

CONSTRUCTION AND MATERIAL SPECIFICATIONS

SECTION VI

A. STATE OF WORK

1. Scope

The specifications outlined herein are for specific application of construction of driveways accessing township roads, in addition to the standards set forth, and shall be subject to all relevant requirements of the Township Subdivision and Land Development Ordinance. All driveways accessing state roads shall meet the requirements of Pa DOT's current standards, and shall be subject to permits issued by Pa DOT.

B. GENERAL DRIVEWAY REQUIREMENTS

1. General Statement

All driveways shall conform to the Subdivision and Land Development Ordinance, and to the specifications set forth herein.

2. Approaches to Driveways

Figure 6 illustrates the requirements set forth in Section 8.8.6 of the Subdivision and Land Development Ordinance.

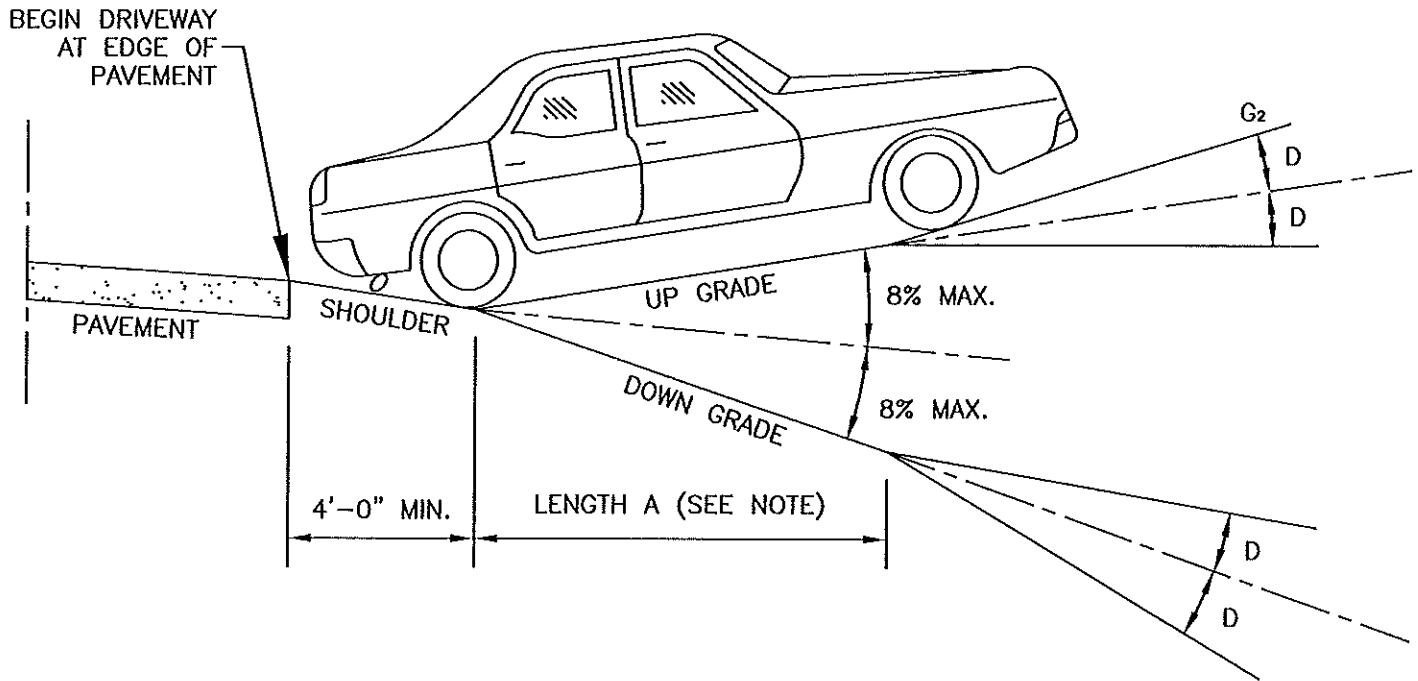
3. Sight Distance

Table 1 sets forth the minimum sight distances required by Section 8.8.7.7(a) of the Subdivision and Land Development Ordinance.

4. Grade of Access Driveway

- A. Figure 1 sets forth the grade requirements authorized by section 8.8.7.I of the Subdivision and Land Development Ordinance, and shall be conformed to.
- B. Grade requirements where curbs and sidewalks are present pursuant to Section 8.8.7 of the Subdivision and Land Development Ordinance.
 1. The driveway approaches shall be installed one and one-half inch above the adjacent roadway or the gutter grade to maintain proper drainage.
 2. The difference between the cross slope of the roadway and the upgrade of the driveway approach shall not exceed eight percent.

