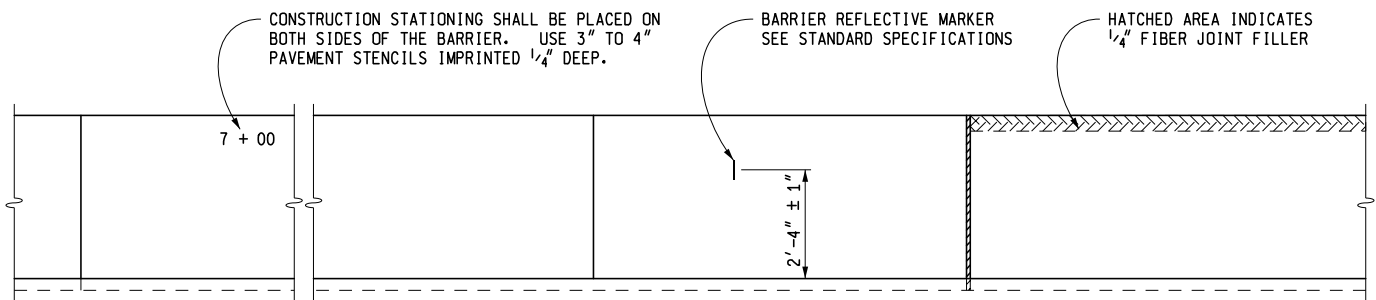


PLAN



ELEVATION  
TYPE A BARRIER



PREPARED BY  
DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR  
Kirk T. Steudle

APPROVED BY: Kimberly Avery  
DIRECTOR, BUREAU OF FIELD SERVICES

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

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

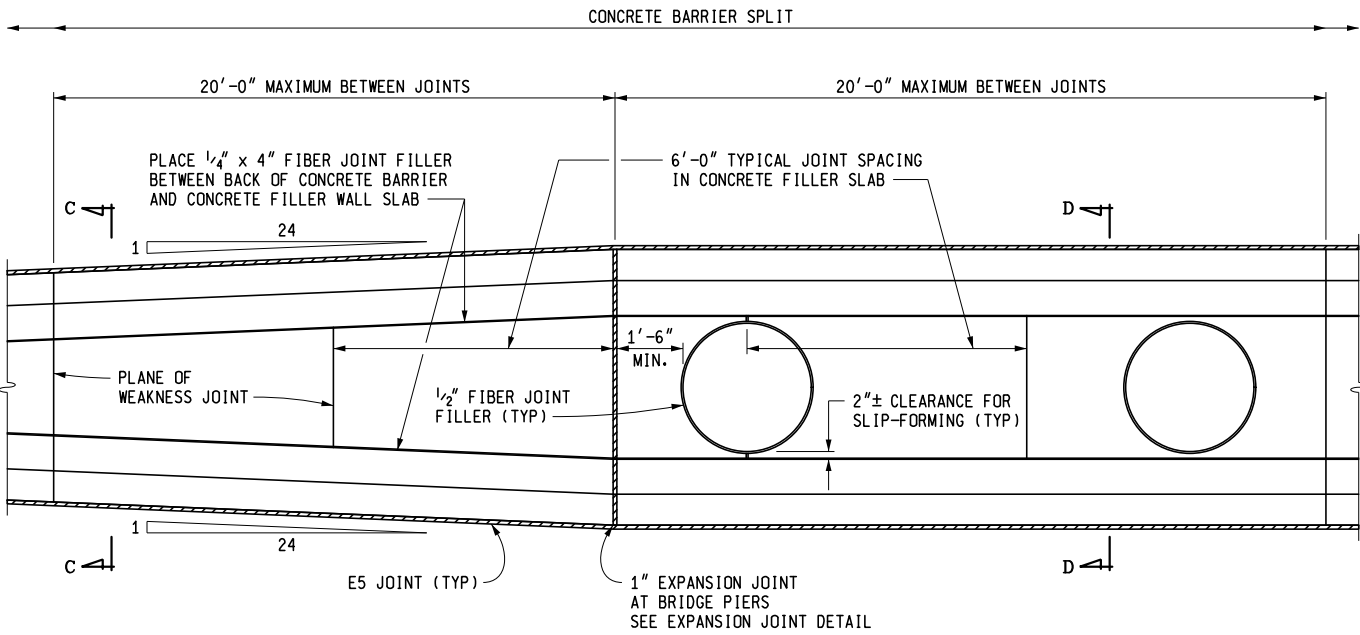
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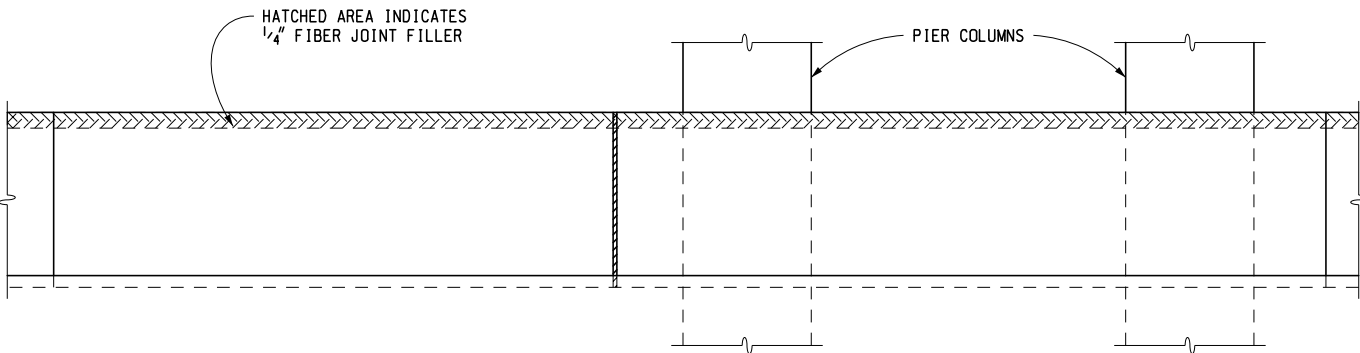
2-24-2017  
PLAN DATE

