**GUARDRAIL ANCHORED IN BACKSLOPE TYPES**

4B, 4T, & 4MGS-8

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**MICHIGAN DEPARTMENT OF TRANSPORTATION**

**BUREAU OF DEVELOPMENT SPECIAL DETAIL FOR**

**37'-6" GUARDRAIL ANCHORED IN BACKSLOPE**

**6 SPACES AT 6'-3"**

**ELEVATION GUARDRAIL, TYPE 4B**

**ELEVATION GUARDRAIL, TYPE 4T**

**PLAN VIEW**

**DESIGN SPEED (mph)**

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<tr>
<th>Design Speed</th>
<th>Flare Rate</th>
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<td>30</td>
<td>7:1</td>
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<tr>
<td>40</td>
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**FLARE RATES BETWEEN FORESLOPE / BACKSLOPE INTERSECT**

**28"**

**34"**

**MATCH FACE OF SLOPE TO EXISTING SLOPE**

**VARIES**

**PLAN VIEW**

**MATCH FACE OF GUARDRAIL TO EXISTING SLOPE**

**VARIABLE LENGTH SPACING GUARDRAIL**

**5'-6" GUARDRAIL ANCHORED IN BACKSLOPE TYPE 4B**

**6" MIN. TYP. FOR BURIED POSTS SEE NOTES**

**SEE NOTES FOR BURIED POSTS 6" MIN. TYP.**

**37'-6" GUARDRAIL ANCHORED IN BACKSLOPE TYPE 4T**

** SEE NOTES FOR BURIED POSTS 6" MIN. TYP.**

**VARIES EDGE OF SHOULDER**

**70**

**60**

**50**

**40**

**30**

**DESIGN SLOPE BEING DESIRABLE 1:10 SLOPE OR FLATTER, WITH EXISTING SLOPE TO MATCH FACE OF 34"**

**BACKSLOPE TYPES GUARDRAIL ANCHORED IN**
**FLARE RATES**

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Flare rate can be reduced to 8:1 between the foreslope / backslope intercept and the backslope.

**PLAN VIEW**

1:10 slope or flatter, with a level slope being desirable.

**ELEVATION GUARDRAIL, TYPE 4MGS-8**

34'-4 1/4" GUARDRAIL ANCHORED IN BACKSLOPE TYPE 4MGS-8

6" MIN. TYP. FOR BURIED POSTS SEE NOTES

9'-4 1/4" EFFECTIVE BEAM ELEMENT LENGTH

BURY TWO POSTS (MINIMUM)

STANDARD (12'-6") W-BEAM ELEMENT

MGS (19'-4 1/2") BEAM ELEMENT
UPPER CORRUGATION ONLY.
ANCHOR PLATE SHALL BE PLACED ON EITHER LEFT OR RIGHT ENDINGS.
THE BEAM ELEMENT MAY BE USED FOR HOLES WILL BE ALLOWED SO THAT
* AN OPTIONAL SET OF ANCHOR PLATE 

ELEVATION GUARDRAIL, TYPE 4B

ELEVATION GUARDRAIL, TYPE 4T

SOIL PLATE

DRILL 3/8" DIAMETER HOLES SO PLATE CAN BE FASTENED TO THE CENTER OF THE POST WITH THE 24" DIMENSION BEING PERPENDICULAR TO THE POST

1/4" THICK STEEL PLATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT SPECIAL DETAIL FOR
GUARDRAIL ANCHORED IN BACKSLOPE TYPES
4B, 4T, & 4MGS-8

HOT-DIP ZINC COATED NAILS (SEE NOTES)
BEARING PLATE (SEE STANDARD PLAN R-66-SERIES)
PLACE POST SLEEVE IN HOLE (SEE STANDARD PLAN R-66-SERIES)
5/8" DIA. HEX HEAD BOLT WITH NUT AND WASHERS (TYP.)
WOOD POSTS SHALL BE USED FOR LAST TWO POSTS (6" x 8" x 7'-0")
SEE POST DETAILS

NOTE:
OMIT OFFSET BLOCK ON LAST TWO POSTS

1'-0" 1'-2"
12'-6"
24"
MICHIGAN DEPARTMENT OF TRANSPORTATION

ELEVATION GUARDRAIL, TYPE 4MGS-8

WOOD POST DETAILS
GUARDRAIL ANCHORED IN BACKSLOPE TYPE 4MGS-8
WOOD POST DETAILS
GUARDRAIL ANCHORED IN BACKSLOPE TYPE 4T

WOOD POST DETAILS
GUARDRAIL ANCHORED IN BACKSLOPE TYPE 4B
ELEVATION GUARDRAIL, TYPE 4B
WITH RUB RAIL

ELEVATION GUARDRAIL, TYPE 4T
WITH RUB RAIL

SPECIAL END SHOE (TYP.)