3. When a planted area exists in front of the sidewalk, one of the following three cases shall apply:
 - a. When the grass strip between the vertical concrete curb and the sidewalk is wide enough to maintain an eight percent maximum driveway approach grade, construct the driveway as shown in Figure 2. Maximum grade for slant concrete curb shall be 2% across the sidewalk and grass strip (See Fig. 2A).
 - b. If the driveway grade would exceed eight percent, depress the outer edge of the sidewalk and maintain a maximum cross slope of six percent. This will enable a driveway slope to stay within the eight percent slope limit (vertical concrete curb). See Figure 3. Maximum grade for slant concrete curb shall be 2% across the sidewalk and grass strip.
 - c. If the sidewalk cross slope would exceed six percent, as indicated in clause (B) of this subgraph, depress the entire sidewalk. The amount of depression shall not exceed one and one-half inches at the inner edge of the sidewalk. The longitudinal slope of the sidewalk shall not exceed two inches per foot. See Figure 4 (vertical concrete curb).
4. When the sidewalk is directly against the back of the curb and the sidewalk is at least five feet wide, the curb shall be sloped as shown in Figure 5 of this subsection. This will eliminate the need for depressing the back edge of the sidewalk. For sidewalks narrower than five feet, the curb will be sloped and the back edge of the sidewalk will be depressed (maximum one and one-half inch) to maintain an eight percent maximum grade on the driveway. The longitudinal grade of the sidewalk shall not exceed two inches per foot. Maximum grade for slant concrete curb shall be 2% across the sidewalk and grass strip (See Figure 5A).



NOTE:

THE SHOULDER SLOPE USUALLY VARIES FROM 1/2" PER FOOT (4%) TO 3/4" PER FOOT (6%). HOWEVER, THE SHOULDER SLOPE SHOULD BE MAINTAINED WHEN CONSTRUCTING THE DRIVEWAY.

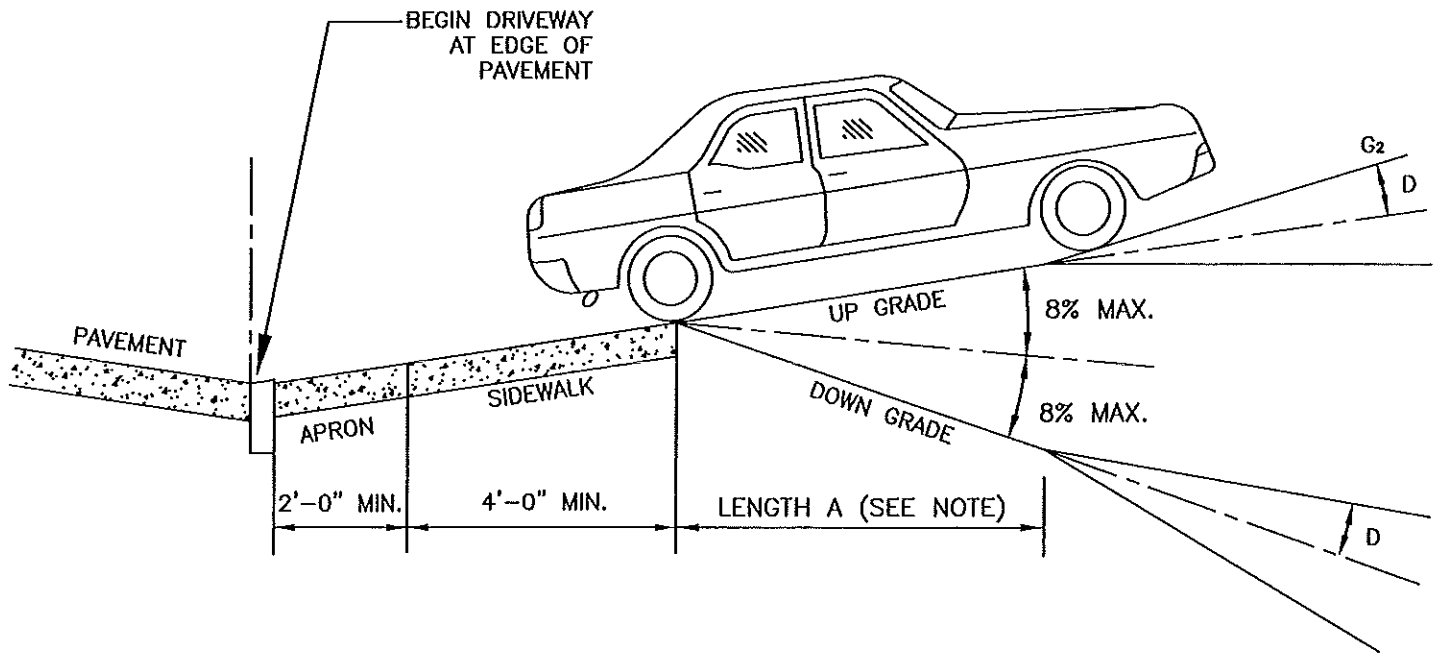
FOR GRADE CHANGES GREATER THAN THOSE SHOWN IN FIGURE 1, VERTICAL CURVES AT LEAST 10 FEET LONG SHALL BE CONSTRUCTED AND LENGTH "A" SHALL BE INCREASED.

GRADES (G2) SHALL BE LIMITED TO 15% FOR MINIMUM USE DRIVEWAYS AND FROM FIVE PERCENT TO EIGHT PERCENT FOR LOW, MEDIUM, OR HIGH VOLUME DRIVEWAYS WITHIN THE RIGHT-OF-WAY.

