

Business & Private Driveway Standards

Prepared by:

Department of Engineering
Anderson, Indiana

DRIVEWAY PERMIT INSTRUCTIONS

1. Print must be dimensioned with dimensions indicated on the drawing.
2. Locate (on the drawing), which direction is NORTH.
3. House (s) and/or building (s) must be shown on the drawing with the correct address of structure (s).
4. Show the centerline (C) location of all existing driveways within one hundred (100) feet either side of the proposed driveway centerline.
5. A distance of four (4) feet shall be minimum between property line and pavement edge.
6. Radius to be four (4) feet minimum, but in no case to extend beyond the extended property line of the adjacent lot.
7. Show width of street pavement, sidewalk and park strips over which driveway enters.
8. Business drives shall have a maximum width of thirty (30) feet, and private drives shall have a maximum width of twenty (20) feet.
9. Show all existing right-of-way (R/W) lines on drawing.
10. Locate distances from proposed driveway centerline to nearest street and/or alley intersections.
11. Show any present curb cuts or existing driveways within the bounds (limits) of the proposed driveway location.
12. Label all paved surfaces such as street, walks, drives etc. (eg. concrete-asphalt).
13. Label all streets, alleys, drives with appropriate name or number, (eg. 37th Street-Alley etc.).
14. Be sure to include YOUR name and ADDRESS on the finished print.

OLD ORDINANCE - Sec. 51.30 - Driving on a sidewalk -

The driver of a vehicle shall not drive within any sidewalk area except at a permanent or temporary driveway. (Ord. 1689, Art. VI, Sec. 10 Passed 1-12-44

Penalty - See Sec. 50.99

Suggested revision of above:

The driver of a vehicle shall not drive within any sidewalk area except at an approved driveway site which complies with the driveway Ordinance No. _____.

Suggested New Driveway Ordinance -

No new driveway shall be constructed within the right-of-way limits of a city street or alley without first securing written permission by petition from the Board of Public Works, City Engineer and the Police Traffic Department. The petition shall be accompanied by four (4) copies of the plans. The plans shall comply with Private and Business Driveway Standards which are on file in the City Engineer's Office.

Penalty - See Sec. 50-99

DRIVEWAY CONSTRUCTION METHODS

1. CURBS. Straight curb and radius curb shall be constructed in accordance with the specifications covering curb construction and in conformity with the design and dimensions shown on the detail plan on file in the Office of the City Engineer.
2. PAVEMENT. Pavements shall be constructed in accordance with these specifications covering pavement construction and in conformity with the design and dimensions shown on the detail plan on file in the Office of the City Engineer.
3. CEMENT. All cement used shall be Portland, either Type I or Type III and shall comply with the standard specifications for Portland Cement as given in A.S.T.M. C-150.
4. GRAVEL BASE. The gravel base shall consist of a mixture of aggregate and clay binder in the proper proportions to give maximum all weather stability constructed on a firm sub-grade in accordance with the specifications on file in the City Engineer's Office.
5. AGGREGATE. The use of bank run gravel will be prohibited. Fine and coarse aggregates shall meet the requirements of these specifications. Coarse aggregate shall consist of clean, sound, durable particles of crushed stone, gravel or air cooled iron blast furnace slag or a combination thereof. Gradation sizes of "U" or "L" or a combination of both shall be used for coarse aggregates.

Fine aggregate shall consist of natural sand, manufactured sand, or a combination thereof. Any manufactured sand used shall consist of clean, sound, hard, durable particles equal in characteristics to natural sand.

Gradation of both fine and coarse aggregates must comply with the tentative specifications for concrete aggregates (A.S.T.M. C-33-54T).

6. COMPOSITION. In preparing the concrete, the cement and the fine and coarse aggregates shall be measured separately. The mix shall meet the following requirements as specified in the mix design on file in the Office of the City Engineer.

- 3" Slump
- 6.0 Sacks (94# bags) cement per cubic yard of concrete.
- 5.5 Gallons of water per sack of cement
- 33 Gallons of water per cubic yard of concrete
- 32% Fine aggregate in total aggregate (by weight)
- 4.5 Cubic feet of concrete maximum yield per sack of cement

In no case shall the ratio of cement to water be less than one (1) to 1.6 and the ratio of cement to combined aggregates measured separately be less than one (1) to 6.9.

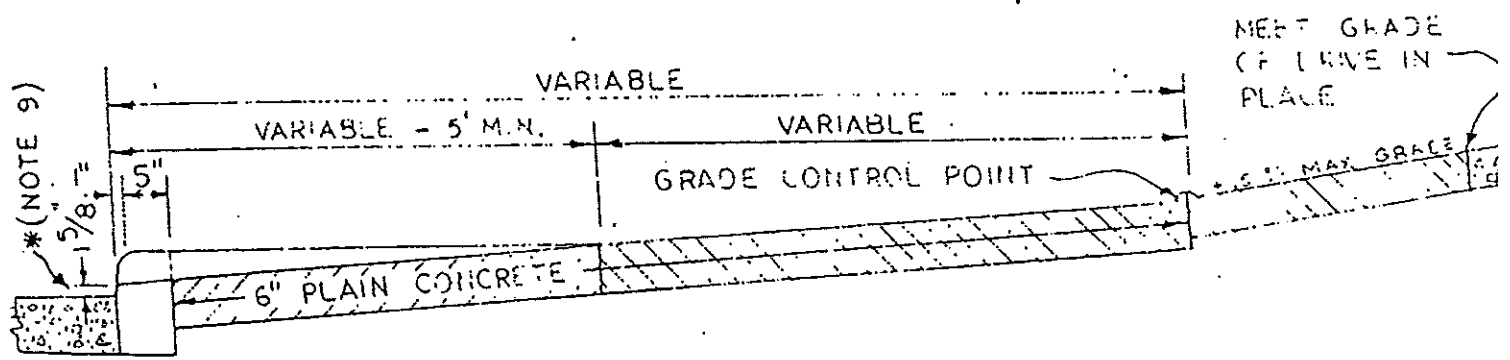
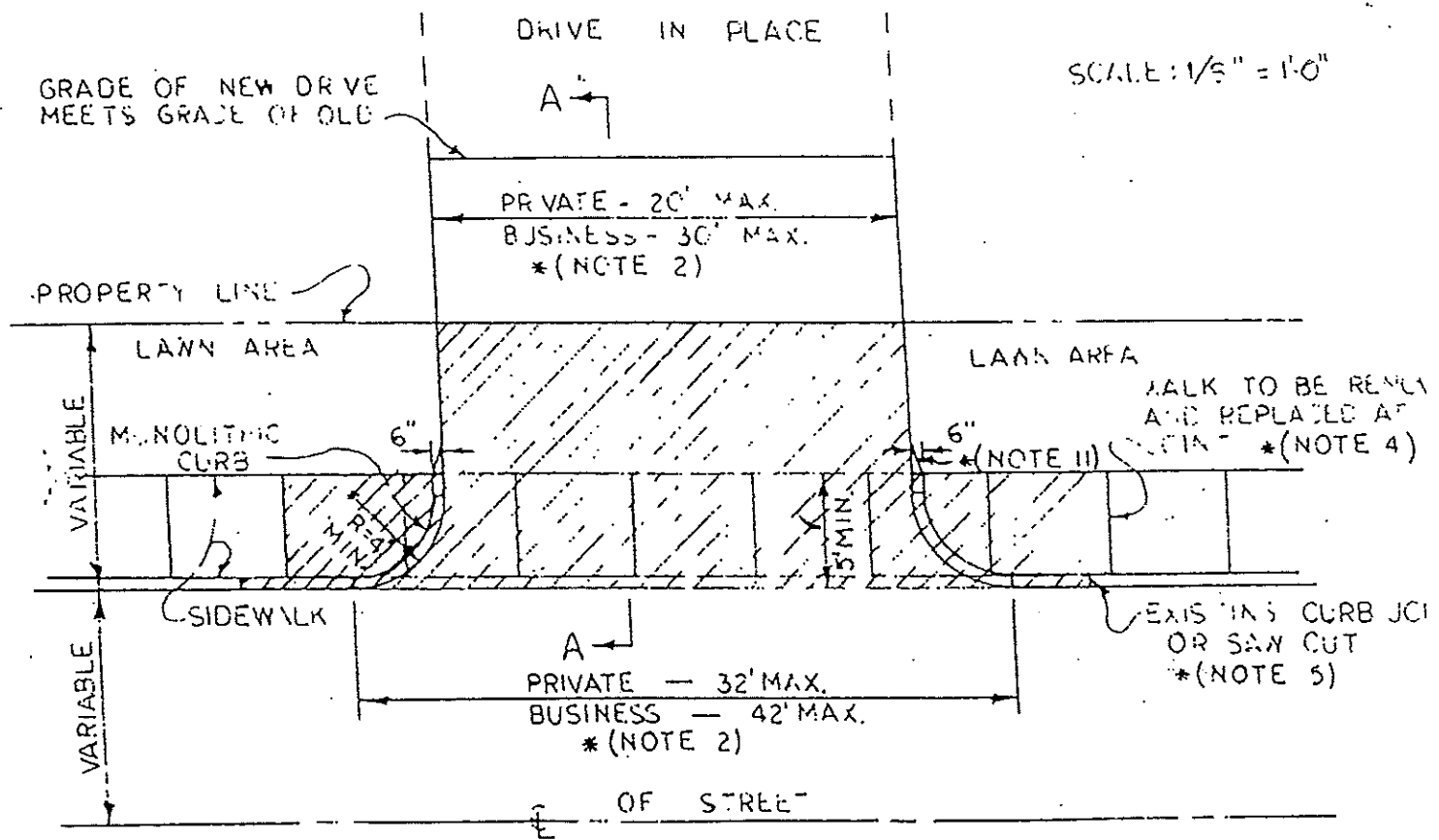
Water used in mixing concrete shall be clean and free from deleterious amounts of acids, alkalis, or organic materials. Potable water shall be considered as meeting the requirements.

