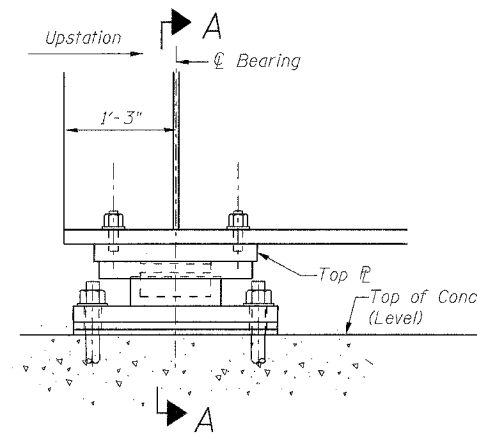


ROUTE No.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 827	12Z-3, 12BR	WABASH, IL GIBSON, IN	158	84
STA.		TO STA.		
F.H.W.A. REGION		ILLINOIS	PROJECT	

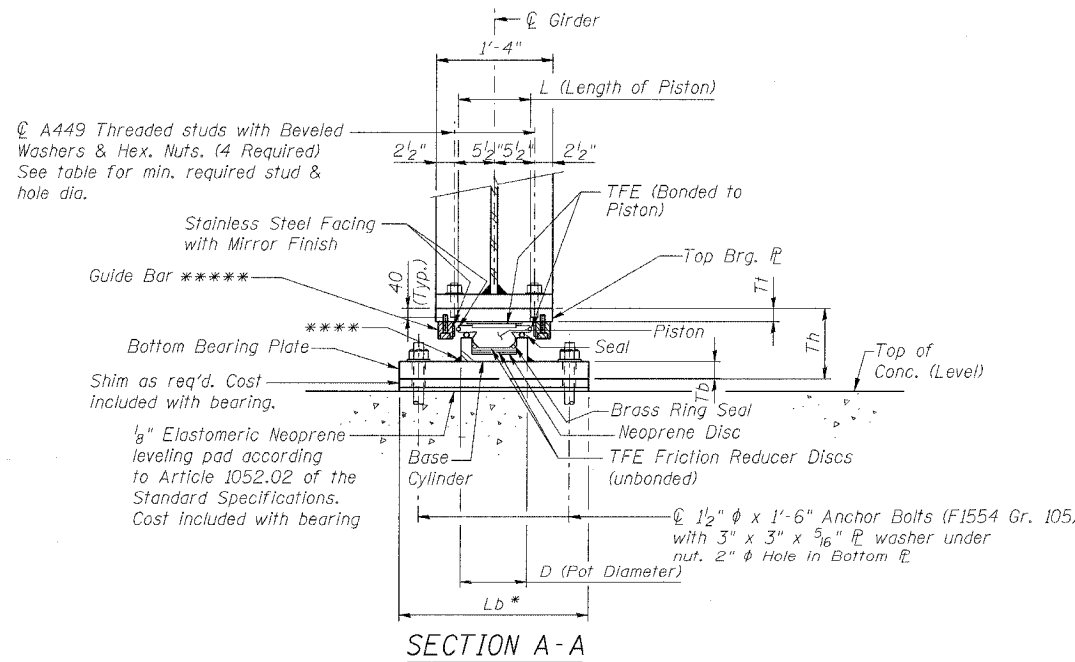
BRIDGE SHEET S68 OF S114

CONTRACT NO. 94450



ELEVATION

(Pier 1 shown, Pier 9 similar, opposite hand)



SECTION A-A

Ø A449 Threaded studs with Beveled Washers & Hex. Nuts. (4 Required) See table for min. required stud & hole dia.

Stainless Steel Facing with Mirror Finish

Guide Bar *****

Bottom Bearing Plate

Shim as req'd. Cost included with bearing.

1/8" Elastomeric Neoprene leveling pad according to Article 1052.02 of the Standard Specifications. Cost included with bearing

L (Length of Piston)

2 1/2" 5 1/2" 5 1/2" 2 1/2"

TFE (Bonded to Piston)

Top Brg. Pl.

