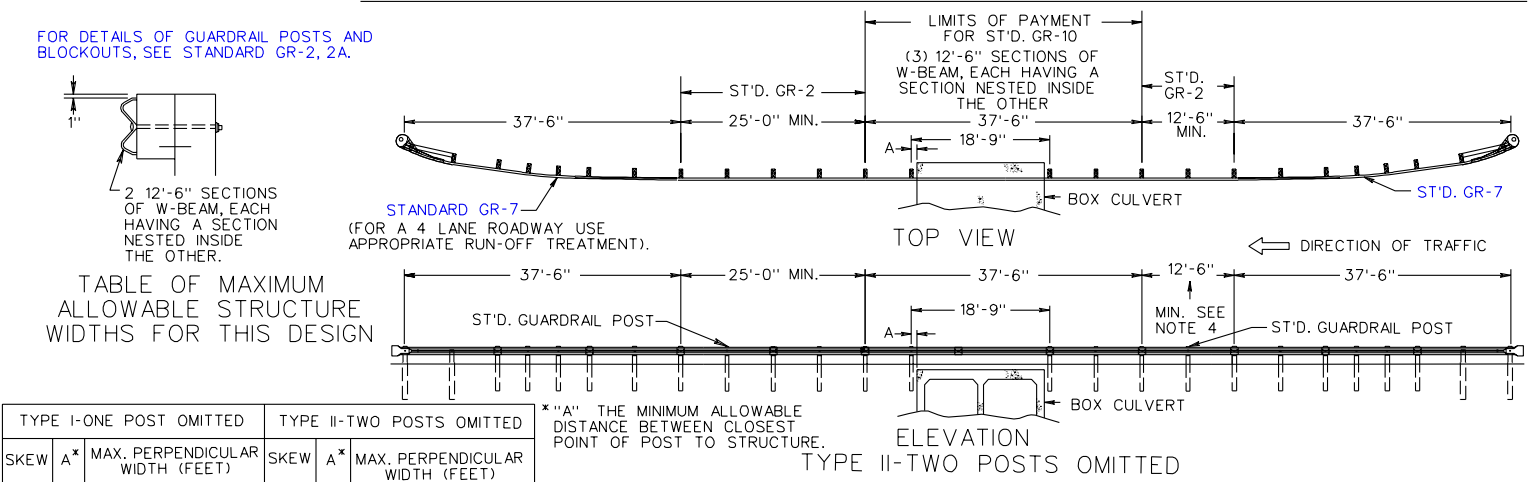
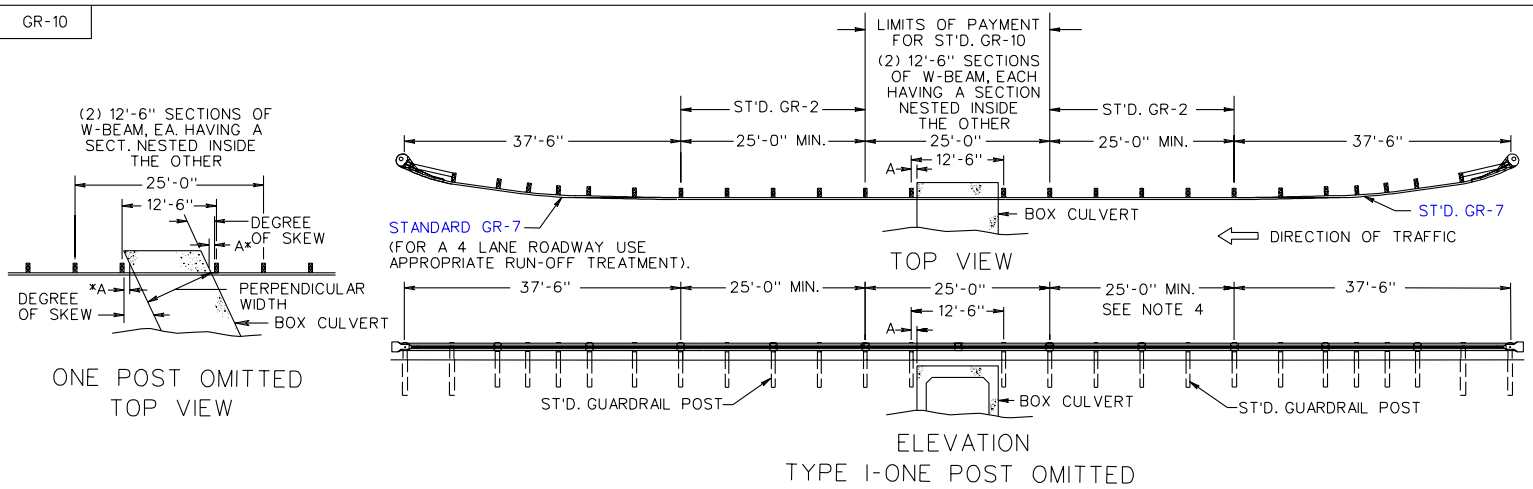


REVISED ON 1-04



FOR DETAILS OF GUARDRAIL POSTS AND BLOCKOUTS, SEE STANDARD GR-2, 2A.

