POT BEARING GENERAL NOTES:

1. PROVIDE MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH DELDOT STANDARD SPECIFICATIONS AND ANSI/AASHTO/AWS/D1.5 BRIDGE WELDING CODE.
2. SANDBLAST IN ACCORDANCE WITH SSPC-SP10 TO REMOVE MILL SCALE FROM BEARINGS.
3. GRIND SMOOTH ALL STEEL SURFACES AND EDGES AND REMOVE ANY SHARP PROTRUSIONS. FABRICATION TOLERANCES AND THE LIMITATIONS ON SURFACE FINISH WILL BE IN ACCORDANCE WITH DELDOT STANDARD SPECIFICATIONS.
4. PAINT ALL STEEL SURFACES IN ACCORDANCE WITH SECTION 616 OF DELDOT STANDARD SPECIFICATIONS. APPLY ALL COATS IN THE FABRICATION SHOP ONLY. DO NOT PAINT PTFE, STAINLESS STEEL OR THE INSIDE OF THE POT. APPLY ONLY PRIME COAT TO THE CONTACT AREA BETWEEN BEAM BOTTOM FLANGE AND SOLE PLATE AND TO THE BOTTOM SIDE OF THE MASONRY PLATE.
5. ROUND ALL PTFE CORNERS TO ACCOMMODATE THE MACHINED RECESS IN STEEL GUIDE PLATE/PISTON.
6. ETCH PTFE ON ONE SIDE FOR BONDING INTO THE MACHINED RECESS.
7. PTFE ON THE SIDE OF GUIDE PLATE MUST BE PIGMENTED.
8. PRIOR TO THE APPLICATION OF ADHESIVE, CLEAN ALL MATING STEEL AND PTFE SURFACES BY GRIT BLASTING AND DEGREASING. APPLY ADHESIVE AS PER THE MANUFACTURER'S RECOMMENDATION.
9. LUBRICATE ALL SURFACES OF NEOPRENE DISC WITH SILICONE GREASE IN ACCORDANCE WITH MILITARY SPECIFICATION MIL-S-8660.
10. CUT FLAT BRASS SEALING RING ENDS AT 45° ANGLE WITH A MAXIMUM GAP OF 0.05". STAGGER THE OPENINGS IN THE BRASS RINGS 120° APART.
11. MARK THE THICKER EDGE OF THE SOLE PLATE AS SUCH FOR THE PURPOSE OF FIELD IDENTIFICATION. PLACE MARK ON THE EDGE OF SOLE PLATE SO THAT IT WILL BE VISIBLE AFTER BEARING INSTALLATION. IN THE CASE OF A SOLE PLATE WITH A COMPOUND BEVEL, PLACE THE MARK ON EITHER EDGE OF THE THICKEST SOLE PLATE CORNER.
12. MARK CENTERLINE OF GUIDED AND NON-GUIDED POT BEARINGS ON THE SIDES OF MASONRY PLATE AND SOLE PLATE. THE CENTERLINE IDENTIFICATION MARKS WILL BE USEFUL TO LOCATE OFFSET DISTANCES IN THE FIELD. USE INDELIBLE INK TO PLACE ALL MARKS.
13. MARK EACH BEARING WITH THE NAME OF THE MANUFACTURER AND TYPE OR MODEL NUMBER. PLACE THE IDENTIFICATION MARK IN A PERMANENT MANNER AND LOCATION SO THAT IT IS VISIBLE AFTER ERECTION.
14. WHEN THE POT IS RECESSED INTO THE MASONRY PLATE, SEAL AROUND THE POT PERIMETER WITH AN APPROVED CAULKING COMPOUND IN THE SHOP AFTER PAINT COATING HAS DRIED.
15. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE ENGINEER OF ANY PROPOSED VARIATION FROM BEARING DIMENSIONS PROVIDED HEREIN DURING FABRICATION.
16. ENSURE ALL BEARING SURFACES, INCLUDING THE BEARING SEAT, ARE LEVEL PRIOR TO INSTALLATION OF POT BEARINGS UNLESS NOTED OTHERWISE.
17. TEST ONE BEARING PER TYPE OR PER LOT SIZE OF 25 FOR A HORIZONTAL FORCE CAPACITY PRIOR TO SHIPMENT.

