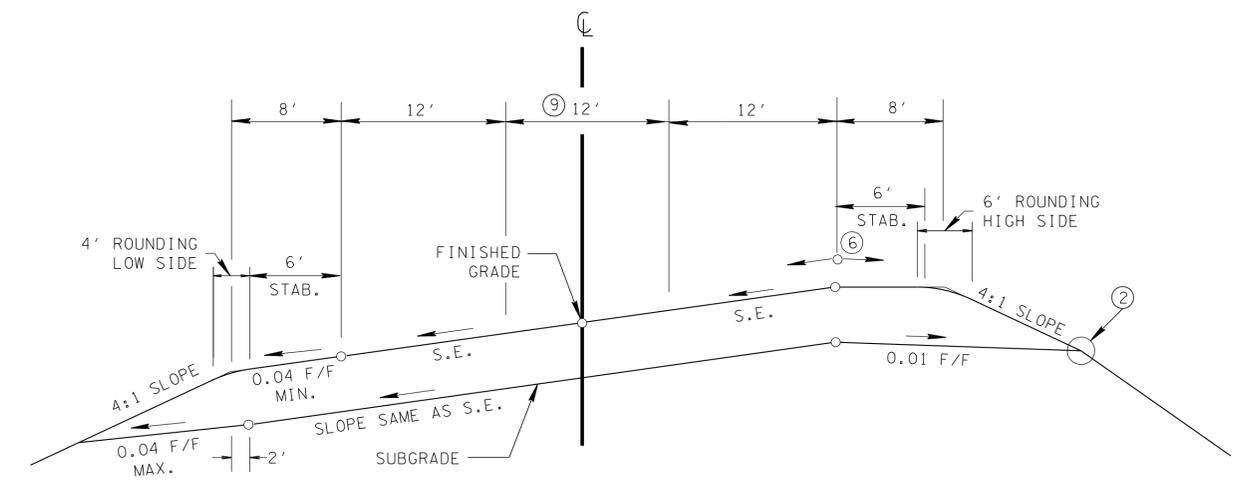
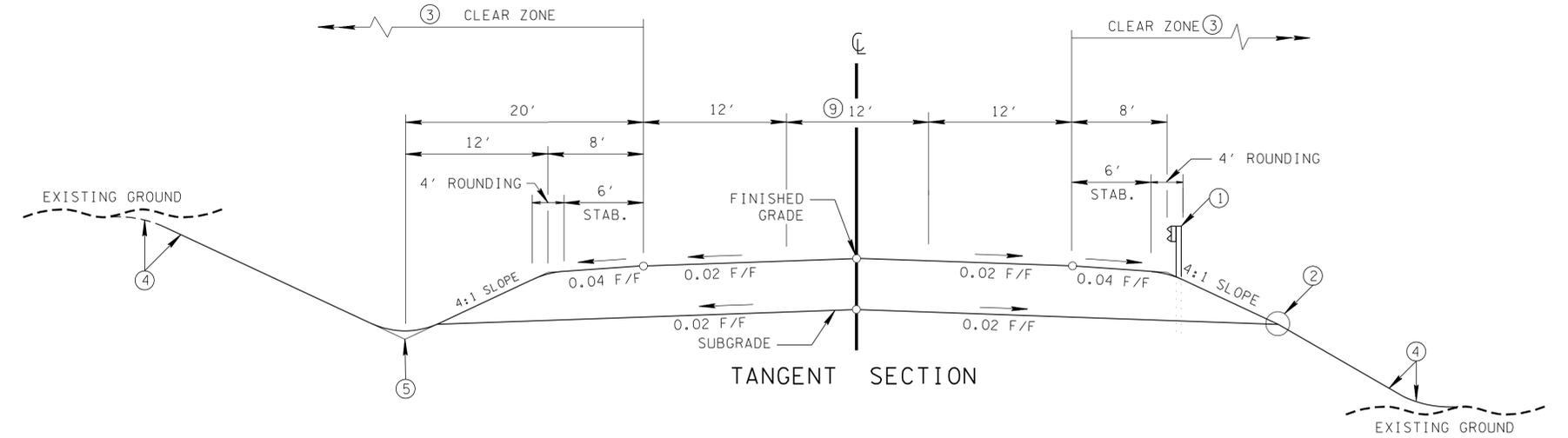