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PLAN



ELEVATION

TYPE A BARRIER

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

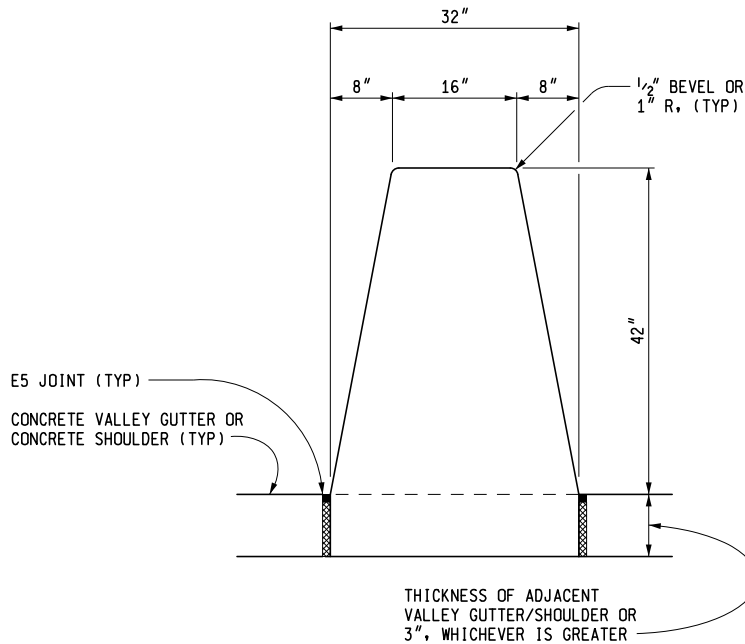
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F.H.W.A. APPROVAL