7. MIXING CONCRETE. The concrete shall be mixed only in such quantities as are required for immediate use, and any which has developed initial set or has been mixed longer than thirty (30) minutes shall not be used. Fine aggregate or bags of cement containing lumps or crusts of hardened materials shall not be used. Concrete shall be mixed thoroughly in a batch mixer of approved type for a period of not less than one (1) minute after all materials are in the drum, and during this period the drum shall make not less than fourteen (14) nor more than twenty (20) revolutions per minute. Between these limits, however, the mixture shall be operated at the speed for which it is designed. The entire contents shall be removed from the drum before materials are placed therein for the succeeding batch.
8. USE OF PRE-MIXED CONCRETE. The use of concrete produced in accordance with specifications of Central Plant Mixed Concrete and Concrete Mixed in Transit which are on file in the Office of the City Engineer is permissible.
9. MOULDED CORES. Moulded cores may be taken from the work under construction as designed by the Engineer and tested for compressive strength. At seven (7) days the concrete shall show a minimum compressive strength of three thousand (3000) pounds per square inch, and at twenty-eight (28) days the minimum compressive strength of four thousand (4000) pounds per square inch.
10. CURING. Provision shall be made for maintaining concrete in a moist condition for at least five (5) days after the placement of the concrete, except that for high early-strength concrete (Type III), moist curing shall be provided for at least the first two (2) days.
11. COLD WEATHER REQUIREMENTS. Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near freezing weather. No frozen materials or materials containing ice shall be used. Weather protection for both the sub-grade and the concrete materials shall comply with the specifications on file in the City Engineer's Office.
12. EXPANSION JOINTS. Expansion joints shall be constructed in accordance with these specifications and as shown on the detail plan on file in the office of the City Engineer.

TYPE I DRIVEWAY STANDARDS

OFFICE OF THE CITY ENGINEER

BY: P.G.H. DATE: 11-10-67 CH.K.U. BY: _____ DATE: _____



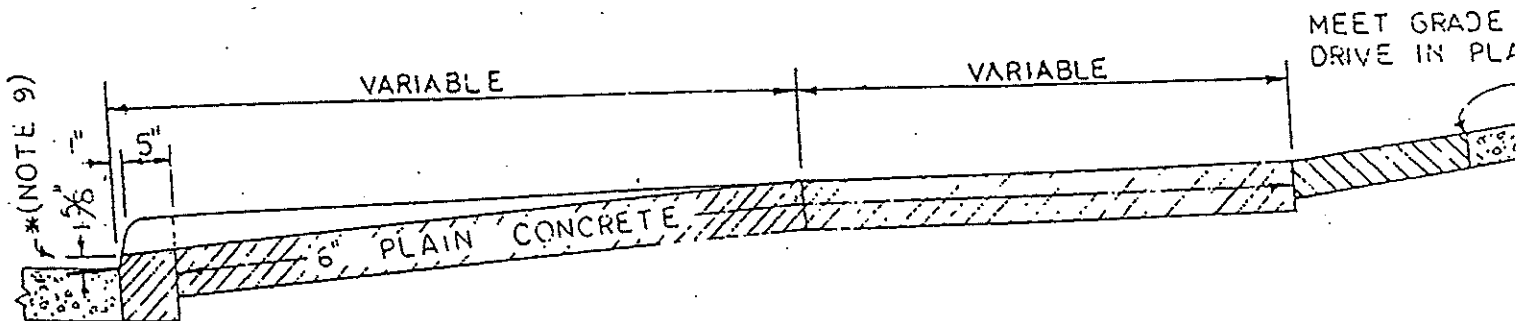
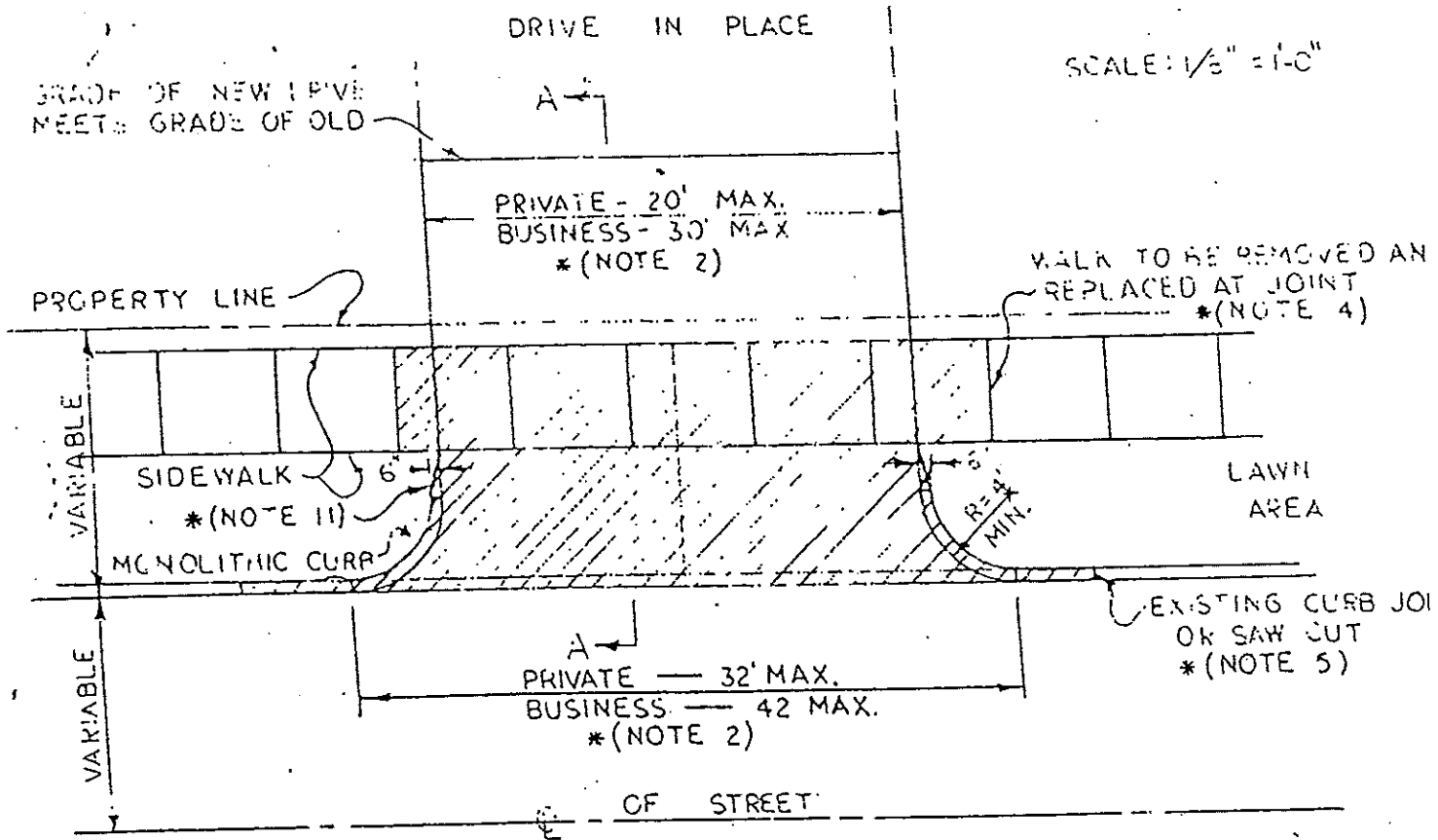
STANDARD GRADE
SECTION "A-A"
SCALE: 1/2" = 1'-0"

