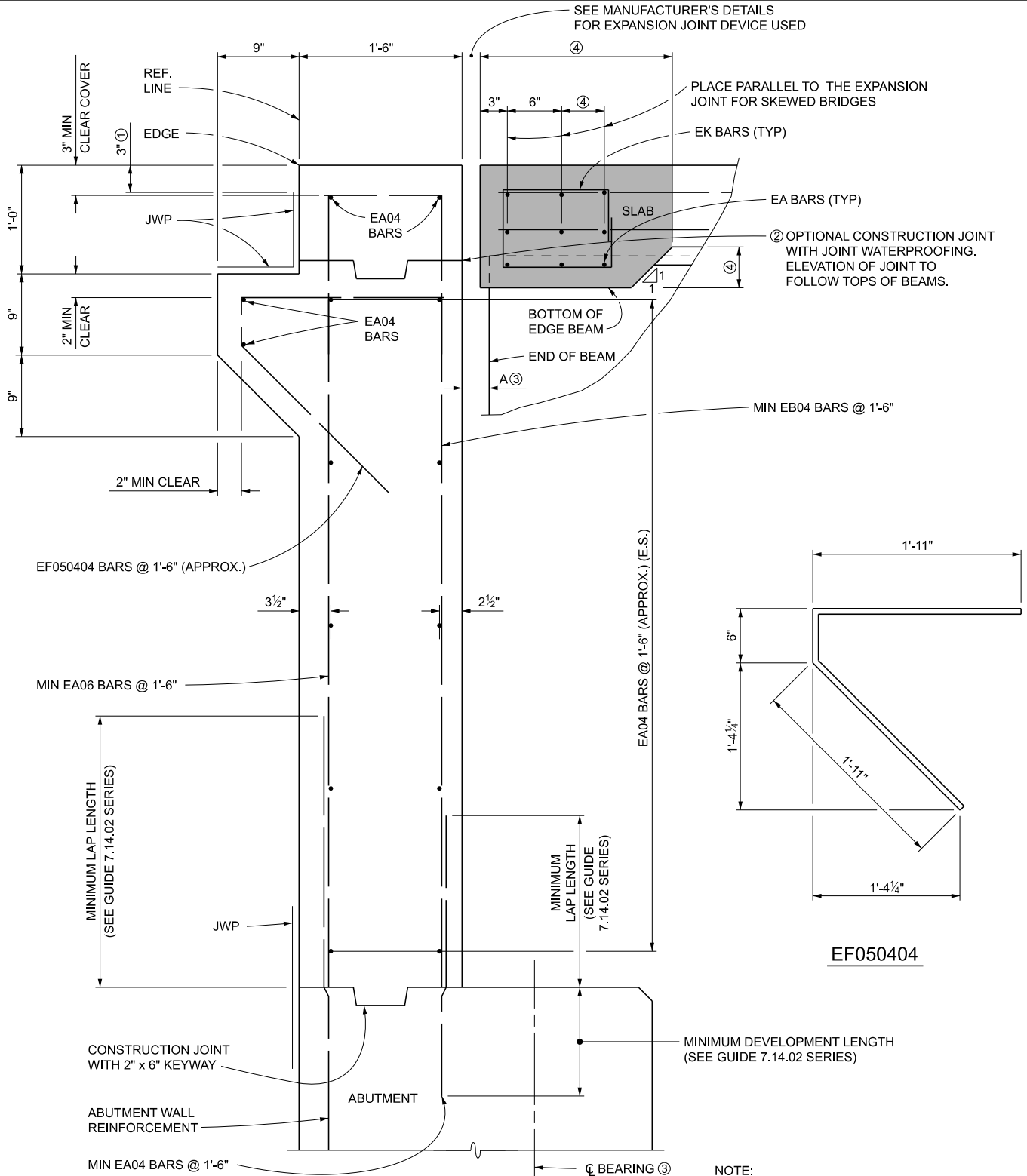


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 CHECKED BY: CWC
 APPROVED BY: KCK

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT
 TYPICAL SECTION THRU
 INDEPENDENT BACKWALL

ISSUED: 03/24/25
 SUPERSEDES: 08/26/24



EF050404 BARS @ 1'-6" (APPROX.)