LENGTH OF UP GRADE AND DOWN GRADE (LENGTH A) SHALL BE TO THE BUILDING SETBACK FOR MINIMUM USE DRIVEWAYS AND A 40 FOOT MINIMUM FOR LOW, MEDIUM, AND HIGH TRAFFIC DRIVEWAYS.

MAXIMUM GRADE CHANGE

	<u>DESIRABLE</u>	<u>MAXIMUM</u>
HIGH VOLUME DRIVEWAY	0%	±3%
MEDIUM VOLUME DRIVEWAY	±3%	±6%
LOW VOLUME DRIVEWAY	±6%	CONTROLLED BY VEHICLE CLEARANCE



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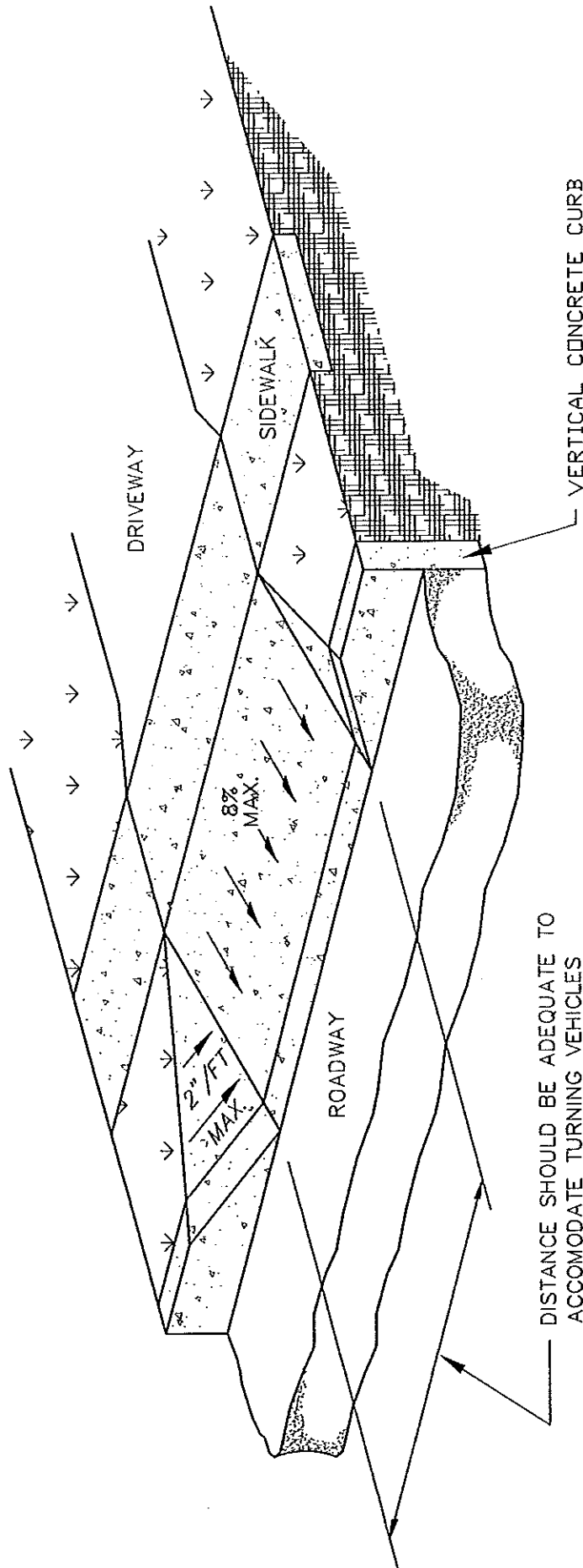
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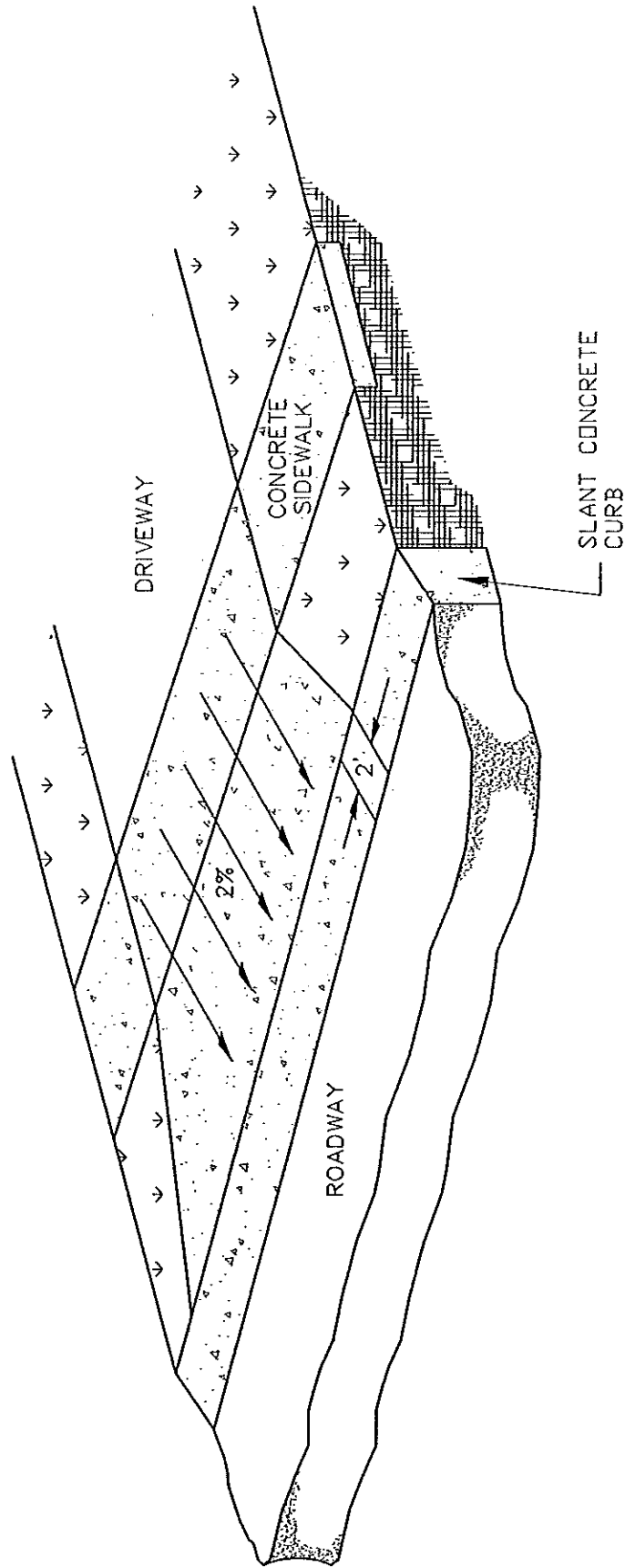
NOTE:
 IF NO SIDEWALK EXISTS, THE MAXIMUM
 SLOPE, AS SHOWN, SHALL BE MAINTAINED
 TO THE LIMITS INDICATED TO ALLOW FOR
 FUTURE CONSTRUCTION OF SIDEWALKS.