* REFER TO "DRIVEWAY CONSTRUCTION REQUIREMENTS"

TYPE II DRIVEWAY STANDARDS

OFFICE OF THE CITY ENGINEER

BY P.G.H. DATE: 11-10-67 C.H.D. BY: _____ DATE: _____



STANDARD GRADE

SECTION "A-A"

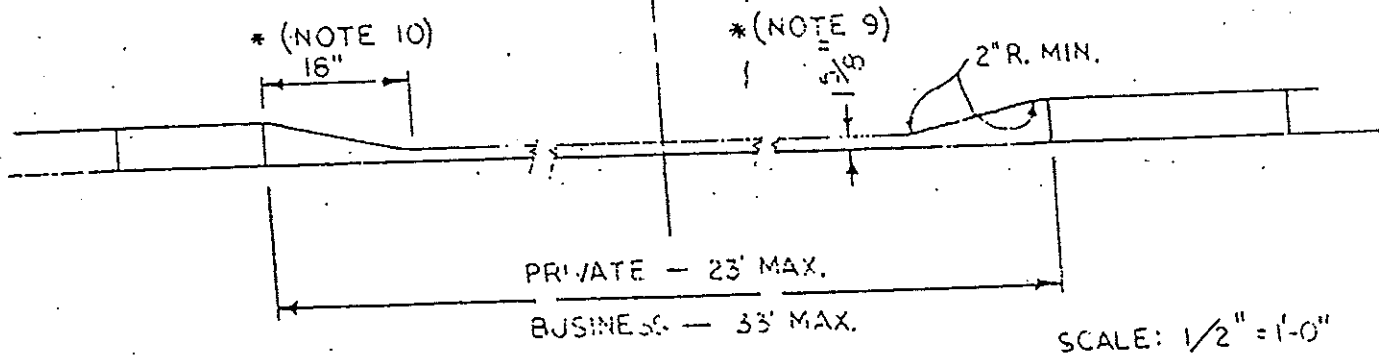
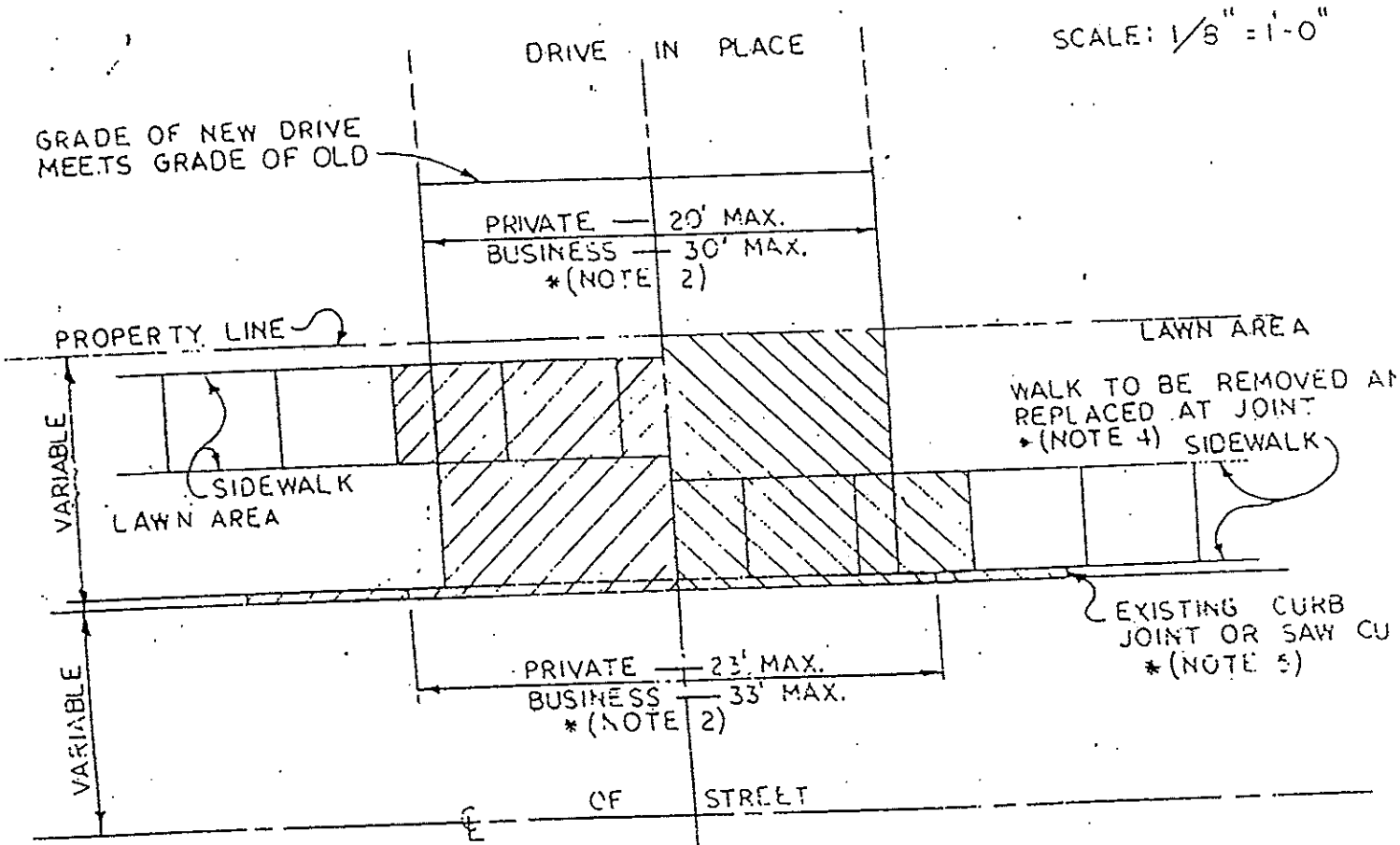
SCALE: 1/2" = 1'-0"

