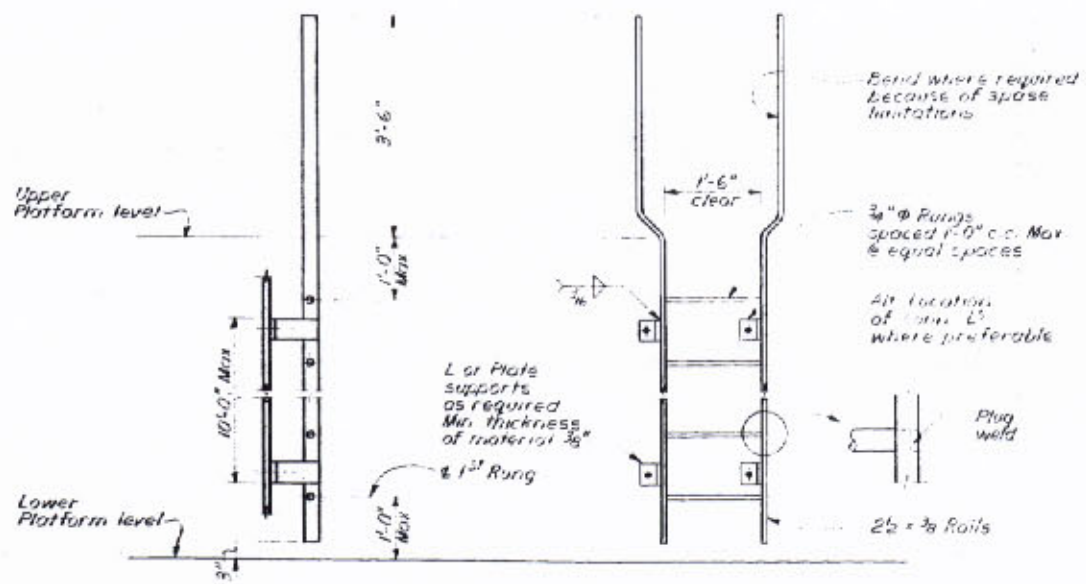


SECTION

ELEVATION

TYP. VENTILATION OPENING AT ACCELEROMETER LOCATIONS

Note: Detail as shown is at inclined webs of main box girders of bridge deck. All other locations details are similar.



TYP. LADDER DETAILS

Note: All material shall be ASTMA-36 galvanized and painted

O.W. Hansen

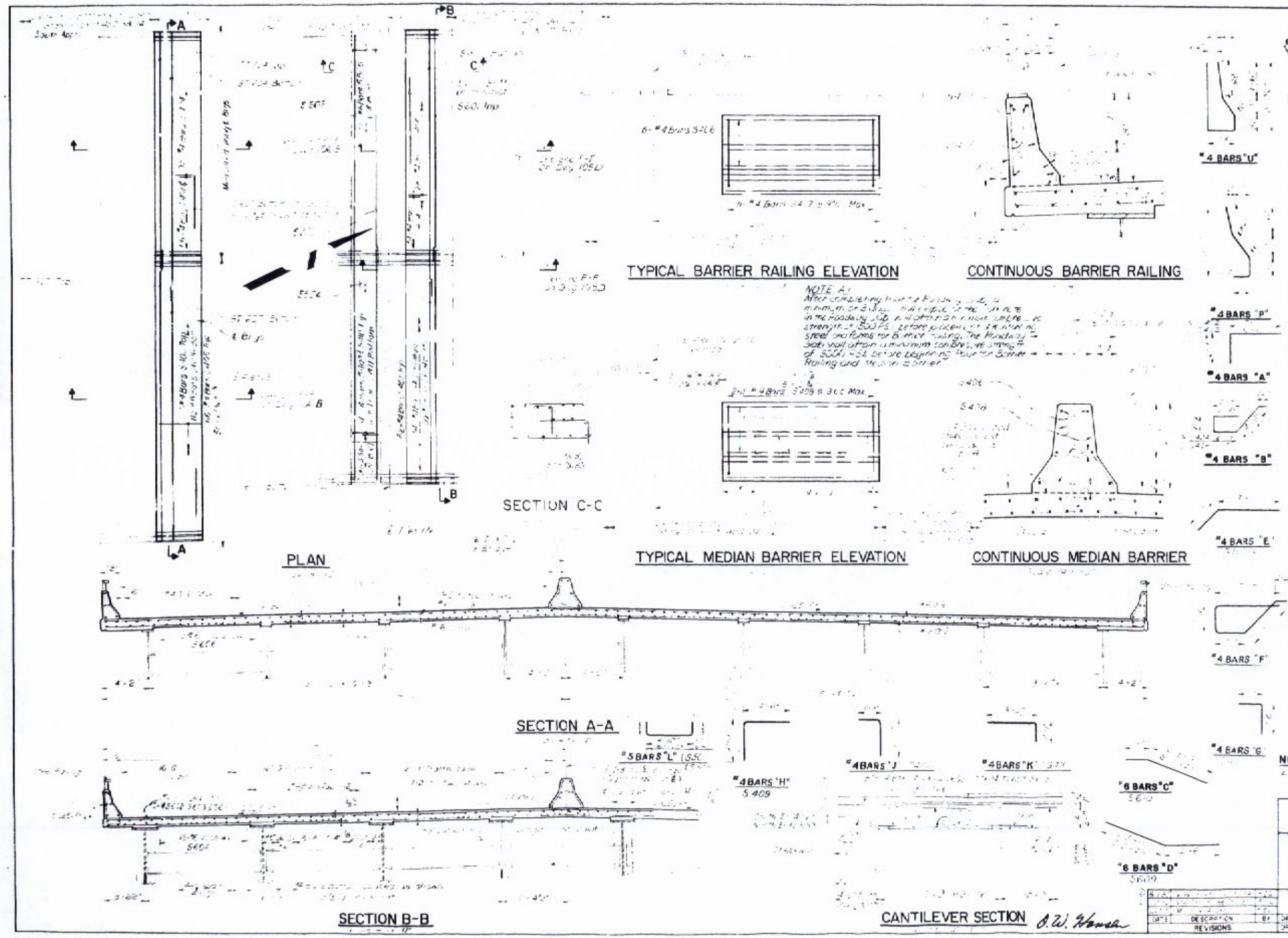
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

MISCELLANEOUS DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE 5-24-77 | SCALE: 3/4"=1'-0" | DWG NO. 112
DRAWN BY A.C. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED [illegible]



FAP	STATE PROJECT	PARISH	SHEET NO
I-310-4(35)225	450-37-02	ST CHARLES	113 B

BARS MARKED SAME AS SO APPR & NO APPR THEY CAN BE CHANGED FOR THESE APPR. DECKS

MARK	SIZE	Nº	TYPE	BAR LENGTH	TOTAL LENGTH
S 601	6	26	Str	42'-2"	1160'-8"
S 602	6	7	Str	47'-4"	331'-4"
S 603	6	7	Str	36'-8"	256'-8"
[illegible]	6	12	Str	[illegible]	435'-0"
[illegible]	6	126	Str	[illegible]	1231'-6"
S 605	6	[illegible]	Str	5'-0"	150'-0"
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	4	[illegible]	[illegible]	[illegible]	476'-4"
S 402	4	52	A	[illegible]	[illegible]
S 404	4	14	B	[illegible]	[illegible]
S 405	4	68	F	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Str	[illegible]	[illegible]
S 407	4	[illegible]	[illegible]	[illegible]	[illegible]
S 408	4	22	C	[illegible]	5'-10"
[illegible]	[illegible]	[illegible]	H	[illegible]	[illegible]
S 410	[illegible]	61	J	[illegible]	[illegible]
S 411	4	[illegible]	K	[illegible]	[illegible]
[illegible]	[illegible]	81	L	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Str	[illegible]	[illegible]
S 555	[illegible]	51	L	7'-2"	580'-3
					2,297 lin
S 401	2	66	[illegible]	3'-6"	231'-0"
S 402	4	27	[illegible]	9'-0"	243'-0"
S 404	4	32	E	[illegible]	966'-9"
S 405	4	66	[illegible]	[illegible]	517'-0"
S 406	[illegible]	18	[illegible]	[illegible]	[illegible]
S 407	4	22	U	[illegible]	66'-0
[illegible]	4	22	P	4'-[illegible]	88'-10
[illegible]	6	6	[illegible]	4	876'-8"
[illegible]	[illegible]	16	Str	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Str	[illegible]	[illegible]
S 16 7	6	7	Str	[illegible]	325
[illegible]	[illegible]	[illegible]	Str	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	Str	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NOTES:

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

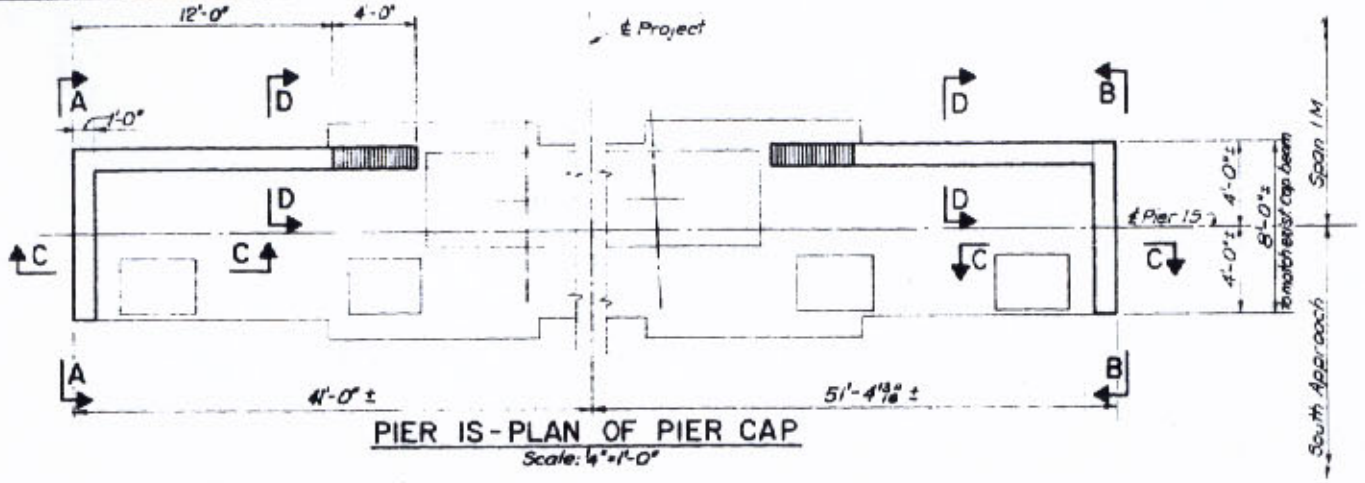
APPROACH DECK DETAILS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

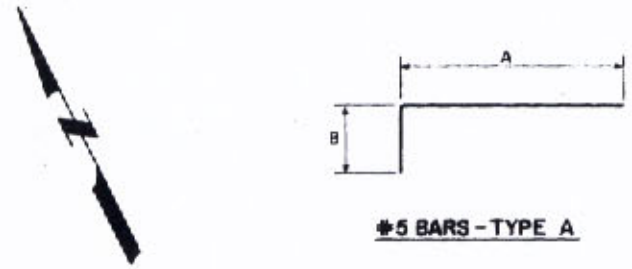
DATE	DESCRIPTION	BY
	REVISIONS	

DATE 5-30-[illegible] SCALE 1" = [illegible] 113 B
DRAWN BY [illegible] CHECKED BY [illegible] IN CHARGE [illegible] APPROVED: [illegible]

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(38)225	450-37-02	ST. CHARLES	114



PIER 15-PLAN OF PIER CAP
Scale: 1/4"=1'-0"

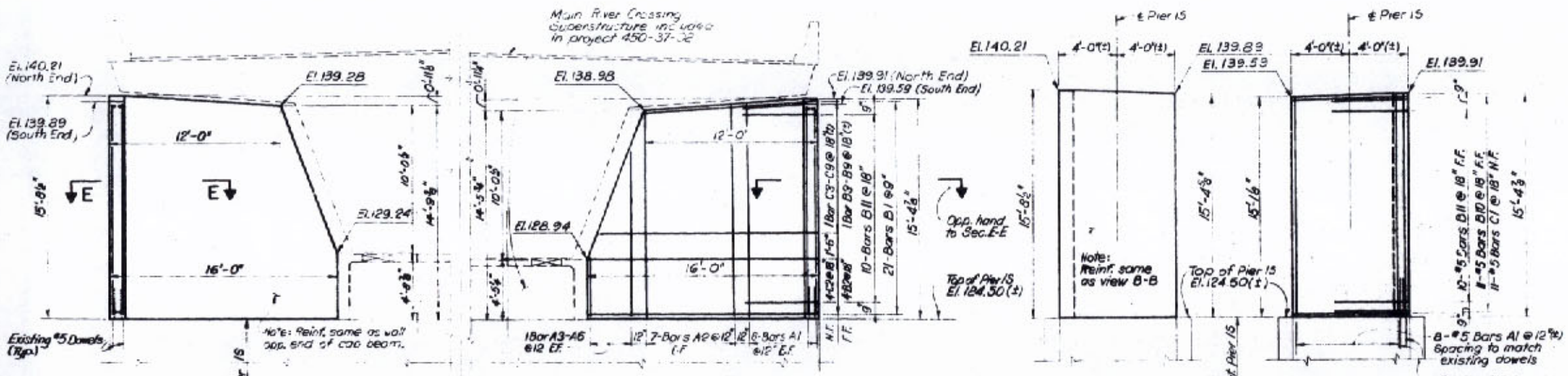


#5 BARS - TYPE A

ESTIMATED QUANTITIES

MARK	NUMBER	SIZE	LENGTH	TYPE	A	B
A1	56	5	15'-0"	Str.		
A2	28		14'-4"			
A3	4		12'-3"			
A4	4		9'-9"			
A5	4		7'-3"			
A6	4		4'-9"	Str.		
B1	42		10'-0"	A	5'-0"	5'-0"
B2	8		16'-2"		15'-8"	6"
B3	2		15'-7"		15'-1"	
B4	2		15'-0"		14'-6"	
B5	2		14'-5"		13'-11"	
B6	2		13'-10"		13'-4"	
B7	2		13'-3"		12'-9"	
B8	2		12'-8"		12'-2"	
B9	2		12'-3"		11'-9"	
B10	22		8'-2"		7'-8"	
B11	40		5'-6"	A	5'-0"	6"
C1	22		7'-8"	Str.		
C2	8		15'-8"			
C3	2		15'-1"			
C4	2		14'-6"			
C5	2		13'-11"			
C6	2		13'-4"			
C7	2		12'-9"			
C8	2		12'-2"			
C9	2	5	11'-9"	Str.		

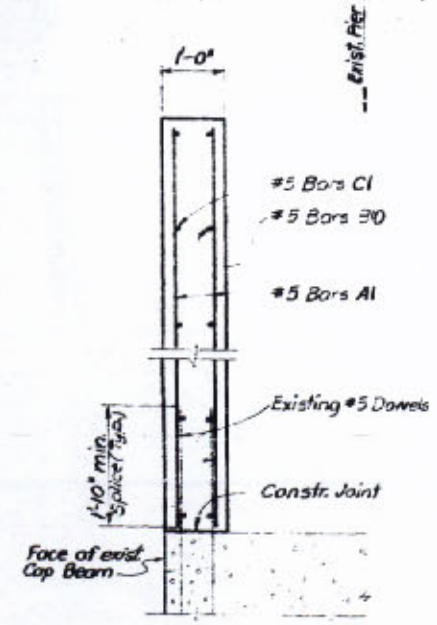
DEFORMED REINF. STEEL: 3131 Lbs.
CLASS A CONCRETE: 24 C.Y.



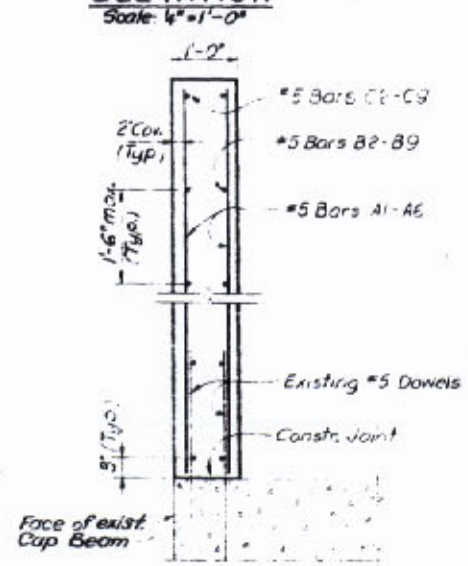
ELEVATION
Scale: 1/4"=1'-0"

VIEW A-A
Scale: 1/4"=1'-0"

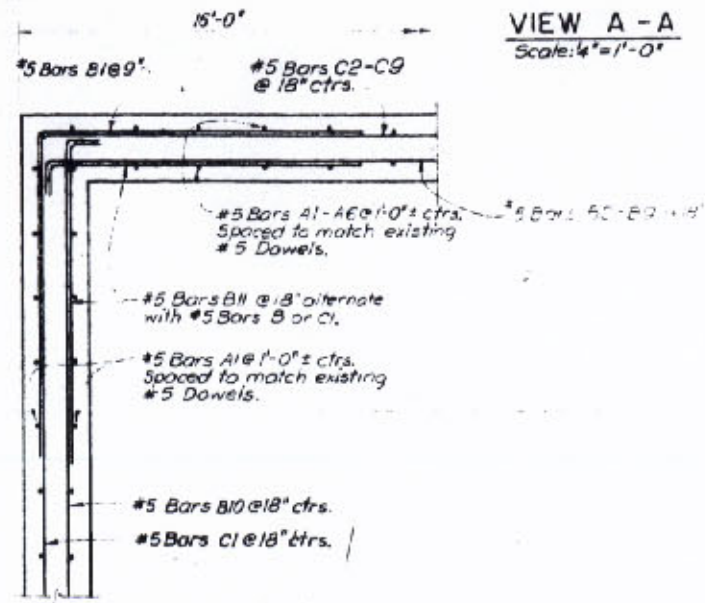
VIEW B-B
Scale: 1/4"=1'-0"



SECTION C-C
Scale: 1/4"=1'-0"



SECTION D-D
Scale: 1/4"=1'-0"



SECTION E-E
Scale: 1/4"=1'-0"

NOTES:
For General Notes, see
N.F. = Near Face
F.F. = Far Face
E.F. = Each Face
CONCRETE SURFACES SHALL BE CLASS 1 ORDINARY SURFACE FINISH IN ACCORDANCE WITH ARTICLE 805.14 OF THE STANDARD SPECIFICATIONS.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

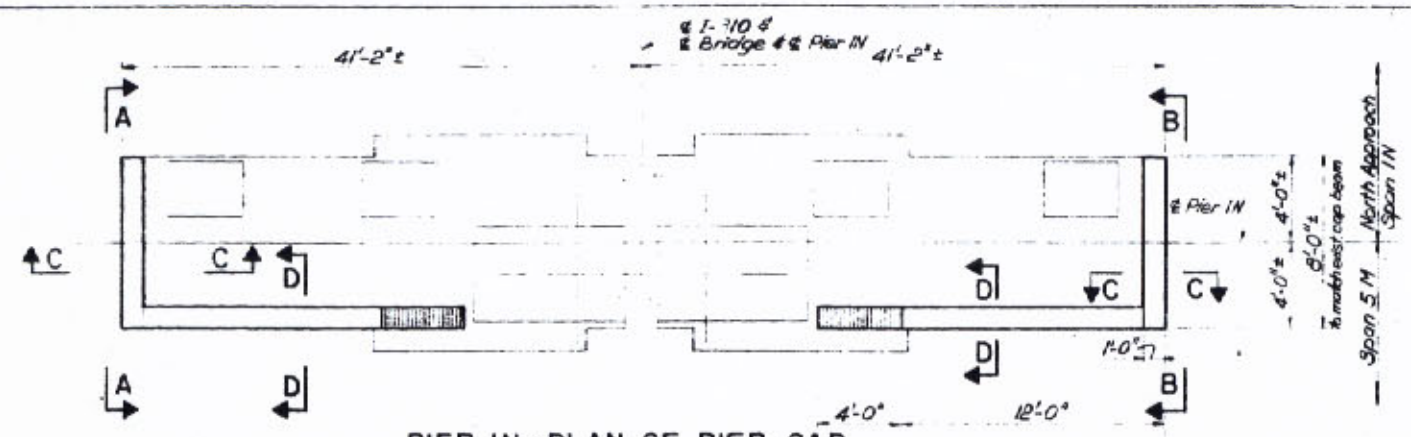
CHEEKWALLS AT PIER 15
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE | SCALE AS SHOWN | DWG NO. 114
DRAWN BY F.T. | CHKD BY I.S. | IN CHARGE S.J. | APPROVED MML

O. W. Hansen



PIER IN - PLAN OF PIER CAP
Scale: 4" = 1'-0"

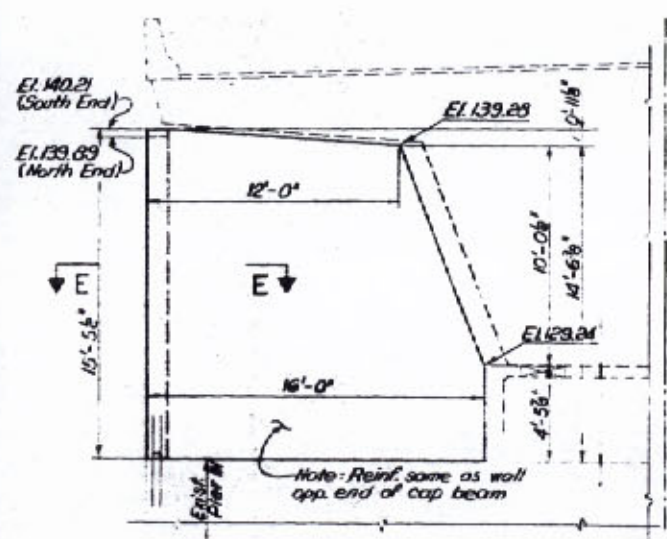
#5 BARS - TYPE A

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351223)	450-37-02	ST. CHARLES	115

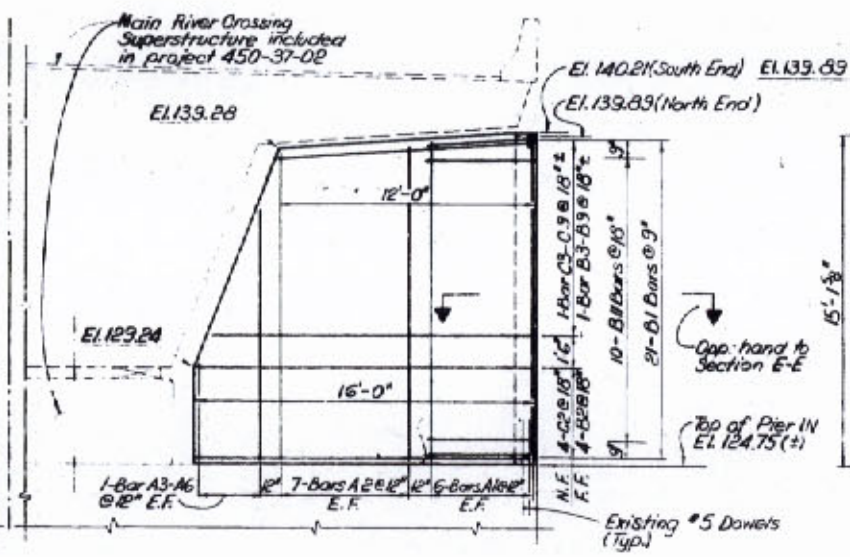
ESTIMATED QUANTITIES

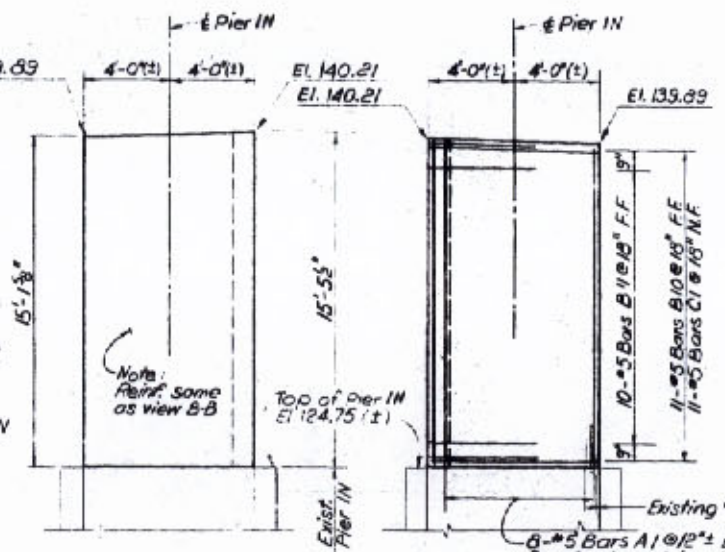
MARK	NUMBER	SIZE	LENGTH	TYPE	A	B
A1	56	5	15'-0"	Str.		
A2	28		14'-4"			
A3	4		12'-3"			
A4	4		9'-9"			
A5	4		7'-3"			
A6	4		4'-9"	Str.		
B1	42		10'-0"	A	5'-0"	5'-0"
B2	8		16'-2"		15'-8"	6"
B3	2		15'-7"		15'-1"	
B4	2		15'-0"		14'-6"	
B5	2		14'-5"		13'-11"	
B6	2		13'-10"		13'-4"	
B7	2		13'-3"		12'-9"	
B8	2		12'-8"		12'-3"	
B9	2		12'-3"		11'-9"	
B10	22		8'-2"		7'-8"	
B11	40		5'-6"	A	5'-0"	6"
C1	22		7'-8"	Str.		
C2	8		15'-8"			
C3	2		15'-1"			
C4	2		14'-6"			
C5	2		13'-11"			
C6	2		13'-4"			
C7	2		12'-9"			
C8	2		12'-2"			
C9	2	5	11'-3"	Str.		

DEFORMED REINF. STEEL : 3131 Lbs.
CLASS A CONCRETE : 24 C.Y.



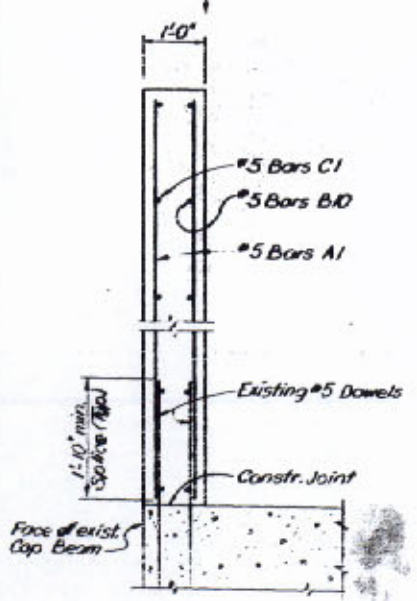
ELEVATION
Scale: 4" = 1'-0"



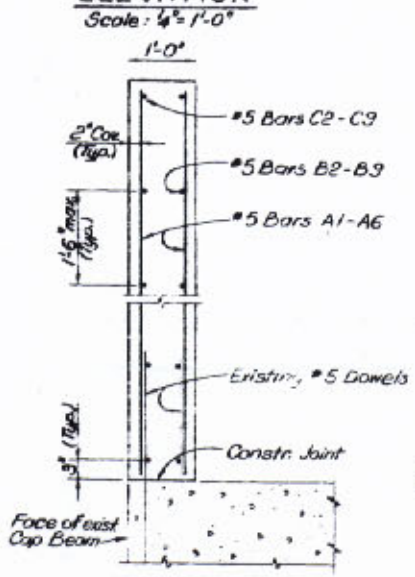


VIEW A - A
Scale: 4" = 1'-0"

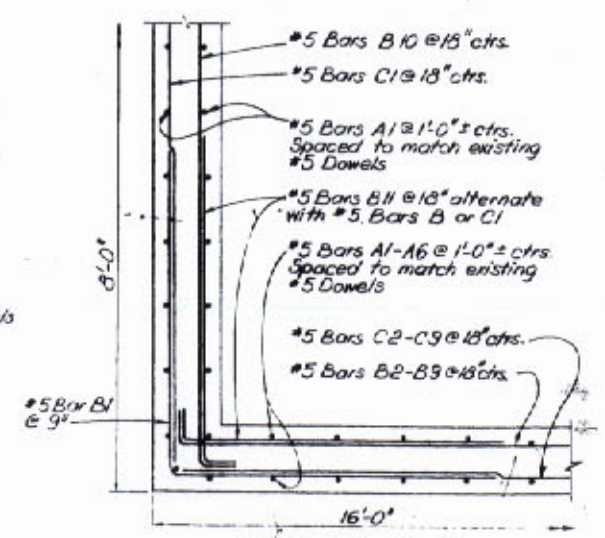
VIEW B - B
Scale: 4" = 1'-0"



SECTION C-C
Scale: 3/4" = 1'-0"



SECTION D-D
Scale: 3/4" = 1'-0"



SECTION E-E
Scale: 3/4" = 1'-0"

O. W. Hanak

NOTES
For General Notes, see Dwg. No. 2
N.F. = Near Face
F.F. = Far Face
E.F. = Each Face
CONCRETE SURFACES SHALL BE CLASS 1 ORDINARY SURFACE FINISH IN ACCORDANCE WITH ARTICLE 805.19 OF THE STANDARD SPECIFICATIONS.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CHEEKWALLS AT PIER IN
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE | MLB: AS SHOWN | DWG. NO. 116
DRAWN BY | CHKD BY | IN CHARGE S.O. | APPROVED MBL

TOP OF WEARING SURFACE ELEVATIONS ⚠

I-310 N.BD. & S.BD RDW'Y

Station	S BD Rdwy Lt Gtr	S BD Rdwy Med Gtr
241+70	142.15	143.10
241+80	142.55	143.5
241+90	142.93	142.85
242+00	143.31	144.26
242+10	143.69	144.64
242+20	144.07	145.02
242+30	144.45	145.40
242+40	144.94	145.79
242+50	145.22	146.17
242+60	145.60	146.55
242+70	145.98	146.93
242+80	146.36	147.31
242+90	146.74	147.69
243+00	147.12	148.07
243+10	147.51	148.45
243+20	147.88	148.83
243+30	148.26	149.21
243+40	148.65	149.60
243+50	149.03	[illegible]
243+60	149.4	150.36
243+70	149.79	150.74
243+80	150.17	151.12
243+90	150.55	151.50
Station	**N BD Rdwy Rt Gtr**	**N BD Rdwy Med Gtr**
241+70	141.32	143.12
241+80	142.29	143.50
241+90	142.62	143.88
242+00	143.08	144.26
242+10	143.47	144.64
242+20	143.86	145.02
242+30	144.25	145.41
242+40	144.65	145.79
242+50	145.04	146.17
242+60	145.43	146.55
242+70	145.83	146.93
242+80	146.22	147.31
242+90	146.61	147.69
243+00	147.01	148.07
243+10	147.40	148.45
243+20	147.79	148.83
243+30	148.18	149.2
243+40	148.58	149.59
243+50	148.97	149.92
243+60	149.36	150.36
243+70	149.76	150.74
243+80	150.15	151.12
243+90	150.54	151.50

Station	S.B. Rdwy Lt Gtr / N.B. Rdwy Rt Gtr	S.B. Rdwy Med Gtr / N.B. Rdwy Med Gtr
244+00	150.3	[illegible]
244+10	151.3	152.4
244+20	151.65	152.4
244+30	152.0	153.2
244+40	152.46	153.4
244+50	152.84	153.7
244+60	153.23	154.19
244+70	153.62	154.57
244+80	[illegible]	[illegible]
244+90	154.41	[illegible]
245+00	154.79	155.3
245+10	155.17	[illegible]
245+20	155.55	[illegible]
245+30	[illegible]	156.8
245+40	156.29	157.24
245+50	156.6	157.6
245+60	157.02	157.97
245+70	157.38	158.3
245+80	[illegible]	158.69
245+90	158.09	159.0
246+00	158.4	159.39
246+10	158.78	159.73
246+20	159.12	160.08
246+30	159.46	160.41
246+40	[illegible]	[illegible]
246+50	160.1	161.08
246+60	160.46	161.4
246+70	160.7	161.7
246+80	161.1	162.05
246+90	161.41	162.36
247+00	161.73	162.65
247+10	162.04	162.9
247+20	162.35	163.2
247+30	162.64	163.59
247+40	162.94	163.9
247+50	163.23	164.2
247+60	163.5	164.48
247+70	163.8	164.76
247+80	164.1	165.0
247+90	164.3	165.3
248+00	164.65	165.60
248+10	164.93	165.88
248+20	165.19	166.14
248+30	165.46	166.4
248+40	165.7	166.67
248+50	165.9	166.9
248+60	166.23	167.2
248+70	166.49	167.44
248+80	166.73	167.69
248+90	166.98	167.9

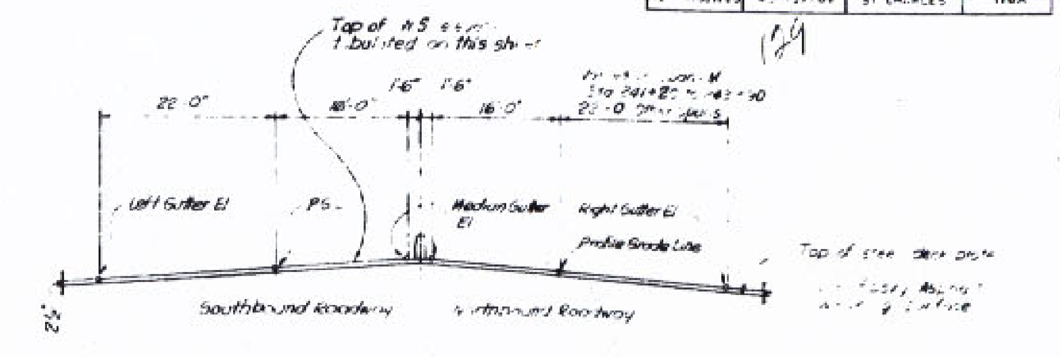
Station	S BD Rdwy Lt Gtr / N BD Rdwy Rt Gtr	S BD Rdwy Med Gtr / N BD Rdwy Med Gtr
249+00	167.22	168.17
249+10	167.48	168.43
249+20	167.69	168.64
249+30	167.92	168.87
249+40	168.14	169.09
249+50	168.36	169.31
249+60	168.58	169.53
249+70	168.8	169.7
249+80	169.0	169.96
249+90	169.22	170.17
250+00	169.4	170.37
250+10	169.62	170.57
250+20	169.82	170.77
250+30	170.0	170.96
250+40	170.20	171.15
250+50	170.38	171.33
250+60	170.56	171.51
250+70	170.72	171.68
250+80	170.8	171.84
250+90	171.05	172.00
251+00	171.21	172.16
251+10	171.36	172.31
251+20	171.52	172.47
251+30	171.66	172.61
251+40	171.81	172.76
251+50	171.95	172.90
251+60	172.09	173.04
251+70	172.22	173.17
251+80	172.35	173.30
251+90	172.48	173.43
252+00	172.60	173.55
252+10	172.72	173.67
252+20	172.84	173.79
252+30	172.95	173.90
252+40	173.06	174.01
252+50	173.17	174.12
252+60	173.27	174.22
252+70	173.37	174.32
252+80	173.47	174.42
252+90	173.56	174.51
253+00	173.65	174.60
253+10	173.74	174.69
253+20	173.82	174.77
253+30	173.90	174.85
253+40	173.98	174.93
253+50	174.05	175.00
253+60	174.12	175.07
253+70	174.18	175.15
253+80	174.25	175.20
253+90	174.30	175.26

Station	S BD Rdwy Lt Gtr / N BD Rdwy Rt Gtr	S BD Rdwy Med Gtr / N BD Rdwy Med Gtr
254+00	174.96	175.8
254+10	174.41	175.36
254+20	174.46	175.41
254+30	174.51	175.46
254+40	[illegible]	175.50
254+50	174.59	175.54
254+60	[illegible]	175.57
254+70	[illegible]	175.61
254+80	174.68	[illegible]
254+90	174.71	[illegible]
255+00	[illegible]	[illegible]
255+10	[illegible]	[illegible]
255+20	[illegible]	[illegible]
255+30	174.78	175.73
255+40	174.78	175.73
255+50	[illegible]	175.74
255+60	[illegible]	[illegible]
255+70	174.79	175.74
255+80	[illegible]	175.72
255+90	[illegible]	175.79
256+00	[illegible]	175.71
256+10	174.75	175.70
256+20	[illegible]	[illegible]
256+30	[illegible]	175.65
256+40	174.68	175.63
256+50	174.65	175.60
256+60	174.6	175.57
256+70	174.58	175.53
256+80	174.59	175.49
256+90	174.50	175.45
257+00	174.45	175.40
257+10	174.40	175.35
257+20	174.35	175.30
257+30	174.3	175.24
257+40	174.23	175.18
257+50	174.17	175.12
257+60	174.10	175.05
257+70	174.03	174.98
257+80	173.96	174.91
257+90	173.88	174.83
258+00	173.80	174.75
258+10	173.72	174.67
258+20	173.63	174.58
258+30	173.54	174.49
258+40	173.45	174.40
258+50	173.35	174.30
258+60	173.25	174.20
258+70	173.15	174.10
258+80	173.04	173.99
258+90	172.93	173.88
259+00	172.81	173.76
259+10	172.70	173.65
259+20	172.58	173.53
259+30	172.45	173.40
259+40	172.32	173.27
259+50	172.19	173.14
259+60	172.06	173.01
259+70	171.92	172.87
259+80	171.78	172.73
259+90	171.63	172.58

Station	S BD Rdwy Lt Gtr / N BD Rdwy Rt Gtr	S BD Rdwy Med Gtr / N BD Rdwy Med Gtr
260+00	171.49	172.44
260+10	171.33	172.26
260+20	171.18	172.13
260+30	171.02	171.97
260+40	170.85	171.81
260+50	170.69	171.64
260+60	170.53	171.48
260+70	170.3	171.30
260+80	170.17	171.
260+90	169.97	170.92
261+00	169.7	170.73
261+10	169.58	170.53
261+20	169.38	170.33
261+30	169.17	170.12
261+40	168.97	169.92
261+50	168.75	169.70
261+60	168.53	169.49
261+70	168.32	[illegible]
261+80	168.10	169.05
261+90	167.87	168.82
262+00	167.62	168.59
262+10	167.4	168.36
262+20	167.17	168.1
262+30	166.93	167.88
262+40	166.68	167.63
262+50	166.44	167.39
262+60	166.18	167.13
262+70	165.93	166.88
262+80	165.67	166.62
262+90	165.41	166.36
263+00	165.14	166.09
263+10	164.87	165.8
263+20	164.60	165.55
263+30	164.32	165.27
263+40	164.04	164.99
263+50	163.76	164.71
263+60	163.47	164.42
263+70	163.18	164.1
263+80	162.88	163.83
263+90	162.58	163.53
264+00	162.28	163.23
264+10	161.97	162.92
264+20	161.66	162.61
264+30	161.35	162.30
264+40	161.03	161.98
264+50	160.71	161.66
264+60	160.39	161.34
264+70	160.06	161.01
264+80	159.73	160.68
264+90	159.40	160.35

Station	S BD Rdwy Lt Gtr / N BD Rdwy Rt Gtr	S BD Rdwy Med Gtr / N BD Rdwy Med Gtr
265+00	159.06	160.0
265+10	158.72	159.67
265+20	158.37	159.32
265+30	158.02	158.97
265+40	157.67	158.62
265+50	157.31	158.26
265+60	156.95	157.9
265+70	156.59	157.54
265+80	156.22	157.17
265+90	155.85	156.8
266+00	155.4	156.42
266+10	155.10	156.05
266+20	154.71	155.66
266+30	154.33	155.28
266+40	153.94	154.89
266+50	153.55	154.50
266+60	153.15	154.1
266+70	152.75	153.70
266+80	152.35	153.30
266+90	151.95	152.90
267+00	151.55	152.50
267+10	151.15	152.10
267+20	150.75	151.70
267+30	150.35	151.30
267+40	149.95	150.90
267+50	149.55	150.50
267+60	149.15	150.10
267+70	148.75	149.70
267+80	148.35	149.30
267+90	147.95	148.90
268+00	147.55	148.50
268+10	147.15	148.10
268+20	146.75	147.70
268+30	146.35	147.30
268+40	145.95	146.9
268+50	145.55	146.50
268+60	145.15	146.10
268+70	144.75	145.70
268+80	144.35	145.30
268+90	143.95	144.90
269+00	143.55	144.50
269+10	143.15	144.10
269+20	142.75	143.70
269+30	142.35	143.30

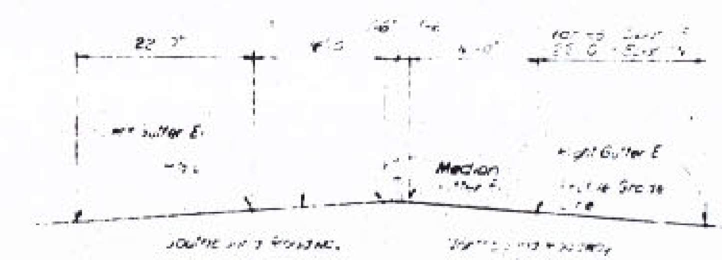
F.A.P.	State Proj.	Parish	Sheet
I-310-1(35)? 4135(1)73	45-17-07	ST. CHARLES	116A



I-410 NBD & SBD RDWY

LOCATIONS OF DECK ELEVATIONS IN SPANS 1M-5M INCL.

Note: Lt & Rt denotes roadway sides looking forward increasing station.



I-410 N BD & S BD RDWY

LOCATIONS OF SLAB ELEVATIONS IN SPAN 1S AND 1N

⚠ [illegible]

NOTES

For General Notes see Sheet 2

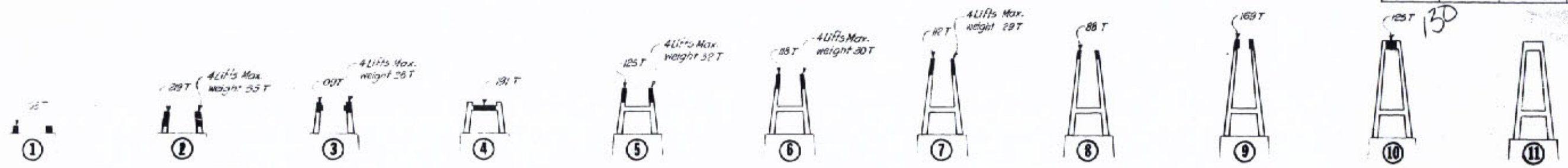
O.W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

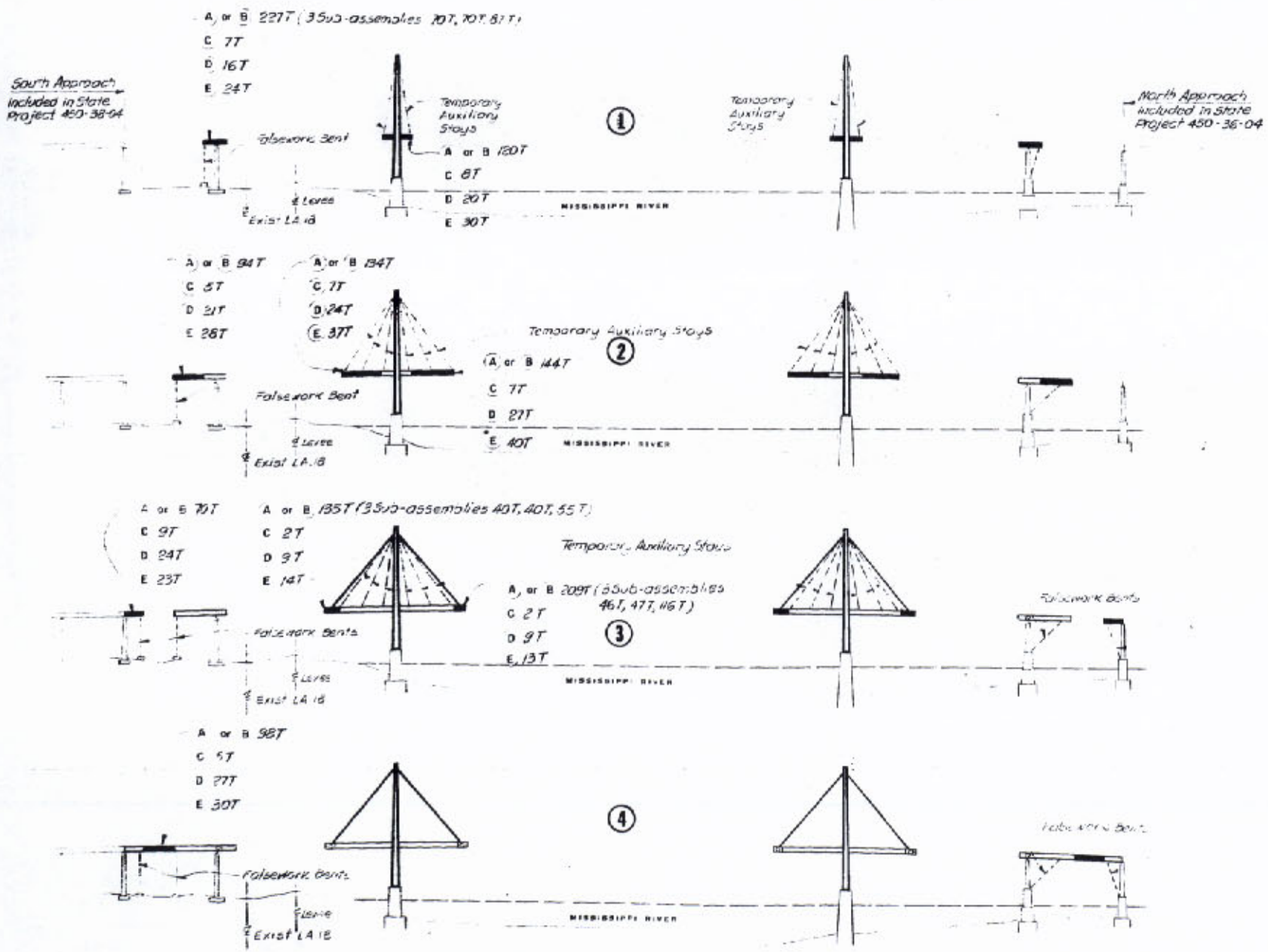
TOP OF WEARING SURFACE ELEVATIONS
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD [illegible]

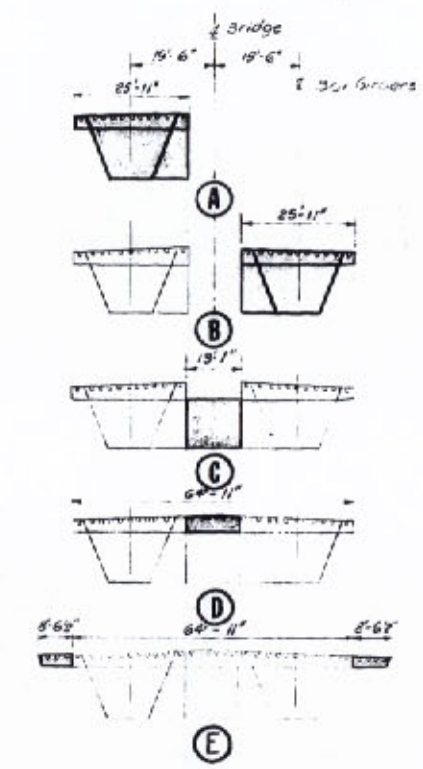
FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	117



ERECTION SCHEME - TOWERS



ERECTION SCHEME - DECK AND CABLE STAYS



ERECTION SCHEME
DECK IN TRANSVERSE DIRECTION

Scale: 1" = 20'

NOTES:

For Section Notes see Dwg. No. 2.

For Sort Lengths of Erection Units see Dwg. No. 115

Denotes Structural Steel being erected.

Denotes Structural Steel erected in the previous stage.

290 T Denotes the lifting weight

Erection sketches shown on Dwg. No. 117 are for informational purposes only with the purpose of showing approximate weight of individual erection lifts as defined by field splices shown elsewhere on plans.

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

ERECTION SCHEME
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (CROWLEY)

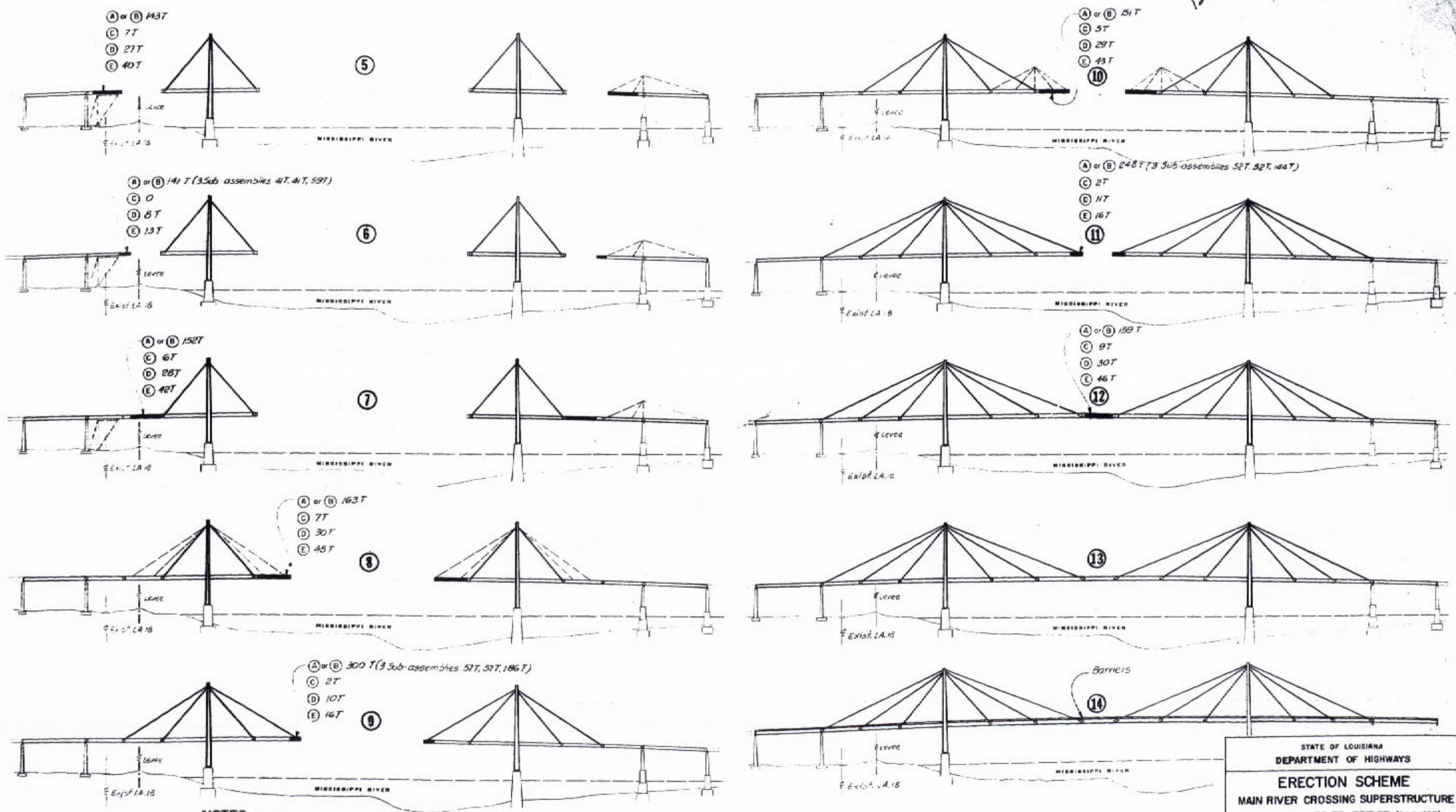
FRANKLAND AND LIENHARD MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE 5-24-77 | SCALE 1" = 1'-3" & 1" = 20' | DWG. NO.
DRAWN BY: W.M. | CHKD. BY: A.E. | IN CHARGE: | APPROVED:

O.W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	118

13



NOTES: For Stage 1 through 4 and erection scheme for Towers and deck see Dwg. No. 117
For Legend and additional Notes see Dwg. No. 117
For General Notes see Dwg. No. 2.

ERECTION SCHEME - DECK AND CABLE STAYS

O. W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

ERECTION SCHEME

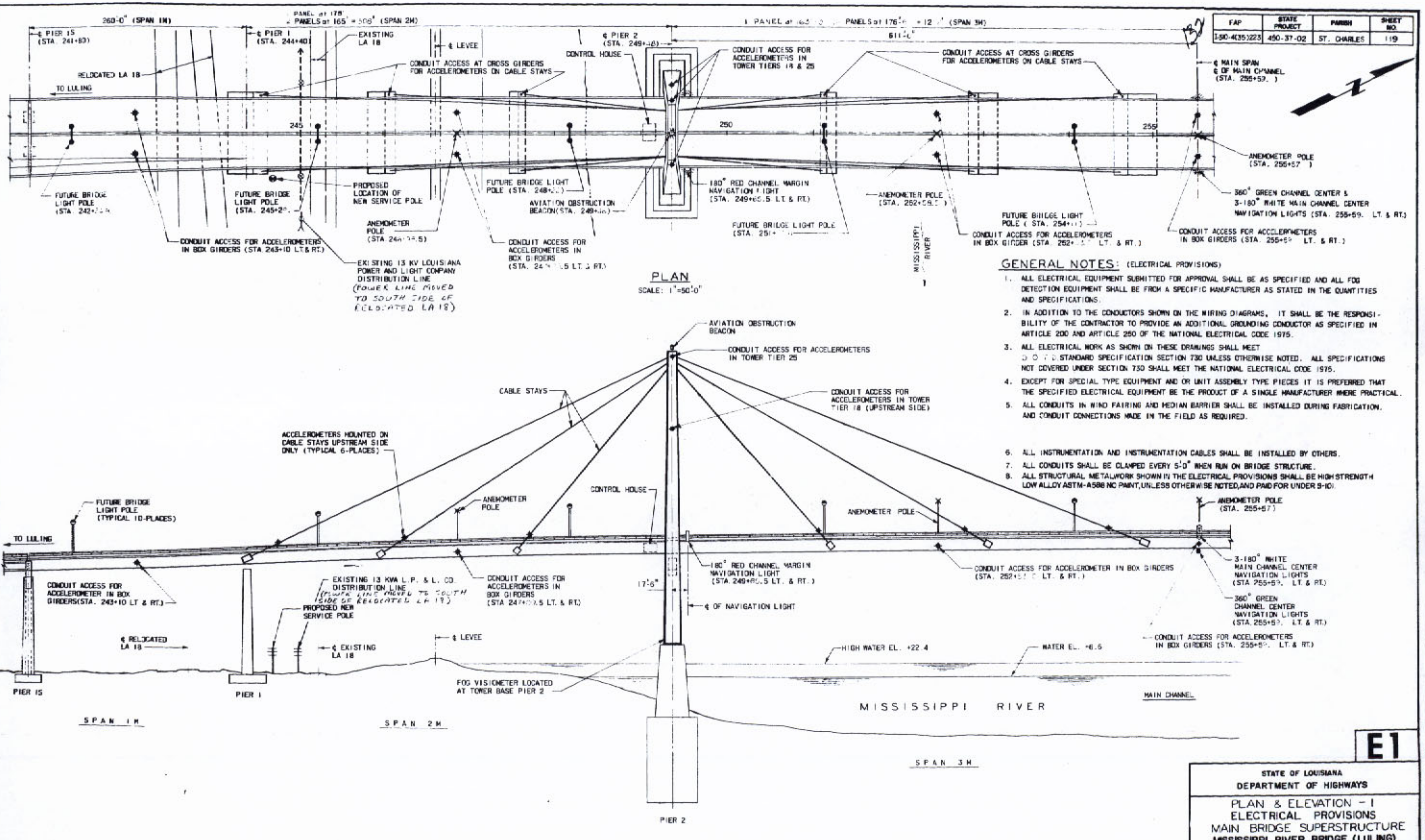
MAIN RIVER CROSSING SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE 5-24-77 | SCALE 1" = 200' | DWG NO. 118
DRAWN BY W.M. | CHKD BY R.D. | IN CHARGE S.J. | APPROVED

FAP	STATE PROJECT	PARISH	SHEET NO.
I-510-4(35)223	450-37-02	ST. CHARLES	119



GENERAL NOTES: (ELECTRICAL PROVISIONS)

1. ALL ELECTRICAL EQUIPMENT SUBMITTED FOR APPROVAL SHALL BE AS SPECIFIED AND ALL FOG DETECTION EQUIPMENT SHALL BE FROM A SPECIFIC MANUFACTURER AS STATED IN THE QUANTITIES AND SPECIFICATIONS.
2. IN ADDITION TO THE CONDUCTORS SHOWN ON THE WIRING DIAGRAMS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AN ADDITIONAL GROUNDING CONDUCTOR AS SPECIFIED IN ARTICLE 200 AND ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE 1975.
3. ALL ELECTRICAL WORK AS SHOWN ON THESE DRAWINGS SHALL MEET D.O.T.D. STANDARD SPECIFICATION SECTION 730 UNLESS OTHERWISE NOTED. ALL SPECIFICATIONS NOT COVERED UNDER SECTION 730 SHALL MEET THE NATIONAL ELECTRICAL CODE 1975.
4. EXCEPT FOR SPECIAL TYPE EQUIPMENT AND OR UNIT ASSEMBLY TYPE PIECES IT IS PREFERRED THAT THE SPECIFIED ELECTRICAL EQUIPMENT BE THE PRODUCT OF A SINGLE MANUFACTURER WHERE PRACTICAL.
5. ALL CONDUITS IN WIND FAIRING AND MEDIAN BARRIER SHALL BE INSTALLED DURING FABRICATION, AND CONDUIT CONNECTIONS MADE IN THE FIELD AS REQUIRED.
6. ALL INSTRUMENTATION AND INSTRUMENTATION CABLES SHALL BE INSTALLED BY OTHERS.
7. ALL CONDUITS SHALL BE CLAMPED EVERY 5'-0" WHEN RUN ON BRIDGE STRUCTURE.
8. ALL STRUCTURAL METALWORK SHOWN IN THE ELECTRICAL PROVISIONS SHALL BE HIGH STRENGTH LOW ALLOY ASTM-A588 NO PAINT, UNLESS OTHERWISE NOTED, AND PAID FOR UNDER 9-10).

O. W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

E1

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

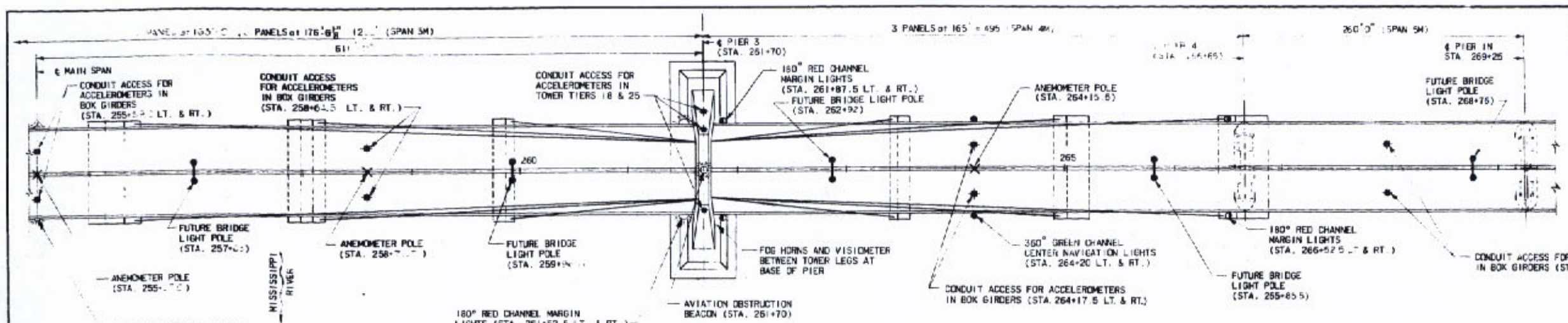
PLAN & ELEVATION - I
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: 1"=50' | DWG. NO.: 13
DRAWN BY: TWS | CHKD. BY: JMS | IN CHARGE: HAE | APPROVED: RBC

FAP	STATE PROJECT	PARISH	SHEET NO.
0310-4(35)223	450-37-02	ST. CHARLES	120

133

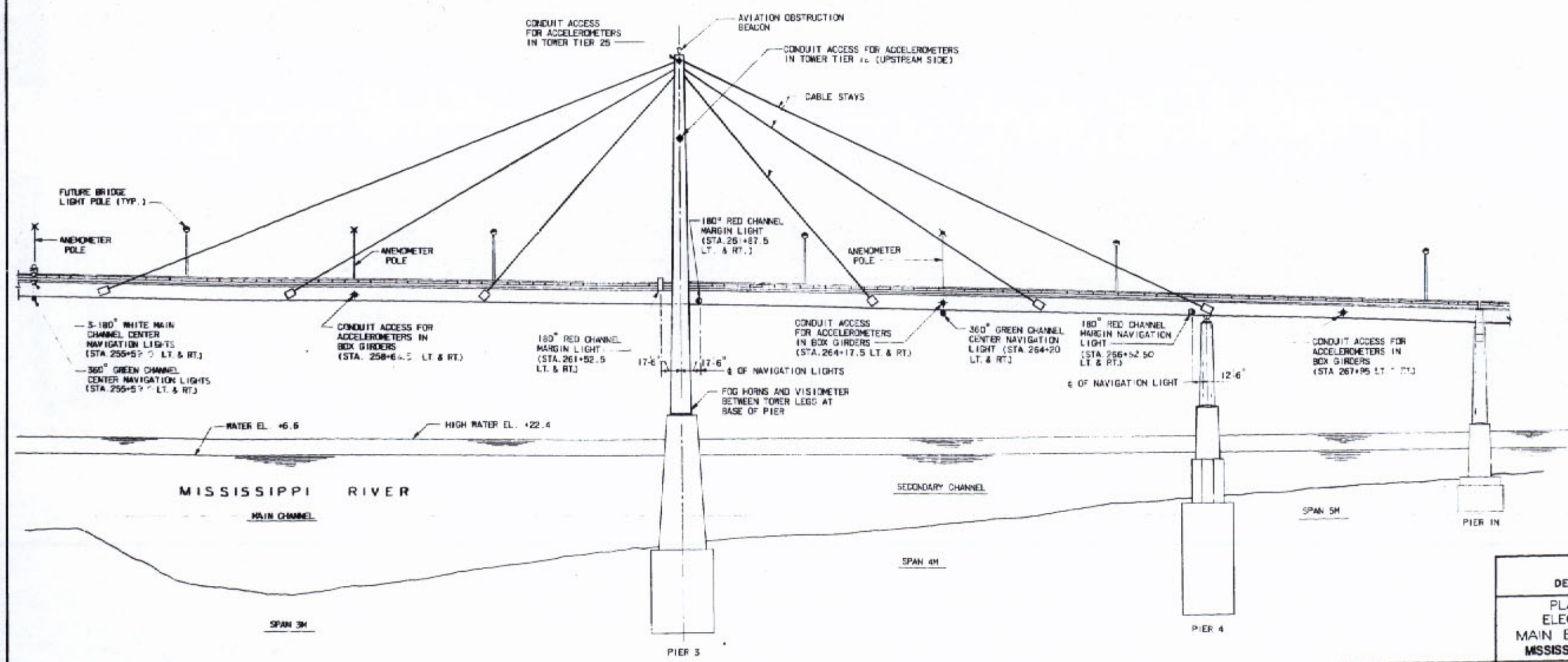


PLAN

SCALE: 1"=50'-0"

NOTE:

1. FOR ELECTRICAL PROVISION GENERAL NOTES, SEE DRAWING E1.



ELEVATION

SCALE: 1"=50'-0"

O. W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

E2

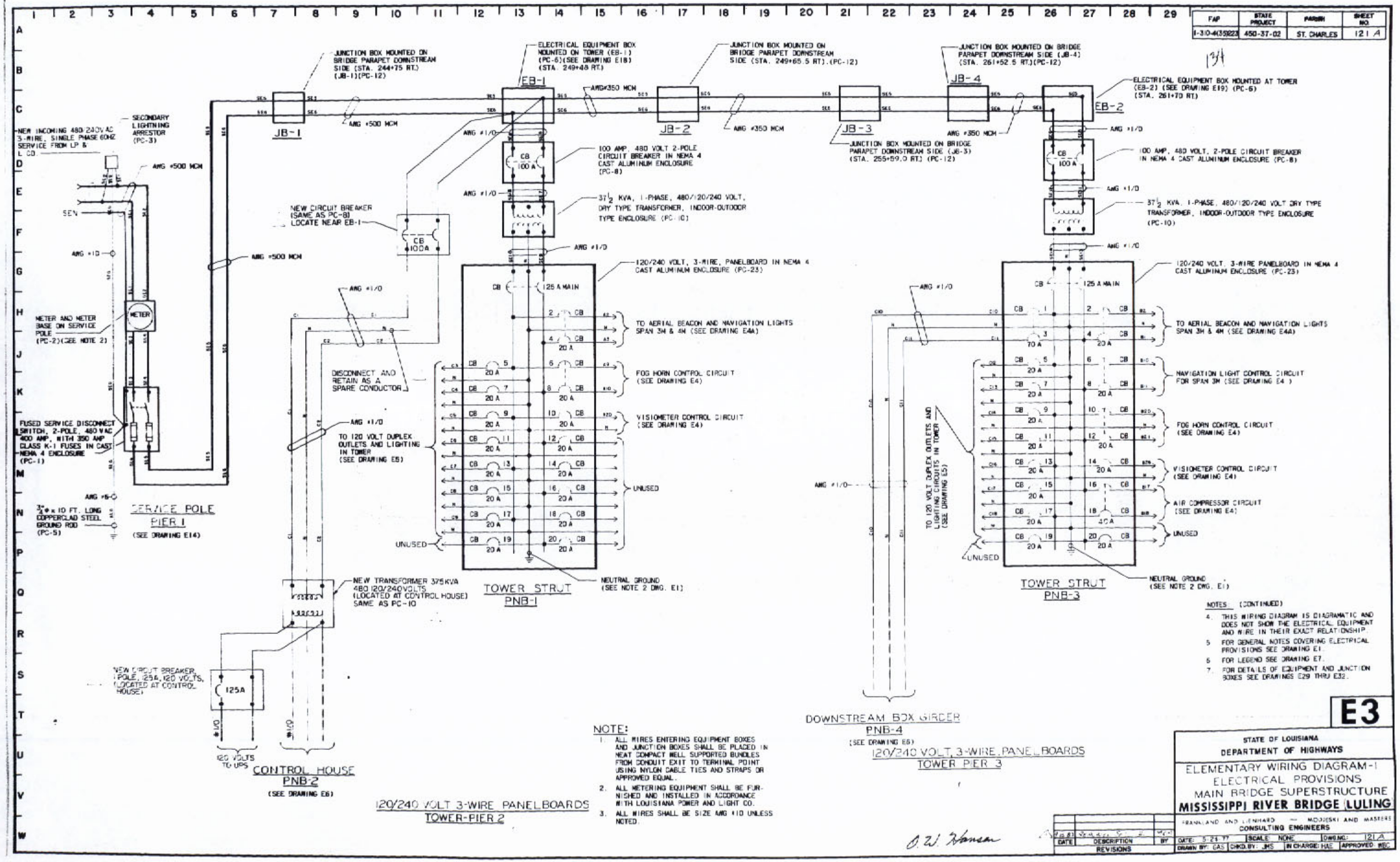
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PLAN & ELEVATION – 2
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: 1"=50' | DWG NO.: 120
DRAWN BY: TWS | CHKD BY: JMS | IN CHARGE: HAE | APPROVED: WBC

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)023	450-37-02	ST. CHARLES	121 A



NOTES: (CONTINUED)

4. THIS WIRING DIAGRAM IS DIAGRAMATIC AND DOES NOT SHOW THE ELECTRICAL EQUIPMENT AND WIRE IN THEIR EXACT RELATIONSHIP.
5. FOR GENERAL NOTES COVERING ELECTRICAL PROVISIONS SEE DRAWING E1.
6. FOR LEGEND SEE DRAWING E7.
7. FOR DETAILS OF EQUIPMENT AND JUNCTION BOXES SEE DRAWINGS E29 THRU E32.

NOTE:

1. ALL WIRES ENTERING EQUIPMENT BOXES AND JUNCTION BOXES SHALL BE PLACED IN NEAT COMPACT WELL SUPPORTED BUNDLES FROM CONDUIT EXIT TO TERMINAL POINT USING NYLON CABLE TIES AND STRAPS OR APPROVED EQUAL.
2. ALL METERING EQUIPMENT SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH LOUISIANA POWER AND LIGHT CO.
3. ALL WIRES SHALL BE SIZE AWG #10 UNLESS NOTED.

O.W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

E3

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

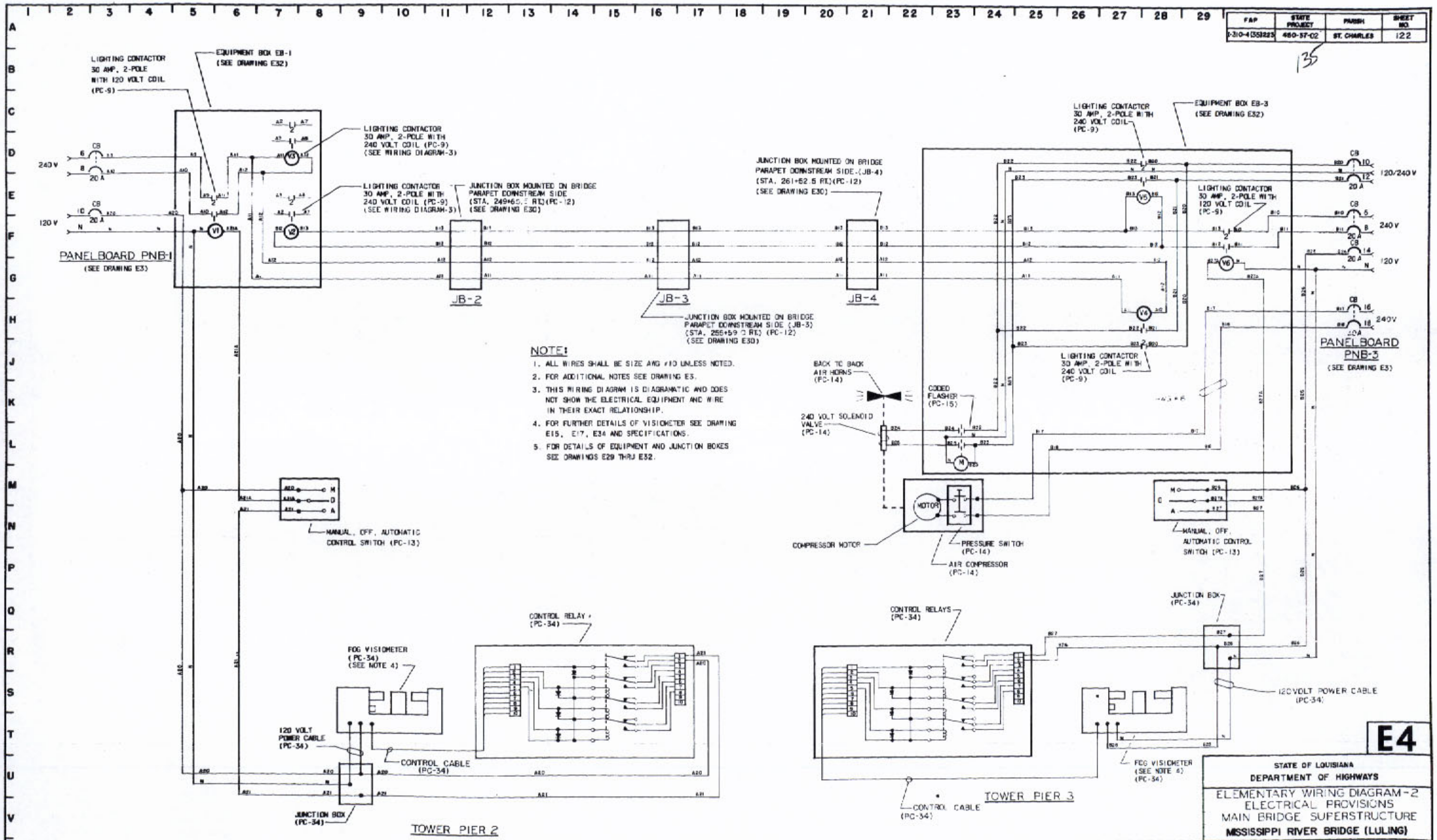
ELEMENTARY WIRING DIAGRAM-1
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LENHARD — MOJESKI AND MASSERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: NONE | DWG NO.: 121 A
DRAWN BY: GAS | CHKD. BY: JHS | IN CHARGE: HAE | APPROVED: WBC

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(353)223	460-57-02	ST. CHARLES	122

135



NOTE:

1. ALL WIRES SHALL BE SIZE AWG #10 UNLESS NOTED.
2. FOR ADDITIONAL NOTES SEE DRAWING E3.
3. THIS WIRING DIAGRAM IS DIAGRAMATIC AND DOES NOT SHOW THE ELECTRICAL EQUIPMENT AND WIRE IN THEIR EXACT RELATIONSHIP.
4. FOR FURTHER DETAILS OF VISIOMETER SEE DRAWING E15, E17, E34 AND SPECIFICATIONS.
5. FOR DETAILS OF EQUIPMENT AND JUNCTION BOXES SEE DRAWINGS E29 THRU E32.

