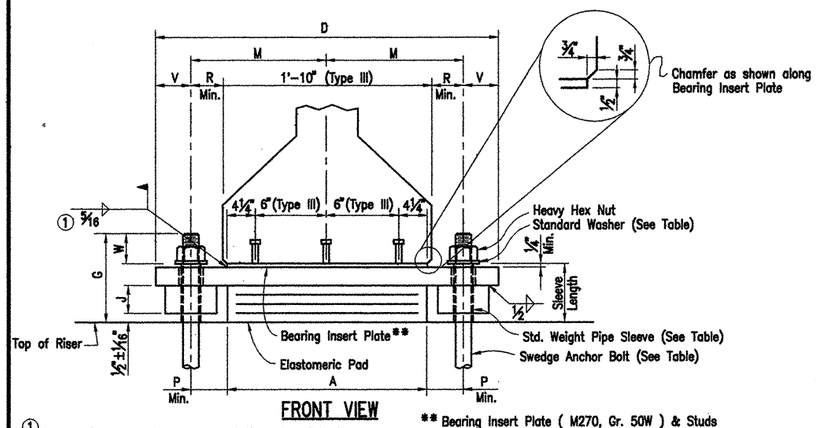
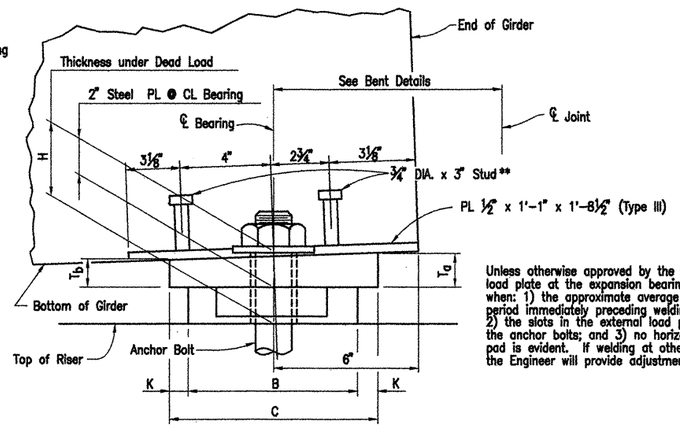
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4/1/09					ARK.			
				JOB NO.		110503	98	233
				07027	ELAST. BEARINGS			41903



FRONT VIEW

① Care shall be taken to ensure that the external load plate is in full, complete contact with the Bearing Insert Plate before welding begins.

** Bearing Insert Plate (M270, Gr. 50W) & Studs shall be considered subsidiary to the item "Prestressed Concrete Girders".

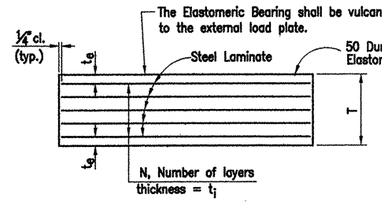


SIDE VIEW

Unless otherwise approved by the Engineer, welding of the external load plate at the expansion bearings to the girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40°F and 80°F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.

TABLE OF DESIGN VARIABLES

ANCHOR BOLT DIAMETER	PIPE SLEEVE NOMINAL DIAMETER	SHEET METAL SLEEVE DIA.	STANDARD WASHER SIZE (O.D.)	MINIMUM EMBEDMENT LENGTH	SLOT WIDTH "F"	P Min.	R Min.	V	W
1 1/2"	1 1/2"	3"	3"	15"	2 3/8"	4 1/2"	2 5/8"	4 1/2"	2 5/8"



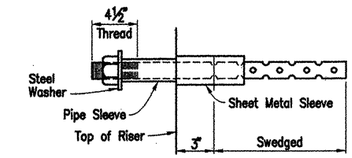
t_e = thickness of elastomer cover on top and bottom of pad
t_i = thickness of elastomer between steel laminae
N = number of elastomer layers of thickness t_i

