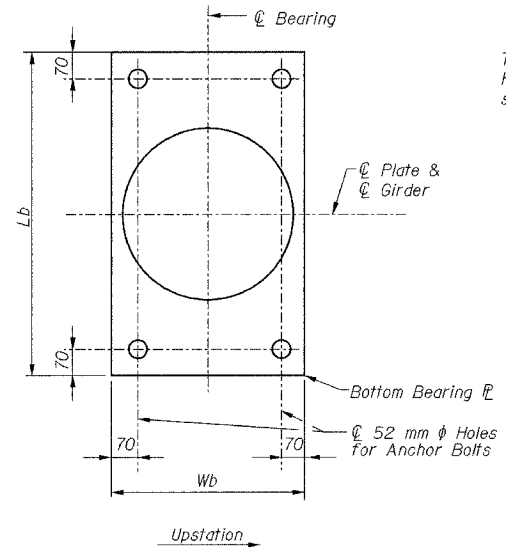
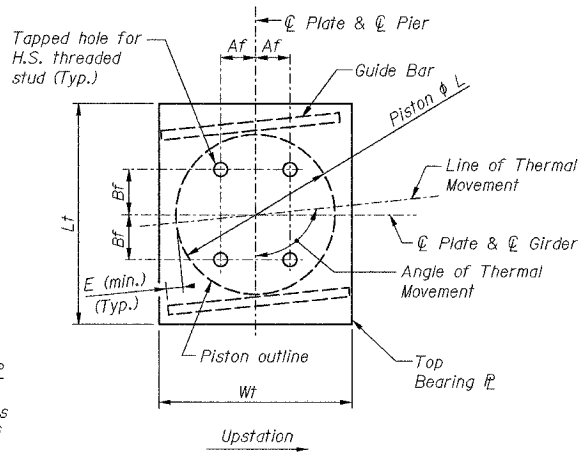


68201	ROUTE No.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 74	*	TAZEWELL	1306	574	
STA.		TO STA.			
F.H.W.A. REGION		ILLINOIS		PROJECT	



**PLAN
PIER BOT. BRG. &
BASE CYLINDER**

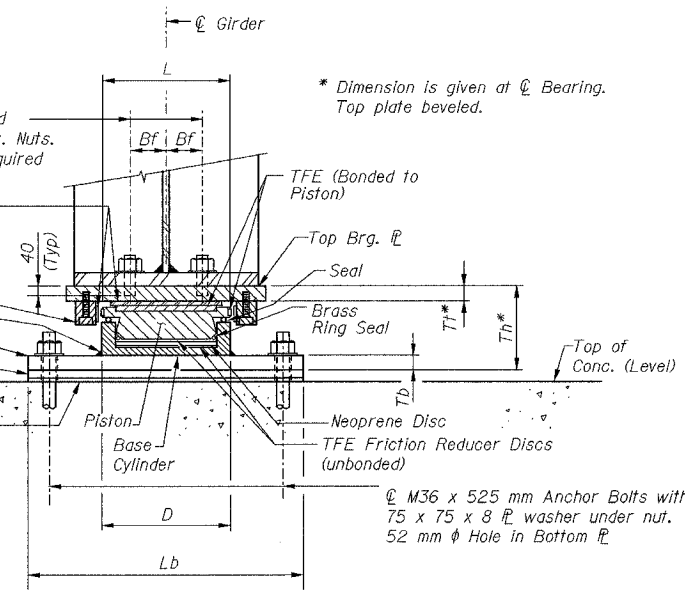


**PLAN
PIER TOP BRG. &
PISTON**

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

Ø F1554 (Fy = 724 MPa) Threaded Studs with Beveled Washers & Hex. Nuts. (4 Required) See table for min required stud & hole dia. Stainless Steel Facing with Mirror Finish

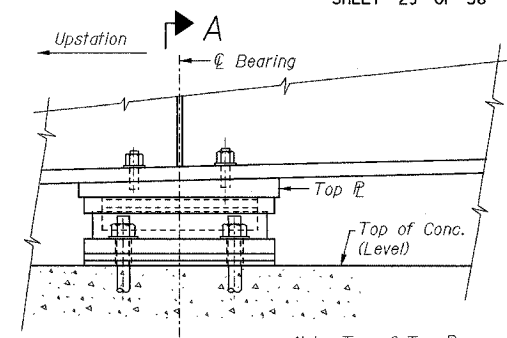
Guide Bar****
**** Weld may be omitted if base cylinder is recessed into bottom bearing plate (Optional)



SECTION A-A

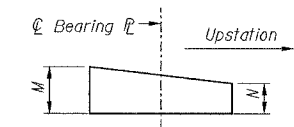
* Dimension is given at Ø Bearing. Top plate beveled.

