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SECTION 5 - DRIVEWAYS

5.1.0 GENERAL

This Section provides minimum and desirable design criteria, provisions and requirements for safe and convenient access to abutting private property along streets and highways. The intent is to assure that access is provided to abutting private property with a minimum of interference with the free and safe movement of vehicular and pedestrian traffic and to prevent traffic congestion arising from vehicular entry to or exit from abutting private property. The right of the public to free and unhampered passage of the public streets shall be held paramount to other interests. Regulated limitation of access is necessary on arterials to enhance their primary function of mobility. Conversely, the primary function of local roads and streets is to provide access. Figure 5-1, in Section 5.4.0 of this Manual reflects the relationship of street classifications with access and mobility.

5.2.0 TYPES OF DRIVEWAYS

There are three (3) basic types of driveways.

5.2.1 Type I

A concrete driveway approach designed and intended to serve as access from a roadway to a lot or parcel of land which is a location for a one (1) or two (2) family residence.

5.2.2 Type II

A concrete driveway approach designed and intended to serve as access from a roadway to a lot or parcel of land used for any development or purpose other than one or two family residences.

5.2.3 Type III

A temporary asphalt driveway approach intended to provide vehicular access to a lot or parcel of land, such access being from a roadway not yet constructed to permanent lines and grades or a roadway not having curb and gutter. Driveways shall be reconstructed under Type I or Type II standards within sixty (60) days after construction of the abutting street to permanent line and grade with concrete curb and gutter. See Figure 5-1, in Section 5.4.0 of this Manual. Type III driveways serving one or two-family residences shall be designed in accordance with the criteria in Table 5-1. Type III driveways serving other land uses shall be designed in accordance with the criteria in Table 5-2. Tables 5-1 and 5-2 specify design criteria for the various types of driveways.

5.3.0 DESIGN CRITERIA

5.3.1 General

A. If a curb inlet is present there shall be ten (10) feet between the inlet opening and the edge of a driveway curb return.

B. Access to alleys requires approval by the Director of the Transportation Services Department and the City Engineer. Access to and from unimproved alleys is not allowed.

C. The angle of driveway approach shall be approximately ninety (90) degrees for two (2) way driveways, forty-five (45) – ninety (90) degrees for one (1) way driveways.

D. Unless approved by the Director of the Transportation Services Department and the City Engineer, one-way driveways shall be prohibited on two-way undivided streets. In addition, one-way driveways are limited to developments where two-way access is unfeasible because of special design considerations, such as severe site constraints, the need for circular drop-offs or other circumstances where one-way circulation may be preferred to two-way access. Examples of such developments include public and private schools, day care uses, car wash facilities and existing developments or small sites where two-way circulation is impractical (see Figure 5-2, in Section 5.4.0 of this Manual for design criteria of semicircular drop-offs). Where one-way access is proposed, developments shall be designed to promote one-way, on-site circulation in support of the one-way drives. Circular drop-offs and one-way driveways shall be designed to prevent conflicts with traffic access, parking and on-site circulation. Priority, however, shall be directed towards reducing the number of driveway approaches along Principal Roadways and Arterial streets to limit conflict points and enhance traffic flows along such roadways. All one-way driveways separated by more than fifteen (15) feet (measured from edge to edge) must be signed for one-way operation.

E. Areas used as motor vehicle service stations or parking lots shall have a six (6) inch raised curb along the entire street frontage except at the driveway approaches and access sidewalks.

F. Where Type I driveways are not appropriate, head-in, back-out parking is generally prohibited on all streets and alleys. Such a condition requires the approval of the Director of the Transportation Services Department and the City Engineer. Other alternatives, however, should be encouraged when possible.

G. All driveways must be constructed within the street frontage of the subject property, as determined by extending the side property lines to the curb line. Neither the driveway nor the curb returns shall overlap adjacent property frontage without written approval from the adjacent property owner.

H. Common driveways may be approved provided that a permanent written access easement is obtained. The developer must include a plat note and provide dedication documents indicating that maintenance of the joint use driveway shall be the responsibility of the lot owners served by the joint use driveway. If more than three (3) residences are to be served by a single joint use driveway, the following requirements apply:

1. The developer must post fiscal surety for the construction of the joint use driveway prior to plat approval and must construct the driveway during the construction of the streets within the same subdivision, or within the term of the fiscal instrument if no public or private streets are to be constructed within the subdivision. The driveway construction shall be subject to City inspection and obtain City approval before fiscal will be released.

2. The developer must construct a driveway, designed by a Professional Engineer, to have an all-weather surface and a pavement structure meeting at least to private street standards. The driveway must be designed to have no more than nine (9) inches of water overtopping the driveway during the one-hundred year storm event as defined in the City of Round Rock Code of Ordinances, 1995 edition.

   The developer must construct a turnaround meeting City of Round Rock Fire Criteria at the end of the driveway, or no further than two hundred (200) feet from the end of the driveway.

3. The developer must obtain a written signature from the area fire service providers acknowledging their approval of the proposed joint use driveway.

4. The joint use access easement will be required to be dedicated as a public utility easement and may be required to be dedicated as a drainage easement, unless otherwise approved by the Director of the Transportation Services Department. In those cases where the joint use access easement is to be combined as a public utility and drainage easement, the access agreement for the driveway must include a clause indicating that the driveway may be used by public service personnel and equipment for servicing public utilities.

