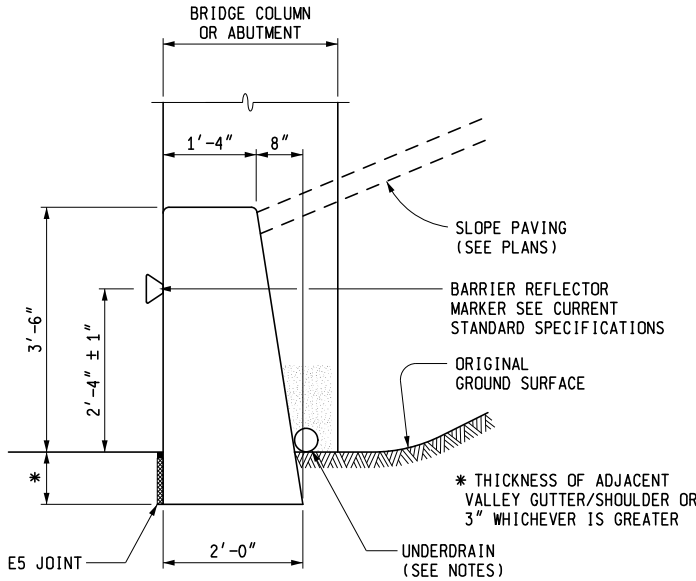
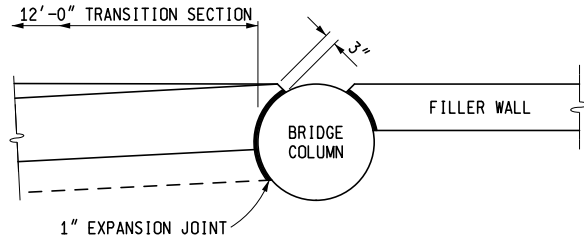


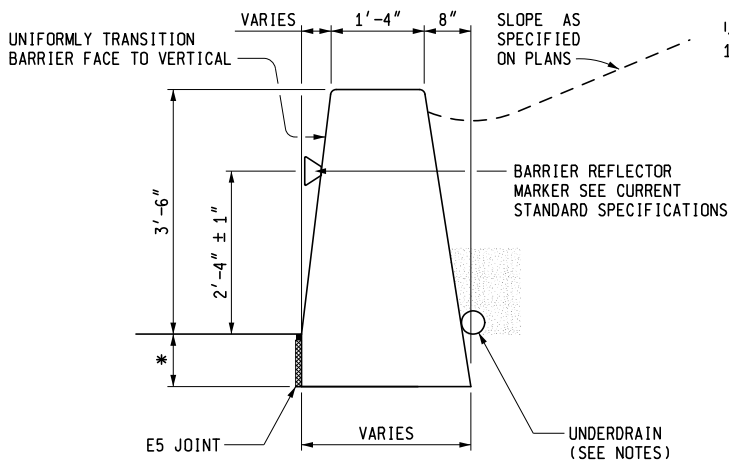
CONCRETE BARRIER, SINGLE FACE
(AT SQUARE COLUMN OR ABUTMENT)



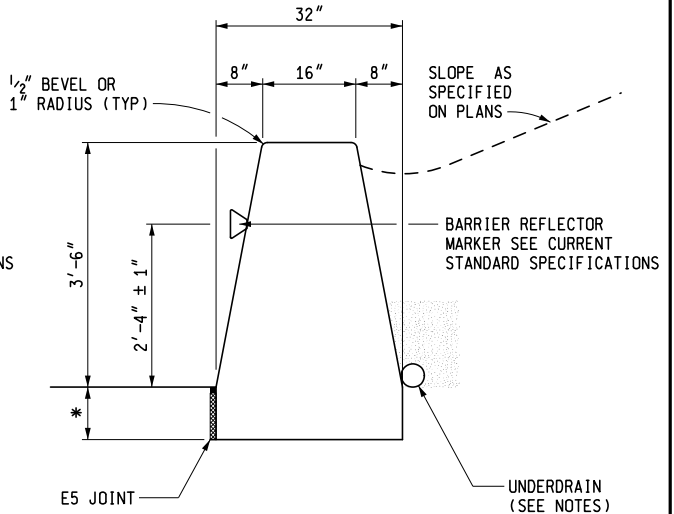
SECTION A - A



CONCRETE BARRIER, SINGLE FACE
(AT CIRCULAR COLUMN)