ELASTOMERIC BEARING

TABLE OF FABRICATOR VARIABLES

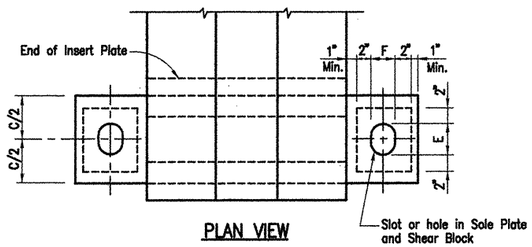
* Maximum Design Load = Service Load

UNIT NO.	BENT OR PIER NO.	BEAM NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (kips)	G	H	ELASTOMERIC PAD A	B	N	t_i	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	EXTERNAL LOAD PLATE C	D	E	F	J	K	M	T_a	T_b	ANCHOR BOLT ANCHOR BOLT (ø x L)	GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
308	Bts. 1, 21 ⚠	All	Exp.	6	109	8"	4 1/16"	22"	6"	4	7/16"	1/4"	5 @ 12 Ga.	2 3/4"	10"	40"	4"	2 3/8"	2 3/16"	2"	15 1/2"	2"	2"	1 1/2" X 26"	55	1 1/2" X 5"	3" X 12"	3"
	Bts. 5, 9, 13, 17, ~~21, 25, 29~~	All	Exp.	12	109	8"	4 1/16"	22"	6"	4	7/16"	1/4"	5 @ 12 Ga.	2 3/4"	10"	40"	4"	2 3/8"	2 3/16"	2"	15 1/2"	2"	2"	1 1/2" X 26"	55	1 1/2" X 5"	3" X 12"	3"
	Bts. 2–4, 6–8, 10–12, 14–16, 18–20	All	Fix	12	125	8"	4 11/16"	22"	6"	4	7/16"	1/4"	5 @ 12 Ga.	2 3/4"	9"	40"	2 3/8"	2 3/8"	2 3/16"	1 1/2"	15 1/2"	2"	2"	1 1/2" X 26"	55	1 1/2" X 5"	3" X 12"	3"



ANCHOR BOLT DETAIL

NOTE:
Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.
If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of prestressed girders, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, Gr. 50W)



PLAN VIEW

Slot or hole in Sole Plate and Shear Block

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."

External load plates & shear blocks shall conform to AASHTO M270, Grade 50W and will not be paid for separately, but will be included in the price bid for "Elastomeric Bearings". Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or AASHTO M298, Class 50.

External load plates with shear blocks shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be cleaned before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be cleaned in accordance with subsection 808.03. Other surfaces shall be blast cleaned in accordance with subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

Anchor bolts, washers and nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe sleeves, Anchor bolts, washers and nuts shall be paid for at the unit price bid for "Structural Steel in Plate Girder Spans (M270, Gr. 50W)".

Bearings shall be seated in accordance with subsection 808.08. This work and materials are considered as subsidiary to the item "Elastomeric Bearings" and will not be paid for directly.

⚠ REMOVED INCORRECT BENTS 4/1/09
W. James Engstrom

CERTIFICATE OF AUTHORIZATION — H. JAMES ENGSTROM & ASSOC., INC. — No. 164 — ARKANSAS ENGINEER

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — NO. 3125 — W. JAMES ENGSTROM — 9/4/07

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 4281 — W. B. CONWAY

BRIDGE ENGINEER

ALTERNATE NO. 1
WHITE RIVER RELIEF BRIDGE

DETAILS OF ELASTOMERIC BEARINGS WITH SHEAR BLOCKS

ROC ROE & WHITE RIVER RELIEF STRS. & APPRS. (CLARENDON) (F) MONROE COUNTY

ROUTE 79 SEC. 13

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Engstrom/Modjeski and Masters, Inc.

DRAWN BY: CJA DATE: Sept. 07 FILENAME: b11050312_e1
CHECKED BY: YO DATE: Nov. 01 SCALE: 1 1/2"=1'-0"
DESIGNED BY: FS DATE: Nov. 01

BRIDGE NO. 07027 DRAWING NO. 41903