Piston

Seal

Top of Conc. (Level)

Brass Ring Seal

Neoprene Disc

TFE Friction Reducer Discs (unbonded)

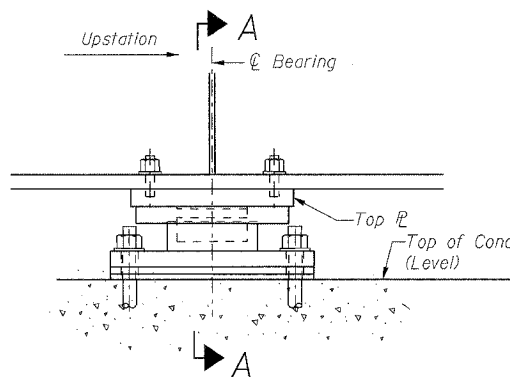
Base Cylinder

Ø 1 1/2" Ø x 1'-6" Anchor Bolts (F1554 Gr. 105) with 3" x 3" x 5/16" Pl. washer under nut. 2" Ø Hole in Bottom Pl.

D (Pot Diameter)

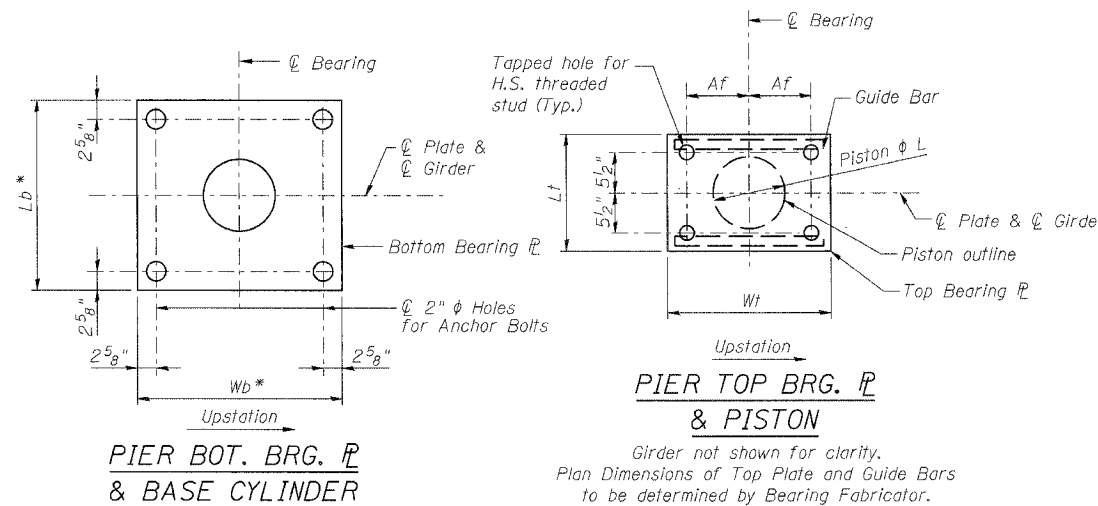
Lb *

***** Weld may be omitted if base cylinder is recessed into bottom bearing plate (Optional)
***** 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.



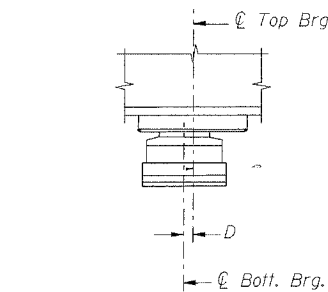
ELEVATION

(Piers 5 & 8)

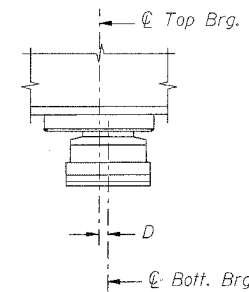


PIER TOP BRG. PL. & PISTON

Girder not shown for clarity. Plan Dimensions of Top Plate and Guide Bars to be determined by Bearing Fabricator.