SECTION B - B



SECTION C - C

CONCRETE BARRIER, SINGLE FACE, TYPE A
(IN LINE WITH BRIDGE COLUMNS OR ABUTMENT)



PREPARED BY
DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Stuedle

APPROVED BY: Kimberly Avery
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: Bradley C. Wiefersch
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
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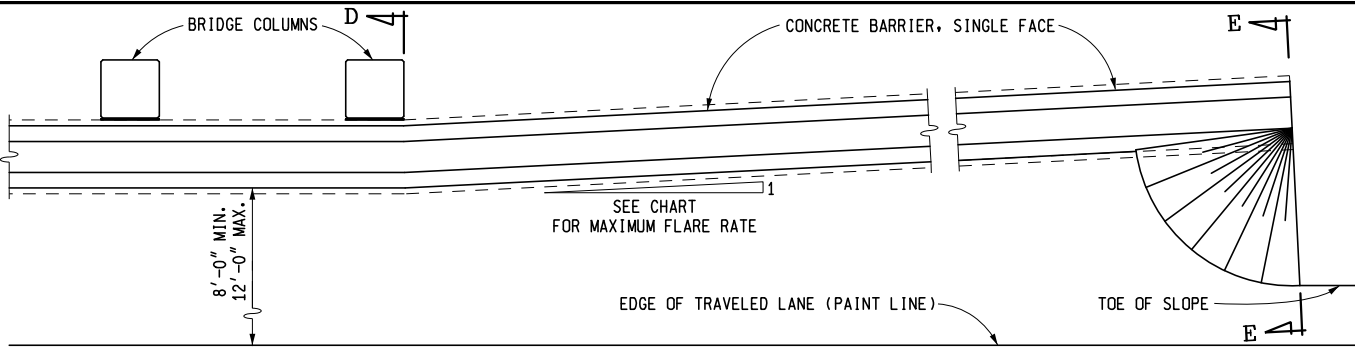
CONCRETE BARRIER, SINGLE FACE

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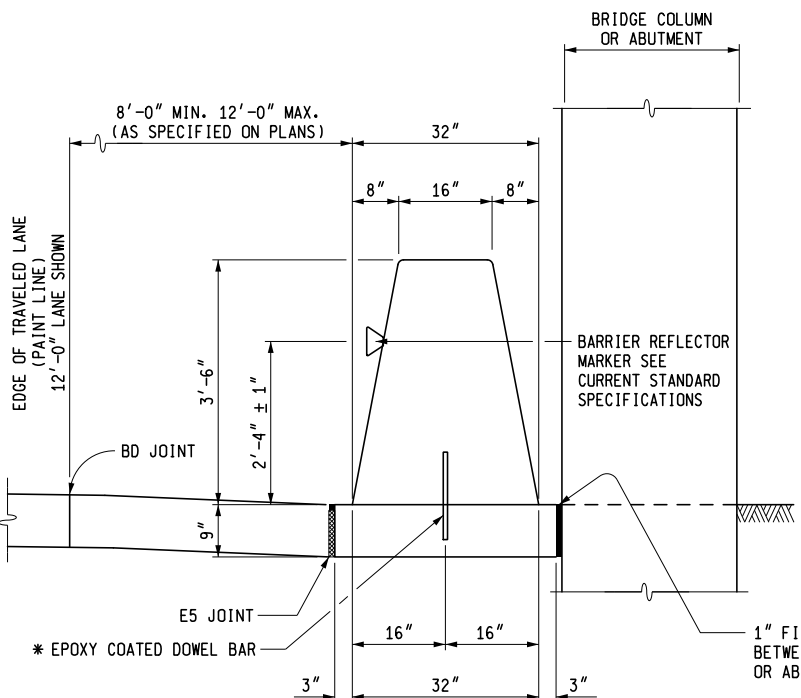
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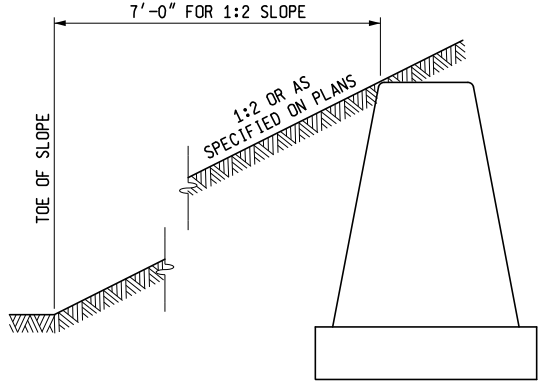


