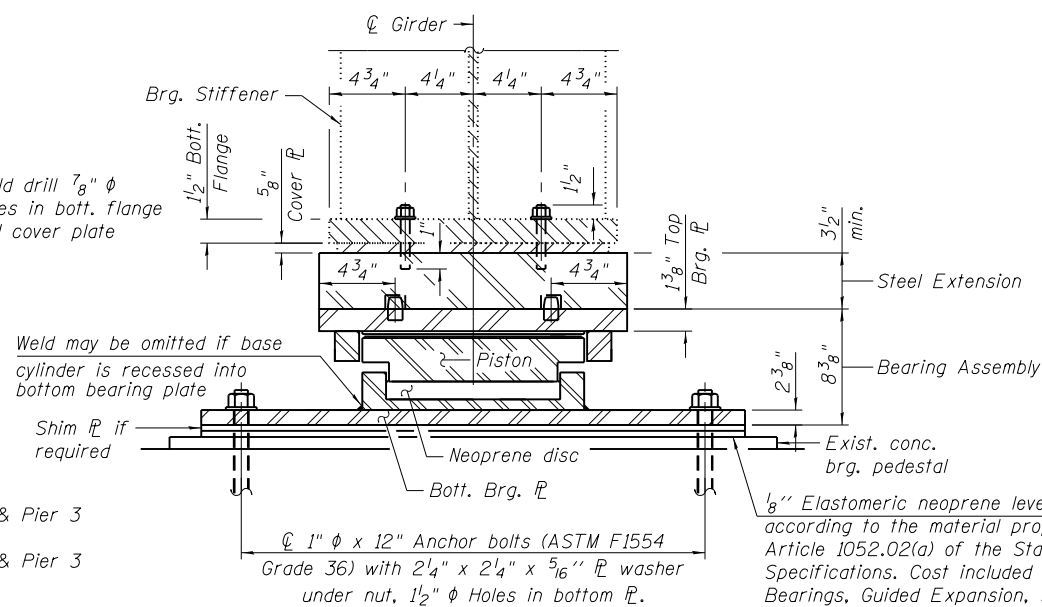


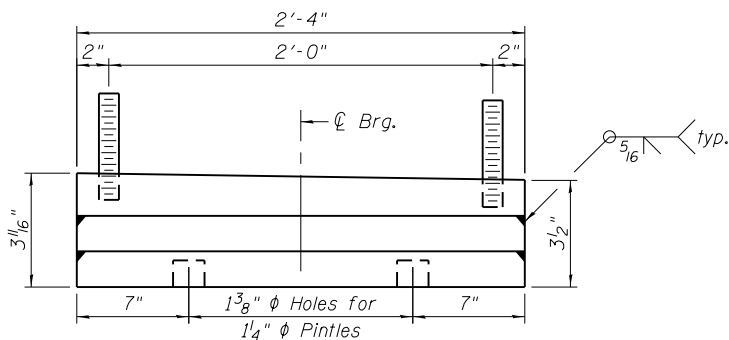
ELEVATION



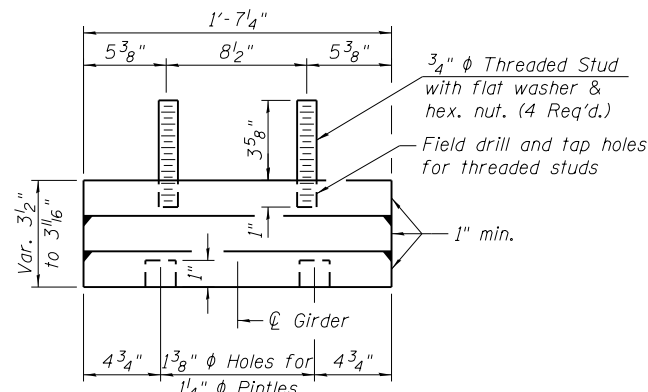
SECTION A-A

GUIDED EXPANSION HLMR BEARING

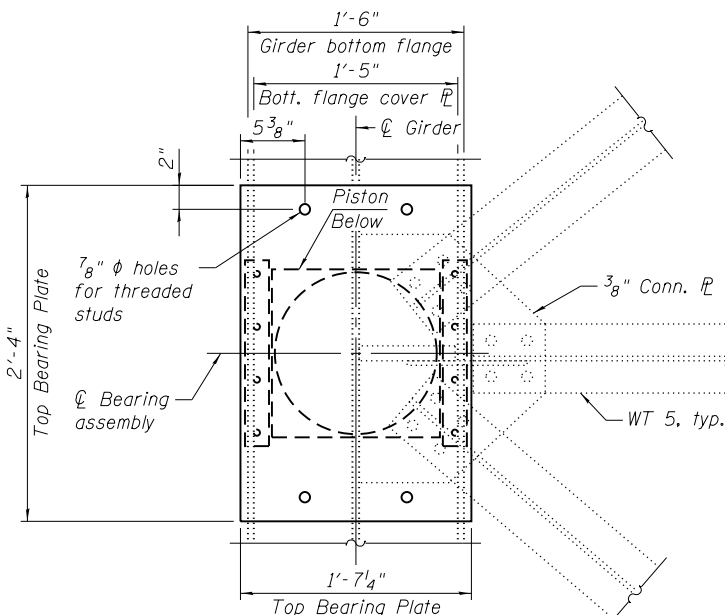
At Pier 1 and Pier 3



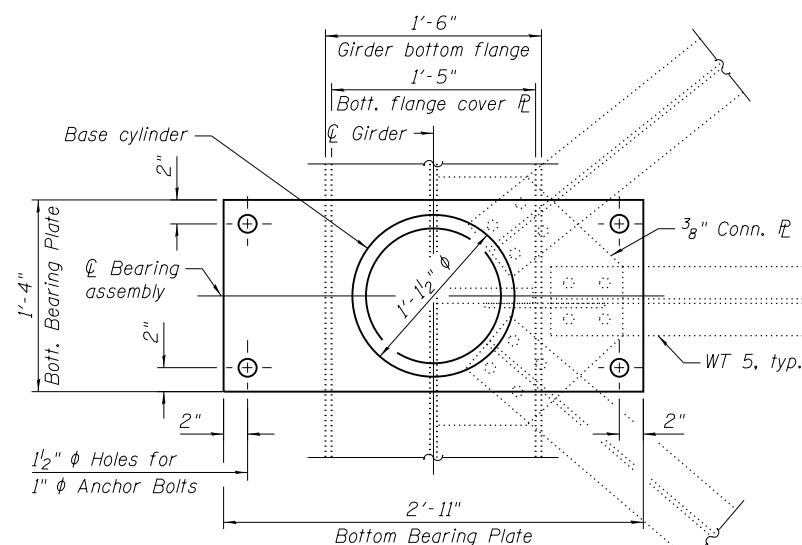
ELEVATION STEEL EXTENSION



END VIEW STEEL EXTENSION



TOP BEARING PL. AND PISTON PLAN