***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.

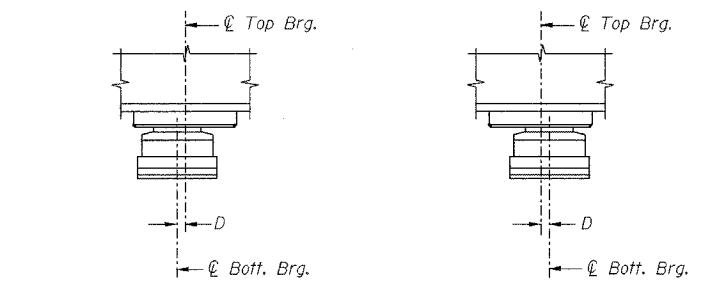


ELEVATION

Note: Top of Top Brg. is sloped. Bottom of Brg. is to be level.



TOP PLATE BEVEL
(Due to longitudinal slope)



BELOW 10 °C (Move bott. brg. away from fixed brg.)
ABOVE 10 °C (Move bott. brg. toward fixed brg.)

**SETTING ANCHOR BOLTS
AT GUIDED AND NON-GUIDED BEARINGS**

D = 1 mm per each 10 m of expansion (contraction) length for every 8 °C temperature change from the normal temperature of +10 °C.

ANGLE OF THERMAL MOVEMENT

	Pier #1	Pier #3	Pier #4
Girder 1	92°-35'-27"	90°-00'-00"	90°-00'-00"
Girder 2	92°-35'-21"	90°-00'-00"	90°-00'-00"
Girder 3	92°-35'-15"	90°-00'-00"	90°-00'-00"
Girder 4	92°-35'-09"	90°-00'-00"	90°-00'-00"

LOCATION	TYPE	PAY ITEM DESIGNATION KN	VERT. DESIGN LOAD** KN	LL ROTATION RANGE, RADIANS	MAX. THEORETICAL THERMAL MOVEMENT Ø D °C	MIN. DIA. THREADED STUD	THREADED STUD HOLE DIA. AT GIRDER BOTTOM Ø
Pier 1	Floating Bearings, Guided Expansion	2000	1929	-0.0032 to 0.0043	±30 mm	M22	24
Pier 3	Floating Bearings, Guided Expansion	1500	1286	-0.0027 to 0.0032	±22 mm	M22	24
Pier 4	Floating Bearings, Guided Expansion	1500	1291	-0.0026 to 0.0020	±44 mm	M22	24

LOCATION	BOT. FLANGE		TOP PLATE/BEARING ASSEMBLY								BOTTOM PLATE			TOTAL BEARING HEIGHT Th
	Af	Bf	E	Tf	L	D	Wt MIN.	Lt MIN.	M	N	Tb	Wb	Lb	
Pier 1	265	225	50	73	476	515	630	566	80	66	73	560	864	289
Pier 3	195	150	55	60	378	416	490	490	71	49	64	458	813	251
Pier 4	195	150	65	60	378	416	510	490	68	52	64	458	813	251

NOTES:

- All steel for the Floating Bearings shall conform to the requirements of AASHTO M 270M Grade 345, unless otherwise noted. See details for threaded studs and anchor bolt materials. Anchor bolts, studs, nuts, and washers shall be hot-dipped galvanized in accordance with AASHTO M 232M. Teflon and stainless steel materials shall conform to AASHTO requirements and "Special Provisions for Floating Bearings".
- See sheet 19 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.
- Bearing assemblies shall be designed and assembled to allow its replacement by jacking the superstructure.

** 5. Vertical Design Loads are the governing service loads; horizontal design loads shall be 20% of vertical load, unless otherwise noted.

6. See sheet 30 for Anchor Bolt details.

BILL OF MATERIAL

Item	Unit	Total
Floating Bearings, Guided Expansion 2000KN	Each	4
Floating Bearings, Guided Expansion 1500KN	Each	8

DESIGNED	HAA
CHECKED	KWS
DRAWN	VH
CHECKED	LRB

FLOATING BEARING - GUIDED EXPANSION
(N. T. S.)

alfred benesch & company
CONSULTING ENGINEERS
205 NORTH MICHIGAN AVENUE, CHICAGO, ILLINOIS 60601
JOB NO. 3513

ILLINOIS DEPARTMENT OF TRANSPORTATION
RAMP K-2 OVER
MAIN ST & RAMP J-3
F.A.I. ROUTE 74 (I-74)
SECTION 90-IIIB-5
GUIDED EXPANSION
FLOATING BEARING DETAILS
PIERS 1, 3 & 4
SN: 090-0156 TAZEWELL CO., IL. STA. 10+529.222
DATE: 12-23-04

2/3/2005

mt:\p\o\3513\vr\compk2\sl\fb04-7a080056.dgn