

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
IM-10-5(347)256	450-17-0018	ORLEANS	108

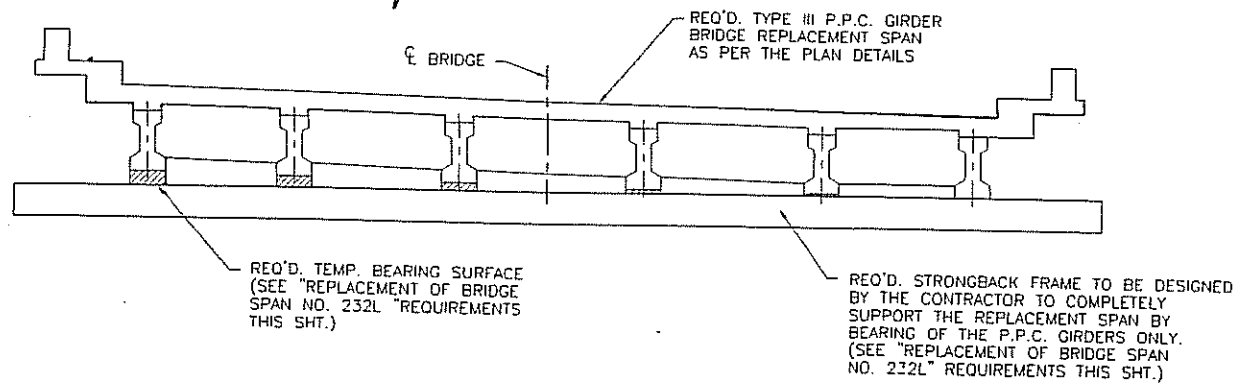
REMOVAL OF BRIDGE SPAN NO. 232L

THE EXISTING 65'-0" LONG BY 45'-6" WIDE MONOLITHIC PRESTRESSED CONCRETE SPAN INCLUDING P.P.C. GIRDERS, SLAB, RAILING AND DIAPHRAGMS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE METHOD OF REMOVAL WHICH MUST SATISFY THE FOLLOWING CRITERIA:

- 1.) NO DEBRIS FROM THE SPAN REMOVAL WILL BE ALLOWED TO FALL INTO LAKE PONTCHARTRAIN
- 2.) THE SPAN REMOVAL WILL BE SUBJECT TO THE TIME CONSTRAINTS AS DETAILED IN THE SPECIAL PROVISIONS OF THE CONTRACT SPECIFICATIONS, ITEM NO. S-101 REMOVAL OF EXISTING BRIDGE SPAN NO. 232L.

THE PROPOSED METHOD OF THE SPAN REMOVAL MUST BE DELIVERED TO THE PROJECT ENGINEER FOR APPROVAL AT LEAST ONE MONTH PRIOR TO THE ACTUAL SPAN REMOVAL.

UPON REMOVAL OF THE EXISTING SPAN, THE EXISTING BEARING ASSEMBLIES INCLUDING STEEL BASE PLATES, INTERMEDIATE BRONZE PLATES, ANCHOR ANGLES, ETC. (SEE SHT. 159 FOR DETAILS) SUPPORTING SPAN 232L SHALL BE REMOVED FROM INTERMEDIATE BENTS 232L AND 233L AND DISPOSED OF BY THE CONTRACTOR. THE BEARING ASSEMBLIES ARE COATED WITH LEAD PAINT AND SHALL BE DISPOSED AT A FACILITY LICENSED FOR ACCEPTANCE OF THIS MATERIAL. THE EXISTING 1" STEEL ANCHOR BOLTS SHALL BE CUT FLUSH WITH THE EXISTING CONCRETE RISER SURFACE AND SEALED WITH AN APPROVED EPOXY COATING. THE EXISTING 1/8" THICK LAYER OF CANVAS UNDER THE BASE PLATES SHALL BE REMOVED AND THE BEARING AREAS SHALL BE THOROUGHLY CLEANED OF FOREIGN MATTER FOR PLACEMENT OF THE REQ'D. NEW LAMINATED BEARING PADS IN ACCORDANCE WITH THE PLAN DETAILS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO INSURE THAT NO RESIDUE FROM CLEANING OF THE CONCRETE BEARING AREAS SHALL BE ALLOWED TO FALL INTO LAKE PONTCHARTRAIN.



BRIDGE REPLACEMENT SPAN NO. 232L

N.T.S.

REPLACEMENT OF BRIDGE SPAN NO. 232L

PRIOR TO COMMENCING THE REMOVAL OF THE EXISTING BRIDGE SPAN NO. 232L, THE COMPLETE REPLACEMENT SPAN INCLUDING P.P.C. GIRDERS, DIAPHRAGMS, SLAB AND RAILING AS DETAILED IN THE PLANS SHALL BE RESTING ON A BARGE IN THE NEAR VICINITY OF ITS REQUIRED LOCATION. IMMEDIATELY AFTER COMPLETION OF THE EXISTING BRIDGE SPAN REMOVAL, THE CONTRACTOR SHALL COMMENCE THE OPERATION OF LIFTING THE REPLACEMENT SPAN OFF THE BARGE AND SETTING IT ON THE BEARING PADS PREVIOUSLY INSTALLED ON INTERMEDIATE BENTS NO. 232L AND 233L AS PART OF THE REMOVAL OPERATION. THE LIFTING AND PLACEMENT OF THE NEW SPAN SHALL SATISFY THE FOLLOWING CRITERIA:

