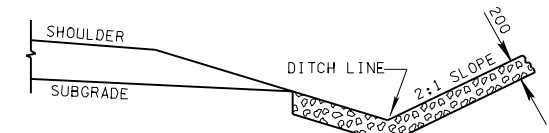
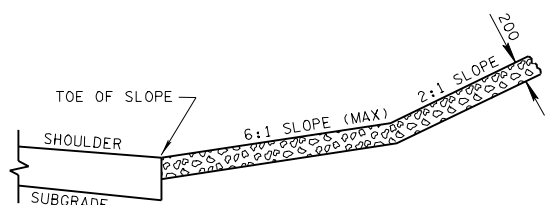


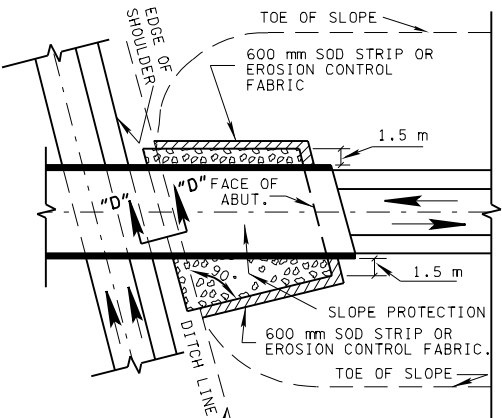
DUMPED RIP-RAP DETAILS



SECTION "D-D" WITH DITCH

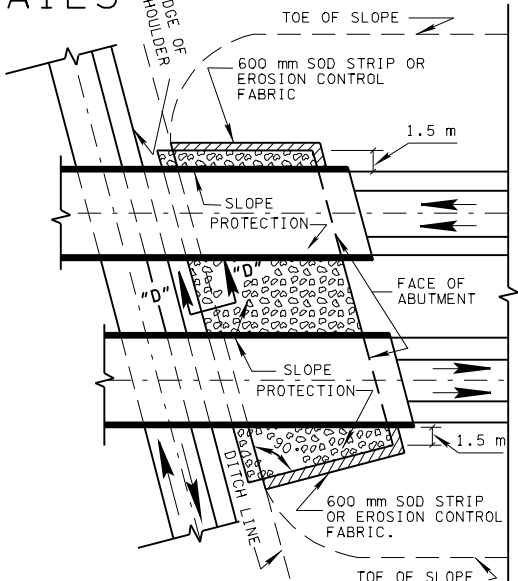


SECTION "D-D" WITHOUT DITCH



PLAN VIEW SINGLE BRIDGE

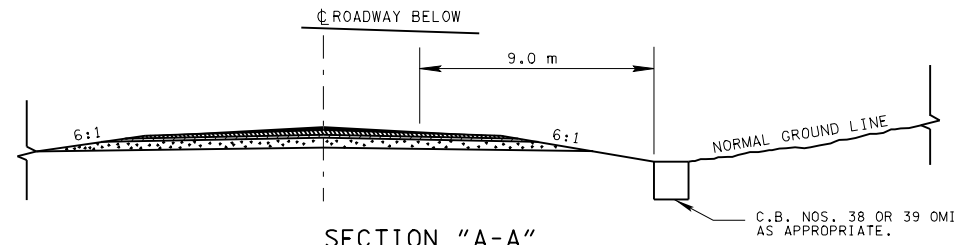
NOTE: PLAN VIEWS ARE SHOWN WITH DITCH. FOR VIEW WITHOUT DITCH, SEE GRADING DESIGN LAYOUT ON THIS SHEET.



