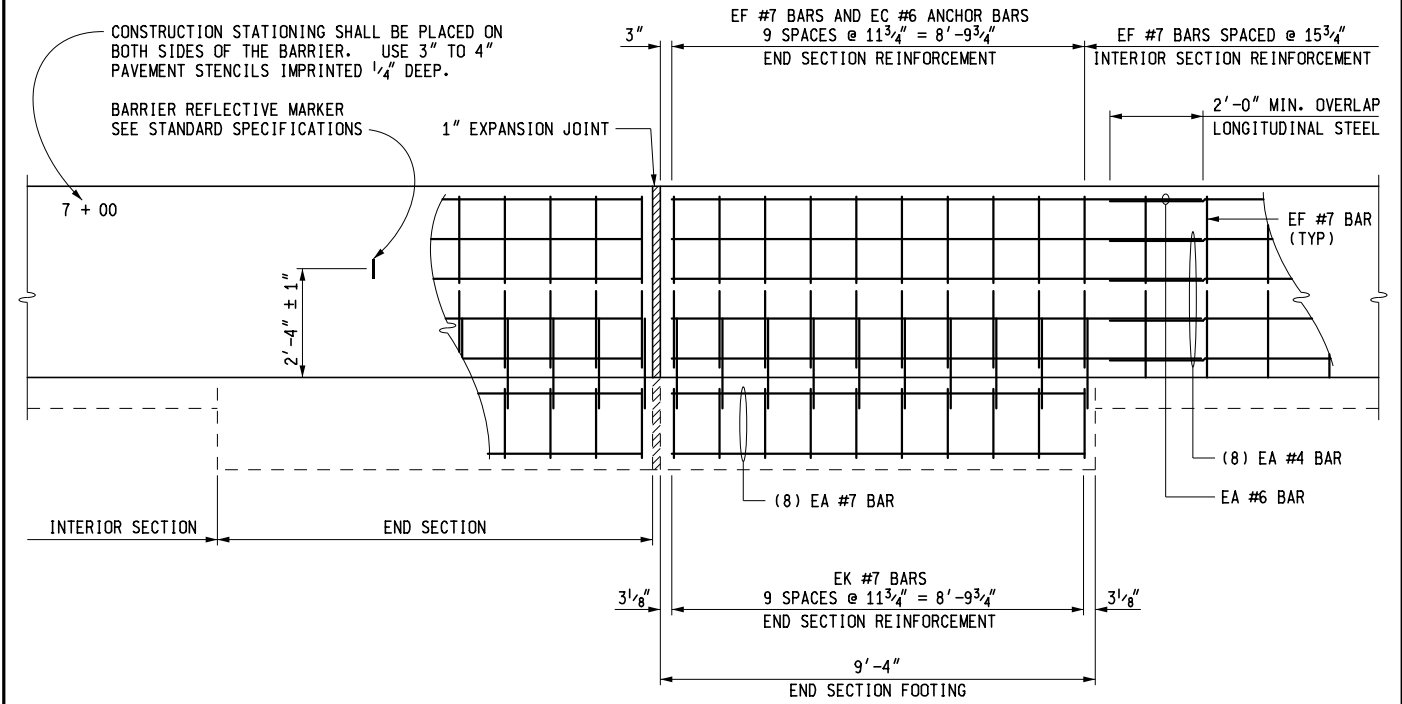


PLAN



ELEVATION
CONCRETE BARRIER

MDOT
Michigan Department of Transportation

PREPARED BY
DESIGN DIVISION

DRAWN BY: B.L.T.

CHECKED BY: W.K.P.