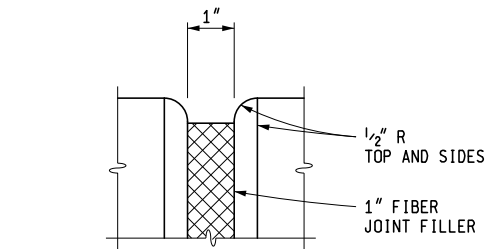
2-24-2017  
PLAN DATE

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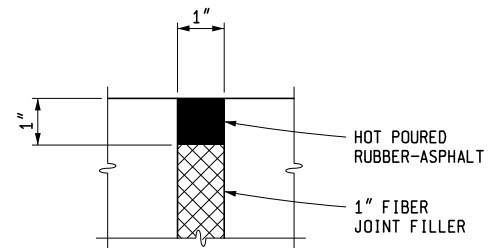
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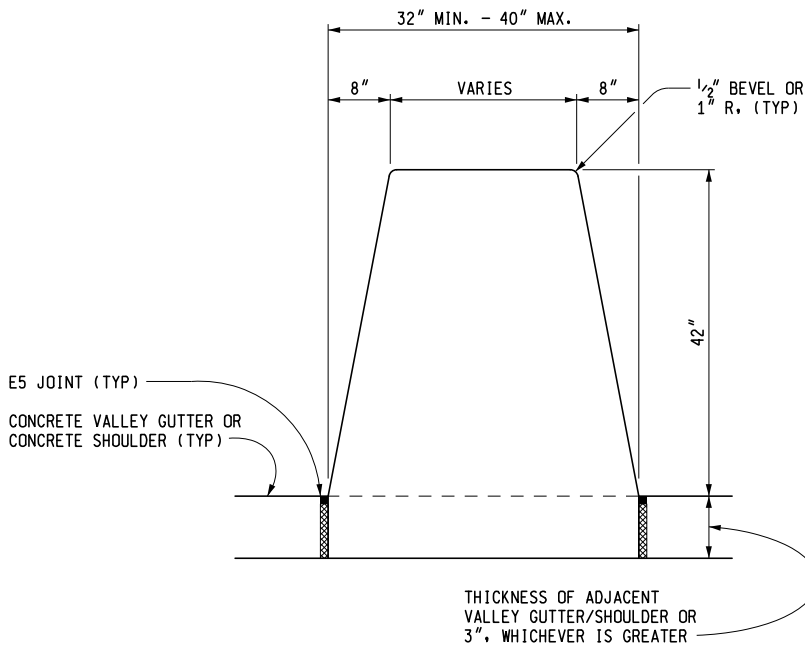
SECTION A-A



EXPANSION JOINT DETAIL



E5 JOINT DETAIL



SECTION B-B  
TYPE A BARRIER

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

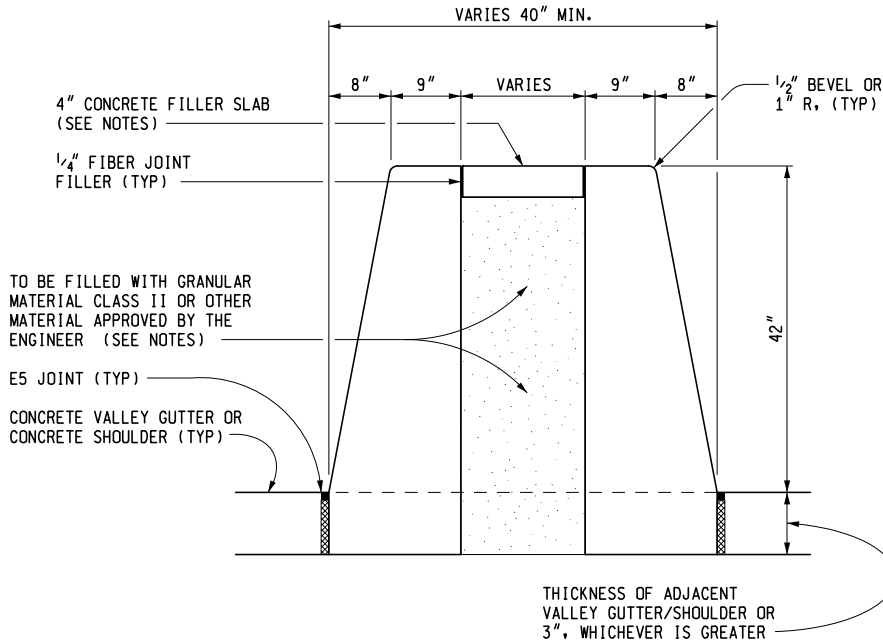
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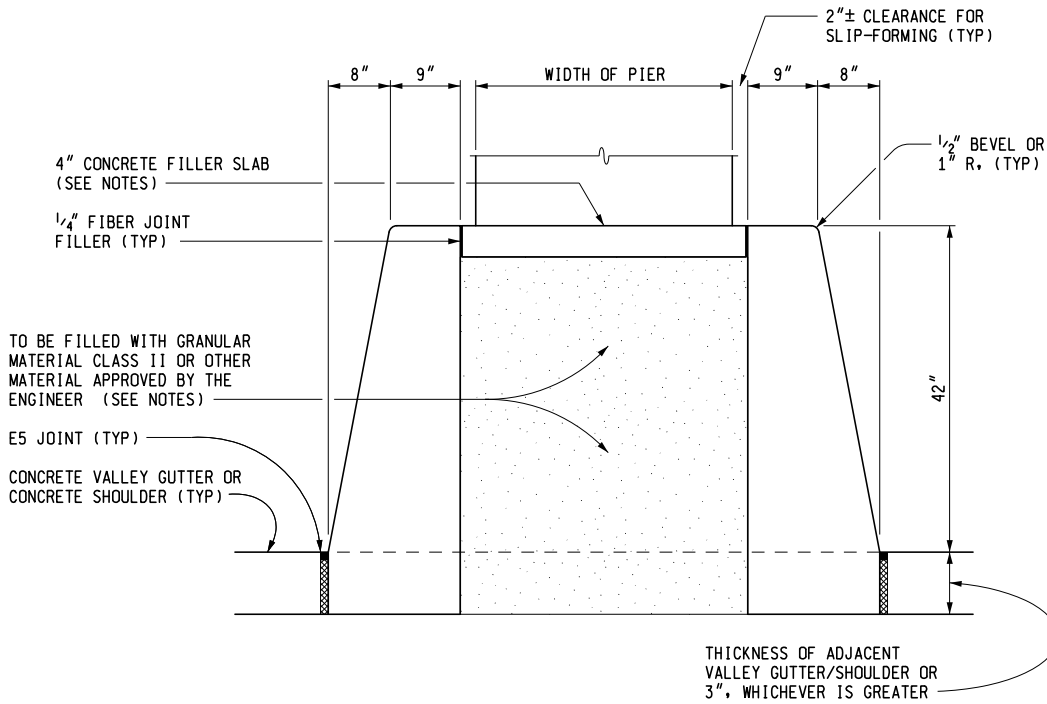
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SECTION C-C