FIGURE 2
 NOT TO SCALE
 DATE: 1/2/01

ISOMETRIC
 DEPRESSED CURB DETAIL

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Gordon L. Brown & Associates, Inc.
 Civil Engineers & Surveyors
 717-741-4621
 7238 South Queen Street
 York, Pa. 17402-4631

GIR&A




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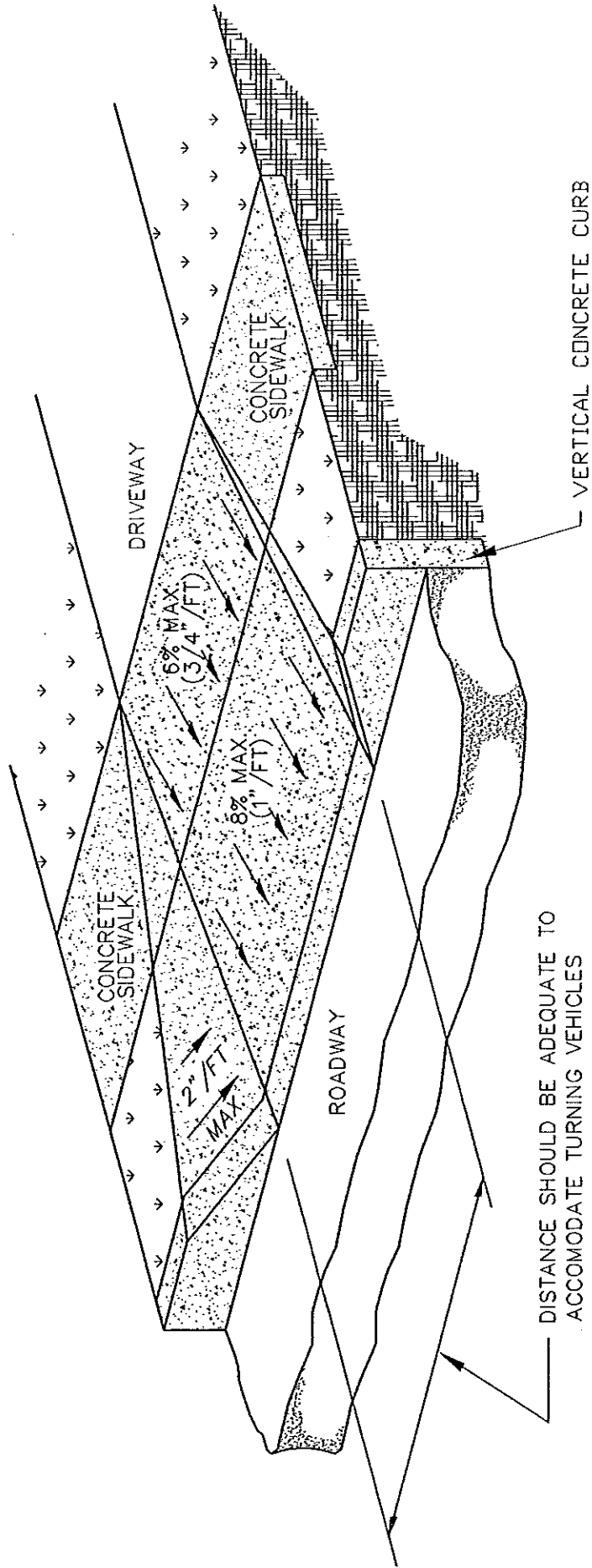
ISOMETRIC
 DEPRESSED CURB DETAIL