DEPARTMENT DIRECTOR
Kirk T. Stuedle

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAFT

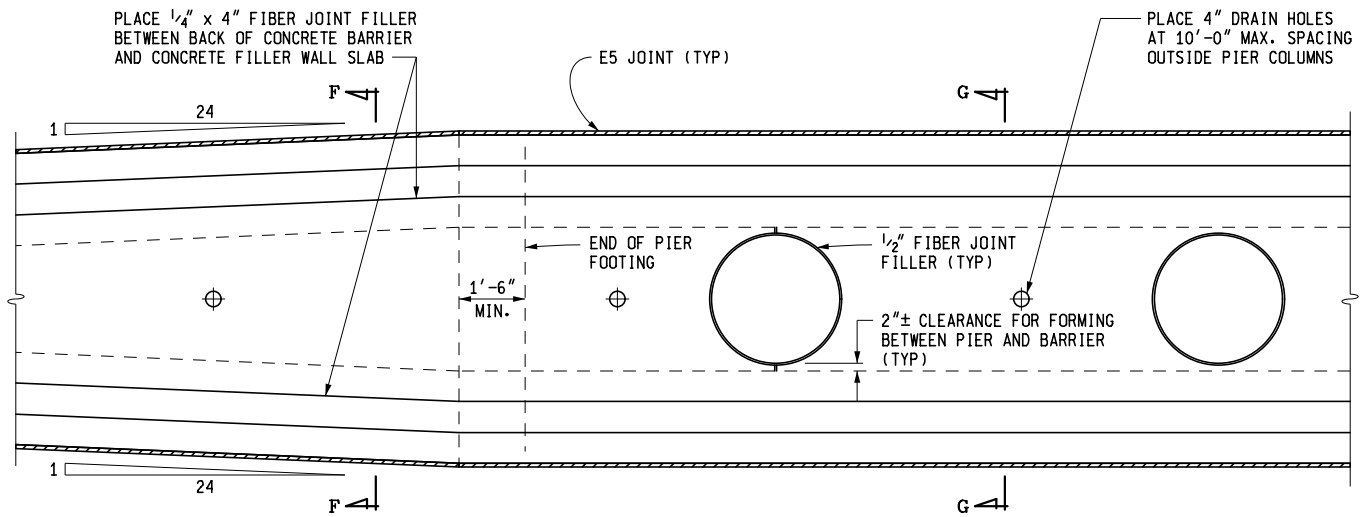
CONCRETE BARRIER

R-49-G

SHEET

F.H.W. APPROVAL _____ PLAN DATE _____

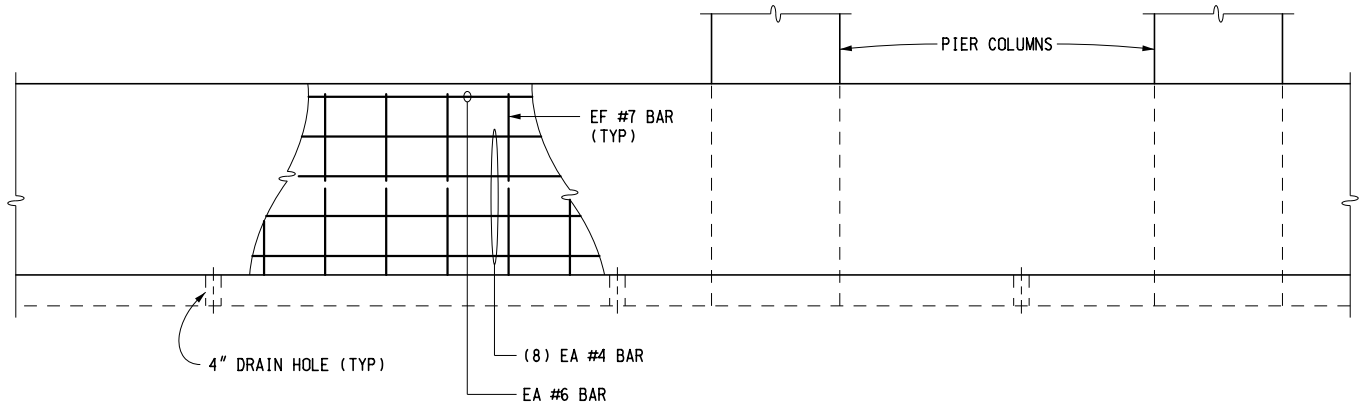
CONCRETE BARRIER SPLIT



CONCRETE BARRIER - SPLIT

PLAN

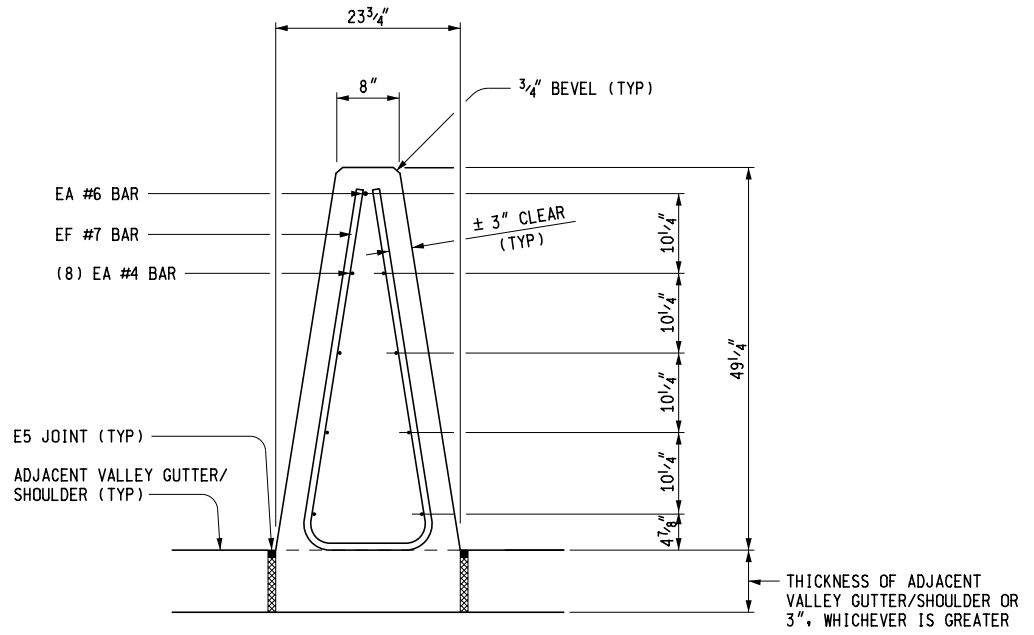