SECTION D-D  
TYPE A BARRIER

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

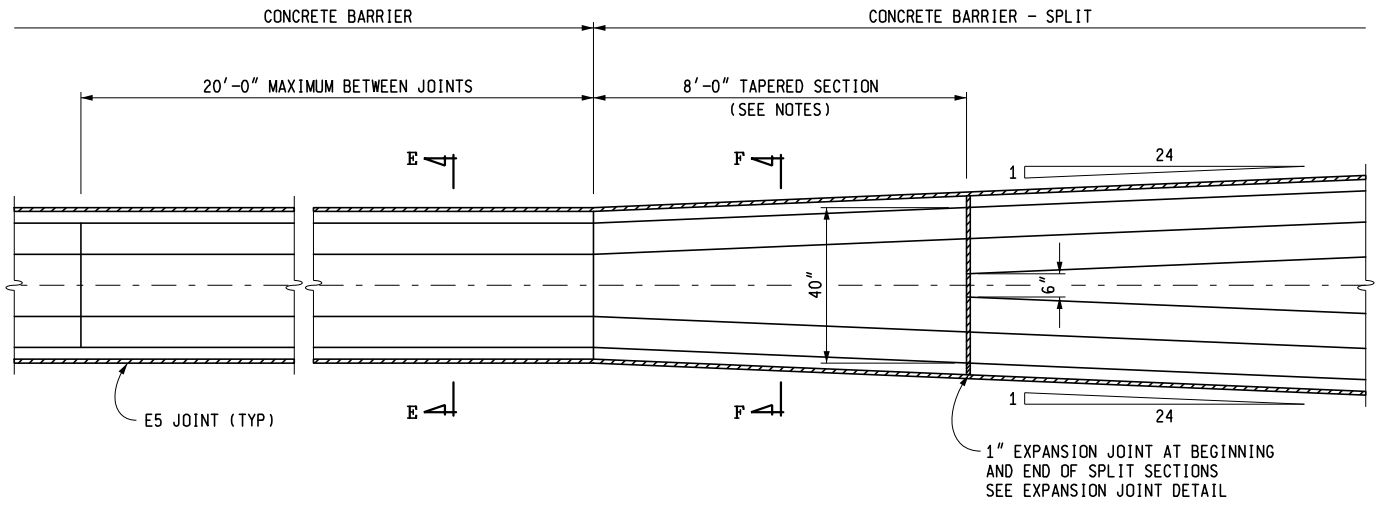
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3-29-2018  
F.H.W.A. APPROVAL