VISIOMETER CONTROL CIRCUIT
PIER 2 & 3
(SEE NOTE 4)

O. W. Hansen

E4

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

ELEMENTARY WIRING DIAGRAM-2
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

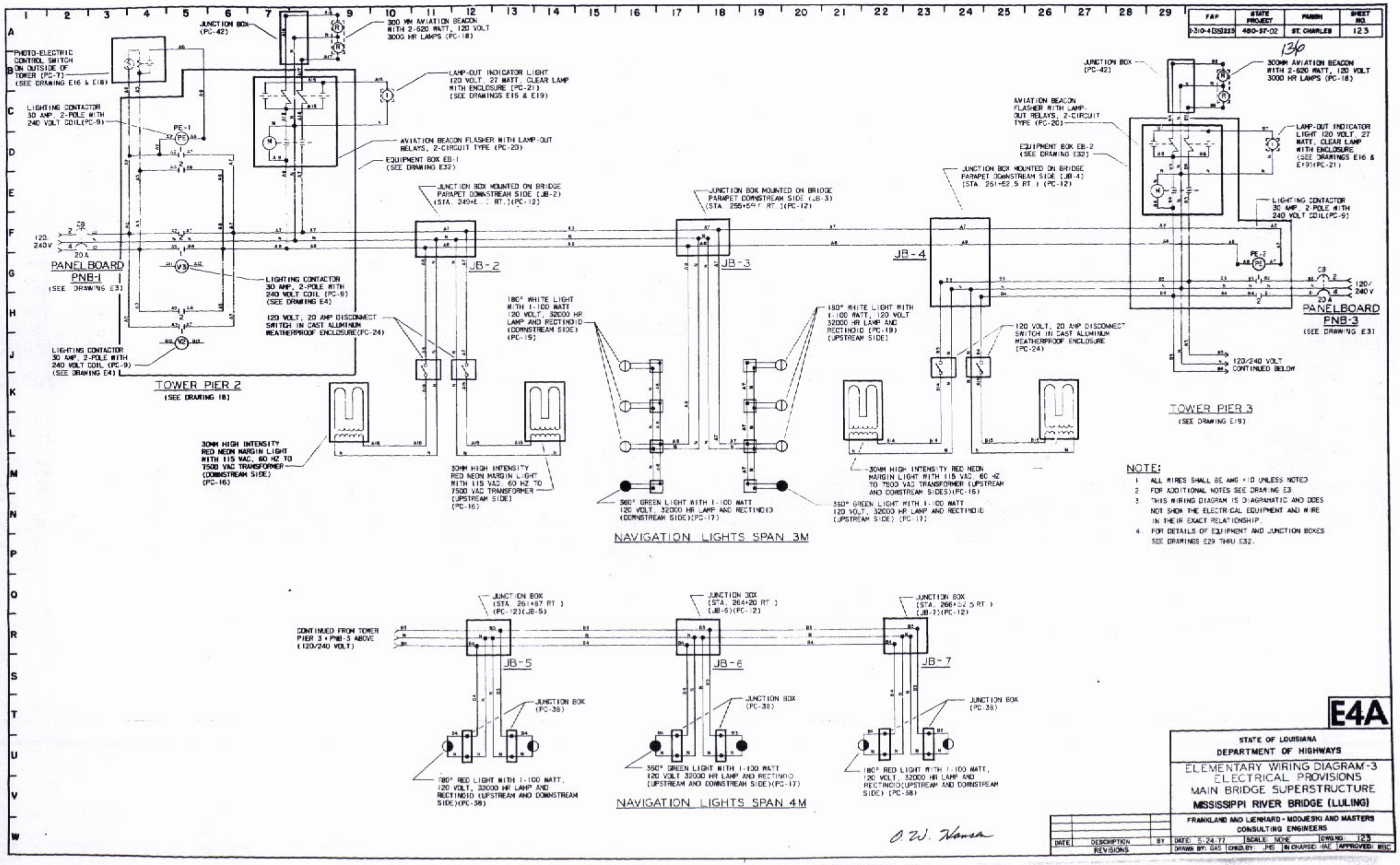
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE 5-24-77 | SCALE NONE | DWG NO. 122
DRAWN BY: GAS | CHKD BY: JHS | IN CHARGE: HAE | APPROVED: RSC

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	460-57-02	ST. CHARLES	123

136



NOTE:

1. ALL WIRES SHALL BE AWG #10 UNLESS NOTED
2. FOR ADDITIONAL NOTES SEE DRAWING E3
3. THIS WIRING DIAGRAM IS DIAGRAMATIC AND DOES NOT SHOW THE ELECTRICAL EQUIPMENT AND WIRE IN THEIR EXACT RELATIONSHIP.
4. FOR DETAILS OF EQUIPMENT AND JUNCTION BOXES SEE DRAWINGS E29 THRU E32.

O. W. Hansen

E4A

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

ELEMENTARY WIRING DIAGRAM-3
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

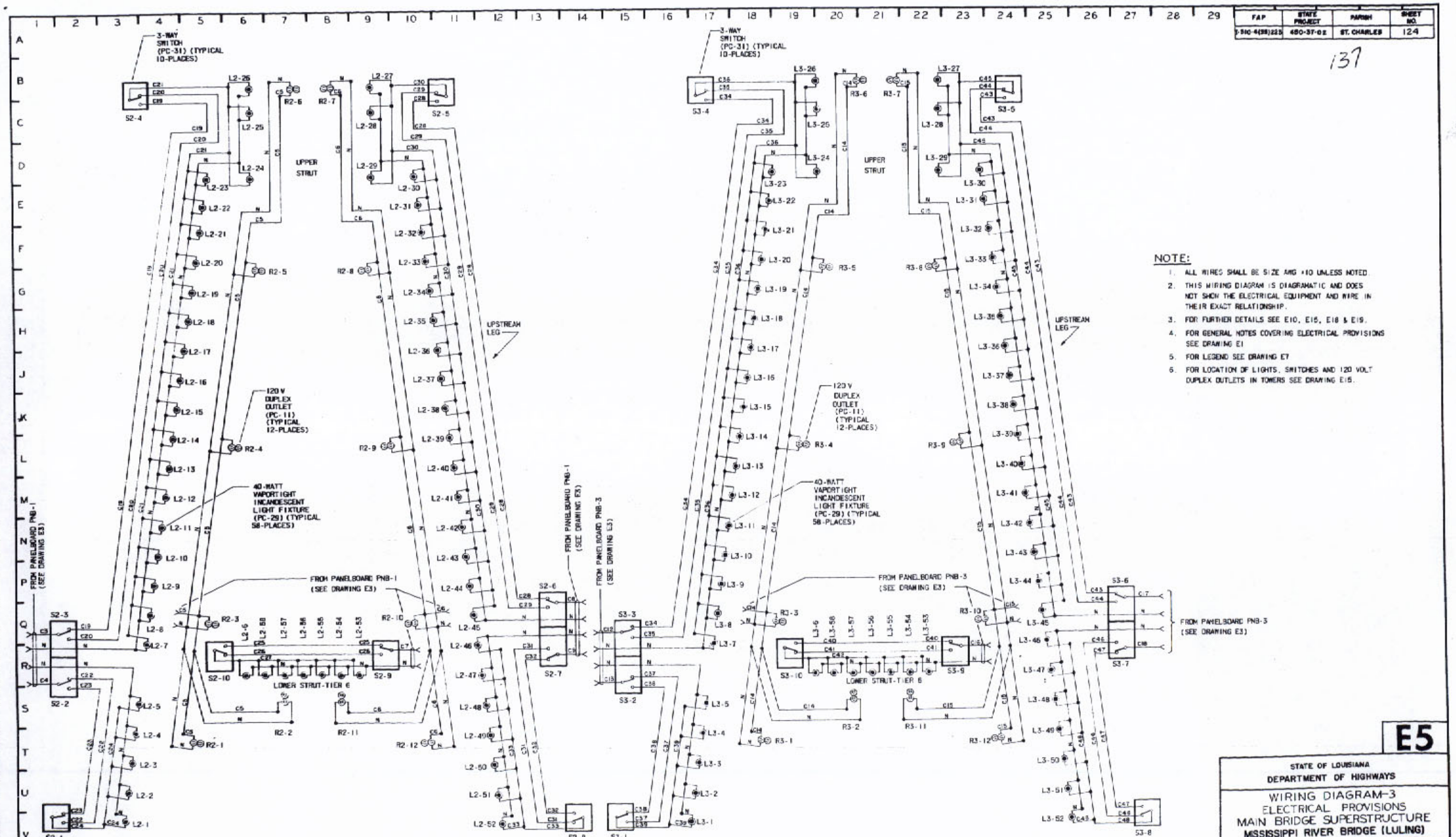
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: NONE | DWG. NO. 123
DRAWN BY: GAS | CHKD. BY: JHS | IN CHARGE: HAE | APPROVED: WBC

FAP	STATE PROJECT	PARISH	SHEET NO.
F-310-4(38)223	450-37-02	ST. CHARLES	124

137



NOTE:

1. ALL WIRES SHALL BE SIZE AWG #10 UNLESS NOTED.
2. THIS WIRING DIAGRAM IS DIAGRAMATIC AND DOES NOT SHOW THE ELECTRICAL EQUIPMENT AND WIRE IN THEIR EXACT RELATIONSHIP.
3. FOR FURTHER DETAILS SEE E10, E16, E18 & E19.
4. FOR GENERAL NOTES COVERING ELECTRICAL PROVISIONS SEE DRAWING E1
5. FOR LEGEND SEE DRAWING E7
6. FOR LOCATION OF LIGHTS, SWITCHES AND 120 VOLT DUPLEX OUTLETS IN TOWERS SEE DRAWING E15.

E5

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

WIRING DIAGRAM-3
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

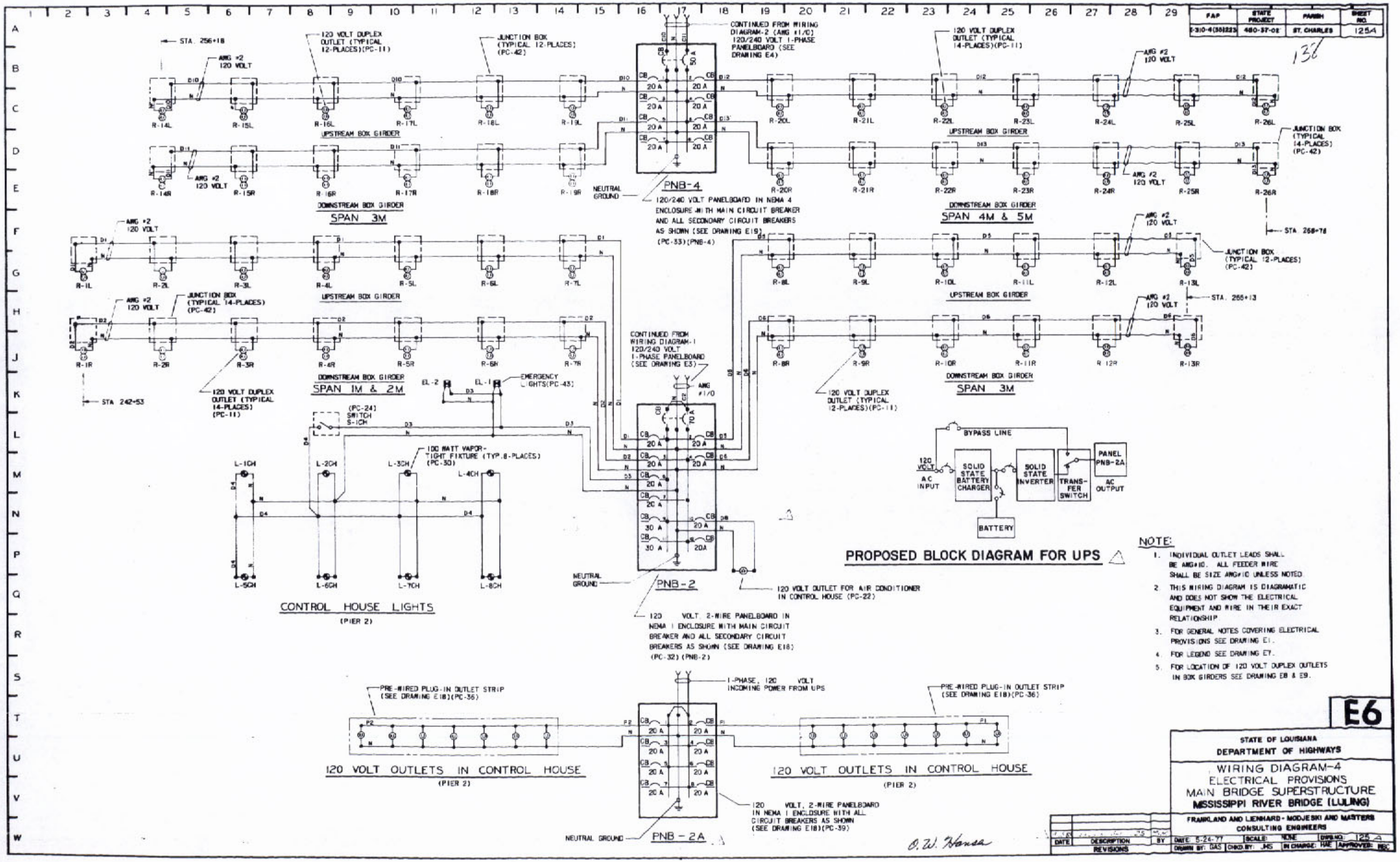
DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: NONE | DWG.NO. 124
DRAWN BY: GAS | CHKD.BY: JMS | IN CHARGE: H.E. | APPROVED: RBC

O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351223)	460-37-02	ST. CHARLES	1254

136



NOTE:

1. INDIVIDUAL OUTLET LEADS SHALL BE AWG#10. ALL FEEDER WIRE SHALL BE SIZE AWG#10 UNLESS NOTED.
2. THIS WIRING DIAGRAM IS DIAGRAMATIC AND DOES NOT SHOW THE ELECTRICAL EQUIPMENT AND WIRE IN THEIR EXACT RELATIONSHIP.
3. FOR GENERAL NOTES COVERING ELECTRICAL PROVISIONS SEE DRAWING E1.
4. FOR LEGEND SEE DRAWING E7.
5. FOR LOCATION OF 120 VOLT DUPLEX OUTLETS IN BOX GIRDERS SEE DRAWING E8 & E9.

E6

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

WIRING DIAGRAM-4
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

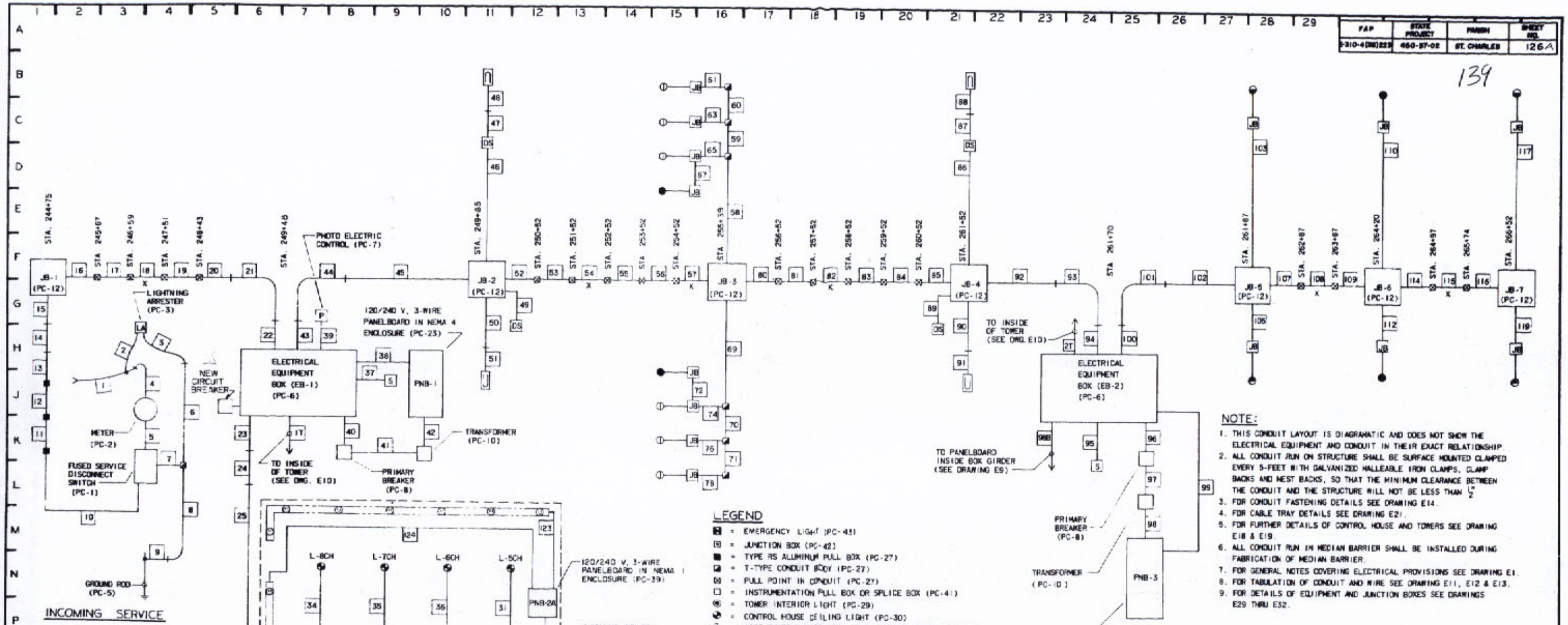
DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: NONE | DWG. NO.: 125-A
DRAWN BY: GAS | CHKD. BY: JHS | IN CHARGE: HAE | APPROVED: REC

O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(INI)223	460-07-02	ST. CHARLES	126A

139



LEGEND

- = EMERGENCY LIGHT (PC-43)
- = JUNCTION BOX (PC-42)
- = TYPE RS ALUMINUM PULL BOX (PC-27)
- = T-TYPE CONDUIT BODY (PC-27)
- = PULL POINT IN CONDUIT (PC-27)
- = INSTRUMENTATION PULL BOX OR SPLICE BOX (PC-41)
- = TOWER INTERIOR LIGHT (PC-29)
- = CONTROL HOUSE CEILING LIGHT (PC-30)
- = 180° WHITE NAVIGATION LIGHT (MAIN CHANNEL) (PC-19)
- = 360° GREEN NAVIGATION LIGHT (MAIN OR SECONDARY CHANNEL)(PC-17)
- = 180° RED NAVIGATION LIGHT (SECONDARY CHANNEL) (PC-38)
- = STRIP - 120 VOLT OUTLETS (PC-36)
- = 120-VOLT OUTLET FOR ROOM AIR CONDITIONER (PC-22)
- = DUPLEX - 120 VOLT OUTLET (PC-11)
- 24 = RUN NUMBER (SEE DRAWING E11, E12 & E13)
- DS = 120 VOLT DISCONNECT SWITCH FOR MARGIN LIGHT (PC-24)
- LA = LIGHTNING ARRESTER (PC-3)
- JB = JUNCTION BOX FOR NAVIGATION LIGHT OR VISIOMETER (SEE DETAILS)
- F = PHOTO-ELECTRIC CONTROL SWITCH (PC-7)
- S = SWITCH (SEE WIRING DIAGRAMS FOR TYPE)
- I = LAMP-OUT INDICATOR LIGHT (PC-21)
- = 180° RED NEON MARGIN LIGHT (MAIN CHANNEL) (PC-16)
- R = AVIATION OBSTRUCTION BEACONS (PC-18)

CS = CONDUIT ACCESS FOR ACCELEROMETER MOUNTED ON CABLE STAY
BG = CONDUIT ACCESS FOR ACCELEROMETER MOUNTED IN BOX GIRDER
TM = CONDUIT ACCESS FOR ACCELEROMETER MOUNTED IN TOWER
PM = CONDUIT ACCESS FOR ANEMOMETER MOUNTED ON POLE
—|— = CHANGE IN CONDUIT OR CABLE RUN
X = TYPE XJ EXPANSION FITTING (FOR EXACT LOCATION SEE DRAWING E24)

NOTE:

1. THIS CONDUIT LAYOUT IS DIAGRAMATIC AND DOES NOT SHOW THE ELECTRICAL EQUIPMENT AND CONDUIT IN THEIR EXACT RELATIONSHIP.
2. ALL CONDUIT RUN ON STRUCTURE SHALL BE SURFACE MOUNTED CLAMPED EVERY 5-FEET WITH GALVANIZED MALLEABLE IRON CLAMPS, CLAMP BACKS AND NEST BACKS, SO THAT THE MINIMUM CLEARANCE BETWEEN THE CONDUIT AND THE STRUCTURE WILL NOT BE LESS THAN $\frac{1}{2}$".
3. FOR CONDUIT FASTENING DETAILS SEE DRAWING E14.
4. FOR CABLE TRAY DETAILS SEE DRAWING E21.
5. FOR FURTHER DETAILS OF CONTROL HOUSE AND TOWERS SEE DRAWING E18 & E19.
6. ALL CONDUIT RUN IN MEDIAN BARRIER SHALL BE INSTALLED DURING FABRICATION OF MEDIAN BARRIER.
7. FOR GENERAL NOTES COVERING ELECTRICAL PROVISIONS SEE DRAWING E1.
8. FOR TABULATION OF CONDUIT AND WIRE SEE DRAWING E11, E12 & E13.
9. FOR DETAILS OF EQUIPMENT AND JUNCTION BOXES SEE DRAWINGS E29 THRU E32.

O.W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

E7

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

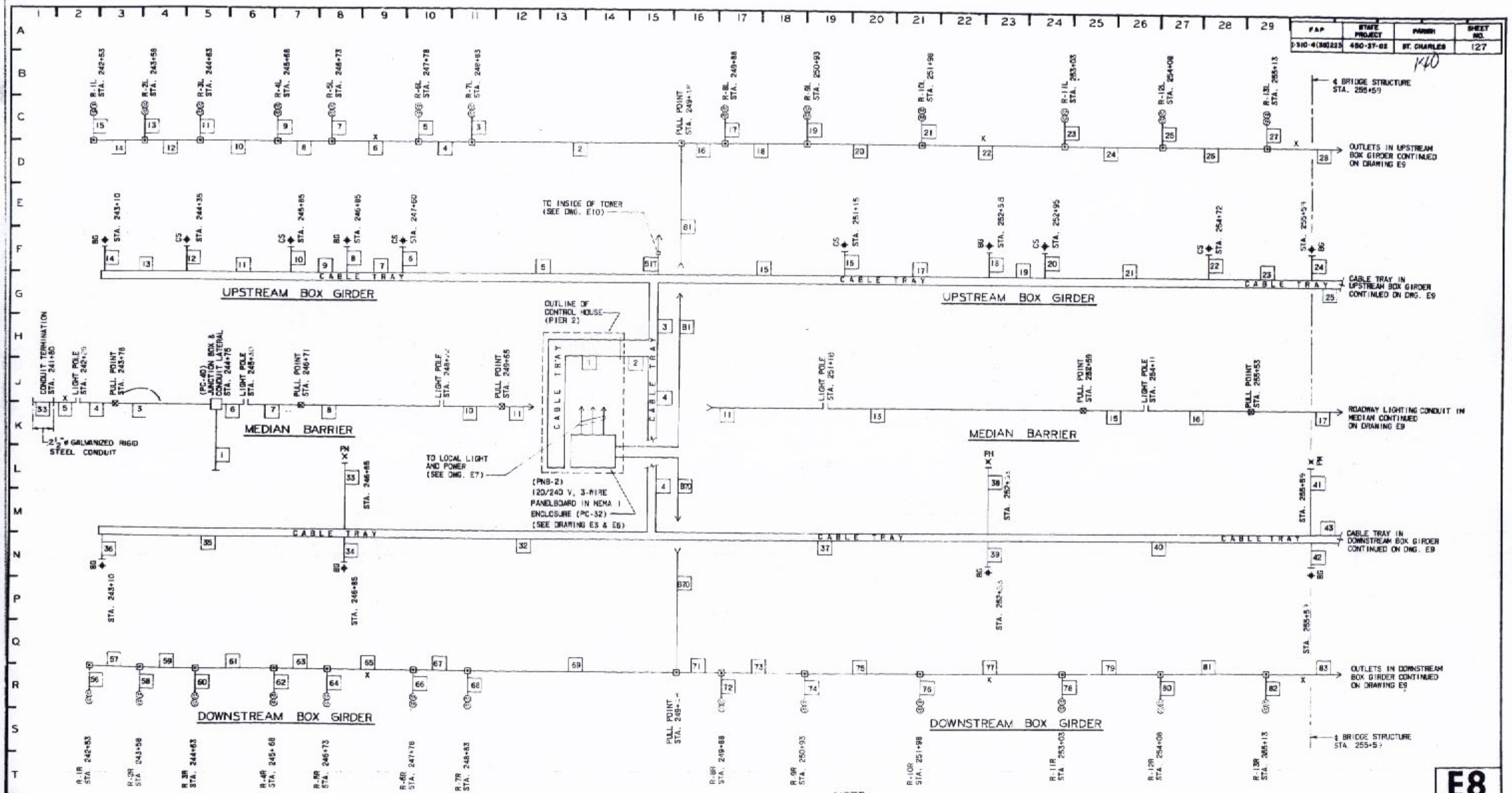
CONDUIT LAYOUT-I
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: NONE | CHG.NO.: 126A
DRAWN BY: GAS | CHKD.BY: JMS | IN CHARGE: HAE | APPROVED: RBC

FAP	STATE PROJECT	PARISH	SHEET NO.
I-910-4(38)233	450-37-02	ST. CHARLES	127

140



NOTE:

1. FOR ADDITIONAL NOTES SEE DRAWING E7.
2. FOR GENERAL NOTES COVERING ELECTRICAL PROVISIONS SEE DRAWING E1.
3. FOR LEGEND SEE DRAWING E7.
4. FOR TABULATION OF CONDUIT AND WIRE SEE DRAWING E11, E12 & E13.

O.W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

E8

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

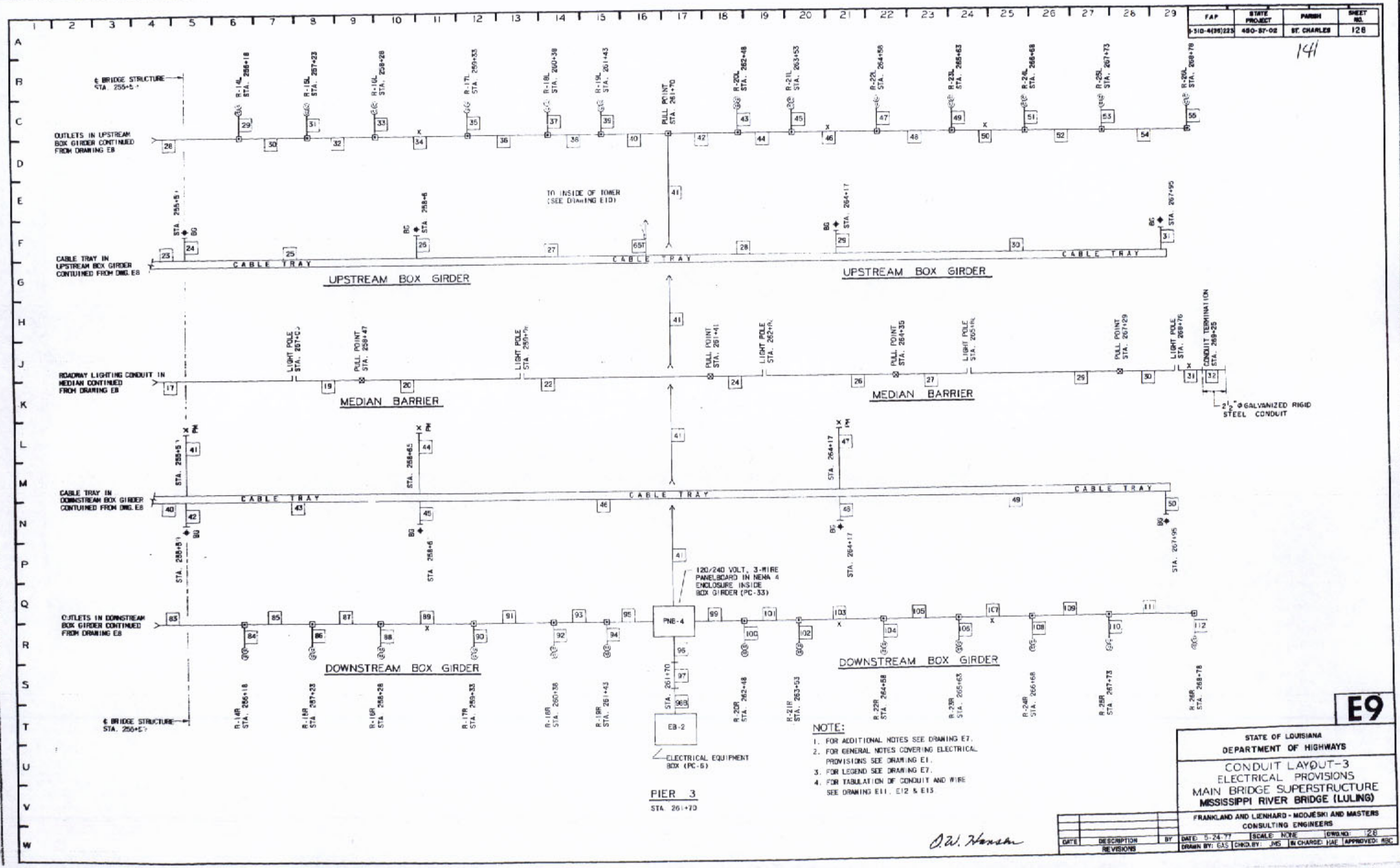
CONDUIT LAYOUT-2
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD · MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: NONE | DWG. NO.: 27
DRAWN BY: GAS | CHKD. BY: JMS | IN CHARGE: HAE | APPROVED: WEC

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(39)223	450-57-02	ST. CHARLES	128

141



NOTE:

1. FOR ADDITIONAL NOTES SEE DRAWING E7.
2. FOR GENERAL NOTES COVERING ELECTRICAL PROVISIONS SEE DRAWING E1.
3. FOR LEGEND SEE DRAWING E7.
4. FOR TABULATION OF CONDUIT AND WIRE SEE DRAWING E11, E12 & E13

E9

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CONDUIT LAYOUT-3
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: NONE | DWG.NO: 28
DRAWN BY: GAS | CHKD.BY: JMS | IN CHARGE: HAE | APPROVED: RBC

DATE	DESCRIPTION	BY
	REVISIONS	

O.W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

CONDUIT LAYOUT-4
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

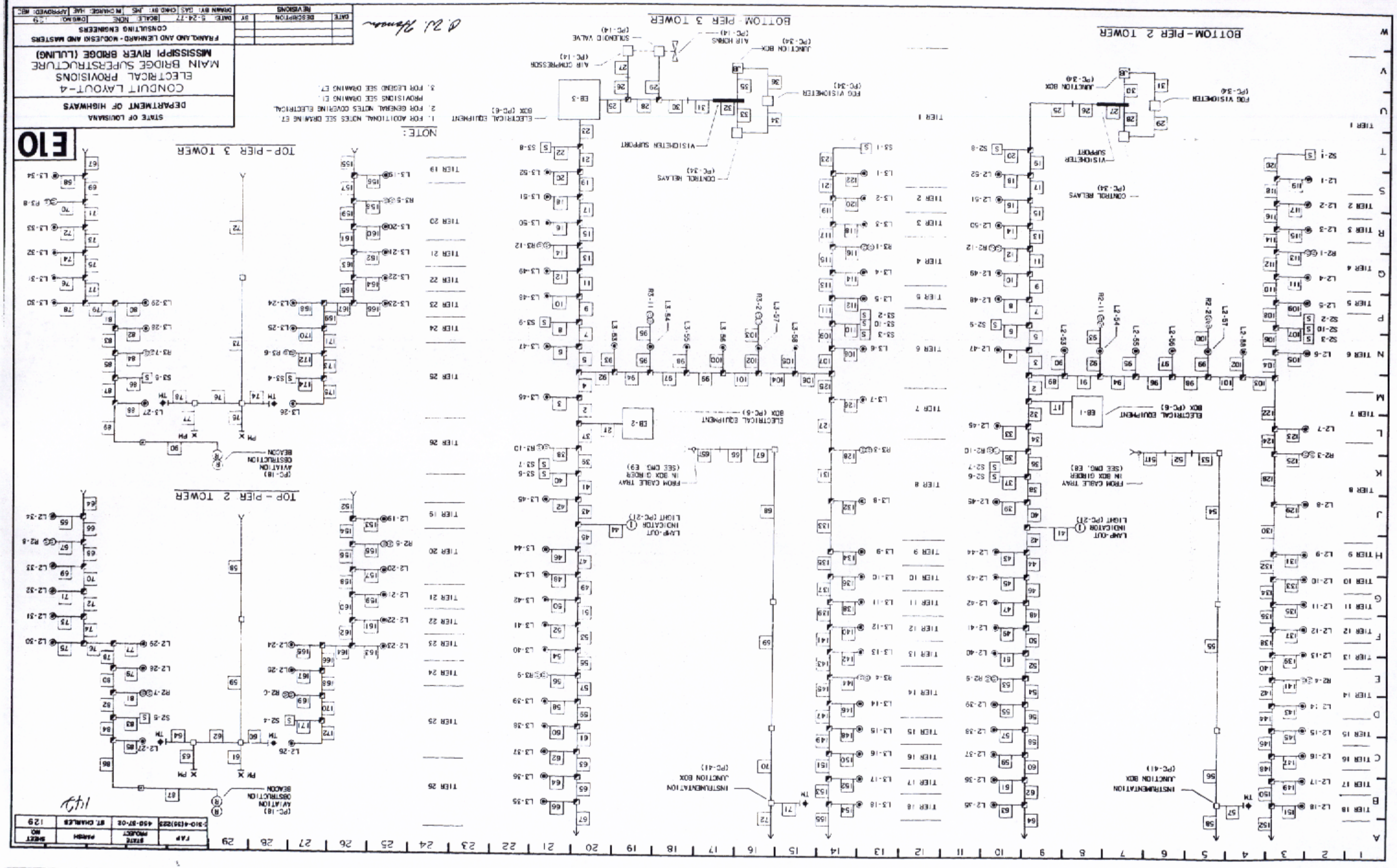
FRANKLAND AND LEINHARD-MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY

REVISIONS

DRAWN BY: DAS | CHKD BY: JMS | M CHARGE: HAE | APPROVED: REC
DATE: 5-24-77 | SCALE: NONE | DWG NO: 129

NOTE:
1. FOR ADDITIONAL NOTES SEE DRAWING E7
2. FOR GENERAL NOTES COVERING ELECTRICAL PROVISIONS SEE DRAWING E1.
3. FOR LEGEND SEE DRAWING E7.



FAP	STATE PROJECT	PARISH	SHEET NO
F-310-4(36)223	450-37-02	ST. CHARLES	129

WIRE AND CONDUIT TABULATION

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-57-02	ST. CHARLES	130

143

INCOMING SERVICE

CONDUIT RUN NO.	CONDUIT LOC. ON DWG. E7	CONDUIT SIZE DIA.	CONDUIT LGTH. LIN. FT.	WIRE (PC-28) NO. AND AWG. SIZE	WIRE (PC-28) DESIGNATION
1	J-3	—	—	1=500 MCM	SE1, 2N(AERIAL)
2	H-3	—	—	2=10	SE1, 2
3	H-4	—	—	1=10	SE6
4	J-4	3"	20'	1=500 MCM	SE1, 2,
5	K-4	3"	3'	1=500 MCM	SE3, 4,
6	J-5	1"	25'	1=10	SE6
7	K-4	1"	2'	1=10	SE6
				1=5	SE6
8	H-5	1" BURIED RGD. STL.	10'	1=6	SE6
9	N-4	—	1'	1=6	SE6
10	H-2	3" BURIED RGD. STL.	45'	2=500 MCM	SE5, 6
11	K-1	3"	45'	2=500 MCM	SE5,6
12	J-1	3"	45'	2=500 MCM	SE5,6
13	H-1	3"	45'	2=500 MCM	SE5,6
14	H-1	3" FLEX	5'	2=500 MCM	SE5,6
15	G-1	3"	40'	2=500 MCM	SE5, 6
16	F-2	3"	108'	2=350 MCM	SE5,6
17	F-3	3"	92'	2=350 MCM	SE5,6
18	F-4	3"	92'	2=350 MCM	SE5,6
19	F-4	3"	92'	2=350 MCM	SE5,6
20	F-5	3"	92'	2=350 MCM	SE5,6
21	F-6	3" FLEX	10'	2=350 MCM	SE5,6
22	H-6	3"	5'	2=350 MCM	SE5,6
23	K-6	2"	95'	3=1/0	C1,2,N
24	L-6	2" FLEX	5'	3=1/0	C1,2,N
25	M-6	2"	15'	3=1/0	C1,2,N
26	—	—	—	—	UNASSIGNED
27	S-12	1"	20'	2=10	D6,N
28	R-10	3/4"	5'	2=10	D5,N
29	J-10	3/4"	8'	2=10	D4,N
30	J-11	3/4"	3'	2=10	D4,N
31	P-11	3/4"	4'	2=10	D4,N
32	J-9	3/4"	3'	2=10	D4,N
33	J-8	3/4"	3'	2=10	D4,N
34	P-7	3/4"	4'	2=10	D4,N
35	P-9	3/4"	4'	2=10	D4,N
36	P-10	3/4"	4'	2=10	D4,N
37	J-8	1"	2'	3=10	A20,21,21A
38	H-9	3"	4'	21=10	A2,3,N,9,10,20,N, C3,N,4,N,5,N,6,N, C7,N,8,N,9,N
				3=1/0	C1,2,N
39	H-8	1"	2'	3=10	A2,3,6
40	K-8	2"	3'	2=1/0	SE5,6
41	K-9	2"	2'	2=1/0	SE7,8
42	K-10	2"	3'	3=1/0	SE9,10,N
43	H-7	3"	5'	7=10	A7,8,N,11,12,B12,13
				2=350 MCM	SE5,6
44	F-8	3" FLEX	10'	7=10	A7,8,N,11,12,B12,13
				2=350 MCM	SE5,6
45	F-9	3"	17'	7=10	A7,8,N,11,12,B12,13
				2=350 MCM	SE5,6
46	D-11	1"	100'	2=10	A7,N
47	C-11	1"	3'	2=10	A18,N (TYPE SD)
48	B-11	—	6'	2=10	A18,N (TYPE SD)
49	G-12	1"	3'	2=10	A8,19
50	G-11	1"	3'	2=10	A19,N (TYPE SD)
51	H-11	—	3'	2=10	A19,N (TYPE SD)
52	F-12	3"	100'	7=10	A7,8,N,11,12,B12,13
				2=350 MCM	SE5,6
53	F-12	3"	100'	7=10	A7,8,N,11,12,B12,13
				2=350 MCM	SE5,6
54	F-13	3"	100'	7=10	A7,8,N,11,12,B12,13
				2=350 MCM	SE5,6
55	F-14	3"	100'	7=10	A7,8,N,11,12,B12,13
				2=350 MCM	SE5,6
56	F-15	3"	100'	7=10	A7,8,N,11,12,B12,13
				2=350 MCM	SE5,6
57	F-15	3"	100'	7=10	A7,8,N,11,12,B12,13
				2=350 MCM	SE5,6

INCOMING SERVICE

CONDUIT RUN NO.	CONDUIT LOC. ON DWG. E7	CONDUIT SIZE DIA.	CONDUIT LGTH. LIN. FT.	WIRE (PC-28) NO. AND AWG SIZE	WIRE (PC-28) DESIGNATION
58	E-16	3/4"	100'	2=10	A7,N
59	C-15	3/4"	7'	2=10	A7,N
60	C-16	3/4"	8'	2=10	A7,N
61	B-16	3/4"	1'	2=10	A7,N
62	—	—	—	—	UNASSIGNED
63	C-16	3/4"	1'	4=10	A7,N,7,N
64	—	—	—	—	UNASSIGNED
65	D-16	3/4"	3'	4=10	A7,N,7,N
66	—	—	—	—	UNASSIGNED
67	D-16	3/4"	5'	2=10	A7,N
68	—	—	—	—	UNASSIGNED
69	H-16	3/4"	6'	2=10	A8,N
70	K-16	3/4"	7'	2=10	A8,N
71	K-16	3/4"	8'	2=10	A8,N
72	J-16	3/4"	5'	2=10	A8,N
73	—	—	—	—	UNASSIGNED
74	J-15	3/4"	3'	4=10	A8,N,8,N
75	—	—	—	—	UNASSIGNED
76	K-16	3/4"	1'	4=10	A8,N,8,N
77	—	—	—	—	UNASSIGNED
78	L-16	3/4"	1'	2=10	A8,N
79	—	—	—	—	UNASSIGNED
80	F-17	3"	100'	6=10	A7,8,11,12,B12,13
				2=350 MCM	SE5,6
81	F-18	3"	100'	6=10	A7,8,11,12,B12,13
				2=350 MCM	SE5,6
82	F-18	3"	100'	6=10	A7,8,11,12,B12,13
				2=350 MCM	SE5,6
83	F-19	3"	100'	6=10	A7,8,11,12,B12,13
				2=350 MCM	SE5,6
84	F-20	3"	100'	6=10	A7,8,11,12,B12,13
				2=350 MCM	SE5,6
85	F-21	3"	100'	6=10	A7,8,11,12,B12,13
				2=350 MCM	SE5,6
86	D-21	1"	100'	2=10	B3,N
87	C-21	1"	3'	2=10	B14,N (TYPE SD)
88	B-21	—	3'	2=10	B14,N (TYPE SD)
89	G-21	1"	3'	2=10	B4,15
90	G-21	1"	3'	2=10	B15,N (TYPE SD)
91	H-21	—	3'	2=10	B15,N (TYPE SD)
92	F-23	3"	18'	9=10	A7,8,11,12 B3,4,N,12,13
				2=350 MCM	SE5,6
93	F-24	3" FLEX	10'	9=10	A7,8,11,12 B3,4,N,12,13
				2=350 MCM	SE5,6
94	H-24	3"	5'	9=10	A7,8,11,12 B3,4,N,12,13
				2=350 MCM	SE5,6
95	K-24	1"	2'	3=10	B25,27,27A
96	K-25	2"	3'	2=1/0	SE5,6
97	L-25	2"	2'	2=1/0	SE11,12
98B	M-25	2"	3'	3=1/0	SE13,14,N
99	L-27	3"	4'	2=8	B1,2,N,10,11,17,18,
				2=10	B20,21,N,26,N C12,N,13,N,14,N, C15,N,16,N,17,N,18,N
				3=1/0	C10,11,N
100	H-25	1"	5'	3=8	B3,4,N
101	F-25	1" FLEX	10'	3=8	B3,4,N
102	F-26	1"	17'	3=8	B3,4,N
103	C-28	3/4"	100'	2=10	B3,N
104	—	—	—	—	UNASSIGNED
105	G-28	3/4"	4'	2=10	B4,N
106	—	—	—	—	UNASSIGNED
107	F-28	1"	100'	3=8	B3,4,N
108	F-29	1"	100'	3=8	B3,4,N
109	F-30	1"	33'	3=8	B3,4,N
110	C-31	3/4"	100'	2=10	B3,N

INCOMING SERVICE

CONDUIT RUN NO.	CONDUIT LOC. ON DWG. E7	CONDUIT SIZE DIA.	CONDUIT LGTH. LIN. FT.	WIRE (PC-28) NO. AND AWG SIZE	WIRE (PC-28) DESIGNATION
111	—	—	—	—	UNASSIGNED
112	G-31	3/4"	12'	2=10	B4,N
113	—	—	—	—	UNASSIGNED
114	F-31	1"	77'	3=8	B3,4,N
115	F-32	1"	77'	3=8	B3,4,N
116	F-33	1"	78'	3=8	B3,4,N
117	G-34	3/4"	100'	2=10	B3,N
118	—	—	—	—	UNASSIGNED
119	G-34	3/4"	4'	2=10	B4,N
120	—	—	—	—	UNASSIGNED
121	R-10	3/4"	10'	2=10	D3,N
122	R-8	3/4"	10'	2=10	D3,N
123	H-12	3/4"	10'	2=10	P1,N
124	H-9	3/4"	20'	2=10	P2,N
125	R-10	3/4"	3'	2=10	D3,N
126	R-9	3/4"	2'	2=10	D3,N

ROADWAY LIGHTING

CONDUIT RUN NO.	CONDUIT LOC. ON DWG. E8	CONDUIT LOC. ON DWG. E9	CONDUIT SIZE DIA.	CONDUIT LGTH. LIN. FT.	WIRE NO. AND AWG SIZE	WIRE DESIGNATION
1	L-5	—	2-1/2"	55'	BY OTHERS	BY OTHERS
2	—	—	—	—		
3	K-4	—	2-1/2"	97'		
4	K-3	—	2-1/2"	145'		
5	K-2	—	2-1/2"	42'		
6	K-6	—	2-1/2"	49'		
7	K-6	—	2-1/2"	147'		
8	K-8	—	2-1/2"	147'		
9	—	—	—	—		
10	K-11	—	2-1/2"	147'		
11	K-12&17	—	2-1/2"	147'		
12	—	—	—	—		
13	K-20	—	2-1/2"	147'		
14	—	—	—	—		
15	K-25	—	2-1/2"	147'		
16	K-27	—	2-1/2"	147'		
17	K-30	K-4	2-1/2"	147'		
18	—	—	—	—		
19	—	K-8	2-1/2"	147'		
20	—	K-13	2-1/2"	147'		
21	—	—	—	—		
22	—	K-14	2-1/2"	147'		
23	—	—	—	—		
24	—	K-18	2-1/2"	147'		
25	—	—	—	—		
25	—	K-21	2-1/2"	147'		
27	—	K-23	2-1/2"	147'		
28	—	—	—	—		
29	—	K-25	2-1/2"	147'		
30	—	K-28	2-1/2"	147'		
31	—	K-29	2-1/2"	39'		
32	—	K-30	2-1/2" GALV.	10'		
33	K-1	—	2-1/2" GALV.	10'	BY OTHERS	BY OTHERS

NOTE:
FOR RUN NO. 99, WIRES 6-7 & 8-9 ARE AWG #8.

INSTRUMENTATION

CONDUIT OR CABLE TRAY (PC-35) RUN NO.	LOC. ON DWG. E8	LOC. ON DWG. E9	SIZE DIA.	LGTH. LIN. FT.	WIRE NO. AND AWG SIZE	WIRE DESIGNATION
1	H-14	—	12"x4" CT.	16'	BY OTHERS	BY OTHERS
2	H-15	—	12"x4" CT.	3'		
3	H-15	—	6"x4" CT.	26'		
4	J&L-15	—	6"x4" CT.	42'		
5	F-13	—	6"x4" CT.	175'		
6	F-10	—	2'	32'		
7	F-9	—	6"x4" CT.	75'		
8	F-8	—	2'	18'		
9	F-8	—	6"x4" CT.	100'		
10	F-7	—	2'	32'		
11	F-6	—	6"x4" CT.	150'		
12	F-5	—	2'	32'		
13	F-4	—	6"x4" CT.	125'		
14	F-3	—	2'	18'		
15	F-17	—	6"x4" CT.	180'		
16	F-19	—	2'	32'		
17	F-21	—	6"x4" CT.	129'		
18	F-23	—	2'	18'		
19	F-23	—	6"x4" CT.	51'		
20	F-24	—	2'	32'		
21	F-26	—	6"x4" CT.	177'		
22	F-28	—	2'	32'		
23	F-29	F-4	6"x4" CT.	80'		
24	F-30	F-5	2'	18'		
25	G-30	F-7	6"x4" CT.	309'		
26	—	F-11	2'	18'		
27	—	F-14	6"x4" CT.	309'		
28	—	F-18	6"x4" CT.	247'		
29	—	F-21	2'	18'		
30	—	F-25	6"x4" CT.	378'		
31	—	F-29	2'	18'		
32	N-12	—	6"x4" CT.	260'		
33	L-8	—	2'	44'		
34	N-8	—	2'	18'		
35	N-5	—	6"x4" CT.	375'		
36	N-3	—	2'	18'		
37	N-19	—	6"x4" CT.	309'		
38	L-23	—	2'	44'		
39	N-23	—	2'	18'		
40	N-26	N-4	6"x4" CT.	308'		
41	L-30	L-5	2'	44'		
42	N-30	N-5	2'	18'		
43	N-30	N-7	6"x4" CT.	309'		
44	—	L-11	2'	44'		
45	—	N-11	2'	18'		
46	—	N-15	6"x4" CT.	556'		
47	—	L-21	2'	44'		
48	—	N-21	2'	18'		
49	—	N-25	6"x4" CT.	378'		
50	—	N-29	2'	18'	BY OTHERS	BY OTHERS

INSTRUMENTATION

CONDUIT OR CABLE TRAY (PC-35) RUN NO.	LOC. ON DWG. E8	LOC. ON DWG. E10	SIZE DIA.	LGTH. LIN. FT.	WIRE NO. AND AWG SIZE	WIRE DESIGNATION
51T	—	K-6	2"	16'	BY OTHERS	BY OTHERS
52	—	K-6	2" FLEX	5'		
53	—	K-5	2"	12'		
54	—	J-5	2"	50'		
55	—	F-5	2"	50'		
56	—	C-5	2"	50'		
57	—	B-4	2"	10'		
58	—	A-5	2"	50'		
59	—	E-29	2"	45'		
60	—	C-28	2"	10'		
61	—	C-29	2"	5'		
62	—	C-29	2"	60'		
63	—	C-30	2"	5'		
64	—	C-30	2"	10'		
65T	—	K-17	2"	16'		
66	—	K-16	2" FLEX	5'		
67	—	K-16	2"	12'		
68	—	J-16	2"	50'		
69	—	F-16	2"	50'		
70	—	C-16	2"	50'		
71	—	B-15	2"	10'		
72	—	B-16	2"	50'		
73	—	H-29	2"	45'		
74	—	H-28	2"	10'		
75	—	L-29	2"	5'		
76	—	H-29	2"	60'		
77	—	L-30	2"	5'		
78	—	H-30	2"	10'	BY OTHERS	BY OTHERS

NOTE:

1. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
2. FOR ADDITIONAL NOTES & LEGEND SEE DRAWING E7.
3. FOR LOCATION OF CONDUITS, SEE DRAWINGS E7, E8, E9 & E10.
4. FLEX = LIQUIDTIGHT ALUMINUM CONDUIT WITH BONDING JUMPER.
5. LIN. FT. = LINEAR FEET
6. CT = CABLE TRAY

O. W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

E11

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TABULATION OF CONDUIT & WIRE-I
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: NONE | DWG. NO.: 130
DRAWN BY: GAS | CHKD. BY: JHS | IN CHARGE: HAE | APPROVED: WBC

WIRE AND CONDUIT TABULATION

FAP	STATE PROJECT	PARISH	SHEET NO.
0310-4(35)229	460-57-02	ST. CHARLES	131

144

BOX GIRDER OUTLETS

CONDUIT					WIRE (PC-28)	
RUN NO.	LOC. ON DWG. E8	LOC. ON DWG. E9	SIZE DIA.	LGTH. LIN. FT.	NO. AND AWG SIZE	DESIGNATION
B1	E&H-16	—	2"	40'	4#2	D1,N,5,N
2	D-13	—	2"	52'	2#2	D1,N
3	C-11	—	3/4"	2'	2#10	D1,N
4	D-10	—	2"	105'	2#2	D1,N
5	C-10	—	3/4"	2'	2#10	D1,N
6	D-9	—	2"	105'	2#2	D1,N
7	C-8	—	3/4"	2'	2#10	D1,N
8	D-7	—	2"	105'	2#2	D1,N
9	C-7	—	3/4"	2'	2#10	D1,N
10	D-6	—	2"	105'	2#2	D1,N
11	C-5	—	3/4"	2'	2#10	D1,N
12	D-4	—	2"	105'	2#2	D1,N
13	C-4	—	3/4"	2'	2#10	D1,N
14	D-3	—	2"	105'	2#2	D1,N
15	C-3	—	3/4"	2'	2#10	D1,N
16	D-16	—	2"	53'	2#2	D5,N
17	C-17	—	3/4"	2'	2#10	D5,N
18	D-17	—	2"	105'	2#2	D5,N
19	C-19	—	3/4"	2'	2#10	D5,N
20	D-20	—	2"	105'	2#2	D5,N
21	C-21	—	3/4"	2'	2#10	D5,N
22	D-22	—	2"	105'	2#2	D5,N
23	C-24	—	3/4"	2'	2#10	D5,N
24	D-25	—	2"	105'	2#2	D5,N
25	C-26	—	3/4"	2'	2#10	D5,N
26	D-27	—	2"	105'	2#2	D5,N
27	C-29	—	3/4"	2'	2#10	D5,N
28	D-30	D-4	2"	105'	—	—
29	—	C-6	3/4"	2'	2#10	D10,N
30	—	D-7	2"	105'	2#2	D10,N
31	—	C-8	3/4"	2'	2#10	D10,N
32	—	D-9	2"	105'	2#2	D10,N
33	—	C-10	3/4"	2'	2#10	D10,N
34	—	D-11	2"	105'	2#2	D10,N
35	—	C-12	3/4"	2'	2#10	D10,N
36	—	D-13	2"	105'	2#2	D10,N
37	—	C-14	3/4"	2'	2#10	D10,N
38	—	D-14	2"	105'	2#2	D10,N
39	—	C-15	3/4"	2'	2#10	D10,N
40	—	D-16	2"	27'	2#2	D10,N
41	—	E&P-17	2"	60'	4#2	D10,N,12,N
42	—	D-17	2"	78'	2#2	D12,N
43	—	C-18	3/4"	2'	2#10	D12,N
44	—	D-19	2"	105'	2#2	D12,N
45	—	C-20	3/4"	2'	2#10	D12,N
46	—	D-20	2"	105'	2#2	D12,N
47	—	C-22	3/4"	2'	2#10	D12,N
48	—	D-22	2"	105'	2#2	D12,N
49	—	C-24	3/4"	2'	2#10	D12,N
50	—	D-24	2"	105'	2#2	D12,N
51	—	C-25	3/4"	2'	2#10	D12,N
52	—	D-26	2"	105'	2#2	D12,N
53	—	C-27	3/4"	2'	2#10	D12,N
54	—	D-28	2"	105'	2#2	D12,N
55	—	C-29	3/4"	2'	2#10	D12,N
56	R-3	—	3/4"	2'	2#10	D2,N
57	Q-3	—	2"	105'	2#2	D2,N
58	R-4	—	3/4"	2'	2#10	D2,N
59	Q-4	—	2"	105'	2#2	D2,N
60	R-5	—	3/4"	2'	2#10	D2,N
61	Q-6	—	2"	105'	2#2	D2,N
62	R-7	—	3/4"	2'	2#10	D2,N
63	Q-7	—	2"	105'	2#2	D2,N
64	R-8	—	3/4"	2'	2#10	D2,N
65	Q-9	—	2"	105'	2#2	D2,N
66	R-10	—	3/4"	2'	2#10	D2,N
67	Q-10	—	2"	105'	2#2	D2,N
68	R-11	—	3/4"	2'	2#10	D2,N

BOX GIRDER OUTLETS

CONDUIT					WIRE (PC-28)	
RUN NO.	LOC. ON DWG. E8	LOC. ON DWG. E9	SIZE DIA.	LGTH. LIN. FT.	NO. AND AWG SIZE	DESIGNATION
69	Q-13	—	2"	52'	2#2	D2,N
B70	L&N-16	—	2"	50'	4#2	D2,N,5,N
71	Q-16	—	2"	53'	2#2	D6,N
72	R-17	—	3/4"	2'	2#10	D6,N
73	Q-17	—	2"	105'	2#2	D6,N
74	R-19	—	3/4"	2'	2#10	D6,N
75	Q-20	—	2"	105'	2#2	D6,N
76	R-21	—	3/4"	2'	2#10	D6,N
77	Q-23	—	2"	105'	2#2	D6,N
78	R-24	—	3/4"	2'	2#10	D6,N
79	Q-25	—	2"	105'	2#2	D6,N
80	R-26	—	3/4"	2'	2#10	D6,N
81	Q-27	—	2"	105'	2#2	D6,N
82	R-29	—	3/4"	2'	2#10	D6,N
83	Q-30	Q-4	2"	105'	—	—
84	—	R-6	3/4"	2'	2#10	D11,N
85	—	Q-7	2"	105'	2#2	D11,N
86	—	R-8	3/4"	2'	2#10	D11,N
87	—	Q-9	2"	105'	2#2	D11,N
88	—	R-10	3/4"	2'	2#10	D11,N
89	—	Q-11	2"	105'	2#2	D11,N
90	—	R-12	3/4"	2'	2#10	D11,N
91	—	Q-13	2"	105'	2#2	D11,N
92	—	R-14	3/4"	2'	2#10	D11,N
93	—	Q-14	2"	105'	2#2	D11,N
94	—	R-15	3/4"	2'	2#10	D11,N
95	—	Q-15	2"	27'	2#2	D11,N
96	—	R-17	2"	25'	3#1/0	C10,11,N
97	—	S-17	2" FLEX	5'	3#1/0	C10,11,N
98	—	S-17	2"	8'	3#1/0	C10,11,N
99	—	Q-18	2"	78'	2#2	D13,N
100	—	R-18	3/4"	2'	2#10	D13,N
101	—	Q-19	2"	105'	2#2	D13,N
102	—	R-20	3/4"	2'	2#10	D13,N
103	—	Q-21	2"	105'	2#2	D13,N
104	—	R-22	3/4"	2'	2#10	D13,N
105	—	Q-22	2"	105'	2#2	D13,N
106	—	R-23	3/4"	2'	2#10	D13,N
107	—	Q-24	2"	105'	2#2	D13,N
108	—	R-25	3/4"	2'	2#10	D13,N
109	—	Q-26	2"	105'	2#2	D13,N
110	—	R-27	3/4"	2'	2#10	D13,N
111	—	Q-28	2"	105'	2#2	D13,N
112	—	R-29	3/4"	2'	2#10	D13,N

PIER 2 TOWER

CONDUIT					WIRE (PC-28)	
RUN NO.	LOC. ON DWG. E10	SIZE DIA.	LGTH. LIN. FT.	NO. AND AWG SIZE	DESIGNATION
1T	M-9	2"	15'	21#10	A16,17,N,15,20,21,N C3,N,4,N,5,N,6,N, C7,N,8,N,9,N,
2	M-9	2"	17'	17#10	A20,21,N, C3,N,4,N,5,N,6,N, C7,N,31,32,33,N
3	N-9	2"	9'	12#10	A20,21,N,C6,N,7, C25,26,31,32,33,N
4	N-10	3/4"	4'	4#10	C33,N,C33,N
5	N-9	2"	2'	12#10	A20,21,N,C6,N,7, C25,26,31,32,33,N
6	P-10	3/4"	4'	3#10	C7,25,26
7	P-9	2"	7'	9#10	A20,21,N,C6,N C31,32,33,N
8	P-10	3/4"	4'	4#10	C33,N,C33,N
9	Q-9	2"	13'	9#10	A20,21,N,C6,N C31,32,33,N
10	Q-10	3/4"	4'	4#10	C33,N,C33,N
11	Q-9	2"	10'	9#10	A20,21,N,C6,N C31,32,33,N
12	Q-10	3/4"	4'	4#10	C6,N,C6,N
13	R-9	2"	7'	7#10	A20,21,N,C31,32,33,N
14	R-10	3/4"	4'	4#10	C33,N,C33,N
15	R-9	2"	15'	7#10	A20,21,N,C31,32,33,N
16	S-10	3/4"	4'	4#10	C33,N,C33,N
17	S-9	2"	15'	7#10	A20,21,N,C31,32,33,N
18	S-10	3/4"	4'	3#10	C33,N,C33
19	T-9	2"	10'	5#10	A20,21,N,C31,32,33
20	T-10	3/4"	4'	3#10	C31,32,33
21	—	—	—	—	UNASSIGNED
22	—	—	—	—	UNASSIGNED
23	—	—	—	—	UNASSIGNED
24	—	—	—	—	UNASSIGNED
25	U-9	1"	95'	3#10	A20,21,N
26	U-8	1" FLEX	3'	3#10	A20,21,N
27	U-7	1" SUP.	3'	3#10	A20,21,N
28	U-7	1" FLEX	2'	2#10	A20,21
29	U-6	—	—	(PC-34)	CONTROL CABLE
30	U-7	1" FLEX	2'	3#10	A20,21,N
31	V-6	—	—	3-WIRE POWER CABLE (PC-34)	
32	L-9	2"	4'	13#10	A15,16,17,N,C5,N C8,N,9,N,31,32,33
33	L-10	3/4"	4'	4#10	C33,N,C33,N
34	L-9	2"	4'	11#10	A15,16,17,N,C5,N, C8,N,9,31,32
35	K-10	3/4"	3'	4#10	C6,N,C6,N
36	K-9	2"	4'	11#10	A15,16,17,N,C5,N C8,N,9,31,32
37	K-10	1"	3'	6#10	C8,9,28,29,31,32
38	K-9	2"	6'	9#10	A15,16,17,N C5,N,28,29,N
39	J-10	3/4"	3'	4#10	C30,N,C30,N
40	J-9	2"	2'	10#10	A15,16,17,N,C5,N C28,29,30,N
41	J-9	1"	15'	2#10	A15,N
42	H-9	2"	17'	9#10	A16,17,N,C6,N, C28,29,30,N
43	H-10	3/4"	3'	4#10	C30,N,C30,N
44	H-9	2"	15'	9#10	A16,17,N,C6,N C28,29,30,N
45	G-10	3/4"	3'	4#10	C30,N,C30,N
46	G-9	2"	15'	9#10	A16,17,N,C6,N C28,29,30,N
47	G-10	3/4"	3'	4#10	C30,N,C30,N
48	F-9	2"	15'	9#10	A16,17,N,C6,N C28,29,30,N
49	F-10	3/4"	3'	4#10	C30,N,C30,N
50	F-9	2"	15'	9#10	A16,17,N,C6,N, C28,29,30,N
51	E-10	3/4"	3'	4#10	C30,N,C30,N
52	E-9	2"	5'	9#10	A16,17,N,C6,N C28,29,30,N
53	E-10	3/4"	3'	4#10	C5,N,C6,N

PIER 2 TOWER

CONDUIT					WIRE (PC-28)	
RUN NO.	LOC. ON DWG. E10	SIZE DIA.	LGTH. LIN. FT.	NO. AND AWG SIZE	DESIGNATION
54	E-9	2"	10'	9#10	A16,17,N,C5,N, C28,29,30,N
55	D-10	3/4"	3'	4#10	C30,N,C30,N
56	D-9	2"	15'	9#10	A16,17,N,C5,N, C28,29,30,N
57	D-10	3/4"	3'	4#10	C30,N,C30,N
58	C-9	2"	15'	9#10	A16,17,N,C5,N C28,29,30,N
59	C-10	3/4"	3'	4#10	C30,N,C30,N
60	C-9	2"	22'	9#10	A16,17,N,C5,N, C28,29,30,N
61	B-10	3/4"	3'	4#10	C30,N,C30,N
62	B-9	2"	15'	9#10	A16,17,N,C5,N, C28,29,30,N
63	B-10	3/4"	2'	4#10	C30,N,C30,N
64	A-9 J-32	2"	13'	9#10	A16,17,N,C5,N C28,29,30,N
65	J-33	3/4"	2'	4#10	C30,N,C30,N
66	H-32	2"	6'	9#10	A16,17,N,C5,N C28,29,30,N
67	H-33	3/4"	2'	4#10	C5,N,C6,N
68	H-32	2"	10'	9#10	A16,17,N,C6,N C28,29,30,N
69	G-33	3/4"	2'	4#10	C30,N,C30,N
70	G-32	2"	10'	9#10	A16,17,N,C5,N, C28,29,30,N
71	G-33	3/4"	2'	4#10	C30,N,C30,N
72	G-32	2"	8'	9#10	A16,17,N,C5,N, C28,29,30,N
73	F-33	3/4"	2'	4#10	C30,N,C30,N
74	F-32	2"	10'	9#10	A16,17,N,C5,N, C28,29,30,N
75	F-33	3/4"	2'	4#10	C30,N,C30,N
76	F-32	2"	4'	9#10	A16,17,N,C5,N, C28,29,30,N
77	F-31	3/4"	2'	4#10	C30,N,C30,N
78	E-32	2"	10'	9#10	A16,17,N,C5,N C28,29,30,N
79	E-31	3/4"	2'	4#10	C30,N,C30,N
80	E-32	2"	4'	9#10	A16,17,N,C5,N C28,29,30,N
81	D-31	3/4"	2'	2#10	C5,N
82	D-32	2"	2'	7#10	A16,17,N, C28,29,30,N
83	D-31	3/4"	2'	3#10	C28,29,30
84	D-32	2"	5'	5#10	A16,17,N,C30,N
85	C-31	3/4"	2'	2#10	C30,N
86	C-32	1"	8'	3#10	A16,17,N
87	E-30	3/4"	6'	3#10	A16,17,N (TYPE SO)
88	—	—	—	—	UNASSIGNED
89	M-9	2"	20'	11#10	C3,N,4,N,5,N, C6,N,25,26,N
90	N-9	3/4"	1'	4#10	C27,N,C27,N
91	M-8	2"	15'	12#10	C3,N,4,N,5,N, C6,N,25,26,27,N
92	N-8	1"	1'	8#10	C5,N,27,N,C6,N,27,N
93	N-8	3/4"	3'	4#10	C6,N,C6,N
94	M-7	2"	15'	10#10	C3,N,4,N,5,N, C25,26,27,N
95	N-7	3/4"	1'	4#10	C27,N,C27,N
96	M-5	2"	15'	10#10	C3,N,4,N,5,N, C25,26,27,N
97	N-5	3/4"	1'	4#10	C27,N,C27,N
98	M-5	2"	15'	10#10	C3,N,4,N,5,N, C25,26,27,N
99	N-5	1"	1'	8#10	C5,N,27,N,C5,N,C27,N
100	N-5	1"	3'	4#10	C5,N,C5,N
101	M-5	2"	15'	10#10	C3,N,4,N,5,N, C25,26,27,N
102	N-4	3/4"	1'	4#10	C27,N,C27,N

PIER 2 TOWER

CONDUIT					WIRE (PC-28)	
RUN NO.	LOC. ON DWG. E10	SIZE DIA.	LGTH. LIN. FT.	NO. AND AWG SIZE	DESIGNATION
103	M-4	2"	20'	10#10	C3,N,4,N,5,N, C25,26,27,N
104	N-3	2"	9'	11#10	C3,4,N,19,20,25,26 C27,N
105	N-3	3/4"	4'	4#10	C27,N,C27,N
106	N-3	2"	2'	10#10	C3,4,N,19,20,25, C26,27
107	P-3	1"	4'	9#10	C3,4,19,20,22,23, C25,26,27
108	P-3	2"	7'	5#10	C5,N,22,23,24,N
109	P-3	3/4"	4'	4#10	C24,N,C24,N
110	Q-3	2"	13'	5#10	C5,N,22,23,24,N
111	Q-3	3/4"	4'	4#10	C24,N,C24,N
112	Q-3	2"	10'	5#10	C5,N,22,23,24,N
113	Q-3	3/4"	4'	4#10	C5,N,C5,N
114	R-3	2"	7'	4#10	C22,23,24,N
115	R-3	3/4"	4'	4#10	C24,N,C24,N
116	R-3	2"	15'	4#10	C22,23,24,N
117	S-3	3/4"	4'	4#10	C24,N,C24,N
118	S-3	2"	15'	4#10	C22,23,24,N
119	S-3	3/4"	4'	3#10	C24,N,C24
120	S-3	3/4"	14'	3#10	C22,23,24
121	—	—	—	—	UNASSIGNED
122	M-3	2"	24'	5#10	C5,N,19,20,N
123	L-3	3/4"	3'	4#10	C21,N,C21,N
124	L-3	2"	5'	5#10	C5,N,19,20,21,N
125	K-3	3/4"	3'	4#10	C5,N,C5,N
126	—	—	—	—	UNASSIGNED
127	—	—	—	—	UNASSIGNED
128	K-3	2"	10'	6#10	C5,N,19,20,21,N
129	J-3	3/4"	3'	4#10	C21,N,C21,N
130	J-3	2"	12'	6#10	C5,N,19,20,21,N
131	H-3	3/4"	3'	4#10	C21,N,C21,N
132	H-3	2"	15'	6#10	C5,N,19,20,21,N
133	G-3	3/4"	3'	4#10	C21,N,C21,N
134	G-3	2"	15'	6#10	C5,N,19,20,21,N
135	G-3	3/4"	3'	4#10	C21,N,C21,N
136	F-3	2"	15'	6#10	C5,N,19,20,21,N
137	F-3	3/4"	3'	4#10	C21,N,C21,N
138	F-3	2"	15'	6#10	C5,N,19,20,21,N
139	E-3	3/4"	3'	4#10	C21,N,C21,N
140	E-3	2"	5'	6#10	C5,N,19,20,21,N

(CONTINUED ON DRAWING E13)

NOTE:

1. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
2. FOR ADDITIONAL NOTES & LEGEND SEE DRAWING E7.