PLAN VIEW



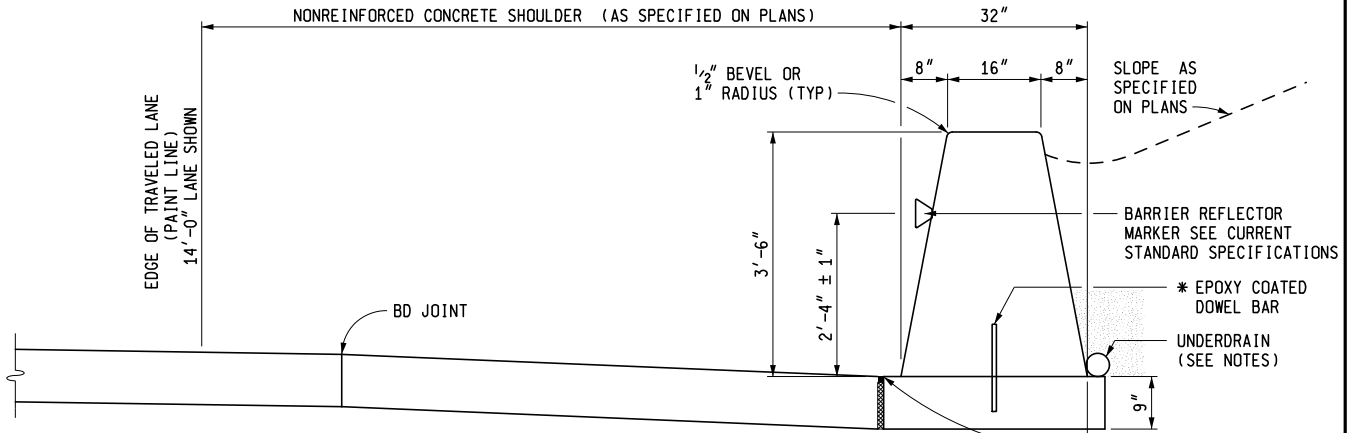
*** NOTE:**

EPOXY COATED DOWEL BARS SHALL BE #6 DEFORMED BARS 1'-3" LONG SPACED AT 1'-6" WITH 6" EMBEDMENT IN FOOTING OR CONCRETE SHOULDER STARTING AT 1'-6" FROM THE BEGINNING OF THE BARRIER. SPACING SHALL BE NO CLOSER THAN 1'-6" FROM ANY TRANSVERSE JOINT: SPACING MAY BE ADJUSTED TO AVOID ANY CONFLICT.



SECTION D - D
CONCRETE BARRIER, SINGLE FACE, TYPE B (SHOWN)
(IN FRONT OF BRIDGE COLUMNS OR ABUTMENTS)

SECTION E - E



CONCRETE BARRIER, SINGLE FACE, TYPE B
(IN LINE WITH BRIDGE COLUMNS OR ABUTMENT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR

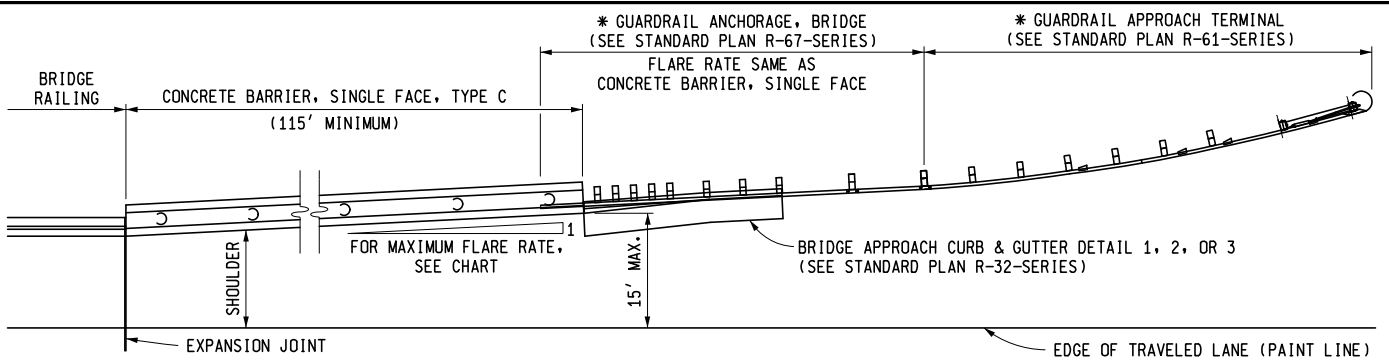
CONCRETE BARRIER, SINGLE FACE

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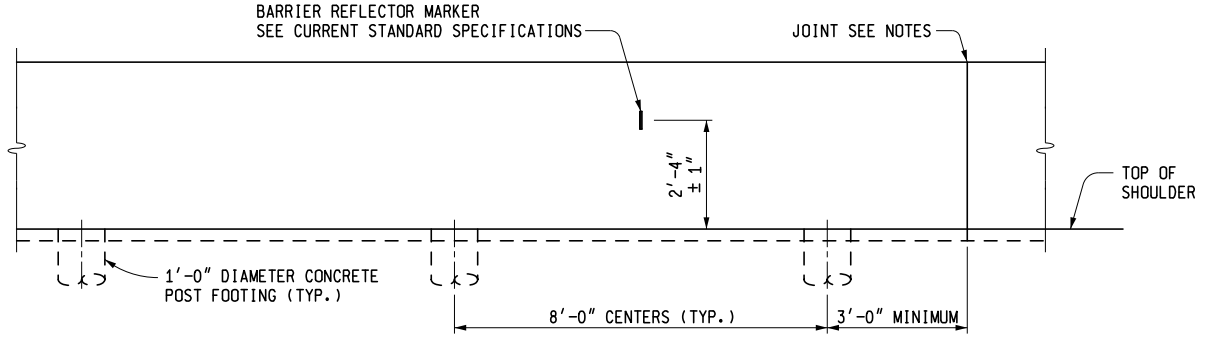
FLARE CHART	
MAXIMUM FLARE	DESIGN SPEED (MPH)
1:20	70
1:18	60
1:16	55
1:14	50
1:12	45
1:10	40
1:8	30

* GUARDRAIL ANCHORAGE, BRIDGE, DETAIL T1 WITH GUARDRAIL APPROACH TERMINAL TYPE 1T OR GUARDRAIL ANCHORAGE, BRIDGE, DETAIL T2 WITH GUARDRAIL APPROACH TERMINAL TYPE 1B

