NOTES:

1. ELASTOMERIC BEARINGS SHALL CONFORM TO SECTION 408 OF THE NJTA STANDARD SPECIFICATIONS.
2. ALL PLATES, KEEPER ANGLES AND PINS SHALL BE ASTM A709, GRADE 36, 50, OR 50W. STEEL SURFACES OF BEARING ASSEMBLIES SHALL BE COATED IN ACCORDANCE WITH THE STANDARD SUPPLEMENTAL SPECIFICATIONS. BEARINGS FOR STEEL SUPERSTRUCTURES SHALL BE PAINTED. BEARINGS FOR CONCRETE SUPERSTRUCTURES SHALL BE GALVANIZED OR ZINC METALIZED. ANY DAMAGE TO THE GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH ASTM A780.
3. STEEL LAMINATES SHALL BE ASTM A709, A36 OR A1011 GRADE 36. SMOOTH AND DEBURR CUT STEEL PLATES BY GRINDING. GRIT BLAST AND DEGREASE ALL STEEL PLATES. DO NOT GALVANIZE OR METALIZE STEEL LAMINATES.
4. FULLY THREADED ANCHORS AND HEX HEADED ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 105. SWEDGED ANCHOR BOLTS WITH THREADED ENDS MAY BE SUBSTITUTED AT THE APPROVAL OF THE ENGINEER. THREADED COUPLER NUTS SHALL BE HEAVY HEX NUTS CONFORMING TO ASTM A563, GRADE A OR SHALL BE FABRICATED FROM APPROVED MATERIAL. WASHERS SHALL CONFORM TO ASTM F436. ANCHOR BOLTS, COUPLER NUTS, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153. ANY DAMAGE TO THE GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH ASTM A780.
5. MASONRY PLATES SHALL BE PROVIDED FOR ALL BEARING ASSEMBLIES. A MINIMUM 1½" THICK PLATE SHALL BE USED.
6. SOLE PLATES SHALL BE BEVELED AS NECESSARY TO ACCOMMODATE THE VERTICAL GEOMETRY OF THE SUPERSTRUCTURE. THE SOLE PLATE SHALL BE BEVELED IF THE LONGITUDINAL GRADE OF THE BOTTOM FLANGE IS 1% OR MORE OR IF THE REQUIRED BEVEL IS ⅛" OR MORE. UNDER FULL DEAD LOAD, THE ELASTOMERIC PAD AND THE BOTTOM OF THE SOLE PLATE SHALL BE TRUE LEVEL. A MINIMUM THICKNESS OF 1½" AT THE CENTER LINE OF THE BEARINGS SHALL BE MAINTAINED.
7. DETAILS OF KEEPER ANGLES AND STIFFENER PLATES WHERE REQUIRED BY DESIGN SHALL BE INCLUDED IN THE CONTRACT PLANS. SEE THE CONTRACT PLANS FOR DETAILS.
8. LAMINATED ELASTOMERIC BEARING PADS SHALL BE VULCANIZED TO THE BEVELED SOLE AND MASONRY PLATES DURING FABRICATION. WHERE SIZE OR GEOMETRY OF THE BEVELED SOLE OR MASONRY PLATES MAKE VULCANIZATION IMPRACTICAL, AT THE PERMISSION OF THE ENGINEER, THE CONTRACTOR MAY VULCANIZE THE ELASTOMERIC BEARINGS TO LOAD PLATES. THE LOAD PLATES SHALL THEN BE SHOP WELDED TO THE SOLE AND MASONRY PLATES. THE USE OF OPTIONAL LOAD PLATES, ASSOCIATED WELDING, AND ANY REQUIRED ADJUSTMENT TO THE SUBSTUCTURE BEARING SEAT ELEVATION(S) SHALL BE AT NO ADDITIONAL COST TO THE AUTHORITY.
9. THE CONTRACTOR SHALL PROTECT THE BEARINGS FROM DAMAGE DUE TO SHEAR DEFORMATION OF BEARING PADS CAUSED BY THE APPLICATION OF THE GIRDER SELF-WEIGHT AND DECK DEAD LOAD. THE METHOD OF PROTECTION SHALL BE DEFINED IN THE BEARING INSTALLATION SCHEME AND SUBMITTED AS A SHOP DRAWING IN ACCORDANCE WITH SECTION 104.08 OF THE STANDARD SPECIFICATIONS.