MIN EA06 BARS @ 1'-6"

MINIMUM LAP LENGTH
(SEE GUIDE 7.14.02 SERIES)

MINIMUM LAP LENGTH
(SEE GUIDE 7.14.02 SERIES)

EF050404

MINIMUM DEVELOPMENT LENGTH
(SEE GUIDE 7.14.02 SERIES)

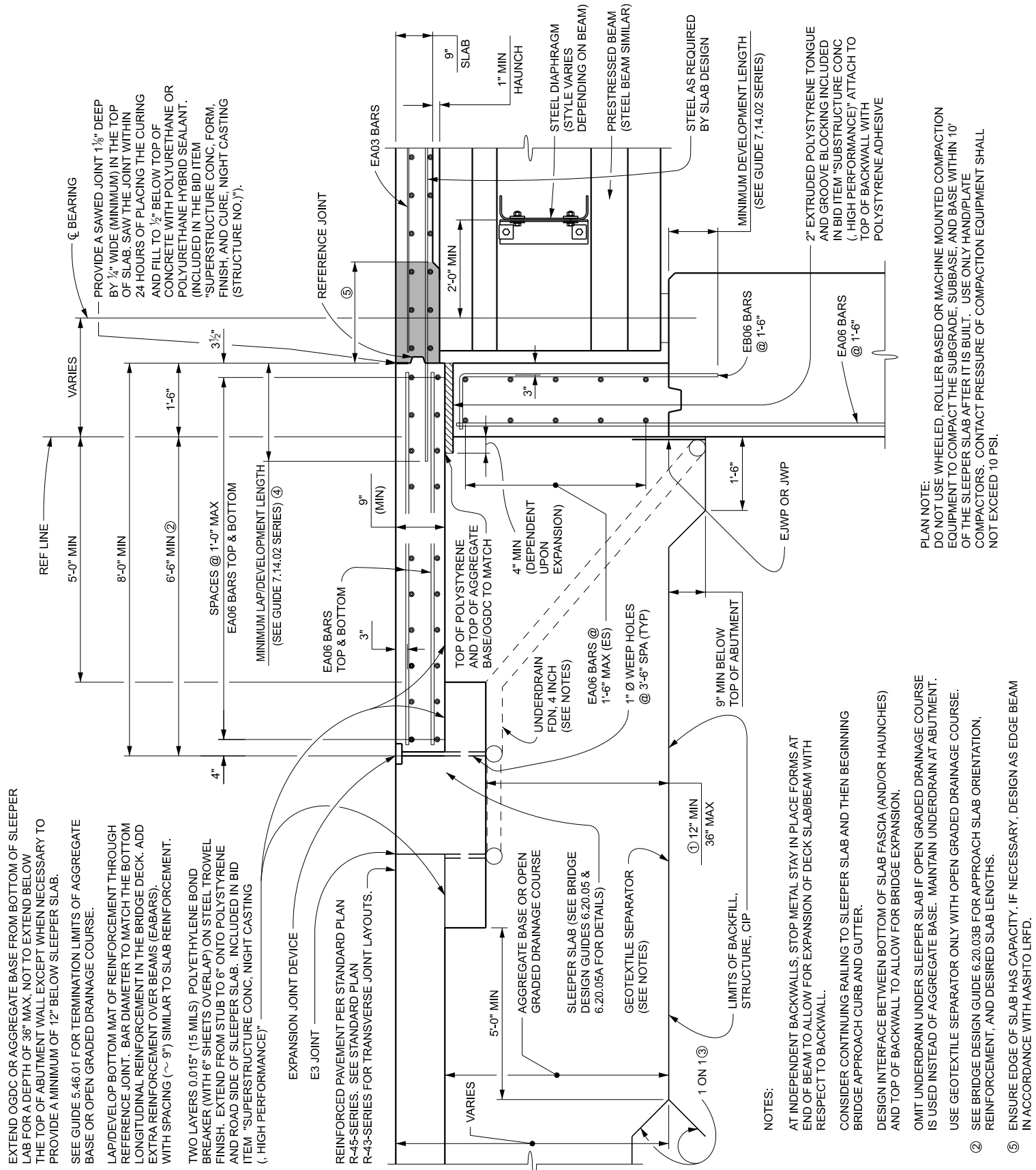
- PLAN NOTE:
- ① ON THE VERTICAL FACE OF THE PAVEMENT SEAT, STOP THE JOINT WATERPROOFING 3" BELOW THE TOP OF BACKWALL.
 - ② WHERE CONSTRUCTION JOINT IS USED, THERE WILL BE NO PAYMENT FOR THE REQUIRED JOINT WATERPROOFING. THE CONCRETE USED TO CONSTRUCT THE BACKWALL IS PAID FOR AS "SUBSTRUCTURE CONC, HIGH PERFORMANCE".