FIGURE 2A
 NOT TO SCALE
 DATE: 1/2/01

Gordon L. Brown & Associates, Inc.
 Civil Engineers & Surveyors
 717-741-4621
 2238 South Queen Street
 York, Pa. 17402-4631



GLB&A

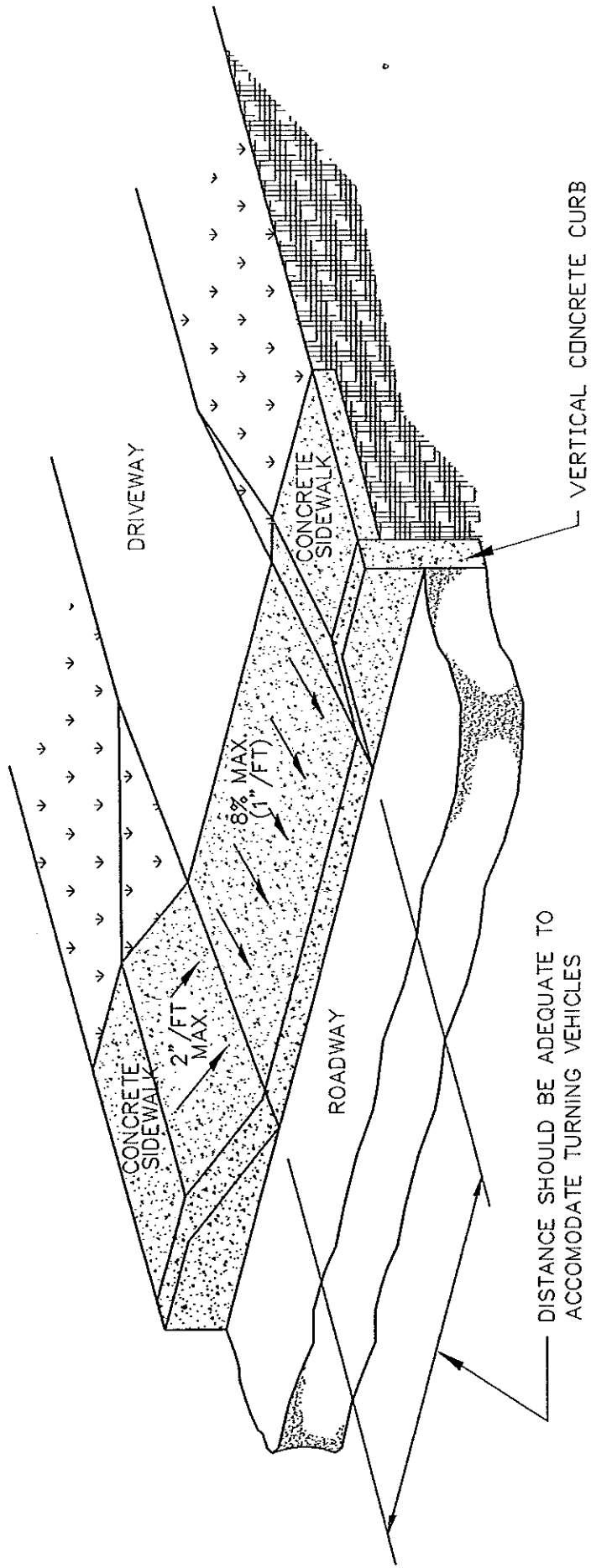


NOTE:
 MAXIMUM GRADE FOR SLANT CONCRETE CURB SHALL BE 2% ACROSS THE SIDEWALK.

IF NO SIDEWALK EXISTS, THE MAXIMUM SLOPE, AS SHOWN, SHALL BE MAINTAINED TO THE LIMITS INDICATED TO ALLOW FOR FUTURE CONSTRUCTION OF SIDEWALKS.

