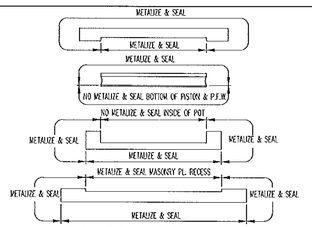
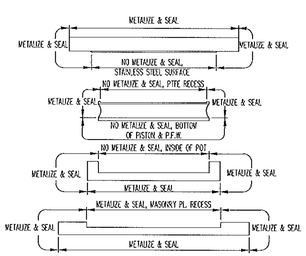
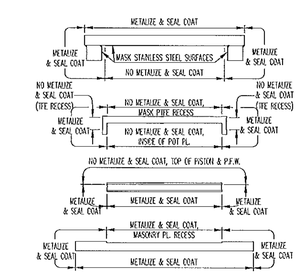


FIXED BEARING COATING LIMITS



MULTI-DIRECTIONAL BEARING COATING LIMITS



UNI-DIRECTIONAL BEARING COATING LIMITS

GENERAL NOTES

1. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN & CONSTRUCTION SPECIFICATIONS 5TH EDITION & ITS LATEST REVISIONS, THE VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006 AS AMENDED BY THE SPECIAL PROVISIONS, AND THE CONTRACT PLANS.

2. PTFE SHALL BE VIRGIN, UNFILLED POLYTETRAFLUOROETHYLENE. GUIDE BAR PTFE SHALL 15% GLASS FILLED & PIGMENTED.

3. PTFE IS TO BE PURCHASED ETCHED ON ONE SIDE FOR BONDING AND MACHINED RECESS. STEEL MATING SURFACES OF PTFE AND STEEL SHALL BE GRIT BLASTED AND DEGREASED PRIOR TO APPLICATION OF ADHESIVE. ADHESIVE SHALL BE APPLIED USING DIRECTIONS SUPPLIED BY THE ADHESIVE MANUFACTURER. THE PTFE RESIN SHALL CONFORM TO THE REQUIREMENTS OF ASTM D4894.

4. STAINLESS STEEL SHALL CONFORM TO ASTM A240 – TYPE 304 AND SHALL BE 11 GA. (0.120"). STAINLESS STEEL SLIDING SURFACES IN CONTACT WITH PTFE SHALL HAVE A NO. 8 MIRROR FINISH AND ALL OTHERS SHALL HAVE A 2B FINISH.

5. WELDING SHALL CONFORM TO AWS-D1.5 BRIDGE WELDING CODE, AS WELL AS ANY STATE STANDARD.

6. THE TOP AND BOTTOM OF THE NEOPRENE DISC SHALL BE LUBRICATED WITH DOW CORNING #4 SILICONE COMPOUND.

7. ALL SHARP CORNERS OF STEEL MATERIALS SHALL BE REMOVED BY GRINDING OR SANDING.

8. THE BRASS SEALING RING ENDS SHALL BE CUT AT AN ANGLE OF 45° WITH A MAXIMUM GAP OF 0.05". THE RINGS SHALL BE STAGGERED 120° USING A QUANTITY OF THREE (3) RINGS.

9. EACH BEARING SHALL BE MARKED WITH THE MANUFACTURER'S NAME, THE BEARING TYPE OR MODEL NUMBER, THE BEARING NUMBER AND LOT NUMBER, UPSTATION, AND THE INSTALLED LOCATION. THE MARKING SHALL BE PERMANENT AND IN A LOCATION THAT WILL BE VISIBLE AFTER ERECTION OF STRUCTURE.

10. EACH BEARING SHALL HAVE MARKS PLACED ON THE SIDE OF THE MASONRY & SOLE PLATES TO INDICATE THE LOCATION OF THE CENTERLINE. IN ADDITION, EACH UNI-DIRECTIONAL BEARING SHALL HAVE THE SOLE PL. & MASONRY PL. MARKED TO INDICATE THE LOCATION OF THE TRANSVERSE CL OF THE STAINLESS STEEL. THE MARK ON THE MASONRY PL. SHALL EXTEND THE ENTIRE LENGTH ON THE TOP SURFACE PRIOR TO ASSEMBLY. THIS MARK CAN BE USED IN THE FIELD TO DETERMINE THE INITIAL OFFSET LOCATION OF THE SOLE PLATE (IF APPLICABLE). THE MARKS SHALL BE MADE IN INDELIBLE INK AND SHALL BE VISIBLE AFTER BEARING INSTALLATION.