- NOTE:
- BARS WITH PREFIX "E" ARE TO BE EPOXY COATED.
 - ③ TO ESTABLISH \bar{C} BEARING, USE "A" = $\frac{1}{2}$ TOTAL MOVEMENT PARALLEL TO \bar{C} BEAM PLUS 1". FOR SKEWED BRIDGES, "A" IS MEASURED AT CORNER OF FLANGE.
 - ④ ENSURE EDGE OF SLAB HAS CAPACITY. DESIGN AS EDGE BEAM IN ACCORDANCE WITH AASHTO LRFD. DIMENSION AND PROVIDE ADDITIONAL REINFORCEMENT AS NECESSARY.

DRAWN BY: BLT
 CHECKED BY: CWC
 APPROVED BY: KCK

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT
 TYPICAL SECTION THRU
 INDEPENDENT BACKWALL WITH SLIDING SLAB

ISSUED: 03/24/25
 SUPERSEDES: 11/25/24



- ① EXTEND OGDC OR AGGREGATE BASE FROM BOTTOM OF SLEEPER LAB FOR A DEPTH OF 36" MAX. NOT TO EXTEND BELOW THE TOP OF ABUTMENT WALL EXCEPT WHEN NECESSARY TO PROVIDE A MINIMUM OF 12" BELOW SLEEPER SLAB.
- ③ SEE GUIDE 5.46.01 FOR TERMINATION LIMITS OF AGGREGATE BASE OR OPEN GRADED DRAINAGE COURSE.
- ④ LAP/DEVELOP BOTTOM MAT OF REINFORCEMENT THROUGH REFERENCE JOINT. BAR DIAMETER TO MATCH THE BOTTOM LONGITUDINAL REINFORCEMENT IN THE BRIDGE DECK. ADD EXTRA REINFORCEMENT OVER BEAMS (EABARS) WITH SPACING (~9") SIMILAR TO SLAB REINFORCEMENT. TWO LAYERS 0.015" (15 MILS) POLYETHYLENE BOND BREAKER (WITH 6" SHEETS OVERLAP) ON STEEL TROWEL FINISH. EXTEND FROM STUB TO 6" ONTO POLYSTYRENE AND ROAD SIDE OF SLEEPER SLAB. INCLUDED IN BID ITEM "SUPERSTRUCTURE CONC. NIGHT CASTING (. HIGH PERFORMANCE)".

EXPANSION JOINT DEVICE
 E3 JOINT
 REINFORCED PAVEMENT PER STANDARD PLAN R-45-SERIES. SEE STANDARD PLAN R-43-SERIES FOR TRANSVERSE JOINT LAYOUTS.

NOTES:

- AT INDEPENDENT BACKWALLS, STOP METAL STAY IN PLACE FORMS AT END OF BEAM TO ALLOW FOR EXPANSION OF DECK SLAB/BEAM WITH RESPECT TO BACKWALL.
- CONSIDER CONTINUING RAILING TO SLEEPER SLAB AND THEN BEGINNING BRIDGE APPROACH CURB AND GUTTER.
- DESIGN INTERFACE BETWEEN BOTTOM OF SLAB FASCIA (AND/OR HAUNCHES) AND TOP OF BACKWALL TO ALLOW FOR BRIDGE EXPANSION.
- OMIT UNDERDRAIN UNDER SLEEPER SLAB IF OPEN GRADED DRAINAGE COURSE IS USED INSTEAD OF AGGREGATE BASE. MAINTAIN UNDERDRAIN AT ABUTMENT.
- USE GEOTEXTILE SEPARATOR ONLY WITH OPEN GRADED DRAINAGE COURSE.
- ② SEE BRIDGE DESIGN GUIDE 6.20.03B FOR APPROACH SLAB ORIENTATION, REINFORCEMENT, AND DESIRED SLAB LENGTHS.
- ⑤ ENSURE EDGE OF SLAB HAS CAPACITY. IF NECESSARY, DESIGN AS EDGE BEAM IN ACCORDANCE WITH AASHTO LRFD.