- 1.) THE SPAN REPLACEMENT WILL BE SUBJECT TO THE TIME CONSTRAINTS AS DETAILED IN THE SPECIAL PROVISIONS OF THE CONTRACT SPECIFICATIONS, ITEM NO. S-101 REMOVAL OF EXISTING BRIDGE SPAN NO. 232L.
- 2.) THE CONTRACTOR WILL BE RESPONSIBLE FOR THE DESIGN OF A STRONGBACK FRAME WHICH WILL COMPLETELY SUPPORT THE REPLACEMENT SPAN ONLY BY DIRECT BEARING OF THE P.P.C. GIRDERS FOR THE LIFTING AND SUBSEQUENT PLACEMENT PROCEDURE. EVERY CONTACT POINT BETWEEN THE P.P.C. GIRDERS AND THE FRAME SHALL BE LEVEL AND PROVIDE A MINIMUM BEARING SURFACE OF 6"x6". IN ADDITION, EACH P.P.C. GIRDER SHALL HAVE A CONTACT POINT ON EACH END OF THE GIRDER LOCATED WITHIN A DISTANCE OF 2'-0" TO 4'-0" MEASURED FROM THE END OF THE GIRDER. THE STRONGBACK FRAME MUST BE SUFFICIENTLY STIFFENED IN BOTH THE TRANSVERSE AND LONGITUDINAL DIRECTIONS TO PREVENT ANY TWISTING OF THE FRAME INSURING THAT THE REPLACEMENT SPAN WILL ONLY RECEIVE VERTICAL REACTION LOADS AT THE POINTS OF BEARING DURING THE LIFTING AND PLACEMENT OPERATION.

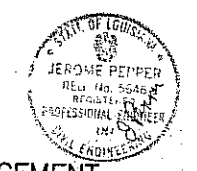
THE CONTRACTOR SHALL SUBMIT THE DESIGN OF THE STRONGBACK PERFORMED AND STAMPED BY A LICENSED PROFESSIONAL CIVIL ENGINEER CERTIFIED BY THE STATE OF LOUISIANA TO THE BRIDGE DESIGN ENGINEER FOR APPROVAL AT LEAST THIRTY(30) CALENDER DAYS PRIOR TO BEGINNING ANY WORK ON THIS ITEM.

IN ADDITION, THE DESIGN CALCULATIONS MUST SHOW THAT THE LOADS INDUCED ON THE REQUIRED P.P.C. GIRDERS BY THE LIFTING AND PLACEMENT OPERATION ARE WITHIN THE ALLOWABLE STRESS LIMITS FOR THE GIRDERS AS DETERMINED BY THE LATEST AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. NO WORK ON THE STRONGBACK LIFTING FRAME SHALL BEGIN UNTIL THE DESIGN CALCULATIONS AND DRAWINGS HAVE BEEN REVIEWED AND APPROVED.

UPON COMPLETION OF THE PLACEMENT OF THE NEW BRIDGE SPAN, THE CONTRACTOR SHALL INSTALL THE BEARING ASSEMBLIES INCLUDING ANCHOR BOLTS AND ANGLES IN ACCORDANCE WITH THE PLAN DETAILS.

NOTES:

- 1.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE DIMENSIONS OF THE EXISTING SPAN TO BE REPLACED BEFORE BEGINNING ANY WORK ON CONSTRUCTION OF THE REPLACEMENT SPAN. ANY DISCREPANCIES IN THE SPAN DIMENSIONS DISCOVERED BY THE CONTRACTOR SHALL BE IMMEDIATELY REPORTED TO THE PROJECT ENGINEER.
- 2.) ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY FOR REMOVAL AND SUBSEQUENT DISPOSAL OF THE EXISTING 65'-0" LONG x 45'-6" WIDE MONOLITHIC PRESTRESSED CONCRETE SPAN NO. 232L AND ASSOCIATED BEARING ASSEMBLIES ALONG WITH PREPARATION OF THE EXIST. INTERMEDIATE BENTS FOR ACCEPTANCE OF THE NEW SPAN SHALL BE INCLUDED IN AND PAID FOR UNDER ITEM NO. S-101 REMOVAL OF EXISTING BRIDGE SPAN NO. 232L PER LUMP SUM.
- 3.) ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY FOR PLACEMENT OF THE REQUIRED 65'-0" LONG x 45'-6" WIDE TYPE III P.P.C. GIRDER REPLACEMENT SPAN INCLUDING DESIGN AND CONSTRUCTION OF A STRONGBACK FRAME TO SUPPORT THE REPLACEMENT SPAN, DELIVERY OF THE SPAN TO THE WORK SITE, LIFTING OF THE SPAN INTO PLACE ON THE EXISTING BRIDGE BENTS AND INSTALLATION OF THE NEW BEARING ASSEMBLIES INCLUDING ANCHOR BOLTS AND ANGLES SHALL BE INCLUDED IN AND PAID FOR UNDER ITEM NO. S-102 PLACEMENT OF REQUIRED BRIDGE SPAN NO. 232L PER LUMP SUM.