O.W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

E12

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TABULATION OF CONDUIT & WIRE-2
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: NONE | DWG.NO.: 131
DRAWN BY: GAS | CHKD. BY: JMS | IN CHARGE: HAE | APPROVED: WBC

WIRE AND CONDUIT TABULATION

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(39)225	450-37-02	ST. CHARLES	132

PIER 2 TOWER

RUN NO.	LOC. ON DWG. E10	CONDUIT SIZE DIA.	CONDUIT LGTH. LIN. FT.	WIRE (PC-28) NO. AND AWG SIZE	WIRE (PC-28) DESIGNATION
141	E-3	3/4"	3'	4#10	C5,N,25,N
142	E-3	2"	10'	6#10	C5,N,19,20,21,N
143	E-3	3/4"	3'	4#10	C21,N,C21,N
144	E-3	2"	15'	6#10	C5,N,19,20,21,N
145	E-3	3/4"	3'	4#10	C21,N,C21,N
146	C-3	2"	15'	6#10	C5,N,19,20,21,N
147	C-3	3/4"	3'	4#10	C21,N,C21,N
148	C-3	2"	22'	6#10	C5,N,19,20,21,N
149	B-3	3/4"	3'	4#10	C21,N,C21,N
150	B-3	2"	15'	6#10	C5,N,19,20,21,N
151	B-3	3/4"	3'	4#10	C21,N,C21,N
152	A-3	2"	13'	6#10	C5,N,19,20,21,N
153	J-25	3/4"	2'	4#10	C21,N,C21,N
154	H-26	2"	6'	6#10	C5,N,19,20,21,N
155	H-25	3/4"	2'	4#10	C5,N,25,N
156	H-26	2"	10'	6#10	C5,N,19,20,21,N
157	G-25	3/4"	2'	4#10	C21,N,C21,N
158	G-26	2"	10'	6#10	C5,N,19,20,21,N
159	G-25	3/4"	2'	4#10	C21,N,C21,N
160	G-26	2"	18'	6#10	C5,N,19,20,21,N
161	F-25	3/4"	2'	4#10	C21,N,C21,N
162	F-26	2"	10'	6#10	C5,N,19,20,21,N
163	E-25	3/4"	2'	4#10	C21,N,C21,N
164	E-26	2"	4'	6#10	C5,N,19,20,21,N
165	E-27	3/4"	2'	4#10	C21,N,C21,N
166	E-26	2"	10'	6#10	C5,N,19,20,21,N
167	E-27	3/4"	2'	4#10	C21,N,C21,N
168	E-26	2"	4'	6#10	C5,N,19,20,21,N
169	D-27	3/4"	2'	4#10	C5,N,C45,N
170	D-26	2"	2'	4#10	C19,20,21,N
171	D-27	3/4"	2'	3#10	C19,20,21
172	C-26	3/4"	9'	4#10	C21,N,C21,N

PIER 3 TOWER

RUN NO.	LOC. ON DWG. E10	CONDUIT SIZE DIA.	CONDUIT LGTH. LIN. FT.	WIRE (PC-28) NO. AND AWG SIZE	WIRE (PC-28) DESIGNATION
27	L-19	3"	15'	[illegible]#10	A11,12,B7,8,9,N, B10,11,12,13,17,18, B20,21,N,26,N,27, C12,N,13,N,14,N,15,N C16,N,17,N,18,N
2	L-20	2"	2'	[illegible]#10	A11,12,B10,11,12,13, B17,18,20,21,N, B26,27,N,C12,N, C13,N,14,N,15,N, C16,N,46,47,N
3	M-21	3/4"	4'	3#10	C48,N,N
4	M-20	2"	24'	[illegible]#10	A11,12,B10,11,12,13, B17,18,20,21,N, B26,27,N,C12,N, C13,N,14,N,15,N C16,N,46,47,48,N
5	N-20	2"	2'	[illegible]#10	A11,12,B10,11,12,13, B17,18,20,21,N, B26,27,N,C15,N,16, C40,41,46,47,48,N
6	N-21	3/4"	4'	4#10	C48,N,C48,N
7	N-20	2"	2'	[illegible]#10	A11,12,B10,11,12,13, B17,18,20,21,N, B26,27,N,C15,N,16, C40,41,46,47,48,N
8	P-21	3/4"	4'	3#10	C16,40,41
9	P-20	2"	10'	[illegible]#10	A11,12,B10,11,12,13 B17,18,20,21,N, B26,27,N,C15,N, C46,47,48,N
10	P-21	3/4"	4'	4#10	C48,N,C48,N
11	C-20	2"	13'	[illegible]#10	A11,12,B10,11,12,13, B17,18,20,21,N, B26,27,N,C15,N, C46,47,48,N
12	Q-21	3/4"	4'	4#10	C48,N,C48,N
13	Q-20	2"	10'	5#10	A11,12,B10,11,12,13 B17,18,20,21,N, B26,27,N,C15,N, C46,47,48,N
14	Q-21	3/4"	4'	2#10	C15,N
15	R-20	2"	7'	[illegible]#10	A11,12,B10,11,12,13, B17,18,20,21,N,26, B27,N,C46,47,48,N
16	R-21	3/4"	4'	4#10	C48,N,C48,N
17	R-20	2"	15'	[illegible]#10	A11,12,B10,11,12,13, B17,18,20,21,N,26, B27,N,C46,47,48,N
18	S-21	3/4"	4'	4#10	C48,N,C48,N
19	S-20	2"	15'	[illegible]#10	A11,12,B10,11,12,13, B17,18,20,21,N,26, B27,N,C46,47,48,N
20	S-21	3/4"	4'	5#10	C48,N,C48
21	T-20	2"	10'	5#10	A11,12,B10,11,12,13, B17,18,20,21,N,26, B27,N,C46,47,48
22	T-21	3/4"	4'	3#10	C46,47,48
23	T-20	2"	10'	12#10	A11,12,B10,11,12, B13,17,18,20,21,N, B26,27,N
24	—	—	—	—	UNASSIGNED
25	U-19	1"	45'	[illegible]	B17,18,24,25, B26,27,N
26	U-19	1"	5'	2#6	B17,18
27	V-19	1" FLEX	3'	2#8	B17,18
28	U-19	1"	15'	5#10	B24,25,26,27,N
29	U-18	1"	2'	2#10	B24,25
30	U-18	1"	25'	3#10	B26,27,N
31	U-17	1" FLEX	3'	3#10	B26,27,N
32	U-17	IN SUP	3'	3#10	B26,27,N
33	U-16	1" FLEX	2'	2#10	B26,27

PIER 3 TOWER

RUN NO.	LOC. ON DWG. E10	CONDUIT SIZE DIA.	CONDUIT LGTH. LIN. FT.	WIRE (PC-28) NO. AND AWG SIZE	WIRE (PC-28) DESIGNATION
34	U-16	—	—	(PC-34)	CONTROL CABLE
35	U-16	1" FLEX	2'	3#10	B26,27,N
36	U-16	—	—	3-WIRE POWER CABLE (PC-34)	
37	L-20	2"	5'	11#10	B7,8,9,N,C15,N, C17,N,18,46,47
38	K-21	3/4"	3'	4#10	C15,N,C15,N
39	K-20	2"	4'	11#10	B7,8,9,N,C15,N, C17,N,18,46,47
40	K-21	1"	3'	6#10	C17,18,43,44,46,47
41	K-20	2"	6'	9#10	B7,8,9,N, C15,N,43,44,N
42	J-21	3/4"	3'	3#10	C46,N,N
43	J-20	2"	2'	10#10	B7,8,9,N, C15,N,43,44,45,N
44	J-19	1"	15'	2#10	B7,N
45	H-20	2"	17'	9#10	B8,9,N, C15,N,43,44,45,N
46	H-21	3/4"	3'	4#10	C45,N,C45,N
47	H-20	2"	15'	9#10	B8,9,N, C15,N,43,44,45,N
48	G-21	3/4"	3'	4#10	C45,N,C45,N
49	G-20	2"	15'	9#10	B8,9,N, C15,N,43,44,45,N
50	G-21	3/4"	3'	4#10	C45,N,C45,N
51	F-20	2"	15'	9#10	B8,9,N, C15,N,43,44,45,N
52	F-21	3/4"	3'	4#10	C45,N,C45,N
53	F-20	2"	15'	9#10	B8,9,N, C15,N,43,44,45,N
54	E-21	3/4"	3'	4#10	C45,N,C45,N
55	E-20	2"	5'	9#10	B8,9,N, C15,N,43,44,45,N
56	E-21	3/4"	3'	4#10	C15,N,C15,N
57	E-20	2"	10'	9#10	B8,9,N, C15,N,43,44,45,N
58	D-21	3/4"	3'	4#10	C45,N,C45,N
59	D-20	2"	15'	9#10	B8,9,N, C15,N,43,44,45,N
60	D-21	3/4"	3'	4#10	C45,N,C45,N
61	C-20	2"	15'	9#10	B8,9,N, C15,N,43,44,45,N
62	C-21	3/4"	3'	4#10	C45,N,C45,N
63	C-20	2"	22'	9#10	B8,9,N, C15,N,43,44,45,N
64	B-21	3/4"	3'	4#10	C45,N,C45,N
65	B-20	2"	15'	9#10	B8,9,N, C15,N,43,44,45,N
66	B-21	3/4"	2'	4#10	C45,N,C45,N
67	A-20 T-32	2"	13'	9#10	B8,9,N, C15,N,43,44,45,N
68	S-33	3/4"	2'	4#10	C45,N,C45,N
69	S-32	2"	6'	9#10	B8,9,N, C15,N,43,44,45,N
70	R-33	3/4"	2'	4#10	C15,N,C15,N
71	R-32	2"	10'	9#10	B8,9,N, C15,N,43,44,45,N
72	R-33	3/4"	2'	4#10	C45,N,C45,N
73	R-32	2"	10'	9#10	B8,9,N, C15,N,43,44,45,N
74	Q-33	3/4"	2'	4#10	C45,N,C45,N
75	Q-32	2"	18'	9#10	B8,9,N, C15,N,43,44,45,N
76	Q-33	3/4"	2'	4#10	C45,N,C45,N
77	P-32	2"	10'	9#10	B8,9,N, C15,N,43,44,45,N
78	P-33	3/4"	2'	4#10	C45,N,C45,N
79	P-32	2"	4'	9#10	B8,9,N, C15,N,43,44,45,N
80	P-31	3/4"	2'	4#10	C45,N,C45,N
81	P-32	2"	10'	9#10	B8,9,N, C15,N,43,44,45,N

PIER 3 TOWER

RUN NO.	LOC. ON DWG. E10	CONDUIT SIZE DIA.	CONDUIT LGTH. LIN. FT.	WIRE (PC-28) NO. AND AWG SIZE	WIRE (PC-28) DESIGNATION
82	N-31	3/4"	2'	4#10	C45,N,C45,N
83	N-32	2"	4'	9#10	B8,9,N, C15,N,43,44,45,N
84	N-31	3/4"	2'	2#10	C15,N
85	N-32	2"	2'	7#10	B8,9,N C43,44,45,N
86	N-31	3/4"	2'	3#10	C43,44,45
87	M-32	2"	6'	5#10	B8,9,N,C45,N
88	L-31	3/4"	2'	2#10	C46,N
89	L-32	1"	8'	3#10	B8,9,N
90	L-30	IN SUP	6'	3#10	B8,9,N (TYPE SO)
91	—	—	—	—	UNASSIGNED
92	M-20	2"	20'	11#10	C12,N,13,N,14,N, C15,N,40,41,N
93	N-19	3/4"	1'	2#10	C42,N
94	M-19	2"	15'	12#10	C12,N,13,N,14,N, C15,N,40,41,42,N
95	N-19	3/4"	1'	8#10	C15,N,42,N,C35,N,C42,N
96	N-19	3/4"	3'	4#10	C15,N,C15,N
97	M-18	2"	15'	10#10	C12,N,13,N,14,N C40,41,42,N
98	N-18	3/4"	1'	4#10	C42,N,C42,N
99	M-17	2"	15'	10#10	C12,N,13,N,14,N, C40,41,42,N
100	N-17	3/4"	1'	4#10	C42,N,C42,N
101	M-16	2"	15'	10#10	C12,N,13,N,14,N, C40,41,42,N
102	N-16	3/4"	1'	8#10	C14,N,42,N,C34,N,C42,N
103	N-16	3/4"	3'	4#10	C14,N,C14,N
104	M-15	2"	15'	10#10	C12,N,13,N,14,N, C40,41,42,N
105	N-15	3/4"	1'	4#10	C42,N,C42,N
106	M-15	2"	20'	10#10	C12,N,13,N,14,N, C40,41,42,N
107	N-14	2"	9'	11#10	C12,13,N,14,N,34, C35,40,41,42,N
108	N-14	3/4"	4'	3#10	C42,N,N
109	N-14	2"	2'	10#10	C12,13,N,14,N,34, C35,40,41,42
110	P-14	1"	4'	9#10	C12,13,34,35, C37,38,40,41,42
111	P-14	2"	7'	5#10	C14,N,37,38,N
112	P-14	3/4"	4'	4#10	C39,N,C39,N
113	Q-14	2"	13'	6#10	C14,N,37,38,39,N
114	Q-14	3/4"	4'	4#10	C39,N,C39,N
115	Q-14	2"	10'	5#10	C14,N,37,38,39,N
116	Q-14	3/4"	4'	2#10	C14,N
117	R-14	2"	7'	4#10	C37,38,39,N
118	R-14	3/4"	4'	4#10	C39,N,C39,N
119	R-14	2"	15'	4#10	C37,38,39,N
120	S-14	3/4"	4'	4#10	C39,N,C39,N
121	S-14	2"	15'	4#10	C37,38,39,N
122	S-14	3/4"	4'	3#10	C39,N,C39
123	T-14	3/4"	14'	3#10	C37,38,39
124	—	—	—	—	UNASSIGNED
125	M-14	2"	24'	5#10	C14,N,34,35,N
126	M-14	3/4"	3'	3#10	C36,N,N
127	L-14	2"	5'	6#10	C14,N,34,35,36,N
128	K-14	3/4"	3'	2#10	C14,N
129	—	—	—	—	UNASSIGNED
130	—	—	—	—	UNASSIGNED
131	K-14	2"	10'	6#10	C14,N,34,35,36,N
132	J-14	3/4"	3'	4#10	C36,N,C36,N
133	J-14	2"	12'	6#10	C14,N,34,35,36,N
134	H-14	3/4"	3'	4#10	C36,N,C36,N
135	H-14	2"	15'	6#10	C14,N,34,35,36,N

PIER 3 TOWER

RUN NO.	LOC. ON DWG. E10	CONDUIT SIZE DIA.	CONDUIT LGTH. LIN. FT.	WIRE (PC-28) NO. AND AWG SIZE	WIRE (PC-28) DESIGNATION
136	G-14	3/4"	3'	4#10	C36,N,C36,N
137	G-14	2"	15'	6#10	C14,N,34,35,36,N
138	G-14	3/4"	3'	4#10	C36,N,C36,N
139	F-14	2"	15'	6#10	C14,N,34,35,36,N
140	F-14	3/4"	3'	4#10	C36,N,C36,N
141	F-14	2"	15'	6#10	C14,N,34,35,36,N
142	E-14	3/4"	3'	4#10	C36,N,C36,N
143	E-14	2"	5'	6#10	C14,N,34,35,36,N
144	E-14	3/4"	3'	4#10	C14,N,C14,N
145	E-14	2"	10'	6#10	C14,N,34,35,36,N
146	D-14	3/4"	3'	4#10	C36,N,C36,N
147	D-14	2"	15'	6#10	C14,N,34,35,36,N
148	D-14	3/4"	3'	4#10	C36,N,C36,N
149	C-14	2"	15'	6#10	C14,N,34,35,36,N
150	C-14	3/4"	3'	4#10	C36,N,C36,N
151	C-14	2"	22'	6#10	C14,N,34,35,36,N
152	B-14	3/4"	3'	4#10	C36,N,C36,N
153	B-14	2"	15'	6#10	C14,N,34,35,36,N
154	B-14	3/4"	3'	4#10	C36,N,C36,N
155	T-26	2"	13'	6#10	C14,N,34,35,36,N
156	S-25	3/4"	2'	4#10	C36,N,C36,N
157	S-26	2"	6'	6#10	C14,N,34,35,36,N
158	R-25	3/4"	2'	4#10	C14,N,C14,N
159	R-26	2"	10'	6#10	C14,N,34,35,36,N
160	R-25	3/4"	2'	4#10	C36,N,C36,N
161	R-26	2"	10'	6#10	C14,N,34,35,36,N
162	Q-25	3/4"	2'	4#10	C36,N,C36,N
163	Q-26	2"	18'	5#10	C14,N,34,35,36,N
164	Q-25	3/4"	2'	4#10	C36,N,C36,N
165	P-26	2"	10'	5#10	C14,N,34,35,36,N
166	P-25	3/4"	2'	4#10	C36,N,C36,N
167	P-26	2"	4'	6#10	C14,N,34,35,36,N
168	P-27	3/4"	2'	4#10	C36,N,C36,N
169	P-26	2"	10'	6#10	C14,N,34,35,36,N
170	N-27	3/4"	2'	4#10	C36,N,C36,N
171	N-26	2"	4'	6#10	C14,N,34,35,36,N
172	N-27	3/4"	2'	2#10	C14,N,
173	N-26	2"	2'	4#10	C34,35,36,N
174	M-27	3/4"	2'	3#10	C34,35,36
175	M-26	3/4"	9'	2#10	C36,N

NOTE:

1. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1
2. FOR ADDITIONAL NOTES & LEGEND SEE DRAWING E7

O. W. Hansen

E13

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

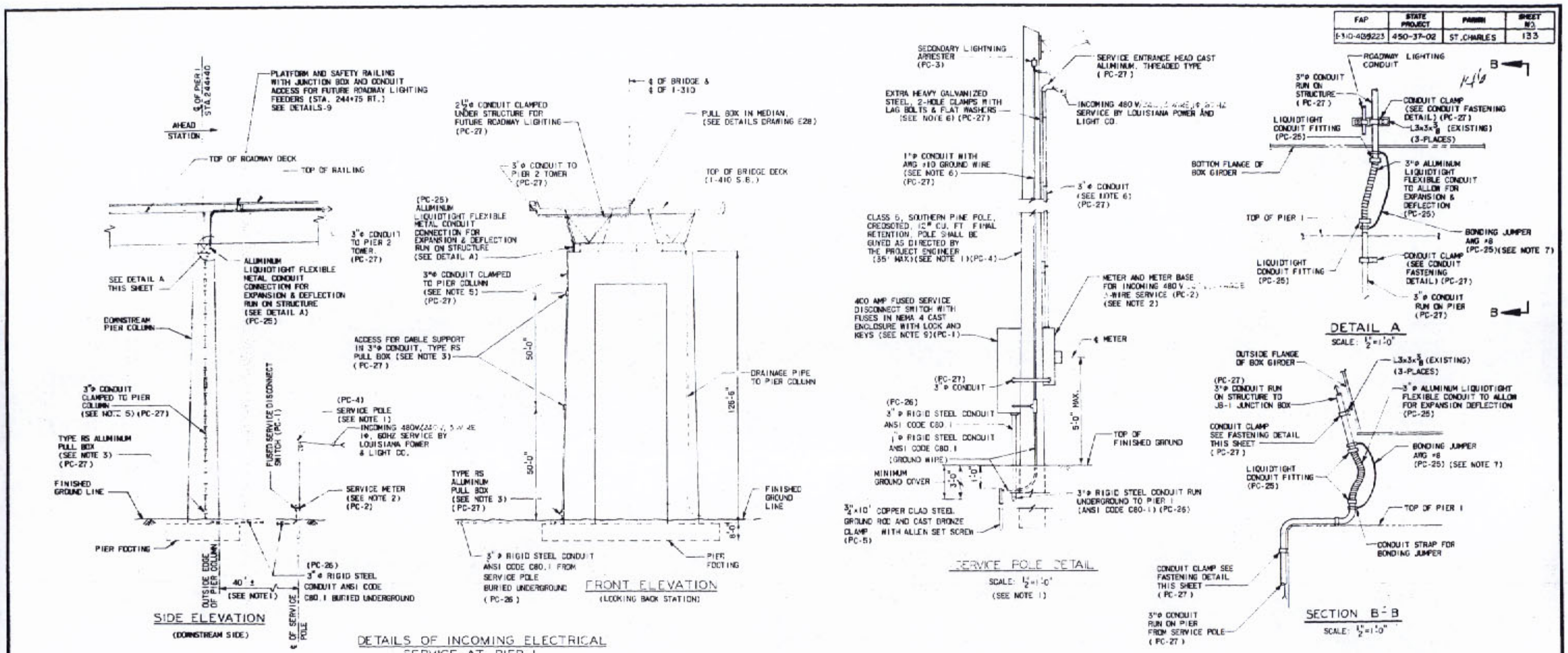
TABULATION OF CONDUIT & WIRE-3
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

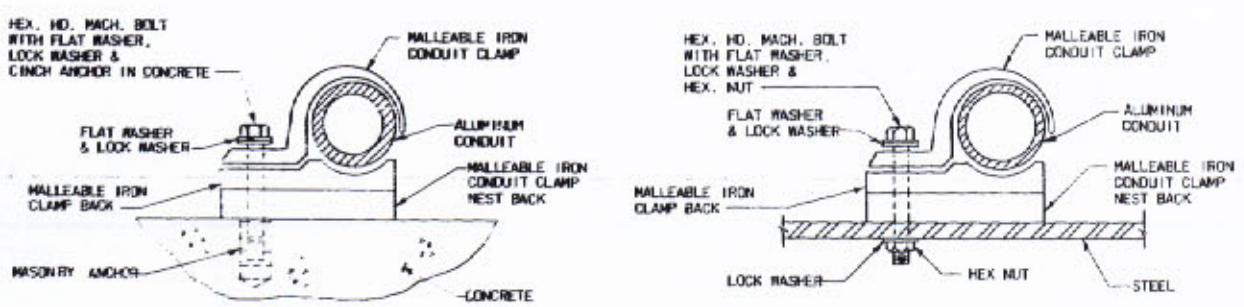
DATE: 5-24-77 | SCALE: NONE | DWG NO. 132
DRAWN BY: GAS | CHKD. BY: JPS | IN CHARGE: HAE | APPROVED: [illegible]

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(95)223	450-37-02	ST. CHARLES	133



DETAILS OF INCOMING ELECTRICAL SERVICE AT PIER 1

SCALE: 1"=20'-0"



CONCRETE MOUNTING

(PC-27)

STEEL MOUNTING

(PC-27)

CONDUIT FASTENING DETAIL

NO SCALE (SEE NOTE 10)

NOTE:

1. SERVICE POLE SHALL BE CLASS 5 SOUTHERN PINE CREOSOTED TO 12# PER. CU. FT. FINAL RETENTION LOCATION SHALL BE DETERMINED BY THE ENGINEER.
2. ALL METERING EQUIPMENT SHALL BE FURNISHED AND INSTALLED AS SPECIFIED BY THE LOUISIANA POWER & LIGHT CO.
3. ALL TYPE RS ALUMINUM PULL BOXES SHALL BE 8"x8"x4" MIN. WITH WATERTIGHT NEOPRENE GASKET, BREATHER, DRAIN AND DRILLED AND TAPPED HOLES WITH BOLT ON HUBS.
4. FOR ELECTRICAL PROVISION GENERAL NOTES, SEE DRAWING E1.
5. ALL CONDUIT RUN ON STRUCTURE SHALL BE SURFACE MOUNTED CLAMPED EVERY 5 FEET WITH GALVANIZED MALLEABLE IRON CLAMPS, CLAMP BACKS AND NEST BACKS, SO THAT THE MINIMUM CLEARANCE BETWEEN THE CONDUIT AND STRUCTURE WILL NOT BE LESS THAN ½".
6. ALL CONDUIT ON SERVICE POLE SHALL BE CLAMPED AT 5 FOOT INTERVALS WITH HEAVY DUTY GALVANIZED 2-HOLE PIPE CLAMPS AND STAINLESS STEEL LAG BOLTS WITH FLAT HEAVY WASHERS.
7. CONTRACTOR TO USE ALUMINUM LIQUIDTIGHT FLEXIBLE METAL CONDUIT AT ALL DEFLECTION JOINTS WITH BONDING JUMPERS. (SEE DETAIL A ABOVE)
8. A LEAD SHIM IS REQUIRED BETWEEN ALL ELECTRICAL EQUIPMENT AND CONCRETE.
9. FUSED SERVICE DISCONNECT SHALL HAVE PROVISIONS SO THAT IT MAY BE LOCKED IN THE FIELD. CONTRACTOR SHALL SUPPLY LOCK AND KEYS AS SPECIFIED BY THE ENGINEER.
10. CONDUIT CLAMP, CLAMP BACK AND NEST BACK USED IN CONDUIT FASTENING DETAIL SHALL BE OF ONE MANUFACTURER.

O. W. Hansa

E14

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DETAILS OF INCOMING SERVICE ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

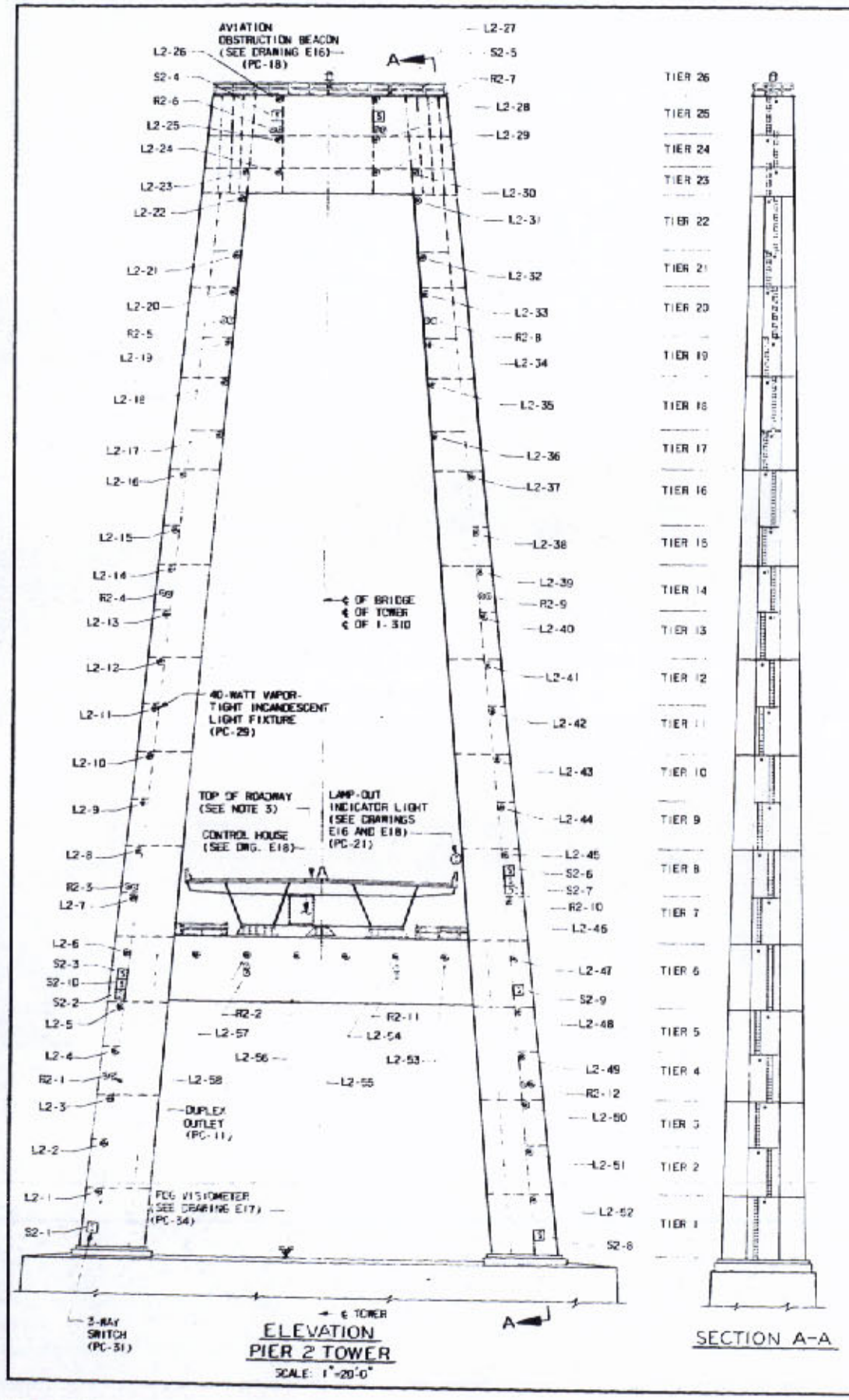
FRANKLAND AND LICHWARD - HOLLESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77	SCALE: 1"=20'0"	DWG NO: 133	
DRAWN BY: GAS	CHKD. BY: JHS	IN CHARGE: HAE	APPROVED: RGC

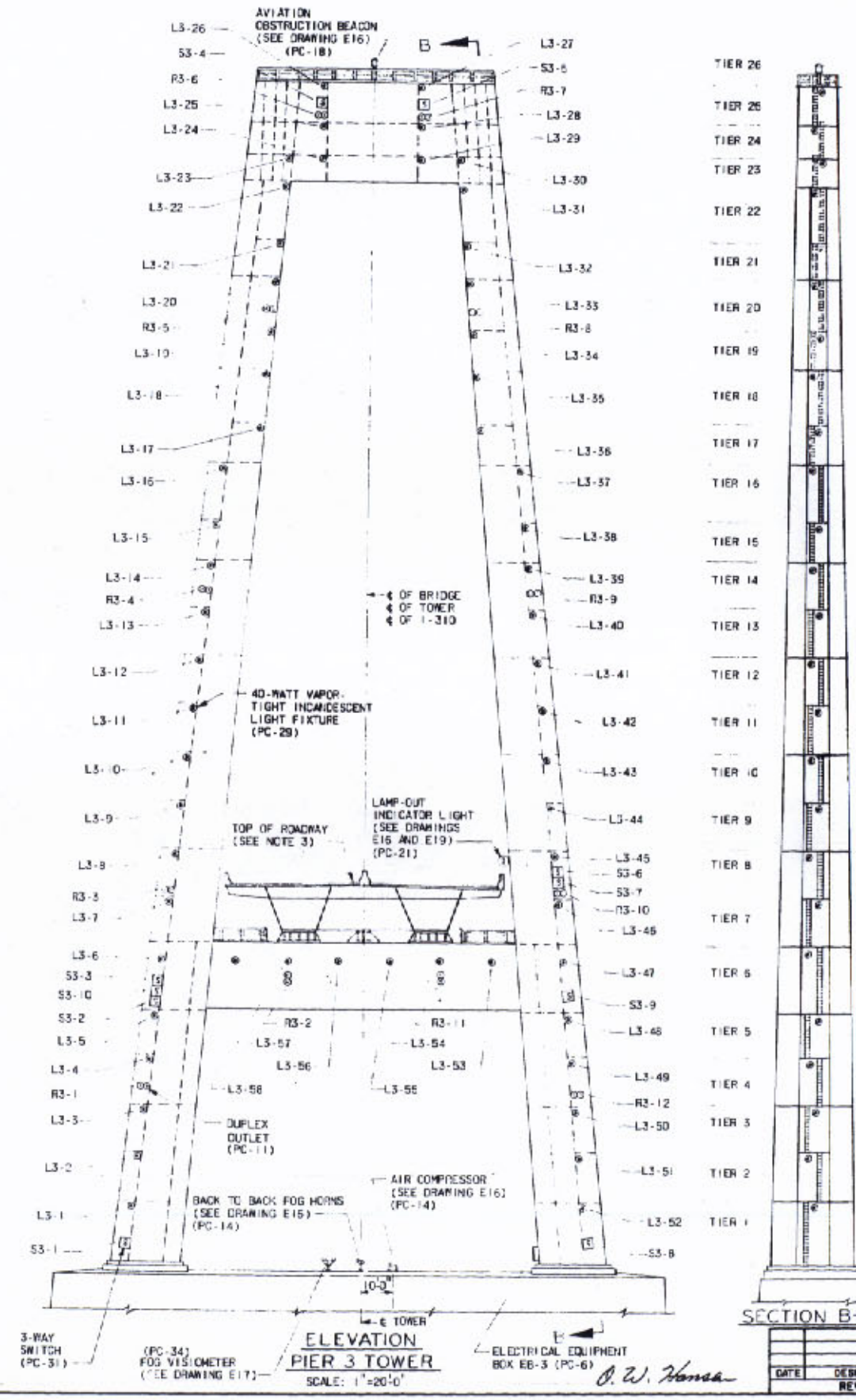
FAP	STATE PROJECT	PARISH	SHEET NO.
5510-4(35)223	480-37-02	ST. CHARLES	134

147

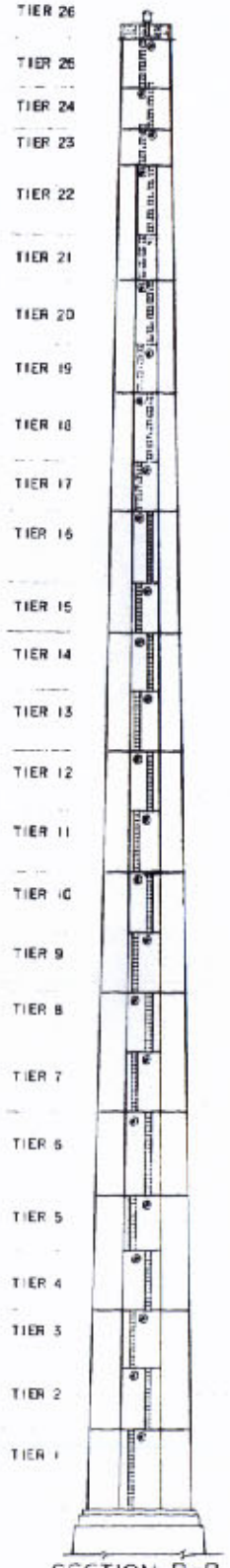


ELEVATION
PIER 2 TOWER
SCALE: 1"=20'-0"

SECTION A-A



ELEVATION
PIER 3 TOWER
SCALE: 1"=20'-0"



SECTION B-B

NOTE:

1. FOR LEGEND SEE DRAWING E7
2. FOR FURTHER DETAILS SEE WIRING DIAGRAMS AND CONDUIT LAYOUTS, DRAWINGS E3 THRU E13
3. FOR DETAILS OF TOWERS AT ROADWAY LEVEL, SEE DRAWING E18 AND E19
4. FOR ELECTRICAL PROVISIONS GENERAL NOTES SEE DRAWING E1

E15

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER DETAILS-1
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

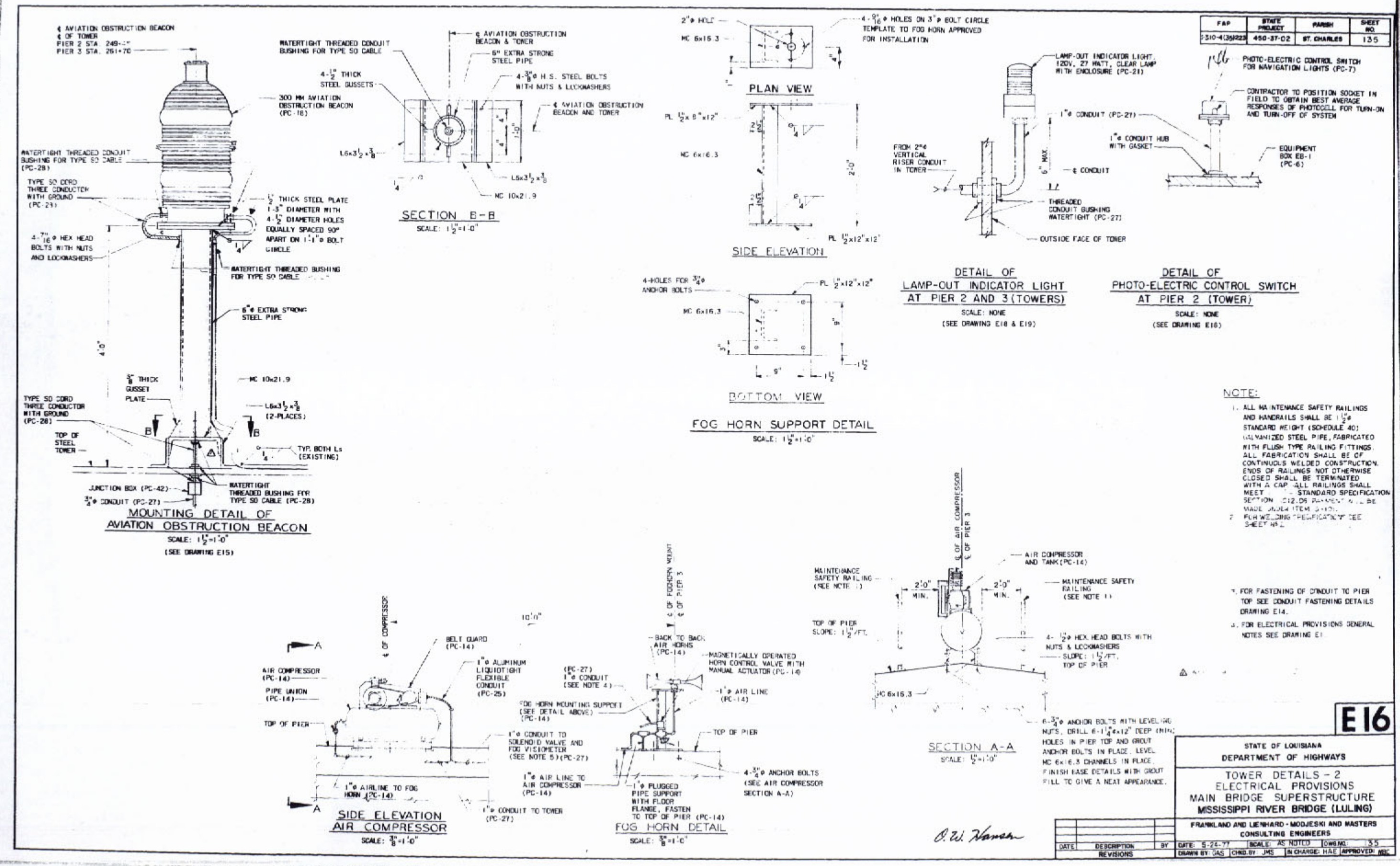
FRANKLAND AND LIENHARD • MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: AS NOTED | DWG NO: 134
DRAWN BY: GAS | CHKD. BY: JMS | IN CHARGE: HAE | APPROVED: RBC

O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
S310-4(35)R23	450-37-02	ST. CHARLES	135



E16

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER DETAILS - 2
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

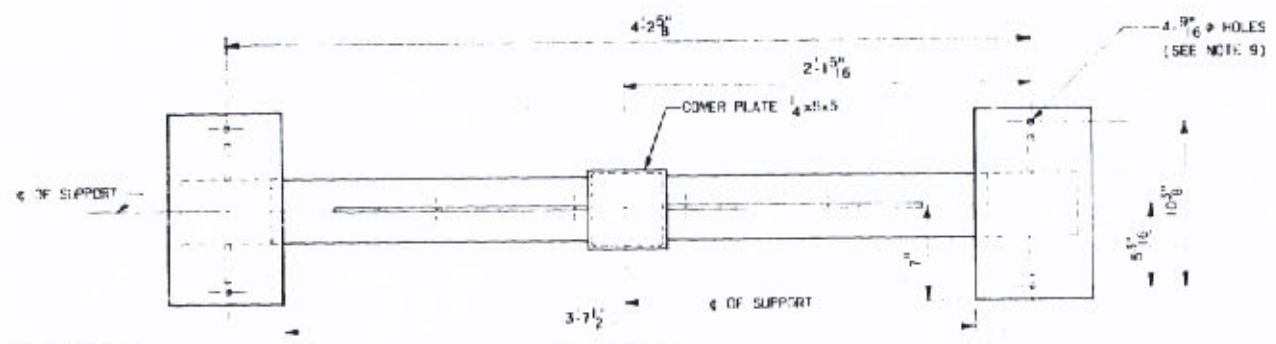
DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: AS NOTED | DWG NO. 55
DRAWN BY: GAS | CHKD. BY: JMS | IN CHARGE: HAE | APPROVED: MBC

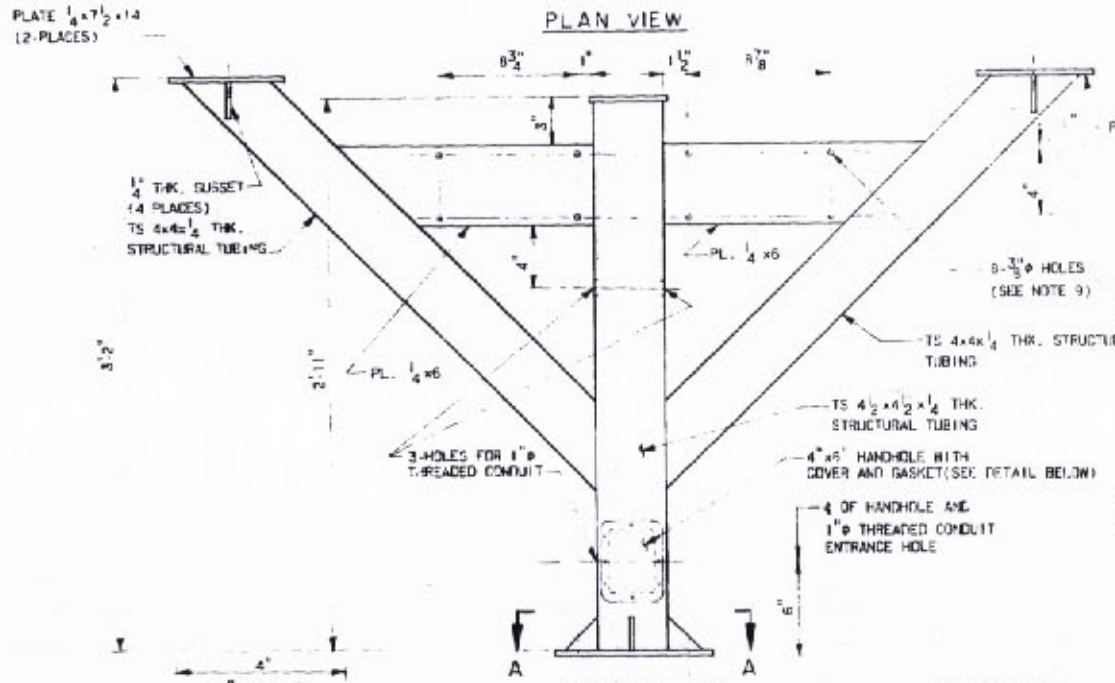
O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO
H-N-0-4138(122)	450-37-02	ST. CHARLES	136

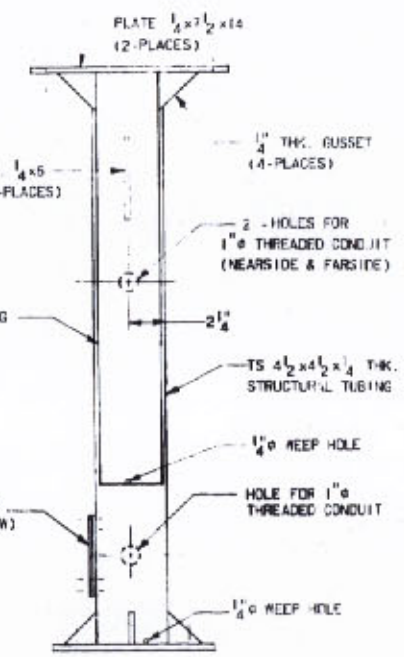
149



PLAN VIEW



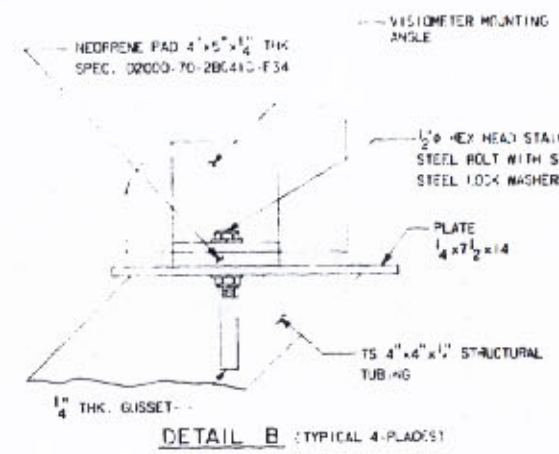
FRONT VIEW



SIDE VIEW

VISIOMETER SUPPORT DETAIL

SCALE: 3/16"=1'
(SEE NOTES 2 AND 3)

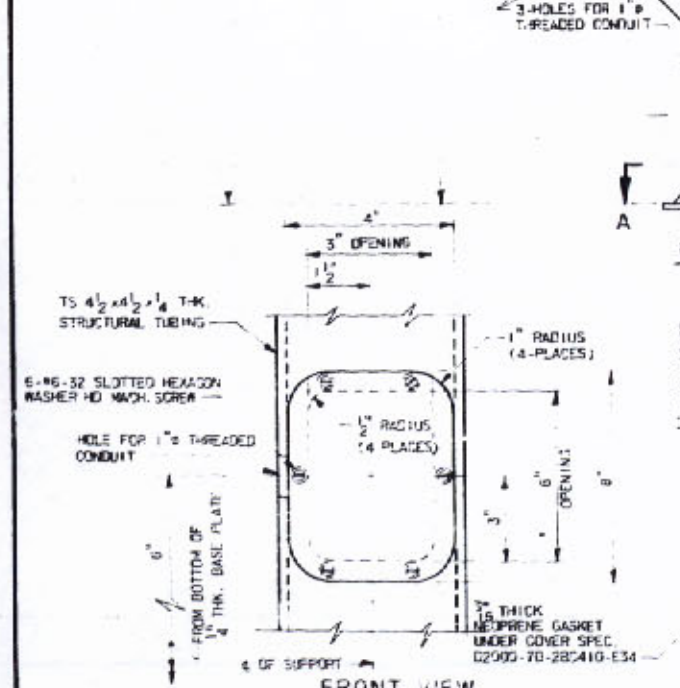


DETAIL B (TYPICAL 4-PLACES)

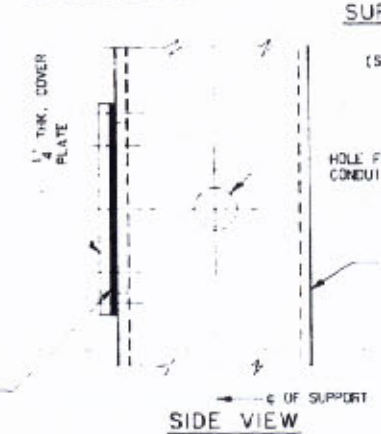
SCALE 3"=1'0"

NOTE:

1. CONTRACTOR TO DRILL 4-1 1/4"ø×12" DEEP(MIN) HOLES IN PIER TOP AND GROUT ANCHOR BOLTS IN PLACE FOR MOUNTING VISIOMETER. FINISH BASE PLATE WITH GROUT FILL TO GIVE A NEAT APPEARANCE.
2. VISIOMETER SUPPORT SHALL BE OF CONTINUOUS WELDED CONSTRUCTION & [illegible]
3. VISIOMETER SUPPORT SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 811, PART 811.16.
4. POWER CABLE AND CONTROL CABLE SHALL BE SECURELY AND NEATLY FASTENED USING NYLON CABLE TIES OR STRAPS.
5. THE LOCATIONS OF THE VISIOMETER ON THE PIER TOP SHALL BE DETERMINED AND APPROVED BY THE MANUFACTURER.
6. VISIOMETER, POWER CABLE, CONTROL CABLE, JUNCTION BOX AND CONTROL RELAYS SHALL BE SUPPLIED BY ONE (1) MANUFACTURER.
7. FOG VISIOMETERS WHEN MOUNTED ON PIER 2 AND PIER 3 SHALL MONITER REPRESENTATIVE VISIBILITY IN THE VICINITY OF THE BRIDGE PIERS. VISIBILITY TO BE MEASURED AT PIER TOP HEIGHT.
8. CALIBRATION OF THE FOG VISIOMETERS SHALL BE DONE IN THE FIELD TO MEET THE VISIBILITY RANGE AS STATED IN NOTE 7 ABOVE. ALL ADJUSTMENTS SHALL BE MADE UNDER THE SUPERVISION OF THE MANUFACTURER AND THE ENGINEER. THE CONTRACTOR SHALL MAKE ALL ADJUSTMENTS OR CHANGES AS DEEMED NECESSARY IN ORDER TO HAVE A COMPLETE AND WORKING FOG DETECTION SYSTEM.
9. ALL MOUNTING HOLES SHOWN IN THE VISIOMETER SUPPORT DETAIL SHALL BE TEMPLATED TO THE EQUIPMENT USED.
10. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.



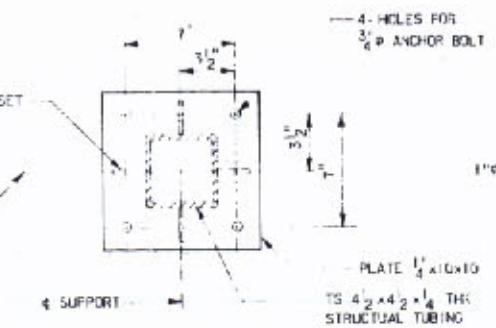
FRONT VIEW



SIDE VIEW

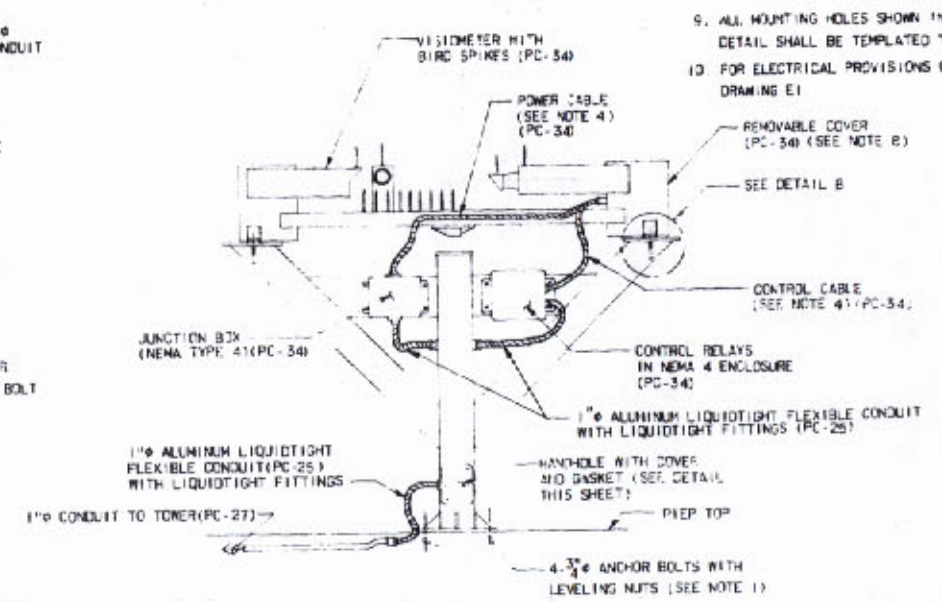
HAND HOLE DETAIL

SCALE: 6"=1'0"



SECTION A-A

SCALE: 3/16"=1'



VISIOMETER MOUNTING DETAIL AT PIER NO. 2 & 3

SCALE: 1"=1'0"
(SEE NOTE 5 & 6)

E17

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER DETAILS - 3
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY

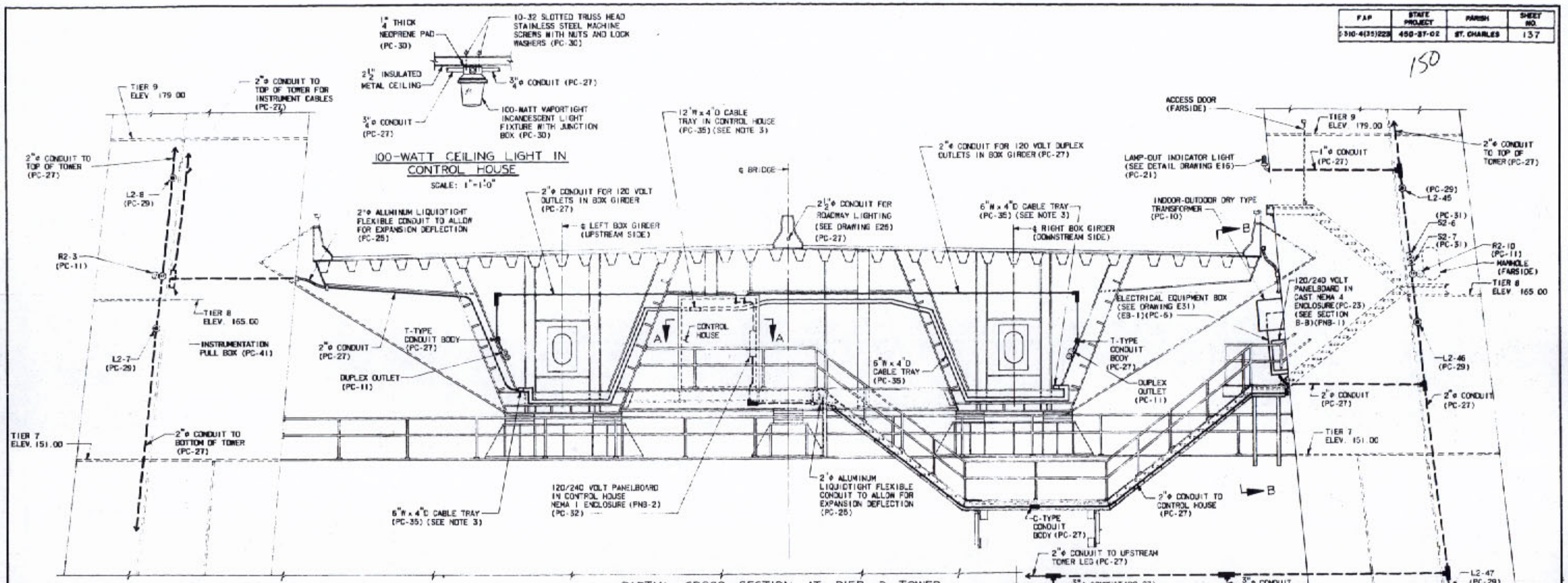
REVISIONS

DATE: 5-24-77 | SCALE: AS NOTED | DWG NO: 36
DRAWN BY: GAS | CHKD BY: JMS | IN CHARGE: HAF | APPROVED: RBC

C. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
0510-4(35)223	450-37-02	ST. CHARLES	137

150



NOTE:

1. FOR FURTHER DETAILS OF CONTROL HOUSE AND TOWER SEE WIRING DIAGRAMS AND CONDUIT LAYOUTS.
2. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
3. ALL CABLE TRAY FROM CONTROL HOUSE SHALL BE THE TOTALLY ENCLOSED TYPE.
4. CONTRACTOR TO MOUNT EMERGENCY LIGHTS IN CONTROL HOUSE ON INTERIOR WALLS FOR BEST UTILIZATION OF LIGHT WHEN ENERGIZED.

E18

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER DETAILS - 4
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

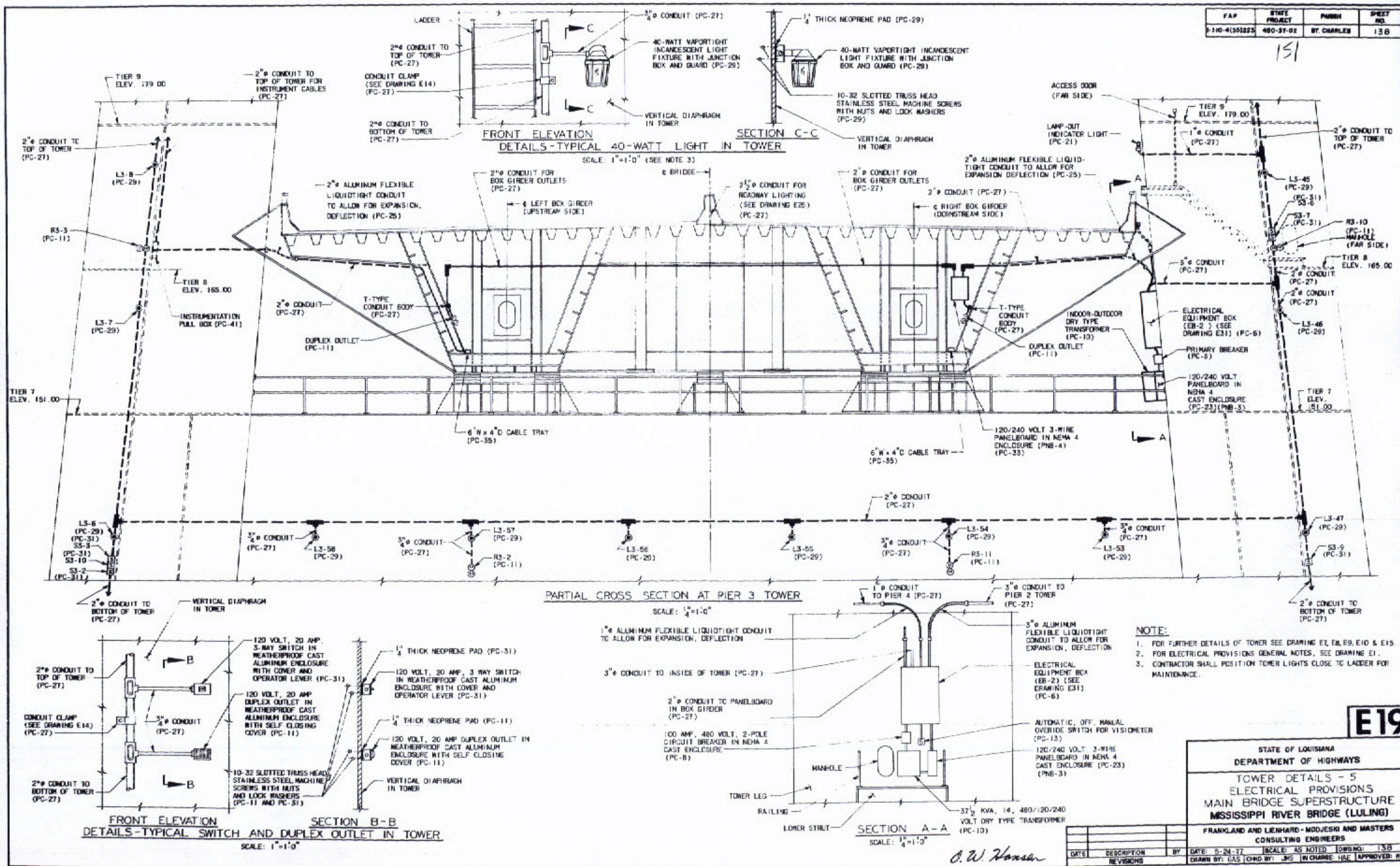
DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: AS NOTED | DWG NO: 137
DRAWN BY: GAS | CHKD BY: JMS | IN CHARGE: HAE | APPROVED: RSC

O.W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(353223)	460-37-02	ST. CHARLES	138

151



NOTE:

1. FOR FURTHER DETAILS OF TOWER SEE DRAWING E7, E8, E9, E10 & E15.
2. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
3. CONTRACTOR SHALL POSITION TOWER LIGHTS CLOSE TO LADDER FOR MAINTENANCE.

E19

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

TOWER DETAILS - 5
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

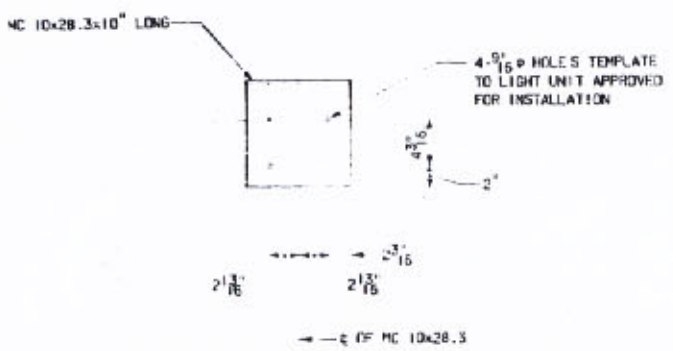
DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: AS NOTED | DWG NO: 138
DRAWN BY: GAS | CHKD BY: JMS | IN CHARGE: HAE | APPROVED: RBC

O. W. Hansen

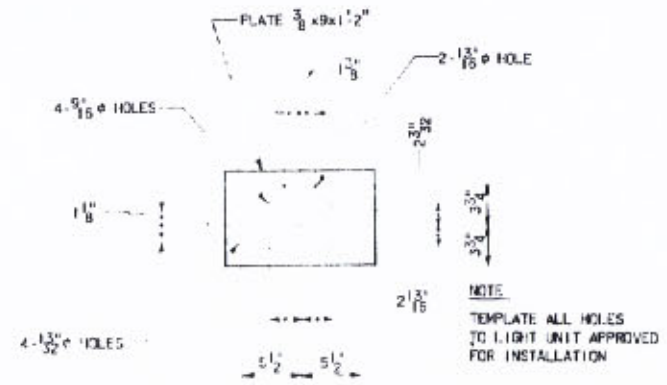
FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351)223	450-37-02	ST. CHARLES	139

152



DETAIL - BOTTOM SUPPORT CHANNEL

SCALE 1½"=1'-0"

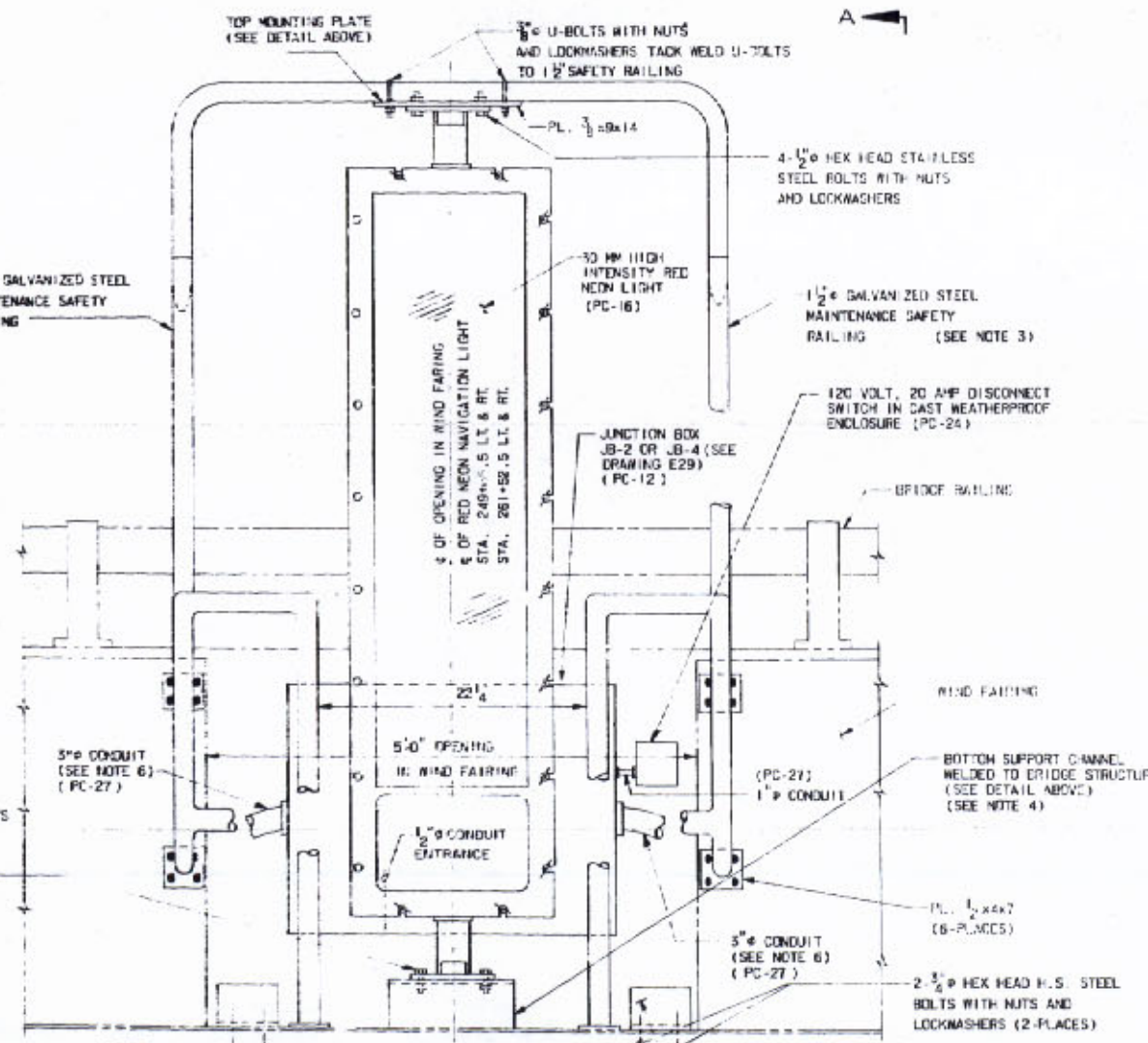


DETAIL-TOP MOUNTING PLATE

SCALE: 1"=1'-0"

NOTE:

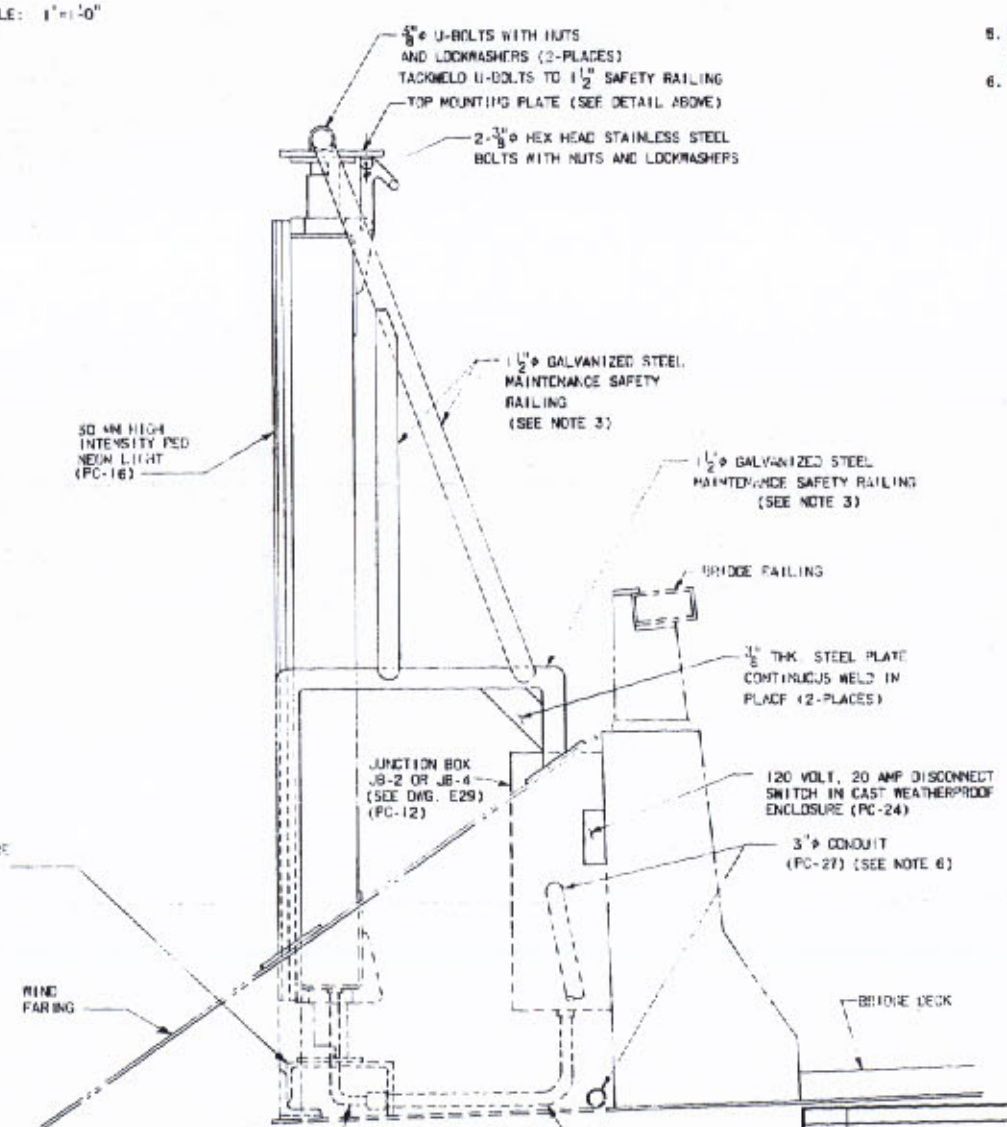
1. CONTRACTOR TO LEAVE SLACK IN TYPE SO CABLE TO ALLOW 180° ROTATION OF NEON LIGHT FOR MAINTENANCE.
2. FOR ELECTRICAL PROVISION GENERAL NOTES, SEE DRAWING E1.
3. ALL MAINTENANCE SAFETY RAILINGS AND HANDRAILS SHALL BE 1½" ø STANDARD WEIGHT (SCHEDULE 40) GALVANIZED STEEL PIPE, FABRICATED WITH FLUSH TYPE RAILING FITTINGS ALL FABRICATION SHALL BE OF CONTINUOUS WELDED CONSTRUCTION. ENDS OF RAILINGS NOT OTHERWISE CLOSED SHALL BE TERMINATED WITH A CAP. ALL RAILINGS SHALL MEET [illegible] STANDARD SPECIFICATION, SECTION [illegible] PAYMENT WILL BE MADE UNDER ITEM [illegible]
4. FOR WELDING SPECIFICATIONS SEE SHEET NO. 2
5. FOR DETAILS OF MAINTENANCE SAFETY RAILING AT 180° RED NEON MARGIN LIGHTS SEE DRAWING E22.
6. FOR CONDUIT FASTENING DETAILS, SEE DRAWING E14.