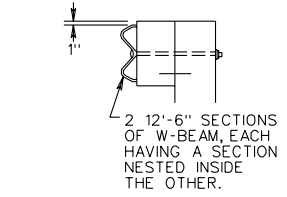


TABLE OF MAXIMUM ALLOWABLE STRUCTURE WIDTHS FOR THIS DESIGN

TYPE I-ONE POST OMITTED			TYPE II-TWO POSTS OMITTED		
SKWEW	A*	MAX. PERPENDICULAR WIDTH (FEET)	SKWEW	A*	MAX. PERPENDICULAR WIDTH (FEET)
0°	9"	10.5	0°	9"	16.75
5°	9"	10.4	5°	9"	16.6
10°	9"	10.2	10°	9"	16.4
15°	9"	10.0	15°	9"	16.0
20°	9"	9.6	20°	9"	15.5
25°	9"	9.2	25°	9"	14.9
30°	9"	8.8	30°	9"	14.2
35°	9"	8.2	35°	9"	13.2
40°	9"	7.6	40°	9"	12.4
45°	9"	7.0	45°	9"	11.4

* "A" THE MINIMUM ALLOWABLE DISTANCE BETWEEN CLOSEST POINT OF POST TO STRUCTURE.

- NOTES:
- THIS SHEET IS APPLICABLE WHEN GUARDRAIL IS REQUIRED AND THE DEPTH OF FILL ABOVE THE TOP SLAB OF THE BOX CULVERT IS LESS THAN 3'-7".
 - GUARDRAIL INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 505 OF THE SPECIFICATIONS. MATERIAL REQUIREMENT FOR COMPONENTS SHALL BE IN ACCORDANCE WITH SECTION 221 OF THE SPECIFICATIONS.
 - GUARDRAIL POST SPACING SHALL BE IN ACCORDANCE WITH STANDARD GR-2.
 - THIS DISTANCE SHALL BE IN ACCORDANCE WITH VDOT POLICY ON DETERMINING THE LENGTH OF NEED FOR GUARDRAIL WITH A MINIMUM DISTANCE AS SHOWN.
 - ALL SPLICES IN NESTED W-BEAM SECTIONS MUST COINCIDE AT A COMMON POINT AND BE BOLTED TOGETHER USING ONE SPLICE PLATE AND ONE SET OF BOLTS AT EACH SPLICE.