MATERIALS:

1. STRUCTURAL STEEL:
   - MATERIAL 4" THICK OR LESS - AASHTO M270/ M270M (ASTM A709/A709M), GRADE 50
   - MATERIAL GREATER THAN 4" THICK - ASTM A572/A572M, GRADE 50
2. ANCHOR BOLTS: ASTM F1554, GRADE 55
3. NUTS: ASTM A563/A563M, GRADE DH
4. WASHERS: ASTM F436/F436M, TYPE 1
5. MECHANICAL GALVANIZATION OF ANCHOR BOLTS, NUTS AND WASHERS: ASTM B695.
6. STAINLESS STEEL: ASTM A240, GRADE 30, TYPE 304 WITH AN ANSI 0.02 mil SURFACE FINISH OR LESS.
7. FLAT BRASS SEALING RINGS: ASTM B36 (HALF HARD) SPECIFICATION.
8. ELASTOMERIC DISC: VIRGIN PLAIN NEOPRENE OR NATURAL RUBBER WITH HARDNESS OF 50 DUROMETER (± 10) PER AASHTO M251.
9. PTFE SHEET: MADE FROM VIRGIN TFE RESIN PER ASTM D4894.
   - MAIN SLIDING SURFACE PTFE - UNFILLED, DIMPLED AND LUBRICATED. DIMPLES MUST HAVE A MINIMUM EDGE DISTANCE OF ½" AND CONFORM TO AASHTO LRFD, SECTION 14.7.2.
   - GUIDE BAR SURFACE PTFE - PIGMENTED, FILLED OR UNFILLED.
10. SEAL AROUND THE POT PERIMETER WITH APPROVED CAULK.
11. BEDDING MATERIAL: ASTM D378.

MATERIAL DESIGN PARAMETERS:

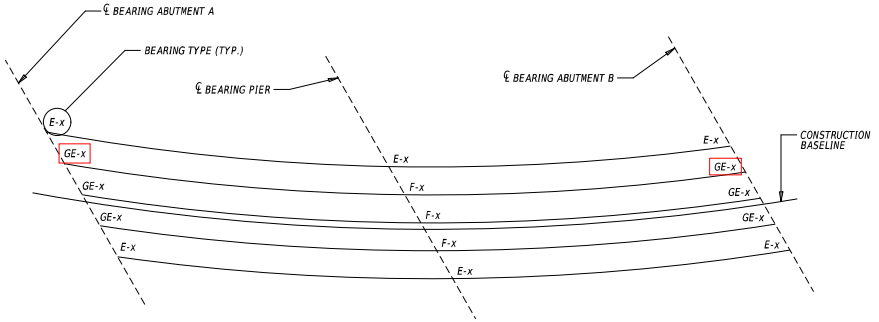
1. ALLOWABLE PRESSURE IN ELASTOMER AND PTFE:

   MAXIMUM = 3500 psi ELASTOMER & PTFE
   MINIMUM = 700 psi ELASTOMER

2. COEFFICIENT OF FRICTION BETWEEN PTFE AND STAINLESS STEEL: 0.18
3. CONCRETE BEARING STRENGTH: f'c = 4500 psi

ANCHOR BOLT INSTALLATION:

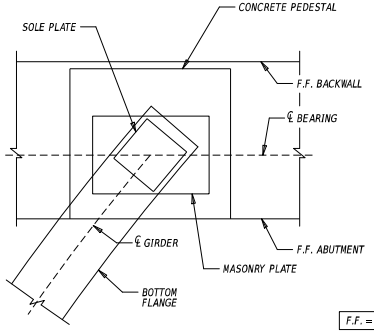
1. IF BLOCKOUTS ARE USED, REMOVE BLOCKOUT FORM AND DEBRIS FROM HOLE PRIOR TO GROUTING. INSTALL USING APPROVED NON-SHRINK GROUT IN ACCORDANCE WITH DELDOT STANDARD SPECIFICATIONS AND PER MANUFACTURER'S RECOMMENDATIONS. DO NOT GROUT UNTIL ALL GIRDER UNITS ARE PROPERLY ALIGNED.
2. PREVENT WATER FROM ACCUMULATING IN THE PREFORMED ANCHOR BOLT HOLES OR STANDARD PIPE AND ENSURE THE HOLES ARE COMPLETELY FILLED WITH GROUT.