PLAN NOTE:
 DO NOT USE WHEELED, ROLLER BASED OR MACHINE MOUNTED COMPACTION EQUIPMENT TO COMPACT THE SUBGRADE, SUBBASE, AND BASE WITHIN 10' OF THE SLEEPER SLAB AFTER IT IS BUILT. USE ONLY HAND/PLATE COMPACTORS. CONTACT PRESSURE OF COMPACTION EQUIPMENT SHALL NOT EXCEED 10 PSI.

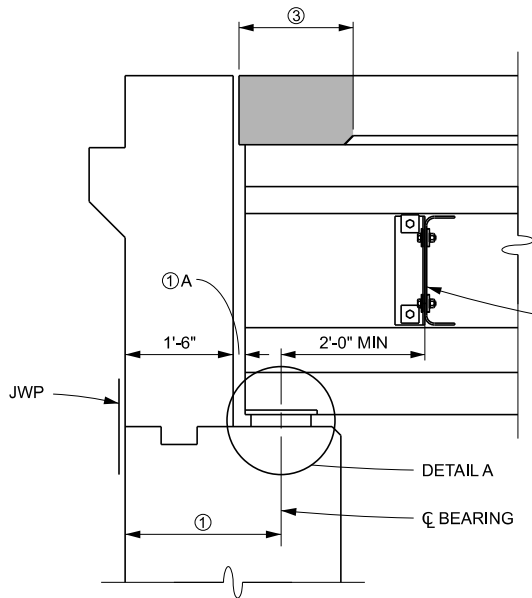
PREPARED BY
 DESIGN DIVISION

6.20.03A

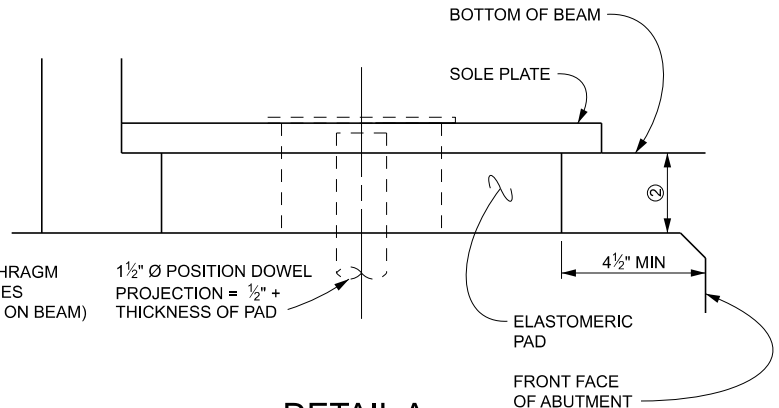
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 APPROVED BY: KCK