EF #7 BARS SPACED @ 15 3/4"
INTERIOR SECTION REINFORCEMENT



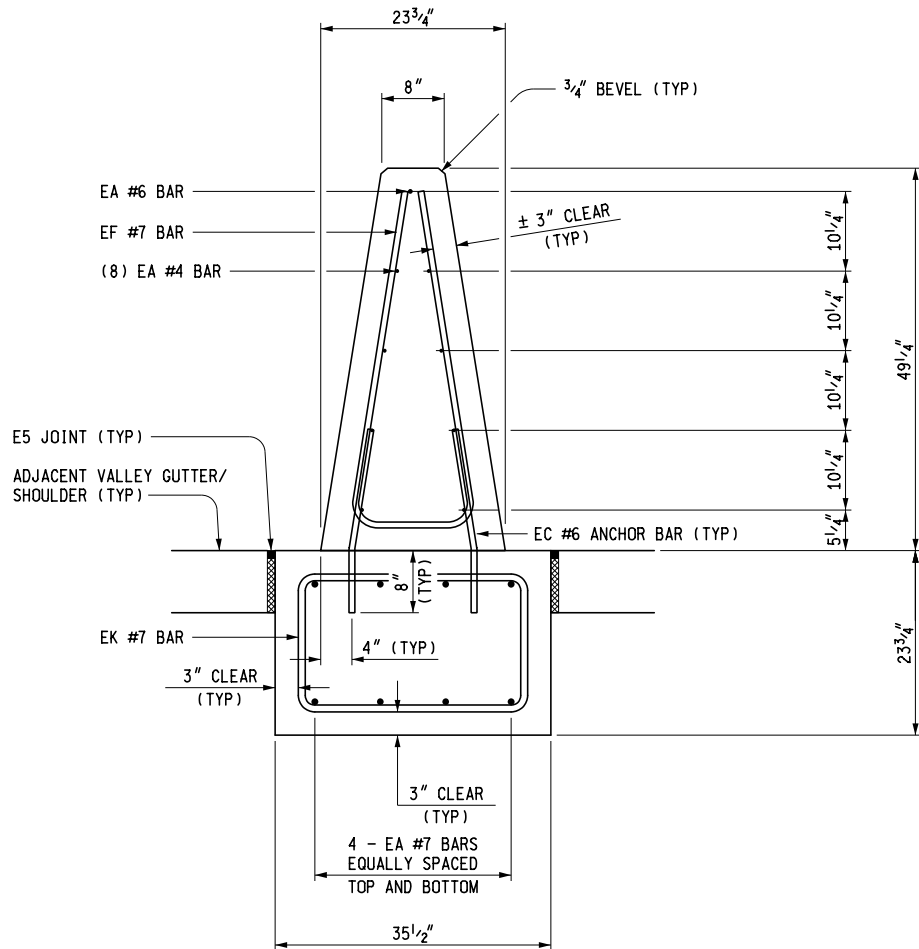
ELEVATION
CONCRETE BARRIER

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
DRAFT
CONCRETE BARRIER

APPROVAL	PLAN DATE	R-49-G	SHEET 3 OF 11
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SECTION A-A