DETAIL AT 30 MM RED NEON MARGIN LIGHT FOR MAIN CHANNEL

SCALE: 1½"=1'-0"

O. W. Hanson



SECTION A-A

SCALE: 1½"=1'-0"

E20

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DETAILS - I
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

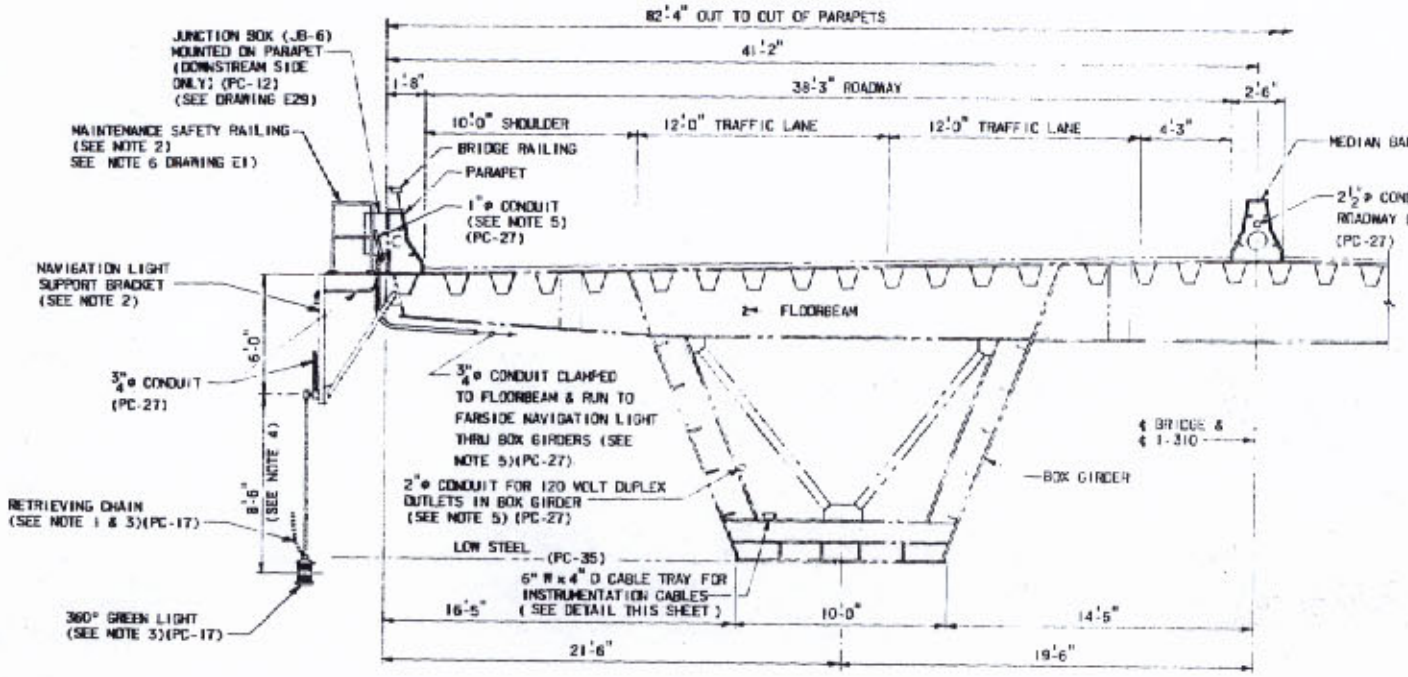
FRANGLIANO AND LIEBHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: AS NOTED | DWG. NO.: 139
DRAWN BY: GAS | CHKD. BY: JMS | IN CHARGE: HAF | APPROVED: WBC

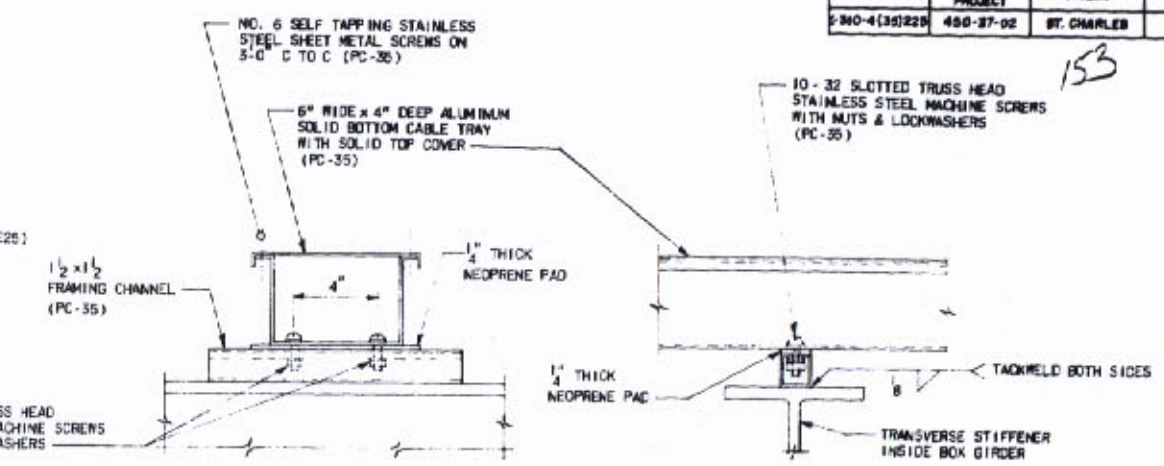
F.A.P.	STATE PROJECT	PARISH	SHEET NO.
C-340-4(35)225	450-37-02	ST. CHARLES	140

153



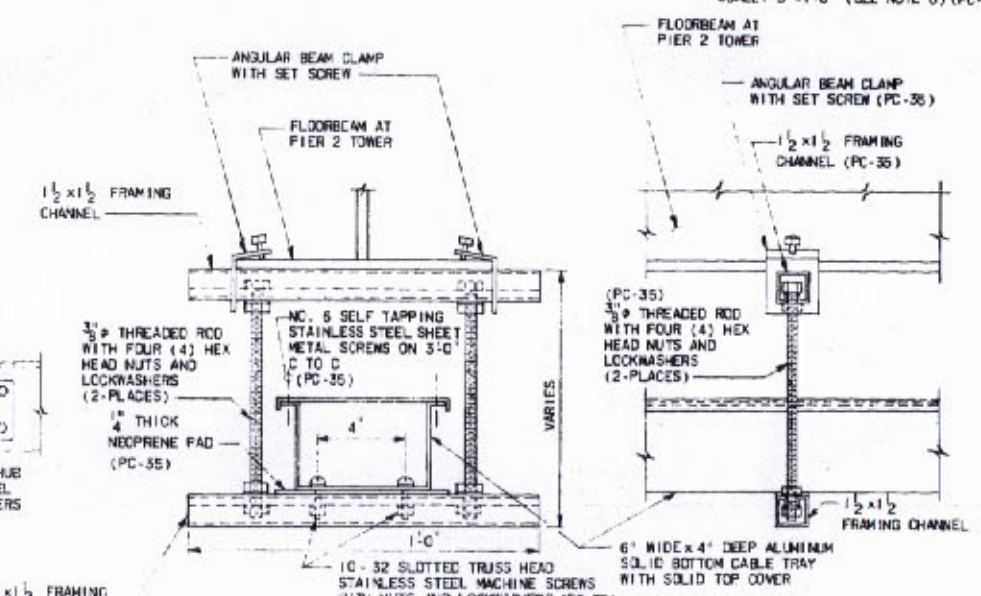
SECTIONAL VIEW OF
360° GREEN NAVIGATION LIGHTS AT STA. 264+20 LT. & RT.

SCALE: ¼"=1'-0"
(SECONDARY CHANNEL)
(BACK STATION)



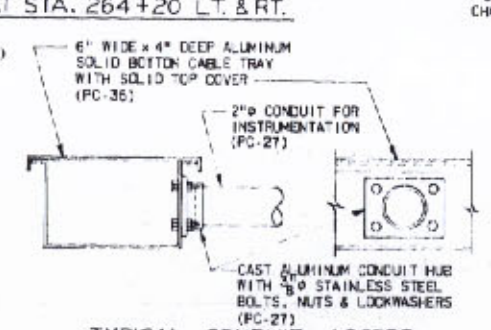
TYPICAL FASTENING DETAILS FOR CABLE TRAY IN BOX GIRDER

SCALE: 3"=1'-0" (SEE NOTE 6) (PC-35)



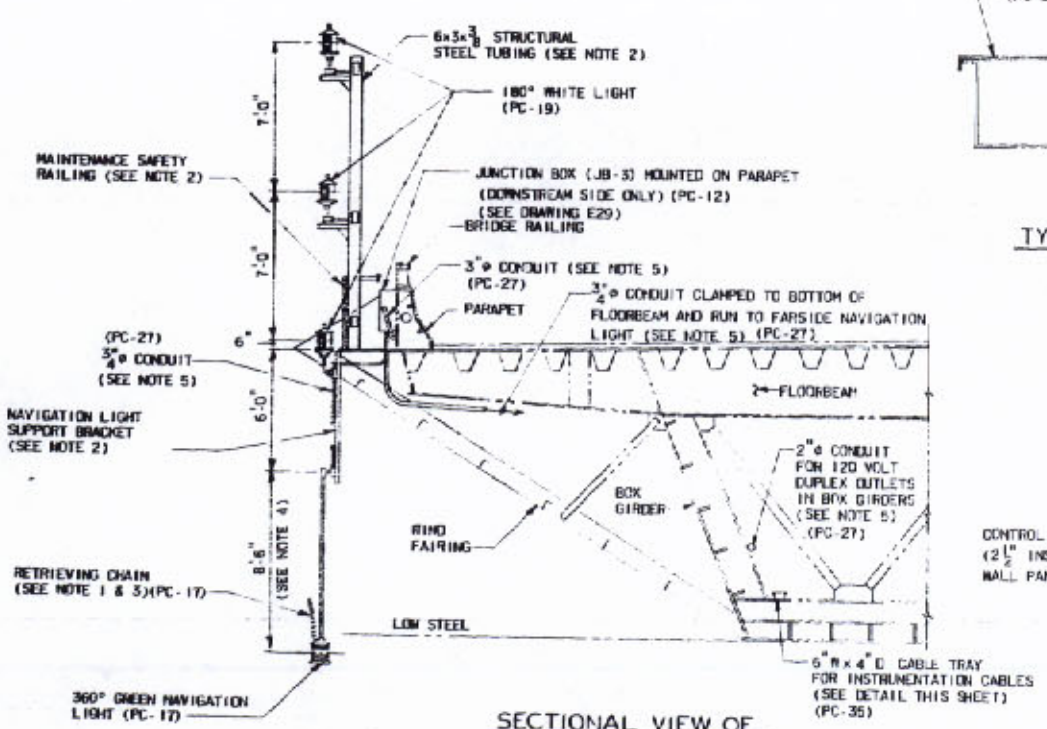
TYPICAL FASTENING DETAILS FOR CABLE TRAY AT PIER 2 FLOORBEAM

(PC-35)(SEE NOTE 6) SCALE: 3"=1'-0"



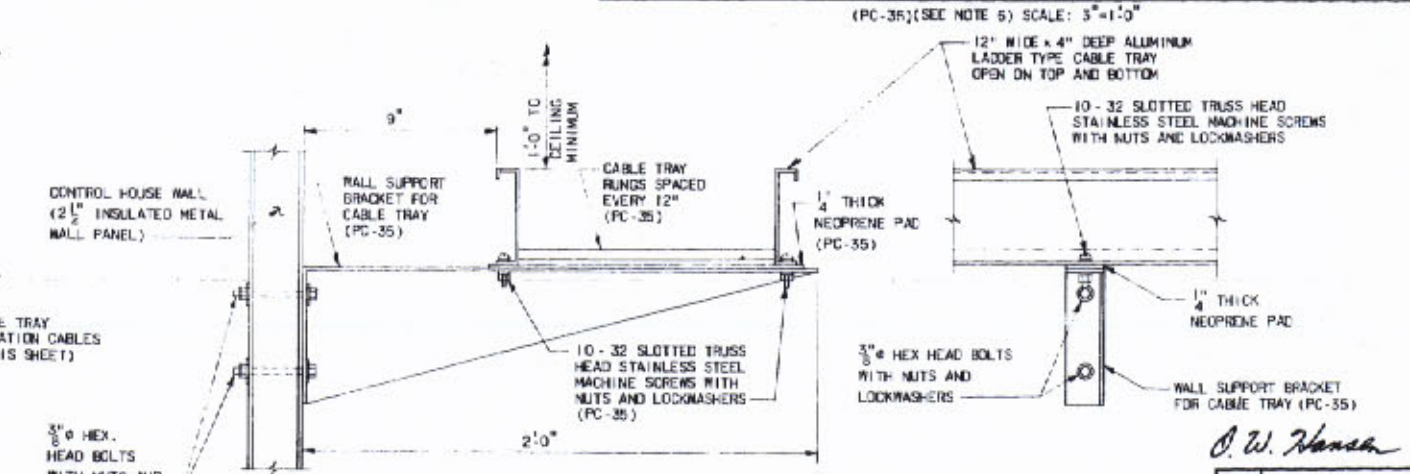
TYPICAL CONDUIT ACCESS
IN CABLE TRAY

SCALE: 3"=1'-0"



SECTIONAL VIEW OF
360° GREEN & 180° WHITE NAVIGATION LIGHTS
AT STA. 255+59.0 LT. & RT.

SCALE: ¼"=1'-0"
(MAIN CHANNEL)
(BACK STATION)



TYPICAL FASTENING DETAILS FOR CABLE TRAY IN CONTROL HOUSE

SCALE: 3"=1'-0" (SEE NOTE 6)(PC-35)

NOTE:

1. CONTRACTOR TO ATTACH RETRIEVING CHAIN FOR 360° GREEN NAVIGATION LIGHTS ON SAFETY RAILING IN FIELD.
2. FOR FURTHER DETAILS OF MAINTENANCE SAFETY RAILING AND NAVIGATION LIGHT SUPPORT SEE DRAWINGS E22 THRU E26.
3. 360° GREEN NAVIGATION LIGHT (DOWNSTREAM SIDE) SHALL ROTATE CLOCKWISE AND 360° GREEN NAVIGATION LIGHTS (UPSTREAM SIDE) SHALL ROTATE COUNTER-CLOCKWISE WHEN RETREIVED FOR MAINTENANCE.
4. 360° GREEN NAVIGATION LIGHTS SHALL BE PLACED BELOW LOW STEEL.
5. FOR CONDUIT FASTENING DETAILS SEE DRAWING E14.
6. WELDING OR DRILLING TO THE TRANSVERSE OR LONGITUDINAL STIFFENERS WILL BE PERMITTED WITH THE PRIOR APPROVAL OF THE ENGINEER. WELDING OR DRILLING TO THE FLOORBEAMS WILL NOT BE APPROVED.
7. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.

E21

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DETAILS-2
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

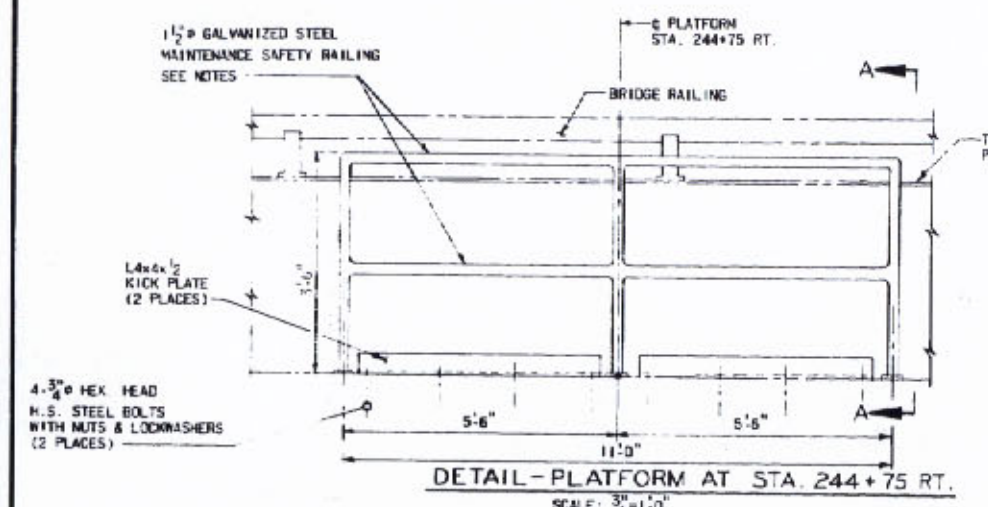
DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: AS NOTED | DWG NO: 140
DRAWN BY: TWS | CHKD.BY: JNS | IN CHARGE: HAE | APPROVED: [illegible]

O. W. Hansen

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	141

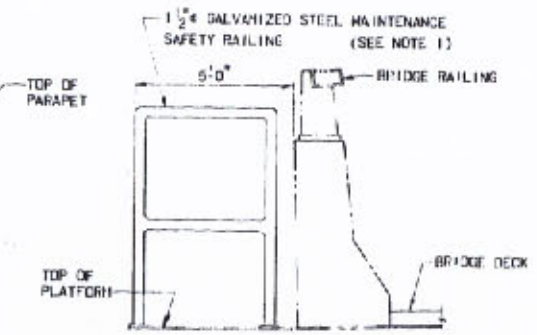
154



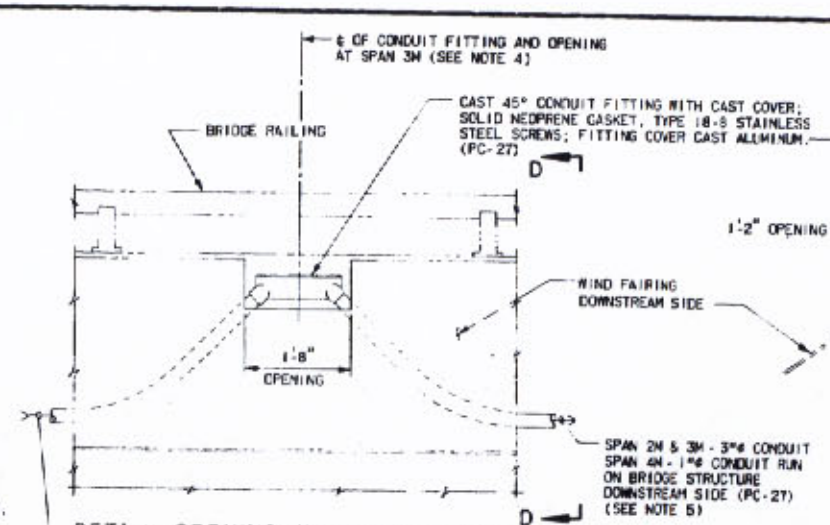
DETAIL-PLATFORM AT STA. 244+75 RT.

SCALE: ¾"=1'-0"

(FOR FURTHER DETAILS SEE DRAWING E28)

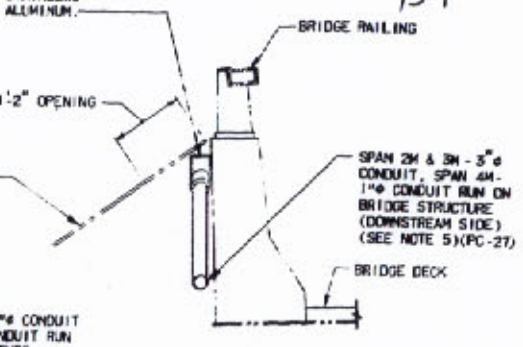


SECTION A-A



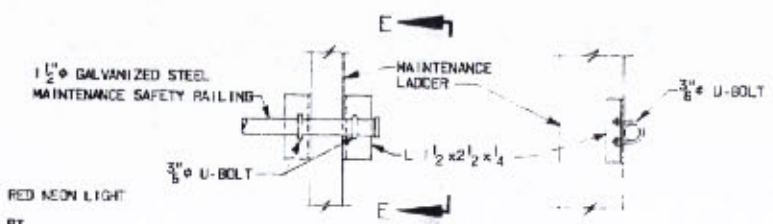
DETAIL-OPENING IN WIND FAIRING AT PULL POINTS (SEE NOTE 3 & 4)

SCALE: ¾"=1'-0"



SECTION D-D

SCALE: ¾"=1'-0"



DETAIL "X"

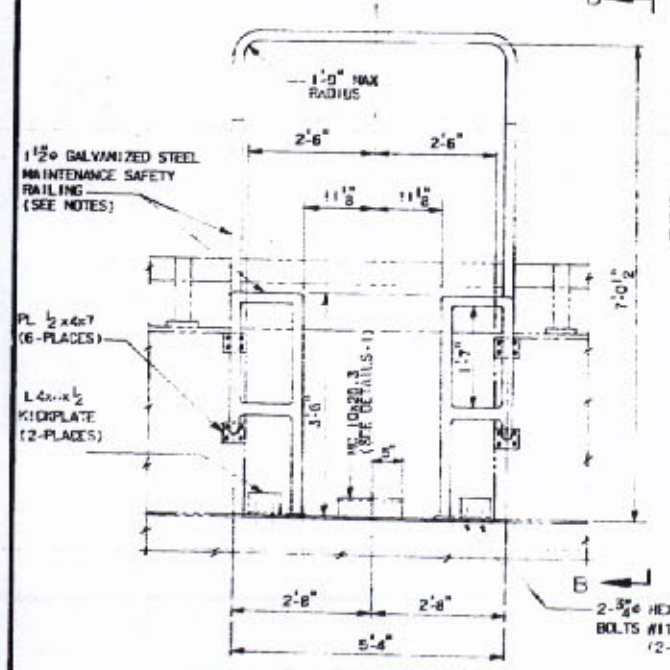
SCALE: 1½"=1'-0"

VIEW E-E

SCALE: 1½"=1'-0"

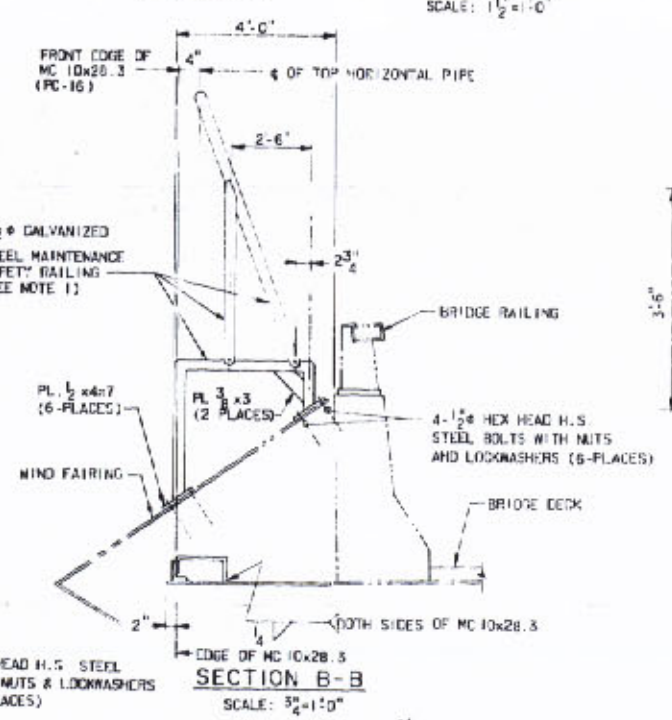
NOTE:

1. ALL MAINTENANCE SAFETY RAILINGS AND HANDRAILS SHALL BE 1½"φ STANDARD WEIGHT (SCHEDULE 40). GALVANIZED STEEL PIPE. FABRICATED WITH FLUSH TYPE RAILING FITTINGS. ALL FABRICATION SHALL BE OF CONTINUOUS WELDED CONSTRUCTION. ENDS OF RAILINGS NOT OTHERWISE CLOSED SHALL BE TERMINATED WITH A CAP. ALL RAILINGS SHALL MEET [illegible] STANDARD SPECIFICATION SECTION 612.06 [illegible]
2. FOR ALUMINUM SPECIFICATIONS SEE SHEET [illegible]
3. DETAIL OF CONDUIT PULL POINT IS SIMILAR AT SPAN 2M AND 4M EXCEPT FOR WIND FAIRING WHICH OCCURS ON SPAN 3M ONLY.
4. FOR LOCATION OF PULL POINTS ON BRIDGE SEE DRAWING E7.
5. FOR CONDUIT FASTENING DETAILS SEE DRAWING E14.
6. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.



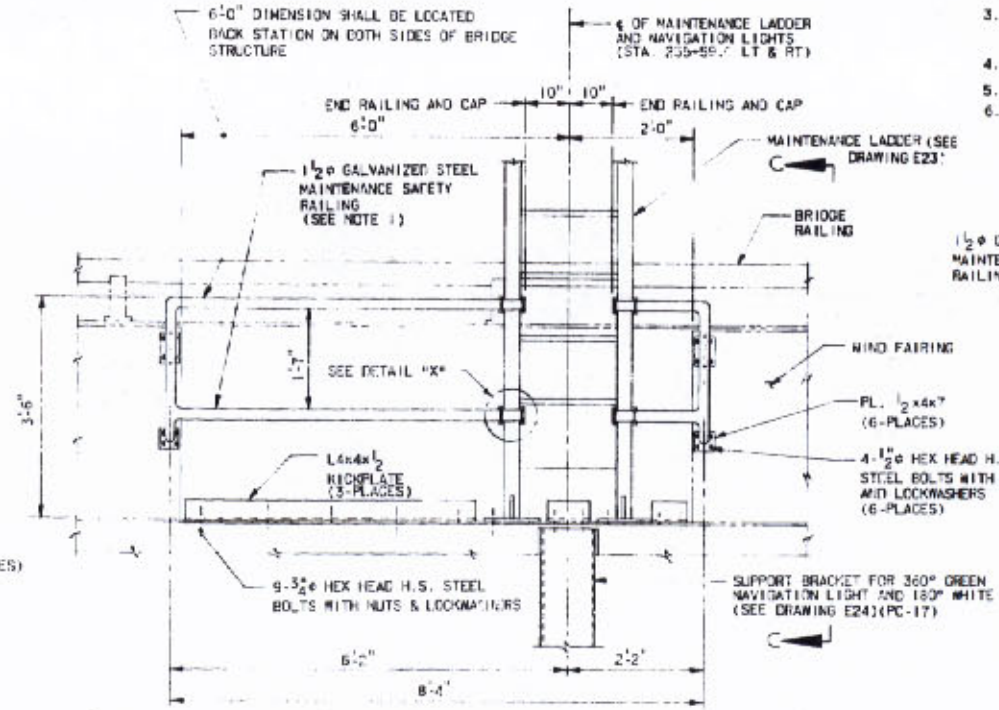
DETAIL-OPENING IN WIND FAIRING AT 180° RED MARGIN LIGHTS

SCALE: ¾"=1'-0"



SECTION B-B

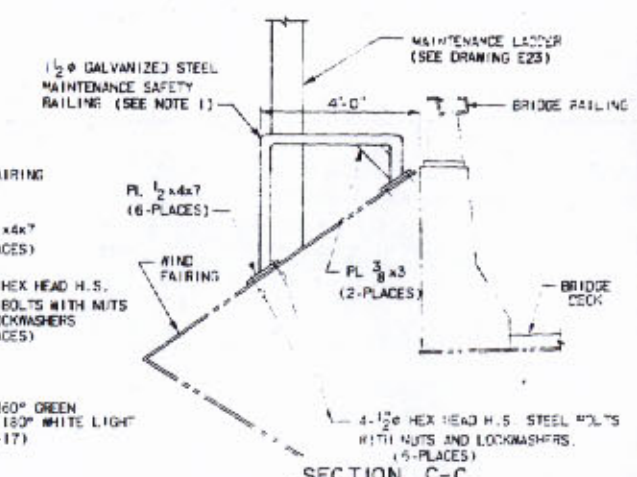
SCALE: ¾"=1'-0"



DETAIL-OPENING IN WIND FAIRING AT CENTER OF MAIN CHANNEL

SCALE: ¾"=1'-0"

(STA. 255+59.0 LT & RT)



SECTION C-C

SCALE: ¾"=1'-0"

E22

O. W. Hanson

DATE	DESCRIPTION	BY
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

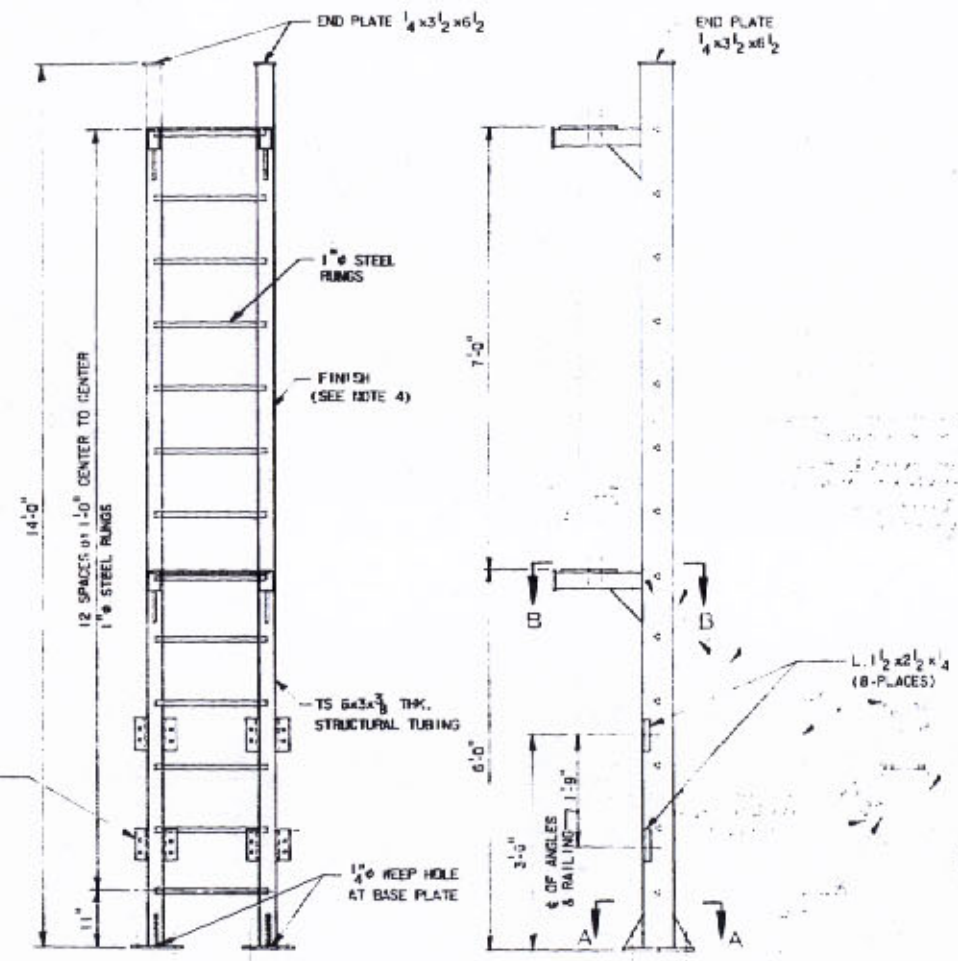
DETAILS - 3
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: ¾"=1'-0" | DWG NO. 4
DRAWN BY: RBA | CHKD. BY: JHS | IN CHARGE: HAE | APPROVED: HBC

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-57-02	ST. CHARLES	142

155



FRONT VIEW

SIDE VIEW

MAINTENANCE LADDER DETAIL FOR 180° WHITE NAVIGATION LIGHTS

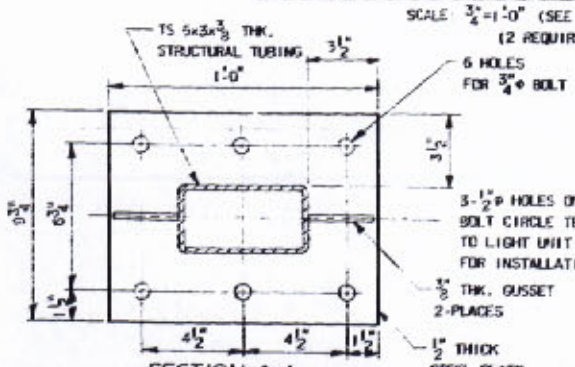
SCALE 3/4"=1'-0" (SEE NOTES 4 & 5)

(2 REQUIRED)

DETAIL - RAILING CONNECTION ANGLE

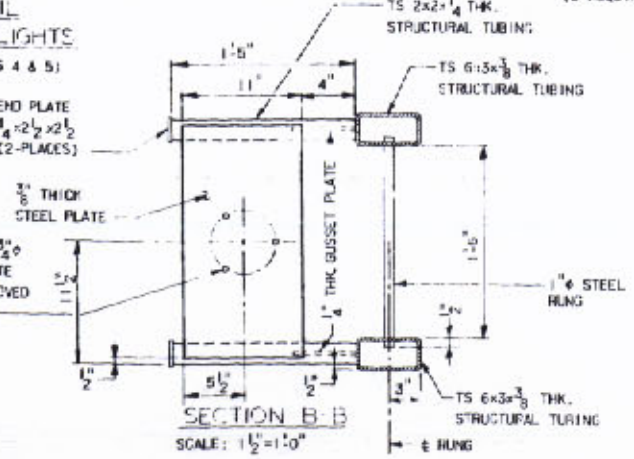
SCALE 3"=1'-0"

(8 REQUIRED PER LADDER)



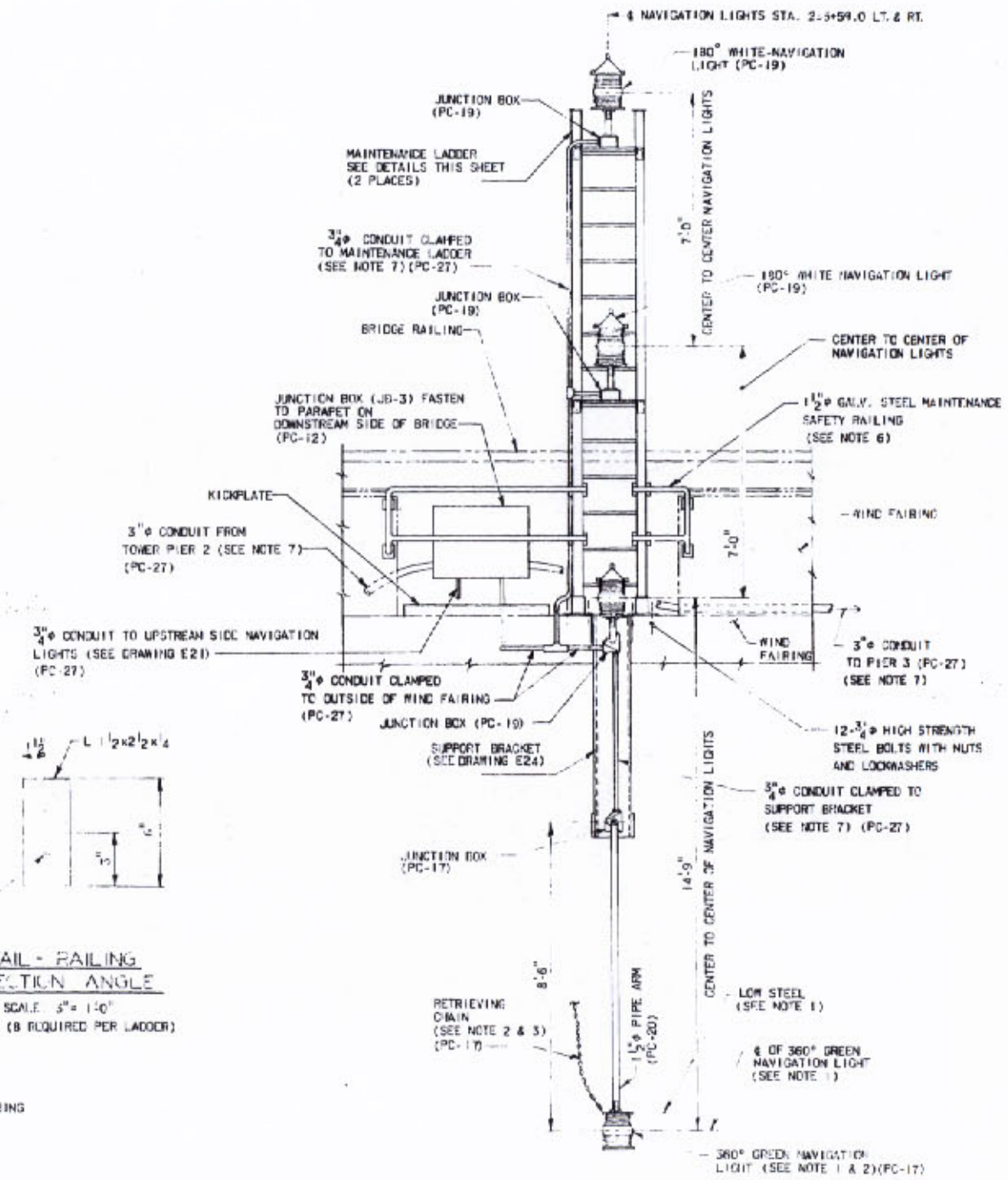
SECTION A-A

SCALE: 3"=1'-0"



SECTION B-B

SCALE: 1 1/2"=1'-0"



ELEVATION VIEW OF NAVIGATION LIGHTS AT CENTER OF MAIN CHANNEL

STA. 255+59.0 LT. & RT.

SCALE: 1/2"=1'-0"

(DOWNSTREAM SIDE SHOWN, UPSTREAM SIDE SIMILAR)

NOTE:

1. ALL 360° GREEN NAVIGATION LIGHTS MUST HANG BELOW THE LOW STEEL LINE OF THE BRIDGE STRUCTURE.
2. 360° GREEN NAVIGATION LIGHT (DOWNSTREAM SIDE) SHALL ROTATE CLOCKWISE AND 360° GREEN NAVIGATION LIGHT (UPSTREAM SIDE) SHALL ROTATE COUNTERCLOCKWISE WHEN RETRIEVED FOR MAINTENANCE.
3. CONTRACTOR SHALL FASTEN RETRIEVING CHAIN FOR 360° GREEN NAVIGATION LIGHTS TO SAFETY RAILING.
4. MAINTENANCE LADDER SHALL BE OF CONTINUOUS WELDED CONSTRUCTION.
5. FOR FURTHER DETAILS OF MAINTENANCE LADDER AND SAFETY RAILING, SEE DRAWING E21.
6. FOR CONDUIT FASTENING DETAILS SEE DRAWING E14.
7. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
8. MAINTENANCE LADDER SAFETY [illegible] SUPPORT BRACKET WILL BE PAID UNDER ITEM [illegible].
9. MAINTENANCE LADDER SHALL BE PAID ACCORDING WITH STANDARD SPECIFICATION SECTION [illegible].

O. W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

E23

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DETAILS-4
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE

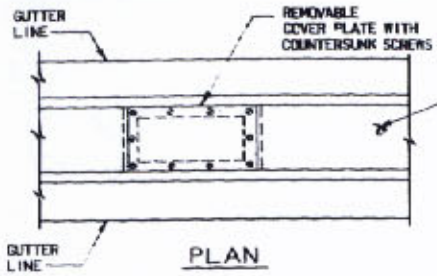
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: AS NOTED | DWG.NO.: 142
DRAWN BY: GAS | CHKD.BY: JHS | IN CHARGE: HAF | APPROVED: RSC

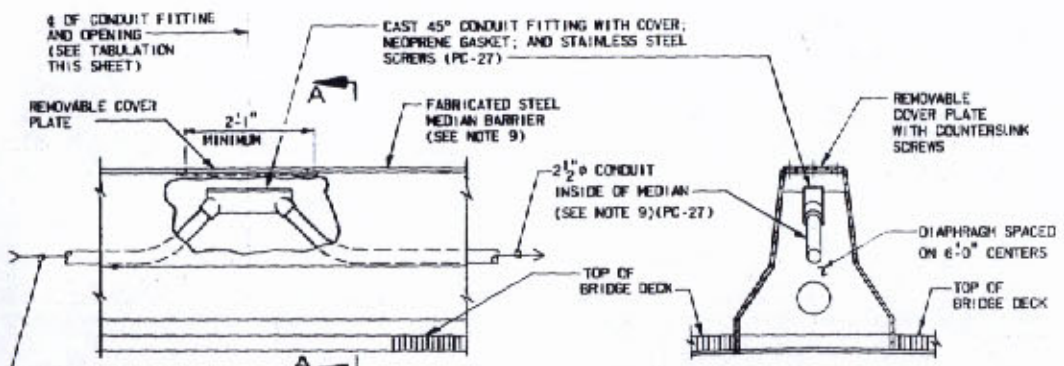
FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)225	460-57-02	ST. CHARLES	143

156



PLAN

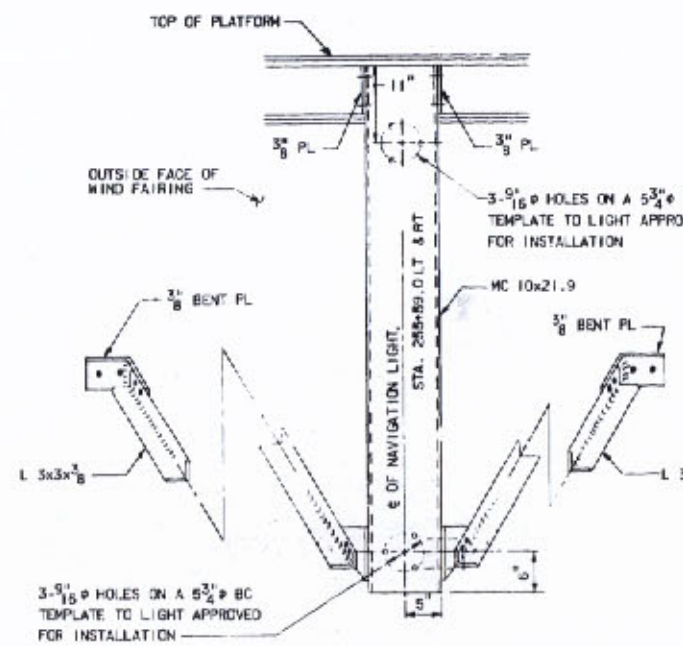
ROADWAY LIGHTING CONDUIT		
LOCATION OF CONDUIT PULL POINTS IN MEDIAN BARRIER (PC-27)		
STA. 243+78		
	STA. 252+59	STA. 261+41
STA. 246+71	STA. 255+53	
		STA. 264+35
STA. 249+65	STA. 258+47	STA. 267+29



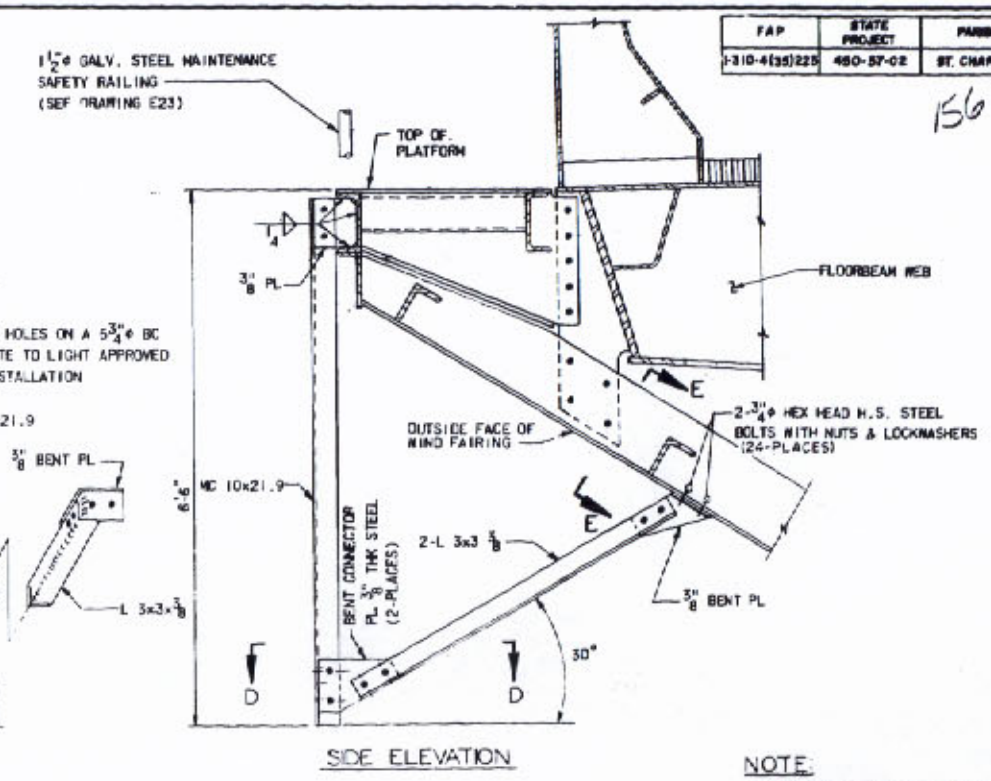
ELEVATION

SECTION A-A

DETAIL - PULL POINTS IN MEDIAN BARRIER FOR ROADWAY LIGHTING CONDUIT



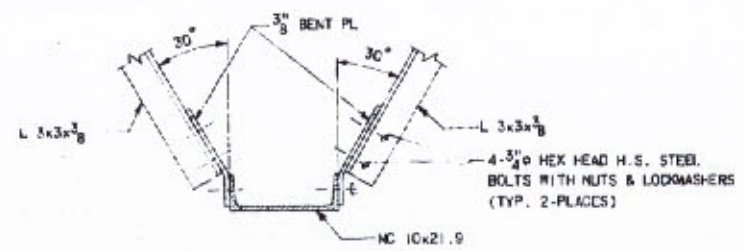
FRONT ELEVATION



SIDE ELEVATION

NOTE:

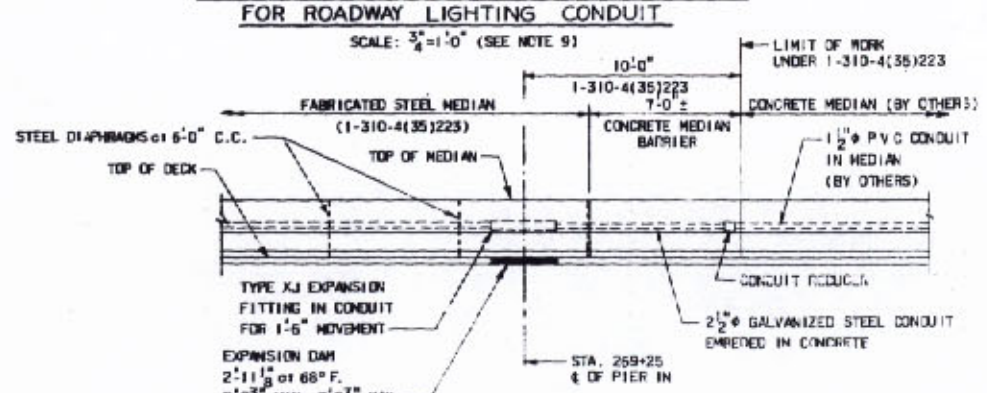
1. FOR ADDITIONAL DETAILS AT 360° GREEN NAVIGATION LIGHT AT ℄ OF MAIN CHANNEL, SEE DRAWING E23.
2. FOR ADDITIONAL DETAILS OF CONDUIT RUN IN STRUCTURE, SEE DRAWINGS E7, E8 & E9.
3. FOR ELECTRICAL PROVISIONS GENERAL NOTES SEE DRAWING E1.
4. FOR CONDUIT FASTEINING DETAILS, SEE DRAWING E14.
5. SUPPORT BRACKETS SHALL BE [illegible] AND SPECIFIED IN ACCORDANCE WITH [illegible] STANDARD SPECIFICATION SECTION 811 AND 1008.
6. CONTRACTOR SHALL FASTEN RETRIEVING CHAIN FOR 360° GREEN NAVIGATION LIGHTS TO SAFETY RAILING.
7. ALL 360° GREEN NAVIGATION LIGHTS SHALL HANG BELOW THE LOW STEEL LINE OF THE BRIDGE STRUCTURE.
8. DRILL ⅛"φ WEEP HOLE IN BOTTOM OF ALL EXPANSION FITTINGS BEFORE PULLING WIRE.
9. ALL CONDUIT RUN IN MEDIAN BARRIER SHALL BE INSTALLED DURING FABRICATION OF MEDIAN BARRIER.
10. [illegible] BRACKETS WILL BE PAID UNDER ITEM [illegible]



SECTION D-D

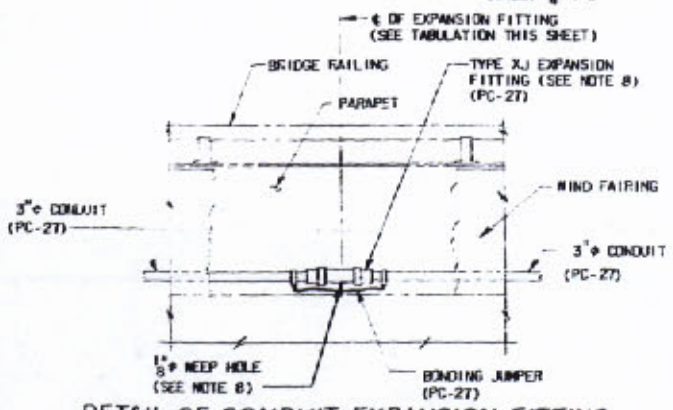
DETAIL - PULL POINTS IN MEDIAN BARRIER FOR ROADWAY LIGHTING CONDUIT

SCALE: ¾"=1'-0" (SEE NOTE 9)



CONDUIT EXPANSION AT PIER IN (SIMILAR DETAIL AT PIER 15)

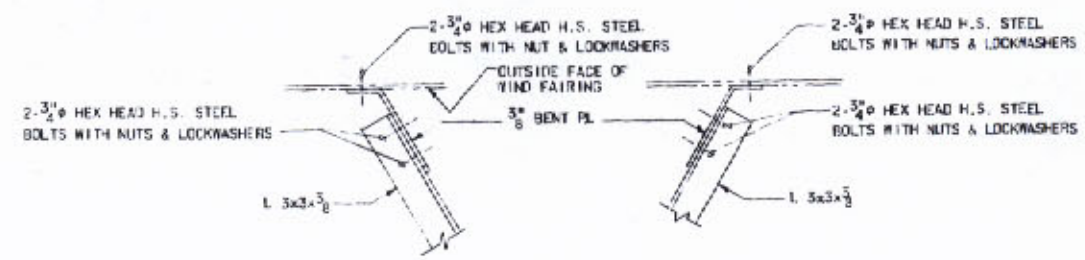
SCALE: ¼"=1'-0"



DETAIL OF CONDUIT EXPANSION FITTING

SCALE: ½"=1'-0"

EXPANSION FITTINGS
LOCATION AT PARAPET AND BOX GIRDERS (PC-27)
STA. 247+29
STA. 252+35
STA. 255+35
STA. 258+35
STA. 263+30
STA. 265+30



SECTION E-E

DETAILS OF SUPPORT BRACKET FOR 360° GREEN NAVIGATION LIGHT AT CENTER OF MAIN CHANNEL

(PC-17) (SEE NOTE 1 & 5)

SCALE: 1"=1'-0"

O.W. Hanch

DATE	DESCRIPTION	BY

REVISIONS

E24

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DETAILS - 5
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

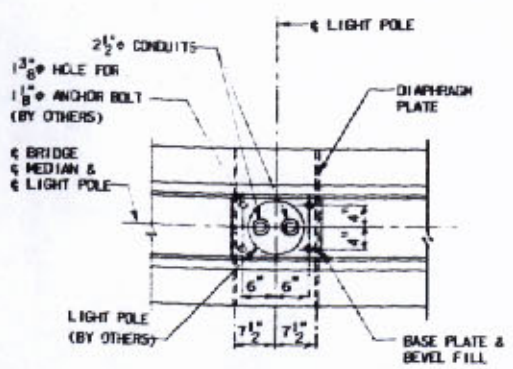
DATE: 5-24-77 | SCALE: AS NOTED | DWG. NO.: 143
DRAWN BY: RBA | CHKD. BY: JRS | IN CHARGE: HAE | APPROVED: RBC

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351)223	450-37-02	ST. CHARLES	144

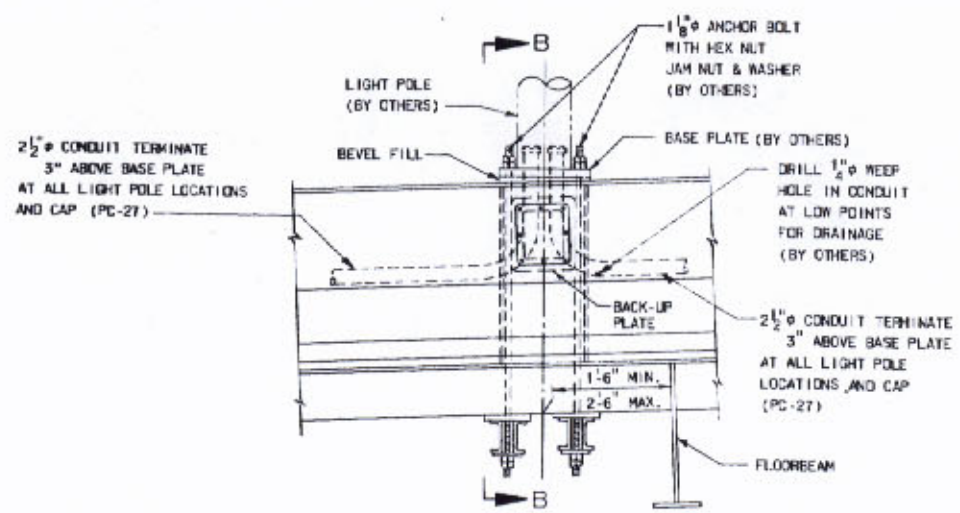
157

NOTE:

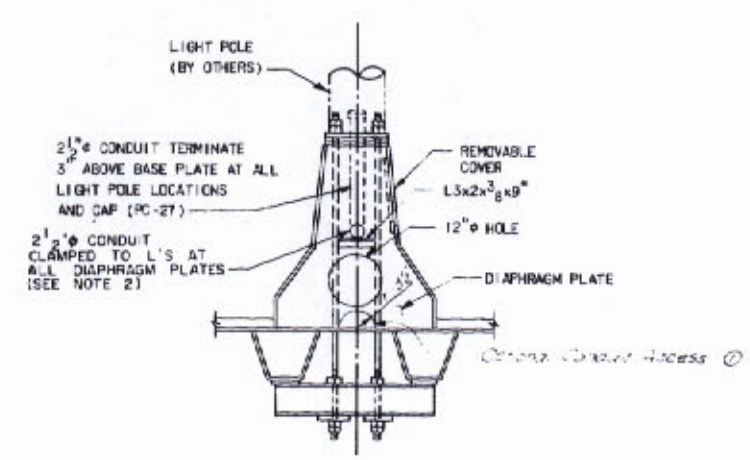
1. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
2. FOR CONDUIT FASTENING DETAIL SEE DRAWING E14
3. FOUNDATION OF LIGHT POLES, SEE DWG. E1662



PLAN



ELEVATION



SECTION B-B

LIGHT POLE MOUNTING DETAIL ON MEDIAN

SCALE: ¾"=1'-0"

O.W. Hanser ⓟ

E25

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DETAILS-6
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

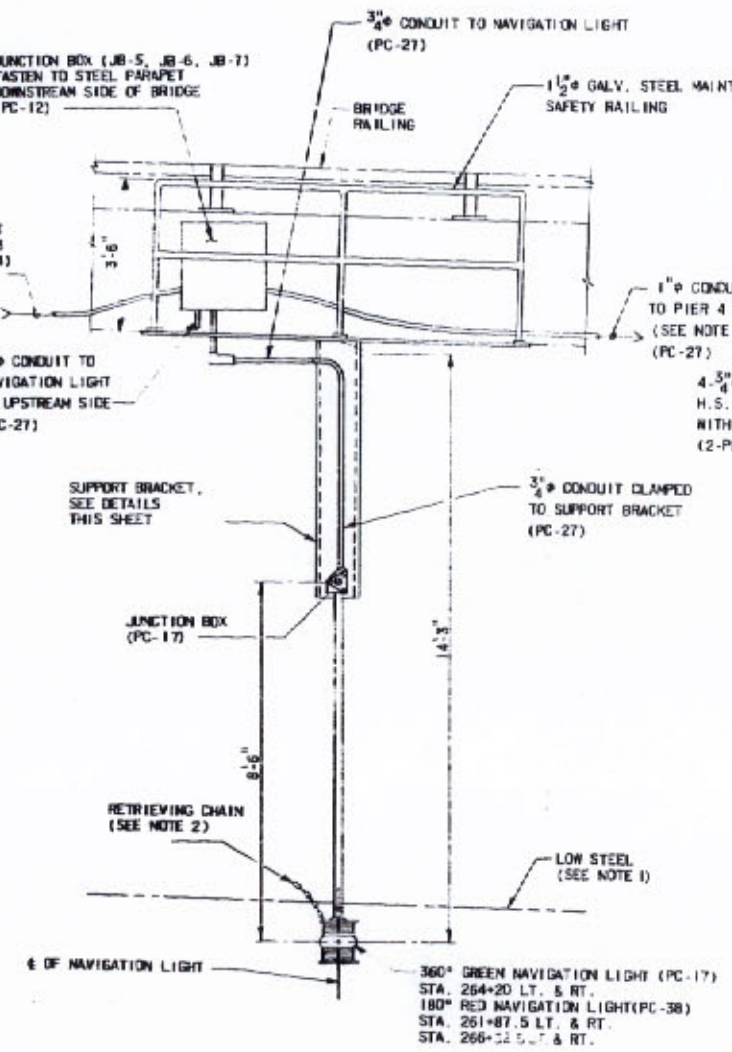
DATE	DESCRIPTION	BY
10-27-78	Opt. Conduit Access	OOTD

REVISIONS

DATE: 5-24-77 | SCALE: AS NOTED | DWG.NO.: 14-4
DRAWN BY: TKS | CHKD.BY: JHS | IN CHARGE: HAE | APPROVED: RBC

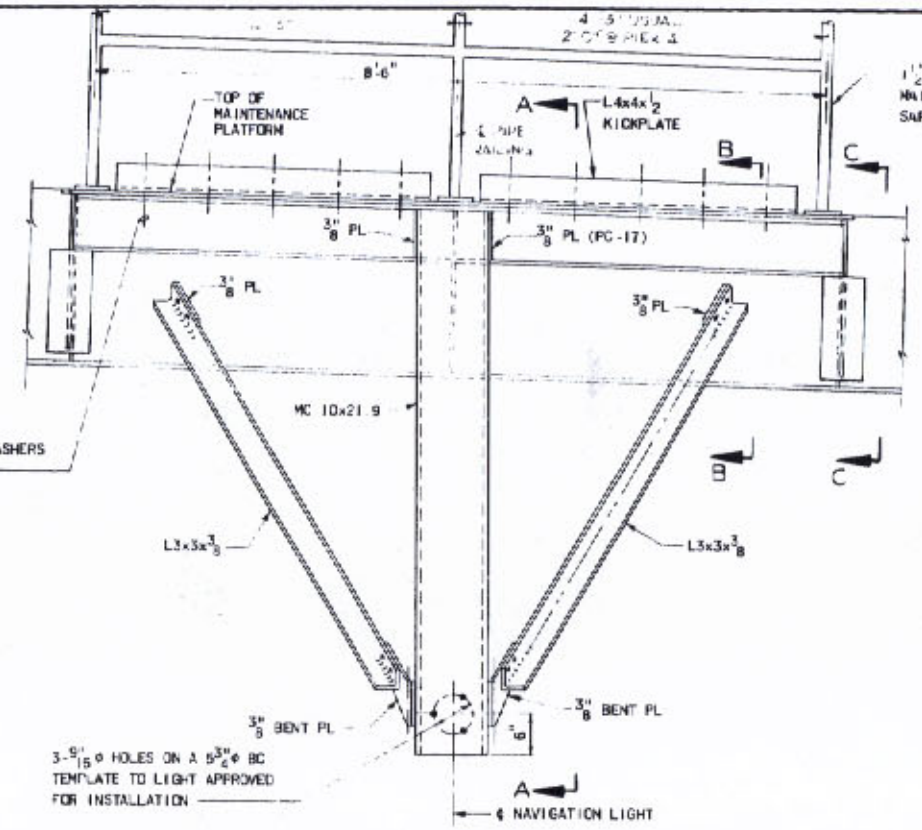
FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)225	450-87-02	ST. CHARLES	145

158



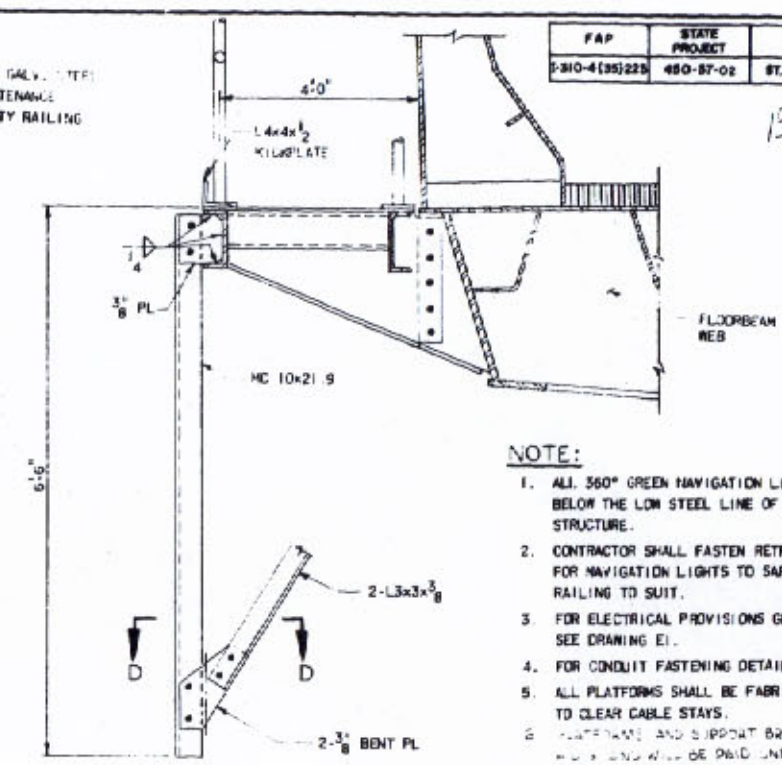
ELEVATION VIEW OF NAVIGATION LIGHTS AT SECONDARY CHANNEL

SCALE: 1/2"=1'-0"



DETAIL - NAVIGATION LIGHT SUPPORT BRACKET AND PLATFORM AT SECONDARY CHANNEL - SPAN 4M

SCALE: 1"=1'-0"
(SEE NOTE 5)

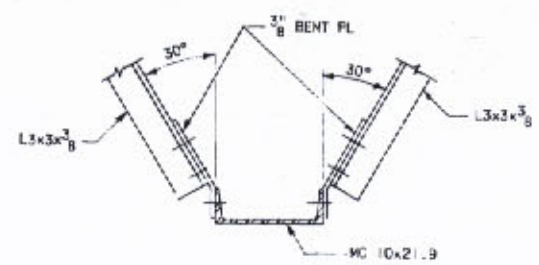


SECTION A-A

SCALE: 1"=1'-0"

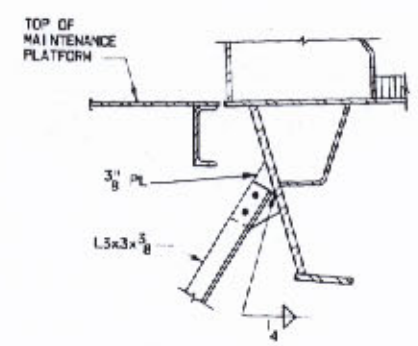
NOTE:

1. ALL 360° GREEN NAVIGATION LIGHTS MUST HANG BELOW THE LOW STEEL LINE OF THE BRIDGE STRUCTURE.
2. CONTRACTOR SHALL FASTEN RETRIEVING CHAIN FOR NAVIGATION LIGHTS TO SAFETY RAILING TO SUIT.
3. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
4. FOR CONDUIT FASTENING DETAIL, SEE DRAWING E14.
5. ALL PLATFORMS SHALL BE FABRICATED AND INSTALLED TO CLEAR CABLE STAYS.
6. PLATFORMS AND SUPPORT BRACKETS SHALL BE PAID FOR AND WILL BE PAID UNDER ITEM [illegible]



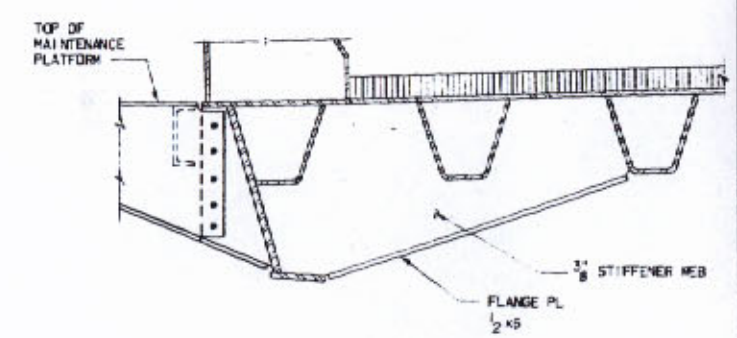
SECTION D-D

SCALE: 1"=1'-0"



SECTION B-B

SCALE: 1"=1'-0"



SECTION C-C

SCALE: 1"=1'-0"

E26

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DETAILS- 7
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

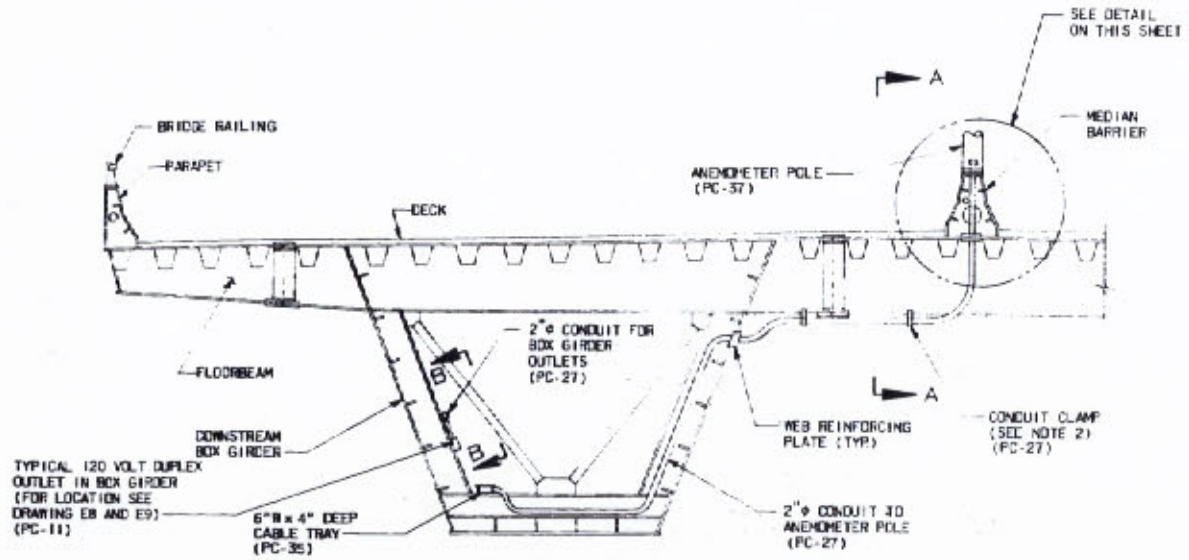
DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: AS NOTED | DWG.NO.: 145
DRAWN BY: TWS | CHKD.BY: JMS | IN CHARGE: HAE | APPROVED: [illegible]

O. W. Hansen

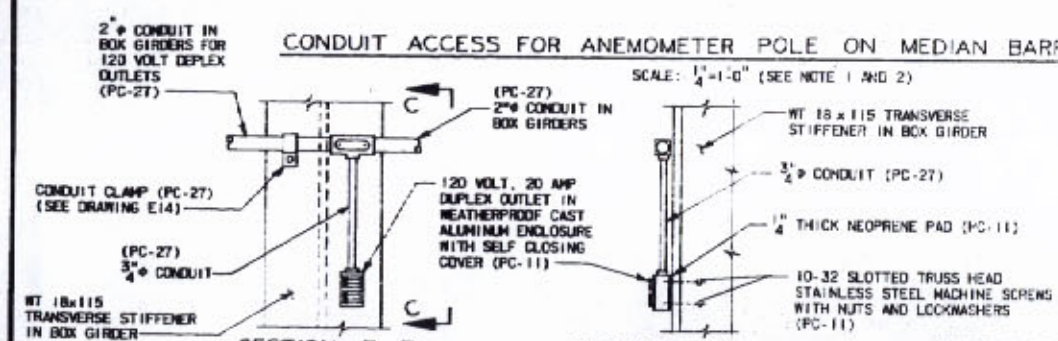
FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35[illegible])	45[illegible]-37-02	ST. CHARLES	146

159



CONDUIT ACCESS FOR ANEMOMETER POLE ON MEDIAN BARRIER

SCALE: $\frac{1}{4}$"=1'-0" (SEE NOTE 1 AND 2)

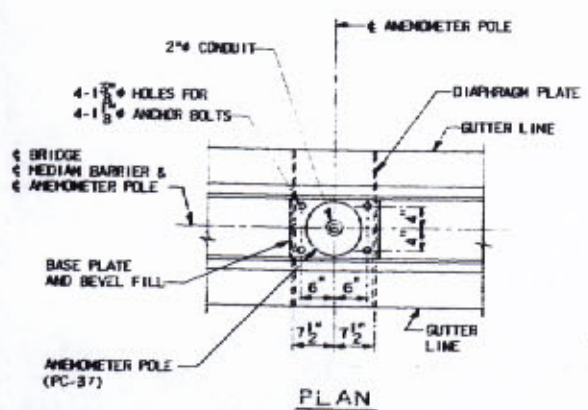


SECTION B-B

SECTION C-C

DETAILS-TYPICAL DUPLEX OUTLET IN BOX GIRDERS

SCALE: 1"=1'-0"

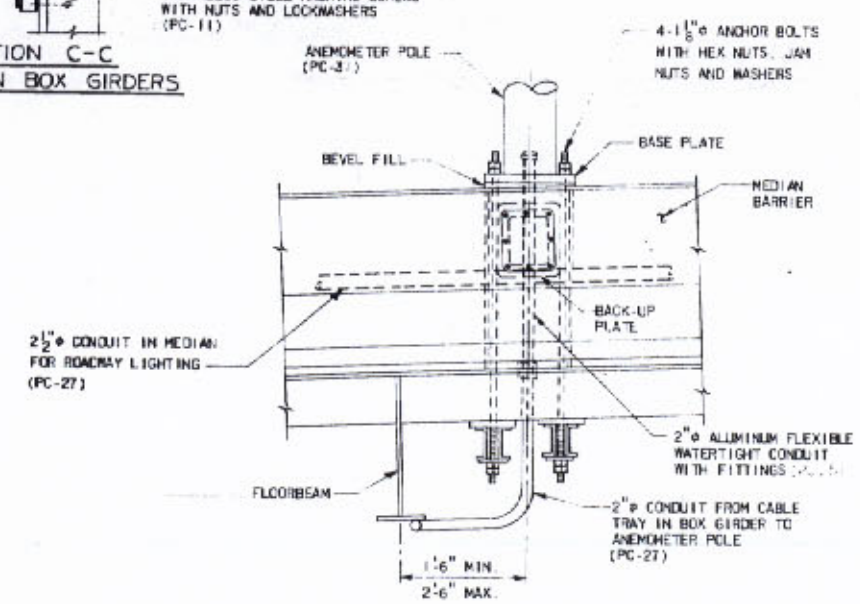


PLAN

MEDIAN BARRIER

SCALE: $\frac{3}{4}$"=1'-0"

(SEE NOTE 1)



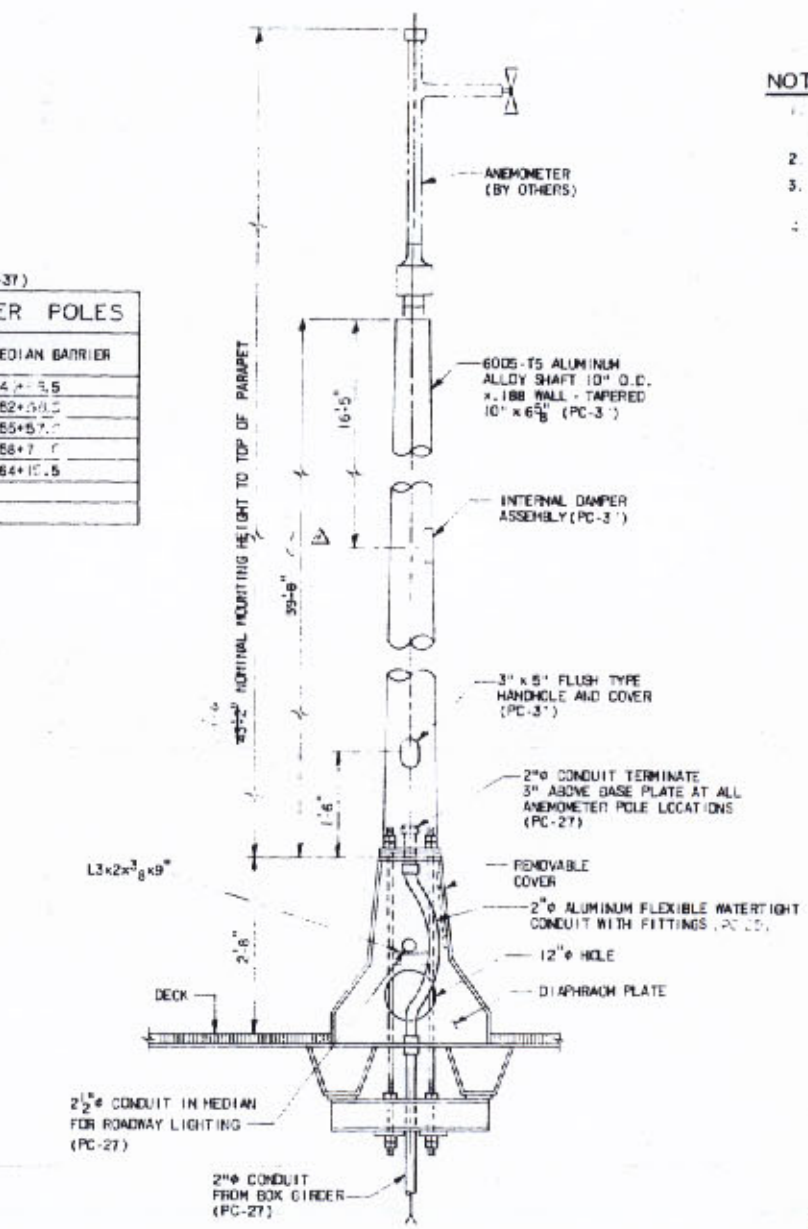
SECTION A-A

SCALE: $\frac{3}{4}$"=1'-0"

(SEE NOTE 1 & 2)

(PC-37)

ANEMOMETER POLES
LOCATION ON MEDIAN BARRIER
STA. 24[illegible]+[illegible].5
STA. 262+[illegible]
STA. 265+5[illegible]
STA. 268+7[illegible]
STA. 264+1[illegible].5



DETAIL - ANEMOMETER POLE ON MEDIAN

SCALE: $\frac{3}{4}$"=1'-0"

(SEE NOTE 1 & 2)

NOTE:

1. ALL CONDUIT RUN IN MEDIAN BARRIER SHALL BE INSTALLED DURING FABRICATION OF MEDIAN BARRIER.
2. FOR CONDUIT FASTENING DETAILS SEE DRAWING E14.
3. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
4. [illegible] ANEMOMETER POLE [illegible]

O.W. Nomer

DATE	DESCRIPTION	BY
	REVISIONS	

E27

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

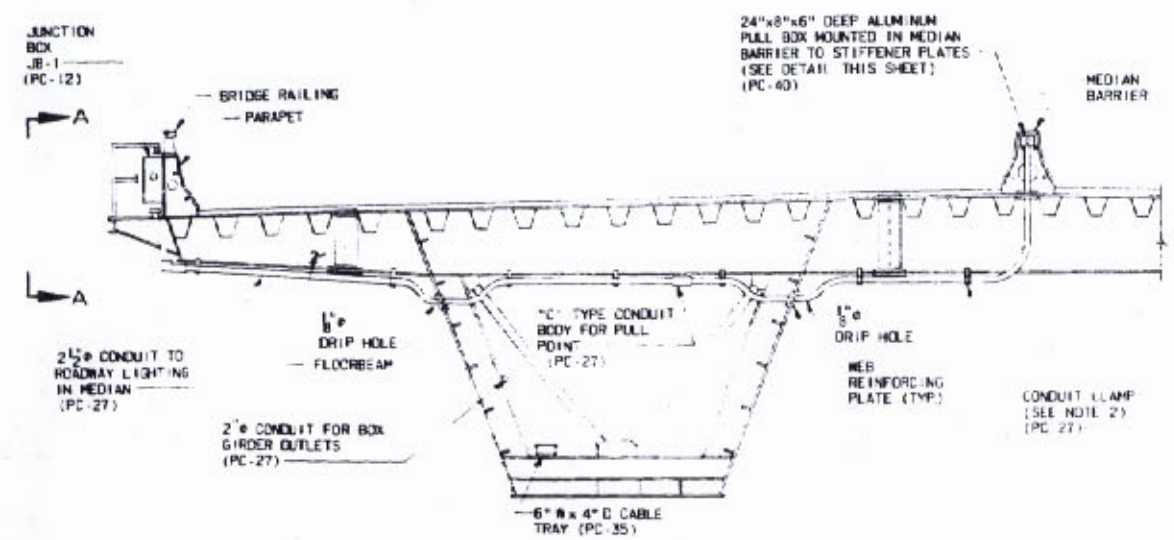
DETAILS-8
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD-MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: AS NOTED | DWG.NO: 145
DRAWN BY: DAS | CHKD.BY: JMS | IN CHARGE: HAE | APPROVED: WBC

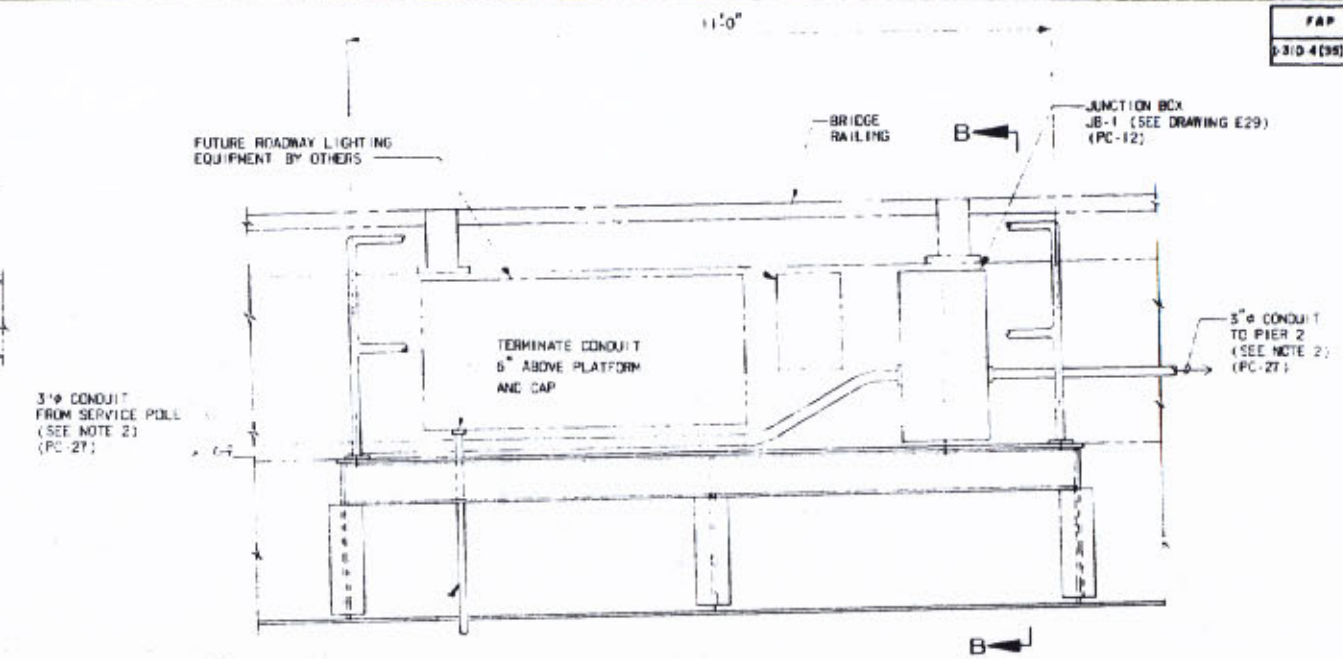
FAP	STATE PROJECT	PARISH	SHEET NO.
0-310-4(35)225	460-37-02	ST. CHARLES	147

160



CROSS SECTION AT STA 244+75

SCALE: 1/4"=1'-0" (SEE NOTE 1 & 2)

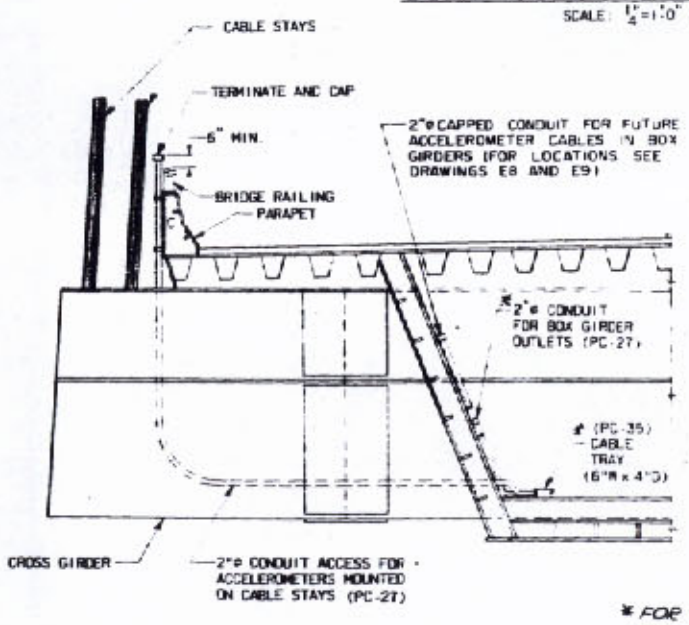


VIEW A-A

SCALE: 3/4"=1'-0" (SEE NOTE 2)

NOTE:

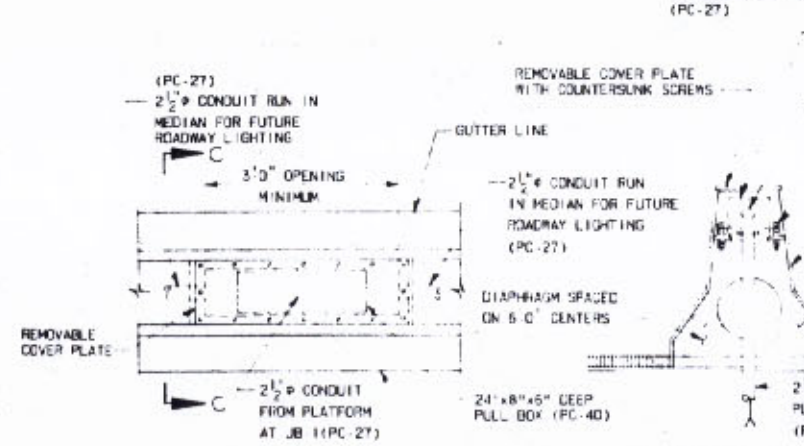
1. ALL CONDUIT RUN IN MEDIAN BARRIER SHALL BE INSTALLED DURING FABRICATION OF MEDIAN BARRIER
2. FOR CONDUIT FASTENING DETAILS SEE DRAWING E14
3. FOR ELECTRICAL PROVISIONS GENERAL NOTES SEE DRAWING E1.