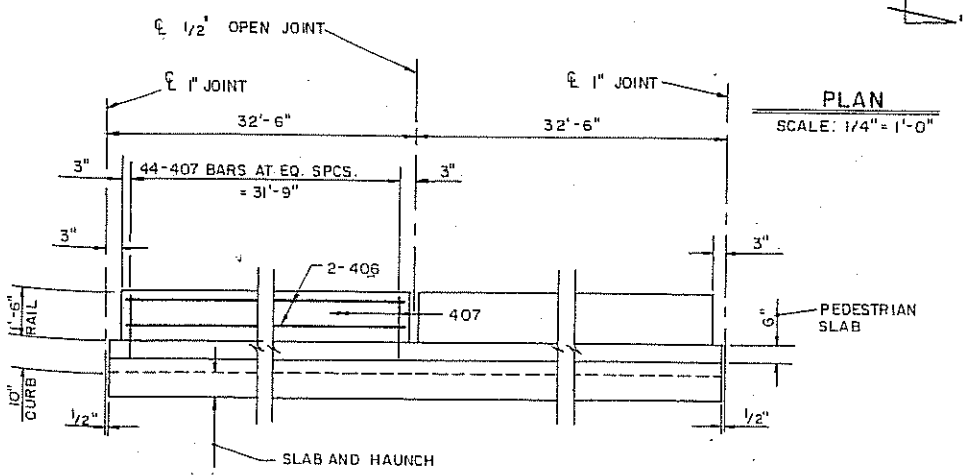
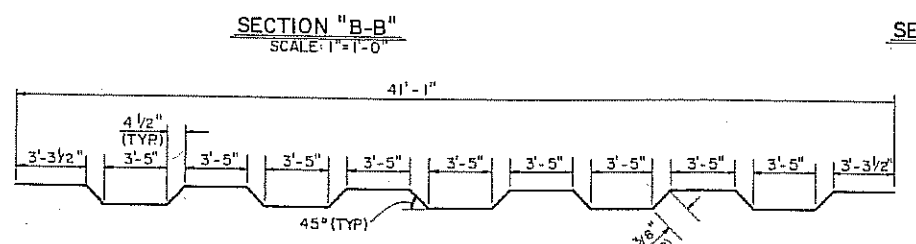
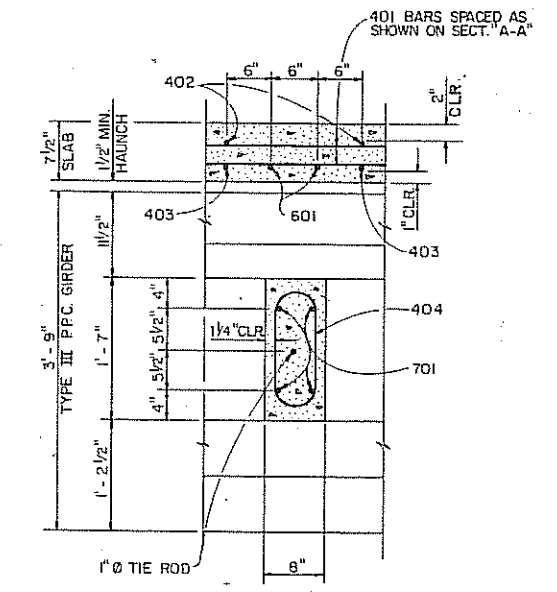
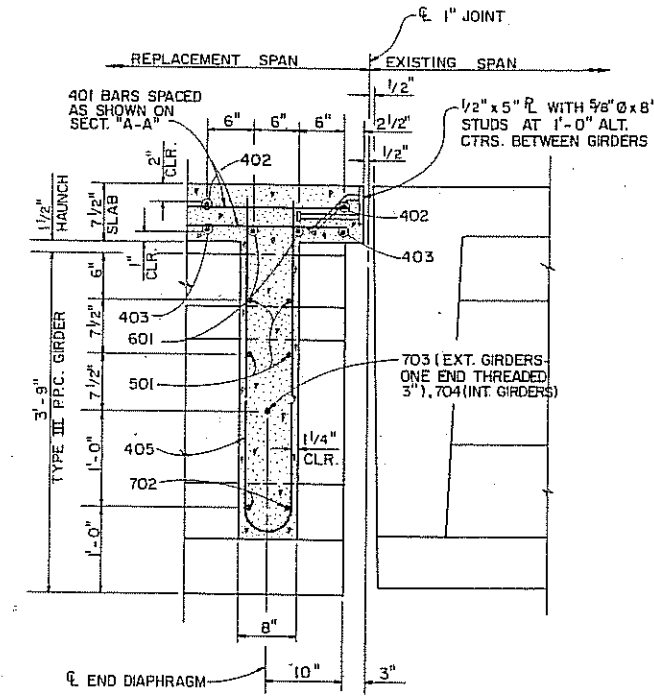
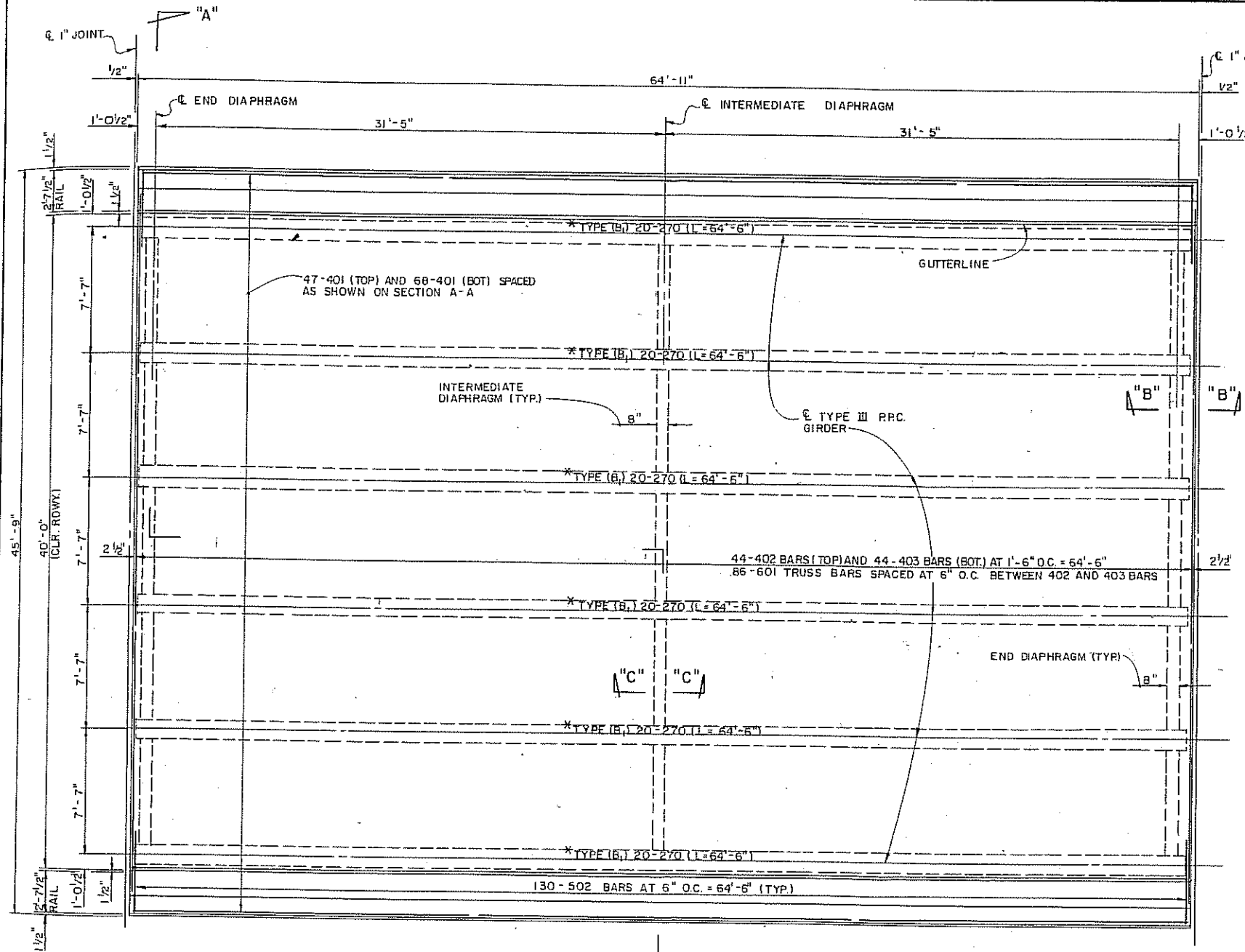