SECTION B-B

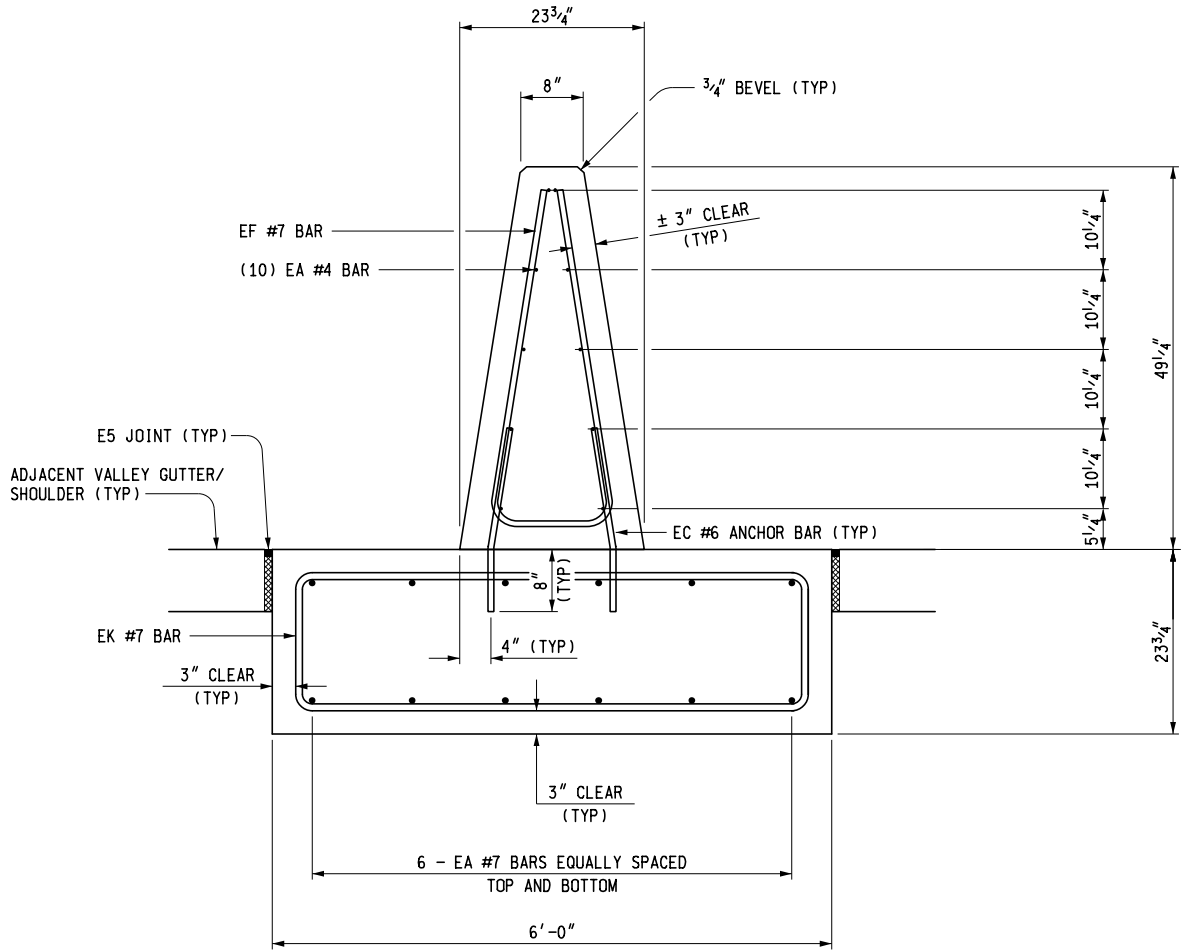
MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAFT

R-49-G

SHEET 4 OF 11

F.H. APPROVAL _____ PLAN DATE _____



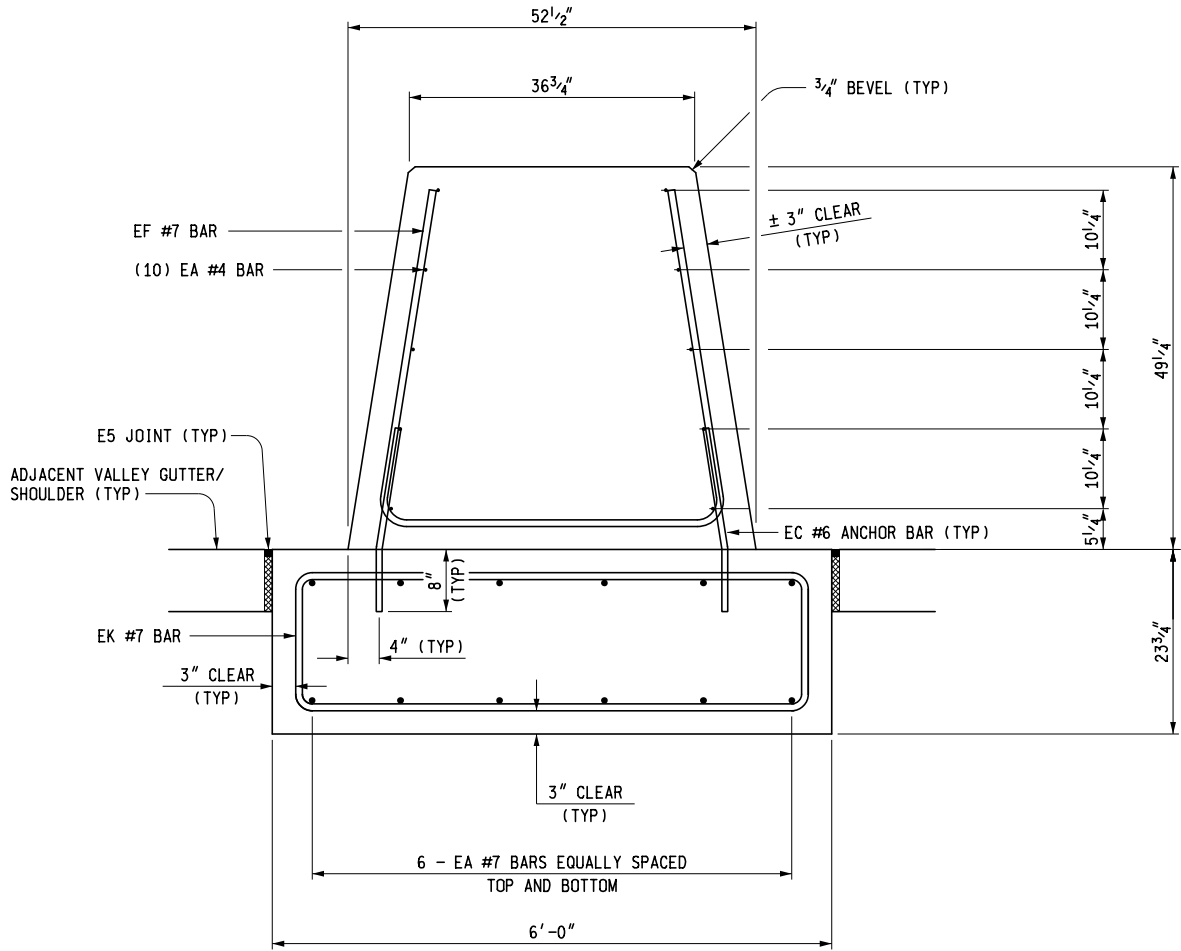
SECTION C-C
TRANSITION

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAFT

CONCRETE BARRIER

APPROVAL	PLAN DATE	R-49-G	SHEET 5 OF 11
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SECTION D-D
TRANSITION

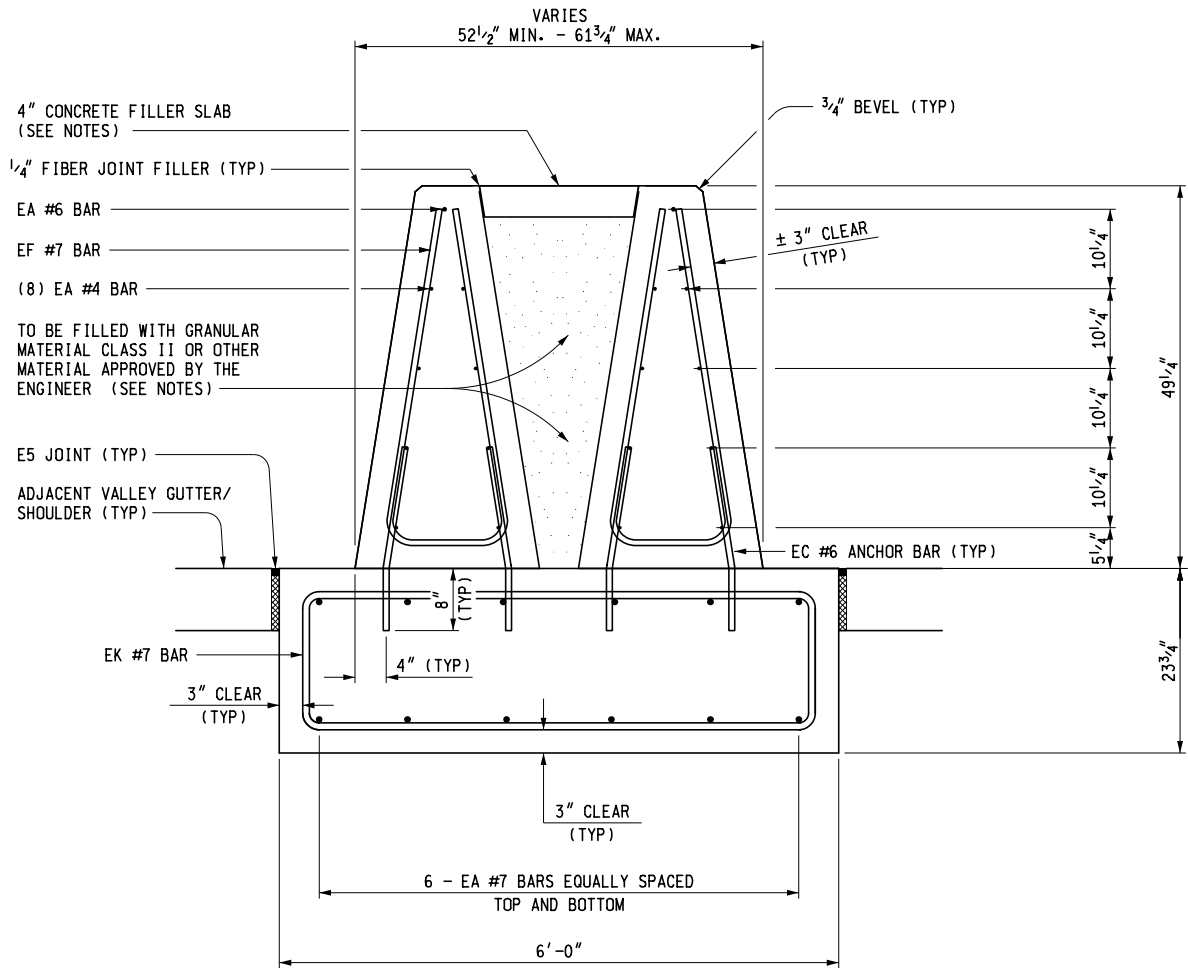
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAFT

R-49-G

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F.H. APPROVAL _____ PLAN DATE _____



SECTION E-E

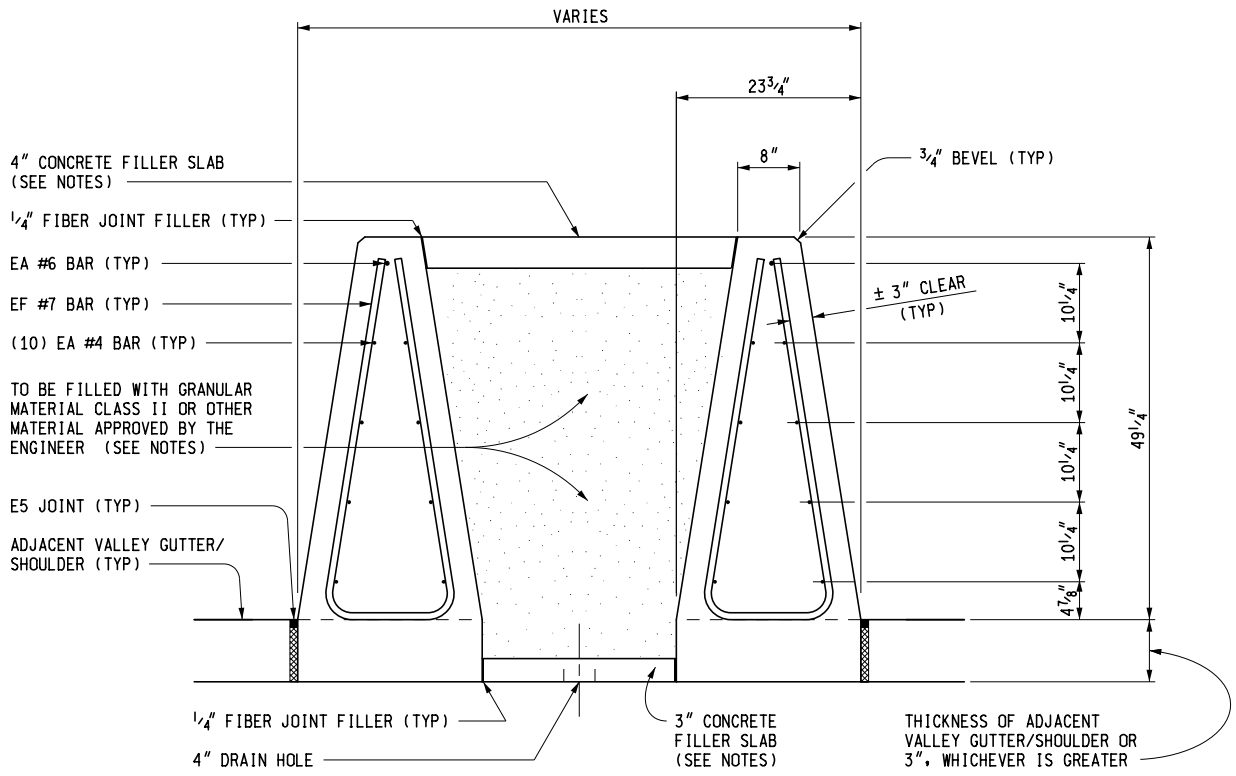
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAFT

R-49-G

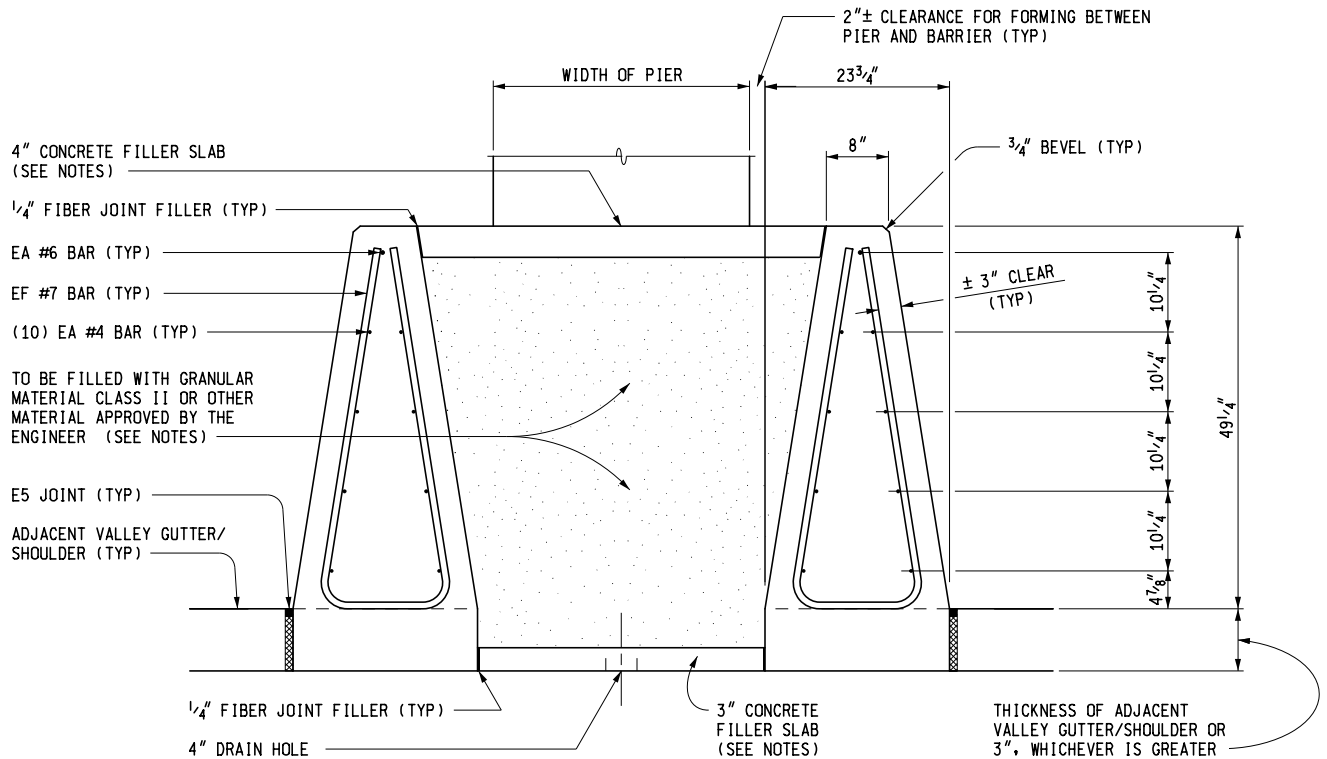
SHEET 11

7 OF 11



SECTION F-F

4" DRAIN HOLE



SECTION G-G

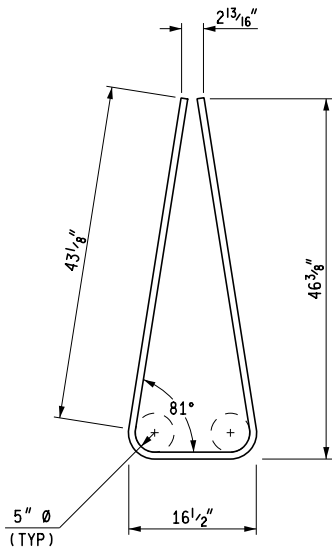
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAFT

