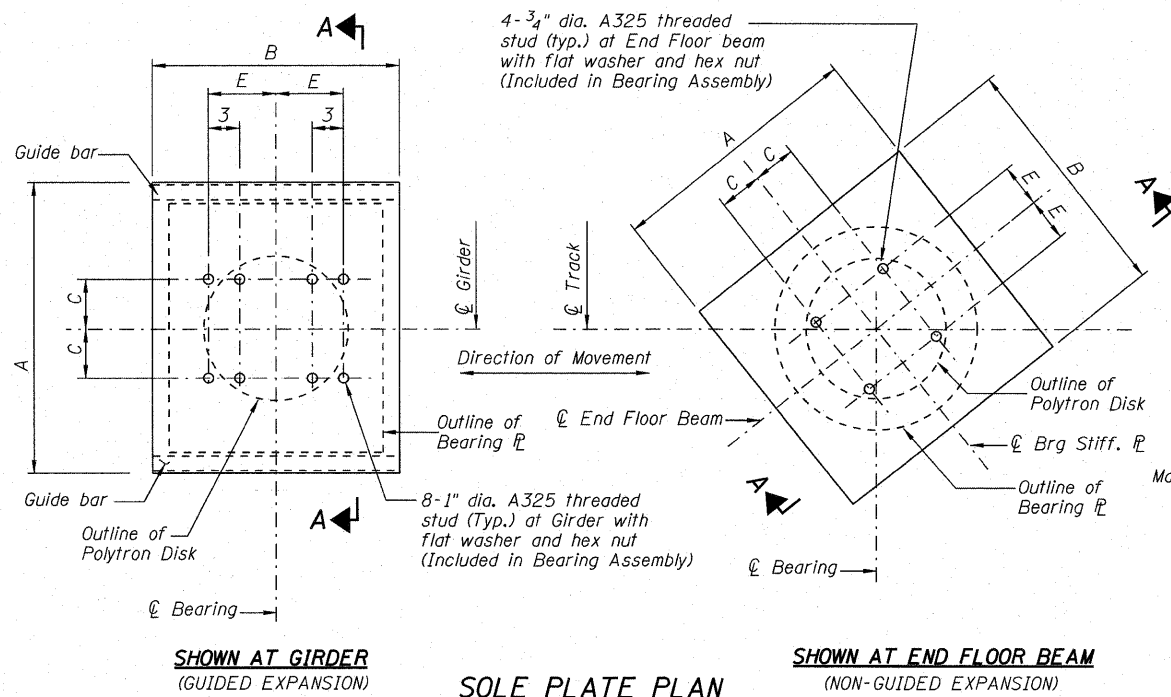
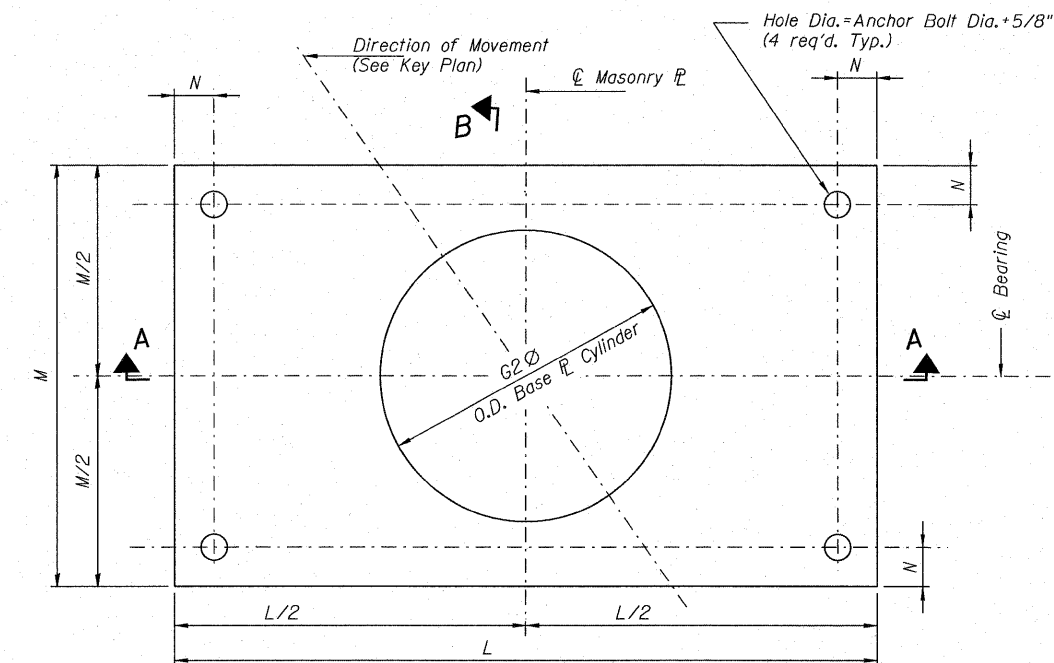