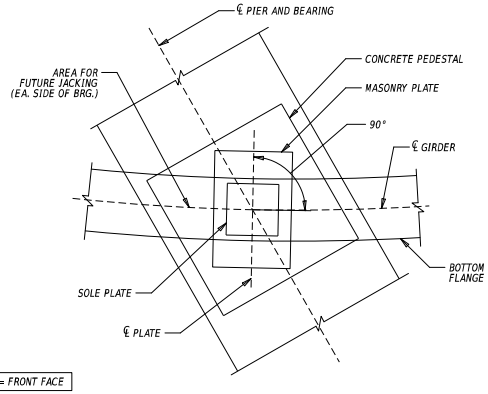


BEARING LAYOUT PLAN

EXAMPLE SHOWN USING 2-SPAN 5-CURVED STEEL GIRDERS ON SKEW

LEGEND:
F - DENOTES FIXED
GE - DENOTES GUIDED
E - DENOTES NON-GUIDED





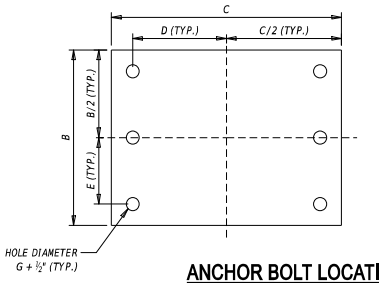
F.F. = FRONT FACE

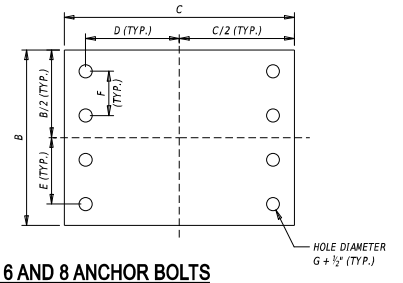
SOLE AND MASONRY PLATE ORIENTATION AT ABUTMENTS

EXAMPLE SHOWN USING 'BEARING LAYOUT PLAN' ON THIS SHEET

SOLE AND MASONRY PLATE ORIENTATION AT PIER

EXAMPLE SHOWN USING 'BEARING LAYOUT PLAN' ON THIS SHEET





ANCHOR BOLT LOCATION PLAN - 6 AND 8 ANCHOR BOLTS

POT BEARING DESIGN LRFD SPECIFICATIONS

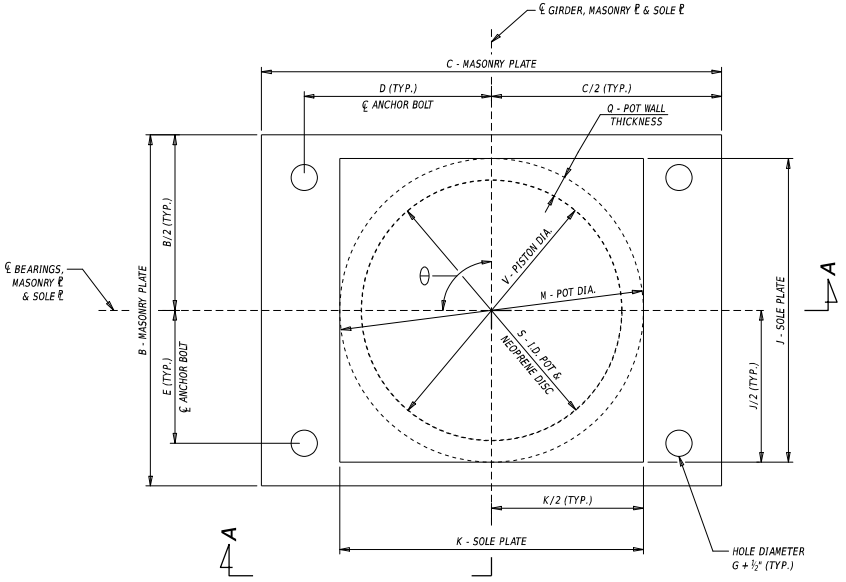
BEARING TYPE	AASHTO LRFD LIMIT STATES	DESIGN LOADS (KIPS)										
		VERTICAL								HORIZONTAL*		
		DL		LL + IMPACT		WIND		TOTAL		TRANSVERSE	LONGITUDINAL	RESOLUTION
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.			
GE-x	SERVICE I	-	-	-	-	-	-	-	-	-	-	-
E-x	SERVICE I	-	-	-	-	-	-	-	-	-	-	-
F-x	SERVICE I	-	-	-	-	-	-	-	-	-	-	-

* example note based on 'bearing layout plan' on this sheet: TRANSVERSE FORCE REFLECTS THE TOTAL TRANSVERSE FORCE PER BEARING LINE. BEARINGS DESIGNED SUCH THAT ALL TRANSVERSE FORCES CAN BE RESISTED BY ONE GUIDED OR FIXED BEARING. THE LONGITUDINAL LOADS AT THE FIXED BEARING LINE AT THE PIER ARE SHARED AMONG THE THREE FIXED BEARINGS. THE LONGITUDINAL FORCE PROVIDED REFLECTS THE FORCE PER BEARING.