FIGURE 3
 NOT TO SCALE
 DATE: 1/2/01

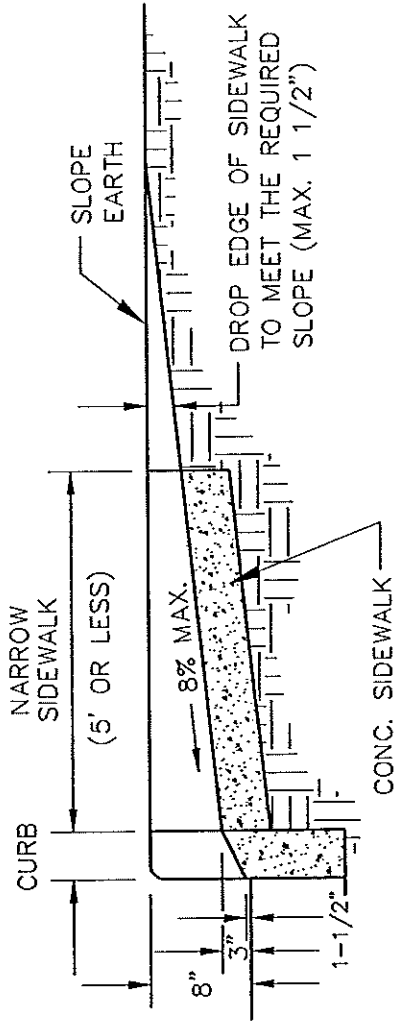
ISOMETRIC DEPRESSED CURB DETAIL



NOTE:
 MAXIMUM GRADE FOR SLANT CONCRETE CURB SHALL BE 2% ACROSS THE SIDEWALK.
 IF NO SIDEWALK EXISTS, THE MAXIMUM SLOPE, AS SHOWN, SHALL BE MAINTAINED TO THE LIMITS INDICATED TO ALLOW FOR FUTURE CONSTRUCTION OF SIDEWALKS.

FIGURE 4
 NOT TO SCALE
 DATE: 1/2/01

ISOMETRIC DEPRESSED CURB DETAIL



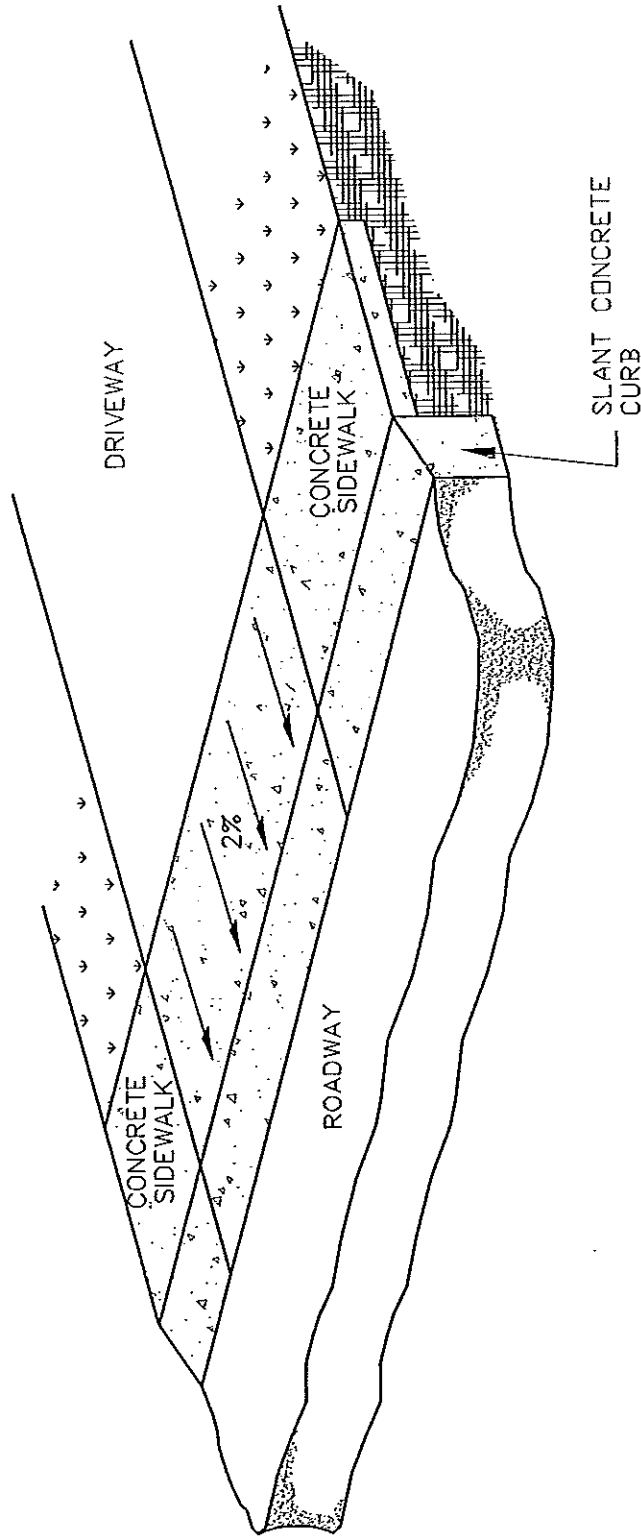
NOTE:
 MAXIMUM GRADE FOR SLANT CONCRETE
 CURB SHALL BE 2% ACROSS THE SIDEWALK.

IF NO SIDEWALK EXISTS, THE MAXIMUM
 SLOPE, AS SHOWN, SHALL BE MAINTAINED
 TO THE LIMITS INDICATED TO ALLOW FOR
 FUTURE CONSTRUCTION OF SIDEWALKS.