* REFER TO "DRIVEWAY CONSTRUCTION REQUIREMENTS"

TYPE III DRIVEWAY STANDARDS

OFFICE OF THE CITY ENGINEER

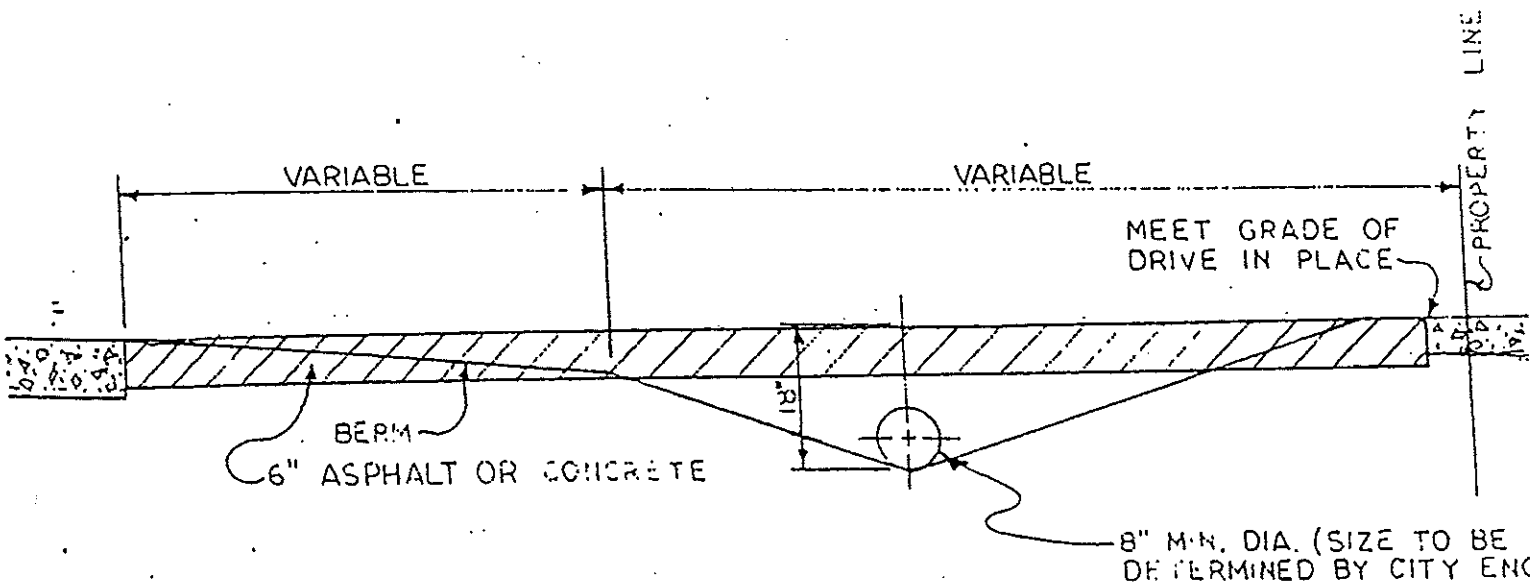
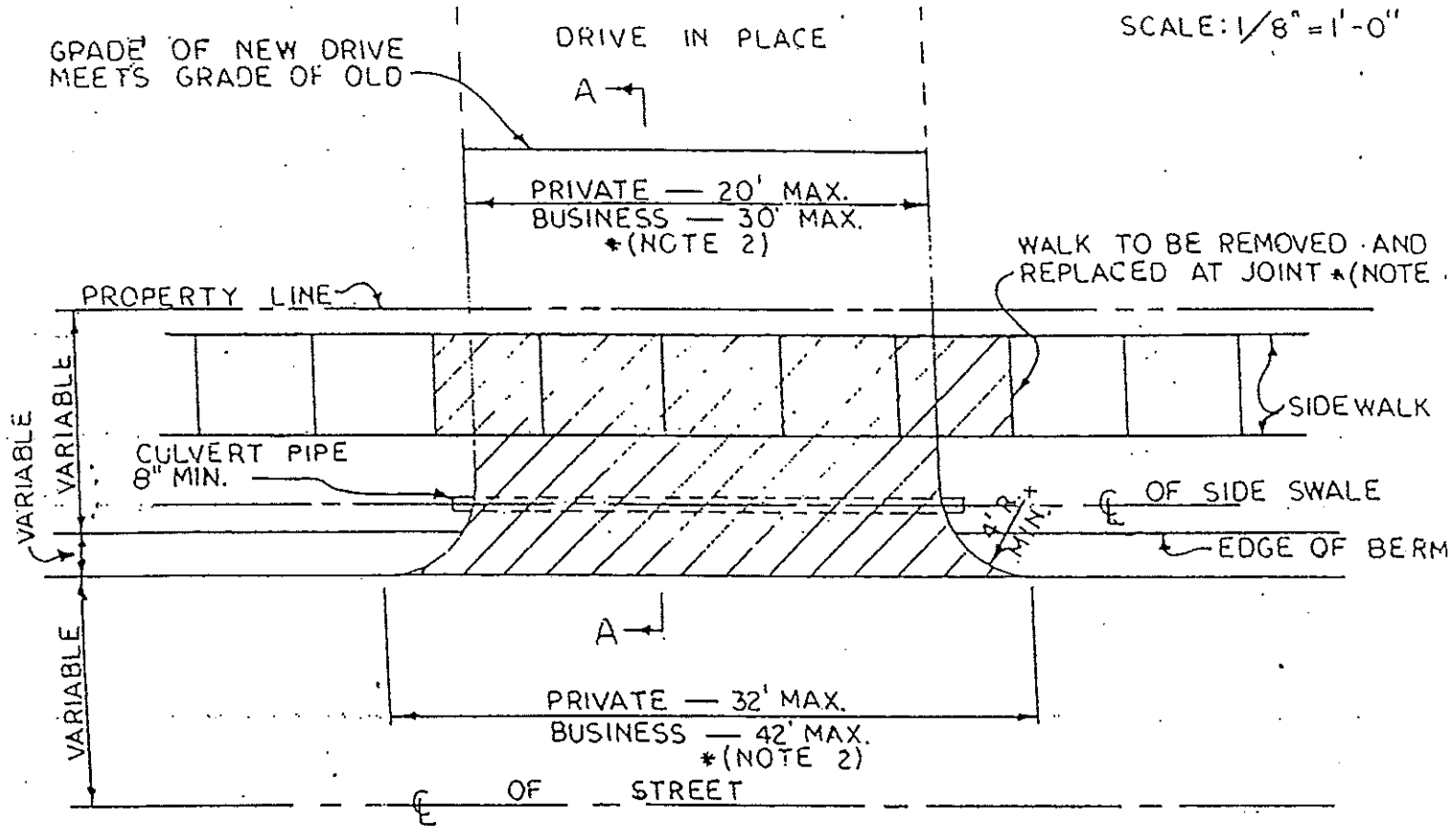
BY: P.G.H. DATE: 11-14-47 CHKD. BY: _____ DATE: _____