FIXED

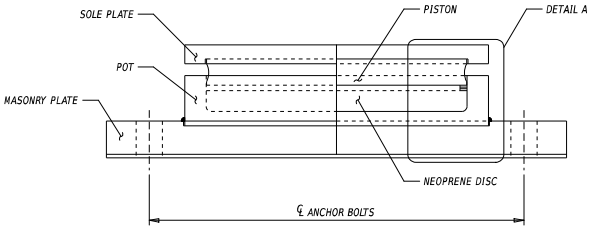
TYPE	QTY.	MASONRY PLATE						ANCHOR BOLT		SOLE PLATE				POT						NEOPRENE DISC			PISTON				BEARING HEIGHT*
		A	B	C	D	E	F	QTY.	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	PP
F-x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* BEARING HEIGHT INCLUDES ⅛" FABRIC REINFORCED ELASTOMERIC PAD

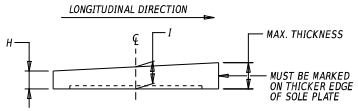


FIXED POT BEARING PLAN

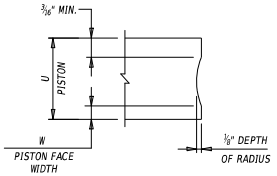
ZERO SKEW SHOWN FOR CLARITY. ANY SKEW GREATER THAN ZERO MUST BE SHOWN ON THE PLAN VIEW. EXAMPLE SHOWN USING 4 ANCHOR BOLTS. REFER TO THE ANCHOR BOLT LOCATION PLAN FOR MORE INFORMATION.



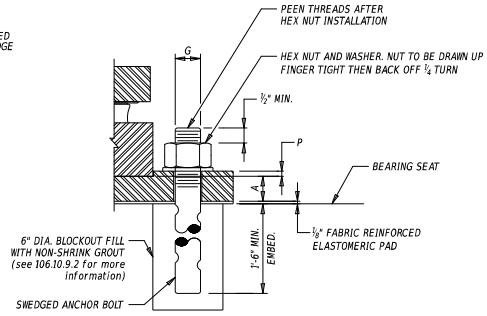
SECTION A-A



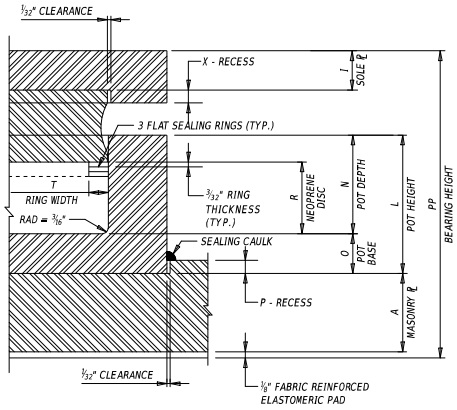
BEVELED SOLE PLATE DETAIL



PISTON DETAIL



ANCHOR BOLT DETAIL

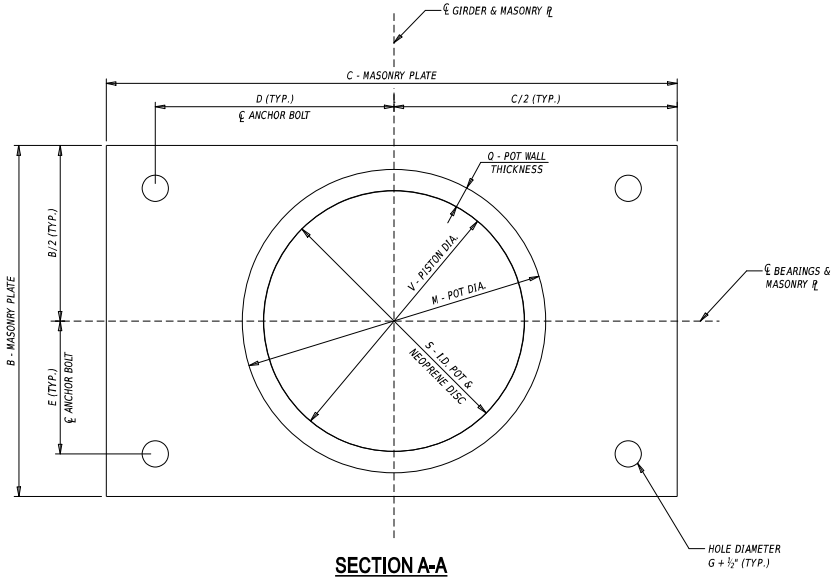


DETAIL A

TYPE	SUBSTRUCTURE UNIT	GIRDER	Θ
F-x	-----	-	-
		-	-
	-----	-	-
		-	-

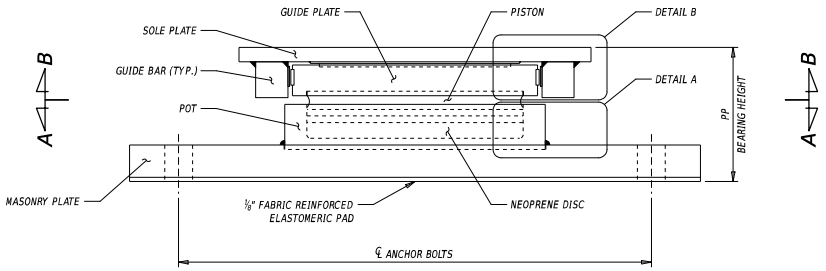
BEARING TYPE F-x

DELAWARE DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL	POT BEARING DETAILS	NOT TO SCALE	ISSUE DATE 10/01/2016	DETAIL No. 345.02 SHEET No. 2 of 6