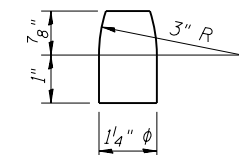


BOTTOM BEARING PL. AND BASE CYLINDER PLAN

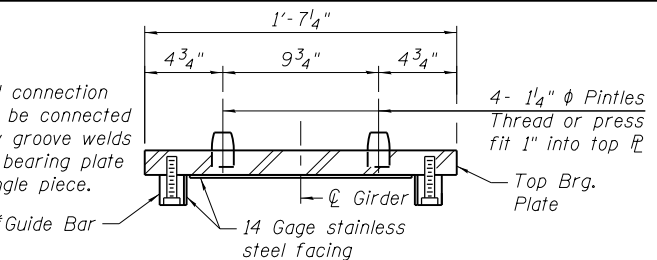
***As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.

HLMR BEARING DESIGN DATA

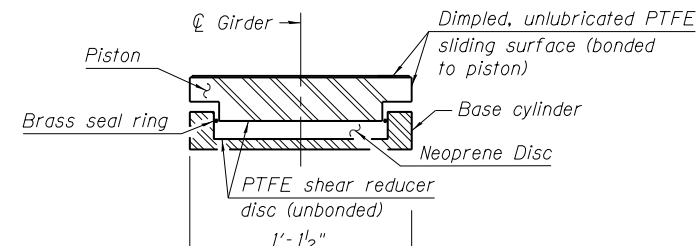
Location	Vertical Design Load (kips)	Lateral Design Load Hs (kips)	Design Rotation, Θs
Pier 1	350	70	0.4%
Pier 3			