CROSS SECTION IS THE SAME AS TYPES I & II

TYPE IV (A)
DRIVEWAY STANDARDS
 OFFICE OF THE CITY ENGINEER

BY: P.G.H. DATE: 11-16-67 CHKD. BY: _____ DATE: _____



STANDARD GRADE
SECTION "A-A"

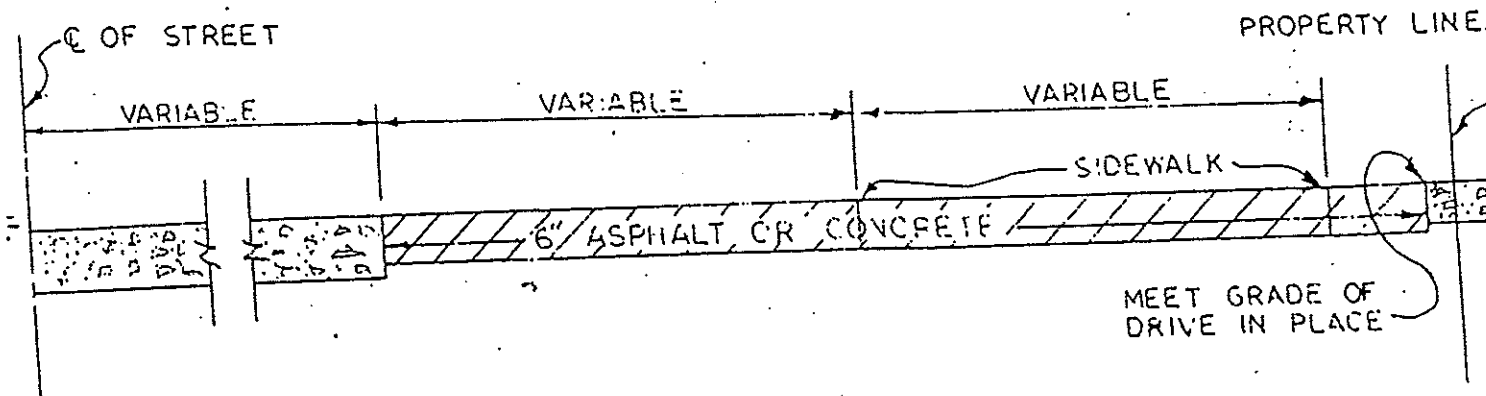
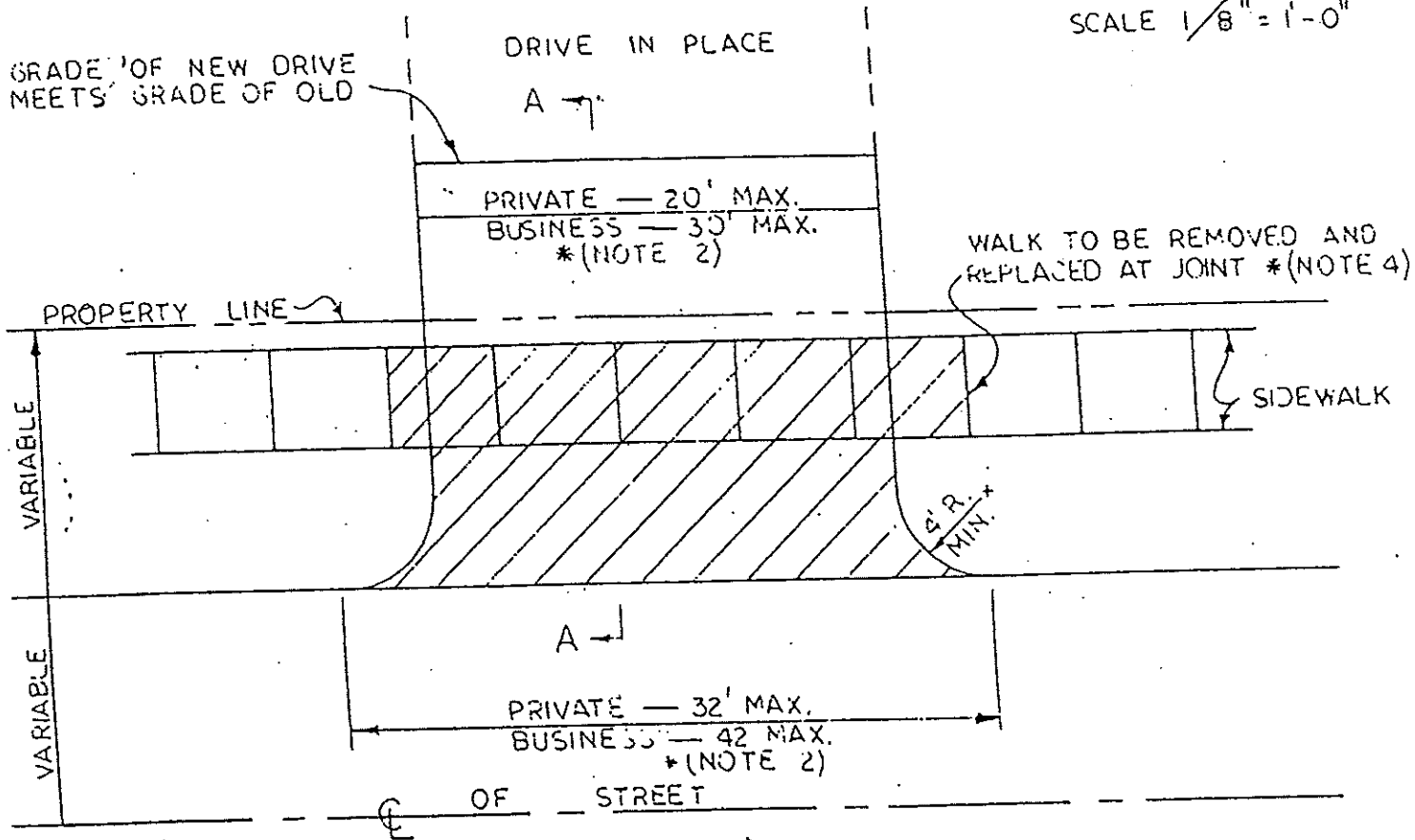
SCALE: 1/2" =

* REFER TO "DRIVEWAY CONSTRUCTION REQUIREMENTS"

TYPE V
DRIVEWAY STANDARDS
 OFFICE OF THE CITY ENGINEER

BY: P.G.H. DATE: 11-17-67 CH'D BY: _____ DATE: _____

SCALE 1/8" = 1'-0"