BELOW 50 °F
(Move bott. brg. away from fixed brg.)



ABOVE 50 °F
(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT BEARINGS

D = 1/8" per each 100' of expansion (contraction) length for every 15 °F temperature change from the normal temperature of 50 °F.

BILL OF MATERIAL

Item	Unit	Total
HLMR Bearings, Guided Expansion, 250 kips	Ea.	12
HLMR Bearings, Guided Expansion, 600 kips	Ea.	12
Anchor Bolts, 1 1/2"	Ea.	96

NOTES:

- All steel for the HLMR Bearings shall conform to the requirements of AASHTO M 270 Grade 50, unless otherwise noted. See details for threaded studs and anchor bolt materials. Anchor bolts shall be hot-dipped galvanized in accordance with AASHTO M 232 (ASTM A 153). Studs, nuts, and washers shall be mechanically galvanized in accordance with AASHTO M 298. All other exposed structural steel of the bearings shall be cleaned and shop painted with either the inorganic or organic paint system. See Special Provision for Cleaning and Painting of New Metal Structures. Teflon and stainless steel materials shall conform to AASHTO requirements and the Special Provision for High Load Multi-Rotational Bearings.
- See sheets S50-S51 for girder layout.
- Dimensions and Bearing characteristics shown in contract drawings are exclusively those necessary for Bearing detailing. Total bearing height (Th) is based on samples of three different bearing Manufacturers. Actual Bearing height may differ from contract plans. Contractor to verify Bearing height and adjust seat elevations, if required, prior to placing pier concrete. If actual dimensions differ to those shown on the plans, then Contractor shall be responsible for meeting AASHTO edge distance requirements and for ensuring adequate clearance for installation of all Anchor Bolts and threaded studs. The Wt dimension at Piers 4 & 9 influences the overall length of the Girder and cannot exceed 2'-5" under any circumstances due to joint restrictions.
- Bearing assemblies shall be designed and assembled to allow its replacement by jacking the superstructure.
- 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.

* To be verified by the contractor for proper access of the drilling tool.
** Design Loads are the governing service loads.
*** Rotation allowances for fabrication tolerances & installation uncertainties not included.

Location	Pay Item Designation (Kips)	Vert. Design Load** (Kips)	Horiz. Design Load** (Kips)	Required Rotation Range*** (Radians)	Max. Theoretical Thermal Movement @ 50 °F	Max. Theoretical Seismic Movement @ 50 °F	Design Movement	Min. Dia. Threaded Stud	Threaded Stud Hole Dia. At Girder Bottom Pl.	
										Top Plate
Piers 4 & 9	250	196.2	48.5	+ 0.02	3 3/8"	± 3 1/4"	± 5"	1"	1 1/8"	
Piers 5 & 8	600	573.6	97.8	+ 0.02	2"	± 3 1/4"	± 4 1/4"	1 1/2"	1 5/8"	
Location										
Piers 4 & 9	8 1/2"	2'-0"	1'-4"	1 3/4"	9 7/8"	11 3/8"	1'-6"	2'-2"	1 5/8"	6 5/8"
Piers 5 & 8	10 1/2"	2'-3 3/8"	1'-8 3/4"	3"	1'-3 1/8"	1'-4 5/8"	2'-0"	2'-8"	2 1/4"	9 1/2"

DESIGNED	KWS
CHECKED	YS
DRAWN	RMG
CHECKED	KWS

benesch

alfred benesch & company
Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-665-0460
Job No. 3426

ILLINOIS DEPARTMENT OF TRANSPORTATION
IL ROUTE 15/IN ROUTE 64
OVER WABASH RIVER PUBLIC WATERS
FAP 827 SECT 12Z-3, 12BR

HLMR BEARING DETAILS
GUIDED EXPANSION

SN: 093-0021 (IL)/9502700 (IN) STA. 1036+27
WABASH CO., IL. DATE: JUNE 15, 2007

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6/26/2007