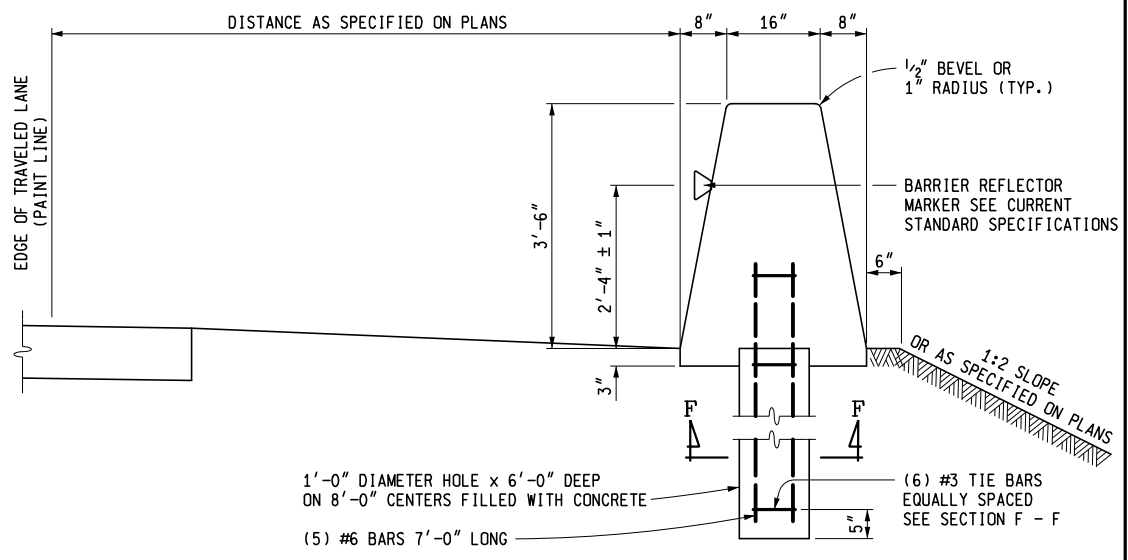
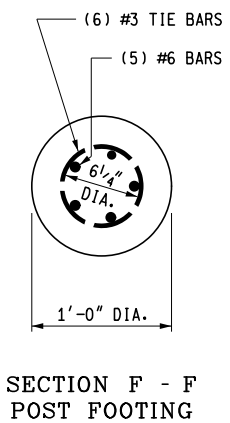
TRANSITION CONCRETE BARRIER, SINGLE FACE TO MATCH SHAPE OF BRIDGE BARRIER RAILING.

THE MAXIMUM FLARE RATE IS THE LARGEST ALLOWABLE DEPARTURE ANGLE FOR THE SPECIFIED DESIGN SPEED. THE FLARE RATE OF THE CONCRETE BARRIER IS LIMITED BY ITS LENGTH AND MAXIMUM 15' OFFSET.

**CONCRETE BARRIER, SINGLE FACE, TYPE C
(WITH GUARDRAIL ENDING)**



ELEVATION VIEW



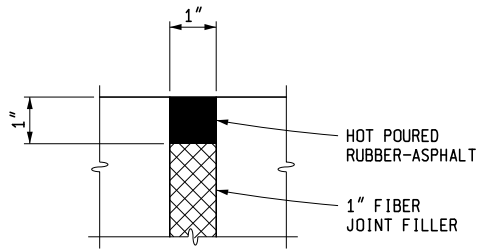
CROSS SECTION VIEW

**CONCRETE BARRIER, SINGLE FACE
(IN LINE WITH BRIDGE COLUMNS OR ABUTMENT)**

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CONCRETE BARRIER, SINGLE FACE

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E5 JOINT DETAIL

NOTES:

THE SIDE CONFIGURATION SPECIFIED ON THIS PLAN CONFORMS TO THE SINGLE SLOPE SHAPE AS SPECIFIED ON STANDARD PLAN R-49-SERIES.

PLACE 1" EXPANSION JOINTS IN THE CONCRETE BARRIER AT APPROXIMATELY 400' INTERVALS. ALSO PLACE 1" EXPANSION JOINTS AT STRUCTURES (INCLUDING SIGN SUPPORTS, LIGHT STANDARD FOUNDATIONS, BRIDGE PIERS, OR ANY STRUCTURE WITH A FOUNDATION). LOCATION OF EXPANSION JOINTS SHOULD BE ADJUSTED TO MATCH EXPANSION JOINTS IN THE SHOULDER. PLANE OF WEAKNESS JOINT SPACING SHALL BE 20' MAXIMUM AND 10' MINIMUM, EXCEPT WHEN THE BARRIER IS ON A CONCRETE SHOULDER. PLANE OF WEAKNESS JOINT SPACING SHALL COINCIDE WITH CONTRACTION JOINTS IN THE SHOULDER.