11. BEARINGS ARE TO BE SHIPPED AS COMPLETE UNITS, STEEL BANDED, AND SHALL BE WRAPPED TO PROTECT FROM MOISTURE AND DIRT DURING TRANSIT AND STORAGE. BEARINGS SHALL BE STORED IN A CLEAN, DRY, LEVEL UPRIGHT POSITION WELL AT JOBSITE. BEARINGS SHALL BE LIFTED FROM THEIR UNDERSIDES ONLY.

12. AT NO TIME MAY THE BEARINGS BE DISASSEMBLED WITHOUT AUTHORIZATION FROM D.S. BROWN OR WITHOUT THE PRESENCE OF A D.S. BROWN REPRESENTATIVE.

13. POT/PISTON INTERFACE SHALL BE CAULKED WITH SIKAFLEX 1A OR APPROVED EQUAL PRIOR TO SHIPMENT.

14. DS BROWN MAY SUBSTITUTE A709 GR 50W FOR A709 GR 50 DUE TO AVAILABILITY AT NO ADDITIONAL COST TO THE OWNER OR CONTRACTOR.

15. IN ACCORDANCE WITH AISC STEEL BRIDGE COMPONENT CERTIFICATION REQUIREMENTS, CALCULATIONS AND DRAWINGS HAVE BEEN REVIEWED BY PHILIP CASE P.E.

16. VERSIFLEX MUNR "POT" STYLE BEARING MANUFACTURING FACILITY AND REPRESENTATIVE FOR COORDINATING PRODUCTION:
THE D.S. BROWN COMPANY
300 EAST CHERRY STREET
NORTH BALTIMORE, OHIO 45872
CSR – BRYAN KRIDER

PROTECTIVE COATING NOTES

1. ALL MILL SCALE SHALL BE REMOVED FROM BEARINGS BY BLASTING (SSPC-SP3) PRIOR TO APPLYING PROTECTIVE COATING.

2. METALIZATION SHALL BE IN ACCORDANCE WITH ANSI/AWS C2.18-93 EXTERNAL STEEL SURFACES SHALL BE METALIZED TO A MINIMUM THICKNESS OF 6 MILS. PROVIDE WIRE MATERIAL FOR THE METALIZED PRIMER CONSISTING OF PURE ZINC (99.9% PURITY).

3. WITHIN 8 HOURS AFTER METALIZATION, THE EXTERNAL STEEL SURFACES SHALL RECEIVE A SEAL COAT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
SEAL COAT = CARBOLINE RUSTBOND, D.F.T. = 2 MILS MIN.

4. SEE COATING LIMIT DETAILS FOR COATING LOCATIONS.

5. PRIOR TO METALIZING ALL CORNERS AND EDGES OF THE STEEL PLATES, SHAPES, ETC., SHALL BE GROUND TO 0.063" RADIUS.

CONTRACTOR NOTES

1. THE LOCATIONS OF THE ANCHOR BOLTS SHALL BE CROSS-REFERENCED WITH SHOP DRAWINGS TO VERIFY THE LOCATIONS.

2. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE STAINLESS STEEL AND PTFE SLIDING SURFACES FROM DAMAGE AT ALL TIMES.

3. DUE TO DESIGN DIFFERENCES, THE OVERALL HEIGHTS OF THE BEARING BEING SUPPLIED MAY DIFFER FROM THE HEIGHTS SHOWN IN THE CONTRACT PLANS. THE ACTUAL BEARING HEIGHTS ARE GIVEN IN THE DATA TABLE ON THE INDIVIDUAL BEARING DETAIL SHEET. CONTRACTOR TO RECALCULATE AND MODIFY PEDESTAL ELEVATIONS ACCORDINGLY.

4. THE BEARINGS WILL BE SHIPPED CENTERED, AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OFFSET THE SOLE PLATE IN THE FIELD DURING INSTALLATION, IF APPLICABLE. OFFSET VALUES WERE NOT PROVIDED IN THE CONTRACT PLANS, SO IF REQUIRED, OFFSETS SHALL BE PROVIDED BY THE BRIDGE DESIGNER.