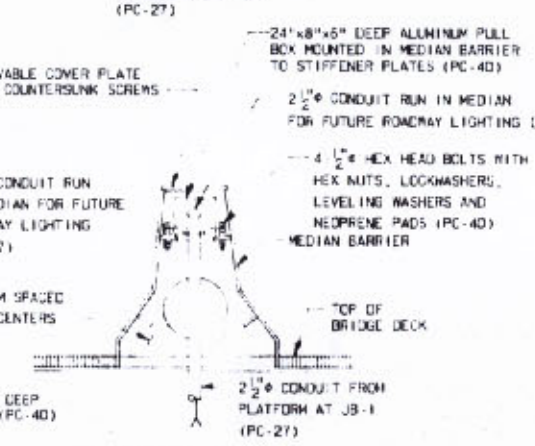
CONDUIT IN CROSS GIRDER FOR ACCELEROMETER CABLES

SCALE: 1/4"=1'-0" (SEE NOTE 2)

* FOR DETOUR OF CONDUIT & CABLE TRAY, SEE DETAIL "A" THIS SHEET



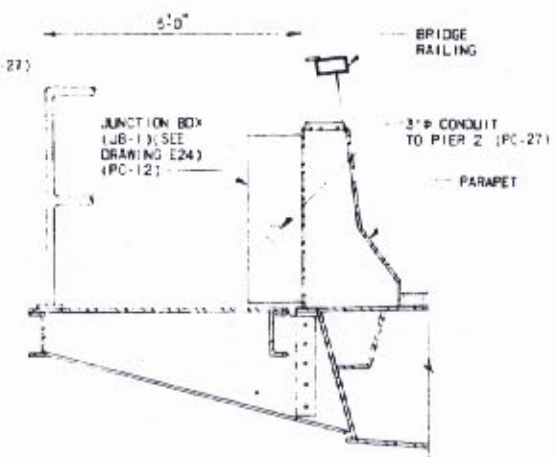
PLAN



SECTION C-C

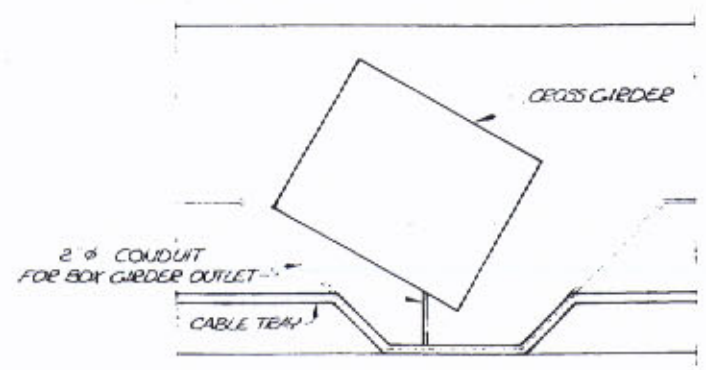
ACCESS PROVISION IN MEDIAN FOR FUTURE ROADWAY LIGHTING

SCALE: 3/4"=1'-0" (SEE NOTE 1 & 2)



SECTION B-B

SCALE: 3/4"=1'-0"



DETAIL "A"

O.W. Hansen

E28

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DETAILS-9
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

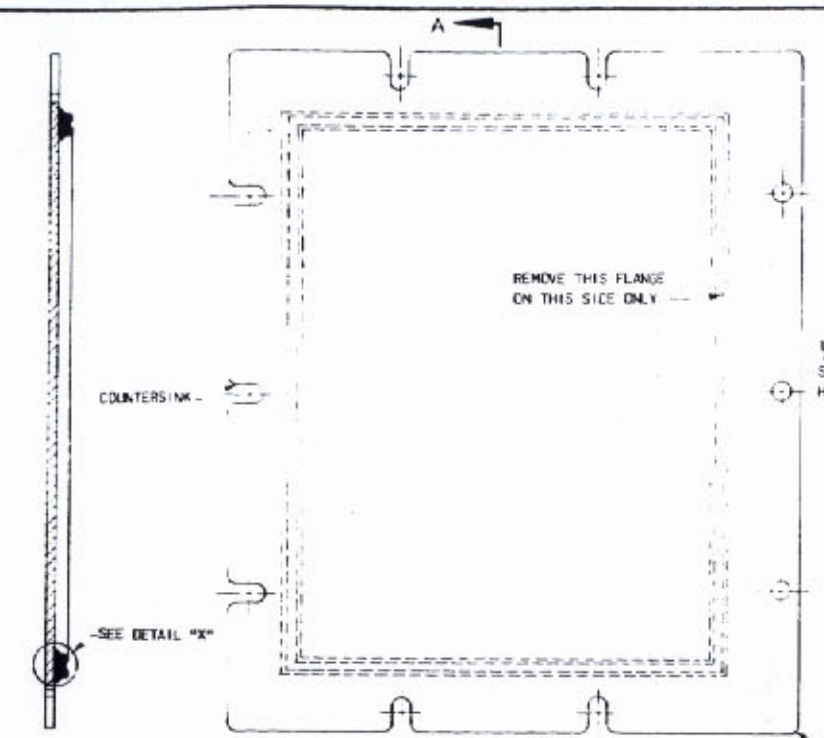
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: AS NOTED | DWG.NO. 147
DRAWN BY: TRS | CHKD.BY: JMS | IN CHARGE: HAE | APPROVED: HSC

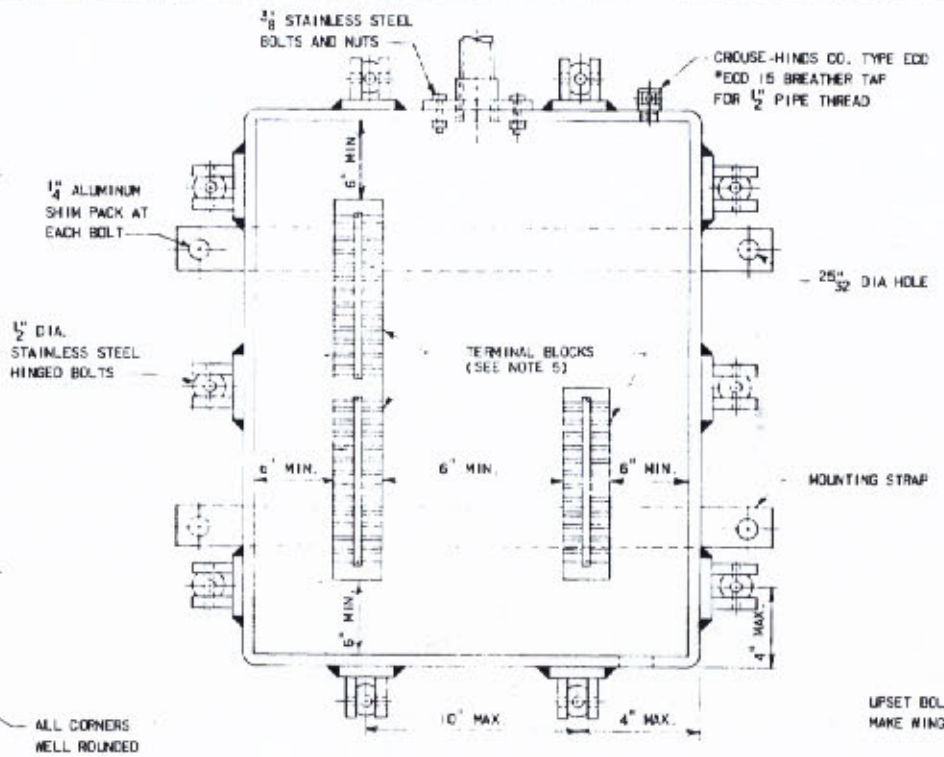
F.A.P.	STATE PROJECT	PARISH	SHEET NO.
(310-4(35)223	450-37-02	ST. CHARLES	148

161

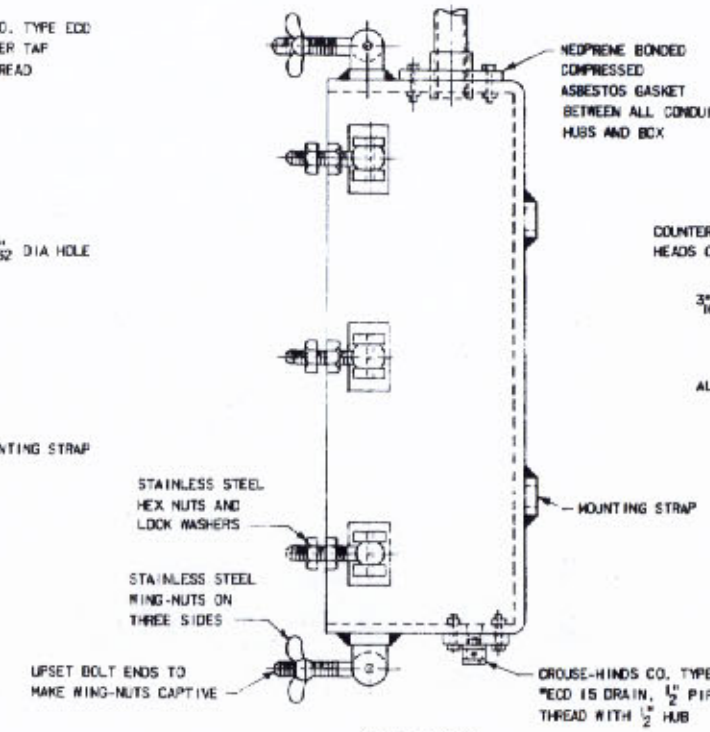


SECTION A-A
(PC-12)

COVER
(PC-12)



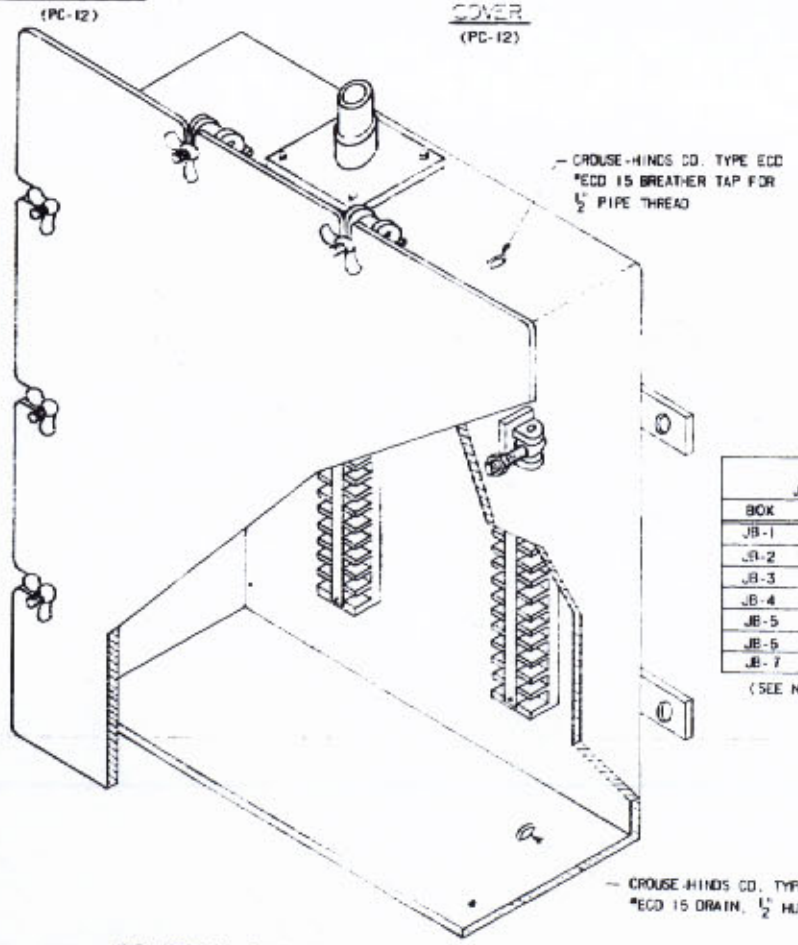
FRONT VIEW
(VIEW IS SHOWN WITH COVER REMOVED)
(PC-12)



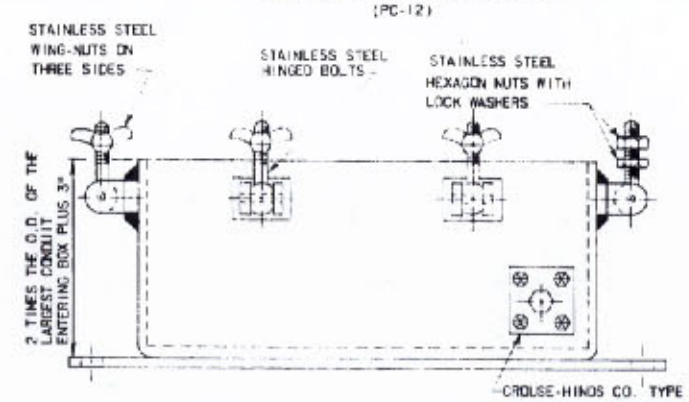
SIDE VIEW
(PC-12)

DETAIL "X"
(PC-12)

NUMBER AND THICKNESS (PC-12) OF SHIMS FOR EACH SHIM PACK			
ONE NORMAL SHIM \ THICKNESS	1/8"	1/16"	1/32"
1/4"	1	1	2



ISOMETRIC CUT AWAY
(PC-12)

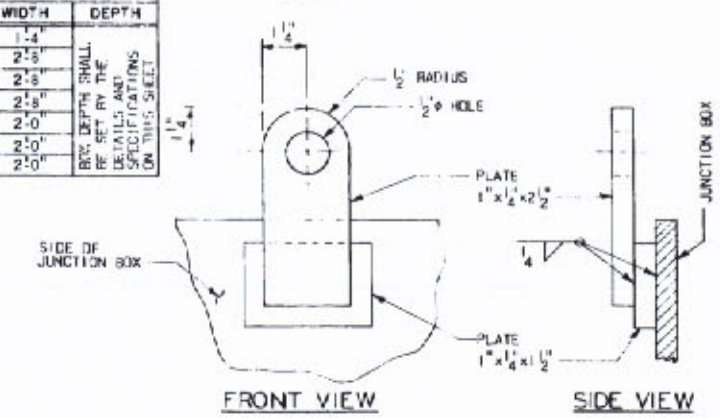


BOTTOM VIEW
(PC-12)

(PC-12)
JUNCTION BOX DIMENSIONS

BOX	HEIGHT	WIDTH	DEPTH
JB-1	2'-8"	1'-4"	BOX DEPTH SHALL BE SET BY THE DETAILS AND SPECIFICATIONS ON THIS SHEET
JB-2	2'-0"	2'-8"	
JB-3	2'-0"	2'-8"	
JB-4	2'-0"	2'-8"	
JB-5	2'-0"	2'-0"	
JB-6	2'-0"	2'-0"	
JB-7	2'-0"	2'-0"	

(SEE NOTE 6)



FRONT VIEW
SIDE VIEW

HASP DETAIL
SCALE: NONE
(PC-12)

SPECIFICATIONS:

MATERIAL: THE BOX SHALL BE MADE OF WELDED ALUMINUM PLATE 1/4" THICK. ALL ALUMINUM USED IN THE MANUFACTURE OF THE BOX SHALL BE COPPER-FREE ALUMINUM ALLOY 6061-T6.

CONSTRUCTION: ALL CORNERS, EDGES AND WELDED PARTS SHALL BE WELL ROUNDED AND GROUND SMOOTH. ALL OPENINGS IN THE BOX SHALL BE REAMED SMOOTH. THE COVER SHALL BE HELD CLOSED WITH 1/2"Φ STAINLESS STEEL HINGED BOLTS, HAVING STAINLESS STEEL WING NUTS ON THREE SIDES. THE HINGED BOLTS ON THE REMAINING SIDE SHALL ACT AS HINGES FOR THE COVER BY USING HEXAGON NUTS AND LOCKWASHERS TO HOLD THE COVER IN PLACE. HINGED BOLTS SHALL BE SET ON A MAXIMUM OF 10" CENTERS, EQUALLY SPACED ON OPPOSITE SIDES, NOT MORE THAN 4" FROM THE CORNERS ON ALL SIDES.

HARDWARE: ALL CONDUIT HUBS SHALL BE CAST ALUMINUM AND ALL BOLTS, NUTS AND OTHER HARDWARE SHALL BE STAINLESS STEEL.

GASKETS: THE BOX COVER SHALL BE FITTED WITH A NEOPRENE GASKET TO FORM A WATERPROOF SEAL. NEOPRENE GASKETS SHALL BE USED BETWEEN THE CONDUIT HUBS AND THE BOX.

HASPS: PROVIDE TWO ALUMINUM HASPS FOR PADLOCKING ON OPPOSITE SIDES.

MARKING: STENCIL "DANGER 480 VOLTS" IN 2" HIGH x 3/8" WIDE BLACK LETTERS ON OUTSIDE COVER.

SHIMS: FOUR (4) 1/4" NOMINAL ALUMINUM SHIMS (SEE TABLE ABOVE)

TERMINAL BLOCKS: SEE JUNCTION BOX DETAILS-2.

NOTE:

1. ALL CONDUIT HUBS SHALL BE LOCATED ON THE TOP BOTTOM OR SIDES ONLY. CONDUIT HUBS IN THE BACK OF THE BOX WILL NOT BE ACCEPTED.
2. ALL TERMINAL BLOCKS SHALL BE DESIGNATED ACCORDING TO THE WIRE DESIGNATORS AS SHOWN ON THE WIRING DIAGRAMS.
3. ALL WIRES ENTERING JUNCTION BOXES SHALL BE PLACED IN NEAT COMPACT WELL SUPPORTED BUNDLES FROM CONDUIT EXIT TO TERMINAL POINT WITH NYLON CABLE TIES AND STRAPS OR APPROVED EQUAL.
4. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
5. FOR FURTHER NOTES AND DETAILS SEE JUNCTION BOX DETAILS-2, SHEET E30.
6. ALL DIMENSIONS SHOWN FOR JUNCTION BOXES ARE INSIDE DIMENSIONS.

O.W. Hansen

E29

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

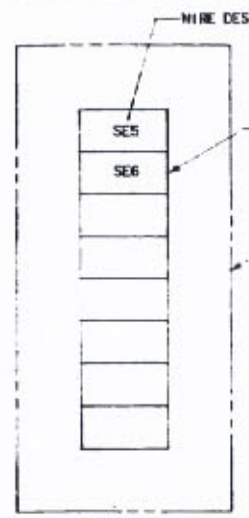
JUNCTION BOX DETAILS-1
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

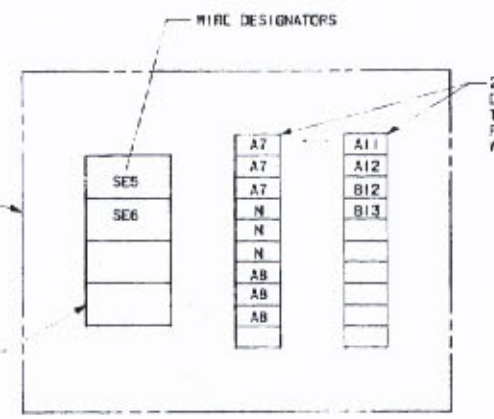
DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: NONE | DWG NO. 148
DRAWN BY: HBA | CHKD. BY: JHS | IN CHARGE: HAE | APPROVED: RBC

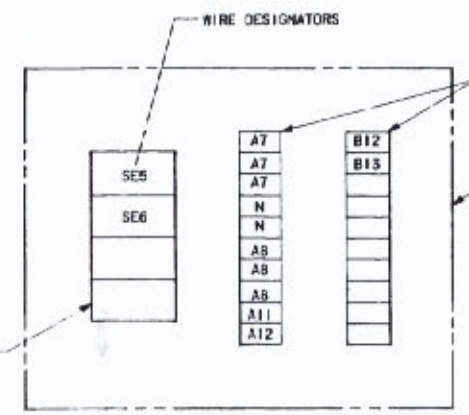
FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(351)223	450-37-02	ST. CHARLES	149



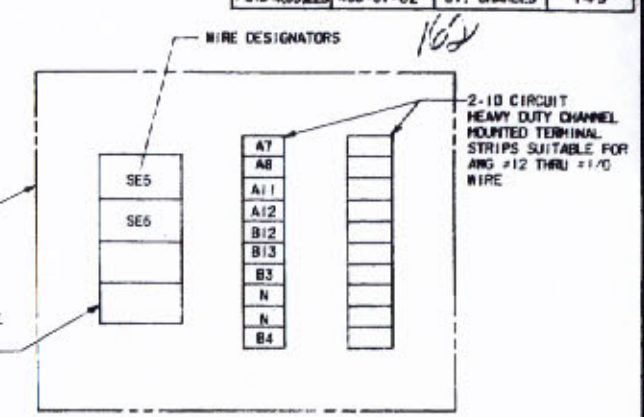
JB-1
STA. 244+75 RT.
(PC-12)



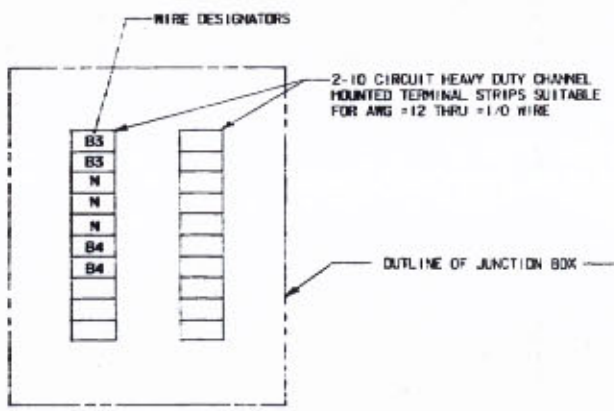
JB-2
STA. 249+[illegible]5 RT.
(PC-12)



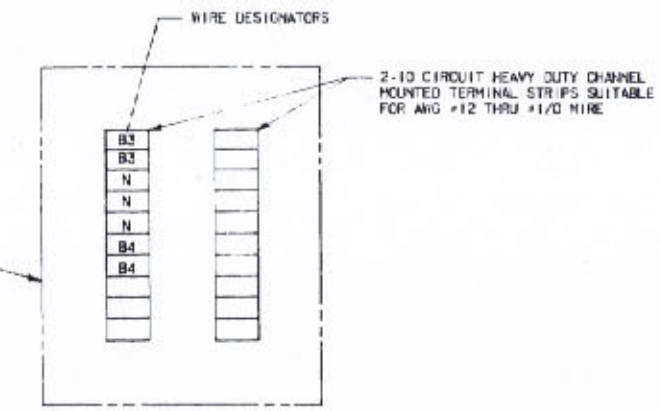
JB-3
STA. 255+[illegible] RT.
(PC-12)



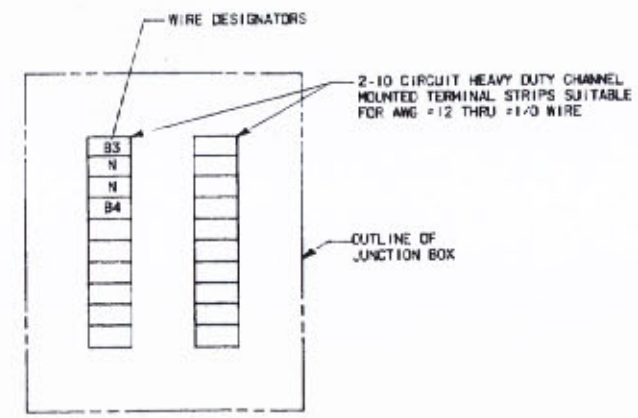
JB-4
STA. 261+52.5 RT.
(PC-12)



JB-5
STA. 261+87 RT.
(PC-12)



JB-6
STA. 264+20 RT.
(PC-12)



JB-7
STA. 266+52.5 RT. (PC-12)

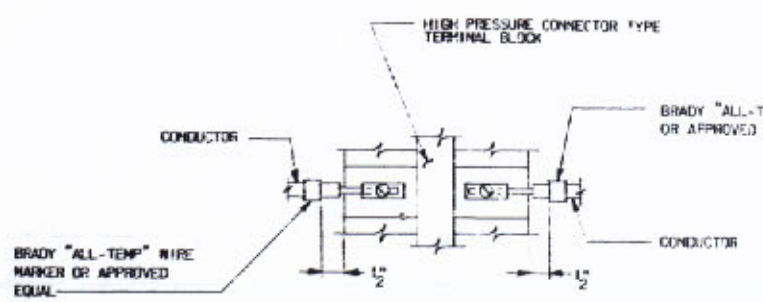
NOTE:

1. FOR FURTHER DETAILS AND NOTES, SEE JUNCTION BOX DETAILS - 1
2. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
3. FOR CLEARANCES BETWEEN TERMINAL BLOCKS AND SIDE OF JUNCTION BOX SEE JUNCTION BOX DETAILS -1.

TERMINAL BLOCK SPECIFICATIONS:

WIRE RANGE: AWG #12 THRU AWG #1/0
VOLTAGE RATING: BLOCKS SHALL MEET 600 VOLT CLEARANCE AND CREEPAGE REQUIREMENTS OF NEMA, AND UL FOR GENERAL INDUSTRIAL CONTROL EQUIPMENT AND PANELBOARDS. BLOCKS SHALL ALSO WITHSTAND VOLTAGES IN EXCESS OF IEEE SWITCHGEAR STANDARDS FOR 750 VOLTS.
SPACING CENTER TO CENTER: SPACING SHALL BE $\frac{3}{4}$" CENTER TO CENTER, ALLOWS 16 CIRCUITS PER FOOT.
MOLDING: SHALL BE MOLDED FROM TOUGH, DURABLE, HIGH DIELECTRIC NYLON FOR SAFE, RELIABLE SERVICE.
MOUNTING: SHALL BE CHANNEL MOUNTED.
WIRE CONNECTION: CONNECTIONS SHALL BE MADE USING A TUBULAR SCREW AND SHALL BE LISTED BY UL AS A PRESSURE CABLE CONNECTOR.

WIRE RANGE: AWG #4 THRU AWG #600 MCM
VOLTAGE RATING: BLOCKS SHALL MEET 600 VOLT CLEARANCE AND CREEPAGE REQUIREMENTS OF NEMA, AND UL FOR GENERAL INDUSTRIAL CONTROL EQUIPMENT AND PANELBOARDS. BLOCKS SHALL ALSO WITHSTAND VOLTAGES IN EXCESS OF IEEE SWITCHGEAR STANDARDS FOR 2000 VOLTS.
SPACING CENTER TO CENTER: SPACING SHALL BE $2\frac{3}{8}$" CENTER TO CENTER.
MOLDING: MEDIUM IMPACT PHENOLIC HEAT RESISTANT, MOISTURE RESISTANT.
MOUNTING: MAY BE MOUNTED SINGLY OR IN ANY NUMBER OF MULTIPLES.
WIRE CONNECTIONS: CONNECTIONS SHALL BE MADE USING A TUBULAR SCREW AND SHALL BE LISTED BY UL AS A PRESSURE CABLE CONNECTOR.



CONDUCTOR IDENTIFICATION DETAIL
SCALE: NONE

O.W. Hansen

DATE	DESCRIPTION	BY

REVISIONS

E30

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

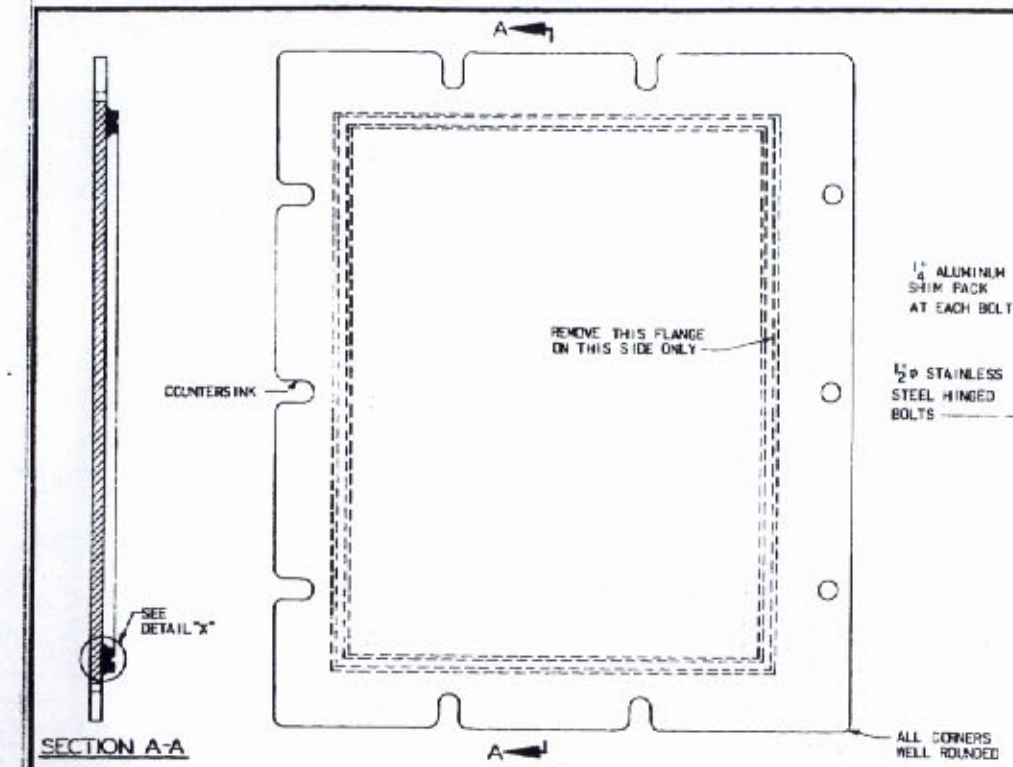
JUNCTION BOX DETAILS-2
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIGHTNER - MOJESKI & MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: NONE | DWG.NO.: 149
DRAWN BY: CAS | CHKD.BY: JMS | IN CHARGE: HAE | APPROVED: MSC

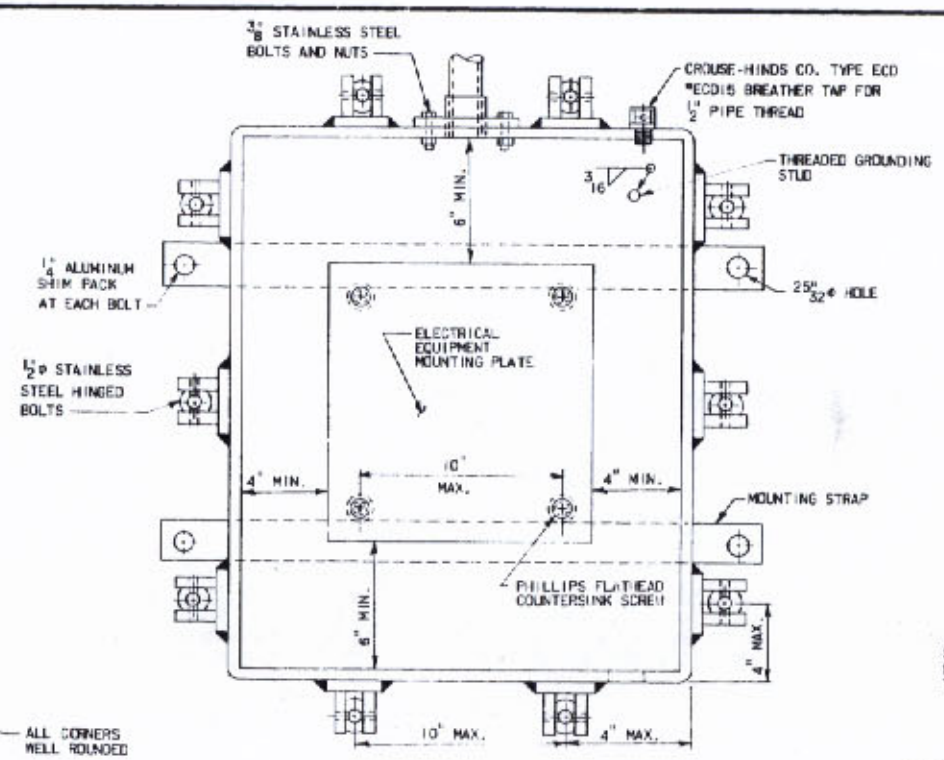
FAP	STATE PROJECT	PARISH	SHEET NO.
P.010-4(351223)	450-37-02	ST. CHARLES	50

163

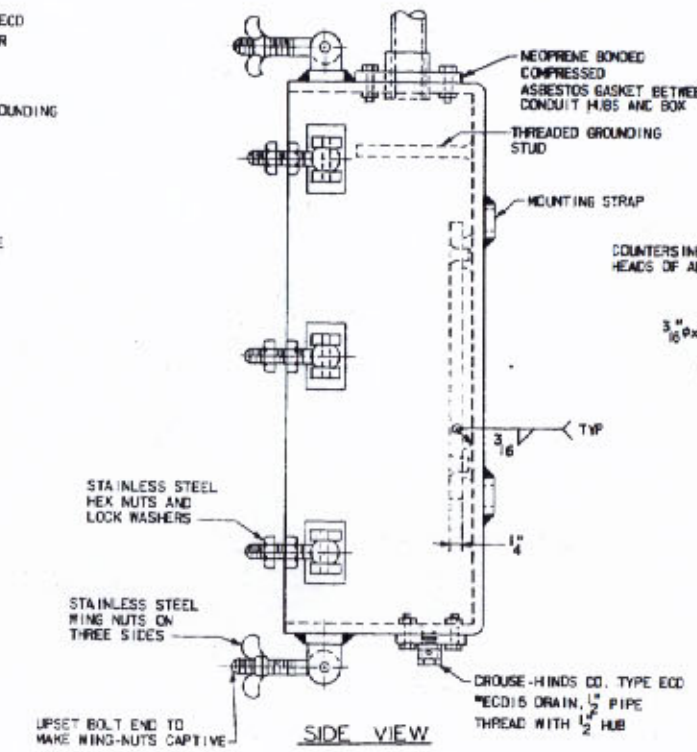


SECTION A-A
(PC-6)

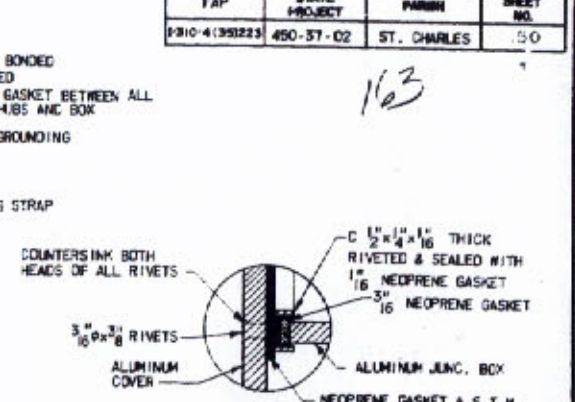
COVER
(PC-6)



FRONT VIEW
(PC-6)



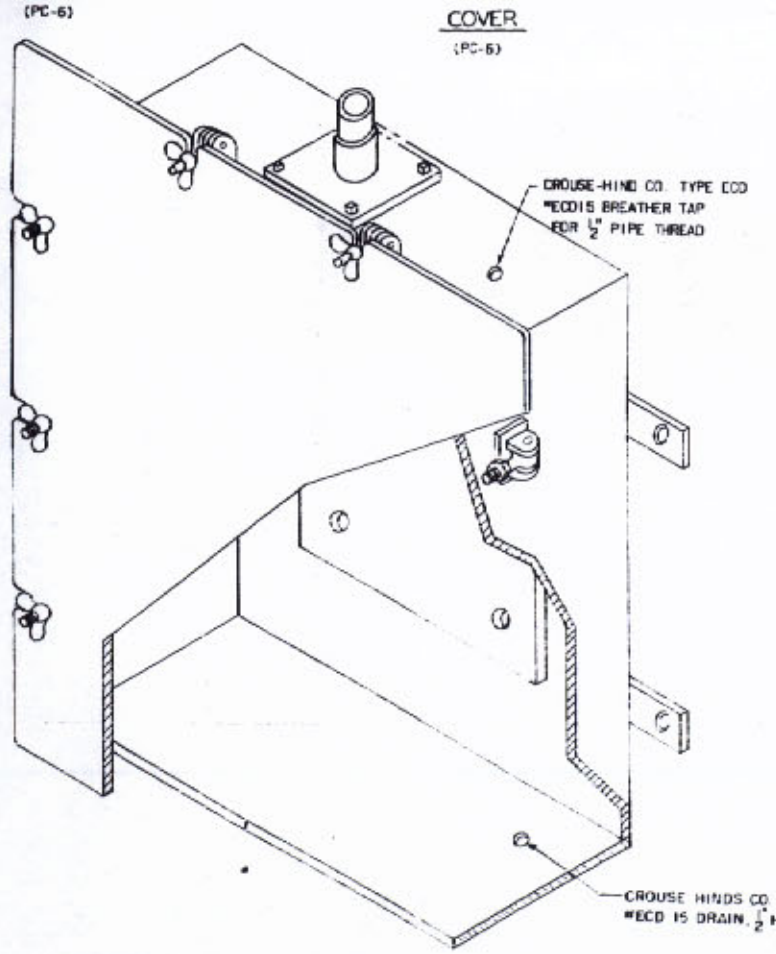
SIDE VIEW
(PC-6)



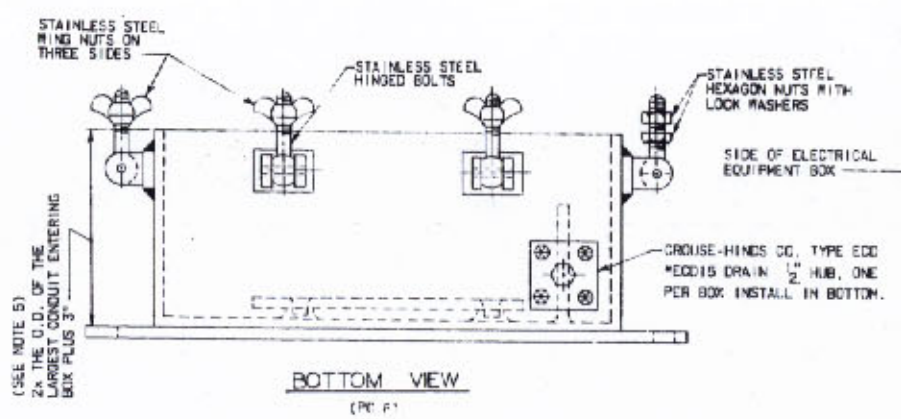
DETAIL "X"
(PC-6)

(PC-6)
EQUIPMENT BOX DIMENSIONS

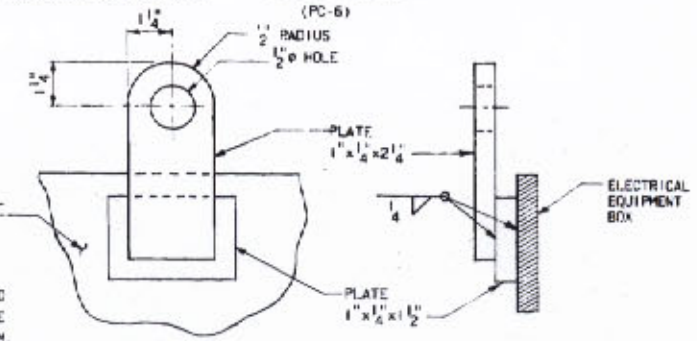
BOX	HEIGHT	WIDTH	DEPTH
EB-1	5'-6"	3'-9"	BOX DEPTH SHALL BE SET BY THE DETAILS AND SPECIFICATIONS ON THIS SHEET
EB-2	5'-6"	3'-9"	
EB-3	3'-9"	2'-4"	



ISOMETRIC CUT AWAY
(PC-6)



BOTTOM VIEW
(PC-6)



FRONT VIEW SIDE VIEW

HASP DETAIL
SCALE NONE
(PC-6)

NUMBER AND THICKNESS OF SHIMS FOR EACH SHIM PACK (PC-6)			
THICKNESS / ONE NORMAL SHIM	1/8"	1/16"	1/32"
1/4"	1	1	2

NOTE:

1. FOR DESCRIPTION OF ELECTRICAL EQUIPMENT TO BE INSTALLED IN INDIVIDUAL BOXES SEE ELECTRICAL EQUIPMENT BOX DETAILS - 2.
2. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
3. ALL CONDUIT HUBS SHALL BE LOCATED ON THE TOP, BOTTOM OR SIDES ONLY. CONDUIT HUBS IN THE BACK OF THE BOX WILL NOT BE ACCEPTED.
4. ALL WIRES ENTERING EQUIPMENT BOX SHALL BE PLACED IN NEAT COMPACT WELL SUPPORTED BUNDLES FROM CONDUIT EXIT TO TERMINAL POINT WITH NYLON CABLE TIES AND STRAPS OR APPROVED EQUAL.
5. THE INSIDE DIMENSIONS OF THE BOX SHALL PROVIDE A MINIMUM OF 4" CLEAR ON SIDES, 2" FROM COVER AND BETWEEN COMPONENTS AND 5" FROM TOP AND BOTTOM.

SPECIFICATION:

MATERIAL: THE BOX SHALL BE MADE OF WELDED ALUMINUM PLATE 1/4" THICK. ALL ALUMINUM USED IN THE MANUFACTURE OF THE BOX SHALL BE COPPER-FREE ALUMINUM ALLOY 6061-T6.

CONSTRUCTION: ALL CORNERS, EDGES AND WELDED PARTS SHALL BE WELL ROUNDED AND GROUND SMOOTH. ALL OPENINGS IN THE BOX SHALL BE REAMED SMOOTH. THE COVER SHALL BE HELD CLOSED WITH 1/2"ϕ STAINLESS STEEL HINGED BOLTS, HAVING STAINLESS STEEL WING NUTS ON THREE SIDES. THE HINGED BOLTS ON THE REMAINING SIDE SHALL ACT AS HINGES FOR THE COVER BY USING HEXAGON NUTS AND LOCKWASHERS TO HOLD THE COVER IN PLACE. HINGED BOLTS SHALL BE SET ON A MAXIMUM OF 10" CENTERS, EQUALLY SPACED ON OPPOSITE SIDES, NOT MORE THAN 4" FROM THE CORNERS ON ALL SIDES.

HARDWARE: ALL CONDUIT HUBS SHALL BE CAST ALUMINUM AND ALL BOLTS, NUTS AND OTHER HARDWARE SHALL BE STAINLESS STEEL.

GASKETS: THE BOX COVER SHALL BE FITTED WITH A NEOPRENE GASKET TO FORM A WATERPROOF SEAL. NEOPRENE GASKETS SHALL BE USED BETWEEN THE CONDUIT HUBS AND THE BOX.

HASPS: PROVIDE TWO ALUMINUM HASPS FOR PADLOCKING, ON OPPOSITE SIDES OF BOX.

MARKINGS: ALL COVERS SHALL BE MARKED "DANGER 480 VOLTS" IN 2" HIGH x 3/8" WIDE BLACK LETTERS ON OUTSIDE COVER.

SHIMS: FOUR (4) 1/4" THK. NOMINAL ALUMINUM SHIMS (SEE TABLE THIS SHEET).

ELECTRICAL APPARATUS: SEE ELECTRICAL EQUIPMENT BOX DETAILS - 2.

O. W. Hansen

E31

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

ELECTRICAL EQUIPMENT BOX DETAILS-1
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

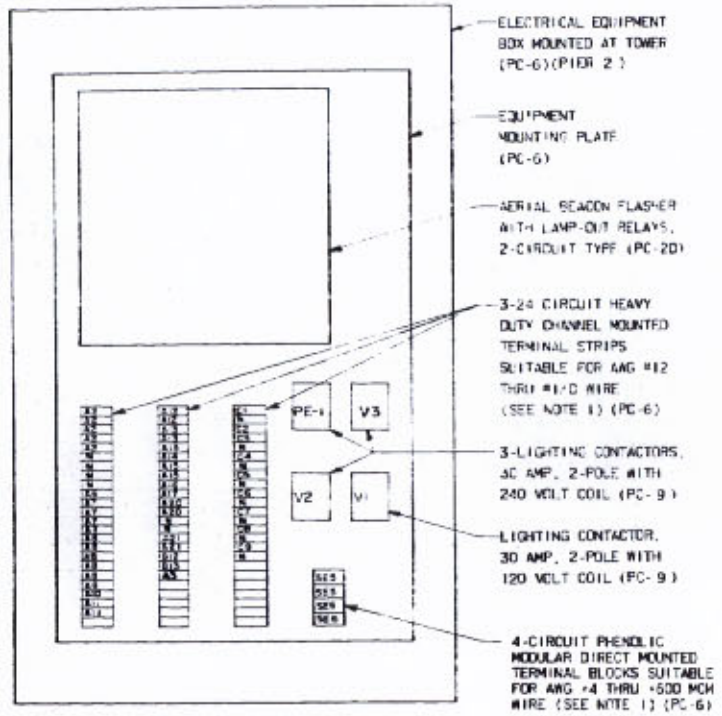
FRANKLAND AND LIENHARD – MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

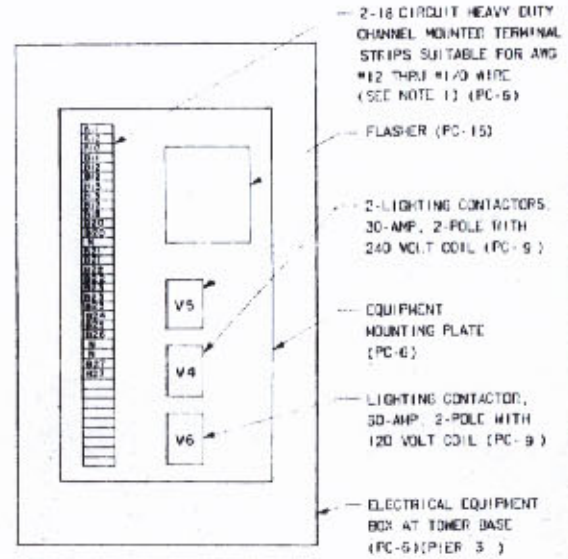
DATE: 5-24-77 | SCALE: NONE | DWG.NO: 150
DRAWN BY: RBA | CHKD.BY: JMS | IN CHARGE: HAE | APPROVED: ABC

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(35)223	450-37-02	ST. CHARLES	151

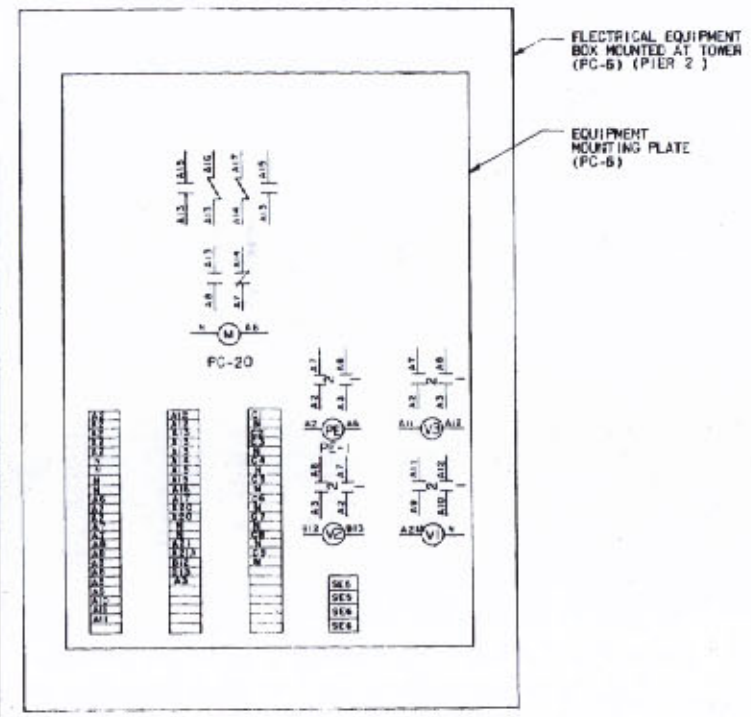
164



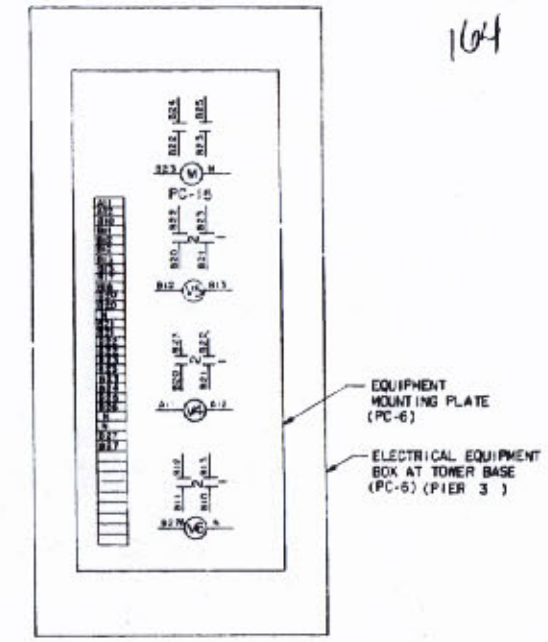
EB-1
STA. 249+[illegible]



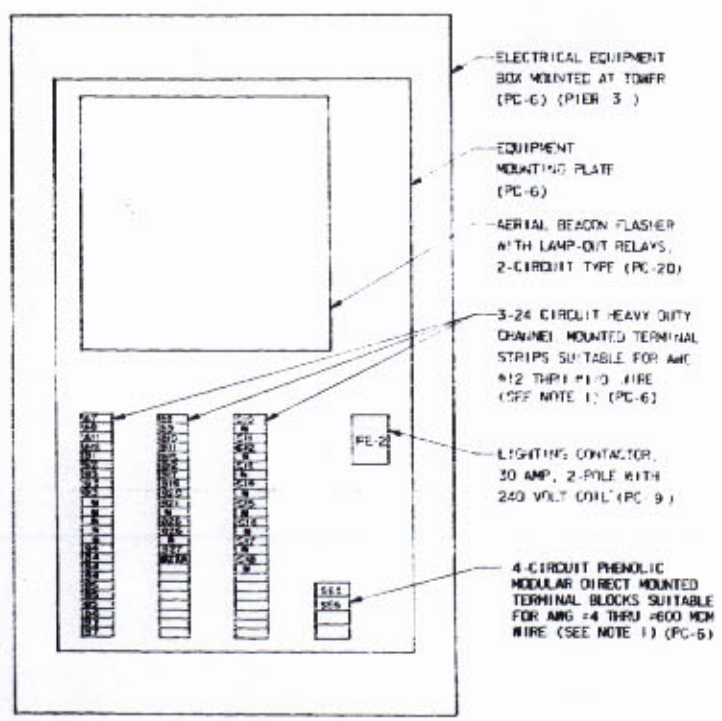
EB-3
STA. 261+70



EB-1
STA. 249+[illegible]

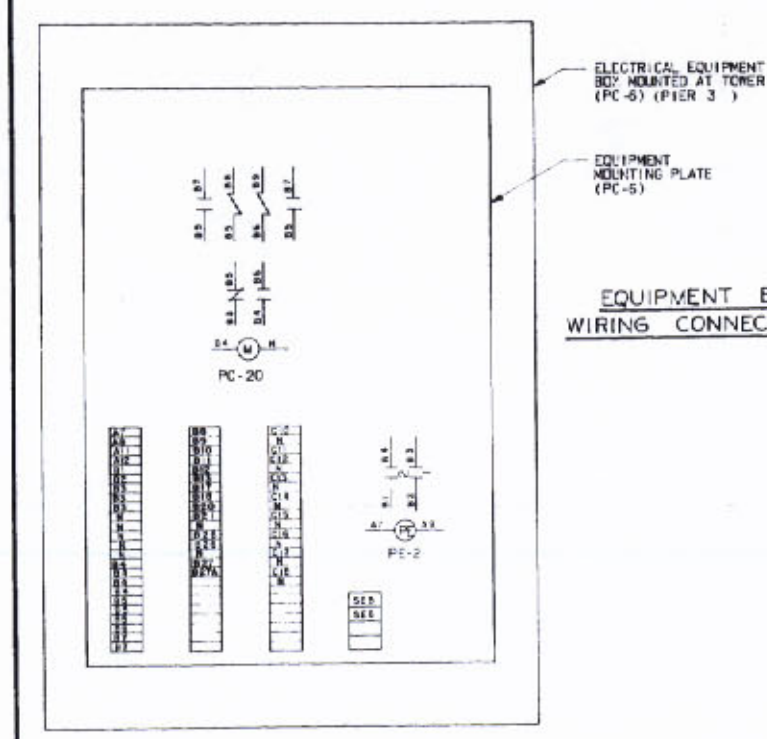


EB-3
STA. 261+70



EB-2
STA. 261+70

EQUIPMENT BOX LAYOUTS



EB-2
STA. 261+70

EQUIPMENT BOX WIRING CONNECTIONS

NOTE:

1. FOR SPECIFICATIONS OF TERMINAL BLOCKS, SEE JUNCTION BOX DETAILS - 2.
2. THE LOCATION OF THE ELECTRICAL EQUIPMENT IN THE EQUIPMENT BOXES MAY BE REARRANGED TO SUIT THE INTERCONNECTION WIRING AS SHOWN ON THE WIRING DIAGRAMS.
3. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.

O. W. Hansen

DATE	DESCRIPTION	BY

REVISIONS

E32

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

ELECTRICAL EQUIPMENT BOX DETAILS-2
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: 5-24-77 | SCALE: NONE | DWG.NO.: 151
DRAWN BY: GAS | CHKD.BY: JMS | IN CHARGE: HAE | APPROVED: WBC

FAP	STATE PROJECT	PARISH	SHEET NO.
0-280-4135 (223)	450-37-02	ST. CHARLES	152

165

MATERIALS LIST - LUMP SUM - ITEM NO. 730 (I)

PIECE NO.	NO REQD.	NAME	MANUFACTURER	TYPE, MODEL CATALOG NO.	RATING AND DESCRIPTION (SEE PROJECT SPECIFICATIONS)	ALTERNATE MANUFACTURER
1	1	SERVICE DISCONNECT SWITCH	SQUARE D	H265DS	2-POLE, 400 AMP, 480 VOLT AC, SINGLE THROW-FUSIBLE IN NEMA TYPE 4 CAST ALUMINUM ENCLOSURE WITH FUSES AS SPECIFIED	GENERAL ELECTRIC WESTINGHOUSE
2	1	WATTHOUR METER WITH MOUNTING BASE	METER SUPPLIED BY L P & L CO. BASE SUPPLIED BY CONTRACTOR	———	LOUISIANA POWER AND LIGHT COMPANY SHALL SUPPLY THE WATTHOUR METER. METER BASE TO BE PURCHASED BY THE CONTRACTOR FROM L P & L CO. AND INSTALLED	———
3	1	SECONDARY LIGHTNING ARRESTER	JOSLYN	J9200-BB	VALVE TYPE, 125-650 VOLT, 2-POLE WITH MOUNTING BRACKET SUITABLE FOR MOUNTING ON SERVICE POLE. LEADS SHALL BE INSULATED FLEXIBLE COPPER AS FURNISHED BY THE MANUFACTURER	GENERAL ELECTRIC MCGRAW EDISON
4	1	SERVICE POLE	———	———	CLASS 4, 35 FOOT MAXIMUM HEIGHT, SOUTHERN PINE CREOSOTED OR PENTA TREATED TO 12# CUBIC FOOT RETENTION IN ACCORDANCE WITH APPLICABLE PROVISIONS OF AWPA STANDARD C4	———
5	1	GROUND ROD	COPPERWELD	———	$\frac{3}{4}$"x10' LONG STEEL COPPER CLAD GROUND ROD WITH CLAMP AND HEX HEAD SET SCREW. SHALL INCLUDE AWG #6 STRANDED COPPER GROUND WIRE	JOSLYN MCGRAW EDISON
6	3	ELECTRICAL EQUIPMENT BOX	CONTRACTOR	———	FOR RATING, DESCRIPTION AND DETAILS SEE CONTRACT DRAWINGS	———
7	1	PHOTOELECTRIC CONTROL SWITCH	FISHER-PIERCE	MODEL 5690	240 VOLT WITH ADJUSTABLE FOOTCANDLE SETTING BETWEEN 35 FOOTCANDLES "TURN-ON" AND 58 FOOTCANDLES "TURN-OFF" SHALL INCLUDE SERIES 5476-63 ADAPTER AND ALL NECESSARY MOUNTING HARDWARE	B & B ELECTROMATIC CORP. TORK
8	2	ENCLOSED CIRCUIT BREAKER	KILLARK	CATALOG NO. XECF-10004A2 SU-3-SU-40	2-POLE, 480 VOLT, 100 AMP, ALUMINUM ENCLOSURE WITH DRAIN AND BREATHER, LOCK "ON" POSITION, EXTERNAL HANDLE, TWO CAST CONDUIT HUBS.	WESTINGHOUSE GENERAL ELECTRIC
9	8	LIGHTING CONTACTOR	SQUARE D	9MO-1	30 AMP, 2-POLE, OPEN TYPE CONTACTOR. SIX(6) WITH 240V, 60HZ OPERATING COILS AND TWO(2) WITH 120V, 60HZ OPERATING COILS	GENERAL ELECTRIC WESTINGHOUSE
10	2	SINGLE PHASE DRY TYPE TRANSFORMER	WESTINGHOUSE	CATALOG NO. T48H11537C	480/120/240 VOLT, 37$\frac{1}{2}$ KVA, WITH TAPS SHALL INCLUDE WALL MOUNTING BRACKETS CATALOG NO. 60DA679G02	SQUARE D GENERAL ELECTRIC
11	76	DUPLEX OUTLET	SLATER	CATLOG NO. 3300-WH	120 VOLT, 20-AMP, NEMA NO. 5-20R SHALL INCLUDE CAST ALUMINUM WEATHERPROOF BOX CATALOG NO. BN-33 AND WEATHERPROOF CAST ALUMINUM SELF CLOSING COVER CATALOG NO. 3780-SC	LEVITON EAGLE
12	7	JUNCTION BOX	CONTRACTOR	———	FOR RATING, DESCRIPTION AND DETAILS SEE CONTRACT DRAWINGS	———
13	2	SELECTOR SWITCH	GENERAL ELECTRIC	CATALOG NO. CR104B241	150 VOLT AC, 3-POSITION, 1 NO-1NC CONTACT SHALL INCLUDE NAME PLATE AND NEMA 4 CAST ALUMINUM ENCLOSURE WITH ALL NECESSARY MOUNTING HARDWARE	SQUARE D WESTINGHOUSE
14	1	FOG HORN AND AIR COMPRESSOR	B & B ELECTROMATIC CORP.	SEE RATING AND DESCRIPTION	AIR COMPRESSOR - 5 HORSE POWER, 230 VOLTS, SINGLE PHASE, 60 CYCLES A.C., 11.97 CUBIC FOOT PISTON DISPLACEMENT, PRESSURE SWITCH "CUT-IN" AT 125 P.S.I. AND "CUT-OUT" AT 150 P.S.I., 60 GALLON TANK, COMPLETE WITH $\frac{1}{2}$" VALVE STRAINER, DRAIN COCK AND GAGE, BELT GUARD, MOTOR TO BE TENV WEATHERPROOF WITH NEMA TYPE 4 ENCLOSURE FOR PRESSURE SWITCH, MODEL NO. CV-507. HORN UNIT-1" PIPE TAP, 2-HORNS MOUNTED BACK TO BACK OF NAVIGATION MARINE CONSTRUCTION CATALOG NO. S-344-800 8" DIA. [illegible], AIR CONSUMPTION 100 P.S.I., 37 CUBIC FT. PER SEC. RANGE 4 MILE PLUS MANUAL SOLENOID VALVE-230 VAC, 60 HZ, SOLENOID CAST BRONZE ENCLOSURE, BRONZE VALVE, BRONZE MANUAL OPERATOR, 1" SIZE, 1" CONDUIT HUB. MANUAL SOLENOID VALVE TYPE FLV-33A34A. THE ABOVE PARTS SHALL INCLUDE ALL AIR LINES AND OTHER APPURTENANT HARDWARE NECESSARY FOR A COMPLETE FOG HORN SIGNAL SYSTEM.	TIDEWATER AUTOMATIC POWER
15	1	FLASHER	B & B LECTROMATIC CORP.	TS-12-H35	120 VAC, 60HZ SHADED POLE MOTOR, PHENOLIC CAM, HEAVY MERCURY PLUNGER RELAY, OPEN FRAME, NO HOUSING, MUST MEET COAST GUARD APPROVAL FOR OPERATING FOG HORN OUTPUT SIGNAL. SHALL INCLUDE ALL STAINLESS STEEL HARDWARE.	SQUARE D AUTOMATIC POWER
16	4	180° RED NEON HIGH INTENSITY NAVIGATION LIGHT	B & B ELECTROMATIC CORP.	NL5675	2-RED NEON TUBES WITH 115 VOLT, 60 HZ/7500 VOLT 60 MA TRANSFORMER IN ALUMINUM ENCLOSURE WITH POLISHED PLATE GLASS LENS, NEOPRENE GASKETS, $\frac{1}{2}$ NPS CABLE ENTRANCE AT BOTTOM, VENT ON TOP, SILICON BRONZE LATCH AND LEVER WHICH ALLOWS 180° ROTATION, OVERALL DIMENSIONS 6'-11" HIGH x 1'-6$\frac{1}{8}$" WIDE. STAINLESS STEEL SWING BOLTS ON ONE SIDE FOR NEON TUBE REPLACEMENT	AUTOMATIC POWER FEDERAL SIGN AND SIGNAL CORP.