10. THE FILLET WELD BETWEEN THE BOTTOM FLANGE AND THE SOLE PLATE SHALL BE MADE AFTER THE DECK HAS BEEN POURED AND THE BEARINGS HAVE BEEN SET INTO FINAL POSITION. THIS WELD SHALL BE MADE WHEN THE AMBIENT TEMPERATURE IS BETWEEN 40°AND 80°F. IF THE CONTRACTOR ELECTS TO INSTALL BEARINGS WHEN THE AMBIENT TEMPERATURE IS OUT OF THIS ALLOWABLE RANGE AN INSTALLATION PROCEDURE FOR RESETTING THE BEARINGS WHEN THE TEMPERATURE IS WITHIN THIS RANGE OR DEFORMING THE BEARINGS SO THAT THEY PERFORM AS IF THEY WERE SET AT 68°F SHALL BE REQUIRED.
11. WELDING PROCEDURES, OVERALL FABRICATION METHODS AND QUALITY INSPECTION PROCEDURE SHALL BE INCLUDED AS A WRITTEN PROCEDURE WITH THE SHOP DRAWING SUBMISSION.
12. WELDING SHALL BE IN ACCORDANCE WITH CURRENT ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5, WITH LATEST AASHTO REVISIONS. MT INDICATES MAGNETIC PARTICLE TESTING.
13. THE SIZE OF THE WELDS BETWEEN THE BOTTOM FLANGE AND SOLE PLATE AND BETWEEN THE SOLE OR MASONRY PLATE AND THE LOAD PLATE SHALL BE AS SHOWN IN THE CONTRACT PLANS. UNLESS OTHERWISE NOTED, MINIMUM WELD SIZE SHALL BE 5/16". THE TRANSVERSE JOINTS BETWEEN THE BOTTOM FLANGE AND THE SOLE PLATE SHALL BE FILLED WITH A NON-HARDENING CAULK COMPOUND IN ACCORDANCE WITH SECTION 923.05 OF THE STANDARD SPECIFICATIONS.
14. THE WELD SHALL BE ALLOWED TO COOL AFTER EACH PASS. THE TEMPERATURE OF THE STEEL ADJACENT TO THE ELASTOMER SHALL NOT EXCEED 200°F. TEMPERATURE SHALL BE CONTROLLED BY THE WELDING PROCEDURES AND TEMPERATURE INDICATING CRAYONS OR OTHER DEVICES SUCH AS PYROMETRIC STICKS AS APPROVED BY THE ENGINEER. QUENCHING TO ACCELERATE COOLING IS NOT PERMITTED.
15. ANCHOR BOLTS MAY BE SET IN FORMS PRIOR TO POURING OF THE SUBSTRUCTURE CONCRETE OR SET IN OVERSIZED (3" DIAMETER MAX.) CORRUGATED METAL SLEEVES PREVIOUSLY PLACED. ANCHOR ROD HOLES MAY BE CORE DRILLED OR STAR DRILLED ONLY AS APPROVED BY THE ENGINEER. WASH AND DRY HOLE BEFORE FILLING WITH RESIN OR EPOXY GROUT IN ACCORDANCE WITH SUBSECTION 403.09(B) OF THE STANDARD SPECIFICATIONS. DRILLED HOLE DIAMETER SHALL BE AS PER EPOXY GROUT OR RESIN MANUFACTURER RECOMMENDATIONS.
16. DESIGN OF THE EMBEDDED PLATE, PIN PLATE, WELDED STUDS AND COUNTERSUNK SCREWS SHALL BE THE AS SHOWN IN THE CONTRACT PLANS.
17. ELASTOMERIC BEARINGS WITH ANGLES BETWEEN ℄ BEARING AND ℄ GIRDER OTHER THAN 90° SHALL BE AS SHOWN IN THE CONTRACT PLANS.
18. DESIGN OF THE PTFE/S.S. SLIDING SURFACE SHALL BE AS SHOWN IN THE CONTRACT PLANS. A TABLE PROVIDING THE INITIAL OFFSET FROM CENTERLINE FOR VARIOUS INSTALLATION TEMPERATURES SHALL BE PROVIDED.