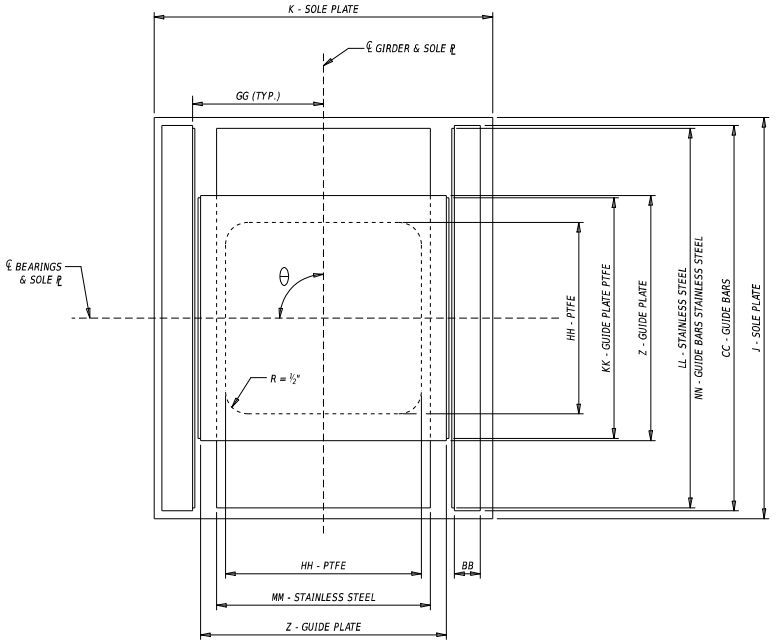


SECTION A-A

ZERO SKEW SHOWN FOR CLARITY. ANY SKEW GREATER THAN ZERO MUST BE SHOWN ON THE PLAN VIEW. EXAMPLE SHOWN USING 4 ANCHOR BOLTS. REFER TO THE ANCHOR BOLT LOCATION PLAN FOR MORE INFORMATION.



GUIDED EXPANSION BEARING ELEVATION



SECTION B-B

PISTON NOT SHOWN FOR CLARITY

TYPE	SUBSTRUCTURE UNIT	GIRDER	θ
GE-x	-----	-	-
		-	-
	-----	-	-
		-	-

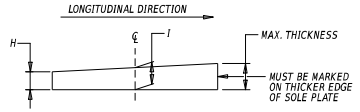
BEARING TYPE GE-x

TYPE	QTY.	MASONRY PLATE						ANCHOR BOLT		POT						NEOPRENE DISC			PISTON				GUIDE PLATE	
		A	B	C	D	E	F	QTY.	G	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
GE-x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

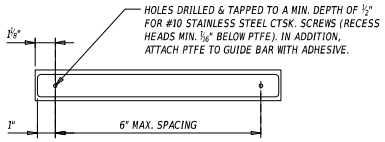
TYPE	GUIDE BARS							PTFE				STAINLESS STEEL			
	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO
GE-x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TYPE	SOLE PLATE				BEARING HEIGHT*
	H	I	J	K	PP
GE-x	-	-	-	-	-