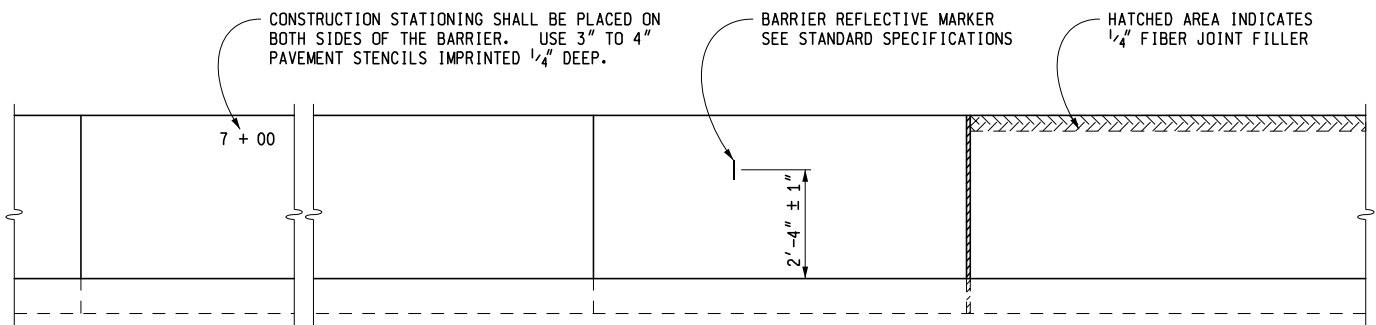
2-24-2017  
PLAN DATE

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PLAN



ELEVATION

TYPE B BARRIER

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

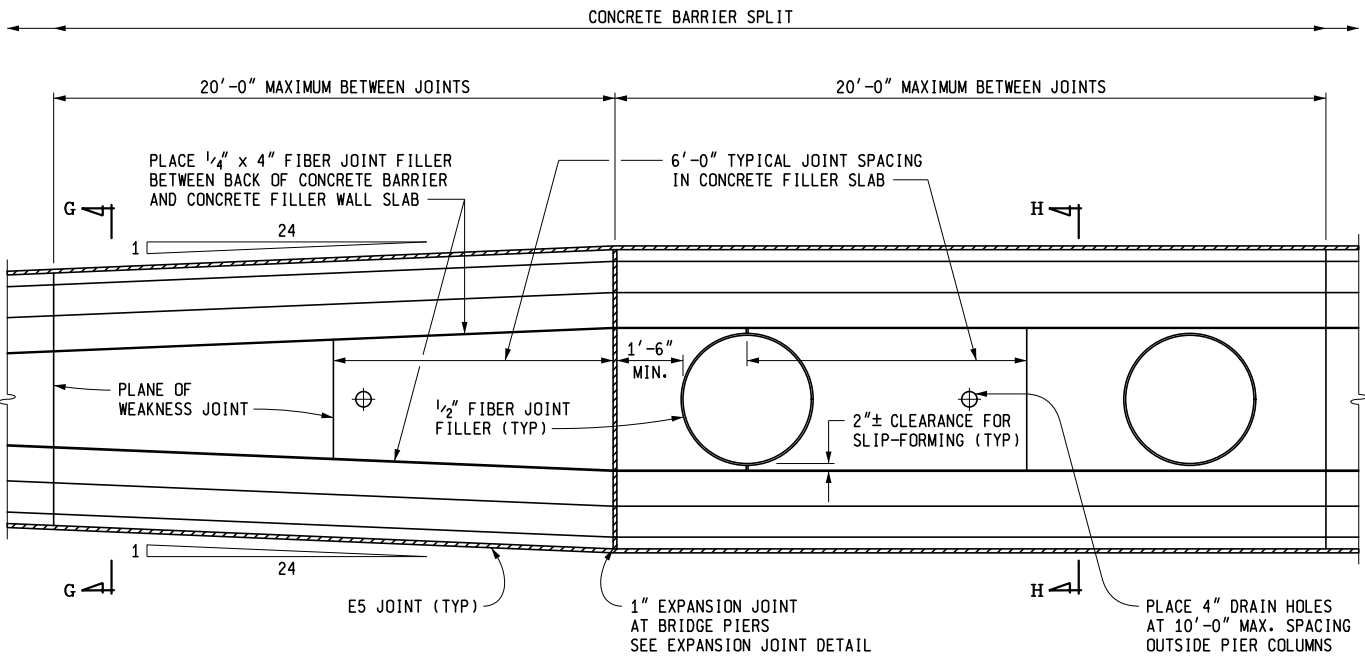
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F.H.W.A. APPROVAL

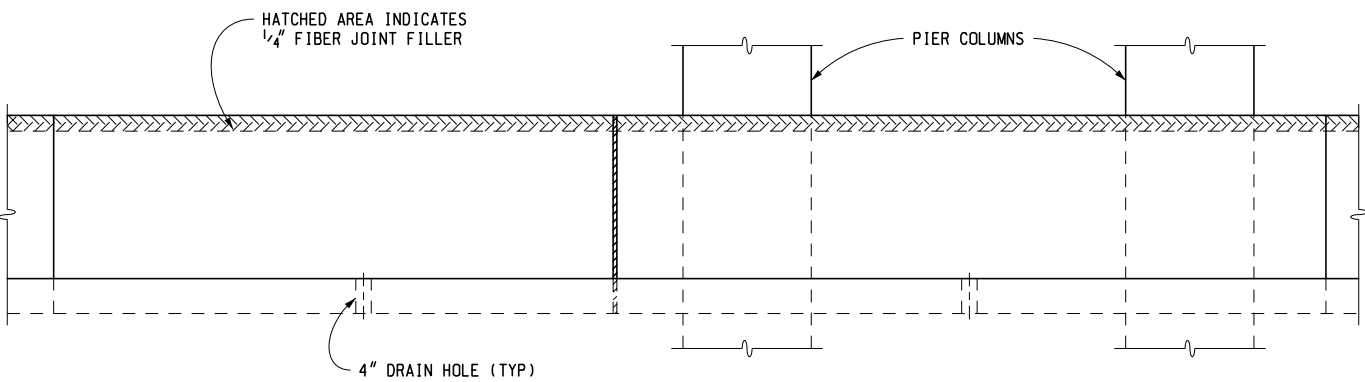
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PLAN