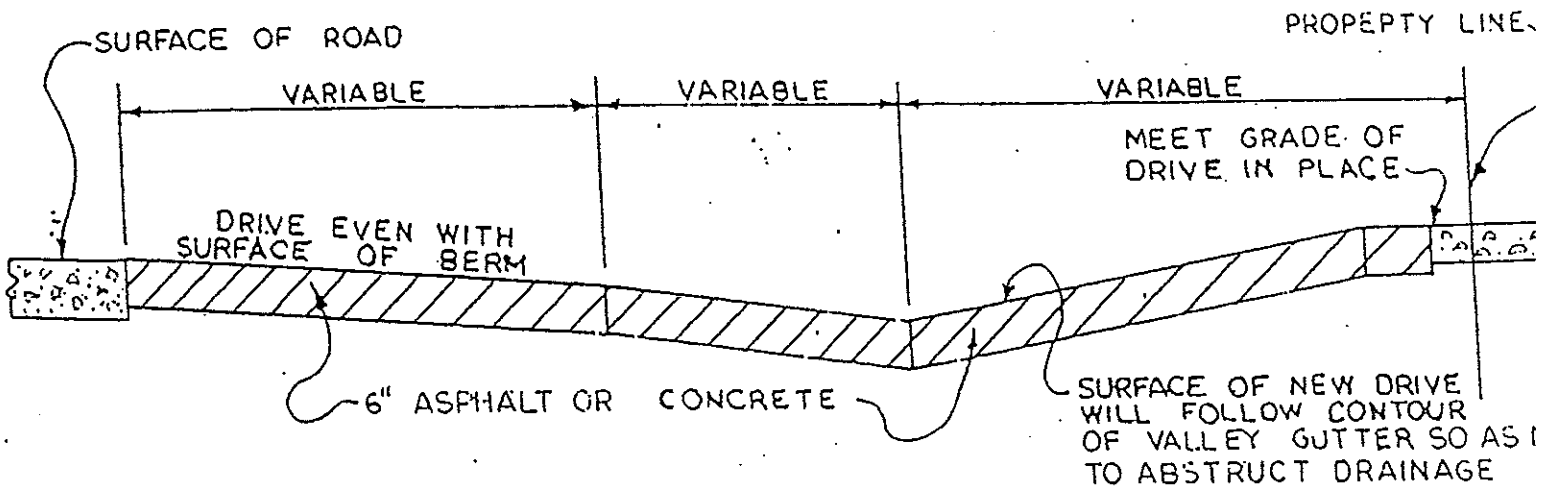
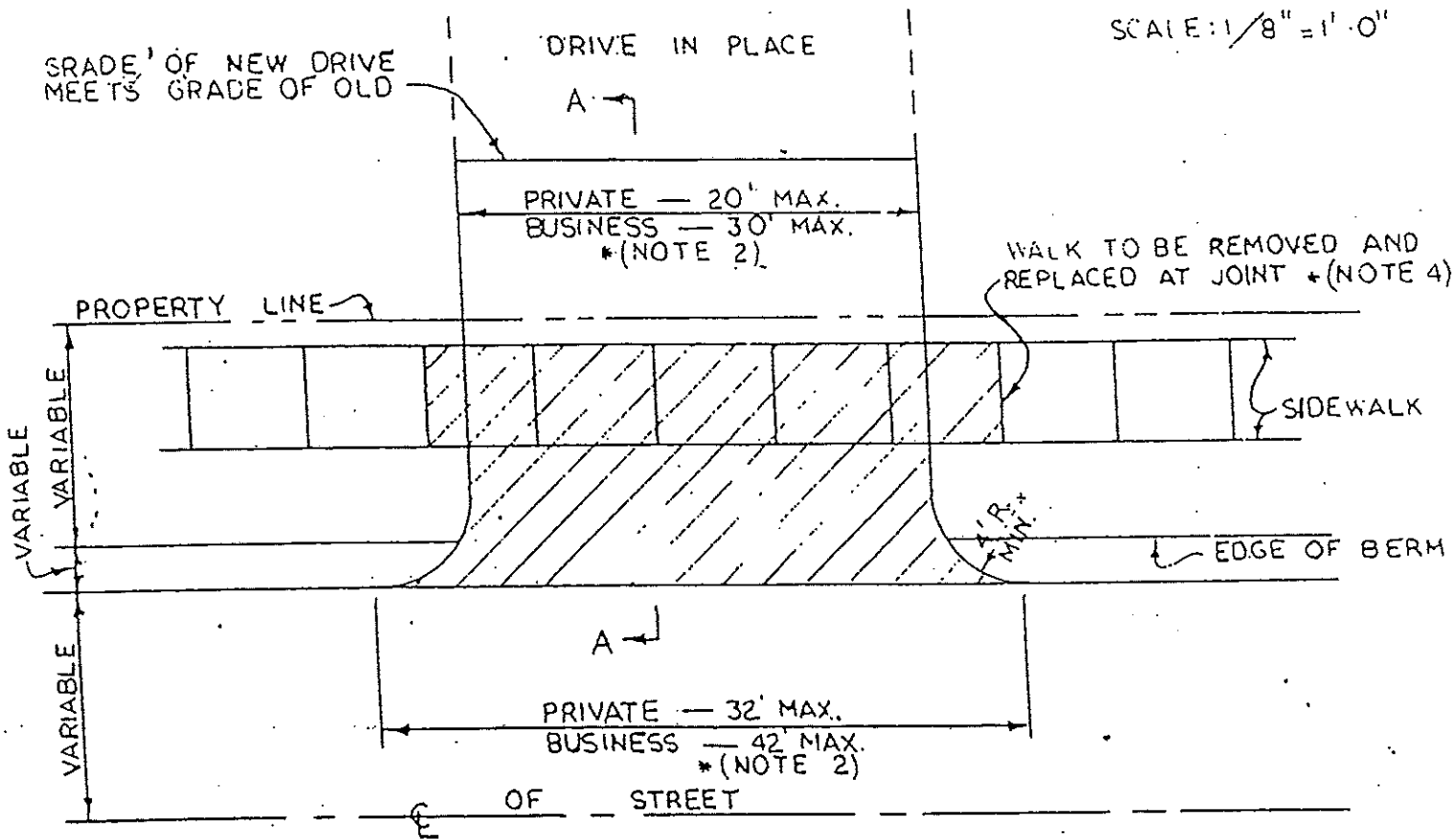
STANDARD GRADE
 SECTION "A-A"
 INVERTED CROWN

SCALE: 1/2" = 1'

* REFER TO "DRIVEWAY CONSTRUCTION REQUIREMENTS"

TYPE IV (B)
DRIVEWAY STANDARDS
 OFFICE OF THE CITY ENGINEER

BY: P.G.H. DATE: 11-16-67 CHKD. BY: _____ DATE: _____



STANDARD GRADE
SECTION "A-A"