**REMOVAL AND REPLACEMENT  
DETAILS FOR EXISTING BRIDGE  
SPAN NO. 232L**

PEPPER AND ASSOCIATES, INC. CONSULTING ENGINEERS					
3012 26th STREET	METAIRIE, LA				
<b>LAKE PONTCHARTRAIN BRIDGE REHABILITATION</b>					
DATED _____ 19__					
STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT					
DESIGNED	W.D.	DETAILED	W.D.	TRACED	B.L.
CHECKED	R.Y.	CHECKED	R.Y.	CHECKED	J.P.

DATE	DESCRIPTION	BY	REVISIONS

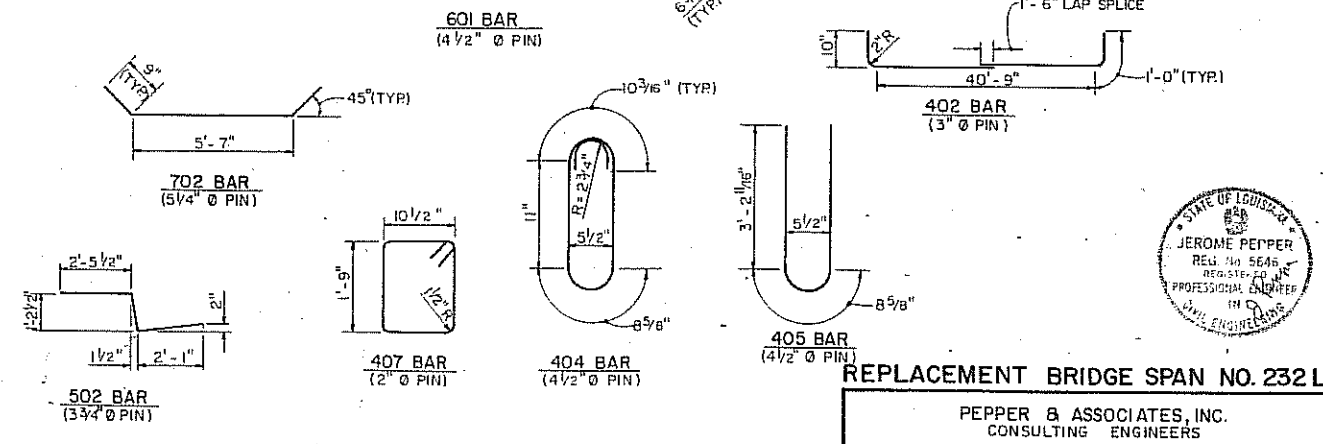
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**NOTES:**

\* 1) FOR DETAILS OF REQ'D TYPE III PRECAST PRESTRESSED CONCRETE GIRDERS SEE SHTS. 140 AND 141. MATERIALS TO BE INCLUDED IN PRICE BID PER LINEAR FOOT OF PRECAST-PRESTRESSED CONCRETE GIRDER ARE LISTED ON MISCELLANEOUS SPAN AND GIRDER DETAILS SHT. 145.

2) SECTION "A-A" IS DETAILED ON SHT. 110



BAR BENDING DIAGRAMS  
N.T.S.



REPLACEMENT BRIDGE SPAN NO. 232 L

PEPPER & ASSOCIATES, INC.  
CONSULTING ENGINEERS  
3012 26th STREET METAIRIE, LA.