ELEVATION

TYPE B BARRIER

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

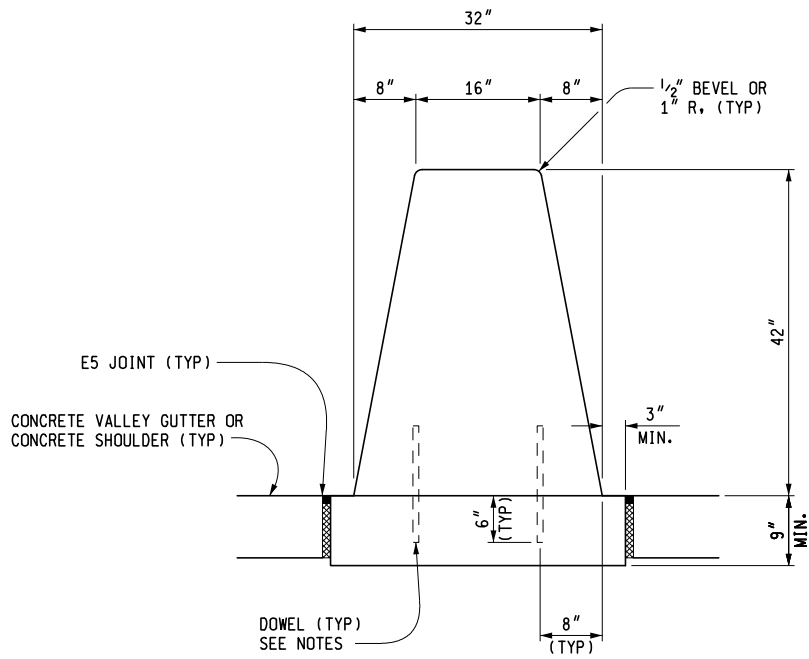
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F.H.W.A. APPROVAL

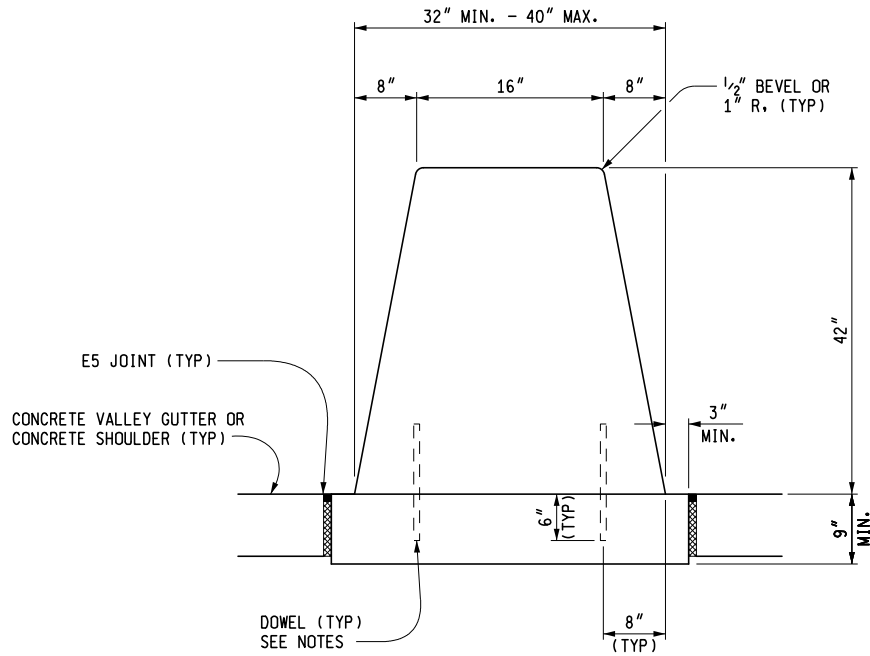
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SECTION E-E



