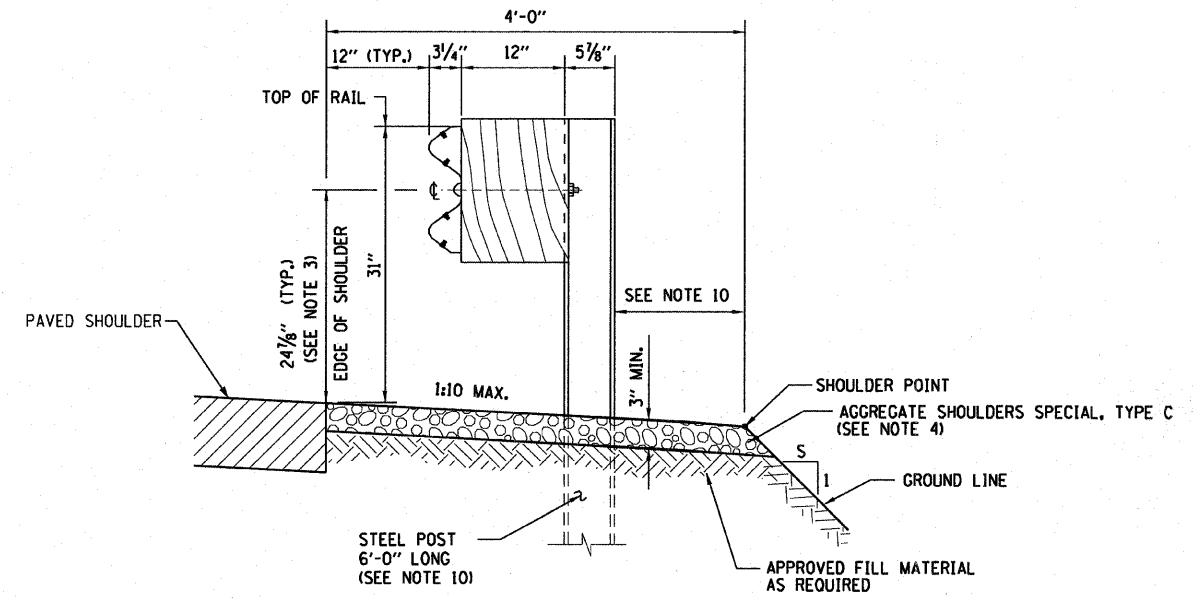


SECTION WITH GUTTER



SECTION WITHOUT GUTTER

GUARDRAIL INSTALLATION DETAILS

NOTES:

1. 1' OFFSET FROM EDGE OF PAVED SHOULDER TO FACE OF RAIL IS TYPICAL FOR ALL INSTALLATIONS EXCEPT AS OTHERWISE DETAILED IN THE PLAN DRAWINGS.
2. WHERE GUTTERS SUCH AS TYPE C-2, C-3 ARE REQUIRED IN FRONT OF THE GUARDRAIL, THE POSTS SHALL BE LOCATED 6" BEHIND THE GUTTER, OR AS OTHERWISE DETAILED IN THE PLANS. THE OFFSET FROM THE EDGE OF SHOULDER TO THE FACE OF THE GUARDRAIL SHALL BE AS SHOWN ON STANDARD B28.
3. THE 24 1/8" TYPICAL RAIL HEIGHT IS MEASURED FROM EXISTING SURFACE 1' IN FRONT OF RAIL, OR FROM EDGE OF SHOULDER/EDGE OF GUTTER WHEN EDGE IS MORE THAN 1' IN FRONT OF RAIL TO CENTER OF RAIL.
4. AGGREGATE SHOULDERS SPECIAL, TYPE C SHALL COMPLY WITH THE REQUIREMENTS OF THE TOLLWAY RECURRING SPECIAL PROVISION. WHERE GUTTER IS PROPOSED WITH GUARDRAIL, A 3" MINIMUM THICKNESS OF AGGREGATE SHOULDERS SPECIAL, TYPE C SHALL BE PLACED BEHIND CURB. FOR GUARDRAIL WITHOUT CURB & GUTTER, AGGREGATE SHOULDER, OF THE SAME THICKNESS SHALL BE PLACED FROM THE EDGE OF PAVED SHOULDER SLOPING AWAY TO A 3" MIN. THICKNESS.
5. AGGREGATE SHOULDERS SPECIAL, TYPE C SHALL EXTEND A MINIMUM OF 1' BEHIND POST OR GUARDRAIL, WHICHEVER IS FURTHER, EXCEPT AS DETAILED ELSEWHERE IN THE PLANS.
6. PLASTIC BLOCK-OUTS SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR WOOD BLOCK-OUTS ON NEW INSTALLATIONS.
7. WHEN S ≤ 3 AND 3'-0" MIN. AGGREGATE SHOULDER CANNOT BE MET, THE POST LENGTH SHALL BE 9'-0" AND THE MIN. AGGREGATE SHOULDER SHALL BE 1'-0" MEASURED DISTANCE BEHIND POST TO THE SHOULDER POINT.
8. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENTS (V:H).
9. UNDER NO CIRCUMSTANCES SHALL AN EXISTING GUARDRAIL, THAT WAS DESIGNED USING A PREVIOUS STANDARD, BE EXTENDED, ATTACHED TO OR MODIFIED IN ANYWAY FROM ITS ORIGINAL DESIGN. IF ANY MODIFICATION IS REQUIRED AND A PROPER BARRIER WARRANT HAS BEEN COMPLETED, THE ENTIRE BARRIER INSTALLATION SHALL BE COMPLETELY REMOVED AND REPLACED WITH A NEW SYSTEM THAT CONFORMS TO THE CURRENT STANDARD.
10. WHEN S ≤ 3 AGGREGATE SHOULDER CAN NOT BE MET, THE POST LENGTH SHALL BE 9'-0" AND THE MINIMUM AGGREGATE SHOULDER DIMENSION SHALL BE 1'-0" MEASURED DISTANCE BEHIND POST TO THE SHOULDER POINT.
11. THE GUARDRAIL SYSTEM HAS BEEN PERFORMANCE-TESTED FOR CRASHWORTHINESS UNDER PROCEDURES DEFINED IN THE NATIONAL COOPERATIVE HIGHWAY PROGRAM (NCHRP) REPORT 350. NO MODIFICATION TO THIS STANDARD DRAWING SHALL BE PERMITTED.
12. GUARDRAIL POSTS SHALL NOT BE INSTALLED IN CONCRETE OR HMA PAVEMENT. WHEN NECESSARY USE LEAVE-OUT DETAIL ON SHEET 4 OF 4 OF THIS SERIES.
13. GUARDRAIL POSTS SHALL NOT BE ATTACHED TO ANY STRUCTURE.



GALVANIZED STEEL PLATE
BEAM GUARDRAIL
STANDARD C1-03

REVISIONS	
7-1-2009	REVISED DIMENSIONS, NOTES AND ADDED DETAILS
3-1-2010	REVISED AGGREGATE SHOULDER DIMENSIONS AND NOTES ADDED GUARDRAIL POST LEAVE-OUTS

APPROVED.....

 CHIEF ENGINEER DATE 7-1-2009