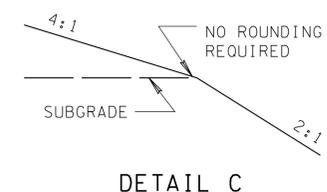
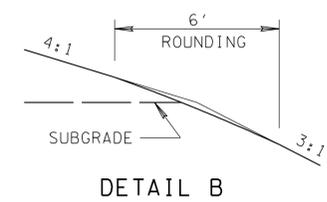
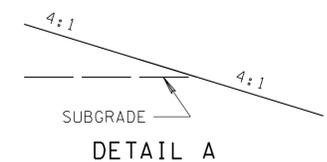
REV. 3-20-02: ADDED SPECIAL NOTE.
 REV. 3-31-03: CHANGED EFFECTIVE DATE IN SPECIAL NOTE.

GENERAL NOTES

- (A) FOR SPECIFIC CONDITIONS NOT COVERED ON THIS SHEET, REFERENCE SHOULD BE MADE TO "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" 1990.
- (B) PAGE NUMBERS REFERRED TO ON THIS DRAWING ARE FROM THE ABOVE REFERENCE.
- (C) REFERENCE SHOULD ALSO BE MADE TO THE AASHTO "ROADSIDE DESIGN GUIDE".
- (D) MINIMUM RIGHT-OF-WAY IS THAT REQUIRED TO ACCOMMODATE SLOPES AND EROSION CONTROL FEATURES (15 TO 20 FEET OUTSIDE THE SLOPE LINES IS DESIRABLE IN RURAL AREAS).
- (E) ALL NEW AND REHABILITATED BRIDGES SHALL BE DESIGNED FOR HS-20 LOADING. THE MINIMUM CLEAR WIDTH FOR NEW AND REHABILITATED BRIDGES SHALL BE EQUAL TO THE FULL WIDTH OF THE APPROACH ROADWAY, CURB-TO-CURB OR FULL SHOULDER WIDTH AS APPLICABLE.
- (F) BRIDGES TO REMAIN IN PLACE SHOULD HAVE ADEQUATE STRENGTH AND AT LEAST THE WIDTH OF THE TRAVELED WAY PLUS 2-FEET CLEARANCE ON EACH SIDE, BUT SHOULD BE CONSIDERED FOR ULTIMATE WIDENING OR REPLACEMENT IF THEY DO NOT PROVIDE AT LEAST 3-FEET CLEARANCE ON EACH SIDE OR ARE NOT CAPABLE OF HS-20 LOADINGS. AS AN INTERIM MEASURE, ALL BRIDGES THAT ARE LESS THAN FULL WIDTH SHOULD BE CONSIDERED FOR SPECIAL NARROW BRIDGE TREATMENTS SUCH AS SIGNING AND PAVEMENT MARKING.
- (G) THIS TYPICAL SECTION IS DESIGNED TO ACCOMODATE AN AVERAGE DAILY TRAFFIC OF 5,000 TO 12,500 VEHICLES PER DAY, WHICH IS CONSIDERED TO BE THE TRAFFIC VOLUME NEEDED TO JUSTIFY THE CONTINUOUS TWO-WAY LEFT TURN LANE (CTWLTL) FOR A 2-LANE HIGHWAY. THE TYPICAL SECTION DESIGN FOR VOLUMES LESS THAN 5,000 VEHICLES PER DAY USES THE DESIGN STANDARDS SHOWN ON STANDARD DRAWINGS RD-TS-1, RD-TS-2 AND RD-TS-3.
- (H) WHEN ENCOUNTERING INTERSECTIONS ON ARTERIAL HIGHWAYS AND COLLECTOR ROADS AND STREETS, DO NOT EXTEND THE CONTINUOUS TWO-WAY LEFT TURN LANE (CTWLTL) UP TO THE INTERSECTION. TERMINATE THE CTWLTL IN ADVANCE OF THE INTERSECTION TO ALLOW DEVELOPMENT OF AN EXCLUSIVE LEFT-TURN LANE. LOCAL ROADS AND STREETS MAY NOT WARRANT AN EXCLUSIVE LEFT-TURN LANE.
- (I) ON WIDENING OF EXISTING TWO-LANE HIGHWAY TO THREE-LANE HIGHWAY THE SHOULDER WIDTH MAY BE REDUCED TO TWO (2) FEET AND THE ROADWAY LANE WIDTH TO ELEVEN (11) FEET UNDER THE FOLLOWING CONDITIONS:
 - (11) THE DESIGN ADT IS 12,500 VEHICLES PER DAY OR LESS.
 - (12) THE DESIGN SPEED IS 35 MILES PER HOUR OR LESS.
 - (13) THERE ARE RESTRICTED AND/OR LIMITED CLEARANCES FOR RIGHT-OF-WAY DUE TO THE EXISTING SOCIAL, ENVIRONMENTAL OR ECONOMIC CONDITIONS.
 - (14) WHEN SUFFICIENT NUMBERS OF ACCIDENTS AND/OR DELAYS IN TRAFFIC EXIST DUE TO MID-BLOCK LEFT TURNS TO JUSTIFY A CONTINUOUS LEFT TURN LANE ON EXISTING TWO-LANE ROADWAY.