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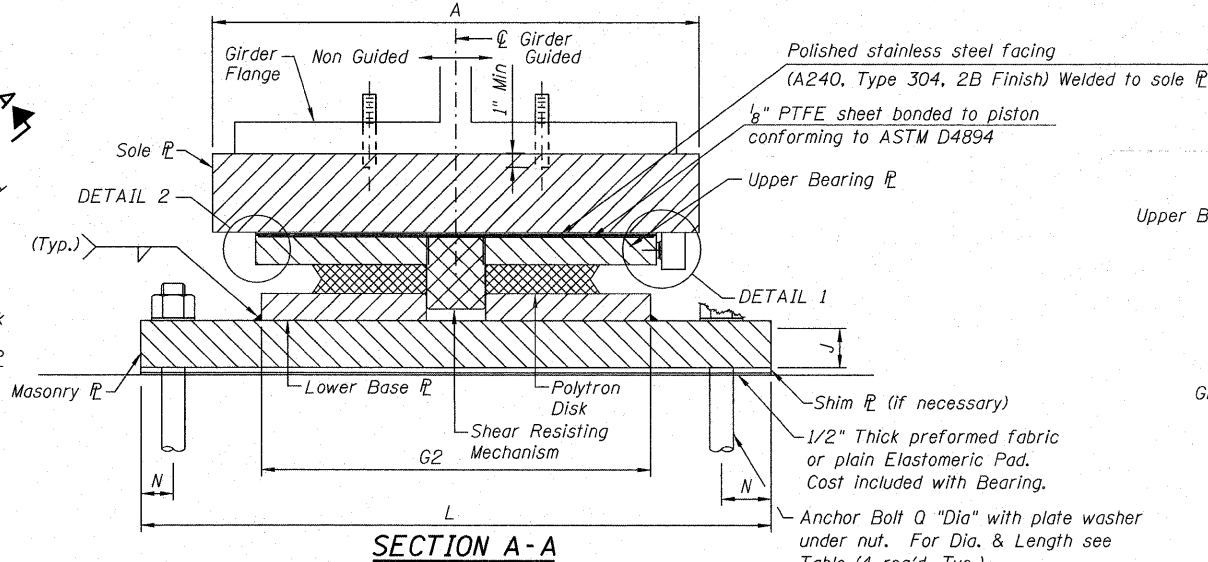
SOLE PLATE PLAN