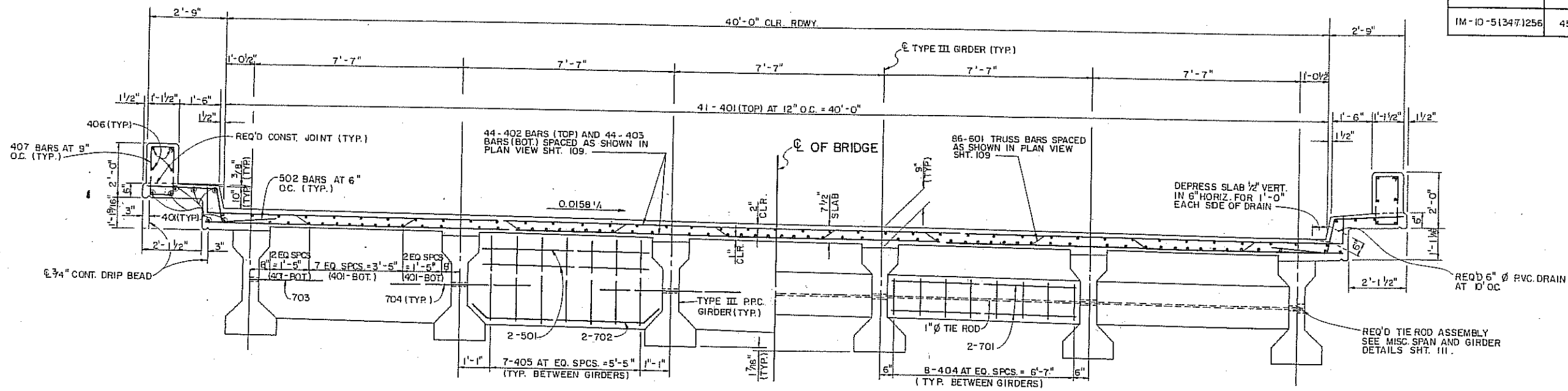
LAKE PONTCHARTRAIN  
BRIDGE REHABILITATION

STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT		
DESIGNED	DETAILED	TRACED
CHECKED	CHECKED	CHECKED

OUTSIDE ELEVATION SHOWING CONCRETE RAILING REINFORCEMENT  
N.T.S.

DATE	DESCRIPTION	BY

F.A.P.	STATE PROJECT	PARISH	SHEET NO.
IM-10-51347.1256	450-17-0018	ORLEANS	110



HALF SECTION AT END DIAPHRAGM

SECTION "A-A"  
SCALE: 1/2" = 1'-0"

HALF SECTION AT INTERMEDIATE DIAPHRAGM

ESTIMATED QUANTITIES (SPAN NO. 232L)				
BAR NO.	NO.	UNIT LENGTH	TOTAL LENGTH	LOCATION
701	20	6'-10"	136'-8"	INTERMEDIATE DIAPHRAGM
702	20	7'-1"	141'-8"	END DIAPHRAGM
703	4	2'-10"	11'-4"	END DIAPHRAGM - EXT. GIRDER
704	8	5'-1"	40'-8"	END DIAPHRAGM - INT. GIRDER
TOTAL NO. 7 BARS = 330'-4" = 675 LBS.				
601	86	42'-7 3/4"	3,667'-6 1/2"	TRANSVERSE IN SLAB
TOTAL NO. 6 BARS = 3,667'-6 1/2" = 5,509 LBS.				
501	40	6'-1"	243'-4"	END DIAPHRAGM
502	260	5'-9 7/8"	1,497'-8 1/2"	PEDESTRIAN RAILING
TOTAL NO. 5 BARS = 1,741'-0 1/2" = 1,816 LBS.				
401	115	66'-2"	7,609'-2"	LONGITUDINAL IN SLAB
402	44	44'-3"	1,947'-0"	TRANSVERSE IN TOP OF SLAB
403	44	42'-7"	1,873'-8"	TRANSVERSE IN BOT. OF SLAB
404	40	4'-3"	170'-0"	INTERMEDIATE DIAPHRAGM
405	70	7'-2"	501'-8"	END DIAPHRAGM
406	16	31'-11"	510'-8"	PEDESTRIAN RAILING
407	176	6'-0"	1,056'-0"	PEDESTRIAN RAILING
TOTAL NO. 4 BARS = 13,668'-2" = 9,130 LBS.				
DEFORMED REINFORCING STEEL = 17,130 LBS.				
CLASS "A-A" CONCRETE FOR SUPERSTRUCTURE = 80.20 CU. YDS.				
STRUCTURAL METALWORK = 931 LBS.				
CONCRETE RAILING (PEDESTRIAN TYPE) = 129.00 LIN. FT.				
TYPE III PRECAST PRESTRESSED CONC. GIRDERS = 387.0 LIN. FT.				

SPAN NOTES

PAY QUANTITIES

THE FOLLOWING MATERIALS ARE TO BE PAID FOR UNDER ITEM 807.06, STRUCTURAL METALWORK, IN SPAN QUANTITIES: DIAPHRAGM TIE RODS, NUTS, BEVELED PLATES AND MASONRY PADS; END DAM PLATE, ANCHOR STUDS OR STRAPS AND SUPPORT ANGLES.

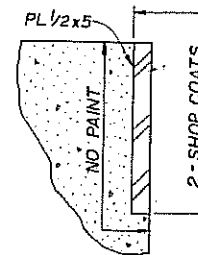
POURING SEQUENCE

SIMPLE SPAN UNITS: THE POUR RATE SHALL BE THAT INDICATED IN SUBSECTION 805.03 OF THE STANDARD SPECIFICATIONS AND BE MADE IN A CONTINUOUS POUR.