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT
 DETAILS AT ABUTMENTS FOR
 PRESTRESSED CONCRETE I-BEAMS

ISSUED: 03/24/25
 SUPERSEDES: 11/25/24



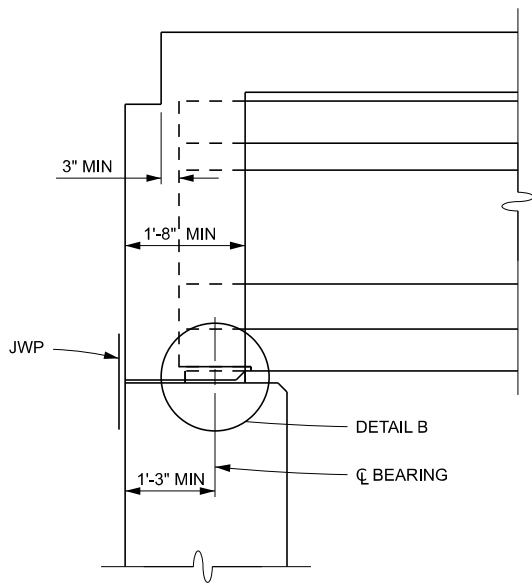
INDEPENDENT BACKWALL



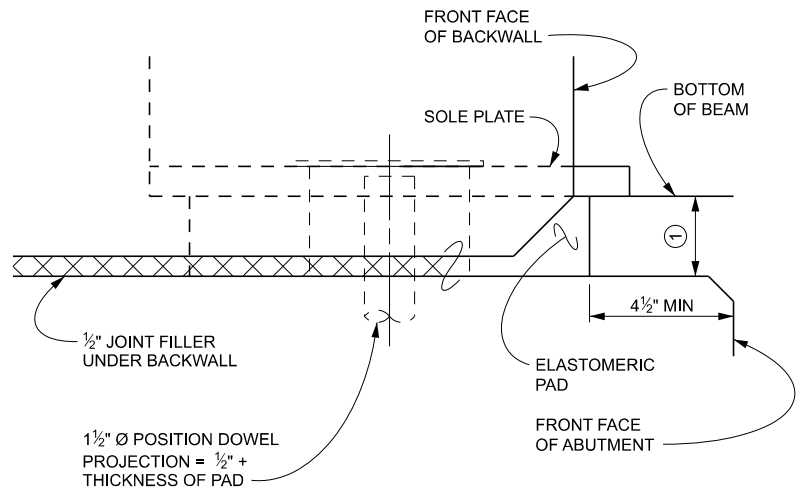
DETAIL A

ALSO APPLIES AT PIERS

- ① TO ESTABLISH \bar{C} BEARING USE "A" = $\frac{1}{2}$ TOTAL MOVEMENT (PARALLEL TO \bar{C} BEAM) PLUS 1". FOR SKEWED BRIDGES "A" IS MEASURED AT CORNER OF BOTTOM FLANGE.
- ② INCREASE ELASTOMERIC PAD THICKNESS AS REQUIRED TO PROVIDE CLEARANCE FOR STRUCTURES ON GRADE AND/OR SKEW.
- ③ ENSURE EDGE OF SLAB HAS CAPACITY. IF NECESSARY, DESIGN AS EDGE BEAM IN ACCORDANCE WITH AASHTO LRFD.



DEPENDENT BACKWALL



DETAIL B

NOTES:

FOR ADDITIONAL BACKWALL DETAILS AND NOTES, SEE DESIGN GUIDES 6.20.01, 6.20.03 SERIES AND 6.20.04 SERIES.

FOR BEARING DETAILS SEE DESIGN GUIDE 8.43.01.

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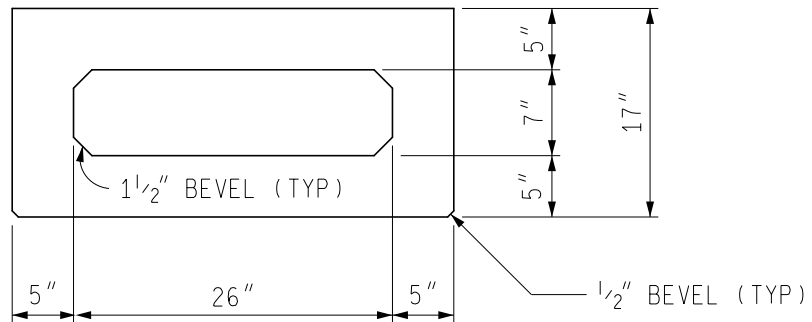
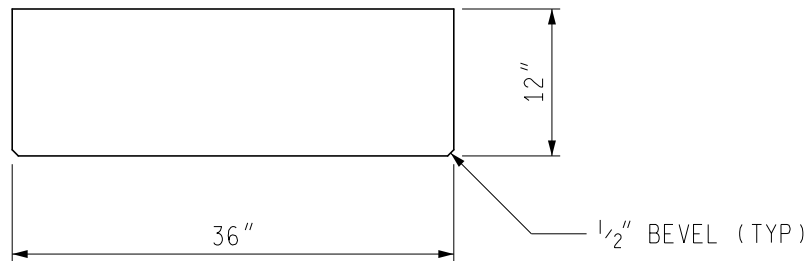
6.60.13

DRAWN BY: BLT
 CHECKED BY: VZ
 APPROVED BY: KCK

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT

PRESTRESSED CONCRETE
 12" & 17" BOX BEAM PROPERTIES

ISSUED: 05/22/23
 SUPERSEDES: 12/27/18



BEAM PROPERTIES								
DEPTH	WIDTH	WEIGHT	AREA	Y_T	Y_B	S_T	S_B	I
in	in	lbs/ft	in ²	in	in	in ³	in ³	in ⁴
12	36	442	424	6.04	5.96	848	860	5,120
17	36	445	427	8.58	8.42	1610	1640	13,800

PREPARED BY
 DESIGN DIVISION

6.65.02