SECTION F-F

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

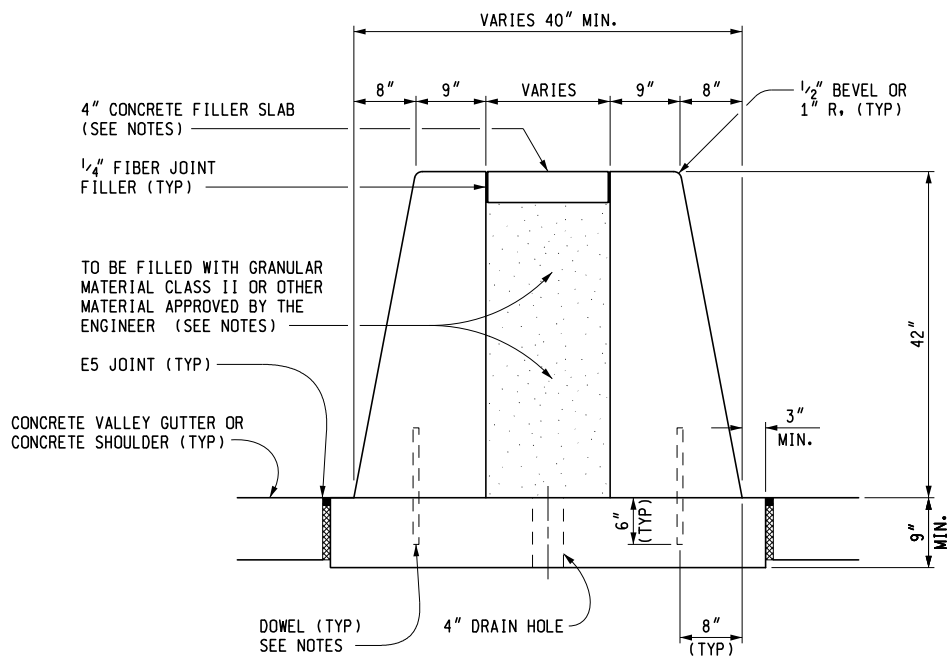
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3-29-2018  
F.H.W.A. APPROVAL

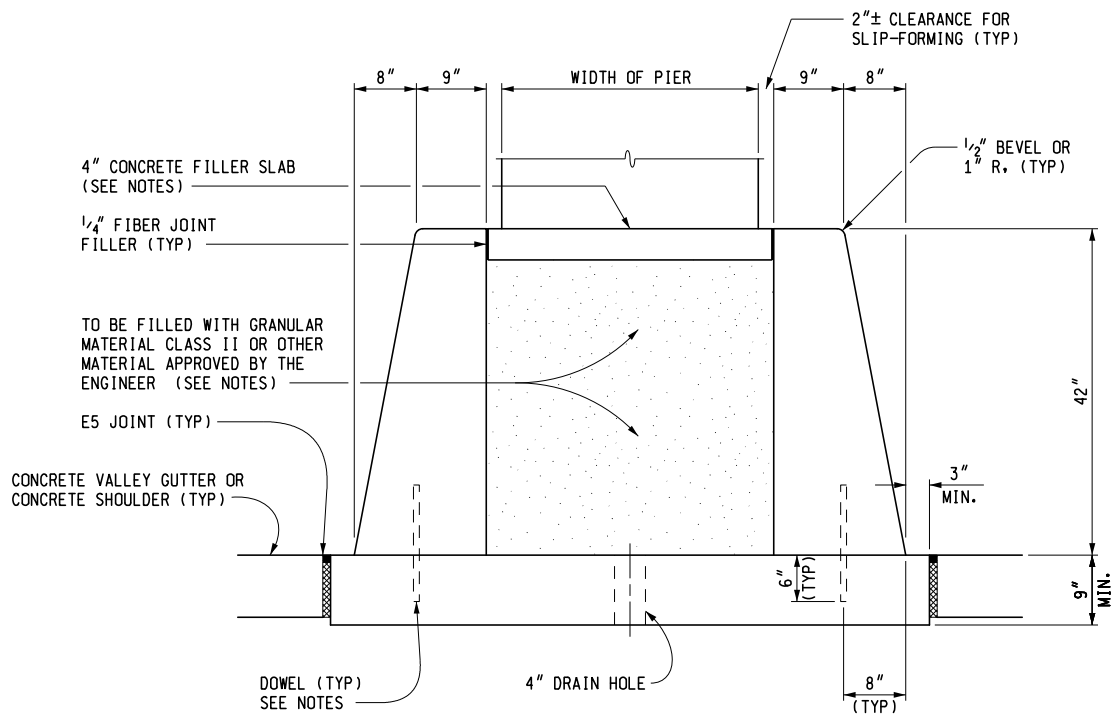
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SECTION G-G