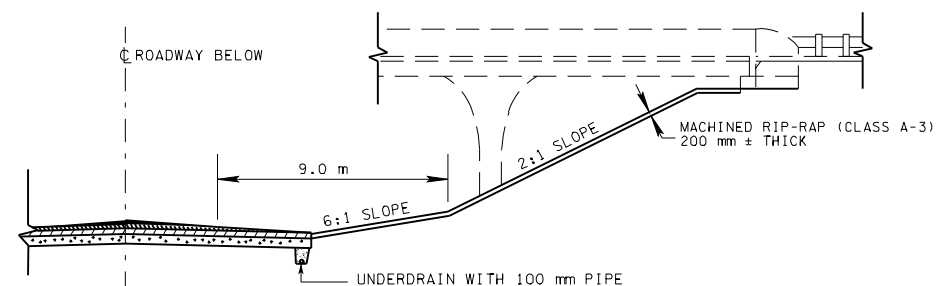
PLAN VIEW DUAL BRIDGES

DUMPED RIP-RAP SLOPE PROTECTION NOTES

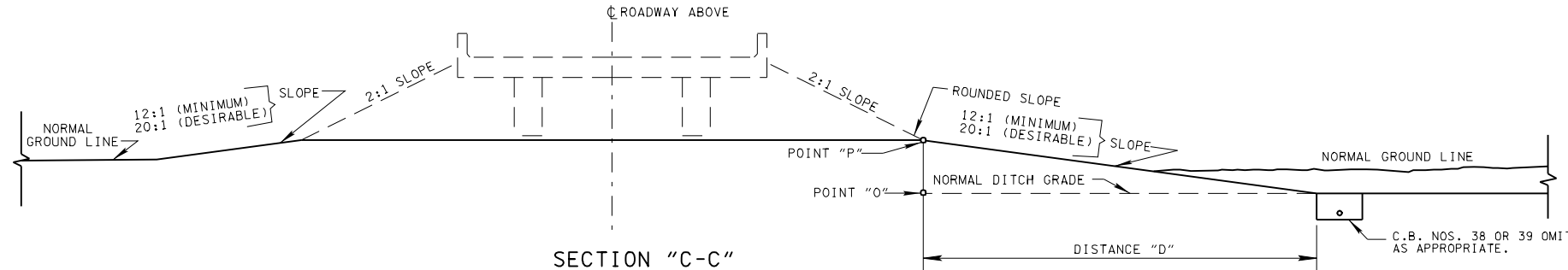
- ① MACHINED RIP-RAP FOR SLOPE PROTECTION SHALL BE 50 mm TO 150 mm IN SIZE, UNIFORMLY GRADED AND MEET THE REQUIREMENTS OF SUBSECTION 709 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. IT IS TO BE PAID FOR UNDER ITEM NO. 709M05.05, MACHINED RIP-RAP (CLASS A-3) PER TONNE.
- ② AGGREGATE SHALL BE PLACED TO A DEPTH OF 200 mm MEASURED PERPENDICULAR TO THE SLOPE FLUSH WITH THE EMBANKMENT SLOPE UNDER THE BRIDGE, SHALL EXTEND FROM THE FACE OF THE ABUTMENTS OR END BENTS ACROSS THE BERM AND DOWN THE SLOPE TO A POINT AS SHOWN IN SECTION "D"- "D" ABOVE AND SHALL EXTEND Laterally TO 1.5 m BEYOND THE OUTER EDGES OF THE SUPERSTRUCTURE.
- ③ THE CRUSHED AGGREGATE MAY BE DUMPED IN PLACE. PLACING SHALL BE CONDUCTED IN A MANNER TO PRODUCE A UNIFORM SURFACE VARYING NO MORE THAN 50 mm IN 1200 mm FROM A TRUE PLANE. HAND PLACINGS MAY BE REQUIRED AS NECESSARY TO CORRECT IRREGULARITIES EXCEEDING THE SPECIFIED TOLERANCES.
- ④ WHERE THE MEDIAN IS OVER 18.0 m THE SLOPE PROTECTION SHALL EXTEND TO THE WIDTH REQUIRED FOR EACH SEPARATE STRUCTURE AND THE AREA BETWEEN THE SLOPE PROTECTION OF EACH STRUCTURE SHALL BE SODDED.
- ⑤ WHERE THE MEDIAN IS 18.0 m OR LESS, THE SLOPE PROTECTION SHALL EXTEND AS SHOWN IN THE PLAN VIEW ABOVE.



