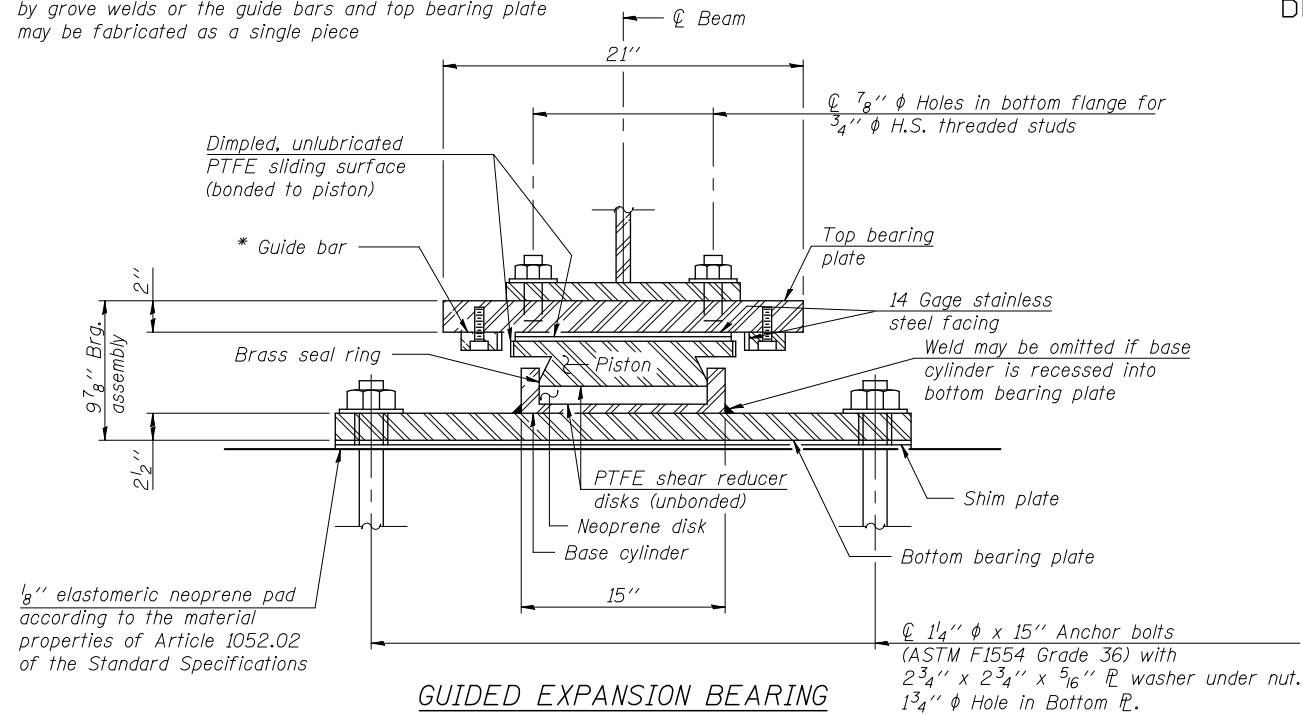


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

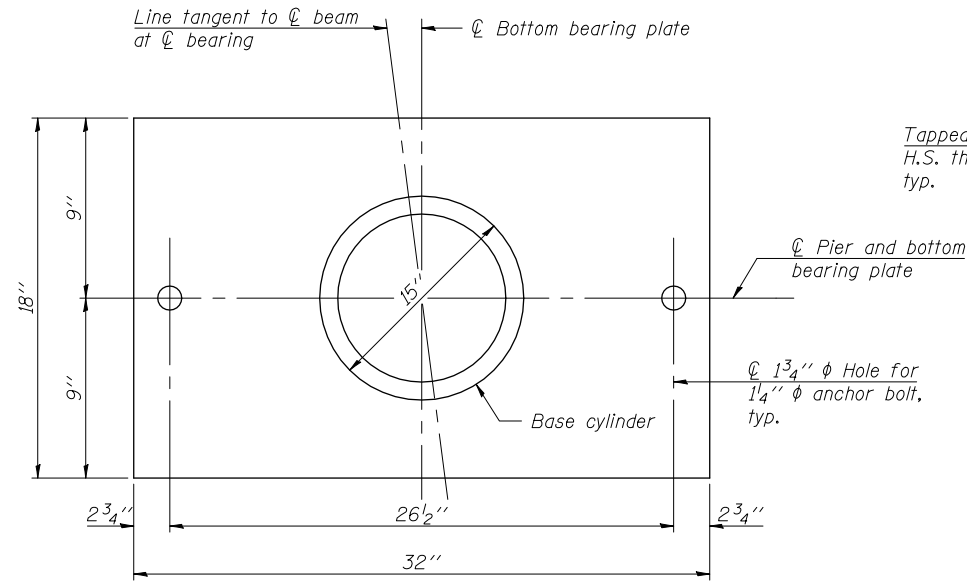
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 32 52 SHEETS
F.A.U. 7706	23(B-1)	LOGAN	179	116	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract #72789