5. THE CONTRACTOR SHALL ENSURE THAT THE MAXIMUM TEMPERATURE REACHED BY SURFACES IN CONTACT WITH THE PTFE IS LIMITED TO 300°F (149°C), AND LIMITED TO 200°F (93°C) FOR SURFACES IN CONTACT WITH THE ELASTOMER. TEMPERATURES SHALL BE DETERMINED BY TEMPERATURE INDICATING WAX PENCILS OR OTHER SUITABLE MEANS. DURING FIELD WELDING, NO WELDING CURRENT SHALL BE PERMITTED TO PASS BETWEEN THE POT AND PISTON COMPONENTS.

SAMPLING AND TESTING NOTES

ELASTOMERIC DISCS SHALL BE SUBJECTED TO RANDOM IN-HOUSE TESTING OF THE APPLICABLE PHYSICAL PROPERTIES PER AASHTO LRFD CONSTRUCTION SPECIFICATIONS, SECTION 18.

BEARINGS SHALL BE SUBJECTED TO THE TESTS DESCRIBED BELOW AND IN ACCORDANCE WITH THE APPLICABLE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS.

1. SAMPLE TEST – ONE (1) BEARING PER "LOT" SHALL BE TESTED AND SHALL BE CHOSEN AT RANDOM. A "LOT" SHALL CONSIST OF ONE OF THE FOLLOWING:
(1) NO MORE THAN 10 EXPANSION BEARINGS OF ONE "LOAD CATEGORY"
ONE LOAD CATEGORY MAY CONSIST OF BEARINGS OF A DIFFERING VERTICAL LOAD CAPACITY BUT THE BEARINGS MAY NOT EXCEED A RANGE OF CAPACITY DIFFERING BY MORE THAN 50KIPS.

2. PROCEDURE FOR TESTING EXPANSION BEARINGS–
   a.) LOAD THE BEARING WITH ITS DESIGN LOADING FOR AT LEAST 12 HOURS. MEASURE THE FORCE REQUIRED FOR THE FIRST MOVEMENT AND CALCULATE THE COEFFICIENT OF FRICTION. MEASURE THE FORCE REQUIRED FOR MOVEMENT UNDER DYNAMIC LOADING AND CALCULATE THE COEFFICIENT OF FRICTION.
   b.) LOAD THE BEARING AT 70% OF THE DESIGN LOAD BUT NOT LESS THAN 200KIPS. MEASURE THE STATIC AND DYNAMIC COEFFICIENTS OF FRICTION.
   c.) LOAD THE BEARING AT 150% OF THE DESIGN LOAD FOR 30 MINUTES, AT A 2% ROTATION, AND SUBJECT THE BEARING TO 100 CYCLES OF MOVEMENT. MEASURE THE STATIC AND DYNAMIC COEFFICIENTS OF FRICTION.
   d.) COEFFICIENTS OF FRICTION SHALL BE LESS THAN 4%

3. PROCEDURE FOR TESTING FIXED BEARINGS–
   a.) LOAD BEARING AT 150% OF ITS DESIGN LOAD FOR 30 MINUTES, AT A 2% ROTATION.

4. AFTER PERFORMING EACH TEST DESCRIBED IN (2) & (3) ABOVE, DISASSEMBLE THE BEARING AND INSPECT FOR:
   a.) ANY SIGN OF SEALING FAILURE.
   b.) ANY SIGN OF MATERIAL FAILURE.
   c.) ANY OTHER DEFECTS.