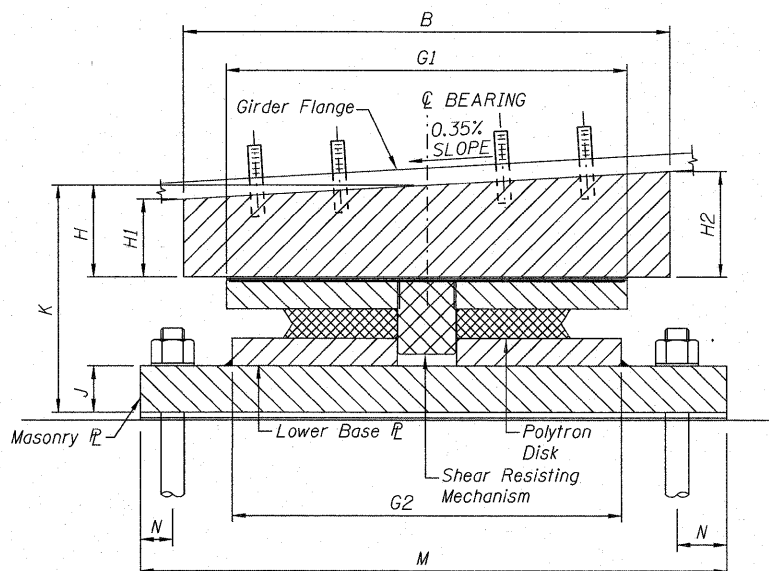
MASONRY PLATE

HLMR BEARING, GUIDED & NON-GUIDED EXPANSION

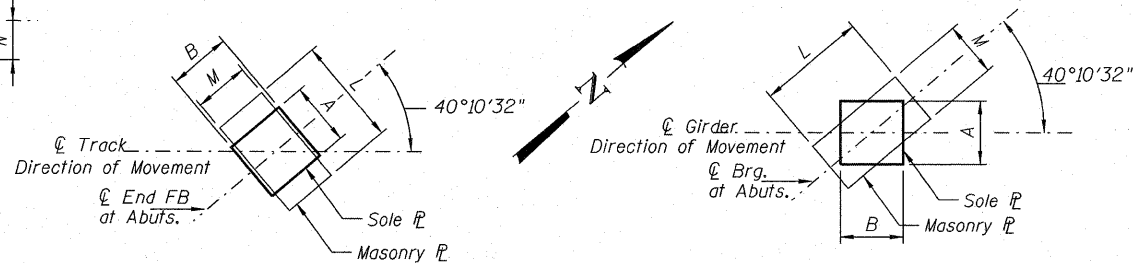
PLAN



SECTION A-A



SECTION B-B

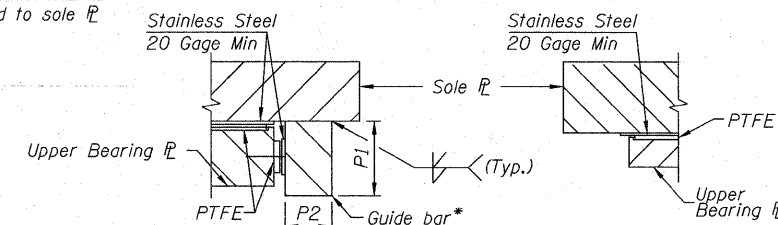


BEARING LAYOUT AT END FLOOR BEAM LOCATION

BEARING LAYOUT AT GIRDER LOCATION

SOLE PLATE AND MASONRY PLATE KEY PLAN

* As an alternate to the welded connection shown, the guide bars may be bolted or fabricated as a single piece.

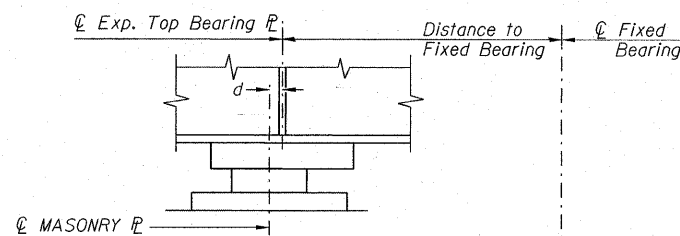


DETAIL 1

DETAIL 2

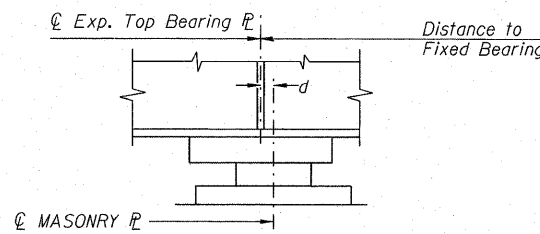
(Guided Bearings for main Through Girders at Abutments to have guide bars)

(Non-guided Bearings for end floor beams do not have guide bars)



BELOW 50° F

(Move masonry away from fixed bearing)



ABOVE 50° F

(Move masonry toward fixed bearing)

SETTING ANCHOR BOLTS AT EXPANSION BEARINGS

NOTE: $d = \frac{1}{8}$ " per each 100' of expansion for every 15°F temperature change from the normal temperature of 50°F.

Notes:

- See Sheet No. 14, 17 & 21 for anchor bolt installation.
- Anchor bolts shall be ASTM F1554 Grade 36 all-thread (or an Engineer-approved alternate material) of the diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 ($F_y=36\text{ksi}$). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- All structural steel for bearings shall be ASTM A572 Grade 42.
- Bearings shall conform to the Multi-Rotational Disc Bearing section of the 2010 AREMA Code.
- Anchor bolts for masonry plates shall be cast into abutments.

BEARING LOCATION	VERT. LOAD (k)	HORZ. LOAD (k)	ROTATION (rad)	A	B	C	E	G1	G2	H	H1	H2	J	K	L	M	N	P1	P2	ANCHOR BOLT O "DIA." x Length	PLATE WASHER
E. & W. Abuts. - Girders	1265	127	0.015	3'-0"	2'-10"	8"	6 $\frac{1}{2}$ "	2'-6"	2'-1"	4 $\frac{15}{16}$ "	4 $\frac{7}{8}$ "	5"	3"	1'-2 $\frac{9}{16}$ "	3'-4 $\frac{1}{2}$ "	2'-6"	2 $\frac{5}{8}$ "	3"	2"	1 $\frac{1}{2}$ "x1'-6"	3"x 3"x $\frac{5}{16}$ "
E. & W. Abuts. & Pier - End Floor Beams	500	50	0.015	1'-10 $\frac{1}{4}$ "	1'-10 $\frac{1}{4}$ "	4"	4"	1'-6 $\frac{1}{4}$ "	1'-3 $\frac{5}{16}$ "	2 $\frac{15}{16}$ "	2 $\frac{29}{32}$ "	2 $\frac{31}{32}$ "	2 $\frac{3}{4}$ "	10 $\frac{1}{16}$ "	2'-5 $\frac{1}{2}$ "	1'-6"	1 $\frac{3}{4}$ "			1 $\frac{1}{4}$ "x1'-0"	2 $\frac{3}{4}$ "x2 $\frac{3}{4}$ "x $\frac{5}{16}$ "

EXPANSION BEARING DATA

DESIGNED - KJH
CHECKED - MGB
DRAWN - RJ
CHECKED - MGB

McDonough Associates Inc.
Engineers / Architects
130 East Randolph Street Chicago, Illinois 60601

SHEET NO. 12 25 SHEETS	F.A.P RTE. 330	SECTION 73 R-B	COUNTY COOK	TOTAL SHEETS 136	SHEET NO. 64
	CONTRACT NO. 60K64				
DATE: 12/17/10		ILLINOIS FED. AID PROJECT			

HLMR EXPANSION BEARINGS
STRUCTURE NO. 016-6201