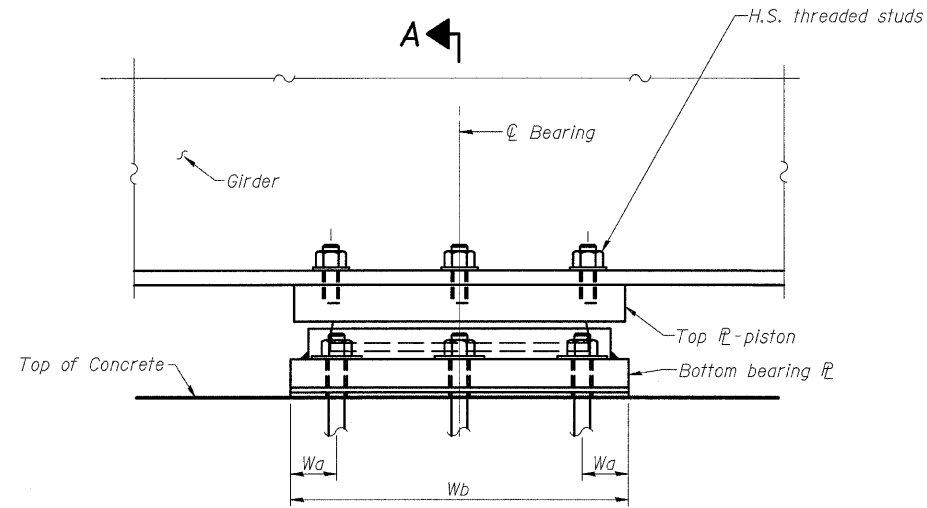


1/12/2010 2:16:37 PM

z:\00f.ies\000024.d\1\Over-Bridge-Plans\0600332PotBearing.mxd



**ELEVATION
HLMR BEARING, FIXED**

SCHEDULE

Location	Type	Vertical Design Load kips	Total Vertical Reaction kips	Slope of Top of Top PL (%)	LL Rotation Range Radians	Positive Angle of Thermal Movement	Total Required Movement -30°F to +130°F
S. Abutment	HLMR Bearing, Guided Expansion	200	166.4	1.51	-0.0009 to 0.0024	3°24'49"	2 1/2"
Pier 1	HLMR Bearing, Fixed	600	553.1	0.53	-0.0016 to 0.0016	---	---
Pier 2	HLMR Bearing, Guided Expansion	450	442.2	0.58	-0.0016 to 0.0012	3°51'13"	2 3/4"
N. Abutment	HLMR Bearing, Guided Expansion	150	131.1	1.36	-0.0017 to 0.0009	6°33'24"	4 3/4"

Location	Top Plate Assembly				Bottom Plate Assembly					Total Bearing Height Th	
	Tt	L	E	Min. φ H.S. Threaded Studs	Tb	Wb	Lb	Wa	La		D
S. Abutment	2 1/4"	10"	2 1/4"	1"	2 1/4"	14"	27 1/2"	1 3/4"	1 3/4"	10"	8"
Pier 1	3 1/4"	20"	---	1 1/2"	2 1/2"	21"	30"	2 5/8"	2 5/8"	19"	9 1/4"
Pier 2	2 1/2"	16 1/4"	2 3/8"	1 1/4"	2 1/2"	18 1/4"	28"	2 5/8"	2 5/8"	16 1/4"	9 1/2"
N. Abutment	2 1/4"	10"	3 3/8"	1"	2"	14"	25 1/2"	1 3/4"	1 3/4"	9 3/4"	7 3/4"

② HLMR Bearing, Fixed, at Pier 1 shall have a Design Longitudinal Reaction of 190 kips, and a Design Lateral Reaction of 85 Kips. These reactions need not act simultaneously.

Notes:

The 1/8" TFE sheet shall be bonded directly to the piston with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type 1. The bond agent shall be applied to the full area of the contact surface.

Actual total bearing heights (Th) may differ from contract plans. Contractor to verify bearing heights and adjust girder seat elevations if required.

All structural steel for bearings shall be AASHTO M270, Grade 50.

"Total Vertical Reaction" in table is the actual controlling vertical service load.

Inverted HLMR bearing configurations are not permitted.

Work this sheet with sheet #30 of 47.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