TOLERANCE TABLE LRFD 18.1.4.2-1

DESCRIPTION	THICKNESS TOLERANCE	DIMENSION TOLERANCE	FLATNESS TOLERANCE	SURFACE FINISH (μ-in)
POT BEARING				
OVERALL DIMENSIONS	+1/4", -0"	+1/8", -0"	--	--
POT DEPTH (INSIDE)	--	+0.025", -0"	--	--
POT WALL: THICKNESS & AVE. I.D.	+1/8", -0"	+0.003", -0.003"	+0.001", -0.001"	32
POT BASE: TOP & BOTTOM SURFACES	+0.025", -0"	--	CLASS C	63
PISTON: RIM	+1/16", -0"	+0.003", -0.003"	+0.001", -0.001"	32
PISTON: TOP AND BOTTOM SURFACES	+0.025", -0"	--	CLASS C	63
ELASTOMERIC DISK (UNSTRESSED)	+1/8", -0"	+1/16", -0"	--	--
FLAT PTFE SLIDING SURFACES				
PTFE	+1/16", -0"	+0.030", -0"	CLASS A	--
STAINLESS STEEL	+1/16", -0"	+1/8", -0"	CLASS A	# 8 MIRROR
GUIDES				
CONTACT SURFACE	--	+1/8", -0"	CLASS A	32
DISTANCE BETWEEN GUIDES	--	+0.030", -0"	--	--
PARALLELISM OF GUIDES	--	+/- 0.005 RAD	--	--
LOAD PLATES				
OVERALL DIMENSIONS	+1/16", -1/16"	+1/4", -1/4"	*CLASS A	125
BEVEL SLOPE	+/- 0.002 RAD	--	--	--

* ONLY FOR SURFACES IN CONTACT WITH THE BEARING. TOP SURFACE OF SOLE PLATE AND BOTTOM SURFACE OF MASONRY PLATE SHALL BE CLASS B.

FLATNESS TOLERANCE

CLASS	X NOM. DIM.
A	0.001
B	0.002
C	0.005

TOLERANCES

EXCEPT AS NOTED BELOW, THE DIMENSIONAL TOLERANCES AND SURFACE FINISHES OF THE BEARING SHALL SATISFY THE REQUIREMENTS OF AASHTO LRFD TABLE 18.1.4.2-1.

1. DIMENSIONS [LENGTH, WIDTH, THICKNESS, HOLE LOCATIONS AND POSITION OF WELDED COMPONENTS]. THE TOLERANCE SHALL BE ± 0.063".

2. FLATNESS
   a.) SOLE PLATE – BEARING SURFACES SHALL BE FLAT WITH MAXIMUM PERMISSIBLE VARIATION OF 0.01" FROM A PLANE DETERMINED BY ANY THREE CORNERS OF THE PLATES.
   b.) MASONRY PLATE – BEARING SURFACES SHALL BE FLAT WITH MAXIMUM PERMISSIBLE VARIATION OF 0.01" FROM A PLANE DETERMINED BY ANY THREE CORNERS OF THE PLATE.
   c.) SLIDING SURFACES – FOR STAINLESS STEEL MATING WITH PTFE BONDED TO STEEL, THE TOLERANCE SHALL BE THE "NOMINAL DIMENSION" IN INCHES TIMES 0.00065. THE "NOMINAL DIMENSION" SHALL BE THE DISTANCE BETWEEN ANY DIAGONAL CORNERS OR OPPOSITE EDGES OF THE BEARING SURFACE. THE TOLERANCE IS APPLICABLE TO BOTH SURFACES.

Vermont Agency of Transportation
RECEIVED
CK'D BY GML OK'D BY JEL
8:53 am, Mar 29, 2012
RESUBMIT ____ APPROVED X
BY KMH DATE 3/29/2012

REV.	DESCRIPTION	DATE	CRT.	CKD.
1	COVERNING SPECIFICATIONS NOTE	3/28/12	KTG	KTG

D.S. BROWN
THE D.S. BROWN COMPANY
300 E. CHERRY STREET
NORTH BALTIMORE, OHIO 45872
419.257.3561
FAX: 419.257.0332
WWW.DSBROWN.COM

LOCATION — TOWN HIGHWAY 6 BRIDGE NO. 57	ITEM	QUANTITY
BRIDGE — 57	--	--
PROJECT NO. — BRO 1442(28)	--	--
PROJECT NAME — SPRINGFIELD	--	--
DESIGNER — VTDOT	--	--
CUSTOMER — T BUCK CONSTRUCTION, INC.	--	--

DESCRIPTION	SCALE	DRAWN BY	CHECKED BY	DATE
GENERAL NOTES & COATING LIMITS	N.T.S.	DA	KTG	1/28/12
WINDSOR CO., VT	PROJECT NUMBER 35029	PUBLICATION 1112	REVISION 1	SHEET GN1