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



DESIGN STANDARDS (FOR GIVEN DESIGN SPEED)		DESIGN SPEEDS (MPH)				
		25	30	35	40	45
MAXIMUM CURVATURE (DEGREES) 0.04 MAX. S.E.		28°00'	19° 00'	13° 30'	10° 00'	7° 45'
MAXIMUM CURVATURE (DEGREES) 0.06 MAX. S.E.		30°45'	21° 00'	15° 00'	11° 15'	8° 30'
MAXIMUM CURVATURE (DEGREES) 0.08 MAX. S.E.		33°30'	22° 45'	16° 15'	12° 15'	9° 30'
MINIMUM LENGTH OF CTWLTL (IN FEET)		500	600	700	850	1000
MAXIMUM RURAL GRADES % (PAGE 472, TABLE VI-3)	LEVEL TOPO	7	7	7	7	6
	ROLLING TOPO	10	9	9	8	7
	MOUNTAINOUS TOPO	11	10	10	10	9
MAXIMUM URBAN GRADES % (PAGE 472, TABLE VI-3)	LEVEL TOPO	9	9	9	9	8
	ROLLING TOPO	12	11	11	10	9
	MOUNTAINOUS TOPO	13	12	12	12	11
(8) MINIMUM STOPPING SIGHT DISTANCE (FEET)		150	200	225-250	275-325	325-400
(7) MINIMUM "K" VALUE	CREST VERTICAL CURVE	20	30	40-50	60-80	80-120
	SAG VERTICAL CURVE	30	40	50	60-70	70-90
SUPERELEVATION		SEE STANDARD DRAWINGS RD-SE-2 & RD-SE-3				

- FOOTNOTES**
- (1) SEE GUARDRAIL STANDARD DRAWINGS FOR TYPICAL GUARDRAIL PLACEMENT.
 - (2) SEE DETAIL A, B AND C ON THIS SHEET FOR ROUNDING.
 - (3) MINIMUM CLEAR ZONE WIDTH SHALL BE DETERMINED FROM STANDARD DRAWING RD-S-11. FOR URBAN DESIGN SEE PAGE 486-487.
 - (4) SEE STANDARD DRAWING RD-S-11 CASE II FOR FILL AND CUT SLOPE TABLES, ROUNDING ON TOP OF CUT SLOPES AND TOE OF FILL SLOPES, AND SPECIAL ROCK CUT TREATMENT.
 - (5) SEE STANDARD DRAWING RD-S-11A FOR ROUNDING OF ROADSIDE DITCH SLOPES.
 - (6) THE SLOPES OF THE SHOULDER AND ROADWAY PAVEMENT SHALL NOT EXCEED AN ALGEBRAIC DIFFERENCE OF 0.07 FOOT PER FOOT.
 - (7) "K" VALUE IS A COEFFICIENT BY WHICH THE ALGEBRAIC DIFFERENCE IN GRADE MAY BE MULTIPLIED TO DETERMINE THE LENGTH IN FEET OF THE VERTICAL CURVE.
 - (8) ANY LENGTH OF STOPPING SIGHT DISTANCE WITHIN THE RANGE OF VALUES ESTABLISHED ON PAGE 470, TABLE VI-2A IS ACCEPTABLE FOR A SPECIFIC SPEED. HOWEVER, VALUES APPROACHING OR EXCEEDING THE UPPER LIMIT OF THE RANGE SHOULD BE USED AS THE BASIS FOR DESIGN WHEREVER CONDITIONS PERMIT.
 - (9) THE DESIRABLE LANE WIDTH IN INDUSTRIAL AREAS WITH HEAVY TRUCK TRAFFIC IS 14 FEET.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.