MATERIALS LIST - LUMP SUM - ITEM NO. 730 (I)

PIECE NO.	NO. REQD.	NAME	MANUFACTURER	TYPE, MODEL	RATING AND DESCRIPTION (SEE PROJECT SPECIFICATIONS)	ALTERNATE MANUFACTURER
17	4	360° GREEN NAVIGATION LIGHT	B & B ELECTROMATIC CORP.	CC7304LK-200MM-JB-RT-A 6360	TWO (2) LIGHT UNITS TO SWING COUNTER CLOCKWISE AND TWO (2) LIGHT UNITS TO SWING CLOCKWISE, WITH A 32,000 HR CLEAR LAMP NO. C-574-XL-100-CL32M AND RECTINOID, ARM LENGTH SHALL BE AS SHOWN ON CONTRACT DRAWINGS (SEE NOTE 4)	TIDEWATER AUTOMATIC POWER
18	2	AVIATION OBSTRUCTION BEACON	B & B ELECTROMATIC CORP.	300 MM CC-553782-A	TO MEET FAA SPECIFICATIONS, FAA TYPE FAA-446 COMPLETE WITH TWO (2) 620 WATT, 120 VOLT, 3000 HR, PS-40 LAMPS. SHALL	SEE FAA ADVISORY CIRCULAR NUMBER 150/5345-1
19	6	180° WHITE NAVIGATION LIGHTS	B & B ELECTROMATIC CORP.	CC7301-PM-200MM-JB-RT-A-W180	FOUR(4) LIGHT UNITS TO HAVE A VERTICAL MOUNTING PIPE AND TWO (2) LIGHT UNITS TO HAVE A 90° ELBOW TYPE (SEE DETAILS ON CONTRACT DRAWINGS). COMPLETE WITH A 32000 HR CLEAR LAMP NO. C-574-XL-100-CL32M AND RECTINOID (SEE NOTE 4)	TIDEWATER AUTOMATIC POWER
20	2	FLASHER AND LAMP OUT RELAYS	B & B ELECTROMATIC CORP.	[illegible]	TWO (2) CIRCUIT TYPE WITHOUT ENCLOSURE WITH LAMP FAILURE RELAYS AND TIME DELAY RELAYS. SEE SPECIAL PROVISIONS	TIDEWATER AUTOMATIC POWER
21	2	LAMP-OUT INDICATOR LIGHT	B & B ELECTROMATIC CORP.	IND-800-LAW	COMPLETE WITH IDUCING AND TAMPERPROOF SCREW AND ONE (1) 110 VOLT, 27 WATT, 4000 HR, CLEAR HEAVY DUTY SIGNAL LAMP	TIDEWATER AUTOMATIC POWER
22	1	SINGLE OUTLET	SLATER	CATALOG NO. S-330-WH	20 AMP, 125 VOLT, WITH ALUMINUM BOX AND STAINLESS STEEL COVER	LEVITON BRYANT
23	2	ENCLOSED PANELBOARD (PNB-1E3)	KILLARK	CATALOG NO. IPB05-2020QI SU-3	120/240 VOLT, 3-WIRE, SOLID NEUTRAL WITH 125 AMP, 2-POLE MAIN BREAKER, DRAIN AND BREATHER WITH ALL SECONDARY CIRCUIT BREAKERS AS SHOWN ON THE WIRING DIAGRAMS	WESTINGHOUSE GENERAL ELECTRIC
24	5	SWITCH	SLATER	CATALOG NO. 620-BR	20 AMP, 120 VOLT, SINGLE POLE WITH ALUMINUM WEATHERPROOF ENCLOSURE AND LEVER TYPE WEATHERPROOF COVER	LEVITON BRYANT
25	AS REQD.	LIQUIDTIGHT ALUMINUM FLEXIBLE METAL CONDUIT	ANACONDA	———	SHALL BE USED AS SHOWN AND SPECIFIED ON THE CONTRACT DRAWINGS. SHALL MEET ARTICLE 351 OF THE 1975 NATIONAL ELECTRICAL CODE	TRIANGLE PWC INC. KEARNEY
26	15 L.F. 20 L.F. 55 L.F.	1"φ 2$\frac{1}{2}$"φ 3"φ GALVANIZED RIGID STEEL CONDUIT	ROBROY INDUSTRIES	———	SHALL MEET [illegible] STANDARD SPECIFICATIONS SUB-SECTION 730.11 AND [illegible] (SEE NOTE 3)	KORKAP INC. YOUNGSTOWN SHEET AND TUBE
27	2129 L.F.	3" RIGID ALUMINUM CONDUIT	REYNOLDS ALUMINUM COMPANY	———	SHALL MEET [illegible] STANDARD SPECIFICATIONS SUB-SECTION 730.11 AND [illegible] (SEE NOTE 3)	KAISER ALUMINUM CO.
	3080 L.F.	2$\frac{1}{2}$" RIGID ALUMINUM CONDUIT				
	9530 L.F.	2" RIGID ALUMINUM CONDUIT				NEW JERSEY ALUMINUM CO.
	1125 L.F.	1" RIGID ALUMINUM CONDUIT				
	1172 L.F.	$\frac{3}{4}$" RIGID ALUMINUM CONDUIT				

L.F. = LINEAL FEET

NOTE:

1. ALL PIECE NOS. SHALL INCLUDE ALL NECESSARY HARDWARE. STEEL [illegible] MAY BE [illegible] ON DRAWING [illegible] INCLUDED IN ITEM [illegible]
2. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.
3. ALL WIRE AND CONDUIT LENGTHS SHOWN ARE APPROXIMATE AND ARE NOT TO BE USED FOR COMPUTING QUANTITIES. LENGTHS SHOWN FOR WIRE ARE FOR SINGLE CONDUCTOR CABLE.
4. NAVIGATION LIGHTS PIECE NO. 17, 19 AND 38 SHALL BE PREWIRED TO TERMINAL BLOCKS INSTALLED IN JUNCTION BOXES ATTACHED TO EACH LIGHT UNIT BY MANUFACTURER.

E33

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

QUANTITIES-I
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD-MIDJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE: 5-24-77 | SCALE: NONE | DWG.NO.: 152
DRAWN BY: RBA | CHKD. BY: JMS | IN CHARGE: HAE | APPROVED: WBC

FAP	STATE PROJECT	PARISH	SHEET NO.
I-310-4(36)229	450-37-02	ST. CHARLES	153

166

MATERIALS LIST - LUMP SUM - ITEM NO. 730 (1)

PIECE NO.	NO. REQ'D.	NAME	MANUFACTURER	TYPE, MODEL	RATING AND DESCRIPTION (SEE PROJECT SPECIFICATIONS)	ALTERNATE MANUFACTURER
28	515 L.F.	AWG #500 MCM WIRE	GENERAL ELECTRIC	———	ALL WIRES SHALL BE COPPER AND HAVE A RATED MOISTURE AND HEAT RESISTANT INSULATION OF CROSS-LINKED POLYETHYLENE USE/THW/RHH 600 VOLT ACCORDING TO IPCEA S66-524, NEMA WC7, COLUMN A AND CONFORM TO SUBSECTION 1.7 C OF THE STANDARD SPECIFICATIONS. (SEE NOTE 3 DRAWING E33)	BRAND REX. CO. OKONITE CO.
	3863 L.F.	AWG #350 MCM WIRE				
	474 L.F.	AWG #1/0 WIRE				
	11,748 L.F.	AWG #2 WIRE				
	20 L.F.	AWG #6 WIRE				
	2,662 L.F.	AWG #8 WIRE				
	32,612 L.F.	AWG #10 WIRE				
	150 L.F.	3/C AWG #10	OKONITE	TYPE SO CAT. NO. 391-02-1035	600 VOLT - HARD SERVICE CORD 90°C RATING	GENERAL ELECTRIC ITT
29	116	VAPORTIGHT INCANDESCENT LIGHT FIXTURE	APPLETON	CATALOG NO. VPMB1075G	SHALL INCLUDE 40 WATT INCANDESCENT LAMP, JUNCTION BOX AND GUARD SUITABLE FOR WALL MOUNTING	CROUSE HINDS KILLARK
30	8	VAPORTIGHT INCANDESCENT LIGHT FIXTURE	APPLETON	CATALOG NO. VPK1075	SHALL INCLUDE 100 WATT INCANDESCENT LAMP, JUNCTION BOX SUITABLE FOR CEILING MOUNT	CROUSE HINDS KILLARK
31	20	3-WAY SWITCH	SLATER	CATALOG NO. 623-BR	20 AMP, 120 VOLT, SHALL INCLUDE WEATHERPROOF COVER WITH OPERATOR LEVER AND WEATHERPROOF ALUMINUM ENCLOSURE	LEVITON BRYANT
32	1	PANELBOARD (PNB-2)	BRYANT	CATALOG NO. B12-20SM	TYPE NLC, 1-PHASE, 3-WIRE 120/240 VOLT SURFACE MOUNT. SHALL INCLUDE 70 AMP MAIN CIRCUIT BREAKER AND ALL SECONDARY CIRCUIT BREAKERS AS SHOWN ON THE WIRING DIAGRAMS	SQUARE D GENERAL ELECTRIC
33	1	PANELBOARD (PNB-4)	KILLARK	CATALOG NO. IPB05-0820QI	120/240 VOLT, 3-WIRE SINGLE PHASE WITH SOLID NEUTRAL, 50 AMP, 2-POLE MAIN CIRCUIT BREAKER, DRAIN AND BREATHER. SHALL INCLUDE ALL SECONDARY CIRCUIT BREAKERS AS SHOWN ON THE WIRING DIAGRAMS.	WESTINGHOUSE GENERAL ELECTRIC
34	2	FOG VISIONETER	METEOROLOGY RESEARCH INC.	MODEL 1580A	FOG VISIONETER SHALL INCLUDE ALL NECESSARY ACCESSORIES, POWER CABLE, CONTROL CABLE, JUNCTION BOX AND MOUNTING SUPPORT (SEE SPECIFICATIONS)	SEE SPECIFICATIONS
35	5542 L.F.	CABLE TRAY SOLID BOTTOM TYPE	P-M INDUSTRIES	SEE RATING AND DESCRIPTION	SEE SPECIAL PROVISIONS	UNITED STATES GYPSUM CHICAGO, ILL. T.J. COPE COLLEGEVILLE, PA
	25 L.F.	CABLE TRAY LADDER TYPE				
36	21 L.F.	OUTLET STRIP IN CONTROL HOUSE	WALKERDUCT	CATALOG NO. 2GR-318	15 AMP, 125 VOLT, 3-WIRE OUTLETS WITH 2#12 INSULATED SOLID WIRE CONDUCTORS AND 1#14 GREEN INSULATED GROUND WIRE IN FINISHED STEEL 3-FOOT LENGTHS. OUTLETS SHALL BE SPACED ON 18 INCH CENTERS, 2 OUTLETS PER 3-FOOT LENGTH	WIREMOLD CO. HUBOLE
37	5	ANEMOMETER POLE	———	SEE RATING AND DESCRIPTION	SEE DETAILS ON DRAWING E27	———
38	4	180° RED NAVIGATION LIGHT	B & B ELECTROMATIC CORPORATION	CC7304LK-200HM-JB-RT-A-R180	TWO (2) LIGHT UNITS TO SWING COUNTER CLOCKWISE AND TWO (2) LIGHT UNITS TO SWING CLOCKWISE WITH A 32,000 HR. CLEAR LAMP NO. C-574-XL-100-CL32H AND RECTINOID, ARM LENGTH SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS. (SEE NOTE 4 DWG. E33)	TIDEWATER AUTOMATIC POWER
39	1	PANELBOARD (PNB-2A)	BRYANT	SB-16SM	TYPE NLC, 8-CIRCUIT, 1-PHASE, 120/240 VOLT SURFACE MOUNT. SHALL INCLUDE ALL CIRCUIT BREAKERS AS SHOWN ON THE WIRING DIAGRAMS.	SQUARE D GENERAL ELECTRIC
40	1	PULL BOX	CONTRACTOR	SEE RATING AND DESCRIPTION	24" x 8" x 6" DEEP ALUMINUM PULL BOX MOUNTED IN MEDIAN BARRIER TO STIFFENER PLATES SHALL INCLUDE ALL MOUNTING HARDWARE SEE DRAWING E28 NEMA TYPE 4 CAST ALUM. ENCLOSURE	———
41	14	JUNCTION BOX (INSTRUMENTATION)	CONTRACTOR	SEE RATING AND DESCRIPTION	12" x 12" x 8" DEEP ALUMINUM PULL BOX MOUNTED IN TOWER. SHALL INCLUDE ALL MOUNTING HARDWARE. SEE DRAWINGS E10, E18 AND E19.	———
42	52	JUNCTION BOX	KILLARK	CATALOG NO. DB-664	6"Wx6"Lx4" DEEP, CABINET TYPE WITH TERMINAL BLOCKS AND ALL NECESSARY MOUNTING HARDWARE. (FOR SPECIFICATIONS ON TERMINAL BLOCKS SEE DRAWING E30)	CROUSE HINDS O-Z/GEDNEY

L.F.= LINEAL FEET

MATERIALS LIST - LUMP SUM - ITEM NO. 730 (1)

PIECE NO.	NO. REQ'D.	NAME	MANUFACTURER	TYPE, MODEL	RATING AND DESCRIPTION (SEE PROJECT SPECIFICATIONS)	ALTERNATE MANUFACTURER
43	2	EMERGENCY LIGHT	TORK	55020	SHALL INCLUDE JUNCTION BOX, CONDUIT ADAPTER, 4 TAMPERPROOF SCREWS FOR MOUNTING, 12-WATT TUNGSTEN-HALOGEN LAMP WITH SEALED NICKEL CADMIUM BATTERIES, POLYCARBONATE DIFFUSER, READY LIGHT, TEST SWITCH, BASE AND SEALING NEOPRENE GASKET, SHALL ALSO INCLUDE SOLID STATE CHARGER WITH SEALED, NORMALLY OPEN RELAY THAT IS ENERGIZED ONLY DURING POWER FAILURE TO MAKE THE LIGHTS FULLY AUTOMATIC.	FEDERAL SIGNAL HOLOPHANE

NOTE:

1. FOR NOTES SEE DRAWING E33.
2. FOR ELECTRICAL PROVISIONS GENERAL NOTES, SEE DRAWING E1.

O. W. Hanson

E34

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

QUANTITIES-2
ELECTRICAL PROVISIONS
MAIN BRIDGE SUPERSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

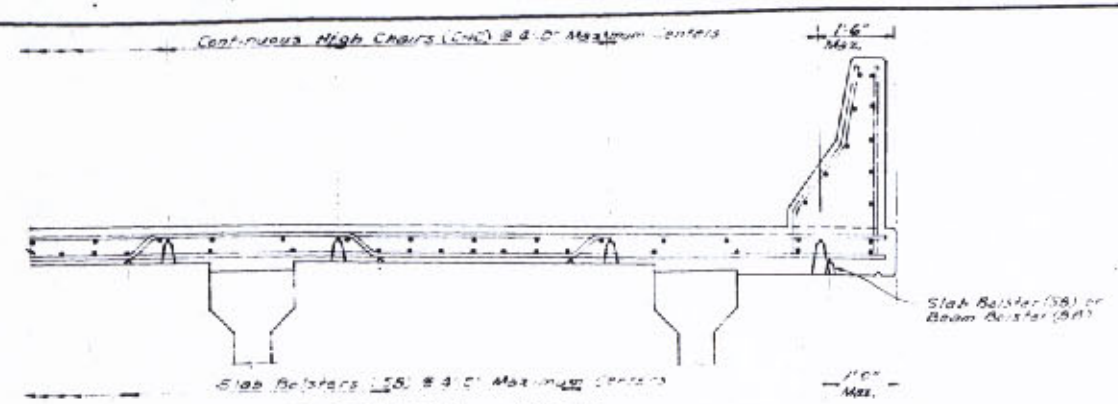
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

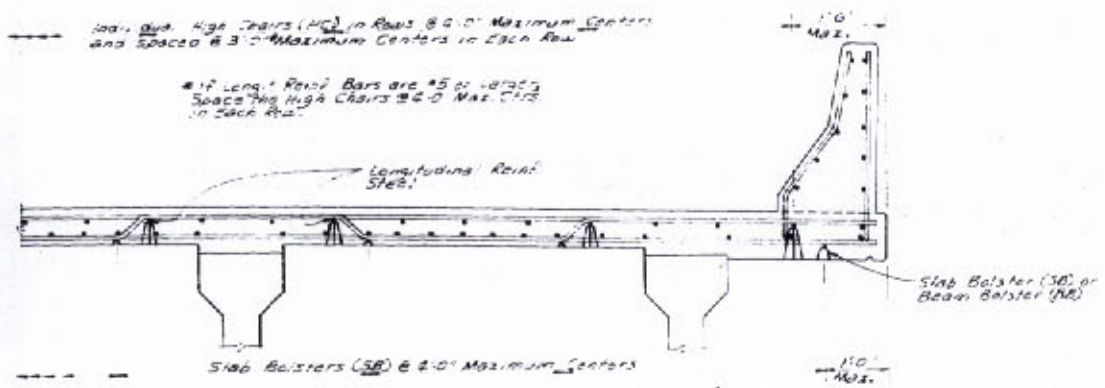
DATED: 5-24-77 SCALE: NONE DWG.NO.: 153
DRAWN BY: GAS CHKD BY: JHS IN CHARGE: HAE APPROVED: WBC

FAP	STATE PROJECT	PARISH	SHEET NO.
-415-4(4)(7)	450-37-02	ST CHARLES	154

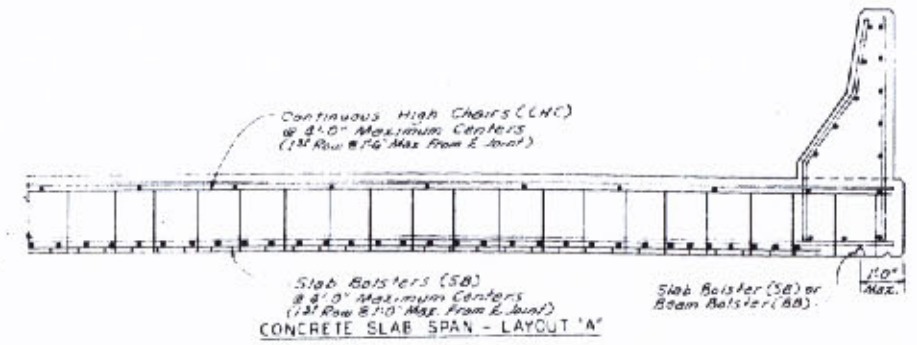
167



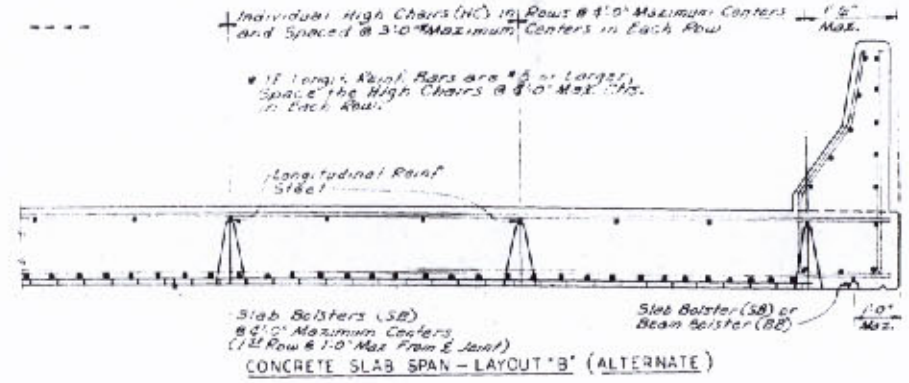
STEEL OR CONCRETE GIRDER SPAN - LAYOUT "A"



STEEL OR CONCRETE GIRDER SPAN - LAYOUT "B" (ALTERNATE)



CONCRETE SLAB SPAN - LAYOUT "A"

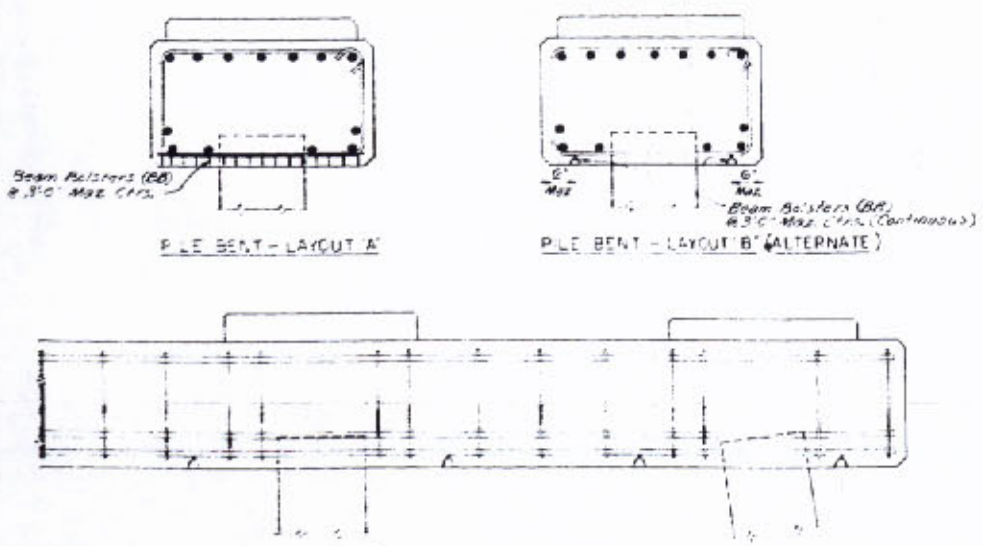


CONCRETE SLAB SPAN - LAYOUT "B" (ALTERNATE)

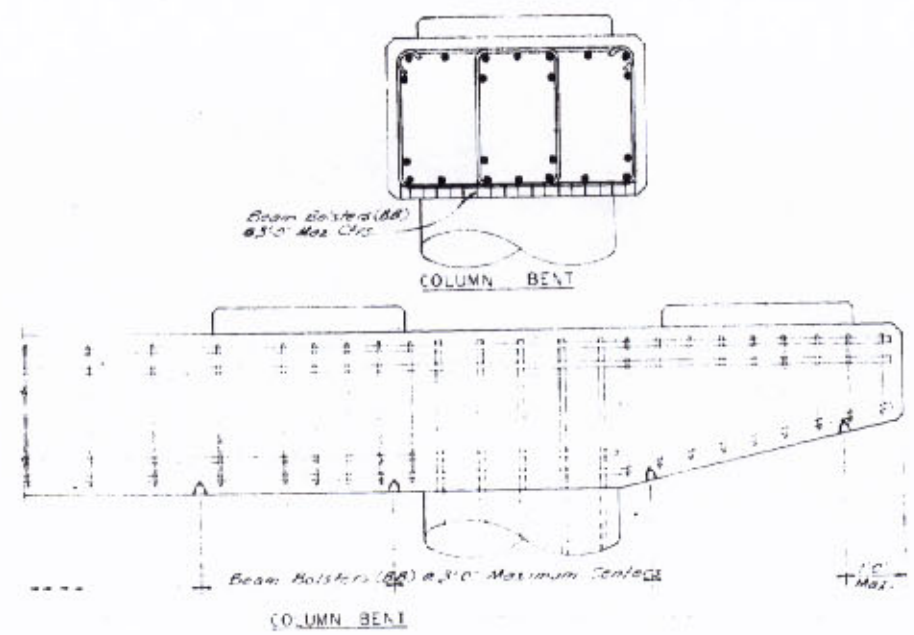
TYPE OF SUPPORT	BAR SUPPORT ILLUSTRATION	MINIMUM WIRE SIZES HEIGHT	TOP	LEGS		REMARKS
Slab Bolster (SB)		All	#14 ga Corrugated	#14 ga		Vert. Corrugations Spaced 1" on Centers
Beam Bolsters (BB)		Up to 2"	#10	#14		
		Over 2"	#10 ga	#14 ga		
# Individual High Chair (HC)		2" to 5"	-	#14 ga		
		5" to 9"	-	#14 ga		
		over 9"	-	#14 ga		
# Continuous High Chair (CHC)		2" to 5"	#14 ga	#14 ga		
		5" to 9"	#14 ga	#14 ga		
		over 9"	#14 ga	#14 ga		

Legs at 20 degrees or less with vertical. When height exceeds 12", reinforce legs with welded cross wires or encircling wires.

Legs at 20 degrees or less with vertical. All legs 8" on center maximum, with leg within 4" of end of chair, and spread between legs not less than 50% of nominal height.



PILE BENT - LAYOUT "B"



COLUMN BENT

GENERAL NOTES:

Steel Wire Bar Supports Shall be in Accordance with the Latest Approved Louisiana Department of Highways Standard Specifications, as Amended by Special Provisions and/or Supplemental Specifications.

Reinforcing Steel Bars Shall be Tied in Accordance with the Latest Approved Louisiana Department of Highways Standard Specifications, as amended by Special Provisions and/or Supplemental Specifications.

A #14 ga Bar with Individual High Chairs @ 2'-0" Max. Ctrs. or A #14 ga Bar or #10 Bar with Individual High Chairs @ 3'-0" Max. Ctrs. may be Substituted, with Individual High Chairs @ 2'-0" Max. Ctrs. for the Continuous High Chairs.

Height of Bar Supports to be that Required to Support the Reinf. Bars in Positions Shown on Plans.

Bar Supports are not intended, and shall not be used to Support Runways for Concrete Buggies or Similar Loads.

Precast Mortar or Concrete Blocks may be Used in lieu of Steel Wire Bar Supports, in Accordance with Standard Specifications, Spacing Shall not Exceed 3'-0" Centers Lengthwise in Slabs or 3'-0" in Bent Caps and Beams.

When Bar Supports are placed in Continuous lines, they Shall be so placed that the Ends of the Supporting Legs Shall be lapped to lock the last leg on the End of one Bar Support over the last leg of the next Bar Support. No Bar Support more than 2' Beyond the last leg at the end of a run of Bars Shall be used.

Where Bar Supports are used on Sand or Aggregate Subgrades, Suitable Plates Shall be Provided to Prevent Displacement of the Support Feet.

All Bar Supports bearing on the forms shall have round bearing legs in the form of a hook (pointed legs) or spherical foot at the lower end of the legs.

STEEL WIRE BAR SUPPORTS

STANDARD PLAN
BAR SUPPORTS
FOR
REINFORCING STEEL

DATED MARCH 27, 1978

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED | DETAILED | TRACED
CHECKED | CHECKED | CHECKED

BRIDGE DESIGN SECTION

DATE	DESCRIPTION	BY
1-31-78	Note regarding wire rod legs	

REVISIONS

O. W. Hansen

S.W.B.S.-100

F.E.P.	STATE PROJECT	PARISH	SHEET NO
1-410-4 35 223	450-37-02	ST CHARLES	155

ADVANCE ROAD CONSTRUCTION SIGN

ADVANCE DETOUR SIGN

ADVANCED ROAD CLOSED SIGN

ADVANCE ONE LANE ROAD SIGN

ADVANCE LANE CLOSED SIGN

ADVANCE FLAGMAN SIGN

ROAD CONSTRUCTION AHEAD | ROAD CONSTRUCTION 1000 FT | ROAD CONSTRUCTION 1500 FT | ROAD CONSTRUCTION 500 FT

DETOUR AHEAD | DETOUR 1000 FT | DETOUR 1500 FT | DETOUR 500 FT

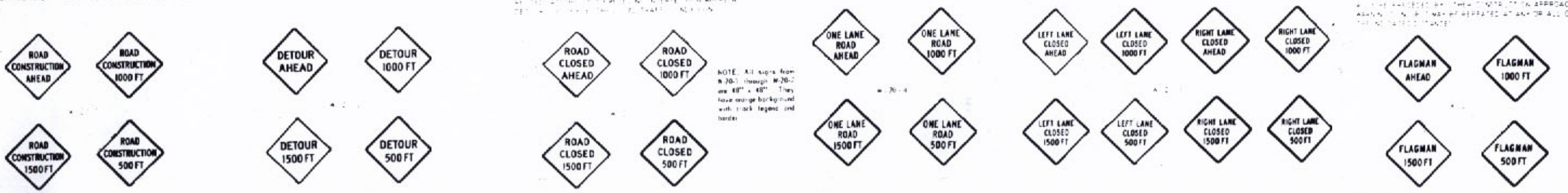
ROAD CLOSED AHEAD | ROAD CLOSED 1000 FT | ROAD CLOSED 1500 FT | ROAD CLOSED 500 FT

NOTE: All signs from W-20-1 through W-20-2 are 48" x 48". They have orange background with black legend and border.

ONE LANE ROAD AHEAD | ONE LANE ROAD 1000 FT | ONE LANE ROAD 1500 FT | ONE LANE ROAD 500 FT

LEFT LANE CLOSED AHEAD | LEFT LANE CLOSED 1000 FT | RIGHT LANE CLOSED AHEAD | RIGHT LANE CLOSED 1000 FT | LEFT LANE CLOSED 1500 FT | LEFT LANE CLOSED 500 FT | RIGHT LANE CLOSED 1500 FT | RIGHT LANE CLOSED 500 FT

FLAGMAN AHEAD | FLAGMAN 1000 FT | FLAGMAN 1500 FT | FLAGMAN 500 FT



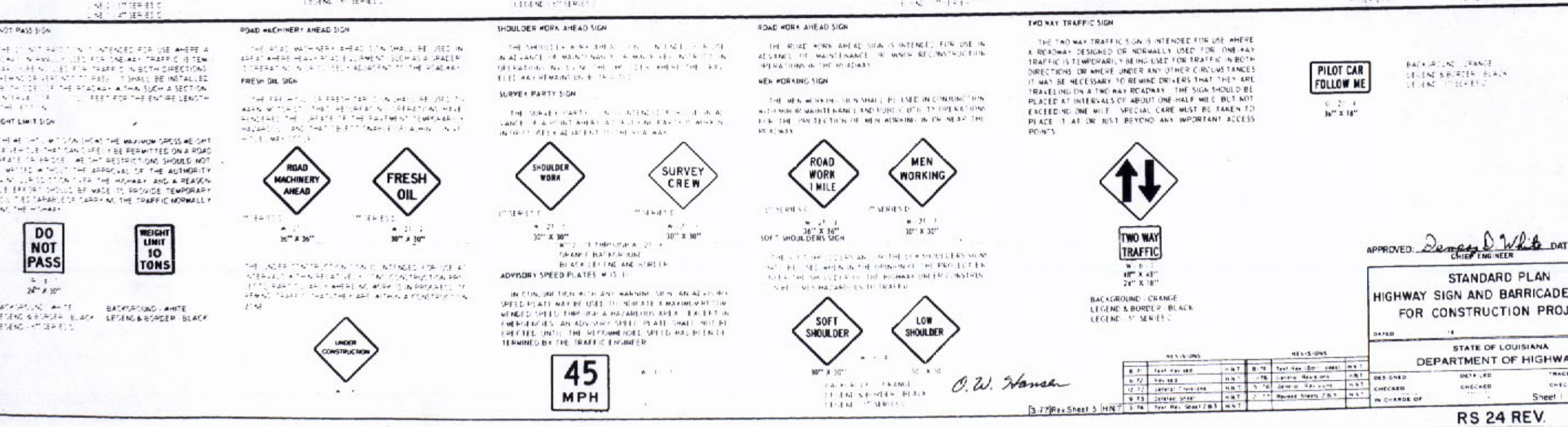
LOCAL TRAFFIC ONLY SIGN

ROAD CLOSED SIGN

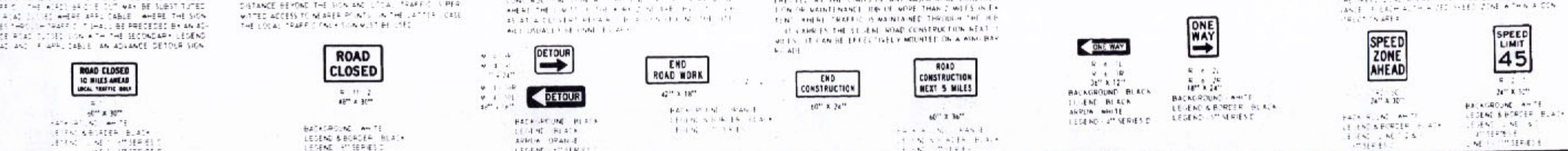
DETOUR ARROW SIGN

END ROAD WORK SIGN

END CONSTRUCTION SIGN



ONE WAY SIGN



ROAD CLOSED 10 MILES AHEAD LOCAL TRAFFIC ONLY

ROAD CLOSED

DETOUR

DETOUR

END ROAD WORK

END CONSTRUCTION

ROAD CONSTRUCTION NEXT 5 MILES

ONE WAY

ONE WAY

SPEED ZONE AHEAD

SPEED LIMIT 45

DO NOT PASS SIGN

WEIGHT LIMIT SIGN

ROAD MACHINERY AHEAD SIGN

FRESH OIL SIGN

SHOULDER WORK AHEAD SIGN

SURVEY PARTY SIGN

ROAD WORK AHEAD SIGN

MEN WORKING SIGN

TWO WAY TRAFFIC SIGN

PILOT CAR FOLLOW ME

DO NOT PASS | WEIGHT LIMIT 10 TONS

ROAD MACHINERY AHEAD | FRESH OIL

SHOULDER WORK | SURVEY CREW

ROAD WORK 1 MILE | MEN WORKING

TWO WAY TRAFFIC

ADVISORY SPEED PLATES

UNDER CONSTRUCTION

45 MPH

SOFT SHOULDERS SIGN

SOFT SHOULDER | LOW SHOULDER

O. W. Hansen

APPROVED: Dempsey D. White DATE: 2-14-72
CHIEF ENGINEER

STANDARD PLAN
HIGHWAY SIGN AND BARRICADE DETAILS
FOR CONSTRUCTION PROJECTS

DATED

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED | DETAILED | TRACED
CHECKED | CHECKED | CHECKED
IN CHARGE OF

Sheet 1 of 3 Sheets

RS 24 REV.

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(351)223	450-37-02	ST. CHARLES	156

169

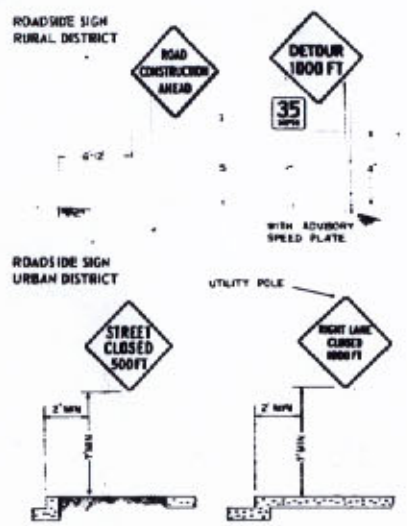


Figure 6-1

HEIGHT AND LATERAL LOCATION OF SIGNS-TYPICAL INSTALLATIONS

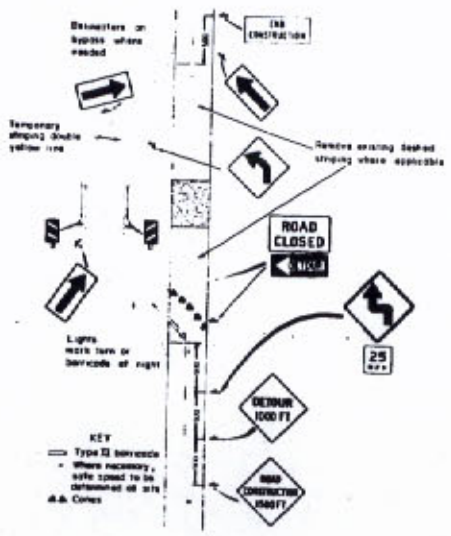


Figure 6-2

TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE THE ENTIRE ROADWAY IS CLOSED AND A BYPASS DETOUR IS PROVIDED. SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY

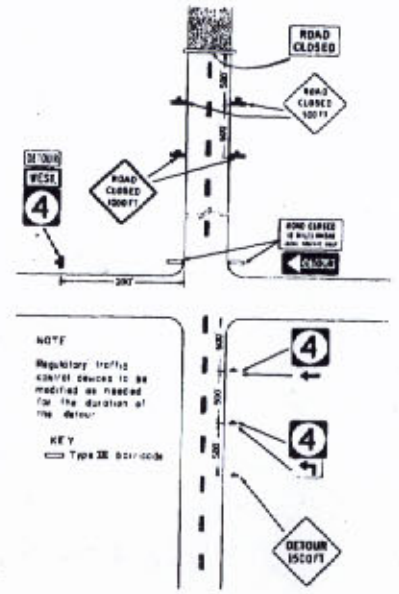


Figure 6-3

TYPICAL APPLICATION-ROADWAY CLOSED BEYOND DETOUR POINT

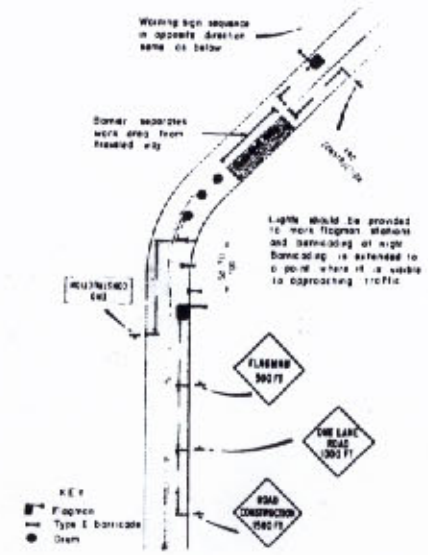


Figure 6-5

TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES ON 2-LANE HIGHWAY WHERE 1 LANE IS CLOSED

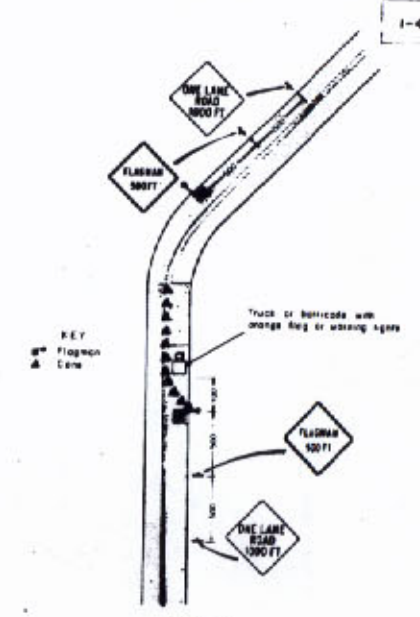


Figure 6-6

TYPICAL APPLICATION-MAINTENANCE OPERATIONS OF SHORT DURATION ON A 2-LANE ROADWAY

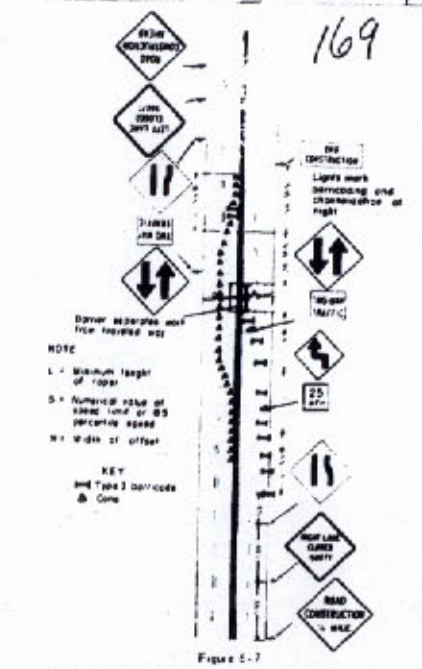


Figure 6-7

TYPICAL APPLICATION-4 LANE UNDIVIDED ROADWAY WHERE HALF THE ROADWAY IS CLOSED

NOTE: WHERE CONSTRUCTION OCCURS WITHIN THE CITY LIMITS, COMMUNITIES OR OTHER AREAS HAVING POSTED LEGAL SPEED LIMITS LESS THAN THOSE SPECIFIED ABOVE THE POSTED LEGAL SPEED SHALL APPLY.

NOTE: WHERE A CONSTRUCTION PROJECT INVOLVES A NUMBER OF ROAD SEGMENTS REMOTE FROM EACH OTHER, ONLY THOSE SEGMENTS WHERE ACTUAL WORK IS IN PROGRESS NEED BE SIGNED. UPON COMPLETION OF ANY SEGMENT, CONSTRUCTION SIGNING MAY BE REMOVED AFTER PERMANENT SIGNING IS IN PLACE.

NOTE: SIGNS SHOWN IN ALL ILLUSTRATIONS ARE TYPICAL AND MAY VARY WITH EACH SPECIFIC CONDITION. OTHER SIGNS FROM SHEET 2 MORE APPROPRIATE FOR THE SPECIFIC CONDITION MAY BE SUBSTITUTED IN ANY OF THE ABOVE ILLUSTRATIONS UPON APPROVAL BY THE PROJECT ENGINEER. HOWEVER, THE REQUIRED NUMBER OF SUCH SIGNS IN ALL CASES SHALL BE CONSTANT AND SHOULD NOT EXCEED THE NUMBER SHOWN ON THE ILLUSTRATIONS.

NOTE: ALL CONSTRUCTION SIGNS ARE TEMPORARY SIGNS AND ARE TO BE MOUNTED ON STEEL POSTS, PORTABLE EASELS OR 4" x 4" WOOD POSTS ADJACENT TO OR WITHIN THE ROADWAY.

NOTE: WHEN TWO PROJECTS ARE ADJOINING AND CONSTRUCTION IS IN PROGRESS ON BOTH, ELIMINATE ALL SIGNS AT JUNCTURE.

WHEN ONE PROJECT IS COMPLETED, REGULAR SIGNING MUST BE ERECTED ON THE REMAINING PROJECT.

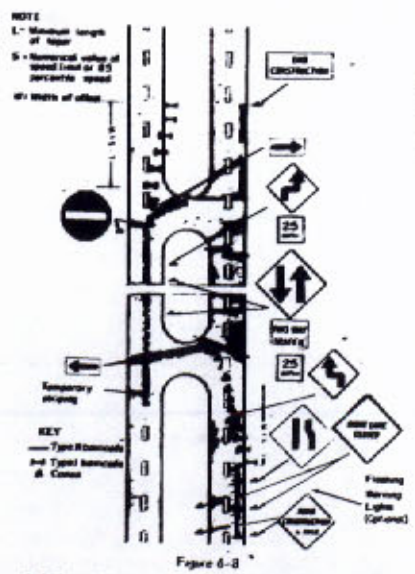


Figure 6-8

TYPICAL APPLICATION - 4 - LANE DIVIDED ROADWAY WHERE ONE ROADWAY IS CLOSED. SIGNS SHOWN 1 DIRECTION OF TRAVEL ONLY

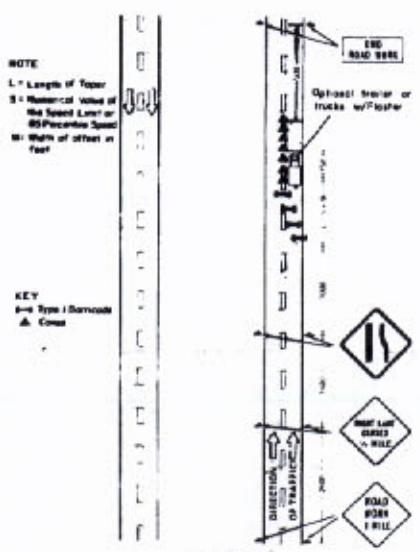


Figure 6-9

TYPICAL APPLICATION - 4 - LANE DIVIDED ROADWAY WHERE HALF OF ROADWAY IS CLOSED

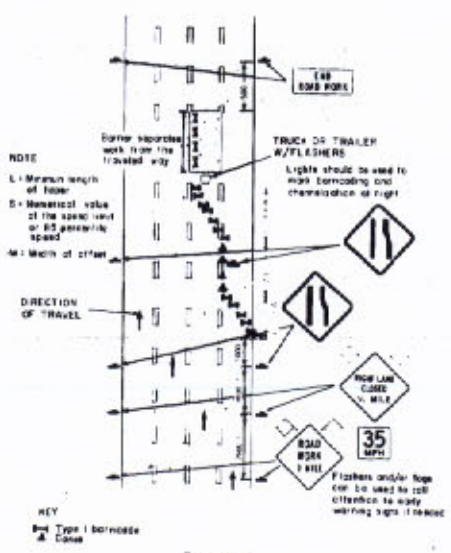


Figure 6-10

TYPICAL APPLICATION CLOSING MULTIPLE LANES OF A MULTI-LANE HIGHWAY

PORTABLE AND TEMPORARY MOUNTINGS

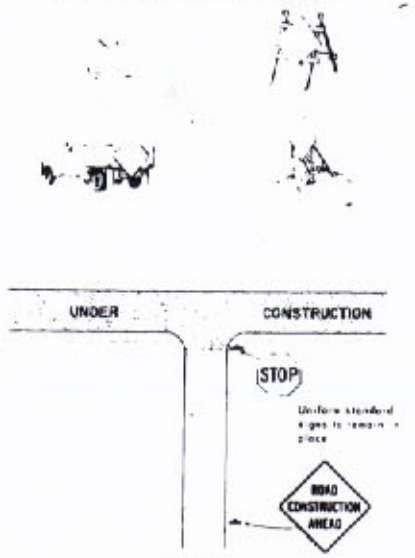


Figure 6-11

TYPICAL SIGNING ON A SIDE ROAD APPROACH TO A CONSTRUCTION PROJECT

ALL SIGNS, SIGNING AND PAVEMENT MARKINGS HEREIN SHALL BE IN ACCORDANCE WITH THE "LOUISIANA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" 1971 EDITION.

SIGNS

ALL SIGNS SHALL BE ERECTED AT A MINIMUM HEIGHT OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT UNLESS MOUNTED ON BARRICADES OR OTHERWISE SPECIFIED IN THESE DETAILS. EDGE OF SIGNS SHALL BE A MINIMUM OF 6 FEET FROM THE EDGE OF THE SLAB OR ON THE EDGE OF THE SHOULDER, DEPENDING ON WHICH IS MORE PRACTICAL. ALL LETTERING SHALL BE IN CLEAR, OPEN ROUNDED TYPE CAPITAL LETTERS AS APPROVED BY THE JOINT COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES.
THE BACKING MATERIAL USED IN THE FABRICATION OF CONSTRUCTION SIGNS SHALL BE IN ACCORDANCE WITH SUBSECTION 713.02 OF THE STANDARD SPECIFICATIONS AS REVISED BY THE PROJECT SPECIFICATIONS.

REFLECTORIZATION OF SIGNS: BARRICADES, AND DRUMS SHALL BE BY MEANS OF ENCAPSULATED LENS REFLECTIVE SHEETING. ALL REFLECTIVE ELEMENTS SHALL REFLECT WHITE LIGHT EXCEPT IF A REFLECTIVE COATING IS USED ON A BACKGROUND OF AN ORANGE SIGN IT SHALL REFLECT ORANGE LIGHT. ALL MATERIAL AND THEIR APPLICATION SHALL MEET DEPARTMENT SPECIFICATIONS.

REMOVAL OF SIGNS: SIGNS WARNING AGAINST A PARTICULAR HAZARD OR OPERATION SHOULD NOT BE LEFT IN PLACE WHEN THE OPERATION IS NOT IN PROGRESS OR WHEN THE HAZARD HAS BEEN REMOVED. ON PART-TIME OPERATIONS SUCH SIGNS AS "TRUCK CROSSING", "MEN WORKING", ETC. SHALL BE REMOVED OR SET ASIDE OUT OF VIEW OF TRAFFIC WHEN THE OPERATION IS NOT IN PROGRESS. THE PRACTICE OF LEAVING NON-ESSENTIAL SIGNS IN PLACE BREEDS CONTEMPT FOR AND DISOBEDIENCE OF THE ESSENTIAL SIGNS AND BARRICADES.

LIGHTING: LIGHTING SHALL SUPPLEMENT ALL BARRICADES THAT CLOSE ONE OR MORE LANES OR THAT EXTEND ACROSS THE ROADWAY. A MINIMUM OF FOUR 4 LIGHTS WILL BE REQUIRED WHERE A BARRICADE CLOSES A ROAD. LIGHTING WILL BE BY APPROVED ELECTRICAL INSTALLATIONS. WHERE BATTERY OPERATED EQUIPMENT IS USED, IT SHALL CONFORM TO SPECIFICATIONS FOR HIGH OR LOW INTENSITY, FLASHING OR STEADY BURNING LIGHTS AS SET FORTH IN THE STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES SECTION 915.

A. ON ALL INTERSTATE, PRIMARY OR OTHER HIGHWAYS CARRYING MORE THAN 75 VEHICLES PER LANE:
1-WHENEVER A LANE IS CLOSED, HIGH INTENSITY FLASHING LIGHTS SHALL BE USED TO DELINEATE THE FIRST ADVANCE WARNING SIGN.
2-STEADY BURNING LIGHTS SHALL BE USED TO MARK BARRICADES PLACED ON THE ROADWAY FOR CHANNELIZATION OF TRAFFIC. APPROVED SEQUENTIAL LIGHTING SHALL BE PERMITTED.

B. TO DELINEATE ALL OTHER HAZARDS OFF THE TRAVELWAY, LOW INTENSITY FLASHERS SHALL BE USED.

C. ON ALL OTHER HIGHWAYS:
1-LOW INTENSITY FLASHING LIGHTS SHALL BE PERMITTED TO DELINEATE THE FIRST ADVANCE SIGN.
2-ALL OTHER DELINEATION SHALL BE ACCOMPLISHED AS SET FORTH IN A-2 AND C-A-2 ABOVE.

RESPONSIBILITY IS HEREBY PLACED UPON THE CONTRACTOR FOR THE ERECTION AND MAINTENANCE OF ALL SIGNS AND BARRICADES OUTLINED IN THESE PLANS AS NECESSARY TO THE PROTECTION OF THE MOTORING PUBLIC THAT FALL WITHIN THE LIMITS OF THE PROJECT AND IMMEDIATELY BEFORE AND PERTAINING TO THE END BARRICADE OR ADVANCE DETOUR BARRICADES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE MAINTENANCE OF ALL STANDARD SIGNS THAT ARE LEFT IN PLACE AS ESSENTIAL TO THE SAFETY, MOVEMENT AND GUIDANCE OF TRAFFIC WITHIN THE LIMITS OF THE PROJECT. THE DEPARTMENT SHALL ERECT ANY DETOUR ROUTE MARKING REQUIRED TO GUIDE TRAVELERS AROUND THE CONSTRUCTION AREA BUT THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SIGNS OF THIS CATEGORY THAT ARE REQUIRED AT THE BARRICADES. THE DEPARTMENT WILL MAINTAIN DETOUR MARKINGS AFTER IT LEAVES THE PROJECT AREA.

PAVEMENT MARKINGS AT EITHER END OF, OR WITHIN THE LIMITS OF THE PROJECT THAT ARE IN CONFLICT WITH THE PROJECT SIGNING OR THE REQUIRED TRAFFIC MOVEMENTS SHALL BE ABRADED FROM THE PAVEMENT. IF, IN THE OPINION OF THE PROJECT ENGINEER, SPECIAL PAVEMENT MARKINGS ARE NEEDED AS A TRAFFIC CONTROL, AS IN CHANNELIZATION OR WIDTH TRANSITIONS, THEY SHALL BE REFLECTORIZED, REMOVABLE, TEMPORARY, LANE MARKING TAPE AND SHOULD BE ACCOMPANIED BY PROPER SIGNS. TYPICAL ILLUSTRATIONS ARE SHOWN IN THE "LOUISIANA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

O. W. Hansen

APPROVED: Damon D. White DATE: 3-16-77
CHIEF ENGINEER

	REVISIONS			REVISIONS	
6-72	Revised	H.N.T.	3-74	Text Revised	H.N.T.
12-72	General Revisions	H.N.T.	8-74	Text Revised	H.N.T.
9-73	Revised Barricades	H.N.T.	1-76	General Revisions	H.N.T.
9-73	General Revisions	H.N.T.	9-76	General Revisions	H.N.T.
9-73	Deleted Sheet No. 1	H.N.T.	2-77	Text Revised	H.N.T.

S-7 Rev. Sht. 3 HNT

STANDARD PLAN
HIGHWAY SIGN AND BARRICADE DETAILS
FOR CONSTRUCTION PROJECTS

DATED 19

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED	DETAILED	TRACED
CHECKED	CHECKED	CHECKED
IN CHARGE OF		Sheet 2 of 3 Sheets

RS 24 REV.

FAP	STATE PROJECT	PARISH	SHEET NO.
4-0-4 35(223)	450-37-02	ST CHARLES	157

170

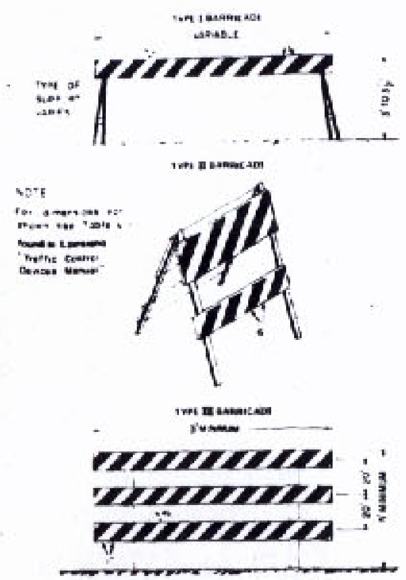


FIGURE 6-14 STANDARD BARRICADES
NOTE
Figure in Louisiana "Traffic Control Devices Manual"

DESIGN OF BARRICADES

THE STANDARD BARRICADE SHALL BE OF EITHER OF THREE TYPES TYPE I, TYPE II OR TYPE III AS HERE DESCRIBED.

A TYPE III BARRICADE SHALL CONSIST OF THREE HORIZONTAL RAILS OF 8 INCH MINIMUM - 12 INCH MAXIMUM WIDTH SPACED VERTICALLY AT APPROXIMATELY 20 INCHES CENTER TO CENTER WITH THE UPPER EDGE OF THE TOP RAIL AT A HEIGHT OF APPROXIMATELY 5 FEET ABOVE THE ROADWAY LEVEL. BARRICADES MAY BE OF VARIABLE LENGTH AS REQUIRED MINIMUM ALLOWABLE LENGTH 3 FEET AND LONG BARRICADES MAY BE ASSEMBLED FROM UNITS OF ANY CONVENIENT SIZE. THE TYPE III BARRICADE IS THE TYPE NORMALLY REQUIRED FOR MAJOR OPERATIONS WHERE THE BARRICADE MUST REMAIN IN PLACE FOR EXTENDED PERIODS.

A TYPE I BARRICADE SHALL CONSIST OF A SINGLE HORIZONTAL RAIL OF 8 INCH MINIMUM - 12 INCH MAXIMUM WIDTH AND LENGTH 2 FEET MINIMUM - MAXIMUM VARIABLE AS REQUIRED WITH ITS TOP EDGE 36 TO 42 INCHES ABOVE THE ROADWAY. THIS TYPE IS INTENDED FOR USE WHERE THE HAZARD IS RELATIVELY SMALL AS FOR EXAMPLE ON CITY STREETS OR FOR THE MORE OR LESS CONTINUOUS DELIMITING OF A RESTRICTED ROADWAY OR FOR TEMPORARY DAYTIME USE.

THE STANDARD MARKING FOR BARRICADES SHALL BE ALTERNATE ORANGE AND WHITE STRIPES SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREE IN THE DIRECTION TRAFFIC IS TO PASS. THE ENTIRE AREA OF ORANGE AND WHITE STRIPES SHALL BE REFLECTORIZED. BARRICADES SHALL BE STRIPED ON BOTH SIDES.

ALL BARRICADES USED AT NIGHT SHALL BE REFLECTORIZED USING ENCAPSULATED LENS REFLECTIVE SHEETING. FOR INCREASED EMPHASIS AT NIGHT, LIGHTING SHALL BE MOUNTED AT BARRICADES. RED FLAGS MAY BE SIMILARLY USED DURING DAYLIGHT HOURS.

DRUMS

DRUMS SET ON END AND USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE MADE OF METAL AND SHALL BE APPROXIMATELY 55 GALLONS IN CAPACITY. THE DRUMS SHALL BE PAINTED WITH AN APPROVED BLACK ENAMEL AND SHALL BE REFLECTORIZED AROUND THE ENTIRE CIRCUMFERENCE OF THE DRUM AS SHOWN IN FIGURE 10 BELOW. THE NON-REFLECTORIZED SPACES AT THE RIDGES BETWEEN THE REFLECTORIZED STRIPES SHALL BE NO MORE THAN 2" IN WIDTH. WHEN DRUMS ARE PLACED IN THE ROADWAY APPROPRIATE ADVANCE WARNING SIGNS SHOULD BE USED. DURING HOURS OF DARKNESS A FLASHING WARNING LIGHT SHOULD BE PLACED ON DRUMS USED SINGLY AND STEADY BURN WARNING LIGHTS SHOULD BE PLACED ON DRUMS USED IN A SERIES FOR TRAFFIC CHANNELIZATION. REFLECTORIZATION SHALL BE BY MEANS OF ENCAPSULATED LENS SHEETING.

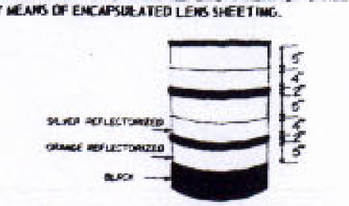
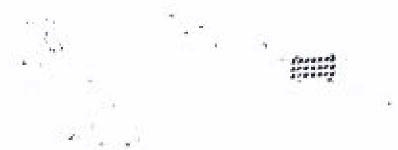


FIGURE 10 STANDARD DRUM MARKINGS

BARRICADES AT THE START OF A CONSTRUCTION PROJECT



WING BARRICADE

PROTECTING BRIDGE OR CULVERT WIDENING OPERATIONS

WING BARRICADES

IN ADVANCE OF A CONSTRUCTION OR MAINTENANCE AREA EVEN WHERE NO PART OF THE ROADWAY IS ACTUALLY CLOSED, WING BARRICADES MAY BE INSTALLED. THEY SHALL BE USED IN ADVANCE OF ALL BRIDGE OR CULVERT WIDENING OPERATIONS. WING BARRICADES ARE TYPE III BARRICADES ERECTED ON THE SHOULDER ON ONE OR BOTH SIDES OF THE PAVEMENT TO GIVE THE SENSATION OF A NARROWING OR RESTRICTED ROADWAY. WING BARRICADES MAY BE USED AS A MOUNTING FOR THE ADVANCE WARNING OR GUIDE SIGNS OR FOR FLASHERS. EXAMPLE OF WING BARRICADES ARE SHOWN ABOVE.

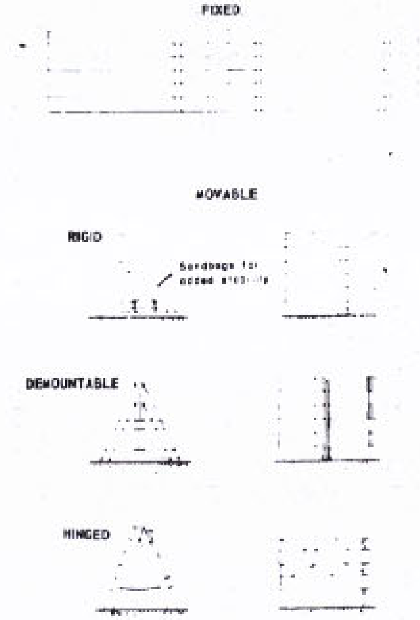


FIGURE 13
TYPE III BARRICADE CONSTRUCTION - TYPICAL EXAMPLES

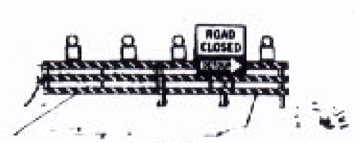


FIGURE 11
BARRICADE CLOSING A ROAD

APPLICATION OF BARRICADES

BARRICADES, AS THE NAME IMPLIES, ARE GENERALLY USED TO BLOCK OFF A PART OR ALL OF A ROADWAY.

WHERE A ROAD IS CLOSED TO TRAFFIC, TYPE III BARRICADES SHALL BE ERECTED AT THE POINTS OF CLOSURE.

FOUR STEADY BURNING LIGHTS SHALL BE PLACED ON THE BARRICADE AS SHOWN ABOVE. IF ONLY ONE LANE OF THE TRAVELWAY IS CLOSED BY A BARRICADE, TWO LIGHTS SHALL BE USED.

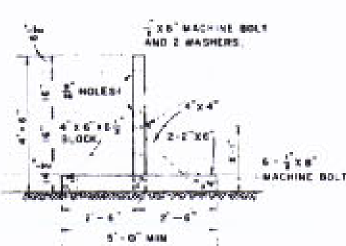


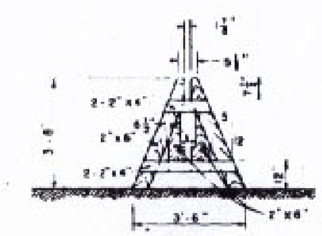
FIGURE 14

STAND

APPROVED: Demary D. Webb CHIEF ENGINEER DATE: 2-11-77

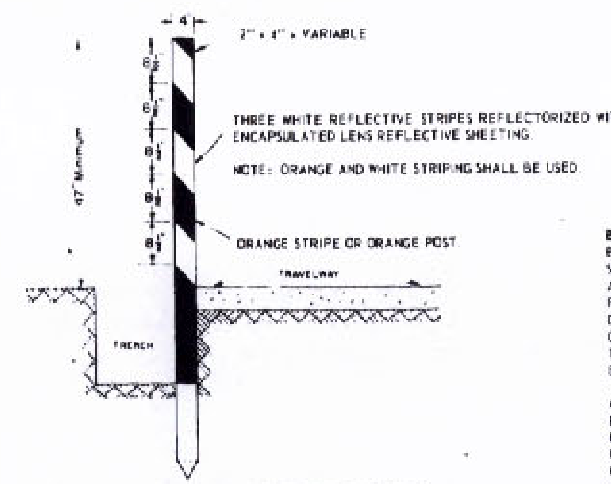
NOTE: CONTINUE STRIPES ON OTHER SIDE IN SAME DIRECTION SHOWN ON DETAIL

ELEVATION



STAND

FIGURE 15



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 EDGE OF EXISTING SLAB.

FIGURE 16

ALIGNMENT DELINEATOR

ALIGNMENT DELINEATOR

THE ALIGNMENT DELINEATOR SHALL BE USED TO PROTECT ALL TRENCHING OPERATIONS PARALLEL TO CENTER LINE WHETHER ON THE SHOULDER OF THE ROAD OR WITHIN THE TRAVELWAY. IT IS ALSO USED TO PROTECT FRESH CONCRETE AND IS TO BE DRIVEN DIRECTLY INTO THE CONCRETE. THE POINT TO BE WRAPPED IN PAPER OR GREASED FOR EASY REMOVAL. THE DELINEATOR SHOULD BE PLACED AS TO THE TRAVELWAY EDGE OF THE TRENCH AS POSSIBLE AT MAXIMUM INTERVALS OF 200'-ON TANGENT SECTIONS AND 100' ON CURVES. THE INTERVAL TO BE REDUCED 45 DEGREE OF CURVATURE INCREASES SO THAT THE EDGE OF TRENCH IS AT ALL TIMES CLEARLY DELINEATED.

THE W8-4 LOW SHOULDER SIGN AND LIGHT SHALL BE USED 500' IN ADVANCE OF EACH SEPARATE SECTION OF OPEN TRENCH. WHERE TWO WAY TRAFFIC DIVIDES AROUND A TRENCH, WINDROW, OR OTHER OPERATION WITHIN THE TRAVELWAY BOTH EDGES OF THE HAZARD SHALL BE DELINEATED. THE DELINEATOR SHALL BE DRIVEN SO THAT THE REFLECTORIZED DIAGONALS FORM A 45 DEGREE ANGLE WITH THE PAVEMENT EDGE AS ILLUSTRATED.

LIGHTS MAY ALSO BE USED IN LIEU OF DELINEATORS ON TRENCHING OR OTHER OPERATIONS REQUIRING ROAD EDGE DELINEATION.

O. W. Hansen

BARRICADES: ALL BARRICADE RAILS ON TYPE I AND TYPE II BARRICADES SHALL BE CONSTRUCTED OF EITHER CLEAR SOUND LUMBER OF NOMINAL DIMENSION OR OF 5/8" GRADE A-A GROUP 1 EXTERIOR TYPE OR BETTER PLYWOOD. EACH PANEL OF PLYWOOD USED SHALL BE IDENTIFIED WITH THE DFPA GRADE-TRADEMARKS 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 CLEAR SOUND LUMBER OF NOMINAL DIMENSIONS 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 SHALL CONFORM IN DIMENSION, DIRECTION OF SLOPE AND ANGLE TO THE DETAILS SHOWN AND SHALL BE REFLECTORIZED WITH ENCAPSULATED LENS REFLECTIVE SHEETING. BOTH SIDES SHALL BE STRIPED.

PAINT USED SHALL MEET THE APPROVED SPECIFICATIONS OF THE DEPARTMENT AS TO BOTH COLOR AND COMPOSITION.

REFLECTIVE STRIPES SHALL BE REFLECTORIZED WITH ENCAPSULATED LENS REFLECTIVE SHEETING.

STRIPES SHOULD SLOPE DOWNWARD TOWARD THE DESIRED DIRECTION OF TRAVEL.

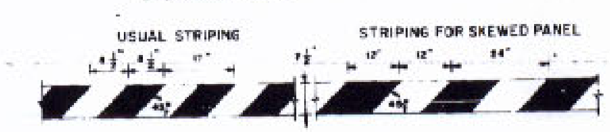
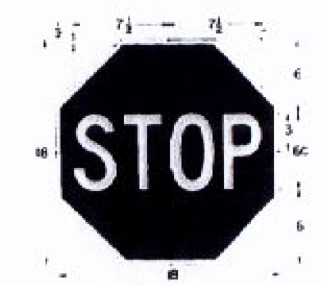


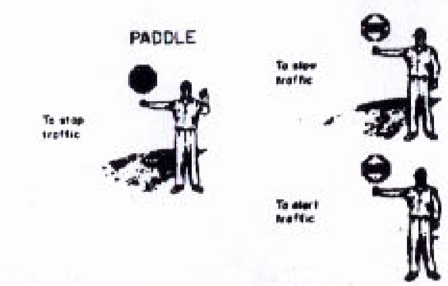
FIGURE 18
DETAILS OF STRIPING



RED BACKGROUND
WHITE BORDERS
AND LEGEND
TO BE MADE OF
.08 ALUMINUM
OR .04 TEMPERED
ALUMINUM

ORANGE REFLECTORIZED BACKGROUND
AREA OUTSIDE OF DIAMOND - BLACK OR
LIGHT BLUE
TO BE MADE OF .08 ALUMINUM
OR .04 TEMPERED ALUMINUM

FIGURE 17
DETAILS OF HAND SIGN



USE OF HAND SIGNALLING DEVICES BY FLAGMAN

FLAGMAN USING A HAND SIGN SHALL BE USED WHEREVER THE CONSTRUCTION OPERATION NECESSITATES TWO WAY TRAFFIC TO USE A SINGLE LANE WHERE MOVING EQUIPMENT ENTERS, CROSSES OR LEAVES THE TRAVELWAY AND WELL IN ADVANCE OF BLASTING OR ANY OTHER HAZARDOUS OPERATION REQUIRING THE ABSOLUTE CONTROL OF TRAFFIC. HAND SIGNS SHALL BE CONSTRUCTED AS ILLUSTRATED. FOR NIGHT OPERATIONS THE FLAGMEN SHOULD BE EQUIPPED WITH A BRIGHT RED LIGHT. FLAGMEN HAVE A DEFINITE RESPONSIBILITY TO THE MOTORING PUBLIC, THEREFORE, ONLY ALERT, INTELLIGENT AND COURTEOUS MEN SHOULD BE USED AND THEY SHOULD BE SCHOOLED IN THE FOLLOWING STANDARD PROCEDURES: A. STAND TO ONE SIDE OF TRAFFIC 150' TO 250' IN ADVANCE OF THE OPERATION OR BARRICADE. B. STAND ALONE. NEVER PERMIT A GROUP OF WORKMEN TO CONGREGATE AROUND HIM. C. WHEN TRAFFIC IS PERMITTED TO MOVE SLOWLY, STAND 90 DEGREES TO TRAFFIC WITH THE HAND SIGN FACING TRAFFIC. EXTEND THE HAND SIGN INTO THE LANE WITH THE WORD "SLOW" FACING APPROACHING TRAFFIC. D. TO STOP TRAFFIC IN THE DAYTIME HOLD THE SIGN HORIZONTALLY IN THE EXTENDED HAND INTO THE PATH OF THE ONCOMING VEHICLE WITH THE WORD "STOP" FACING APPROACHING TRAFFIC. TO STOP TRAFFIC AT NIGHT USE A BRIGHT RED LIGHT MOVING IT BACK AND FORTH ACROSS THE PATH OF APPROACHING TRAFFIC. TO RELEASE TRAFFIC NEVER SIGNAL WITH THE SIGN OR LIGHT. EITHER USE THE FREE HAND TO SIGNAL OR USE VERBAL INSTRUCTIONS. E. BE COURTEOUS IN EXPLAINING THE REASON FOR THE DELAY AND IN ISSUING ANY INSTRUCTIONS TO THE MOTORISTS. THE USE OF AN ORANGE VEST AND OR AN ORANGE CAP SHALL BE REQUIRED FOR FLAGMAN DURING WORK AT NIGHT. THESE GARMENTS SHALL BE REFLECTORIZED.

REVISIONS			REVISIONS		
6-72	Revised	H.M.T.	3-74	Text Revised	H.M.T.
12-72	General Revisions	H.M.T.	8-74	Text Revised (Barricades)	H.M.T.
7-73	Revised Sign Codes	H.M.T.	1-76	General Revisions	H.M.T.
9-73	General Revisions	H.M.T.	5-76	General Revisions	H.M.T.
9-73	Deleted Sheet No. 1	H.M.T.	2-77	Text Revised	H.M.T.

3-77 Rev. Sheet 3 H.M.T.

STANDARD PLAN
HIGHWAY SIGN AND BARRICADE DETAILS
FOR CONSTRUCTION PROJECTS

DATED

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED / DETAILED / TRACED
CHECKED / CHECKED / CHECKED
IN CHARGE OF

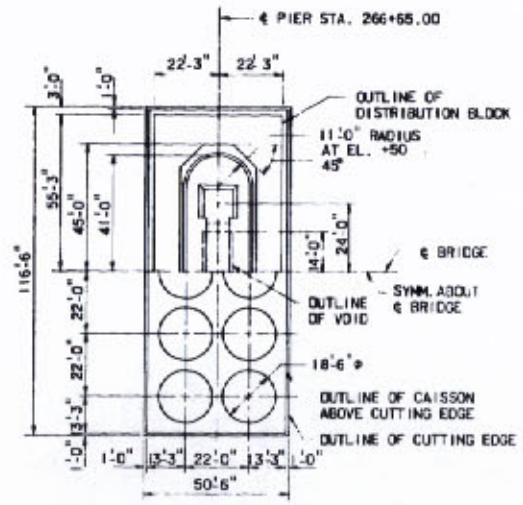
Sheet 3 of 3 Sheets

RS 24 REV.