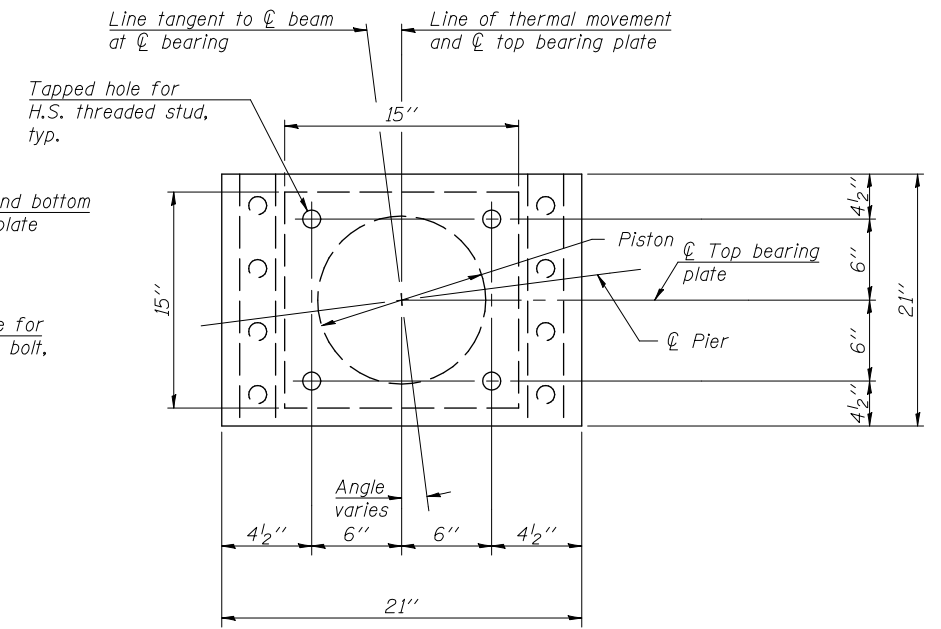
\* As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece



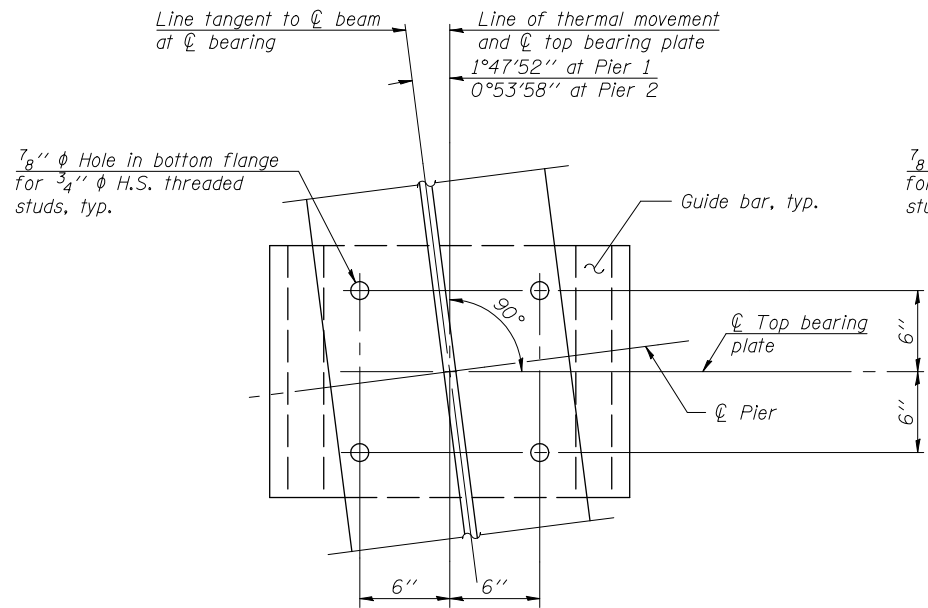
**GUIDED EXPANSION BEARING  
PIERS 1, 2, AND 4**