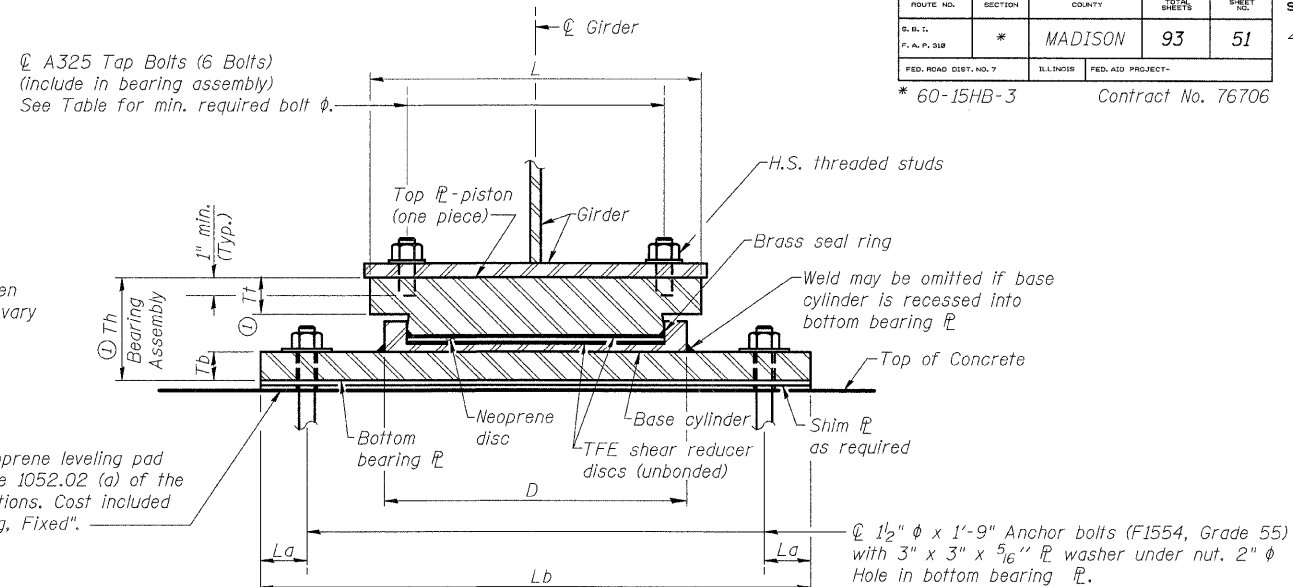
Anchor bolts may be either cast in place or installed in holes drilled after the supported member is in place.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

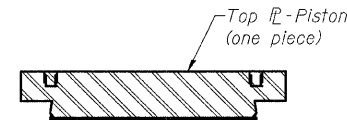
DESIGNED	ADL
CHECKED	WLW
DRAWN	RLW
CHECKED	WLW

① Dimensions Tt and Th are given at center bearing. Thickness will vary because girders are sloped.

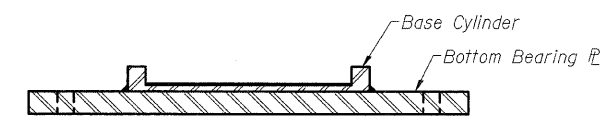
1/8" elastomeric neoprene leveling pad according to Article 1052.02 (a) of the Standard Specifications. Cost included with "HLMR Bearing, Fixed".



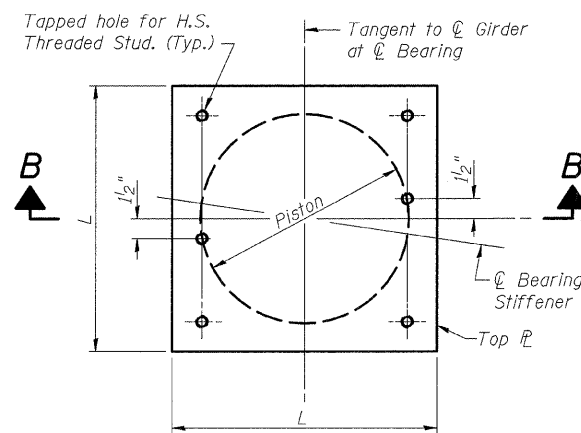
SECTION A-A



SECTION B-B

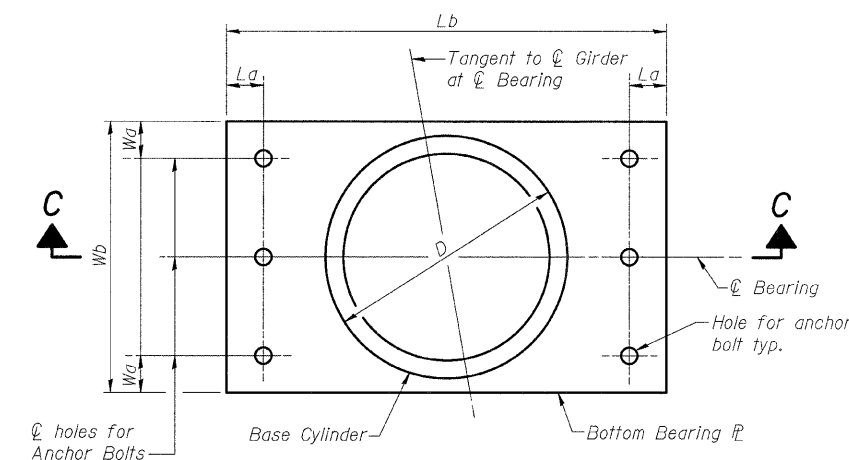


SECTION C-C



**TOP PL-PISTON PLAN
FOR HLMR BEARING, FIXED**

Girder not shown for clarity. Plan Dimensions of Top Plate not shown in schedule to be determined by Bearing Fabrication.



**BOTTOM BEARING PL AND
BASE CYLINDER PLAN
FOR HLMR BEARING, FIXED**

BILL OF MATERIAL

Item	Unit	Total
HLMR Bearing, Fixed - 600K	Each	6
HLMR Bearing, Guided Expansion, 200K	Each	6
HLMR Bearing, Guided Expansion, 450K	Each	6
HLMR Bearing, Guided Expansion, 150K	Each	6

**HLMR BEARING DETAILS
RAMP B OVER FAP RTE 310
SECTION 60-15HB-3
MADISON COUNTY
STATION 17+72.64 (RAMP B)
SN 060-0332**