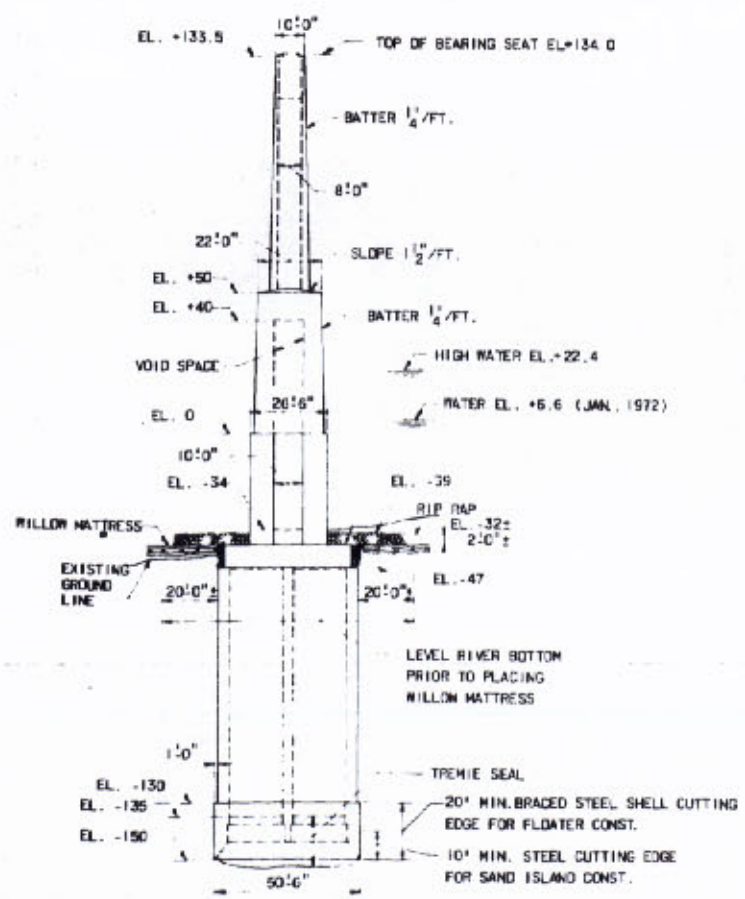
FAI	STATE PROJECT	PARISH	SHEET NO.
I-410-4(351)223	450-37-02	ST. CHARLES	158

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

171



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 B
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)	55,326	35,426	11,917	11,917
BUOYANT WEIGHT OF PIER SUBSHAFT		(KIPS)	15,524	17,612	6,849	6,849
BUOYANT WEIGHT OF DISTRIBUTION BLOCK		(KIPS)	8,775	3,882	3,564	4,158
BUOYANT WEIGHT OF CAISSON		(KIPS)	59,102	83,678	24,657	25,972
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)	2,958	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	2.06

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

	GROSS	BUOYANT
EARTH WEIGHT	120 LB/C.F.	57.6 LB/C.F.
CONCRETE WEIGHT	150 LB/C.F.	87.5 LB/C.F.
RIPRAP WEIGHT	96.4 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.

INFORMATION PURPOSES ONLY

O.W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

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

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: MAR. 15, 1974 | SCALE: 1"=30' | DWG. NO. 7
DRAWN BY: SLH | CHKD. BY: CTF | IN CHARGE: HEH | APPROVED: TRK

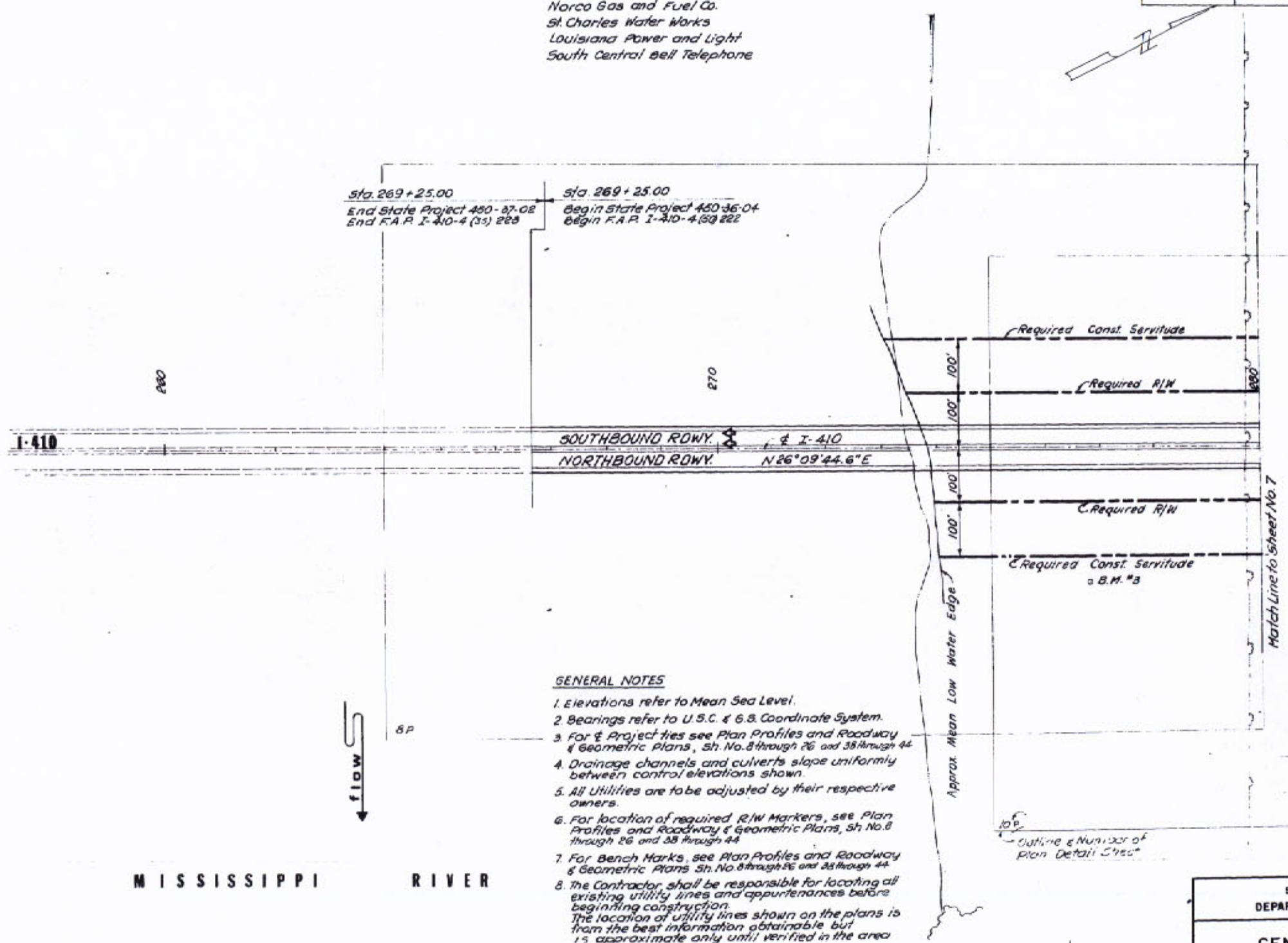
FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)222	450-36-04	ST. CHARLES	6

F.A.P.	STATE PROJECT	PARISH	SHT. No.
I-410-4(35)223	450-37-02	ST CHARLES	159

172

UTILITIES:

Shell Pipeline Corp.
United Gas Pipeline Corp.
Norco Gas and Fuel Co.
St. Charles Water Works
Louisiana Power and Light
South Central Bell Telephone



GENERAL NOTES

1. Elevations refer to Mean Sea Level.
2. Bearings refer to U.S.C. & G.S. Coordinate System.
3. For ℄ Project ties see Plan Profiles and Roadway & Geometric Plans, Sh. No. 8 through 26 and 38 through 44.
4. Drainage channels and culverts slope uniformly between control elevations shown.
5. All Utilities are to be adjusted by their respective owners.
6. For location of required R/W Markers, see Plan Profiles and Roadway & Geometric Plans, Sh. No. 8 through 26 and 38 through 44.
7. For Bench Marks, see Plan Profiles and Roadway & Geometric Plans Sh. No. 8 through 26 and 38 through 44.
8. The Contractor shall be responsible for locating all existing utility lines and appurtenances before beginning construction. The location of utility lines shown on the plans is from the best information obtainable but is approximate only until verified in the area of construction.
9. Clearing and grubbing shall extend to the right-of-way lines, but shall be as required by Construction Operations within Construction Servitudes.

O. W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GENERAL PLAN-1

MISSISSIPPI RIVER BRIDGE (LULING)

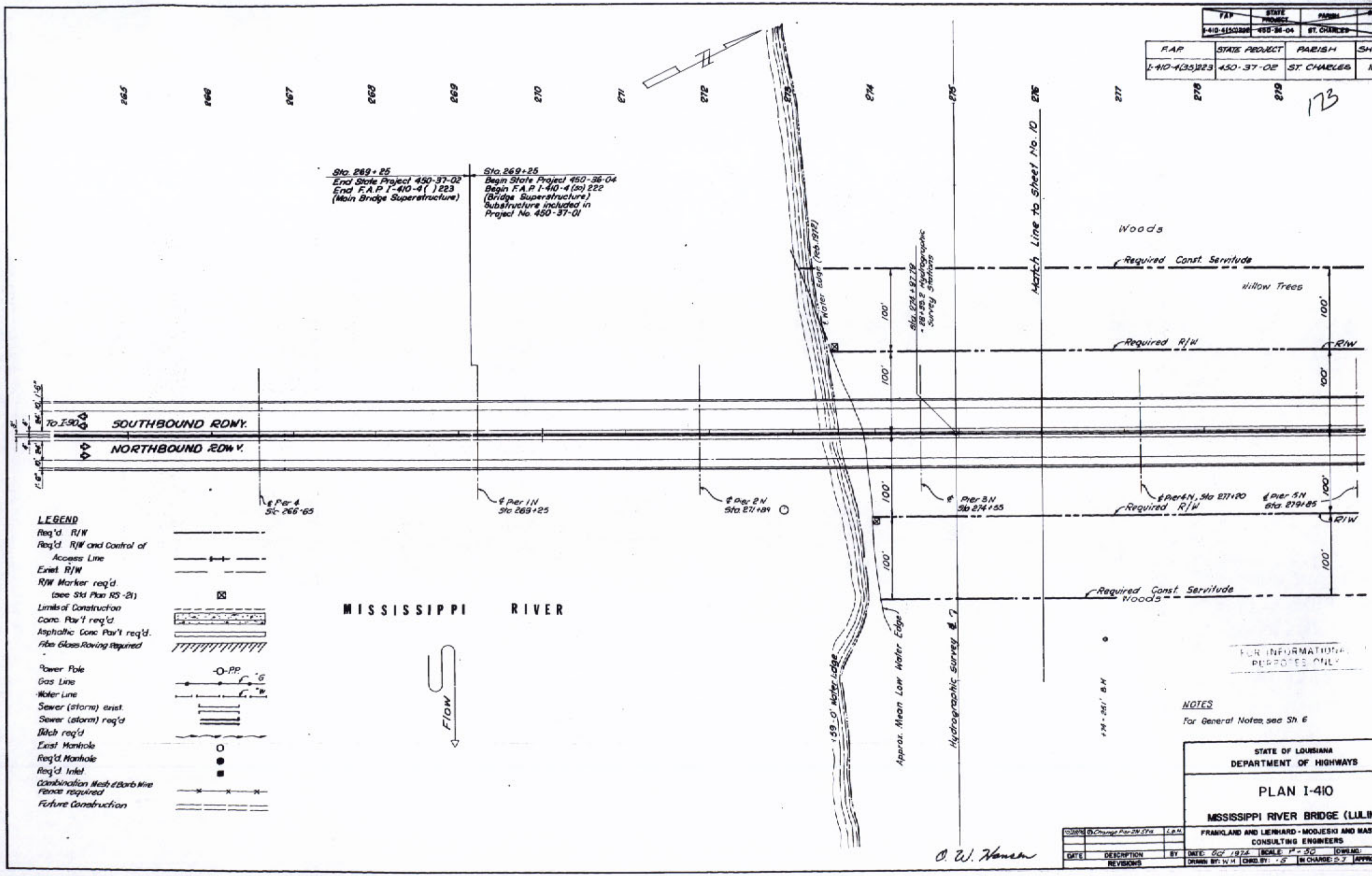
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE: [illegible] 1974 | SCALE: 1" = 100' | DWG. NO.: 6
DRAWN BY: [illegible] | CHKD. BY: [illegible] | IN CHARGE: G. J. | APPROVED: AWL

F.A.P.	STATE PROJECT	PARISH	SHT. No.
I-410-4(35)223	450-37-02	ST. CHARLES	160

173



FOR INFORMATIONAL PURPOSES ONLY

NOTES

For General Notes, see Sh. 6

O. W. Hansen

DATE	DESCRIPTION	BY
10/30/74	Change Pier 2N Sta.	L.P.M.

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PLAN I-410

MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

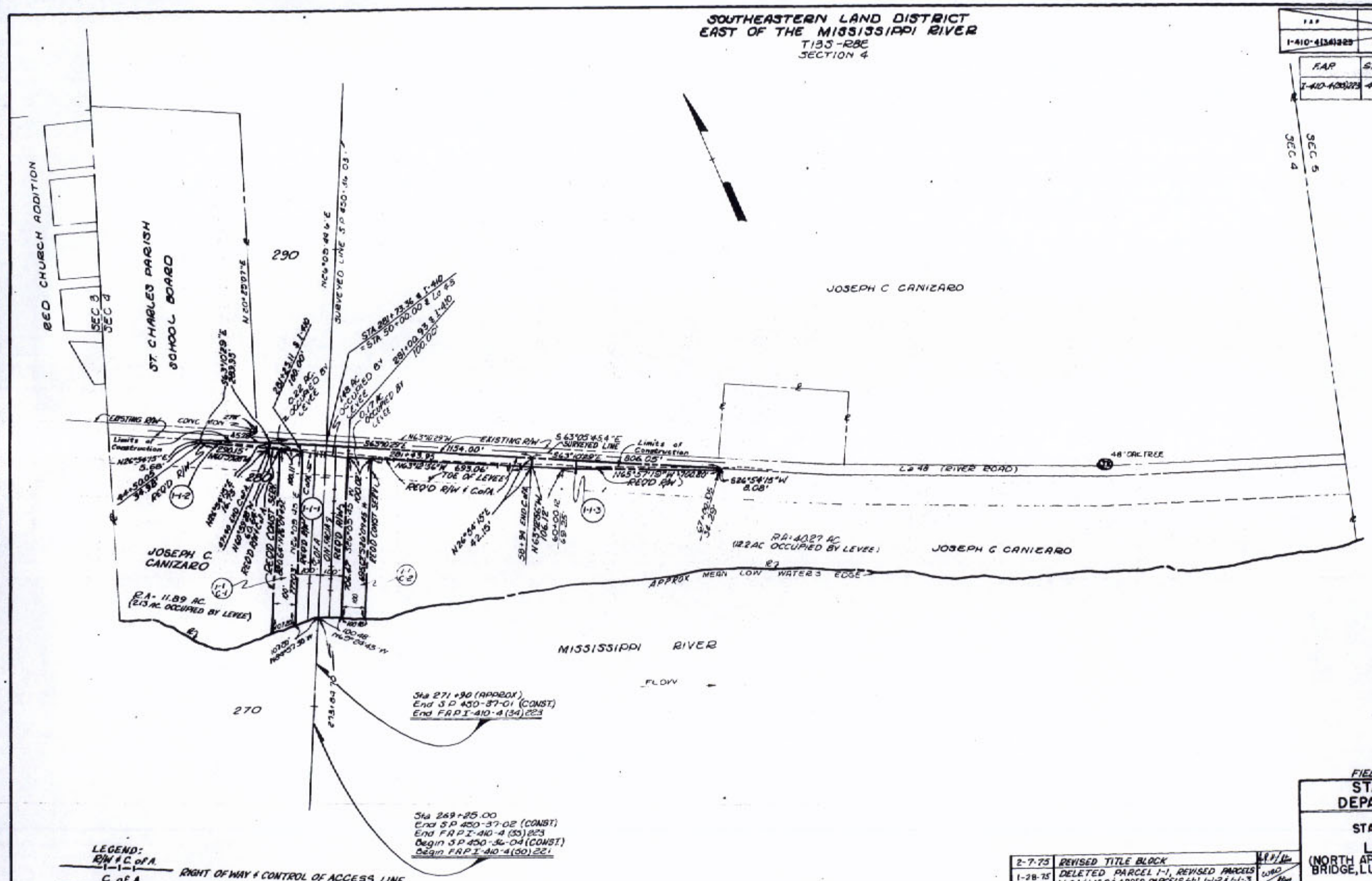
DATE: Oct. 1974 | SCALE: 1" = 50' | DWG. NO.: 8
DRAWN BY: W.M. | CHKD. BY: J.S. | IN CHARGE: S.J. | APPROVED: MAC.

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

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

F.A.P.	STATE PROJECT	PARISH	SHT. NO.
I-410-4(33)223	450-37-02	ST. CHARLES	161

174



FOR INFORMATION PURPOSES ONLY

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, 22+00.00, ARE RELATED TO THE SURVEYED LINE.

O. W. Hansen

PARCEL	OWNER	ACQUISITION	AREA	ACQ-LA. DEPT. OF HWYS.
1-1-3	JOSEPH C. CANIZARO	C.O.B. 120, F.O. 399, 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. 537, APR. 3, 1972	4.369 AC.	
1-1-C-2			1.609 AC.	
1-1-C-1			1.234 AC.	
1-1			DELETED	

DATE	REVISIONS	BY
2-7-75	REVISED TITLE BLOCK	
1-28-75	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	WBO
11/21/74	GENERAL REVISIONS	
5-21-74	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	
10/26/73	ADDED PARCELS 1-1-C, 1-1-C-2 & ADDED C OF A	

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(48)217
LAPLACE-BOUTTE HWY.
(NORTH APPROACH TO THE MISSISSIPPI RIVER BRIDGE, LULING)
ST. CHARLES PARISH
I-410

FRANK B. CHACHERE REG. LAND SURVEYOR	JAMES R. WHEAT REG. LAND SURVEYOR	
DATE: 7-5-73	DRAWN BY: L.D.S.	SHEET
SCALE: 1" = 200'	COMPUTER: J.R.W.	1C

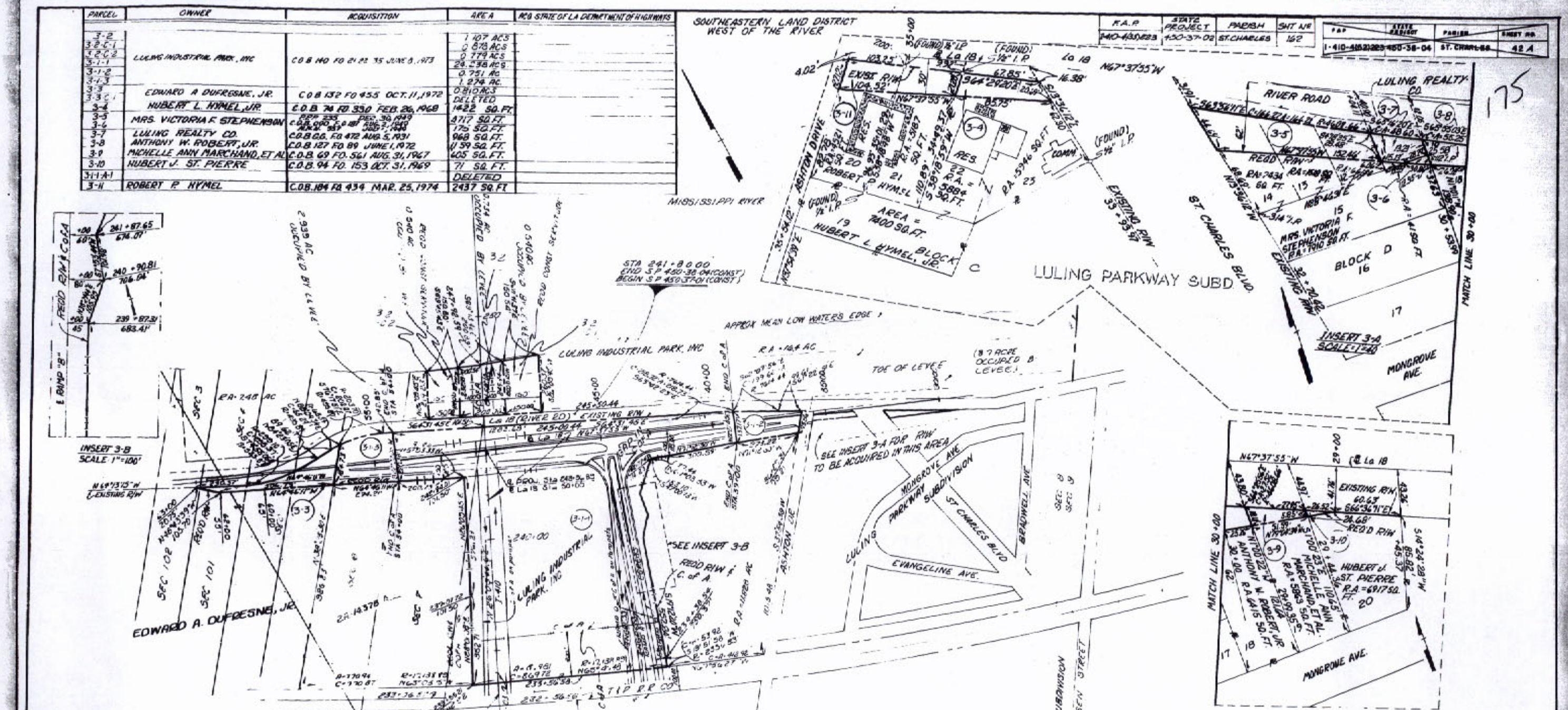
FILE NO. 2-5-1-68

PARCEL	OWNER	ACQUISITION	AREA	REQ STATE OF LA DEPARTMENT OF HIGHWAYS
3-2			1.107 ACS	
3-2-C-1			0.678 ACS	
3-2-C-2	LULING INDUSTRIAL PARK, INC	C.O.B. 140 FO. 21 & 22 35 JUNE 6, 1973	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. 350 FEB. 26, 1968	1422 SQ. FT.	
3-5	MRS. VICTORIA F. STEPHENSON	REF. 235 DEC. 30, 1949	8717 SQ. FT.	
3-6		C.O.B. 090 P. 187 AUG. 7, 1973 AKA: 857 AUG. 7, 1973	175 SQ. FT.	
3-7	LULING REALTY CO.	C.O.B. 66 FO. 472 AUG. 5, 1931	968 SQ. FT.	
3-8	ANTHONY W. ROBERT, JR.	C.O.B. 127 FO. 89 JUNE 1, 1972	1159 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-A-1			DELETED	
3-11	ROBERT P. HYMEL	C.O.B. 184 FO. 434 MAR. 25, 1974	2437 SQ. FT.	

F.A.P.	STATE PROJECT	PARISH	SHT. NO.
I-410-4(3)223	450-37-02	ST. CHARLES	162

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-410-4(3)223	450-38-04	ST. CHARLES	42 A

175



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 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. DAYS 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

O.W. Hansen

PARCEL	OWNER	ACQUISITION	AREA	REQ 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
5-5-76	DELETED PARCEL 3-1-1-A-1	LND/Hw
1-28-76	CORRECTED AREA & TIES ON PARCEL 3-8	LND/Hw
11-24-75	REVISED PARCEL 3-4 & ADDED PARCEL 3-11	LND/Hw
5-19-75	REVISED PARCELS 3-3, 3-4, 3-5 & 3-8, ADDED PARCELS 3-9, 3-10 & 3-1-1-A-1 & DELETED PARCEL 3-3-C-1	LND/Hw
2-24-75	ADDED PARCEL 3-4, 3-5, 3-6, 3-7, 3-8	LND/Hw
8-22-74	REVISED OWNERSHIP PARCELS 3-3 & 3-3-C-1	LND/Hw
8-12-74	REVISED PARCELS 3-1-1, 3-1-2, & 3-1-3	LND/Hw
12-2-73	REVISED OWNERSHIP PARCELS 7-2-3-C-1, 7-2-C-2, 7-1-1, 7-1-2	LND/HGL
11-16-73	Revised Sheet No. Deleted Parcels 7-2-7-C-1, 7-2-C-2, 7-1-1, 7-1-2, 7-1-3, 7-3, 7-3-C-1, Added 7-2, 7-2-C-1, 7-2-C-2, 7-1-1, 7-1-2, 7-1-3, 7-3, 7-3-C-1	LND/Hw
10-24-73	Revised All Parcels And C of A.	LND/Hw
8-30-73	Deleted Parcels 7-1, 7-1-C-1, & 7-1-C-2. Revised Parcels 7-2-C-1 and 7-2-C-2. Added Parcels 7-1-1, 7-1-2, 7-1-3, 7-1-4, 7-3-C-1	LND/Hw

FOR INFORMATION PURPOSES ONLY

RIGHT OF WAY PLAN - 2F

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

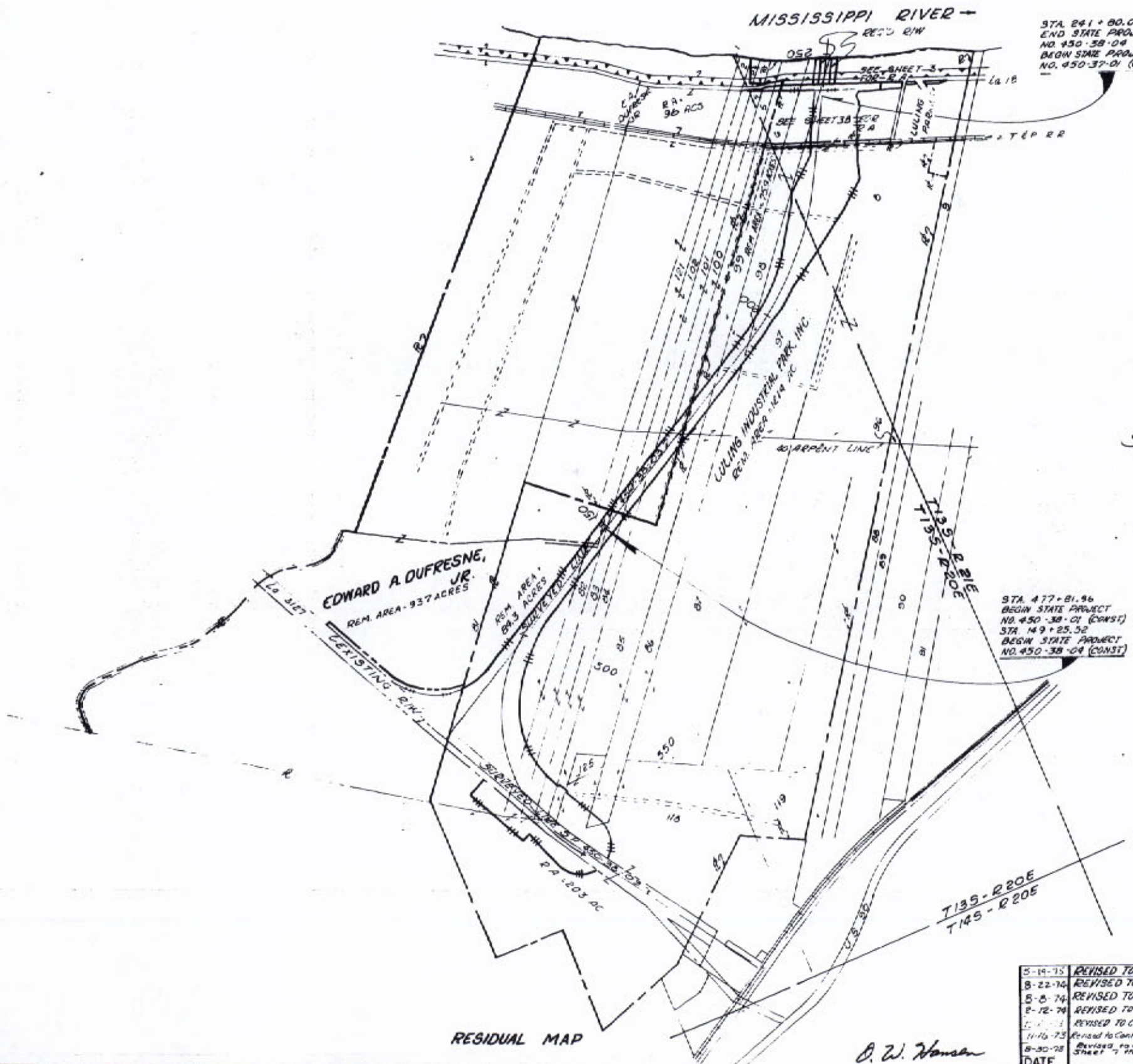
FRANK B. CHACHERE, REG. LAND SURVEYOR
JAMES R. WHEAT, REG. LAND SURVEYOR

DATE: 7-5-73 | DRAWN BY: L.D.S. | SHEET
SCALE: 1"=200' | COMPUTER: J.R.W. | 3G

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-410-4(33)223	450-38-04	ST. CHARLES	4.3

F.A.P	STATE PROJECT	PARISH	SHT. Nº
I-410-4(33)223	450-37-02	ST. CHARLES	16.3

176



SOUTHEASTERN LAND DISTRICT
WEST OF THE MISSISSIPPI RIVER

RESIDUAL MAP

O. W. Hansen

DATE	REVISIONS	BY
5-19-75	REVISED TO CONFORM WITH SHEET 3D	
8-22-74	REVISED TO CONFORM WITH SHEETS 2 & 3B	
5-8-74	REVISED TO CONFORM WITH SHEET 1	
2-12-74	REVISED TO CONFORM WITH SHEET 3	
[illegible]	REVISED TO CONFORM WITH SHEETS 1 & 3	
11-16-73	Revised to Conform With Sheets 1 & 3. Revised Sheet No.	
8-30-73	Revised to conform with revisions on Sheet 7 this date	

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)
FA.P I-410-4(46)223
ROUTE I-410
ST. CHARLES PARISH

FRANK B. CHACHERE
REG. LAND SURVEYOR

JAMES R. WHEAT
REG. LAND SURVEYOR

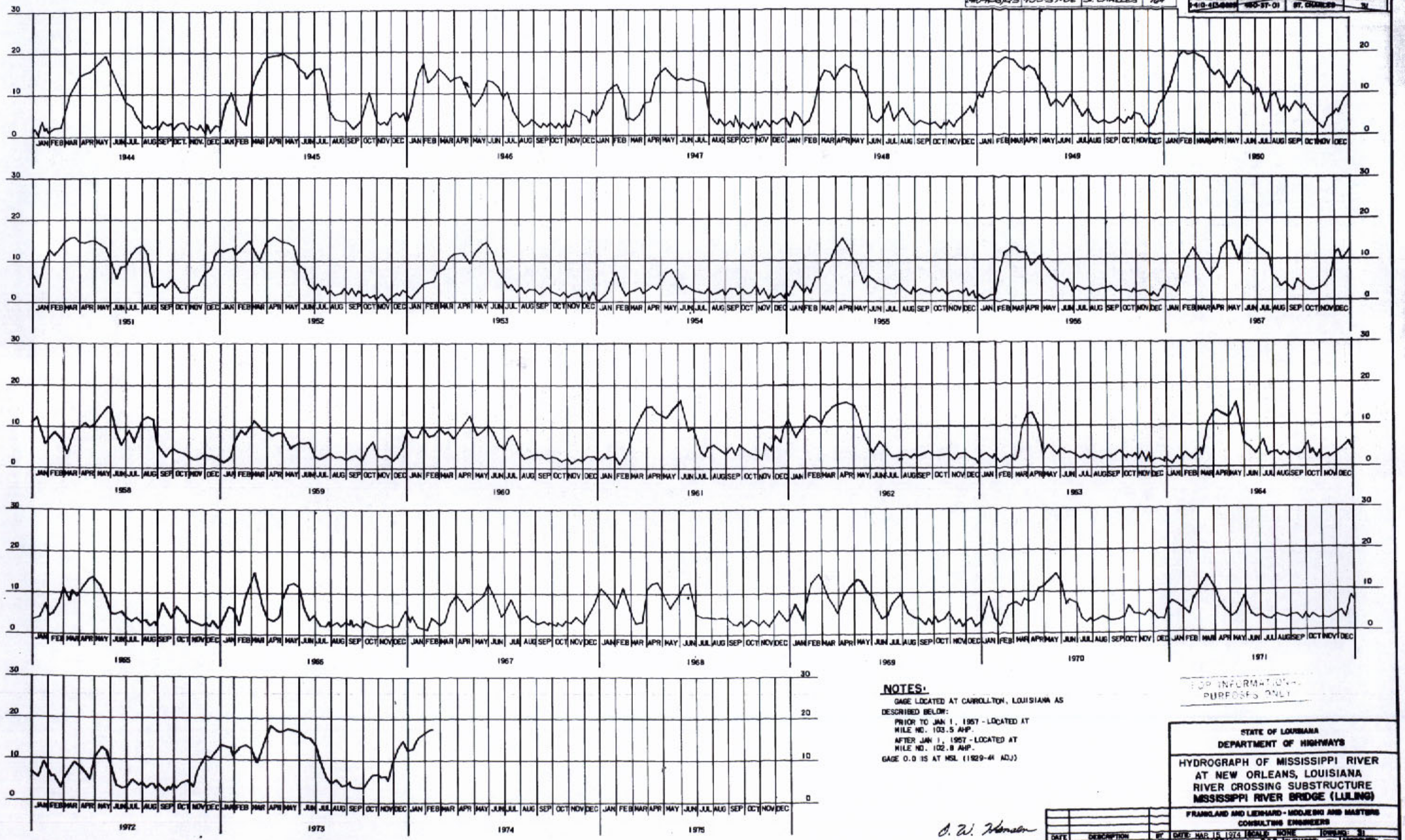
DATE: 7-5-73
SCALE: 1" = 1000'
DRAWN BY:
COMPUTER:
SHEET 4

FILE NO 2-5-1-69

177

F.A.P.	STATE PROJECT	PARISH	SHT NO
(410-4(35)223	450-37-02	ST. CHARLES	164

FAP	STATE PROJECT	PARISH	SHEET NO.
4-(0-4(35)223	450-37-01	ST. CHARLES	31



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 (1929-44 ADJ)

FOR INFORMATIONAL PURPOSES ONLY

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

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

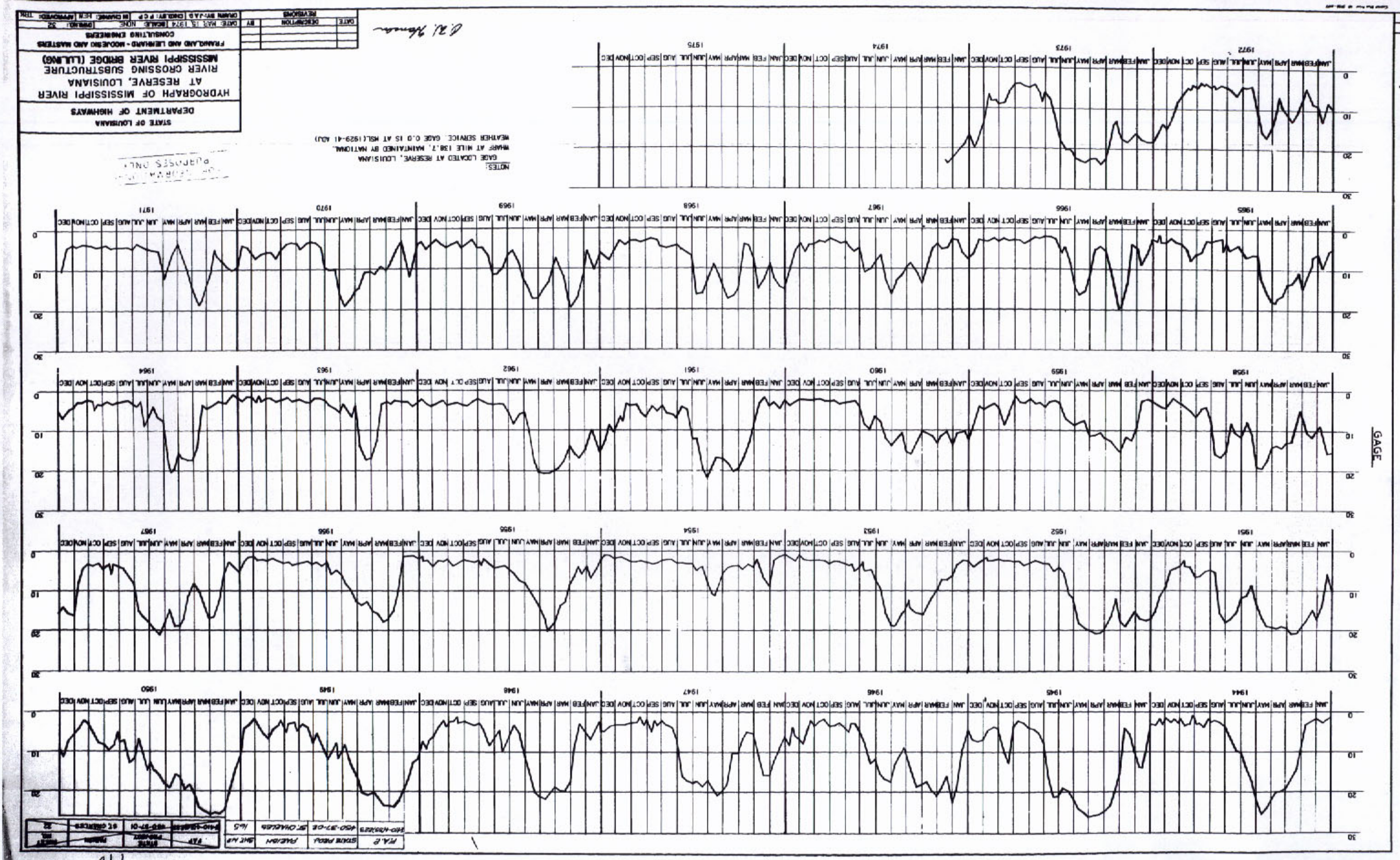
FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE: MAR 15 1974 SCALE: NONE DWG NO: 31
DRAWN BY: JRD CHKD. BY: PCP IN CHARGE: HEW APPROVED: TBK

O. W. Hansen

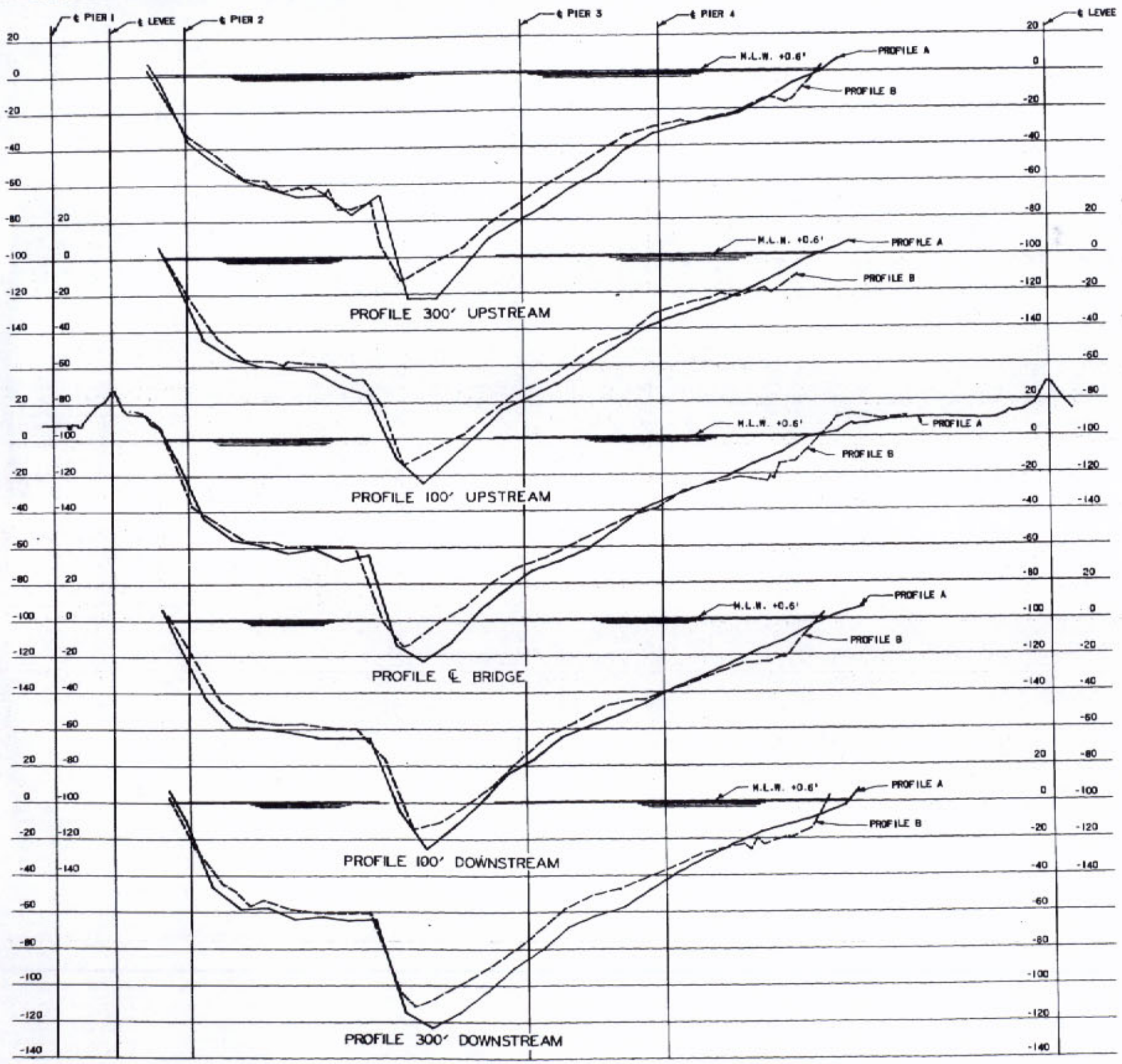
0502
0202


STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS
HYDROGRAPH OF MISSISSIPPI RIVER
AT RESERVE, LOUISIANA
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)
FRANKLAND AND LIEBHARD - MOOJESIO AND MASTERS
CONSULTING ENGINEERS
DATE: MAR 15, 1974 SCALE: NONE DWG NO: 32
DRAWN BY: J.A.G. CHKD BY: P.C.P. IN CHARGE: H.F.N. APPROVED: T.R.K.
DATE DESCRIPTION BY
REVISIONS
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)
GAGE
P.A.P. STATE PROJ. PARISH SHT NO
H10-H35/223 450-37-02 ST. CHARLES 16-5
178

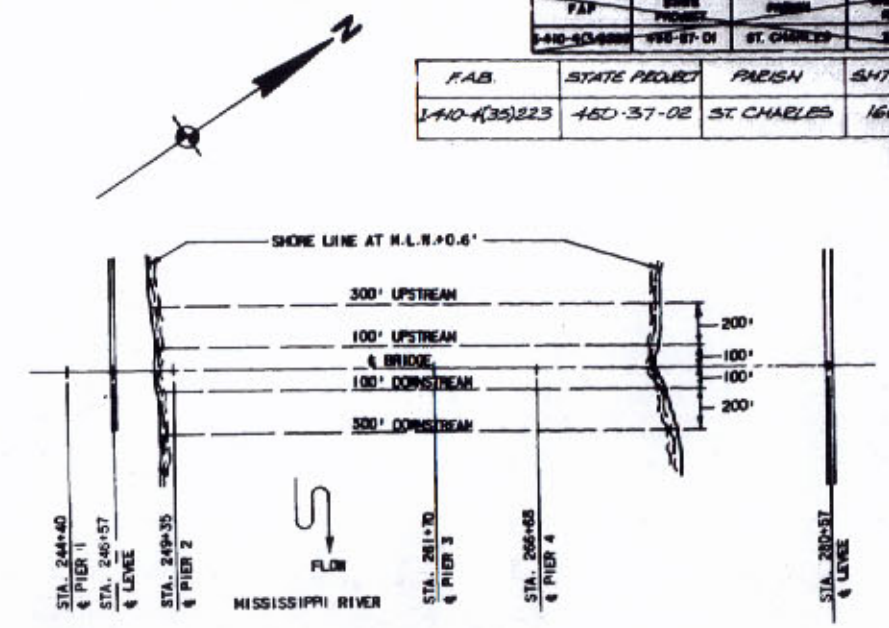
179

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	460-37-01	ST. CHARLES	33

F.A.B.	STATE PROJECT	PARISH	SHT. NO.
I-410-4(35)223	460-37-02	ST. CHARLES	166



SCALE: 1"=200' HORIZ.
1"=30' VERT.



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.

FOR INFORMATION PURPOSES ONLY

O. W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

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

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE: MAR. 15 1974 | SCALE: AS NOTED | DWG. NO.: 33
DRAWN BY: JAD | CHKD. BY: HIC | IN CHARGE: HEW | APPROVED: TRK

0502
0202

180

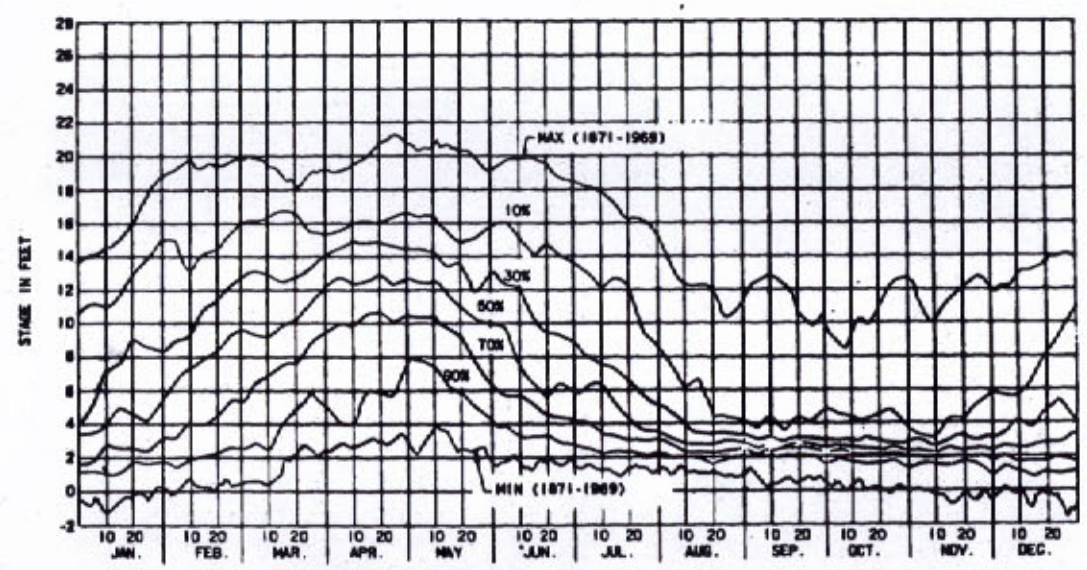
FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-01	ST. CHARLES	24

F.A.P.	STATE PROJECT	PARISH	SHT. NO.
I-410-4(35)223	450-37-02	ST CHARLES	167

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	2.8	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	6.8
13	5.1	5.7	6.8
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



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

Following is information extracted from the Climatic Atlas of the United States, dated 1968, in regard to prevailing wind conditions for New Orleans, La.

PREVAILING DIRECTION AND MEAN SPEED (MPH)

Jan.	N 8	July	SW 6.5
Feb.	NE 9	Aug.	SE 6
March	SE 9	Sept.	NE 7
April	SE 8	Oct.	NE 7
May	SE 8	Nov.	NE 8
June	SE 7	Dec.	NE 8

Annual SE 8

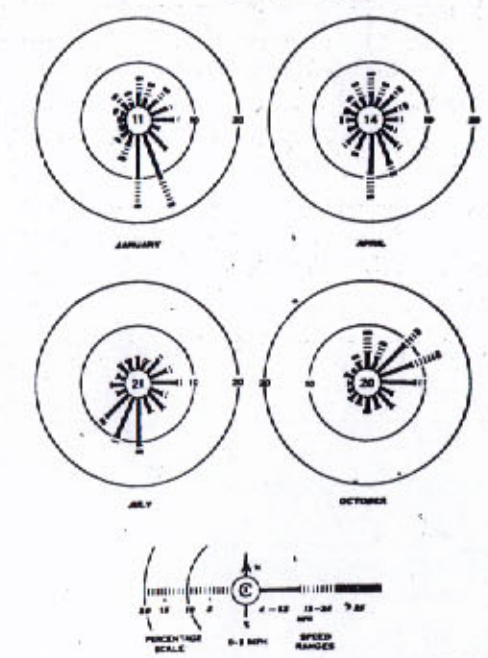
FASTEST SPEED AND DIRECTION

Jan.	NE 41	July	NW 37
Feb.	E 44	Aug.	NE 41
March	NW 43	Sept.	SE 99
April	NE 35	Oct.	SE 31
May	NE 43	Nov.	NW 28
June	NE 40	Dec.	NW 31

NEW ORLEANS, LOUISIANA

TERMINAL FORECASTING REFERENCE MANUAL

SURFACE WINDS



Based on Hourly Observations

Period of Record: March 1943 - Feb. 1954 inclusive

June 1957

FOR INFORMATION PURPOSES ONLY

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

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

FRANKLIN AND MARSH - MONSON AND MARSH
CONSULTING ENGINEERS

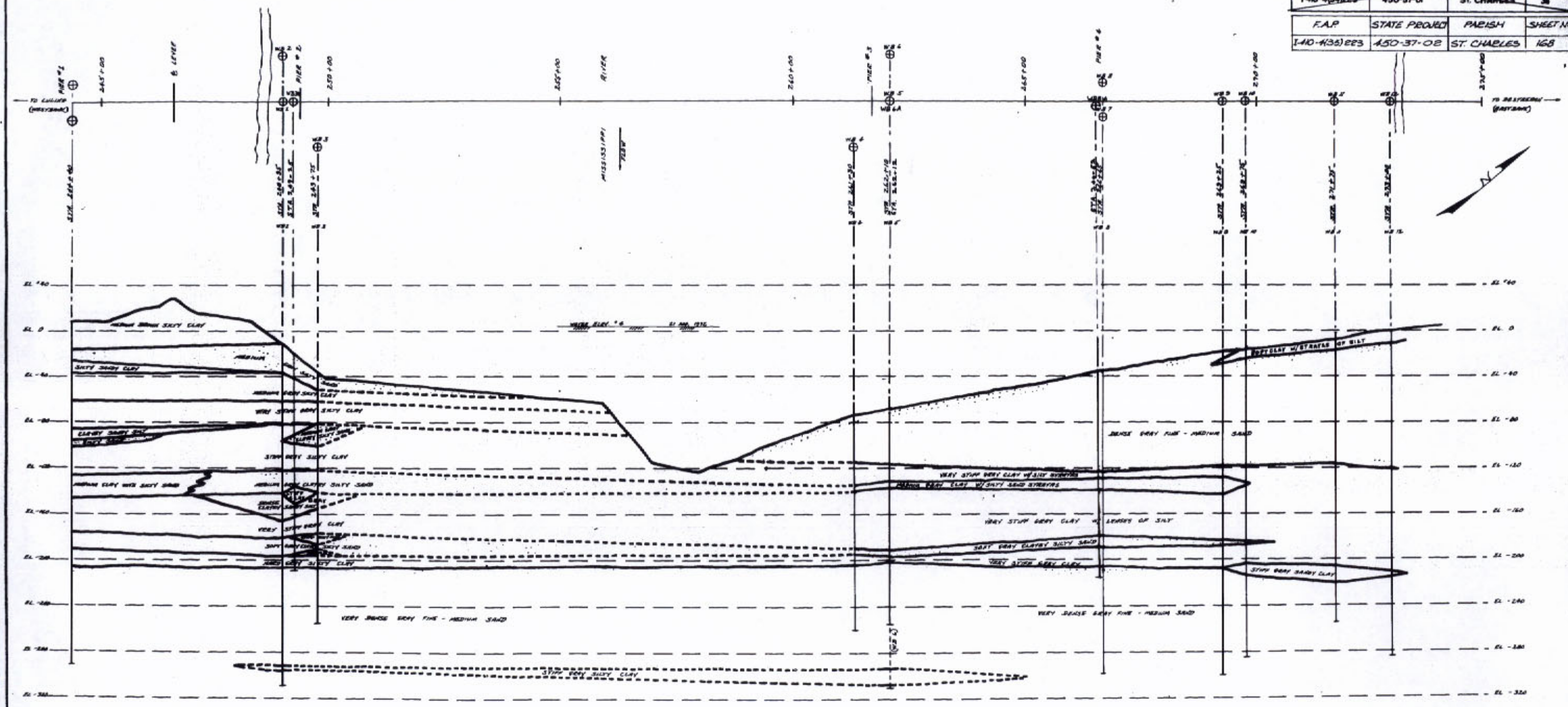
DATE	BY	DATE	BY
		5 MAR. 15 1974	

O. W. Hansen

1-81

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

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-02	ST. CHARLES	168



FOR INFORMATION ONLY

SCALE:
HORIZONTAL 1" = 100'
VERTICAL 1" = 40'

ELEVATIONS FROM MSL

FOR INFORMATIONAL PURPOSES ONLY

O. W. Hanson

INTERSTATE 410 BRIDGE AT LULING

GENERALIZED CROSS-SECTION

DATED FEB 28 1973

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED	DETAILED G. CRAMER	TRACED W. FOSTER
CHECKED	CHECKED	CHECKED G. CRAMER

MATERIAL SECTION

DATE	DESCRIPTION	BY

REVISIONS

SOIL TYPE & COLOR	qu	φ	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. BR. SI. CL. w/TR. IRON OXIDE	0.66		112	.055	32	65	45		0
GR. FI. SA				–	N	P			
GR. SI. CL. w/LEN. SI. & TR. ORG	0.73		112	.055	42	86	64		
GR. SA. CL.	1.42		115	.063	18	43	25		
BR. SI. CL.	1.00		112	.055	42	92	65		
GR. CL. SA. SI.	5.00		–	.058	26	23	10		
GR. FI. SI. SA				–	N	P			
GR. CL. w/LEN. SI. w/TR. SHELL @ EL. -108' TO -112'	2.01		80+5	.057	33	68	33		
GR. SI. SA.		0.49	80+5	.058	35	N	P		
GR. CL. w/LEN. SI.	1.91		115	.060	25	47	25		
GR. CL. SA. SI.		0.37	112	.061	27	N	P		
GR. SA. CL.	0.25		115	.062	23	42	23		
GR. FI. – MED. SA.	N.C.			8" PENET. = 50		–	N	P	
	N.C.			6" PENET. = 60					

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

DRIVING RESISTANCE
TONS

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

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	φ	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. BR. SI. CL. w/TR. IRON OXIDE	0.75		111	.055	43	88	52		0
GR. FI. SA. w/TR. SHELL					–	N	P		
GR. SI. SA. CL.	0.51		112	.053	46	94	59		
GR. SI. CL.	0.73		112	.056	40	51	27		
GR. & BR. SI. CL.	1.89		111	.057	23	86	57		
GR. CL. SA. SI.	0.66		112	.062	26	27	9		
GR. FI. SI. SA				–	N	P			
GR. CL.	1.62		112	.056	60	72	45		
GR. CL. w/STR. SI. SA.	0.82		112	.058	–	33	12		
GR. CL. w/TR. SHELL STR. SI. SA @ EL. -161' TO -166'	1.85		111	.059	42	82	48		
GR. CL. SA. SI.	0.53		111	.060	25	36	8		
GR. SA. CL.	0.59		112	.060	26	33	19		
GR. FI. – MED. SA.	N.C.			6" PENET. = 50		–	N	P	
GR. SA. w/GRAV. @ EL. -281' TO -291'	N.C.			6" PENET. = 50					

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

DRIVING RESISTANCE
TONS

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

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	φ	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

DRIVING RESISTANCE
TONS

BORING No.
DATE MADE:
STA:
LOCATION:

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES:

FAP	STATE PROJECT	PARISH	SHEET No.
I-410-4(35)223	450-37-01	ST. CHARLES	37

FAP	STATE PROJ.	PARISH	SHEET No.
I-410-4(35)223	450-37-02	ST. CHARLES	169

182

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

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

SBR. = Spongy
Mot. = Mottled
TR. = Trace
N. P. = Non-Plastic
PENET. = Penetration
N. C. = No Core
S/S = Slickensided
YLD. = Yield
M. S. = Multiple Shears
V. S. = Vertical Shears
45° 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 CORE = No preliminary 6" driving prior to securing drive core

qu = Compressive strength from triaxial unconfined 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	N# 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							

FOR INFORMATION ONLY

CORE BORINGS AND TEST PILES.

O. W. Hansen

DATE	DESCRIPTION	BY

REVISIONS

INTERSTATE 410 BRIDGE AT LULING

PIER 1 BORINGS

DATED MARCH 12, 1993

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SURVEYED Laurent Thibodeaux | DETAILED - | TRACED
CHECKED J.S.G. | CHECKED | CHECKED L.J.

MATERIAL SECTION — BRIDGE DESIGN SECTION

BORING Nº R-3 DATE MADE: 9 . . 73 STA: 247 - 75 LOCATION: ℄

SOIL TYPE & COLOR	φ	¢	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION

DRIVING RESISTANCE TONS

TEST LOAD TONS — TIME HOURS — SETTLEMENT INCHES

BORING Nº R-4 DATE MADE: 9 . 3 . 73 STA: 247 - 63 LOCATION: 40' Rt. ℄

SOIL TYPE & COLOR	φ	¢	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION

DRIVING RESISTANCE TONS

TEST LOAD TONS — TIME HOURS — SETTLEMENT INCHES

BORING Nº DATE MADE: STA: LOCATION:

SOIL TYPE & COLOR	φ	¢	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION

DRIVING RESISTANCE TONS

TEST LOAD TONS — TIME HOURS — SETTLEMENT INCHES

STA — TEST PILE TIP

NOTES

③

PENETROMETER

FAP	STATE PROJECT	PARISH	SHEET Nº
~~I-410-4(4)(60)~~	~~450-37-01~~	~~ST. CHARLES~~	~~36~~
I-410-4(38)223	450-37-02	ST. CHARLES	170

183

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

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

FOR INFORMATION PURPOSES ONLY

O.W. Hansen

DATE	DESCRIPTION	BY

REVISIONS

FOR INFORMATION ONLY

CORE BORINGS AND TEST PILES

INTERSTATE 410 BRIDGE AT LULING

WATER BORINGS - I

DATED OCT. 1 19 73

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SURVEYED	DETAILED	TRACED
CHECKED J.E.B.	CHECKED	CHECKED

MATERIAL SECTION — BRIDGE DESIGN SECTION

SOIL TYPE & COLOR	qu	qp	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. SI. SA w/ STR. SI. CL.		2.54	112.5	.055	42	N	P	22	-20
GR. SI. CL.	2.70		115.5	.057	33	110	83	23	-30
GR. SI. CL.	2.38		117.5	.060	28	32	51	24	-40
GR. SI. CL. TR. SHELL	1.13		117.5	.058	32	53	34	25	-50
GR. SI. CL.	1.74		112.5	.059	44	74	63	26	-60
GR. CL. SI. SA.				.058	32	41	N. P.	27	-70
	w.c.			5" PENET. =			50		
GR. CL. SA. SI.				—		N.	P.	28	-80
	w.c.			5" PENET. =			50		
GR. BR. CL. TR. OBS. & SHELL	3.15		5/6	.055	41	66	41	29	-90
GR. CL. SI. SA		.057	115.5	.060	28	30	12	30	-100
GR. SI. CL.	4.31		115.5	.063	22	46	30	31	-110
GR. MED. SA.				—		N.	P.	32	-120
	w.c.			5" PENET. =			55		
	w.c.			6" PENET. =			50		
	w.c.			6" PENET. =			50		
GR. CL. w/STR. SHELL & SA	w.c.		113	.061	27	50	30	33	-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.

DRIVING RESISTANCE TONS

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

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qp	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
GR. SI. SA. w/ STR. SI. CL.					—	N.	P	21	-20
GR. SI. CL. LEN. SI. TR. SHELL	0.67		112.0	.051	35	102	75	22	-30
GR. SI. CL. LEN. SI. TR. SHELL & BRANC.	2.33		112.5	.062	32	56	41	23	-40
GR. SI. CL.	1.33		112.5	.057	29	33	19	24	-50
GR. CL. SI. SA.	0.79		112.0	.066	36	35	8	25	-60
	w.c.								
GR. SI. CL.	2.02		105.5	.055	45	65	43	26	-70
GR. SI. SA					—	N.	P	27	-80
GR. CL. SA. SI.	1.50		112	.058	—	84	58	28	-90
GR. BR. CL.	3.02		112	.058	35	68	40	29	-100
GR. SI. SA TR. OBS.					6" PENET. =		50	30	-110
					—	N.	P		
GR. SI. CL.	2.35		112	.060	25	32	17	31	-120
GR. MED. SA.	w.c.				6" PENET. =		50	32	-130
	w.c.				—	N.	P	33	-140
	w.c.				6" PENET. =		50		-150

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-2 STA: 248+35
DATE MADE: SEPT. 12, 1972 LOCATION: 100' LT. ℄

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qp	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
w/ WATER & SURF. CONCRETE MATERIALS ON SURF.									-10
GR. SI. SA. TR. CL. & SHELL					—	N.	P	34	-20
GR. SI. CL.	0.80		112.0	.060	23	29	14	35	-30
GR. BR. SA. SI. CL. TR. OBS.	2.83		112.5	.062	18	43	31	36	-40
GR. CL. SI. SA	0.60		112.5	.060	25	29	10	37	-50
GR. CL.	1.51		112.5	.059	38	75	48	38	-60
GR. CL. SI. SA		0.63	115.5	.061	23	N.	P	39	-70
						w.c. = 30			
GR. SA. CL.	1.30		115.	.065	19	32	16	40	-80
GR. CL. LEN. SI. TR. OBS. w/1000 @ 110'-130'	2.82		115.	.059	23	41	24	41	-90
GR. SI. CL.	1.45		112.5	.058	26	36	13	42	-100
GR. FI. SI. WITH CL. SI.				—		N.	P.	43	-110
GR. SI. CL.	1.32		112.5	.061	23	33	10	44	-120
GR. SA. CL.	2.46		112.5	.061	22	33	22	45	-130
GR. FI. - MED. SA	w.c.			6" PENET. =			44		
				—		N.	P.	46	-150
	w.c.			6" PENET. =			50		-160

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-3 STA: 249+70
DATE MADE: SEPT. 16, 1972 LOCATION: 100' RT. ℄

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES

BL.	Blue	CL.	Clay	STR.	Strata				
BK.	Black	MAT.	Material	MOTT.	Mottled				
BR.	Brown	LAM.	Lamination	TEX.	Texture				
GR.	Gray	SA	Sand	FI.	Fine				
GRN.	Green	SH.	Shale	F. F.	Fine Fine				
PK.	Pink	SI	Silt	F. C.	Fine Coarse				
WH	White	ALT.	Alternating	S. S.	Stratigraphic Section				
YE.	Yellow	CC.	Coarse	CRU.	Crushed				
CONC.	Concretions	FI	Fine	M. S.	Medium Sand				
RTS.	Roots	MED.	Medium	C. S.	Coarse Sand				
IRON.	Rotten	I. O	Iron Ore	S. A.	Sharp Angular				
VEG.	Vegetation	LEN	Lenses	SUB.	Subangular				
WD.	Wood	Q. A.	Quick Acting						

FAP	STATE	PARISH	SHEET Nº
I-410-4(13)223	450-37-01	ST. CHARLES	39

FAP	STATE PROJECT
I-410-4(13)223	450-37-02
FAP-SH	SHEET Nº
ST. CHARLES	171

184

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 (natural) 6 inches

N - 18 — Number of blows of 140 lbs. hammer dropped 30 in. required to drive 2 in. O.D. Split Spoon sampler 18 in. after has initially been driven 6 in. unless amount of penetration is shown otherwise

NO CORE — No preliminary 6" driving prior to recovering core data

qu — Compressive strength from triaxial unconfined shear test tons per sq. ft.

qp — Compressive strength from torsional direct unconfined shear test tons per sq. ft.

φ — Angle of internal friction

γ — Wet weight of undisturbed 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

DATED NOV. 27, 1972

O.W. Hansen

FIELD BOOK NO. SL-3856

DATE	DESCRIPTION	BY

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SURVEYED CHARLET | DETAILED — | TRACED
CHECKED J.E.B. | CHECKED — | CHECKED L.D.

MATERIAL SECTION — BRIDGE DESIGN SECTION

SOIL TYPE & COLOR	qu	qc	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
(2' WATER @ SURF.)									
GR. FI. SA.					-	N. P.	N.P. / N.P. / N.P.	(B2-2A)	-80 / -90 / -100 / -110
GR. CL. LEN. S. CL. TR. DEB.	1.50		N.S.	.053	45	57	37	(B2-3)	-120 / -130
GR. SA. S. CL.	5.00		-	.054	33	N.	P.	(B2-4)	-140
STR. CL. SI. SA. @ 155 / WT. NO. @ 153 - 167 / GR. SI. CL.	2.4		N.S.	.067	23	36	20	(B2-5)	-150 / -160 / -170 / -180
GR. FI. SA. SI.					-	N.	N.P. / P.	(B2-6)	-190
GR. SI. CL.	2.0		N.S.	.062	32	28	16	(B2-7)	-200
GR. FI. - MED. SA.	N.S.				4" PENET.	.58		(B2-8)	-210 / -220 / -230
TR. PEA GRAV. @ 244' - 246'	N.S.				5" PENET.	.65			-240 / -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.

DRIVING RESISTANCE TONS

BORING Nº W.B.-6 STA: 261+30
DATE MADE: NOV. 22, 1972 LOCATION: 100' RT ℄

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qc	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
(2' WATER @ SURF.)									
GR. MED. SA.					-	N.	N.P. / P. / N.P.	(B1-1)	-80 / -90 / -100 / -110
GR. CL. LEN. SI.	.52		V.L.B.	.036	35	50	32	(B1-2)	-120 / -130
GR. CL. LEN. SI. SA.	0.92		V.L.B.	.033	-	23	11	(B1-3)	-140
GR. CL. LEN. SI.	2.33		N.S.	.059	37	68	38	(B1-4)	-150 / -160 / -170 / -180
GR. FI. SA.	N.S.				5" PENET.	.72		(B1-5)	-190
GR. CL.					37	54	36	(B1-6)	-200
GR. FI. - MED. SA.	N.S.				3" PENET.	.50			-210
					-	N.	P.	(B1-7)	-220 / -230
	N.S.				3" PENET.	.55			-240 / -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.

DRIVING RESISTANCE TONS

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

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	qc	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
(2' WATER @ SURF.)									
GR. FI. SA.					-	N.	N.P. / P. / N.P.	(B2-8)	-80 / -90 / -100 / -110
GR. CL. - LEN. SA.	1.65		V.L.B.	.056	38	67	46	(B2-1)	-120 / -130
GR. CL. SI.				.057	32	N.	P.	(B2-2)	-140
GR. CL. - STR. SI. / STR. CL. SI. @ 126	1.70		6.0	.064	41	68	49	(B2-3)	-150 / -160 / -170 / -180
GR. FI. SA. SI.					-	N.	N.P. / P.	(B2-4)	-190
GR. CL. - TR. DEB.	2.17		V.L.B.	.058	33	54	31	(B2-5)	-200
	N.S.				5" PENET.	.58			-210
GR. GR. MED. SA.	N.S.				-	N.	P.	(B2-6)	-220 / -230
	N.S.				6" PENET.	.58			-240 / -250 / -260
GR. CL. LEN. SI. - TR. SHELL	2.10		V.L.B.	.058	33	53	34	(B2-7)	-270 / -280
									-290

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 W.B.-6 STA: 262+10
DATE MADE: SEPT. 6, 1972 LOCATION: 100' LT ℄

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES

BL.	Blue	LT.	Light	STR.	Strong
BR.	Brown	LBR.	Laterite	MED.	Medium
GR.	Gray	OR.	Orange		
GRN.	Green	SH.	Shell	FR.	Fragments
PK.	Pink	SI.	Silty	SI. C.	Silty Clay
WH.	White	ALT.	Alternating	S. S.	Sandstone
YE.	Yellow	CO.	Coarse	YELL.	Yellow
CONC.	Concretions	FI.	Fine	W. S.	Water Stain
RTS.	Roots	MED.	Medium		
ROE.	Roe	I. O.	Iron Ore	BLK.	Black
VEG.	Vegetation	LEN.	Lenses	SL.	Slight
WD.	Wood	O. A.	Oxidized 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 sample, refusal 0 blows

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 6 in. has been driven 6 in., or the amount of penetration if less than 6 in.

NO CUSL — No preliminary driving prior to sampling or in zone

qu — Compressive strength from unconfined compression test (tons per sq. ft.)

qc — Compressive strength from a calibrated penetrometer (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

E.4' — Estimated unconfined compressive strength based on 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

FAP	STATE PROJECT
F-410-4(35)223	450-37-02
PARISH	SHEET Nº
ST CHARLES	172

FAP	STATE PROJECT	PARISH	SHEET Nº
F-410-4(35)223	450-37-01	ST. CHARLES	40

185

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

O.W. Hanson

DATE	DESCRIPTION	BY

REVISIONS

INTERSTATE 410
BRIDGE AT LULING

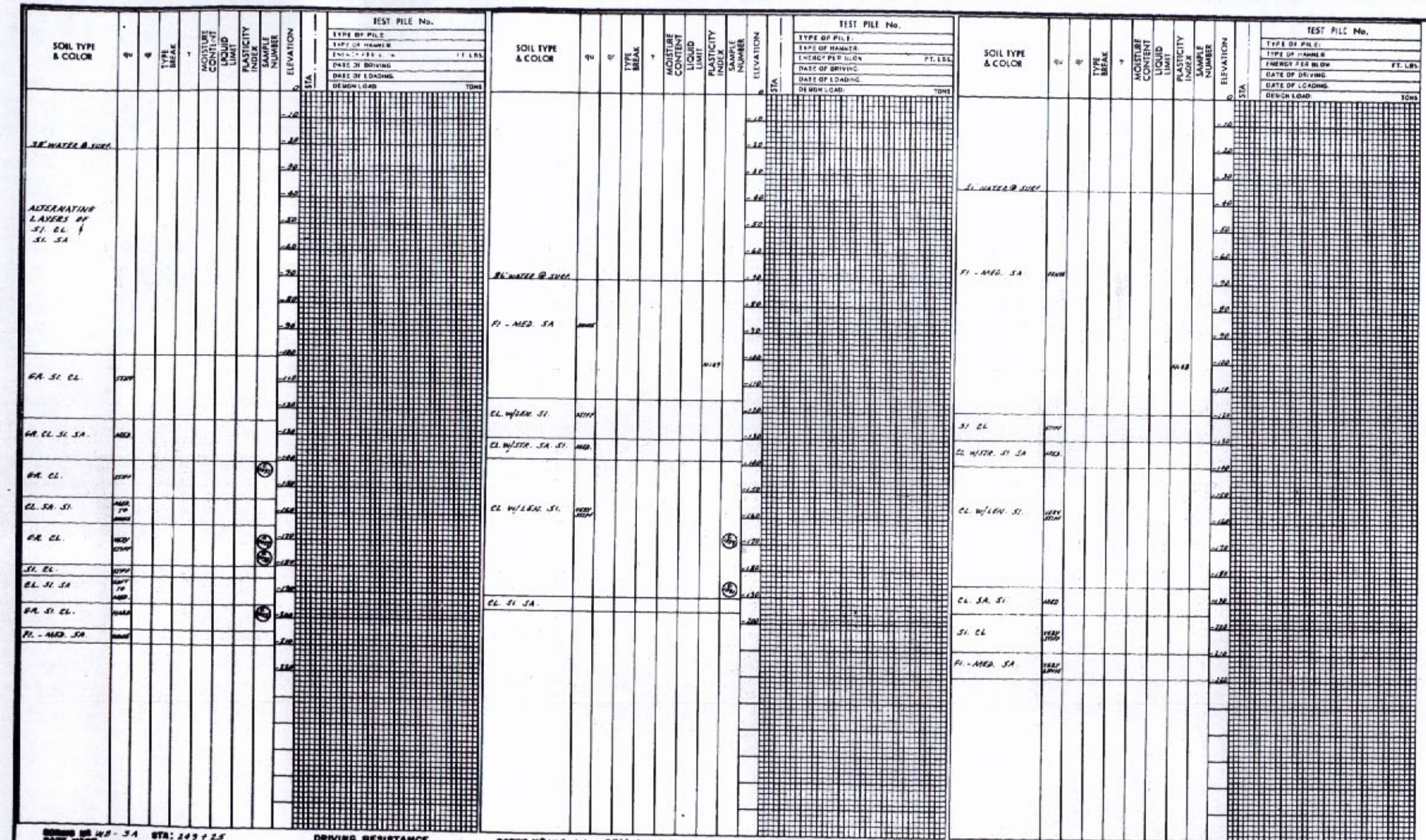
WATER BORINGS - 3

DATED: JUL. 18 1972

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SURVEYED [illegible] DETAILED — TRACED [illegible]
CHECKED J.E.B. CHECKED — CHECKED R.J.