ISOMETRIC
 DEPRESSED CURB DETAIL
 SECTION A-A OF FIGURE 4

FIGURE 5
 NOT TO SCALE
 DATE: 1/2/01



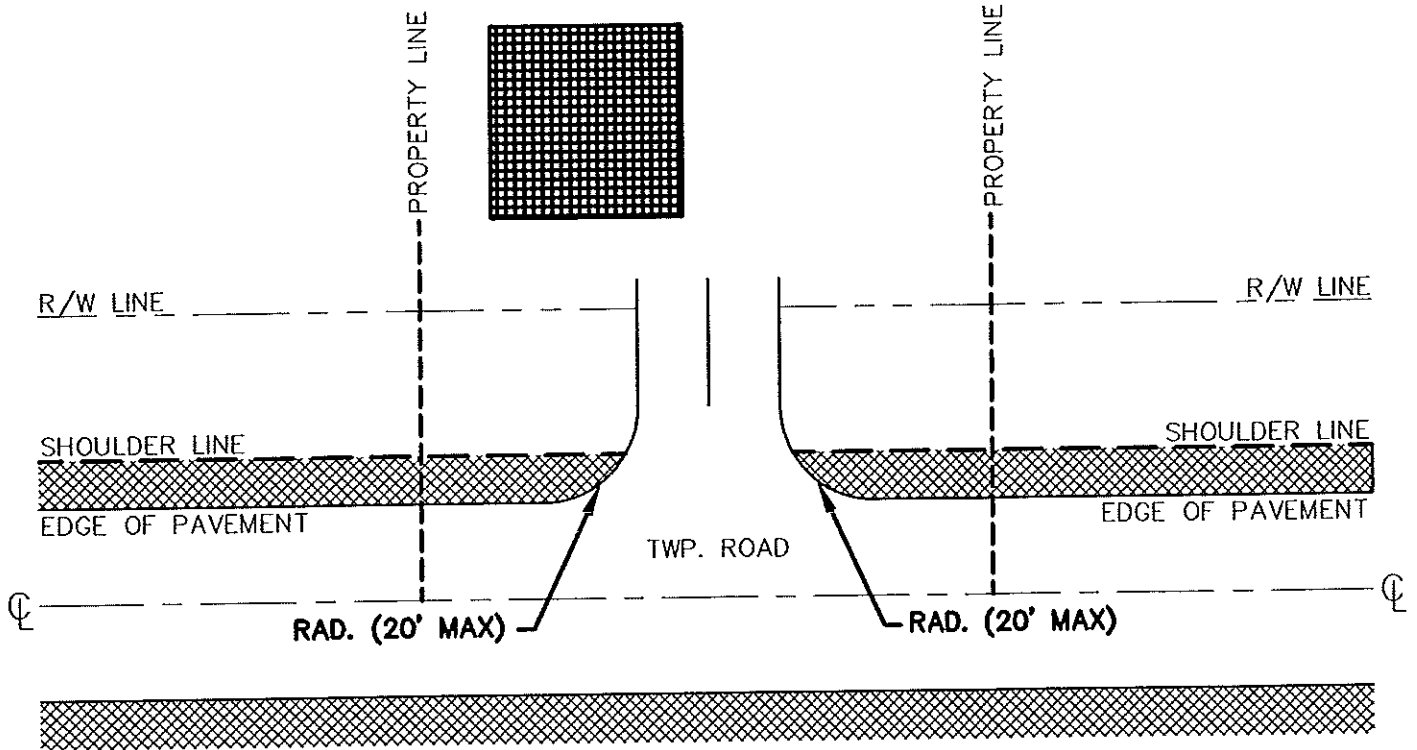


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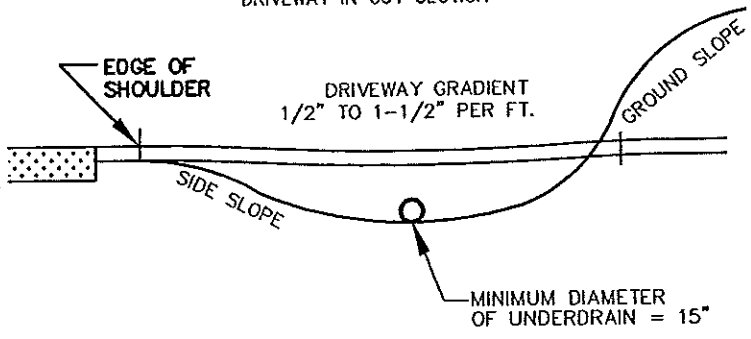
ISOMETRIC
 DEPRESSED CURB DETAIL