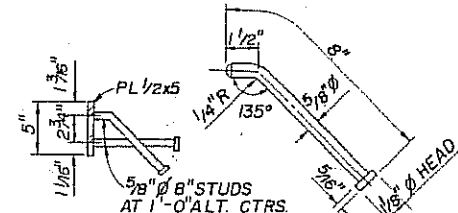
ALL UNITS:

WHERE CONSTRUCTION JOINTS ARE USED, NOT LESS THAN 7 DAYS SHALL HAVE ELAPSED BETWEEN ADJACENT POURS. THE VERTICAL SURFACES OF THE SLAB CONSTRUCTION JOINTS BETWEEN ADJACENT POURS SHALL BE COATED, PRIOR TO EACH SUCCEEDING POUR, WITH AN APPROVED 2-PART LIQUID EPOXY ADHESIVE CAPABLE OF BONDING FRESH TO CURED CONCRETE AND CURING IN THE PRESENCE OF MOISTURE. THE EPOXY SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

PAINTING REQUIREMENTS FOR END DAMS

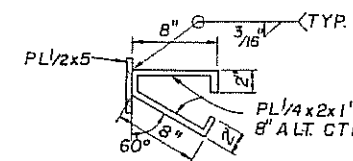


ANCHOR STUD DETAILS



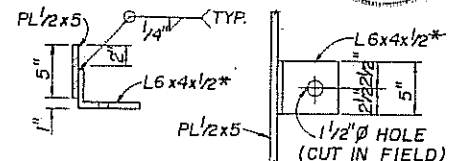
ANCHOR STUDS SHALL BE 5/8" DIA x 8" AUTO-MATIC END WELDED TYPE. ALL BENDS ARE TO BE MADE PRIOR TO WELDING.

ALTERNATE STRAP ANCHOR



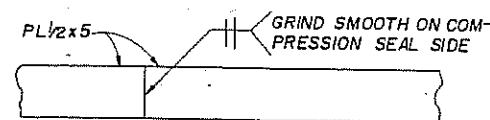
1/4 x 2 x 1'-0" STRAP ANCHORS AT 8" ALTERNATE CENTERS MAY BE SUBSTITUTED FOR 5/8" DIA x 8" STUDS AT NO ADDITIONAL PAY.

END DAM ANCHOR ANGLE



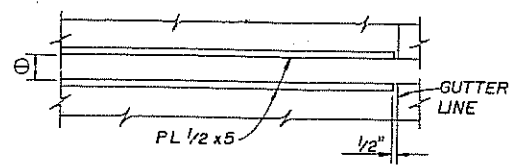
\*USE L 8 x 4 x 1/2 FOR APPROACH SLAB END DAMS.

PERMISSIBLE END DAM SPLICE



PL 1/2 x 5 TO HAVE A UNIVERSAL MILL FACE FINISH ON TOP OR TOP EDGE IS TO BE FINISHED SMOOTH IF CUT TO MATCH CROWN OF ROADWAY.

PART PLANT OF JOINT



SEE SPAN DETAILS FOR JOINT OPENING

80.20 x 150 pcf x 17 = 324,810 lb  
 129 ft x 1.69 ft<sup>2</sup> x 150 pcf = 32,701 lb  
 387.5 ft x 58.3 lb/ft = 225,621 lb  
 1'-1 1/2" x 5'-6" = 1.125 x 15 = 1.69 ft<sup>2</sup>