SCALE 1/2" =

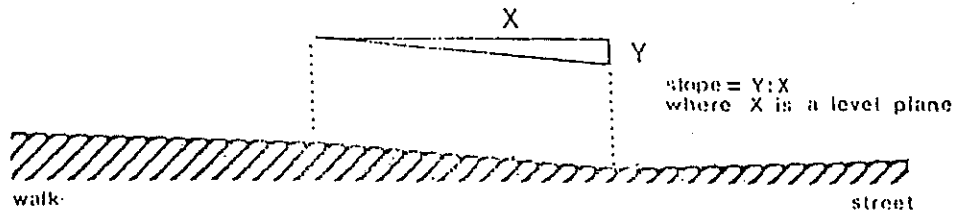


Fig. 11
Measurement of Curb Ramp Slopes

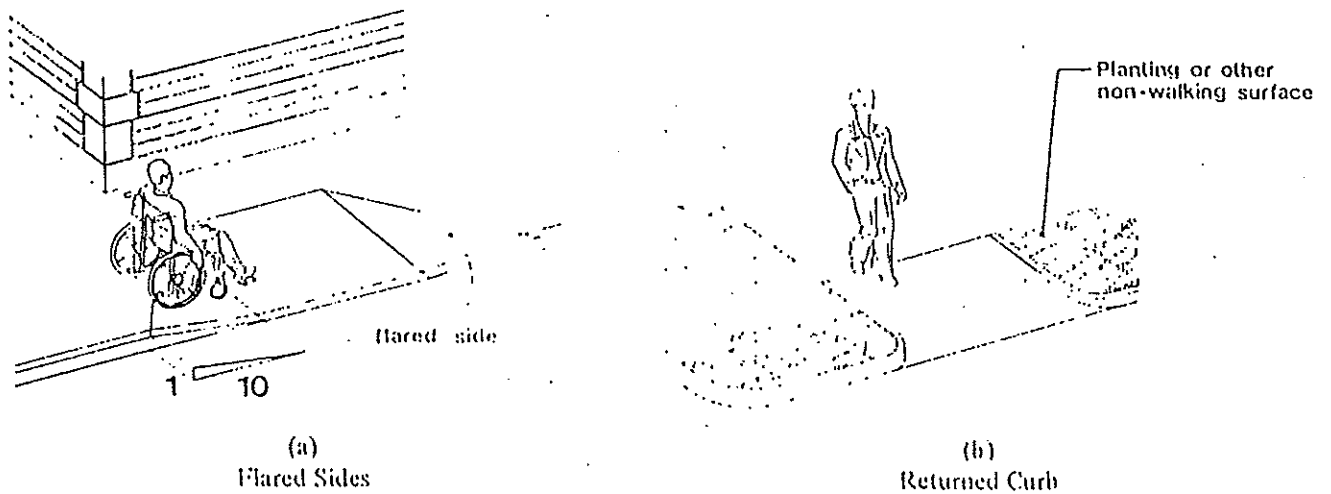


Fig. 12
Sides of Curb Ramps

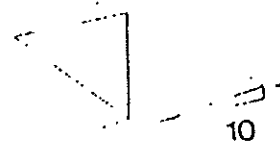


Fig. 13
Built-Up Curb Ramp

with 4.8.2. The slope shall be measured as shown in Fig. 11.

4.7.3 Width. The minimum width of a curb ramp shall be 36 in (915 mm), exclusive of flared sides.

4.7.4 Surface. Surfaces of curb ramps shall comply with 4.5.

4.7.5 Sides of Curb Ramps. If a curb ramp is located where pedestrians must walk across the ramp,

then it shall have flared sides; the maximum slope of the flare shall be 1:10 (see Fig. 12(a)). Curb ramps with returned curbs may be used where pedestrians would not normally walk across the ramp (see Fig. 12(b)).

4.7.6 Built-Up Curb Ramps. Built-up curb ramps shall be located so that they do not project into vehicular traffic lanes (see Fig. 13).

4.7.7 Warning Textures. A curb ramp shall have a



Fig. 14
Warning Signals at Curb Ramps.

tactile warning texture complying with 4.29 and extending the full width and depth of the curb ramp, including any flares (see Fig. 14).

4.7.8 Obstructions. Curb ramps shall be located or protected to prevent their obstruction by parked vehicles.

4.7.9 Location at Marked Crossings. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides (see Fig. 15).

4.7.10 Diagonal Curb Ramps. If diagonal (or corner type) curb ramps have returned curbs or other well defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have 48-in (1220-mm) minimum clear space as shown in Fig. 15(c) and (d). If diagonal curb ramps are provided at marked crossings, the 48-in (1220-mm) clear space shall be within the markings (see Fig. 15(c) and (d)). If diagonal curb ramps have flared sides, they shall also have at least a 24-in (610-mm) long segment of straight curb located on each side of the curb ramp and within the marked crossing (see Fig. 15(c)).

4.7.11 Islands. Any raised islands in crossings shall be cut through level with the street or have curb ramps at both sides and a level area at least 48-in (1220-mm) long in the part of the island intersected by the crossings (see Fig. 15(a) and (b)).

4.7.12 Uncurbed Intersections. If there is no curb at the intersection of a walk and an adjoining street, parking lot, or busy driveway, then the walk shall have a tactile warning texture complying with 4.29.5 at the edge of the vehicular way.

4.8 Ramps

4.8.1* General. Any part of an accessible route with a slope greater than 1:20 shall be considered a ramp and shall comply with 4.8.

4.8.2* Slope and Rise. The least possible slope shall be used for any ramp. The maximum slope of a ramp in new construction shall be 1:12. The maximum rise for any ramp run shall be 30 in (760 mm) (see Fig. 16). Curb ramps and ramps to be constructed on existing sites or in existing buildings or facilities may have slopes and rises as shown in Table 2 if space limitations prohibit the use of a 1:12 slope or less.

4.8.3 Clear Width. The minimum clear width of a ramp shall be 36 in (915 mm).

4.8.4 Landings. Ramps shall have level landings at the bottom and top of each run. Landings shall have the following features:

- (1) The landing shall be at least as wide as the widest ramp run leading to it.
- (2) The landing length shall be a minimum of 60 in (1525 mm) clear.
- (3) If ramps change direction at landings, the minimum landing size shall be 60 in by 60 in (1525 mm by 1525 mm).
- (4) If a doorway is located at a landing, then the area in front of the doorway shall comply with 4.13.6.

4.8.5* Handrails. If a ramp run has a rise greater than 6 in (150 mm) or a horizontal projection greater than 72 in (1830 mm), then it shall have handrails on both sides. Handrails are not required on curb ramps. Handrails shall comply with 4.26.2 and shall have the following features:

- (1) Handrails shall be provided along both sides of ramp segments. The inside handrail on switchback or dogleg ramps shall always be continuous.
- (2) If handrails are not continuous, they shall extend at least 12 in (305 mm) beyond the top and bottom of the ramp segment and shall be parallel with the floor or ground surface.
- (3) The clear space between the handrail and the wall shall be 1-1/2 in (38 mm).

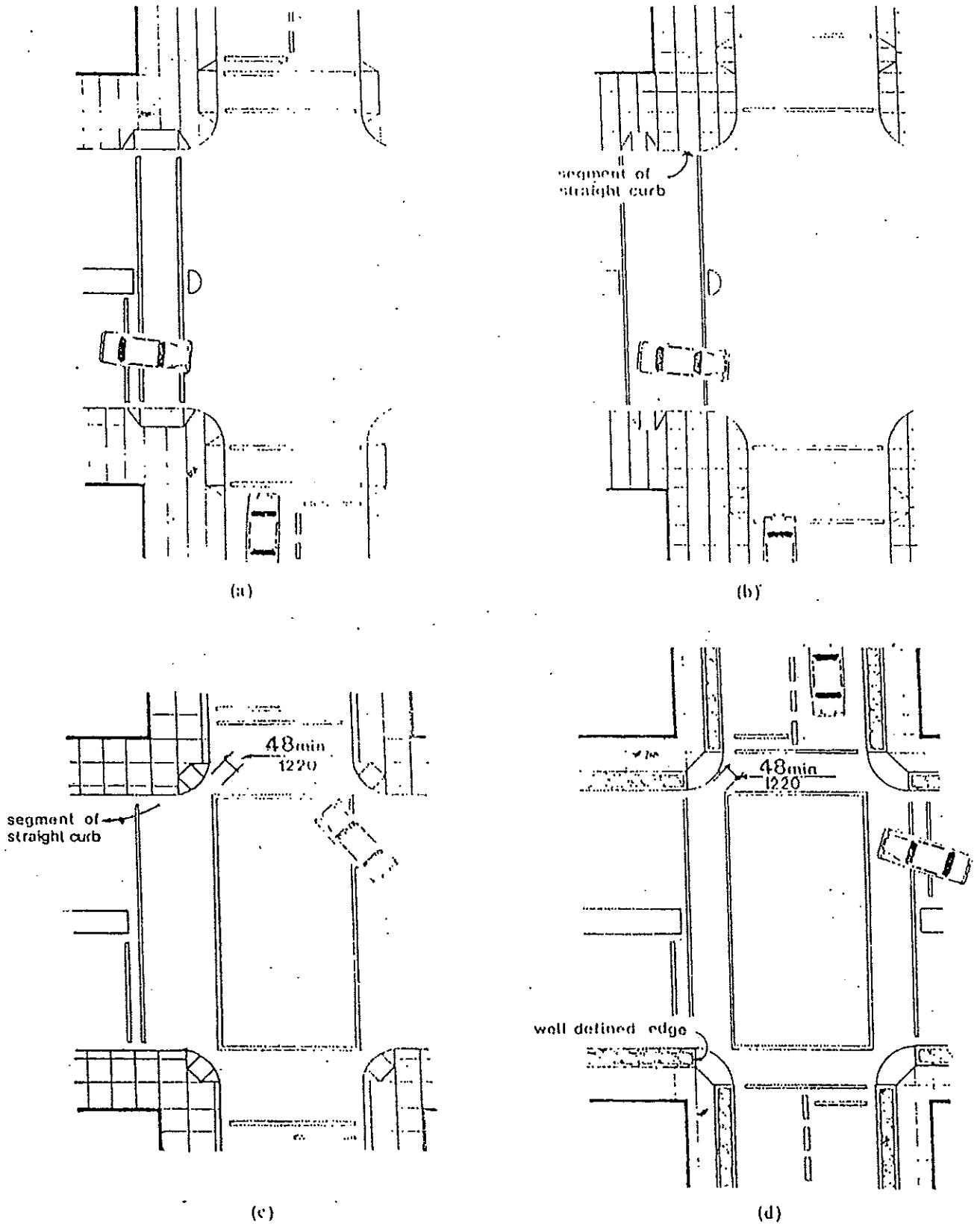
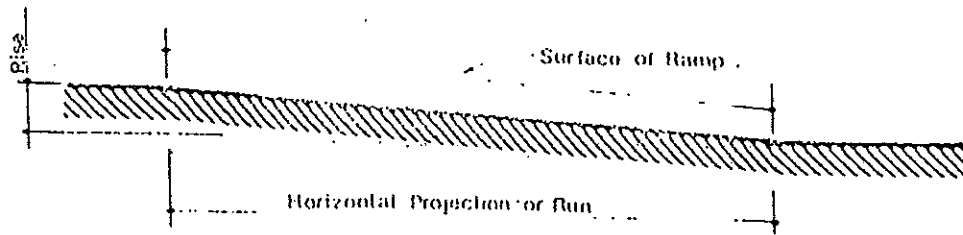