FIGURE 5A
 NOT TO SCALE
 DATE: 1/2/01

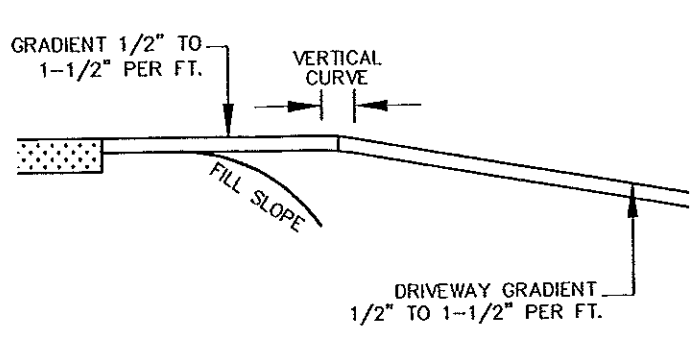
RESIDENTIAL DRIVEWAY SKETCH
(LIST WIDTH AND RADIUS)



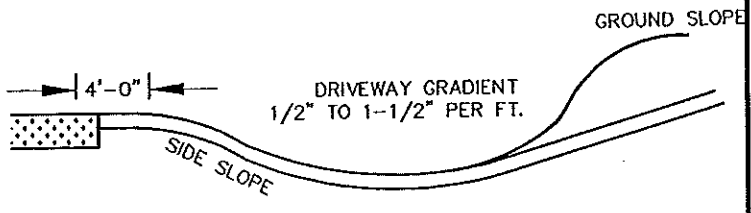
WITHOUT ROADWAY
DRIVEWAY IN CUT SECTION



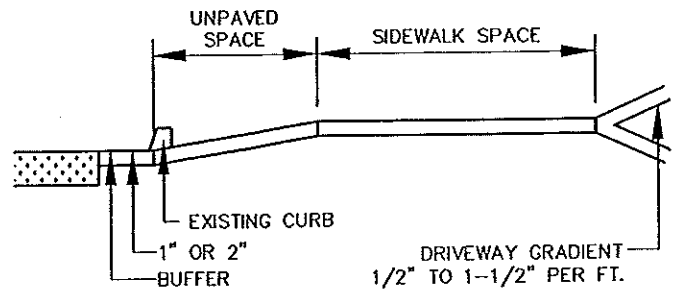
WITHOUT ROADWAY
DRIVEWAY IN FILL SECTION



WITHOUT ROADWAY
DRIVEWAY IN VALLEY GUTTER



WITH HIGHWAY CURB
DRIVEWAY WITH HIGHWAY EDGE CURB



NOTE:
DIFFERENCE BETWEEN GRADIENT OF DRIVEWAY AND CROSS
SLOPE OF PAVEMENT SHOULD NOT EXCEED 1" PER FT.

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Table 1 - Safe Sight Distance for passenger cars and single unit trucks exiting from driveways onto two-lane roads.

MINIMUM SAFE STOPPING SIGHT DISTANCE = $1.47Vt + \frac{V^2}{50(F \pm G)}$

	G = HIGHWAY GRADE IN %													
	0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	+13
15	75' 75'	74' 75'	73' 76'	73' 77'	73' 77'	73' 78'	72' 79'	72' 79'	71' 80'	71' 81'	71' 82'	70' 83'	70' 84'	70' 85'
20	109' 109'	108' 110'	107' 111'	106' 112'	105' 113'	104' 115'	103' 117'	103' 117'	102' 118'	102' 119'	101' 121'	101' 123'	100' 125'	100' 127'
25	147' 147'	145' 148'	144' 150'	143' 151'	142' 153'	140' 155'	139' 157'	138' 159'	137' 161'	136' 164'	135' 166'	134' 169'	134' 172'	133' 175'
30	196' 196'	194' 198'	191' 201'	189' 204'	187' 207'	185' 210'	183' 214'	182' 217'	180' 221'	178' 226'	177' 230'	175' 235'	174' 241'	173' 247'
35	249' 249'	245' 252'	242' 256'	238' 260'	236' 265'	233' 269'	231' 274'	228' 280'	226' 286'	224' 292'	221' 299'	219' 306'	217' 314'	215' 323'
40	314' 314'	309' 319'	304' 325'	299' 331'	295' 337'	291' 345'	287' 352'	284' 360'	280' 369'	277' 379'	274' 389'	271' 401'	268' 414'	266' 428'
45	383' 383'	376' 390'	370' 398'	364' 406'	358' 415'	353' 425'	348' 435'	343' 447'	338' 459'	334' 472'	330' 487'	326' 503'	322' 521'	319' 540'
50	462' 462'	453' 471'	444' 481'	436' 492'	429' 504'	421' 517'	415' 531'	409' 547'	403' 563'	397' 581'	392' 600'	388' 622'	382' 647'	378' 674'
55	538' 538'	527' 550'	517' 562'	508' 576'	494' 590'	490' 605'	482' 622'	475' 641'	467' 660'	461' 682'	454' 706'	448' 733'	442' 762'	437' 795'
60	621' 621'	608' 634'	596' 649'	584' 665'	573' 682'	563' 701'	554' 721'	545' 742'	536' 766'	528' 792'	521' 821'	513' 852'	506' 887'	500' 926'

11-1A V = SPEED (MPH)

MEASURED SIGHT DISTANCE: STATION _____ (RIGHT) _____ (LEFT) _____ (LEFT TURN IN) _____