SHEET 1 OF 2

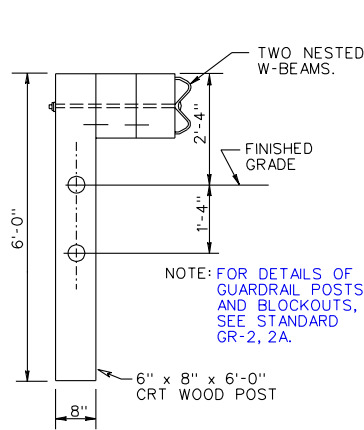
GUARDRAIL AT LOW-FILL CULVERTS

VIRGINIA DEPARTMENT OF TRANSPORTATION

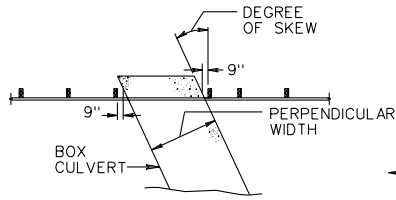
501.19

SPECIFICATION REFERENCE
221 505

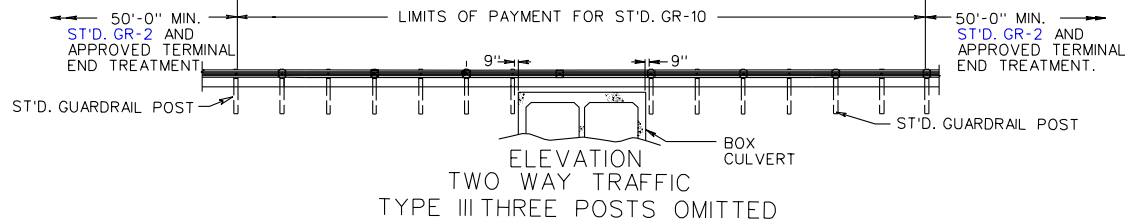
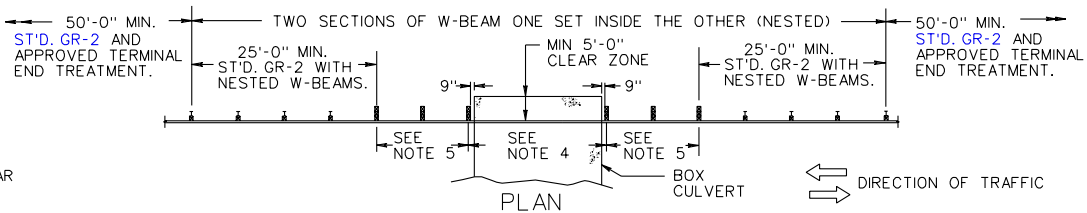
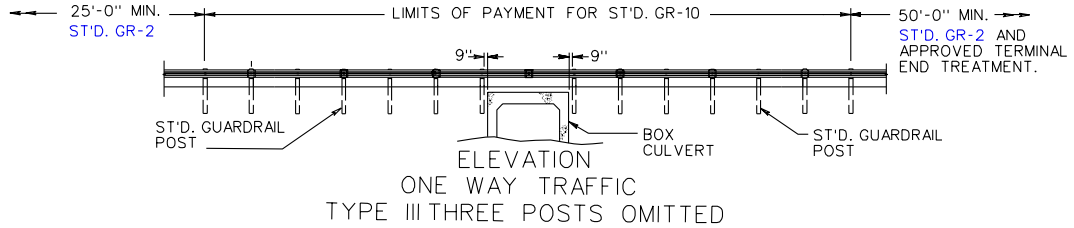
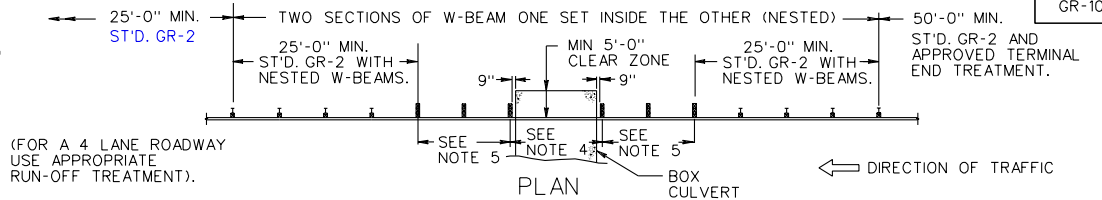
REVISED ON 1-04



CRT POST WITH DOUBLE BLOCKOUTS



THREE POSTS OMITTED TOP VIEW



TYPE III-THREE POSTS OMITTED	
SKEW	MAX. PERPENDICULAR WIDTH (FEET)
0°	23.00
5°	22.90
10°	22.60
15°	22.10
20°	21.40
25°	20.60
30°	19.60
35°	18.40
40°	17.10
45°	15.60

NOTES:

- THIS SHEET IS APPLICABLE WHEN GUARDRAIL IS REQUIRED AND THE DEPTH OF FILL ABOVE THE TOP SLAB OF THE BOX CULVERT IS LESS THAN 3'-7".
- GUARDRAIL INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 505 OF THE SPECIFICATIONS. MATERIAL REQUIREMENT FOR COMPONENTS SHALL BE IN ACCORDANCE WITH SECTION 221 OF THE SPECIFICATIONS.
- GUARDRAIL POST SPACING SHALL BE IN ACCORDANCE WITH STANDARD GR-2.
- TWO NESTED W-BEAM GUARDRAILS, SEE TABLE FOR ALLOWABLE WIDTHS (25'-0" MAXIMUM).
- TWO NESTED W-BEAM GUARDRAILS, CRT WOODPOST, 6'-3" SPACING, WITH TWO 6"x8"x14" WOOD OR RECYCLED MATERIAL BLOCKOUTS.
- ALL SPLICES IN NESTED W-BEAM SECTIONS MUST COINCIDE AT A COMMON POINT AND BE BOLTED TOGETHER USING ONE SPLICE PLATE AND ONE SET OF BOLTS AT EACH SPLICE.

SHEET 2 OF 2

SPECIFICATION REFERENCE
221 505

GUARDRAIL AT LOW-FILL CULVERTS

VIRGINIA DEPARTMENT OF TRANSPORTATION

501.20