PINTLE



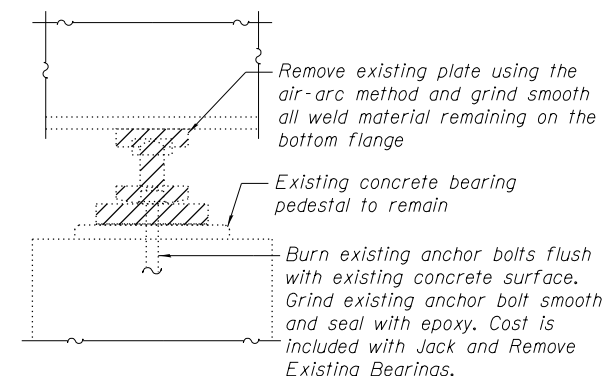
TOP BEARING PLATE ASSEMBLY



PISTON ASSEMBLY

NOTES

- The 1/8" PTFE sheet shall be bonded directly to the piston with a two component medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MM-A-134, Type 1. The bond agent shall be applied to the full area of the contact surfaces.
- The Vertical and Lateral Design Loads given are the actual unfactored controlling service loads. The Design Rotation given is the actual unfactored controlling service rotation (potential additional rotation allowances due to fabrication and installation tolerances and other uncertainties have not been included in the Θs values shown in the table).
- HLMR Bearings dimensions and details are based on a specific manufacturer's design tables. Actual dimensions and details may differ. Contractor to verify bearing heights and adjust steel extension heights as necessary based on the actual bearings provided. Cost included with HLMR Bearings, Guided Expansion, 350K.
- Cost of threaded studs and field drilling and tapping shall be included in the cost of HLMR Bearings, Guided Expansion, 350 K.
- 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.
- Cost of fabricating and installing the steel extensions and pintles shall be included with Furnishing and Erecting Structural Steel.
- Prior to ordering any material, the Contractor shall verify in the field the slope of the existing girders and all existing bearing height and shim thickness dimensions and adjust the proposed steel extension heights as required.
- The expected movement of each bearing due to temperature change from a normal temperature of 50°F is 7/8" in each direction for a total movement range of 1 3/4".
- 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 bearings are in place.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Existing cross-frame bolts shall not be disconnected without prior approval from the Engineer. Existing lateral bracing bolts may be disconnected and lateral bracing members removed provided that bolts for no more than one member are disconnected at one time. Any bolts removed shall be replaced with new ASTM A325 high strength bolts of the same diameter as existing. Cost included with HLMR Bearings, Guided Expansion, 350K.



EXISTING BEARING REMOVAL

JACK AND REMOVE EXISTING BEARINGS PROCEDURE

- Jacking of existing beams shall be done after deck is removed.
- The Contractor shall submit for approval by the Engineer details and calculations for jacking existing beams and removing and installing bearings prior to commencing any related work. Below shows the minimum jack capacity required for each bearing.

Location	Beam DL Reaction (k)	Min. Jacking Capacity (k)
W. Abut. & E. Abut.	18	30
Pier 1 & Pier 3	53	80

- There shall be at least one jack per bearing and the jack shall be placed directly under the girder. The jacking operation shall follow procedures outlined in the special provision "Jack and Remove Existing Bearings". The girders shall be blocked in position until after the completion of the installation of new bearings.
- The new bearings and steel extensions shall be in place and the jacks shall be removed before the new concrete deck is poured.

BILL OF MATERIAL

Item	Unit	Total
HLMR Bearings, Guided Expansion, 350K	Each	26
Anchor Bolts, 1"	Each	104
Jack and Remove Existing Bearings	Each	26

12/29/01 PM

5/2/2013

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BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbainc.com



USER NAME =
DESIGNED - TL
CHECKED - BAK
PLOT SCALE =
DRAWN - TL
PLOT DATE = 03/29/2013
CHECKED - BAK

DESIGNED - TL
CHECKED - BAK
DRAWN - TL
CHECKED - BAK

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS II
STRUCTURE NO. 016-2440

SHEET NO. S-28 OF S-47 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	456
CONTRACT NO. 60J12				

ILLINOIS FED. AID PROJECT