Fig. 15
Curb Ramps at Marked Crossings



Slope	Maximum Rise		Maximum Horizontal Projection	
	in	mm	ft	m
1:12	30	760	10	3
1:16	30	760	10	3
1:20	30	760	10	3

Fig. 16

Components of a Single Ramp Run and Sample Ramp Dimensions

Table 2
Allowable Ramp Dimensions for Construction in Existing Sites, Buildings, and Facilities

Slope*	Maximum Rise		Maximum Run	
	in	mm	ft	m
Steeper than 1:10 but no steeper than 1:8	3	75	2	0.6
Steeper than 1:12 but no steeper than 1:10	6	150	5	1.5

*A slope steeper than 1:8 not allowed.

(4) Gripping surfaces shall be continuous.

4.8.6 Cross Slope and Surfaces. The cross slope of ramp surfaces shall be no greater than 1:50. Ramp surfaces shall comply with 4.5.

4.8.7 Edge Protection. Ramps and landings with drop-offs shall have curbs, walls, railings, or projecting surfaces that prevent people from slipping off the ramp. Curbs shall be a minimum of 2-in (50-mm) high (see Fig. 17).

4.8.8 Outdoor Conditions. Outdoor ramps and their approaches shall be designed so that water will not accumulate on walking surfaces.

4.9 Stairs

4.9.1 Minimum Number. Stairs connecting levels not connected by an elevator shall comply with 4.9.

These specifications are not mandatory for stairs within dwelling units.

4.9.2 Treads and Risers. On any given flight of stairs, all steps shall have uniform riser heights and uniform tread widths. Stair treads shall be no less than 11-in (280-mm) wide, measured from riser to riser (see Fig. 18(a)).

4.9.3 Nosings. The undersides of nosings shall not be abrupt. The radius of curvature at the leading edge of the tread shall be no greater than 1/2 in (13 mm). Risers shall be sloped or the underside of the nosing shall have an angle not less than 60 degrees from the horizontal. Nosings shall project no more than 1-1/2 in (38 mm) (see Fig. 18).

4.9.4 Handrails. Stairways shall have handrails at both sides of all stairs. Handrails shall comply with 4.26 and shall have the following features:

(1) Handrails shall be continuous along both sides of stairs. The inside handrail on switchback or dogleg stairs shall always be continuous (see Fig. 19(a) and (b)).

(2) If handrails are not continuous, they shall extend at least 12 in (305 mm) beyond the top riser and at least 12 in (305 mm) plus the width of one tread beyond the bottom riser. At the top, the extension shall be parallel with the floor or ground surface. At the bottom, the handrail shall continue to slope for a distance of the width of one tread from the bottom riser; the remainder of the extension shall be horizontal (see Fig. 19(c) and (d)). Handrail extensions shall comply with 4.4.

DRIVEWAY CONSTRUCTION REQUIREMENTS

1. DESCRIPTION. Business and Private Drive pavements shall be from the curb line of improved streets or from the edge of the roadway surface on unimproved streets to the property line. All paved drives shall be constructed as shown on the plans approved by the Board and in accordance with these specifications.
2. Business Drives shall have a maximum width of thirty (30) feet and where radii are to be constructed, the maximum finished opening shall be forty-two (42) feet. Private Drives shall have a maximum width of twenty (20) feet; and where radii are to be constructed, the maximum finished opening shall be thirty-two (32) feet.
3. No part of any Business Driveway shall be constructed nearer than fifty (50) feet to any intersecting street right-of-way line.
4. Sidewalk sections less than six (6) inches in depth existing within the construction limits of the driveway shall be removed and replaced at existing construction joints. No part of a section shall be permitted to remain.
5. Straight curbs which are to be removed shall be removed either at existing construction joints or properly sawed at the proposed new curb joint locations.
6. Combined curb and gutter sections which are to be removed shall be removed either at existing construction joints or properly sawed to a minimum width of eighteen (18) inches measured from the face of the curb toward the center line of the street.
7. Asphaltic Concrete Curbing, Gutter, or Sidewalk shall not be constructed where cement concrete curbing, gutter, or sidewalk is to be removed.
8. Either a four (4) foot minimum radius or a "Drop Curb" shall be used at the curb opening and neither shall be permitted to extend beyond the adjacent property line extension.
9. A gutter line consisting of a 1 5/8 inch lip shall be constructed across the entire driveway opening.
10. If "Drop Curbs" are to be constructed, the vertical drop shall be rolled down to the gutter line lip in a horizontal distance of eighteen (18) inches.
11. If curb radii are to be constructed, the curb height shall be completely diminished at the driveway throat.
12. SIDEWALK BETWEEN BUSINESS DRIVES-SAFETY ISLANDS. When two or more Business Drives are constructed adjacent to each other, there shall be not less than eight (8) feet of sidewalk between the drives creating a safety island. The radii of curb returns at such safety islands shall be not less than four (4) feet. The curb exposure shall be not less than five (5) inches.

13. If no curb or gutter exists at the edge of the roadway surface either a metal culvert pipe or a swale must be placed in the existing or proposed roadway drainage swale. The size and grade of the culvert or swale shall be determined by the City Engineer. If the existing roadway consists of an "inverted crown", the design of which is approved by the City Engineer, then no culvert or swale shall be required across the driveway.
14. The terminus at the start of all new driveway openings shall be in accordance with the proposed street surface widths as directed by the City Engineer. Business or Private Drives may require acceleration or deceleration lanes as determined by the City Engineer.