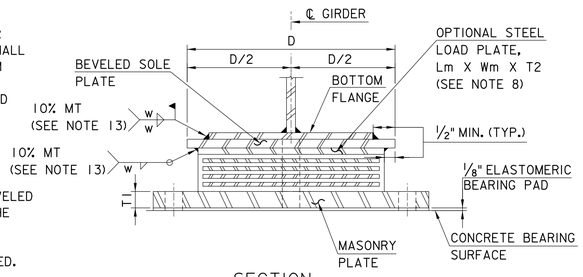
ELASTOMERIC BEARING TABLE ⚠ (SEE CONTRACT PLANS FOR COMPLETED BEARING TABLE)

LOCATION	FIX / EXP.	ITEM NO.	QUANTITY REQUIRED	DC ••• (KIPS) UNFACTORED	DW ••• (KIPS) UNFACTORED	LL W/O IM ••• (KIPS) UNFACTORED	SHAPE FACTOR	OPTIONAL LOAD ℞ THICKNESS T2 (IN)	ONE WAY • LONG. MOVEMENT (IN)	ELASTOMER LAYERS: EXT. LAYER THICKNESS (IN)	INT. LAYER THICKNESS (IN)	N LAYERS	Lm (IN)	Wm (IN)	SHEAR MODULUS (KSI)	MASONRY ℞: T1 (IN)	Fm (IN)	Gm (IN)	EL (IN)	ET (IN)	BRG. H•• (IN)	ANCHOR BOLTS: ø n (IN)	BOLTS PER BRG.	WELD SIZE W (IN)	SOLE PLATE: C (IN)	D (IN)	BEVEL T3 (IN)	BEVEL T4 (IN)	ø p PIN DIA. (IN)

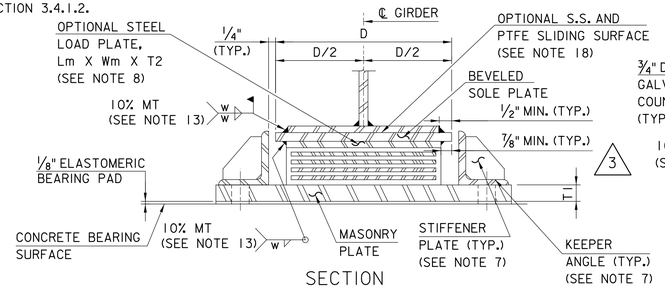
• ONE WAY LONGITUDINAL MOVEMENT IS THE MAXIMUM MOVEMENT (EXPANSION OR CONTRACTION) OF THE SUPERSTRUCTURE WHEN BEARINGS ARE SET AT 68°F. FOR SETTING OF BEARINGS AT TEMPERATURES OTHER THAN 68°F, SEE NOTE 10.

•• HEIGHT OF BEARING ASSEMBLY, H, DOES NOT INCLUDE ⅛" ELASTOMERIC BEARING PAD.

••• DEFINED AS PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 3.4.1.2.



SECTION



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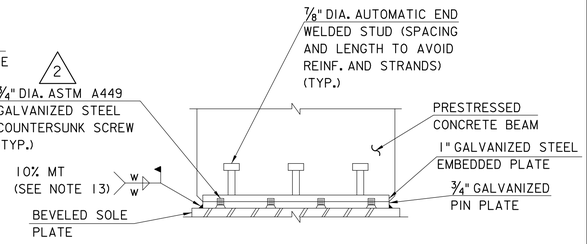
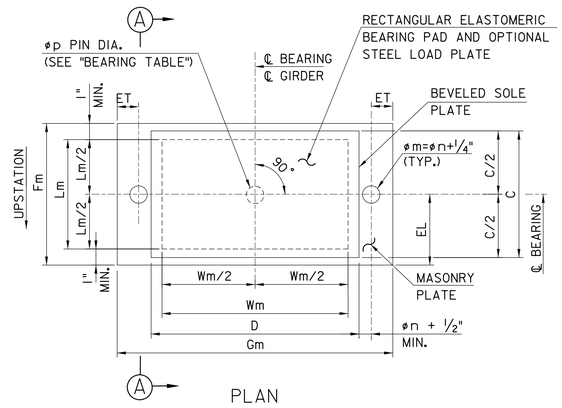