JOINTS IN THE CONCRETE FOOTING SHALL COINCIDE WITH THE JOINTS IN THE CONCRETE BARRIER.

PLANE OF WEAKNESS JOINTS IN THE CONCRETE BARRIER SHALL BE AT LEAST 2 1/2" DEEP AND SHALL BE EDGED.

IN A CUT SECTION, THE CONCRETE BARRIER SHALL BE ENDED BY BURYING IT IN THE SIDE SLOPE.

IN FILL SECTIONS, THE CONCRETE BARRIER SHALL BE ENDED WITH GUARDRAIL ANCHORAGE, BRIDGE, DETAIL T1 AND GUARDRAIL APPROACH TERMINAL TYPE 1T OR GUARDRAIL ANCHORAGE, BRIDGE, DETAIL T2 AND GUARDRAIL APPROACH TERMINAL TYPE 1B. THE GUARDRAIL ANCHORAGES SHALL BE BUILT ACCORDING TO STANDARD PLAN R-67-SERIES. THE GUARDRAIL APPROACH TERMINAL SHALL BE BUILT ACCORDING TO STANDARD PLAN R-61-SERIES. THE BRIDGE APPROACH CURB & GUTTER WILL BE EITHER DETAIL 1, 2, OR 3, AS SPECIFIED ON THE PLANS AND CONSTRUCTED ACCORDING TO STANDARD PLAN R-32-SERIES.

THE TOP AND FACES OF THE BARRIER SHALL NOT VARY MORE THAN 1/2" IN 10' WHEN CHECKED WITH A 10' STRAIGHTEDGE, EXCEPT AT GRADE CHANGES AND CURVES, AND SHALL BE FREE OF HUMPS, SAGS, AND OTHER IRREGULARITIES.

"CONCRETE BARRIER, SINGLE FACE, TYPE A" IS CONCRETE BARRIER CAST MONOLITHIC WITH CONCRETE FOOTINGS; TYPE B IS CONCRETE BARRIER DOWELED TO NONREINFORCED CONCRETE SHOULDERS OR TO A SEPARATE BASE; TYPE C IS CONCRETE BARRIER PLACED ON CONCRETE POST FOOTINGS, WITH NO BACKFILL TO SUPPORT THE BACK SIDE OF THE BARRIER WALL.

WHEN "CONCRETE BARRIER, SINGLE FACE, TYPE A" IS DESIGNATED ON THE PLANS, THE BARRIER MAY BE CONSTRUCTED USING DOWELS AND A WIDENED BASE AS SPECIFIED FOR THE "CONCRETE BARRIER, SINGLE FACE, TYPE B". THE DOWELS, EXTRA WIDTH OF BASE, OR ANY EXTRA WORK REQUIRED WILL BE INCLUDED IN THE PAY ITEM "CONC BARRIER, SINGLE FACE, TYPE A".

THE UNDERDRAIN, LOCATED BEHIND THE CONCRETE BARRIER AND AT THE ELEVATION OF THE TOP OF SHOULDER, IS A MINIMUM 4" DIAMETER FOUNDATION UNDERDRAIN WRAPPED WITH GEOTEXTILE. CLASS 11AA GRANULAR MATERIAL MUST BE PLACED AROUND THE UNDERDRAIN AND AT LEAST 12" ABOVE IT. THE REMAINDER OF THE FILL WILL BE ACCORDING TO CURRENT SPECIFICATIONS.

FOR DETAILS OF THE SHOULDER SECTION, SEE TYPICAL CROSS-SECTIONS IN THE ROAD PLANS.

BARRIER REFLECTOR MARKERS ARE TO BE SPACED AT THE FOLLOWING INTERVALS:

- 1) 50'-0" ON TANGENT SECTIONS AND CURVES WITH A RADIUS OF 1150' OR MORE.
- 2) 25'-0" ON CURVES WITH A RADIUS LESS THAN 1150'.

BARRIER REFLECTOR MARKERS SHALL MATCH COLOR OF EDGE LINE.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CONCRETE BARRIER, SINGLE FACE

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