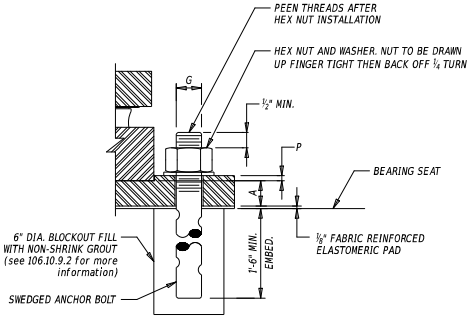
* BEARING HEIGHT INCLUDES ⅛" FABRIC REINFORCED ELASTOMERIC PAD



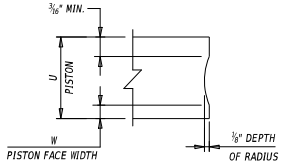
BEVELED SOLE PLATE DETAIL



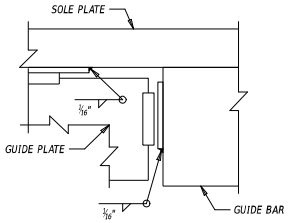
GUIDE PLATE PTFE DETAIL



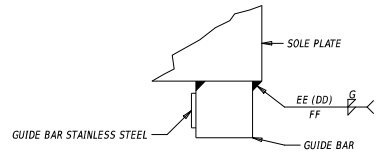
ANCHOR BOLT DETAIL



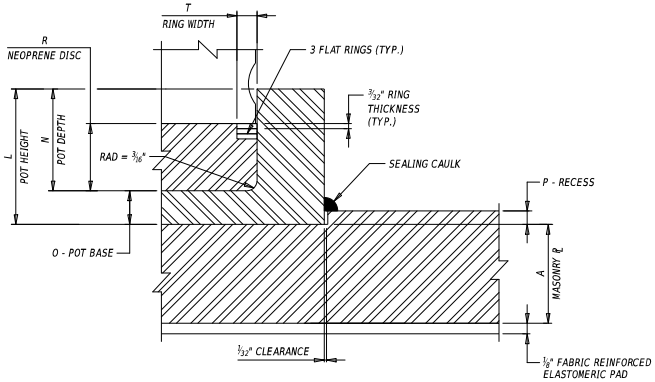
PISTON DETAIL



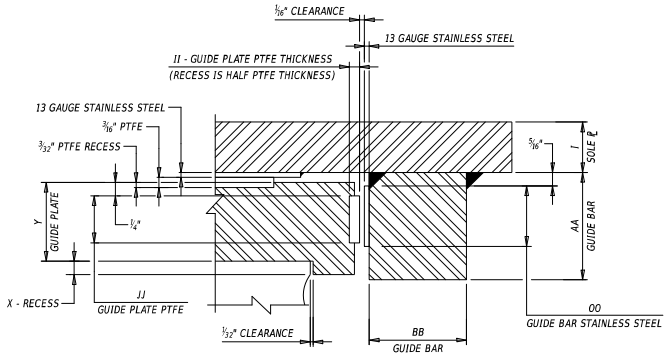
STAINLESS STEEL WELD DETAIL



GUIDE BAR WELD DETAIL



DETAIL A



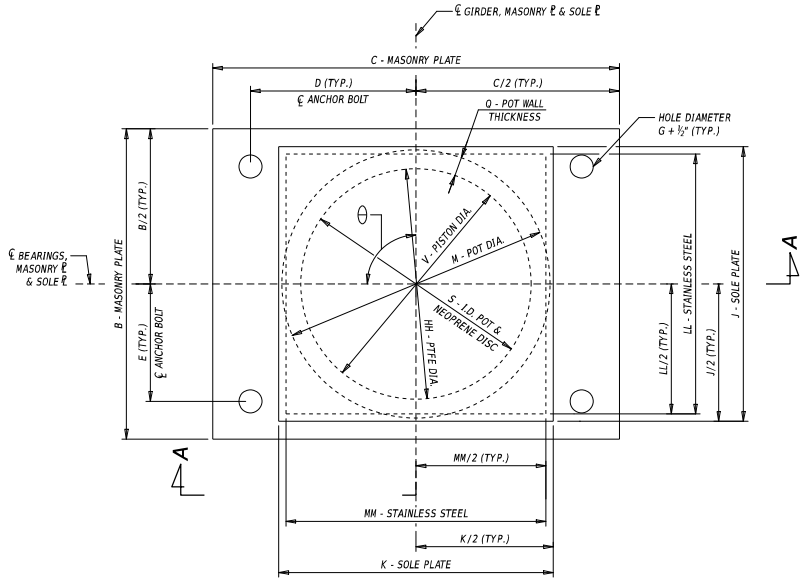
DETAIL B

BEARING TYPE GE-x

NON-GUIDED

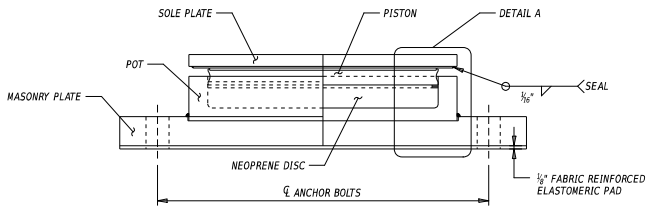
TYPE	QTY.	MASONRY PLATE						ANCHOR BOLT		SOLE PLATE				BEARING HEIGHT*	POT						NEOPRENE DISC			PISTON			PTFE	STAINLESS STEEL	
		A	B	C	D	E	F	QTY.	G	H	I	J	K	PP	L	M	N	O	P	Q	R	S	T	U	V	W	HH	LL	MM
E-x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* BEARING HEIGHT INCLUDES ⅛" FABRIC REINFORCED ELASTOMERIC PAD