SECTION "A-A"



SECTION "B-B"



SECTION "C-C"

SPECIAL NOTE

THIS DRAWING IS NOT TO BE UTILIZED FOR NEW DESIGN PROJECTS BEGUN AFTER OCTOBER 1, 2002.

FORMULAS

GENERAL	12:1 SLOPE	20:1 SLOPE	
$D = \frac{(600 \times "S") \times 0.3048}{100 + ("S" \times "G")}$	$D = \frac{(720) \times 0.3048}{10 + 1.2"G"}$	$D = \frac{(1200) \times 0.3048}{10 + 2"G"}$	FOR (+) GRADE
$D = \frac{(600 \times "S") \times 0.3048}{100 - ("S" \times "G")}$	$D = \frac{(720) \times 0.3048}{10 - 1.2"G"}$	$D = \frac{(1200) \times 0.3048}{10 - 2"G"}$	FOR (-) GRADE

GENERAL NOTES

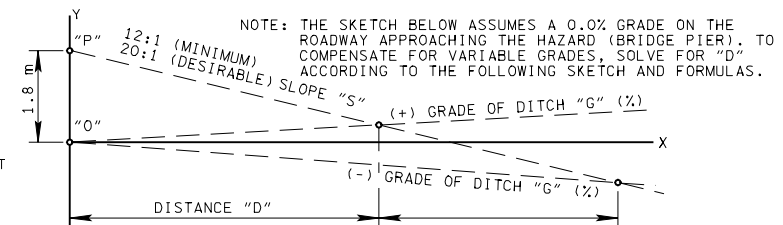
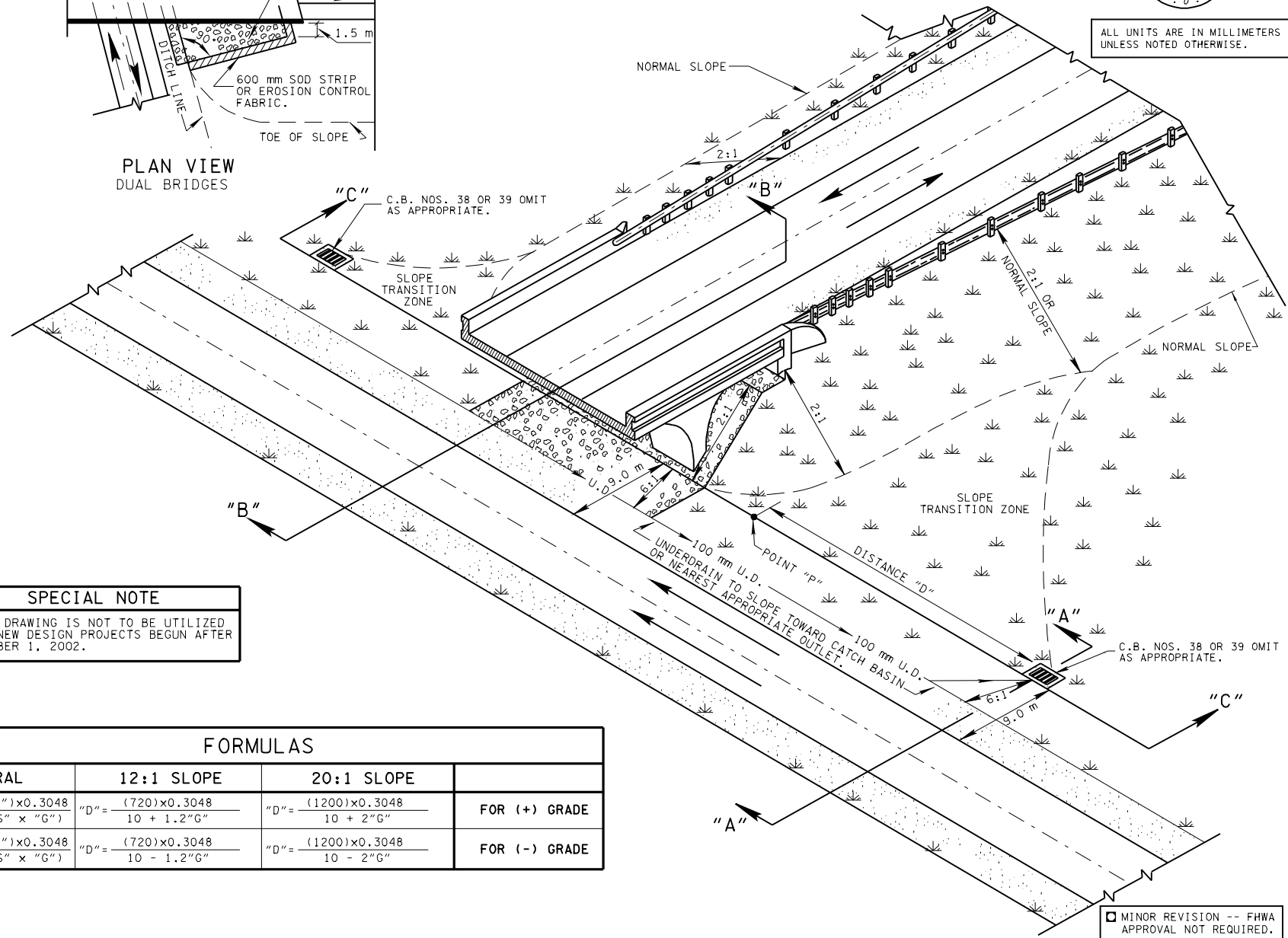
- (A) ALL WORK INDICATED ON THIS DRAWING SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF TENNESSEE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION."
- (B) PAYMENT FOR ALL ITEMS DIRECTLY INDICATED OR INFERRED ON THIS DRAWING WILL BE MADE UNDER APPROPRIATE ITEM NUMBER(S) AND DESCRIPTION(S) RECORDED ELSEWHERE IN THE PLANS.