Total Wtg = 17,130 + 324,810 + 931 + 32,701 + 225,621 = 601,193 lb = 300 Ton

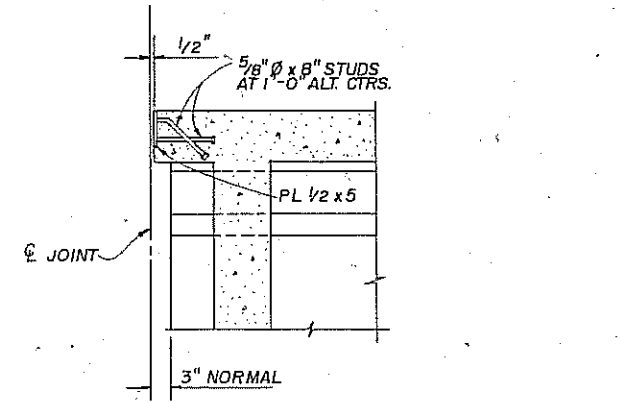
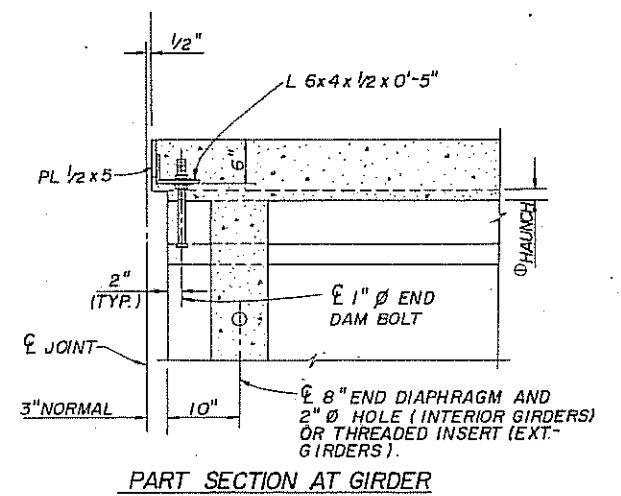
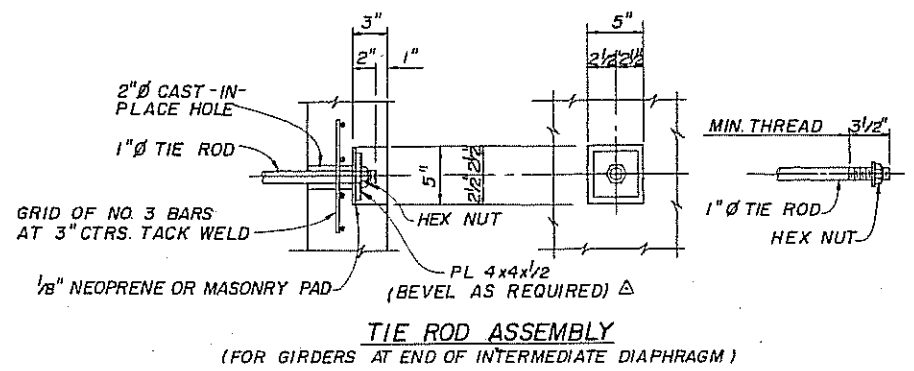
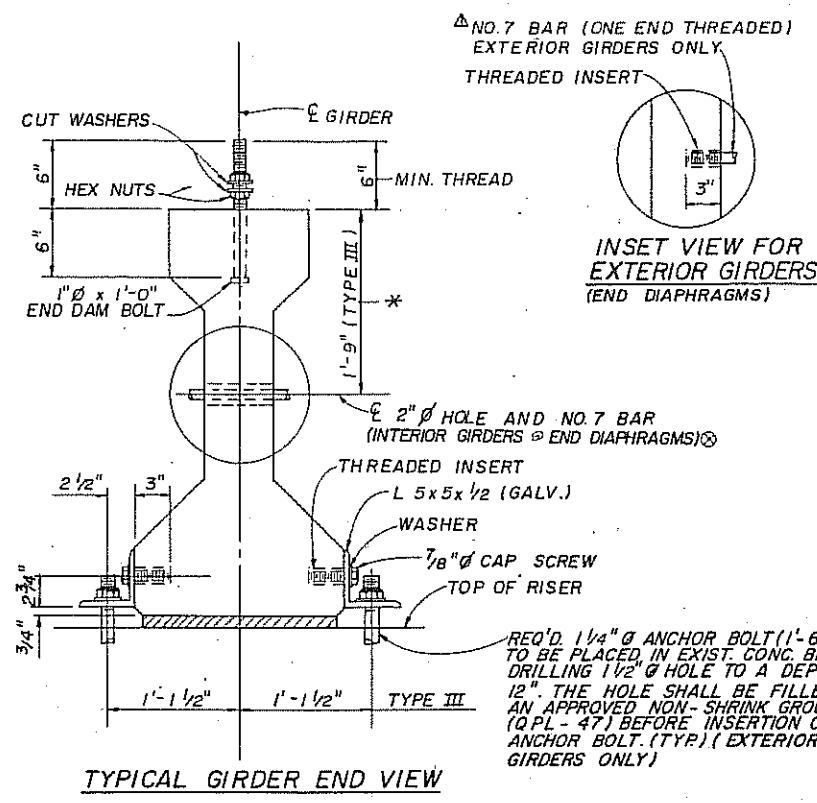
REPLACEMENT BRIDGE SPAN NO. 232L

PEPPER & ASSOCIATES, INC.  
CONSULTING ENGINEERS  
3012 26th STREET METAIRIE, LA.

LAKE PONTCHARTRAIN  
BRIDGE REHABILITATION

DESIGNED			DETAILED			TRACKED		
CHECKED			CHECKED			CHECKED		

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REVISIONS		



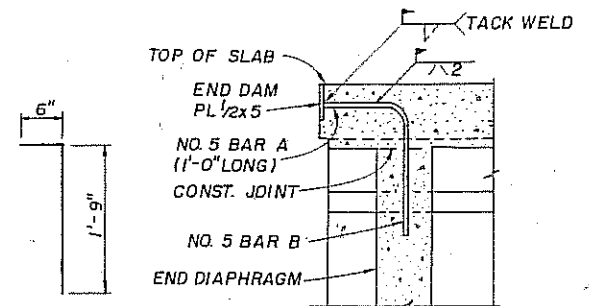
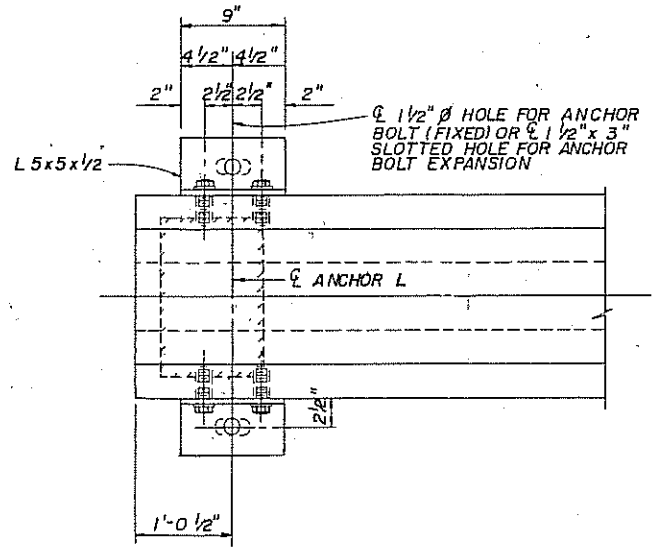
⊙ 2" Ø HOLE (INTERIOR GIRDERS) AND 2" Ø HOLE WITH 5" SQUARE WELL (EXTERIOR GIRDERS) FOR 1" Ø TIE ROD AND ASSEMBLY ARE REQUIRED AT END INTERMEDIATE DIAPHRAGM FOR SPANS GREATER THAN 50' IN LENGTH.

\* THIS DIMENSION MAY BE ADJUSTED TO CLEAR DRAPED STRANDS WHEN NECESSARY AND IS TYPICAL FOR ALL GIRDERS REGARDLESS OF ROADWAY CROWN.