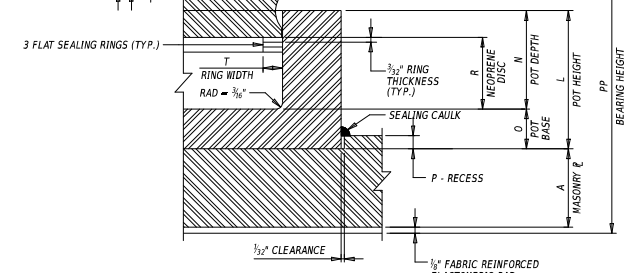


NON-GUIDED POT BEARING PLAN

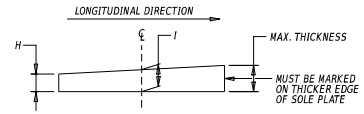
ZERO SKEW SHOWN FOR CLARITY. ANY SKEW GREATER THAN ZERO MUST BE SHOWN ON THE PLAN VIEW. EXAMPLE SHOWN USING 4 ANCHOR BOLTS. REFER TO THE ANCHOR BOLT LOCATION PLAN FOR MORE INFORMATION.



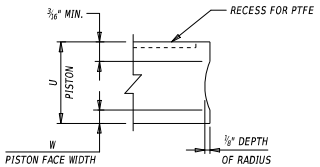
SECTION A-A



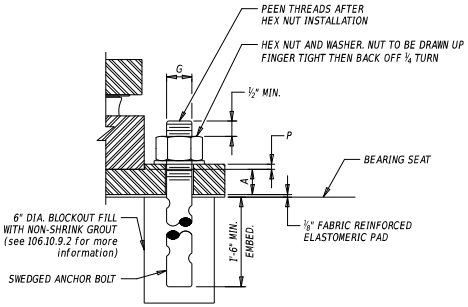
DETAIL A



BEVELED SOLE PLATE DETAIL



PISTON DETAIL

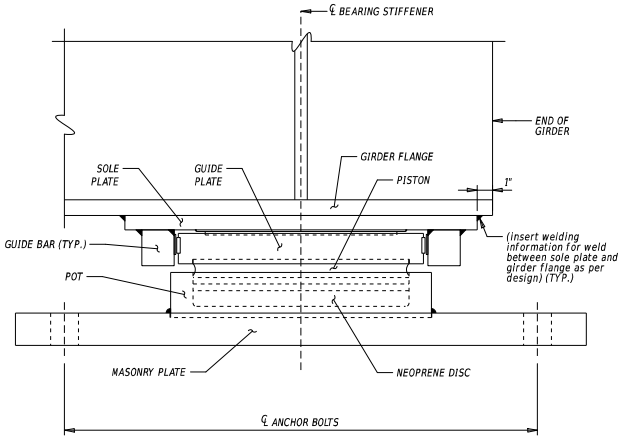


ANCHOR BOLT DETAIL

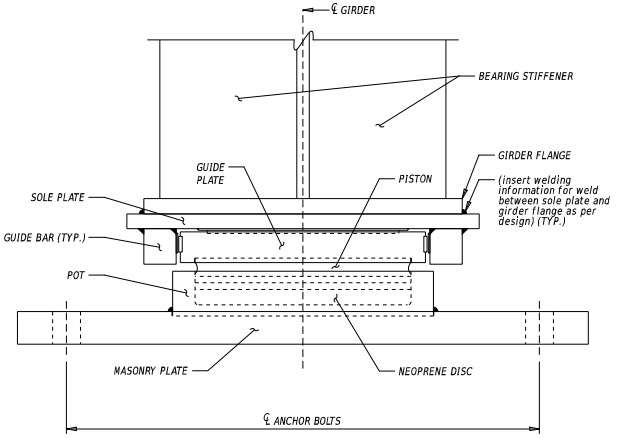
TYPE	SUBSTRUCTURE UNIT	GIRDER	θ
E-x	-----	-	-
		-	-
	-----	-	-
		-	-

BEARING TYPE E-x

DELAWARE DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL	POT BEARING DETAILS	NOT TO SCALE	ISSUE DATE 10/01/2016	DETAIL No. 345.02 SHEET No. 5 of 6