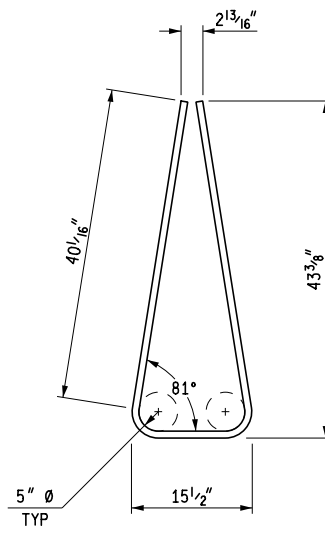
R-49-G

SHEET 8 OF 11

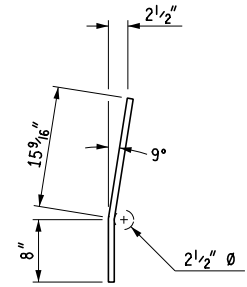
F.H.W. APPROVAL _____ PLAN DATE _____



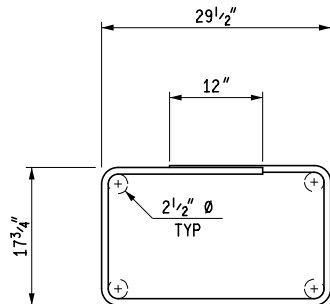
EF #7 BAR
INTERIOR SECTION



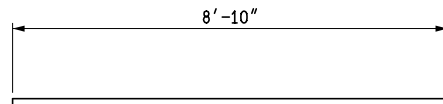
EF #7 BAR
END SECTION



EC #6 ANCHOR BAR

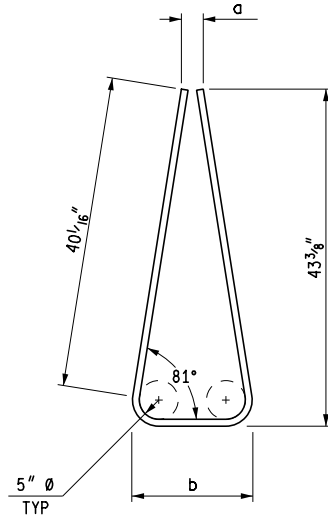


EK #7 BAR
END SECTION FOOTING

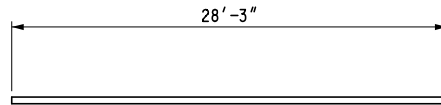


EA #7 BAR
END SECTION FOOTING

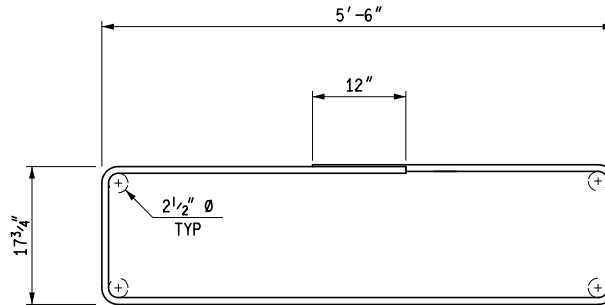
TRANSITION REINFORCEMENT		
STIRRUP	DIMENSION	
	a	b
1	2 ¹³ / ₁₆ "	15 ¹ / ₂ "
2	4 ¹ / ₁₆ "	16 ³ / ₄ "
3	5"	17 ¹ / ₁₆ "
4	6"	18 ¹ / ₁₆ "
5	6 ¹⁵ / ₁₆ "	19 ⁵ / ₈ "
6	7 ¹⁵ / ₁₆ "	20 ⁵ / ₈ "
7	8 ¹⁵ / ₁₆ "	21 ⁵ / ₈ "
8	9 ⁷ / ₈ "	22 ⁹ / ₁₆ "
9	10 ⁷ / ₈ "	23 ⁹ / ₁₆ "
10	11 ¹³ / ₁₆ "	24 ¹ / ₂ "
11	12 ¹³ / ₁₆ "	25 ¹ / ₂ "
12	13 ³ / ₄ "	26 ⁷ / ₁₆ "
13	14 ³ / ₄ "	27 ⁷ / ₁₆ "
14	15 ³ / ₄ "	28 ⁷ / ₁₆ "
15	16 ¹ / ₁₆ "	29 ³ / ₈ "
16	17 ¹ / ₁₆ "	30 ³ / ₈ "
17	18 ⁵ / ₈ "	31 ⁵ / ₈ "
18	19 ⁵ / ₈ "	32 ⁵ / ₈ "
19	20 ⁵ / ₈ "	33 ⁵ / ₈ "
20	21 ⁹ / ₁₆ "	34 ¹ / ₄ "
21	22 ⁹ / ₁₆ "	35 ¹ / ₄ "
22	23 ¹ / ₂ "	36 ³ / ₁₆ "
23	24 ¹ / ₂ "	37 ³ / ₁₆ "
24	25 ⁷ / ₁₆ "	38 ¹ / ₈ "
25	26 ⁷ / ₁₆ "	39 ¹ / ₈ "
26	27 ⁷ / ₁₆ "	40 ¹ / ₈ "
27	28 ³ / ₈ "	41 ¹ / ₁₆ "
28	29 ³ / ₈ "	42 ¹ / ₁₆ "
29	30 ⁵ / ₁₆ "	43"
30	31 ⁵ / ₁₆ "	44"



EF #7 BAR
TRANSITION



EA #7 BAR
TRANSITION FOOTING



ED #7 BAR
TRANSITION FOOTING

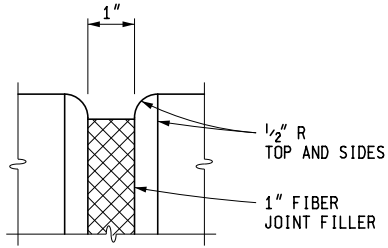
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

DRAFT

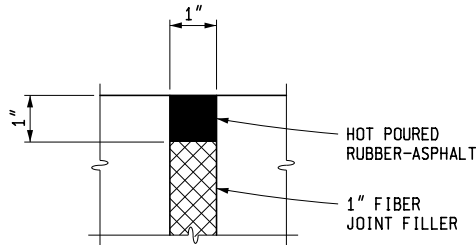
CONCRETE BARRIERS

APPROVAL: _____ PLAN DATE: _____ SHEET NO. 11

R-49-G



EXPANSION JOINT DETAIL



E5 JOINT DETAIL

NOTES:

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

END SECTION TRANSITIONS, INCLUDING END SECTION FOOTINGS, ARE INCLUDED IN THE PAY ITEM "CONC BARRIER, SPLIT, HIGH PERFORMANCE."

WHEN CHECKED WITH A 10' STRAIGHTEDGE, EXCEPT AT GRADE CHANGES AND 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 4" THICK 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 3" THICK CONCRETE FILLER SLAB WITH 4" DIAMETER DRAIN HOLES SHALL BE PAID FOR AS "SIDEWALK, CONC, 3 INCH". THE 1/4" FIBER JOINT FILLER SHALL BE INCLUDED IN THE PAY ITEM "SIDEWALK, CONC, 3 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' (MAX.) INTERVALS. 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" AND 3" CONCRETE FILLER SLABS ALIGNED WITH EXPANSION JOINTS IN BARRIER.

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.

E5 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 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 <b style="font-size: 2em;">DRAFT CONCRETE BARRIER			
F.H. APPROVAL	PLAN DATE	R-49-G	SHEET 11 OF 11