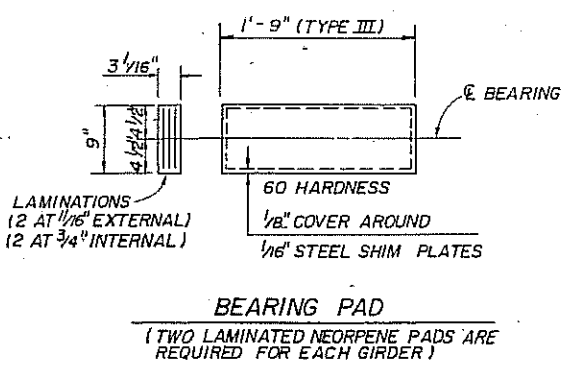
△ THE CONTRACTOR, AT HIS OPTION, MAY USE EITHER NO. 7 BARS OR SWEDGED BOLTS OF THE SAME SIZE AND LENGTH AT NO ADDITIONAL PAY.

△ INSIDE FACE OF 4x4x1/2 PLATE SHOULD BE BEVELED AS REQUIRED TO PROVIDE FULL AND EVEN BEARING. SHOP DRAWINGS WILL BE REQUIRED IN ACCORDANCE WITH LATEST APPROVED LA. D.O.T.D. STANDARD SPECIFICATIONS.

**NOTE (TIE ROD ASSEMBLY):**  
HAND TIGHTEN NUT AGAINST PLATE BEFORE POURING INTERMEDIATE DIAPHRAGM. AFTER DIAPHRAGM AND SLAB ARE IN PLACE FOR 48 HOURS, TIGHTEN NUT FIRMLY AND PAINT ALL EXPOSED SURFACES OF WELL, STEEL PLATE, ROD AND NUT WITH AN APPROVED EPOXY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND GROUT FLUSH WITH EDGE OF BEAM (NO DIRECT PAYMENT)



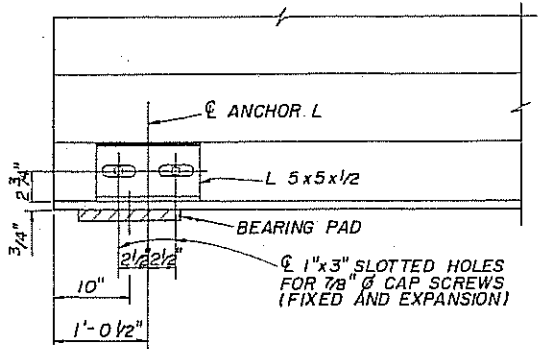
⊙ HAUNCH THICKNESS REQUIRED BY THE PLANS IS TO BE MAINTAINED AT END BEARING EXCEPT FOR GIRDER FABRICATION AND CONSTRUCTION TOLERANCES. THIS DIMENSION IS TO BE VARIED AS REQUIRED WITHIN THE SPAN IN ORDER TO MAINTAIN CONSTANT SLAB THICKNESS AND TO CONSTRUCT THE DECK TO PROPER GRADE.



**BEARING PAD**  
(TWO LAMINATED NEOPRENE PADS ARE REQUIRED FOR EACH GIRDER)

**NOTES (BEARING ASSEMBLY):**

- BEARING ASSEMBLY, EXCEPT BEARING PAD, IS REQUIRED ONLY ON EXTERIOR GIRDERS. BEARING PADS ARE REQUIRED FOR ALL GIRDERS AND ARE TO BE SHIPPED FREE OF GIRDER.
- WASHERS AND CAP SCREWS AT BEARING ASSEMBLY ARE TO BE GALVANIZED. AT THE CONTRACTOR'S OPTION, THREADED INSERTS AT BEARING ASSEMBLY MAY BE GALVANIZED OR ELECTRO-PLATED AND COVERED WITH GREASE.



**NO. 5 BARS B**  
(2 1/2" Ø PIN)

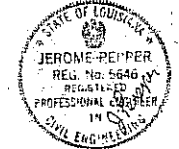
**SECTION BETWEEN GIRDERS**  
(SHOWING END DAM STABILIZER BARS)

**END DAM STABILIZER BARS:**  
NO. 5 BARS B SHALL BE PLACED IN ONE END DIAPHRAGM PER JOINT EQUALLY SPACED BETWEEN END DAM ANCHOR ANGLES AND BOLTS AT 4'-6" MAXIMUM CENTERS NO. 5 BARS A TO BE TACK WELDED TO THE END DAM PLATE AT THE NO. 5 BAR B LOCATIONS. NO DIRECT PAY FOR END DAM STABILIZER BARS.

**PROCEDURES:**

- CAST NO. 5 BARS B IN END DIAPHRAGM CONCRETE.
- LOOSELY TIE NO. 5 BARS A TO NO. 5 BARS B AFTER END DAMS AND DECK STEEL ARE IN PLACE.
- TACK WELD NO. 5 BARS A TO END DAM PLATE.
- ADJUST END DAM FIRMLY TIE AND THEN WELD NO. 5 BARS A TO NO. 5 BARS B.
- CAST DECK.

**PART ELEVATION AT BEARING**  
(SHOWING BEARING ANCHOR DETAILS)  
APPLIES ONLY TO EXTERIOR GIRDERS



REPLACEMENT BRIDGE SPAN NO. 232L  
MISCELLANEOUS SPAN AND GIRDER DETAILS

PEPPER & ASSOCIATES, INC.  
CONSULTING ENGINEERS  
3012 26th STREET METAIRIE, LA.

**LAKE PONTCHARTRAIN  
BRIDGE REHABILITATION**

DESIGNED: \_\_\_\_\_ DETAILED: \_\_\_\_\_ TRACED: \_\_\_\_\_  
CHECKED: \_\_\_\_\_ CHECKED: \_\_\_\_\_ CHECKED: \_\_\_\_\_

STATE OF LOUISIANA  
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

DATE	DESCRIPTION	BY
REVISIONS		