- (C) WHEN EXISTING PHYSICAL CONDITIONS OF THE APPROACH AND TRANSITION ZONE ARE SO UNIQUE AS TO WARRANT INDIVIDUAL DESIGN, A CONTOUR PLAN SHALL BE PREPARED TO PROVIDE THE CONSTRUCTION ENGINEER WITH DATA FOR CONSTRUCTION TO THE INTENDED LINES AND GRADES.
- (D) IN RARE CASES WHEN A STEEP (2:1) FILL SLOPE IS UNAVOIDABLE WITHIN THE SAFETY APPROACH ZONE, A GUARDRAIL BARRIER WILL BE INDICATED ON PLANS IN ACCORDANCE WITH DESIGN POLICY SET OUT IN THE "SM-GR-" SERIES OF STANDARD DRAWINGS.

NOTES TO DESIGNERS:

- REV. 11-1-95: CHANGED TO METRIC.
- REV. 5-27-96: CHANGED SIZE OF UNDERDRAINS.
- REV. 5-27-98: CHANGED NOTE ① UNDER DUMPED RIP-RAP SLOPE PROTECTION NOTES. CHANGED REFERENCE THROUGHOUT DRAWING OF NOS. 36 AND 37 CATCH BASINS TO NOS. 38 AND 39 CATCH BASINS.
- REV. 3-20-02: ADDED SPECIAL NOTE.
- REV. 3-31-03: CHANGED EFFECTIVE DATE IN SPECIAL NOTE.



ALL UNITS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.



NOTE: THE SKETCH BELOW ASSUMES A 0.0% GRADE ON THE ROADWAY APPROACHING THE HAZARD (BRIDGE PIER), TO COMPENSATE FOR VARIABLE GRADES, SOLVE FOR "D" ACCORDING TO THE FOLLOWING SKETCH AND FORMULAS.