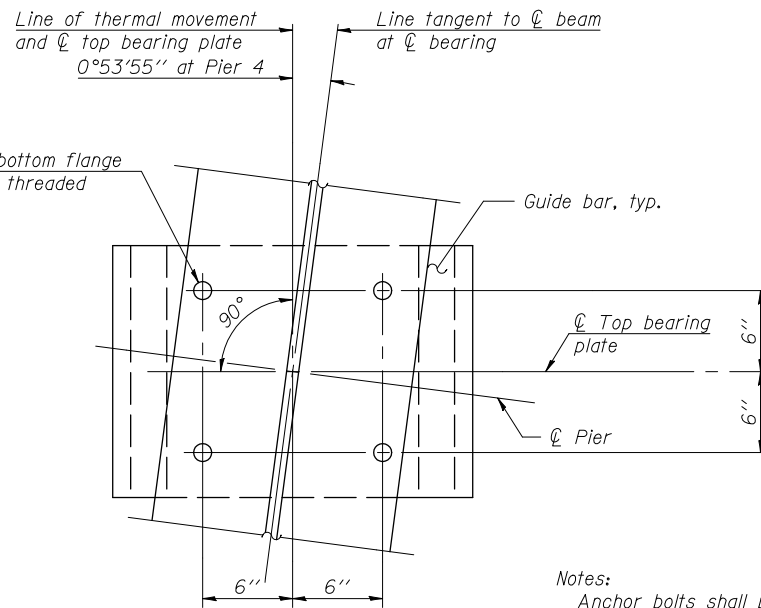
**BOTTOM BEARING PLATE AND  
BASE CYLINDER PLAN**



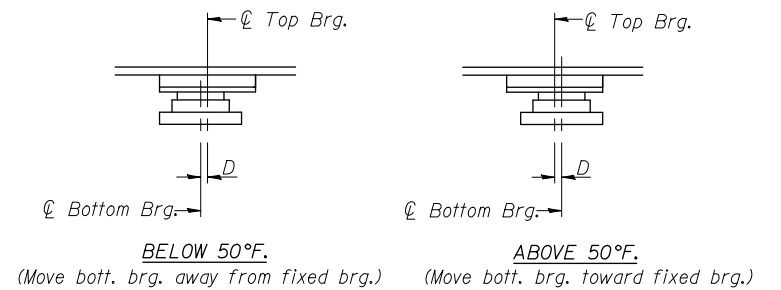
**TOP BEARING PLATE AND  
PISTON PLAN**



**PIERS 1 AND 2 BEARING ALIGNMENT**



**PIER 4 BEARING ALIGNMENT**



**SETTING ANCHOR BOLTS AT EXP. BRG.**

D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

DESIGNED	JJD
CHECKED	EML
DRAWN	JJD
CHECKED	EML

**HLMR BEARING SUMMARY TABLE**

Location	Pier 1	Pier 2	Pier 4
Type	Exp.	Exp.	Exp.
DL + LL	352 k	332 k	352 k
Total Required Movement	3"	1 1/2"	1 1/2"
Required Rotation	±0.02 Rad.	±0.02 Rad.	±0.02 Rad.

**Notes:**

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

Anchor bolts for HLMR bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place.

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

The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50W.

Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

3/4" diameter Threaded studs shall conform to AASHTO M164, Type 3.

**BILL OF MATERIAL**

Item	Unit	Total
High Load Multi-Rotational Bearings, Guided Expansion, 400k	Each	36
Anchor Bolts, 1 1/4"	Each	72

**HLMR BEARING DETAILS**

F.A.U. ROUTE 7706 - SECTION 23(B-1)

LOGAN COUNTY

STATION 99+46.00

STRUCTURE NO. 054-0512

**HORNER &  
SHIFRIN, INC.  
ENGINEERS**