NOTE: FOR ADDITIONAL DETAILS, SEE STEEL GIRDER BEARINGS

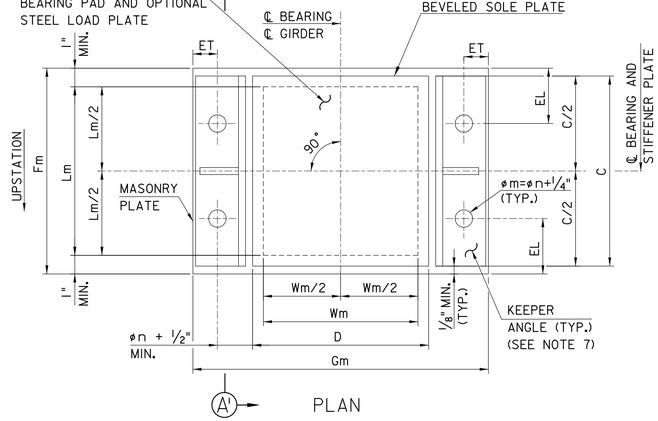
ELASTOMERIC BEARING - PRESTRESSED CONCRETE BEAM SOLE PLATE DETAIL

N.T.S.



FIXED BEARINGS - STEEL GIRDER

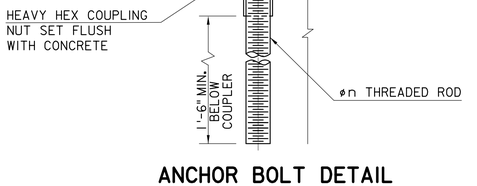
N.T.S.



EXPANSION BEARINGS - STEEL GIRDER

(GUIDED EXPANSION BEARING SHOWN, EXPANSION BEARING SIMILAR WITHOUT PROVISIONS FOR KEEPER ANGLES)

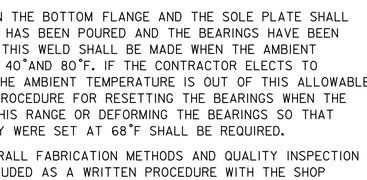
N.T.S.



ANCHOR BOLT DETAIL

(KEEPER ANGLES, WHERE REQUIRED, ARE NOT SHOWN FOR CLARITY.)

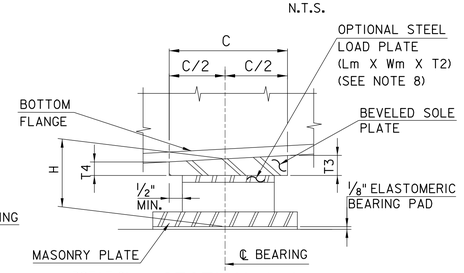
N.T.S.



TYPICAL SECTION THROUGH ELASTOMERIC PAD AND PIN DETAIL FOR FIXED BEARINGS

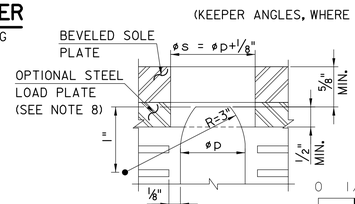
(EXPANSION BEARING SIMILAR, WITHOUT PROVISIONS FOR PIN)

N.T.S.



SECTION A-A

(SECTION A'-A' SIMILAR, KEEPER ANGLE NOT SHOWN FOR CLARITY)



DETAIL A

N.T.S.

REV.	DESCRIPTION	DATE
3	REVISED EXP. BRG SOLE PLATE DIMENSION	11/24
2	REVISED: CONFORMS TO 2019 DESIGN MANUAL AND MINOR REVISIONS	10/22
1	REVISED TABLE	10/14
0	REISSUED DRAWING	02/12

NEW JERSEY TURNPIKE AUTHORITY

NEW JERSEY TURNPIKE
GARDEN STATE PARKWAY

STANDARD DRAWINGS

LAMINATED ELASTOMERIC BEARING DETAILS

OFFICE OF THE CHIEF ENGINEER
NEW JERSEY TURNPIKE AUTHORITY
WOODBRIDGE, NEW JERSEY

STANDARD DRAWING
BR-10

CONTRACT NO.

SHEET NO. OF