MATERIAL SECTION — BRIDGE DESIGN SECTION



BORING NO. WB-3A STA: 243+25
DATE MADE: 1-16-73 LOCATION: ℄

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

BORING NO. WB-8A STA: 266+52
DATE MADE: 1-14-73 LOCATION: 12' Rt ℄

NOTES

FED. ROAD DIST. NO.	STATE PROJECT	PARISH	SHEET NO.
I-410-4(351223)	450-37-01	ST. CHARLES	41

FAP	STATE PROJECT
I-410-4(351223)	450-37-02
F.A.I. NO.	SHEET NO.
ST. CHARLES	173

186

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 Core		
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 CLAY = No preliminary 6" driving prior to securing drive data

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

φ = 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

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

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL		DESIGNATION	N# 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 -4

DATED MAY, 15, 1973

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SURVEYED Chaffe & Chaffe	DETAILED —	TRACED	
CHECKED J.E.B.	CHECKED —	CHECKED L.J.	

MATERIAL SECTION — BRIDGE DESIGN SECTION

DATE	DESCRIPTION	BY

REVISIONS

O.W. Hanser

SOIL TYPE & COLOR	qu	φ	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
SE WATER @ 3.0'									
GR. FI. SA					-	N	P		
GR. CL. LEAN SI.	1.37		24.5	.115	45	65	45		
GR. CL. SI. SA					18	N	P		
GR. SI. CL.	.90		117.3	.133	43	54	29		
GR. CL. - LEAN SI. SA. & REF.	1.26		113	.118	30	37	21		
GR. CL. - TR. SHELL	1.88		117.5	.133	32	53	30		
GR. FI. - MED. SA					-	N	P		

TEST PILE No.
TYPE OF PILE
TYPE OF HAMMER
ENERGY PER BLOW FT. LBS.
DATE OF DRIVING
BEARING - AVG. TONS

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

SOIL TYPE & COLOR	qu	φ	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
SE WATER @ 3.0'									
GR. SI. - MED. SA					-	N	P		
GR. SI. SA. - LEAN SI.	1.37		111.5	.135	43	65	45		
GR. SI. SA					-	N	P		
GR. SI. CL.	2.23		118.3	.121	36	42	25		
GR. CL. SI. SA		0.49	118	.127	30	N	P		
GR. CL. TR. SHELL & BOT. NO.	2.23		115	.118	33	48	26		
GR. FI. - MED. SA.					-	N	P		

TEST PILE No.
TYPE OF PILE
TYPE OF HAMMER
ENERGY PER BLOW FT. LBS.
DATE OF DRIVING
BEARING - AVG. TONS

BORING No. W.B.-8 STA: 266+30
DATE MADE: AUG. 26, 1972 LOCATION: 85' LT. ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

SOIL TYPE & COLOR	qu	φ	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
SE WATER @ 3.0'									
GR. SI. SA					-	N	P		
GR. CL. - LEAN SI.	1.43		116.1	.126	45	66	43		
GR. SI. SA	0.40		118.7	.128	-	23	11		
GR. SI. CL.	2.50		117.5	.133	49	65	37		
GR. CL. - STR. SI. SA.					29	23	N	P	
GR. CL.	2.11		116.8	.133	33	42	23		
GR. FI. - MED. SA					-	N	P		

TEST PILE No.
TYPE OF PILE
TYPE OF HAMMER
ENERGY PER BLOW FT. LBS.
DATE OF DRIVING
BEARING - AVG. TONS

BORING No. W.B.-9 STA: 269+25
DATE MADE: AUG. 28, 1972 LOCATION: ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES

FAP	STATE PROJECT	SHEET No.
I-410-4(351223)	450-37-01	42
I-410-4(351223)	450-37-02	
PARISH	SHEET No.	
ST. CHARLES	174	

187

MOISTURE CONTENT

(3)

NO PENETRATION

N 18

NO CORE

qu

φ

γ

14'

CORRELATION OF PENETRATION RESISTANCE AND SOIL PROPERTIES

SOIL	DESIGNATION		N# OF BLOWS 'N'	"qu" UNCONFINED COMPRESSIVE STRENGTH KIPS 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

DATED DEC. 28 1972

O. W. Hansen

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SURVEYED CREWLEST | DRAWN LLO | TRACED
CHECKED J.E.B. | CHECKED | CHECKED L.J.

MATERIAL SECTION — BRIDGE DESIGN SECTION

DATE	DESCRIPTION	BY
	REVISIONS	

SOIL TYPE & COLOR	qu	qr	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
WATER @ 3'± SR CL.					9 18	NON-PLASTIC			0
GR. FI. SA						N.	P.		-60
STR. SI. CL. @ 38'									-110
GR. SI. CL.	1.51			0.059	0.052	43	71	47	-160
STR. CL. SA @ 178'									-170
GR. CL. SA. STR. SA. CL.		0.58	M.S.	0.060	32	N.	P.		-210
GR. MED - CR. SA.						N.	P.		-260
WATER FOUND @ 330'									-330

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

BORING NO WB-10 STA: 263+35
DATE MADE: Aug. 23, 1972 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
WATER @ 3'± GR. SI. SA - STR. CL.					31	34	N.P.		-10
GR. FI. SA					–	N.	P.		-60
GR. SI. CL.	1.87		M.S.	0.059	32	51	23		-160
GR. SA. CL.	1.73		V.S.	0.061	20	21	4		-210
GR. FI. SA.					–	N.	P.		-260

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

BORING NO WB-11 STA: 271+50
DATE MADE: Aug. 23, 1972 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
WATER @ 3'± GR. SI. CL. STR. SI. SA						38	21 N.P.		-10
GR. FI. SA					–	N.	P.		-60
GR. SI. CL.	1.58		M.S.	0.056	33	46	46		-160
GR. SI. CL.					28	24	N.P. 11		-210
GR. FI., MED. SA.					–	N.	P.		-260

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

BORING NO WB-12 STA: 271+32
DATE MADE: Aug. 18, 1972 LOCATION: 5' LT ℄

DRIVING RESISTANCE TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES

BL. - Blue	CL. - Clay	Stiff	Stiff	Stiff	
BK. - Black	GRAV. - Gravel	Wet	Mottled		
BR. - Brown	CRS. - Coarse	Tr.	Trace		
GR. - Gray	SA. - Sand	Tr. F.	Trace-Fine		
GN. - Green	SI. - Silty	PEN.	Penetration		
PK. - Pink	SI. - Silty	Tr. C	Tr. Coarse		
WH. - White	ALT. - Alternating	S. S.	Slickensides		
YL. - Yellow	CR. - Coarse	VER.	Varve		
CONC. - Concretions	FI. - Fine	M. S.	Multiple Seams		
RTS. - Roots	MED. - Medium	V. S.	Vertical Seams		
ROT. - Rotten	S. O. - Iron Ore	60°S.	Seam 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 in full 6 inches

N = 16 - 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 CUBE - No preliminary 6" driving prior to seating drive shoe

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

qu - Compressive strength from correlation 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

0.4* - Estimated unconfined compressive strength by correlation with similar material on this project.

FAP	STATE PROJECT	PARISH	SHEET
460-4(38)223	460-07-01	ST. CHARLES	43

FAP	STATE PROJECT
I-460-4(38)223	460-07-02
PARISH	SHEET No.
ST. CHARLES	175

188

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.	AS BUILT TIP ELEV. MIN ELEV.	AS BUILT TIP ELEV. AVE. ELEV.
PIER 2N	271+90	-120							

FOR INFORMATION ONLY
CORE BORINGS AND TEST PILES

FOR INFORMATION ONLY
O. W. Hansen

DATE	DESCRIPTION	BY

REVISIONS

INTERSTATE 410 BRIDGE AT LULING

WATER BORINGS-6

DATED Dec. 23 1972

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SURVEYED Charles S. Chenney	DETAILED —	TRACED	
CHECKED	CHECKED —	CHECKED L.J.	

MATERIAL SECTION — BRIDGE DESIGN SECTION

SOIL TYPE & COLOR	qu	qp	TYPE BREAK	γ	MOISTURE CONTENT	LIQUID LIMIT	PLASTICITY INDEX	SAMPLE NUMBER	ELEVATION
BR. SI. CL. w/STR. SI.	1.26*		-	.046	-	39	16		
BR. SI. CL. w/STR. SI. SA	0.81		M.S.	.059	-	37	16		
GR. FI. - MED. SA					-	N	N.P.		
BR. SI. CL. w/STR. SA					42	49			
GR. FI. - MED. SA					-	N	N.P.		
BR. SI. CL. w/STR. SA					41	68			
GR. FI. - MED. SA w/TR. GRAV.					-	N	N.P.		
BR. SI. CL. w/STR. CL. SI.	1.00		60°S	.056	33	35	16		
BR. SI. CL. w/STR. CL. SI.	1.19		60°S	.059	26	37	18		
BR. CL. SI.		0.35	M.S.	.060	-	37	7		
BR. CL. SI.	1.03		VLD	.060	-	39	8		
BR. SI. CL. w/STR. MED. SA.	1.00*		-	.058	-	36	20		
BR. FI. - MED. SA.				3" PENETR.	-	N	N.P.		
BR. CL. SI. w/LEN. SI. SA. & TR. GRAV.	0.64		60°S	.057	-	31	7		
BR. SI. CL. w/TR. RAT. WD.	3.20		55°S	.061	52	65	29		
BR. SI. SA. CL.	2.60		F.S.	.061	21	32	12		
BR. SI. CL. w/STR. GRAV.					-	N	N.P.		
BR. SI. CL. w/TR. GRAV.	2.19		M.S.	.052	52	85	56		
BR. SI. CL. w/STR. CL. SI.					39	48	18		
BR. SI. CL. w/TR. GRAV.	3.00		60°S	.056	37	68	41		
BR. SI. CL. w/STR. CL. SA.	0.98		M.S.	.057	-	28	10		
GR. FI. SI. SA.	0.6			3" PENETR.	-	N	N.P.		
NOTE: DETAILED TO 230' STILL IN SAND									

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

BORING NO. B-15
DATE MADE 8-1-93
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. SI. CL. w/TR. GRAV.	1.30		V.L.D.	.058	26	38	20		
BR. SA. SI. CL.	0.42		V.L.D.	.058	57	61	22		
BR. CL. SA. SI.	0.32		V.L.D.	.061	-	28	5		
BR. SI. CL.	1.31		V.L.D.	.053	31	36	30		
GR. SI. CL.	0.80		V.L.D.	.053	31	35	12		
GR. SI. CL.	0.90		V.L.D.	.057	34	42	22		
GR. CL. SA		0.32	M.S.	.060	30	N	P		
GR. SI. SA. CL.	1.60		V.S.	.060	29	38	17		
GR. CL. SI. SI.		0.35	60°S	.056	36	46	21		
GR. FI. SA	M.C.			8" PENETR.	-	N	P.		
GR. SI. CL. w/LEN. SI.	2.21		M.S.	.056	42	73	34		
GR. CL. SI. w/STR. FI. SI. SA.	0.38		M.S.	.058	-	24	3		
BR. SI. CL.	1.90		M.S.	.059	31	39	17		
GR. SI. CL.	2.10		S/S	.060	31	57	32		
GR. SA. SI. CL.	1.51		V.L.D.	.061	25	33	16		
BR. SI. SA. w/LEN. CL.		0.66	V.L.D.	.060	38	N	P.		
GR. SI. CL. w/TR. RAT. WD.	3.83		M.S.	.056	38	56	26		
GR. FI. SA.	M.C.			3" PENETR.	-	N	P.		

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

BORING NO. B-24
DATE MADE: 7-31-93
STA: 273+30
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

BORING NO.
DATE MADE:
STA:
LOCATION:

DRIVING RESISTANCE
TONS

TEST LOAD TONS
TIME HOURS
SETTLEMENT INCHES

NOTES:

TIP	STATE PROJECT NO.	PARISH	SHEET NO.
I-410-4(35)223	450-57-01	ST. CHARLES	44

FAP	STATE PROJECT
I-410-4(35)223	450-57-02
PARISH	SHEET NO.
ST. CHARLES	176

189

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

CL. - Clay
GRAV. - Gravel
ORG. - Organic
SA. - Sand
SH. - Shelly
SI. - Silty
ALT. - Alternating
CO. - Coarse
FI. - Fine
MED. - Medium
I. O. - Iron Ore
LEN. - Lenses
Q. A. - Quick Acting

TR. - Trace
MOD. - Moderate
IR. - Iron
M. P. - Medium Plastic
PEN(T). - Penetration
N. C. - No Coil
S/S - Slickensides
YLD. - Yield
M. S. - Multiple Shear
V. S. - Vertical Shear
90° 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 COIL = No preliminary 6" driving prior to securing drive data

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

qp = 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 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.

FOR INFORMATION ONLY
CORE BORINGS AND TEST PILES.

O. W. Hanson
F.B. NOS. SI. 3856, SI. 3875, SI. 3877 & SI. 3885

DATE	DESCRIPTION	BY

REVISIONS

INTERSTATE 410 BRIDGE AT LULING

EAST BANK BORINGS

DATED AUG. 31, 1973

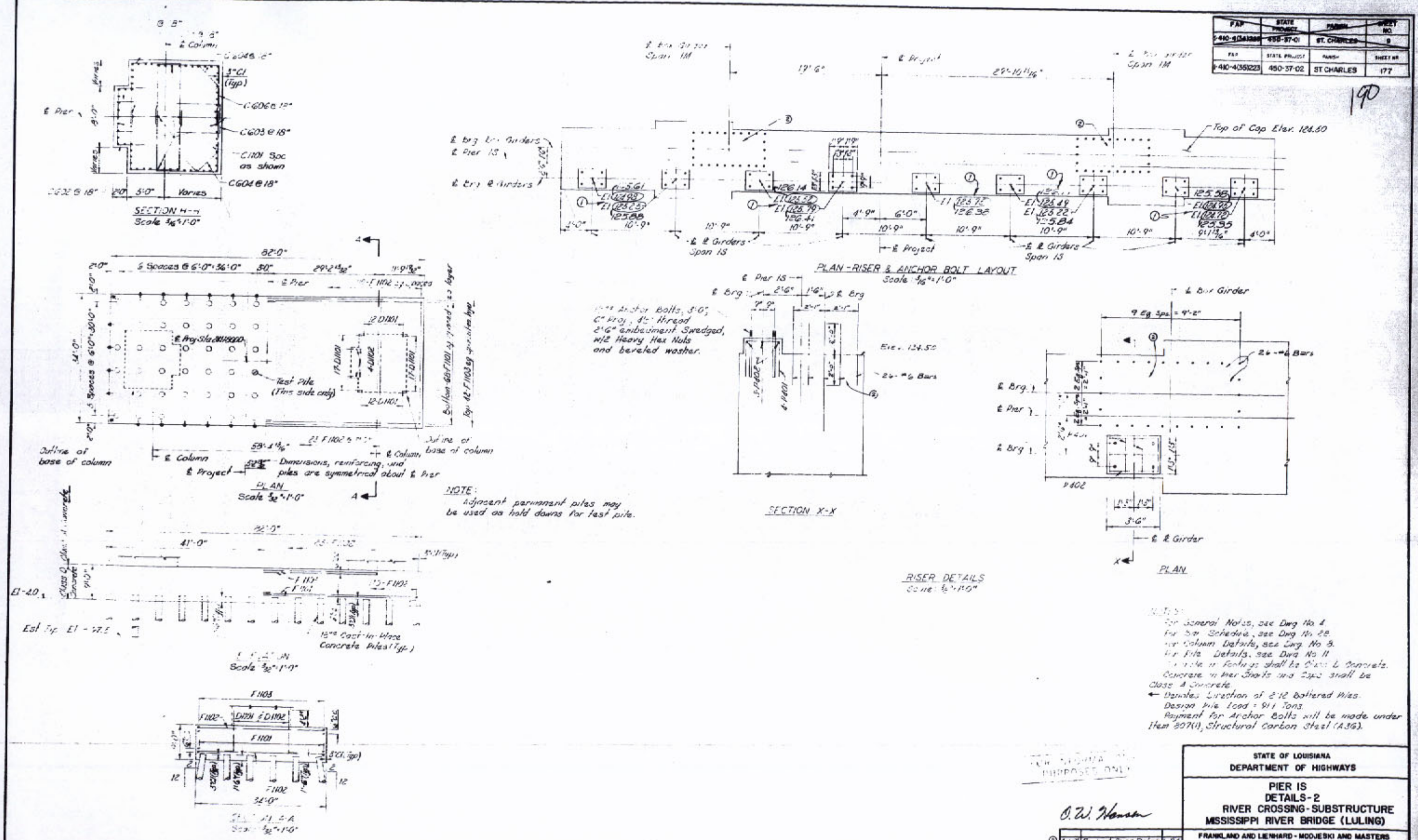
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

SURVEYED CHARLEY & GEORGE | DETAILED — | TRACED [illegible]
CHECKED J.E.F. | CHECKED — | CHECKED [illegible]

MATERIAL SECTION — BRIDGE DESIGN SECTION

FAP	STATE PROJECT	PARISH	SHEET NO.
F-410-4(35)223	450-37-01	ST. CHARLES	9
F-410-4(35)223	450-37-02	ST CHARLES	177

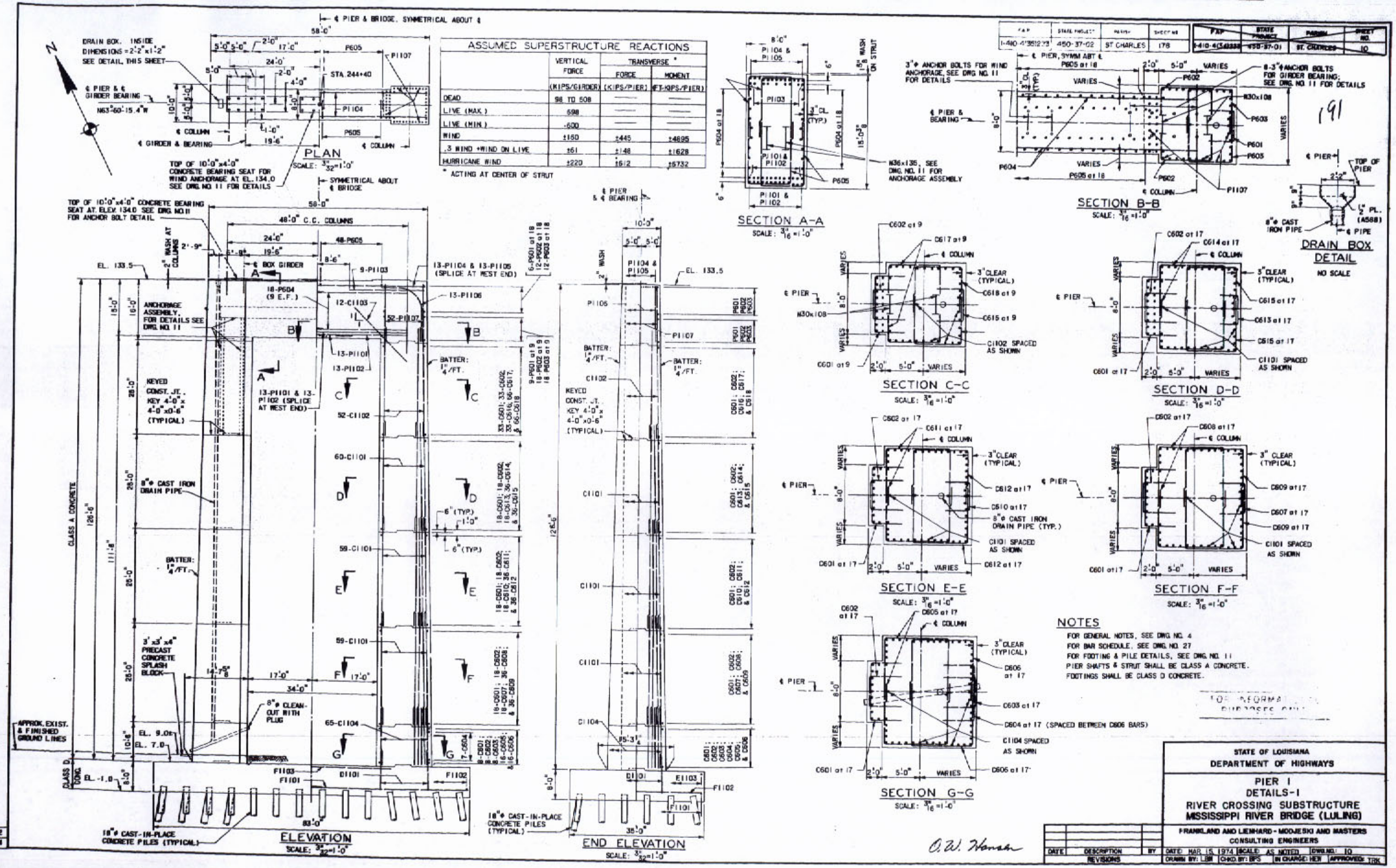
190



FAP	STATE PROJECT	PARISH	SHEET NO.
1-410-4(35)223	450-37-02	ST CHARLES	178

FAP	STATE PROJECT	PARISH	SHEET NO.
1-410-4(34)223	450-37-01	ST. CHARLES	10

191



ASSUMED SUPERSTRUCTURE REACTIONS

	VERTICAL FORCE (KIPS/GIRDER)	TRANSVERSE * FORCE (KIPS/PIER)	TRANSVERSE * MOMENT (FT-KIPS/PIER)
DEAD	98 TO 508	—	—
LIVE (MAX.)	598	—	—
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

NOTES

FOR GENERAL NOTES, SEE DWG. NO. 4
FOR BAR SCHEDULE, SEE DWG. NO. 27
FOR FOOTING & PILE DETAILS, SEE DWG. NO. 11
PIER SHAFTS & STRUT SHALL BE CLASS A CONCRETE.
FOOTINGS SHALL BE CLASS D CONCRETE.

FOR INFORMATION PURPOSES ONLY

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

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

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

DATE: MAR. 15, 1974 | SCALE: AS NOTED | DWG. NO.: 10
DRAWN BY: LBM | CHKD. BY: BPS | IN CHARGE: HEW | APPROVED: TRK

O. W. Hansen

0502
0204

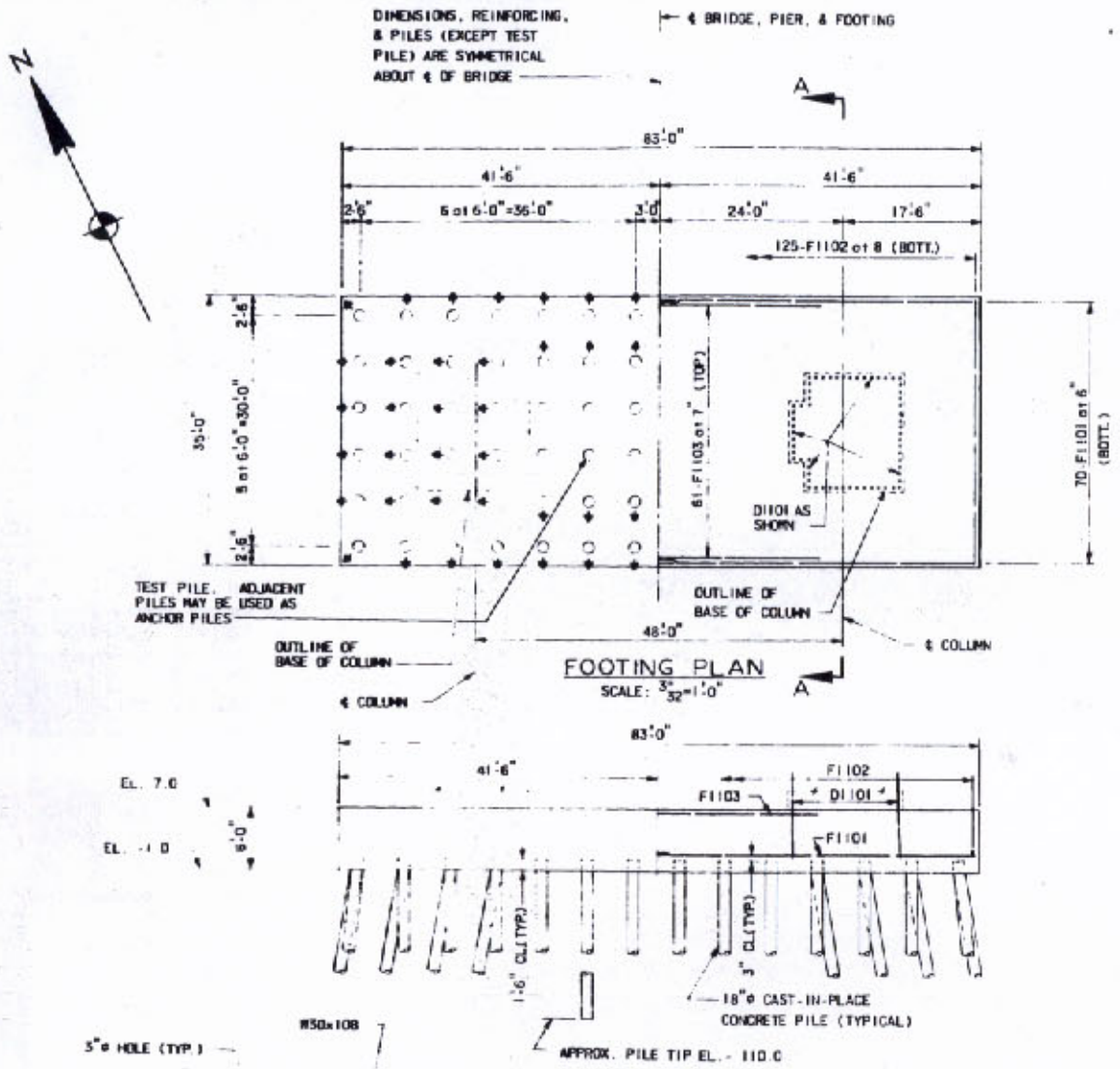
FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-02	ST. CHARLES	179

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-01	ST. CHARLES	11

192

DIMENSIONS, REINFORCING, & PILES (EXCEPT TEST PILE) ARE SYMMETRICAL ABOUT ℄ OF BRIDGE

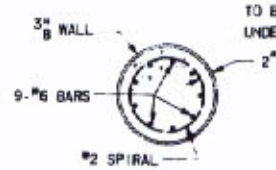
← ℄ BRIDGE, PIER, & FOOTING



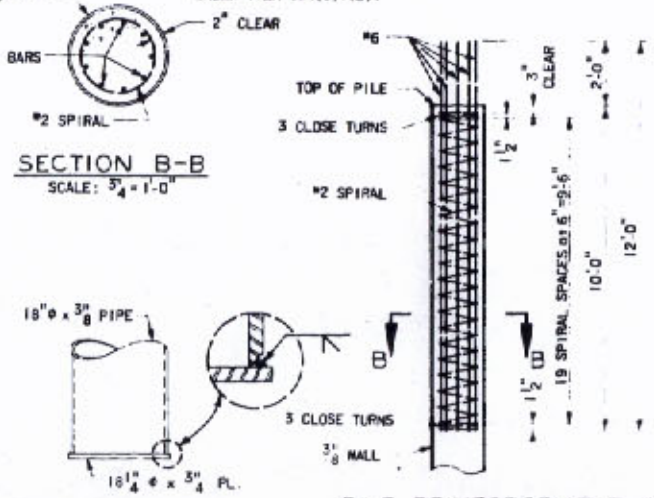
FOOTING PLAN
SCALE: 3/32"=1'-0"

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

NOTE:
PAYMENT FOR PILE REINFORCEMENT TO BE INCLUDED IN UNIT PRICE BID UNDER ITEM 804(5).(C).

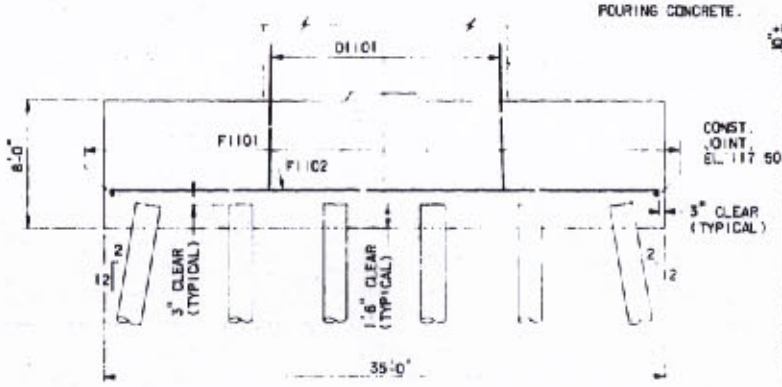


SECTION B-B
SCALE: 3/4"=1'-0"

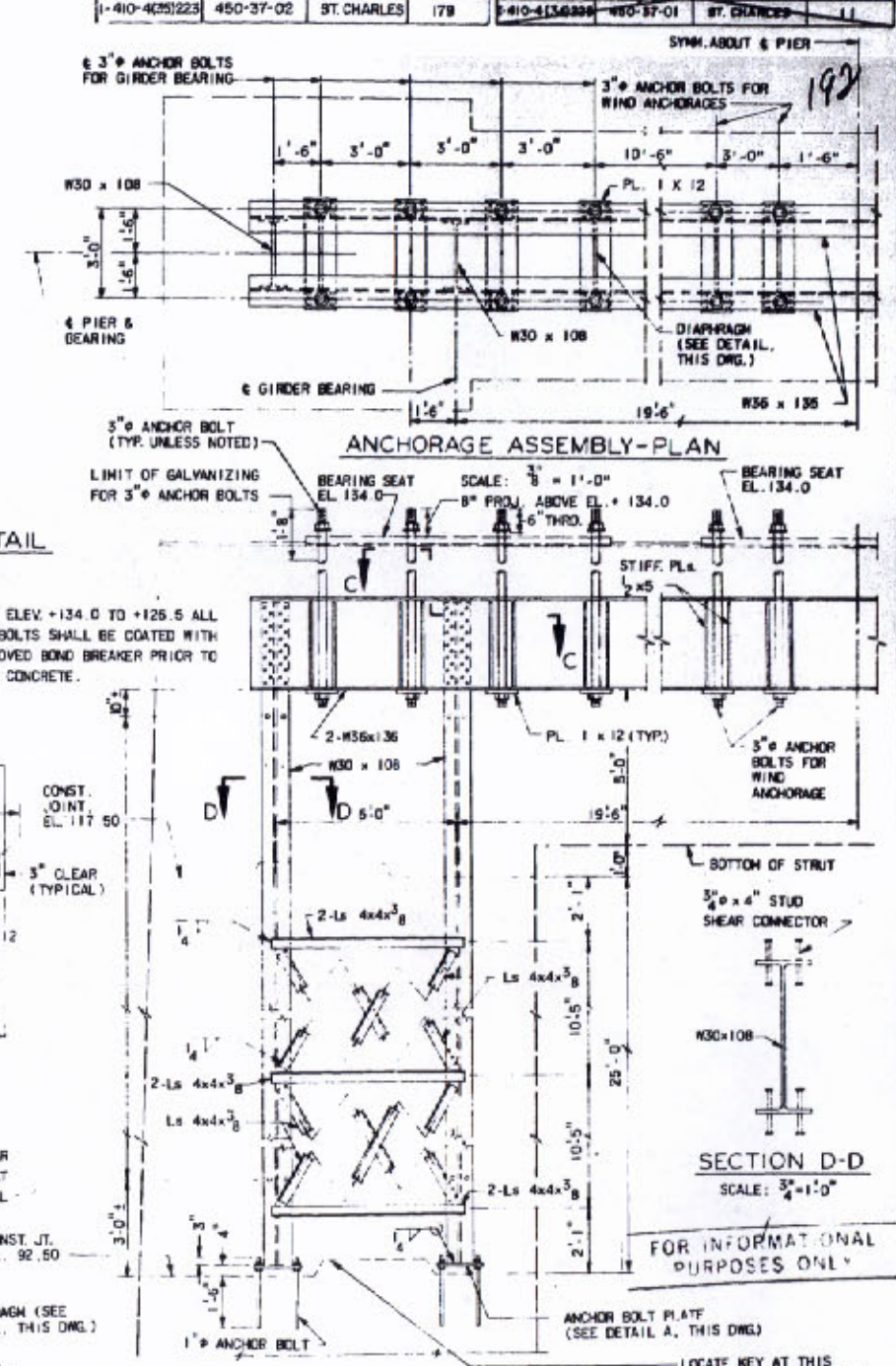


PILE REINFORCEMENT DETAIL
SCALE: 3/8"=1'-0"

SUGGESTED END ON PIPE PILE
SCALE: 3/4"=1'-0"

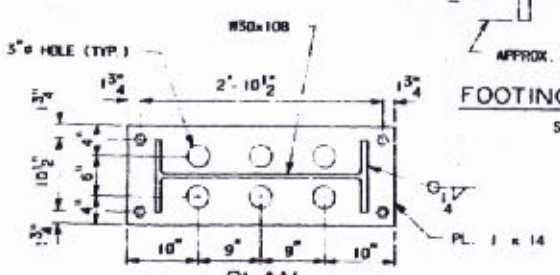


SECTION A-A
SCALE: 3/16"=1'-0"

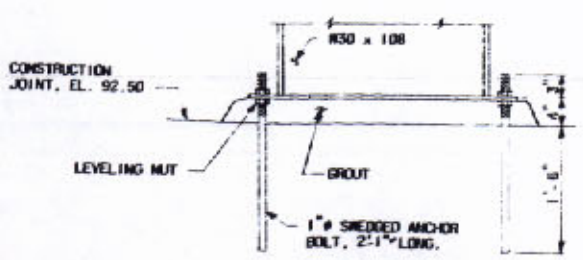


ANCHORAGE ASSEMBLY-PLAN

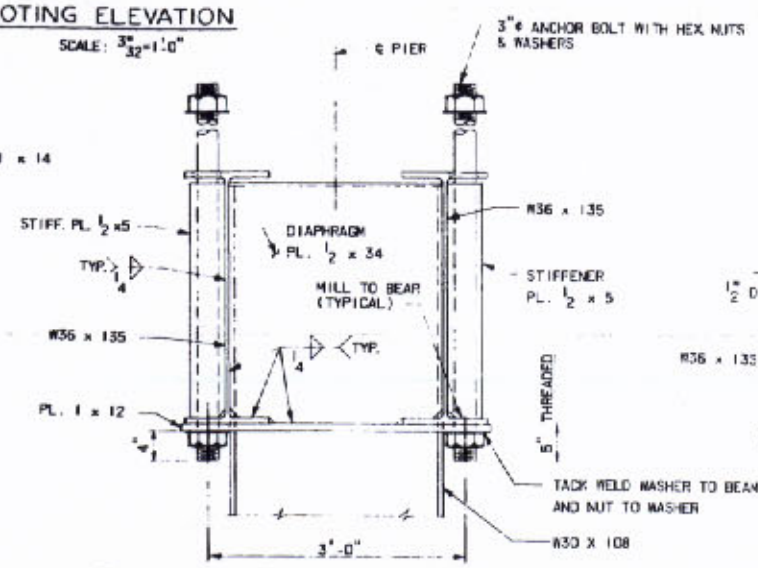
NOTE:
FROM ELEV. +134.0 TO +125.5 ALL ANCHOR BOLTS SHALL BE COATED WITH AN APPROVED BOND BREAKER PRIOR TO POURING CONCRETE.



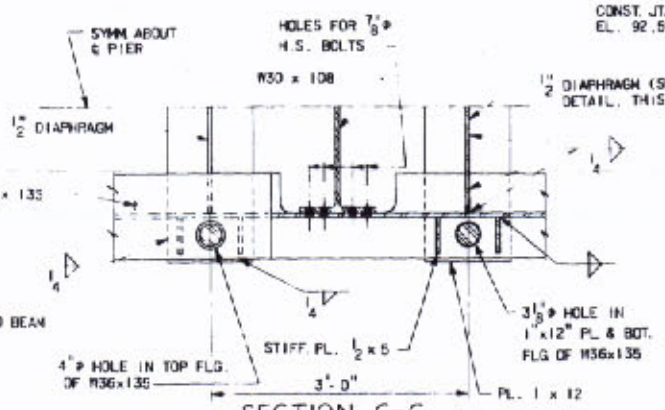
PLAN
SCALE: 1"=1'-0"



ELEVATION DETAIL A
SCALE: 1"=1'-0"



TYPICAL DIAPHRAGM DETAIL AT BOLTS
SCALE: 1"= 1'-0"



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

SECTION D-D
SCALE: 3/4"=1'-0"

3/4"ø x 4" STUD SHEAR CONNECTOR (TYP.) AT 18" ± C.C. VERTICAL

FOR INFORMATIONAL PURPOSES ONLY

ANCHORAGE ASSEMBLY-ELEVATION
SCALE: 3/8"=1'-0"

NOTES:
FOR GENERAL NOTES, SEE DWG. NO. 4.
FOR BAR SCHEDULE, SEE DWG. NO. 27.
FOR STRUT & COLUMN DETAILS, SEE DWG. NO. 10.
ALL FOOTING CONCRETE SHALL BE CLASS D CONCRETE.
← DENOTES DIRECTION OF 2:12 BATTERED PILES.
DESIGN PILE LOAD = 78 TONS.
ALL BOLTS SHALL BE 7/8"ø ASTM A325 BOLTS.
3"ø ANCHOR BOLTS SHALL CONFORM TO ASTM A307

O. W. Hanson

DATE	DESCRIPTION	BY
	REVISIONS	

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

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

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

DATE: MAR. 15, 1974 | SCALE: AS NOTED | DWG. NO.: 11
DRAWN BY: LBR | CHKD BY: BPS | IN CHARGE: HEW | APPROVED: TRK

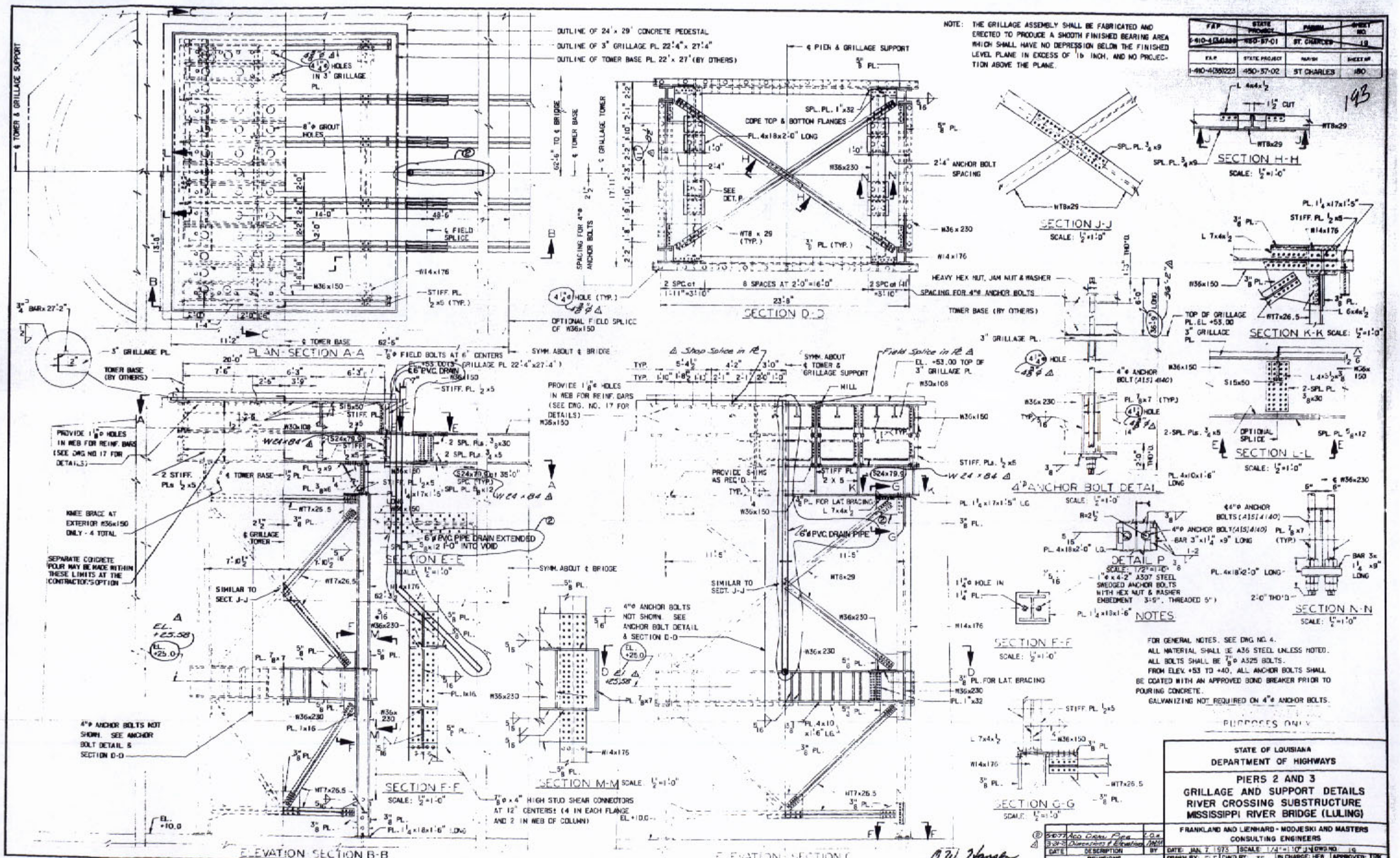
0502
0204

FAP	STATE PROJECT	PARISH	SHEET NO.
F-910-4(36)223	450-57-01	ST. CHARLES	19

FAP	STATE PROJECT	PARISH	SHEET NO.
F-910-4(36)223	450-57-02	ST CHARLES	180

193

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.

FOR PURPOSES ONLY

DATE	DESCRIPTION	BY
3-27-73	Add Drain Pipe	C.D.H.
3-29-73	Dimensions & Elevations	DMH

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

PIERS 2 AND 3
GRILLAGE AND SUPPORT DETAILS
RIVER CROSSING SUBSTRUCTURE
MISSISSIPPI RIVER BRIDGE (LULING)

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

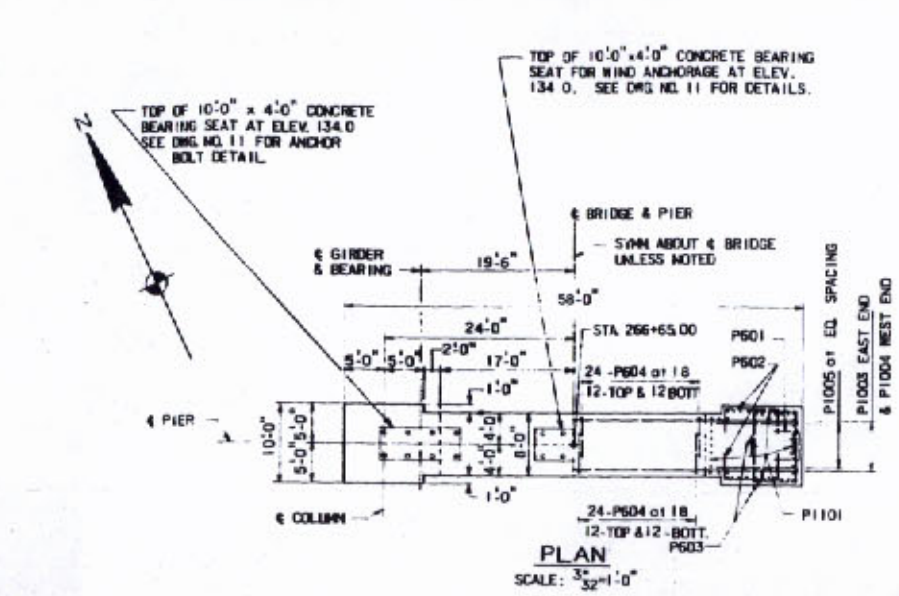
DATE: JAN. 7, 1973 | SCALE: 1/4"=1'-0" | DWG. NO. 19
DRAWN BY: ELF | CHKD. BY: TS | IN CHARGE: HER | APPROVED: TRK

O.W. Hanson

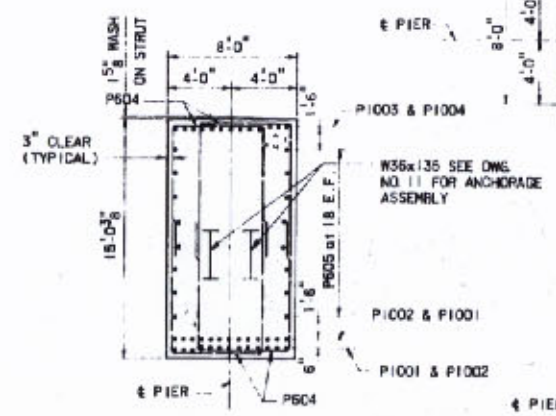
FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-01	ST. CHARLES	20

FAP	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-02	ST.CHARLES	181

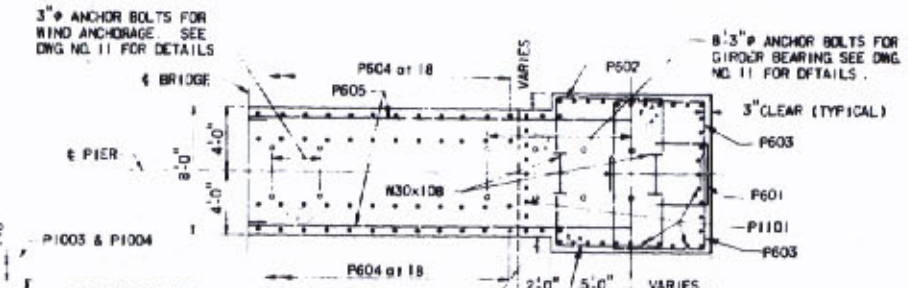
194



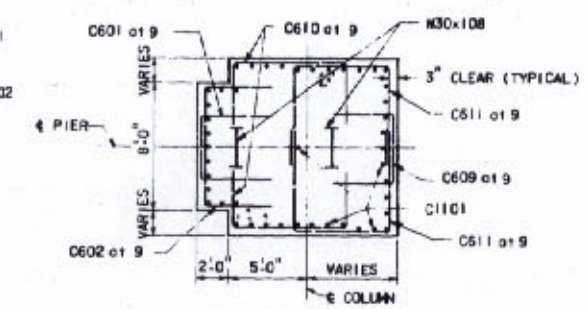
PLAN
SCALE: 3"/32" = 1'-0"



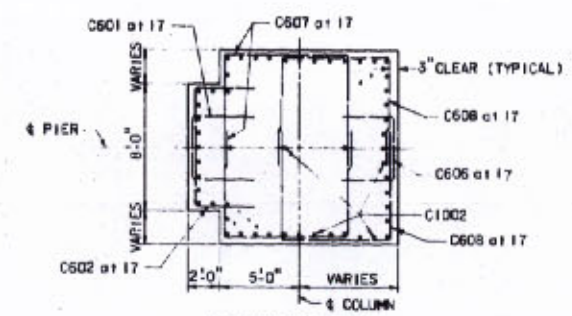
SECTION A-A
SCALE: 3"/16" = 1'-0"



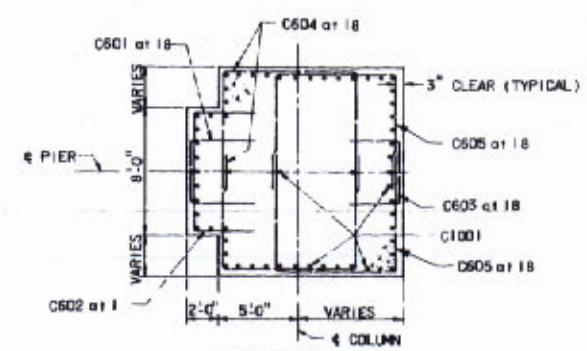
SECTION B-B
SCALE: 3"/16" = 1'-0"



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



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



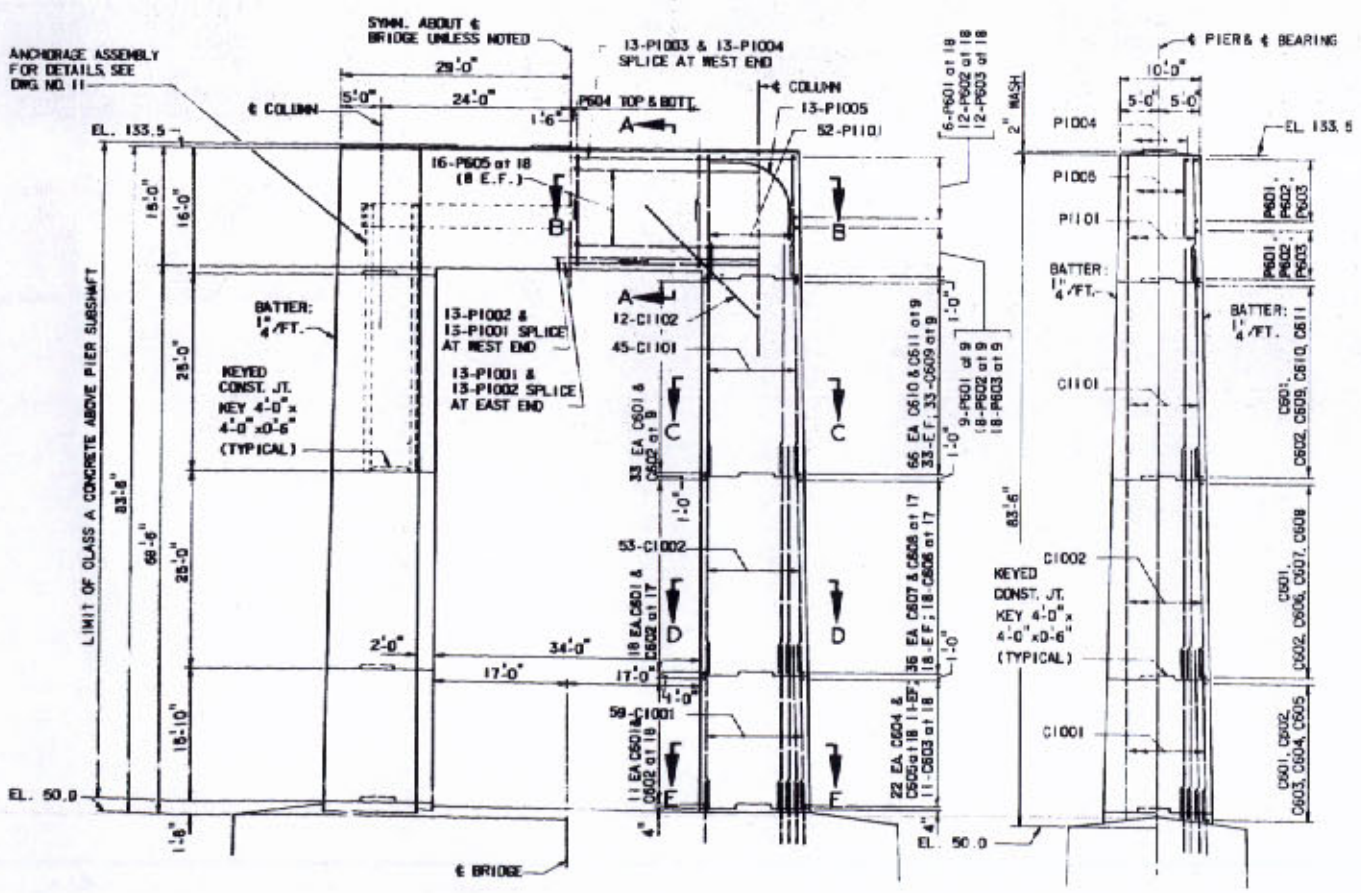
SECTION E-E
SCALE: 3"/16" = 1'-0"

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

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.



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

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

FOR INFORMATIONAL PURPOSES ONLY

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

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

FRANKLAND AND LIENHARD - MOOJESKI AND MASTERS
CONSULTING ENGINEERS

DATE	DESCRIPTION	BY
	REVISIONS	

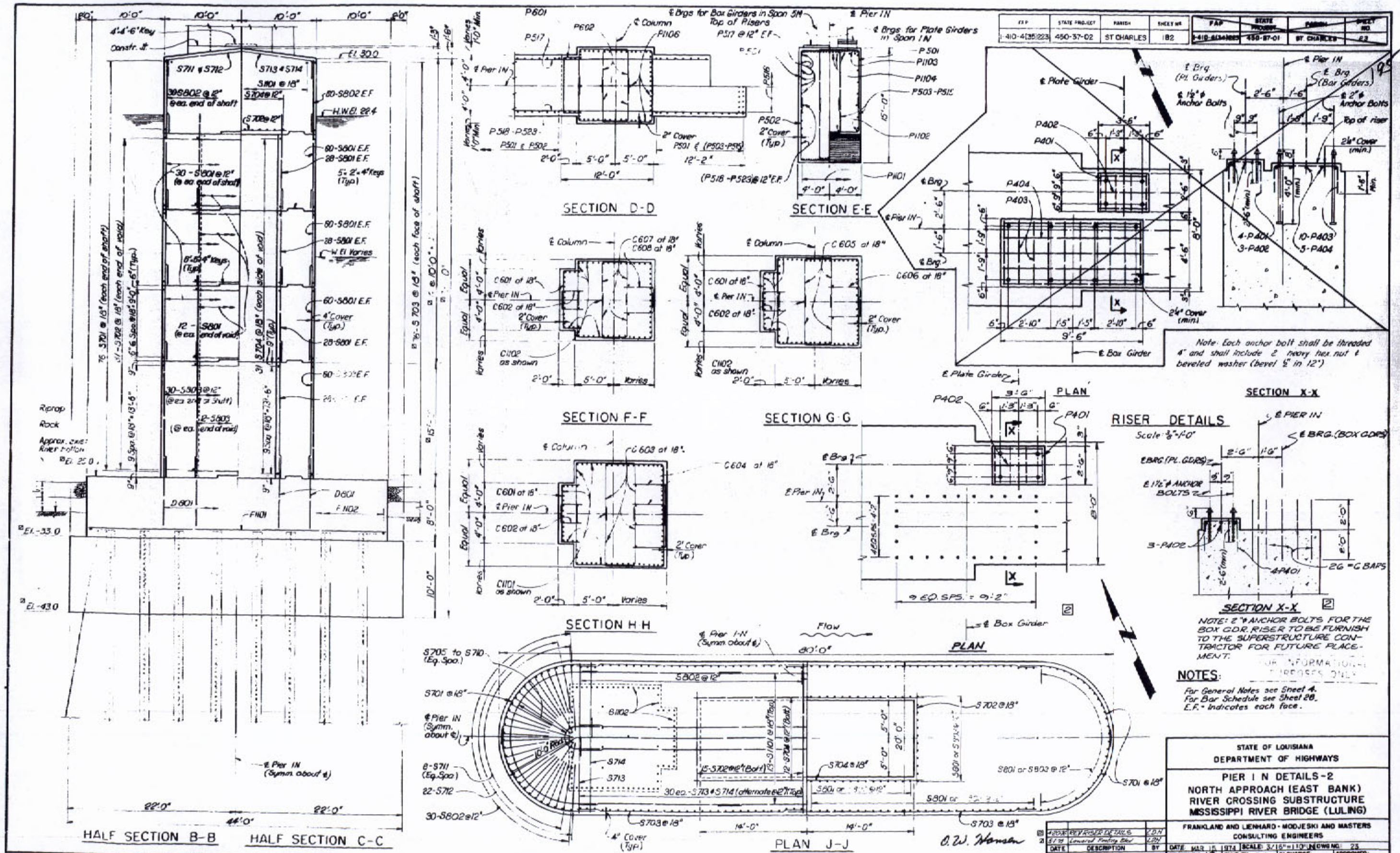
DATE: MAR. 15, 1974 | SCALE: AS NOTED | DWG.NO: 20
DRAWN BY: SLH | CHKD.BY: CR-HEN | IN CHARGE: HEW | APPROVED: TRK

O. W. Hansen

0502
0204

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-02	ST CHARLES	182

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
I-410-4(35)223	450-37-01	ST. CHARLES	22



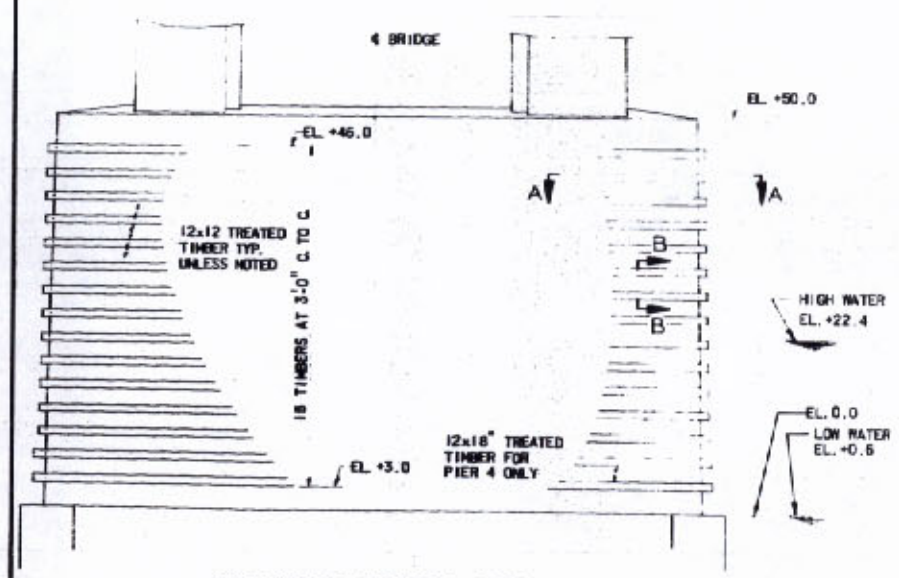
F.A.P.	STATE PROJECT NO.	PARISH	SHEET NO.
I-410-4(35)223	450-37-02	ST CHARLES	183

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

196

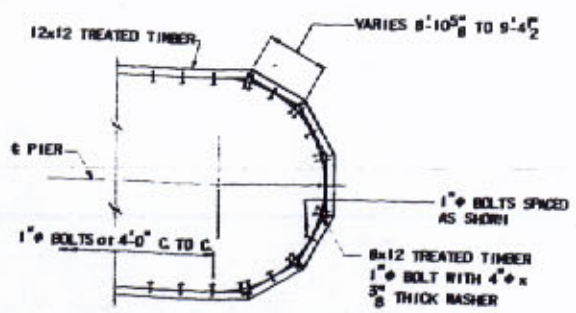
LOCATION PLAN FOR PIER PROTECTION TIMBER

SCALE: 1"=200'



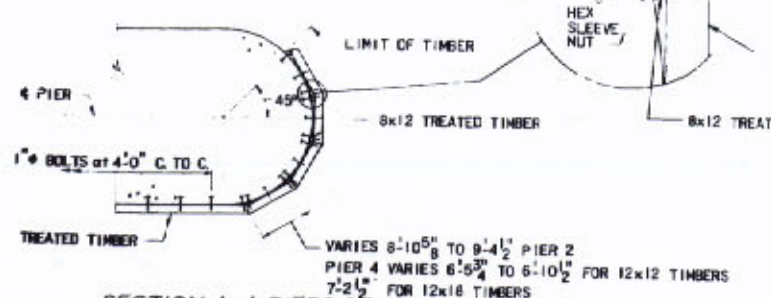
ELEVATION - TYPICAL PIER

SCALE: $\frac{3}{32}$"=1'-0"



SECTION A-A PIER 3

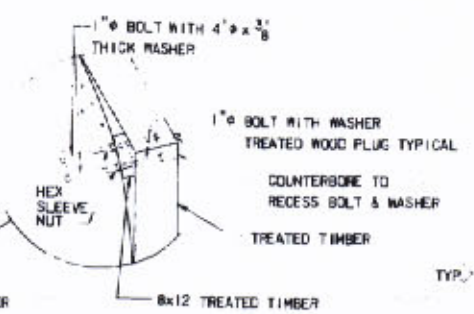
SCALE: $\frac{3}{32}$"=1'-0"

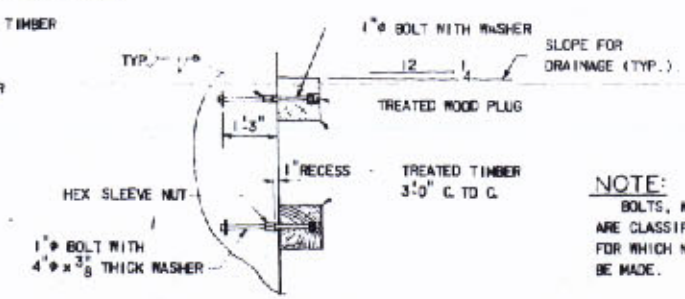


SECTION A-A PIERS 2 & 4

(PIER 4 SHOWN PIER 2 SIMILAR)

SCALE: $\frac{3}{32}$"=1'-0"





SECTION B-B

SCALE: $\frac{1}{2}$"=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.

O. W. Hansen

DATE	DESCRIPTION	BY

REVISIONS

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

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

FRANKLAND AND LIENHARD - MODJESKI AND MASTERS
CONSULTING ENGINEERS

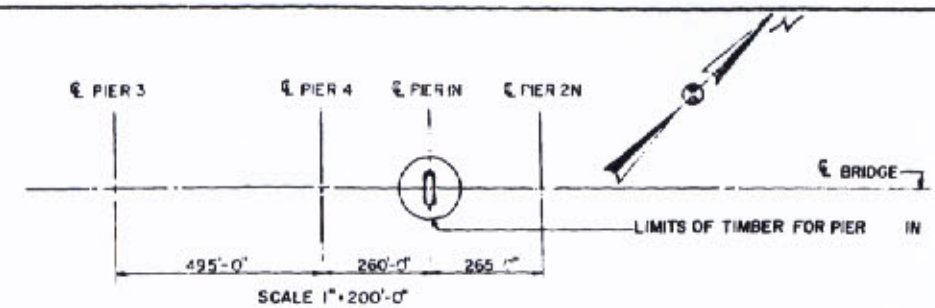
DATE: MAR. 15, 1974 | SCALE: AS NOTED | DWG. NO.: 26
DRAWN BY: CRH | CHKD. BY: JEP | IN CHARGE: HEM | APPROVED: TRK

ELS

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

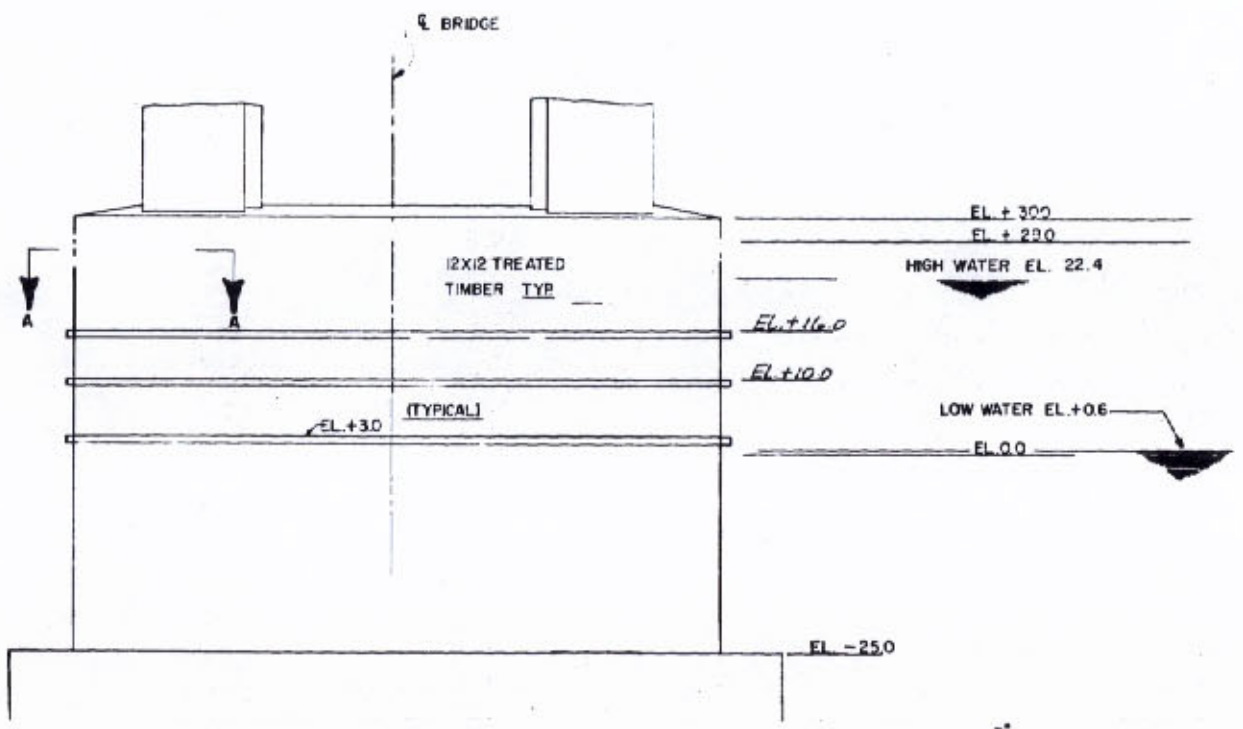
FED. AID PROJECT	STATE PROJECT	PARISH	SHEET NO
I-410-4(35)222	450-37-02	ST CHARLES	184

197



SCALE 1" = 200'-0"

LOCATION PLAN FOR PIER PROTECTION TIMBER

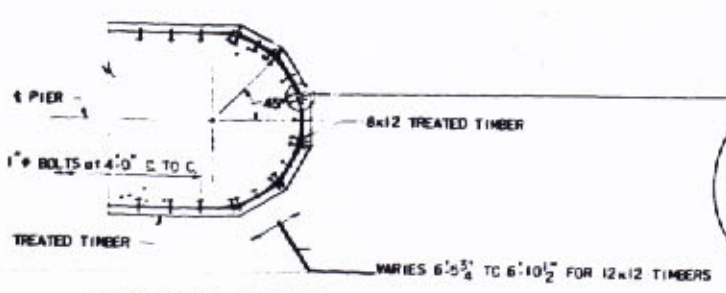


ELEVATION - TYPICAL PIER IN

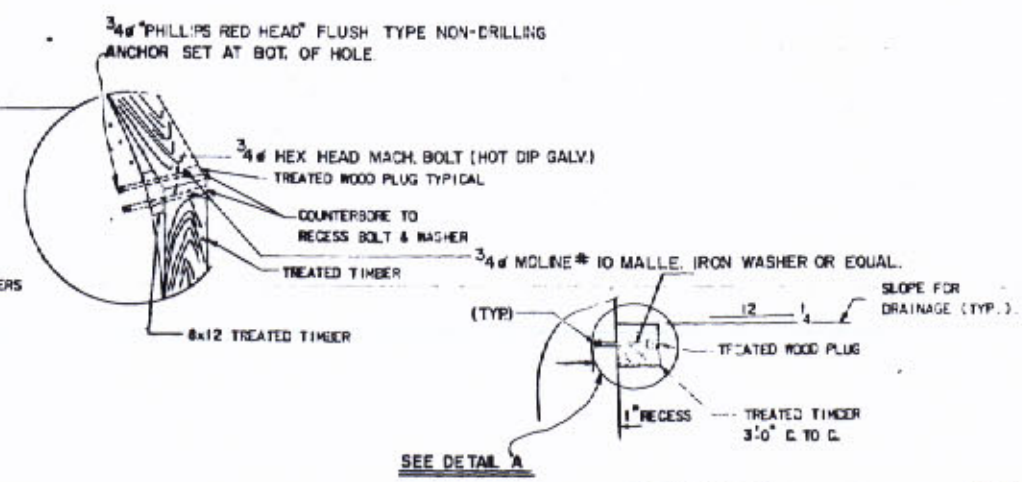
SCALE 3/32" = 1'-0"

NOTES:

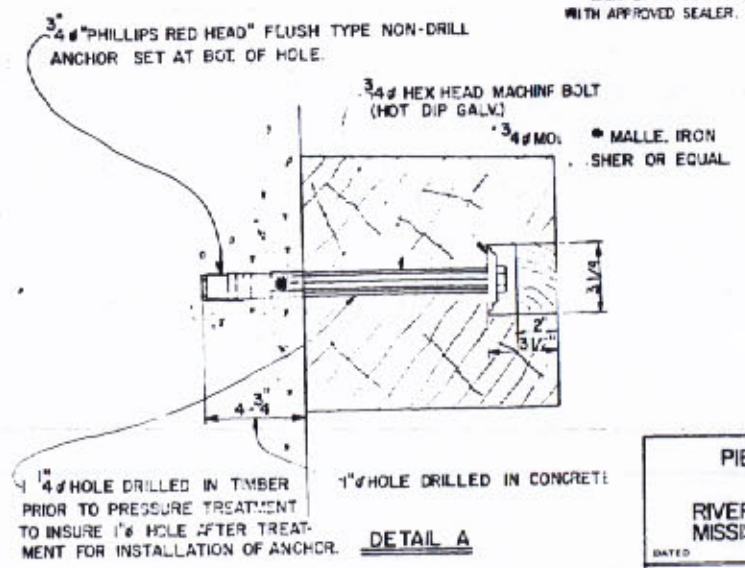
TIMBER SHALL BE PREFABRICATED PRIOR TO TREATMENT.
TIMBER TREATMENT SHALL BE APPLIED UNDER PRESSURE AND SHALL CONSIST OF PENTACHLOROPHENOL WITH A PETROLEUM CARRIER, FORMULATED TO MINIMIZE STAINING OF PIER SURFACES.
ENDS OF TIMBER PIECES CUT IN FIELD SHALL BE PROTECTED WITH APPROVED SEALER.



SECTION A-A PIERS



SECTION B-B TYP PIERS



DETAIL A

O.W. Hansen

DATE	DESCRIPTION	BY
	REVISIONS	

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

DATED

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED — DETAILED A. Scott Jr. TRACED
CHECKED — CHECKED CHECKED