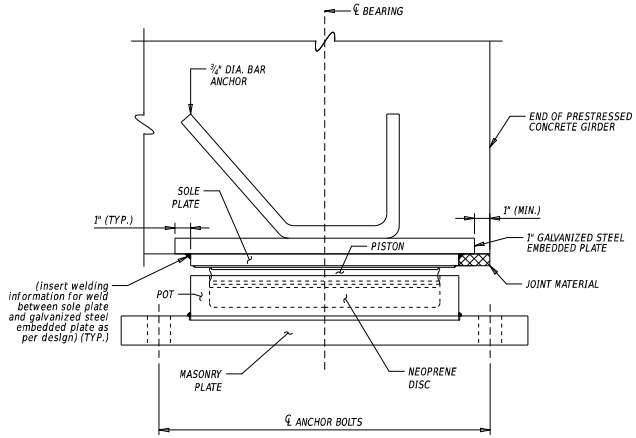
SIDE VIEW



END VIEW

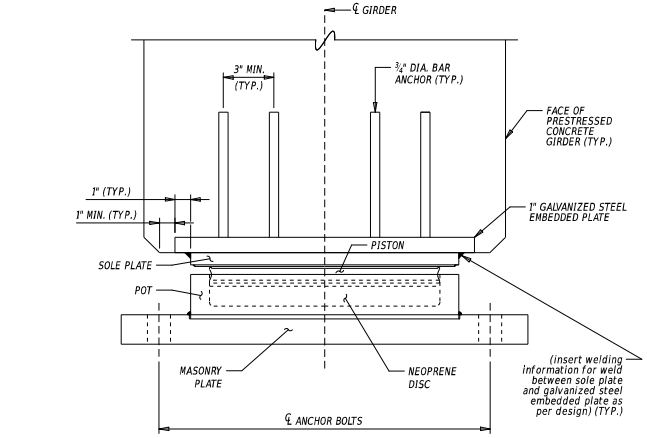
WELDED CONNECTION FOR STEEL GIRDER

EXAMPLE SHOWN USING GUIDED BEARING



SIDE VIEW

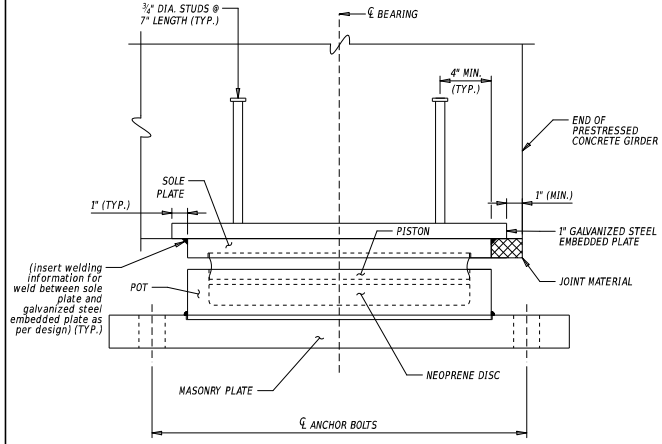
NOTE: NUMBER AND SPACING OF STUDS OR ANCHORS TO BE DETERMINED PER DESIGN. ENSURE THAT PLACEMENT OF STUDS OR ANCHORS DO NOT COME INTO CONFLICT WITH PRESTRESSING STRANDS.



END VIEW

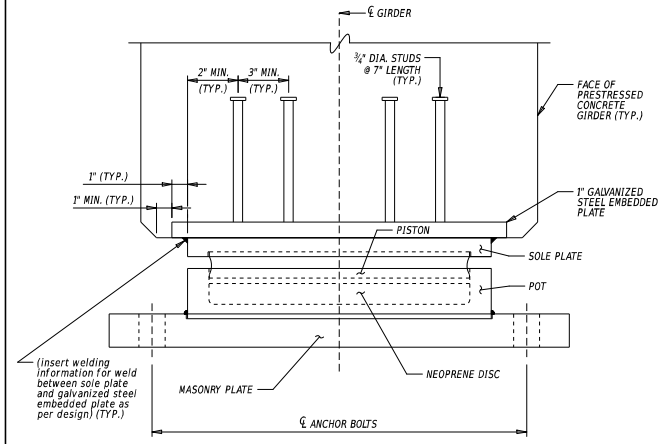
ANCHOR CONNECTION FOR PRESTRESSED CONCRETE GIRDER

EXAMPLE SHOWN USING NON-GUIDED BEARING



SIDE VIEW

NOTE: NUMBER AND SPACING OF STUDS OR ANCHORS TO BE DETERMINED PER DESIGN. ENSURE THAT PLACEMENT OF STUDS OR ANCHORS DO NOT COME INTO CONFLICT WITH PRESTRESSING STRANDS.



END VIEW

STUD CONNECTION FOR PRESTRESSED CONCRETE GIRDER

EXAMPLE SHOWN USING FIXED BEARING

NOTE: CONNECTION DETAILS SHOWN ON THIS SHEET ARE FOR GUIDANCE ONLY. THE DESIGNER MUST DESIGN AND DETAIL THE CONNECTIONS TO BE PROJECT-SPECIFIC.