SECTION H-H

MICHIGAN DEPARTMENT OF TRANSPORTATION  
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CONCRETE BARRIER

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NOTES:

WHEN "CONCRETE BARRIER, DOUBLE 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, DOUBLE FACE, TYPE B". THE DOWELS, EXTRA WIDTH OF BASE, OR ANY EXTRA WORK REQUIRED WILL BE INCLUDED IN THE PAY ITEM "CONC BARRIER, DOUBLE FACE, TYPE A".

WHEN "CONCRETE BARRIER, DOUBLE FACE, TYPE B" IS DESIGNATED ON THE PLANS, THE BARRIER SHALL BE CONSTRUCTED ON AN EXISTING BASE OR SHOULDER AND DOWELED WITH EPOXY COATED #6 DEFORMED BARS 1'-3" LONG. DOWEL PLACEMENT SHALL START 1'-6" FROM END OF STANDARD SECTION. DOWELS SHALL BE PLACED EVERY 3'-0" ALONG THE BARRIER ALTERNATING FROM SIDE TO SIDE (6'-0" C-C ALONG EACH SIDE). DOWELS ARE INCLUDED IN THE PAY ITEM "CONC BARRIER, DOUBLE FACE, TYPE B". ON SPLIT SECTIONS, DOWELS SHALL BE PLACED 3'-0" C-C ALONG EACH SIDE OF THE BARRIER. SPACING MAY BE ADJUSTED TO AVOID CONFLICT WITH JOINTS. DOWELS ARE INCLUDED IN THE PAY ITEM "CONC BARRIER, DOUBLE FACE, TYPE B". THE BASE FOR "CONCRETE BARRIER, DOUBLE FACE, TYPE B" WILL BE PAID FOR SEPARATELY (FOR EXAMPLE: AS CONCRETE SHOULDER, CONCRETE BASE COURSE, ETC.).

THE TAPERED SECTIONS AT THE BEGINNING AND END OF CONCRETE BARRIER, SPLIT ARE INCLUDED IN THE PAY ITEM "CONC BARRIER, SPLIT, TYPE \_\_\_".

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.

THE CONCRETE FILLER SLAB SHALL BE PAID FOR AS "SIDEWALK, CONC, 4 INCH". THE 1/4" FIBER JOINT FILLER SHALL BE INCLUDED IN THE PAY ITEM "SIDEWALK, CONC, 4 INCH".

THE CLASS II GRANULAR MATERIAL USED IN FILLING SPLIT BARRIER SECTIONS WILL BE PAID FOR AS "CONC BARRIER BACKFILL, CIP".

PLACE 1" EXPANSION JOINTS AT 400' INTERVALS IN BOTH TYPE A AND TYPE B BARRIERS. ALSO PLACE 1" EXPANSION JOINTS AT SPLIT SECTIONS AND ON BOTH ENDS OF ALL STRUCTURES (INCLUDING SIGN SUPPORT FOUNDATIONS, LIGHT STANDARD FOUNDATIONS, BRIDGE PIERS, OR ANY STRUCTURE WITH A FOUNDATION). PLACE 1" EXPANSION JOINTS IN 4" CONCRETE FILLER SLAB, ALIGNED WITH EXPANSION JOINTS IN BARRIER.

PLANE OF WEAKNESS JOINT SPACING SHALL BE 20'-0" MAXIMUM AND 10'-0" MINIMUM. PLANE OF WEAKNESS JOINTS IN THE BARRIER SHALL BE TO A DEPTH OF AT LEAST 4" AND SHALL BE EDGED.

BARRIER SHALL BE ENDED SO AS NOT TO PRESENT A HAZARD TO APPROACHING TRAFFIC, SUCH AS BY CURVING IT AWAY FROM A TARGET POSITION BEYOND THE CLEAR ZONE, BY ENDING AT A STRUCTURE, OR BY UTILIZING AN IMPACT ATTENUATION DEVICE.

FOR VALLEY GUTTER DETAILS, SEE STANDARD PLAN R-33-SERIES.

ES LONGITUDINAL JOINT WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE PAYMENT FOR THE VALLEY GUTTER OR SHOULDER WHICH IS ADJACENT TO THE BARRIER WALL OR THE BASE FOR THE CONCRETE BARRIER.

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

3-29-2018  
F.H.W.A. APPROVAL

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