WASHER UNDER NUT (TYP.)
HEX HEAD BOLT WITH ROUND DIA. X 9" LONG
WASHER UNDER NUT (TYP.)

WITH RUB RAIL

1'-8½" VARIABLE LENGTH W BEAM RUB RAIL 1'-8½"

3" WHEN SLOT LENGTH IS 3"
4" WHEN SLOT LENGTH IS 5"

1" HOLES (TYP.)
2" 4" 4" 7½"
8½"

© BEAM ELEMENT
G 1½" x 3" OR 5" SLOTS
© ©

3½" X 2½" POST BOLT SLOT (OPTIONAL)

NOTE:
EXTRA POSTS, SPECIAL END SHOES, GUARDRAIL, HARDWARE AND ANY EXTRA WORK ARE INCLUDED IN THE BID ITEM GUARDRAIL ANCHORED IN BACKSLOPE TYPE 4B OR TYPE 4T.
PLAN VIEW GUARDRAIL, TYPE 4MGS-8
WITH RUB RAIL

ELEVATION GUARDRAIL, TYPE 4MGS-8
WITH RUB RAIL

NOTE:

EXTRA POSTS, SPECIAL END SHOES, GUARDRAIL, HARDWARE AND ANY EXTRA WORK ARE INCLUDED IN THE BID ITEM GUARDRAIL ANCHORED IN BACKSLOPE TYPE 4MGS-8
6" MIN. TYP. FOR BURIED POSTS
SEE NOTES

IF 1'-6" OR GREATER INSTALL RUB RAIL.
MAKE SURE PROPER DRAINAGE IS MAINTAINED

NOTE: ONLY THE LAST GUARDRAIL POST OF THE PARALLEL GUARDRAIL RUN AND THE LAST BURIED GUARDRAIL POST ARE SHOWN. (OTHER POSTS ALONG THE FLARED GUARDRAIL RUN ARE NOT SHOWN)

NOTES:

ALL POSTS, OFFSET BLOCKS, BEAM ELEMENTS, AND HARDWARE (INCLUDING BOLTS, NUTS, AND WASHERS) SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATIONS AND TO THE CURRENT STANDARD PLAN R-60-SERIES, WHERE APPLICABLE, EXCEPT AS SPECIFIED ON THIS PLAN.

ALL 1:10 SLOPES SHALL BE GRADED TO CLASS A SLOPE TOLERANCES.

AFTER THE CABLE ASSEMBLY HAS BEEN TIGHTENED, A SECOND NUT SHALL BE INSTALLED SO THAT THE CABLE WILL NOT LOOSEN.

TWO HOT-DIP ZINC COATED NAILS SHALL BE DRIVEN INTO THE WOOD POST AT THE TOP OF THE BEARING PLATE TO KEEP THE BEARING PLATE FROM ROTATING.

WHEN ADDITIONAL POST BOLT SLOTS ARE REQUIRED, THEY SHALL BE DRILLED OR PUNCHED AND REGALVANIZED. BURNING WILL NOT BE ALLOWED.

TERMINAL SHALL BE SET A MINIMUM 6" INTO THE BACKSLOPE AND HAVE 6" OF COVER ON ALL SIDES TO LESSEN THE POSSIBILITY IT WILL BE EXPOSED BY EROSION AND SNAG AN IMPACTING VEHICLE.

THE GUARDRAIL SHALL REMAIN AT A CONSTANT HEIGHT RELATIVE TO THE LOCAL GRADE. A W BEAM RUB RAIL WILL BE REQUIRED IF THE OPENING UNDER THE PRIMARY RAIL IS 1'-6" OR MORE. SEE DETAILS.

Michigan Department of Transportation
Bureau of Development Special Detail for
Guardrail Anchored in Backslope Types
4B, 4T, & 4MGS-8

F.H.W.A. Approval
Special Detail 24
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