5. If the developer does not use a restrictive covenant to require homeowners to park all vehicles off the joint use driveway surface, then the joint use driveway surface must be at least twenty-four (24) feet wide. Otherwise, the driveway surface may be no less than twenty (20) feet wide.

6. The developer must erect signs indicating "private driveway" at the driveway entrance and include a plat note indicating that maintenance of the driveway will not be the responsibility of the City.

I. Driveways may not exceed seventy (70) percent of roadway frontage.

J. Type I driveways are to be located no closer to the corner of intersecting rights-of-way than sixty (60) percent of parcel frontage or fifty (50) feet, whichever is less. All other driveways are to be located no closer to the corner of intersecting rights-of-way than sixty (60) percent of parcel frontage or one hundred (100) feet; whichever is less. Also, driveways shall not be constructed within the curb return of a street intersection.

K. All Type II and III driveways on undivided arterial streets shall be designed to

align with opposing streets or driveways or be offset by a minimum of one hundred and twenty (120) feet (measured from edge to edge). All Type II and III driveways on undivided collector streets shall be designed to align with opposing streets or driveways or be offset by a minimum of eighty (80) feet (measured from edge to edge). All Type II and III driveways on divided streets shall be designed to align with median breaks or be offset by a minimum of one hundred (100) feet (measured from the nose of the median to the nearest edge of the driveway). Alignment of driveways with opposing streets is discouraged for signalized intersections unless approved by the Director of the Transportation Services Department and the City Engineer. When such a design is approved, the driveway approach may be constructed without an apron and the maximum driveway widths in Table 5-2 may be increased to match the cross-section of the opposing street.

L. Premises used as a motor or drive through bank or parking garage may have driveway approaches as approved by the Director of the Transportation Services Department and the City Engineer. Said approaches shall be utilized for drive-in facilities and shall not be utilized for angle or head-in parking.

M. It is desirable to minimize the number of driveways on an arterial street in order to reduce the number of conflict points and facilitate traffic flow. The dimension in Table 5-2 for spacing between driveways should be increased whenever possible so that the number of driveways can be reduced. It is recognized, however, that certain existing tracts may not be able to fully comply with these standards due to limited frontage or other constraints. When compliance with criteria stated in Table 5-2 is precluded due to the location of driveways on adjoining properties, attempts should be made to obtain alternative access where feasible, including joint access driveways, access easements to adjoining properties or access to intersecting streets.

N. The throat lengths in Table 5-2 may be reduced, if approved by the Director of the Transportation Services Department, after considering the following factors:

1. Physical constraints on the site, such as existing structures;
2. The impact upon on-site circulation;
3. Shallow lot depths or unusual lot configurations;
4. Existing or potential traffic movements which are unsafe or which have an adverse effect on traffic operations;
5. Traffic volumes and classification on the driveway and the intersecting street;
6. Alternatives to the proposed design;
7. Other information presented by the applicant; and
8. For existing sites, the extent of redevelopment proposed.

Throat lengths in excess of those shown in Table 5-2 may be required by the

Director of the Transportation Services Department, if justified by the findings of a TIA or queuing study.

O. Right-turn deceleration lanes should be considered on approach to driveways when criteria indicated in Figure 5-3, in Section 5.4.0 of this Manual, is used.

P. Driveway Grade Breaks.

The following has been adapted from the ITE report, Guidelines for Driveway Designs and Locations, latest edition. Figure 5-4, in Section 5.4.0 of this Manual reflects acceptable driveway profile intended to limit abrupt changes in grades. These standards should eliminate the need for extremely low speeds and provide adequate vehicle clearance. The value of G1 is limited by shoulder slope or by the presence of a sidewalk within the right-of-way, but should not exceed ten (10) percent. If this grade exceeds ten (10) percent, then the tangent length shall be a minimum of fifty (50) feet. The value of G2 for commercial and industrial driveways should be limited to six (6) percent and limited to ten (10) percent for multi-family driveways.

Where a driveway crosses or adjoins a sidewalk, walkway, or an accessible path of travel, as defined by the ADA, the driveway grade shall be a maximum of two (2) percent, over a minimum throat length of three (3) feet contiguous with the sidewalk, thereby effectively matching the cross slope of the sidewalk or accessible path of travel across the full width of the driveway.

Q. Channelized islands for limited movement driveways conforming to Figure 5-5, in Section 5.4.0 of this Manual may be utilized, provided that the applicant establishes a maintenance agreement with the City.

Where a sidewalk, walkway, or an accessible path of travel, as defined by the Americans With Disabilities Act of 1990, crosses a limited movement driveway island, a minimum four (4) foot wide sidewalk, across the island to provide a continuous, uninterrupted detectable warnings at the boundaries between the sidewalks and the driveways.

R. As provided in Chapter 11, Zoning, City of Round Rock Code of Ordinances, 1995 edition, existing driveways may be required to conform with the standards in this Manual, including driveway closing, sidewalk and curb construction where appropriate, as a condition of the approval of any application for zoning, rezoning, or site plan, approval.

S. Where divided driveways are proposed, on-site circulation must be designed to minimize driver confusion and reinforce the one-way traffic flow on either side of the driveway median.

5.3.2 Criteria for Various Types of Driveway

Tables 5-1 and 5-2 represent criteria for the various driveway classes.

TABLE 5-1
TYPE I DRIVEWAY CRITERIA

	Minimum	Desirable	Maximum
SINGLE FAMILY			
Width	12’	18’	30’
Curb Return Radius	5’	5’	10’
Throat Length[b]		Extended to property R.O.W. line-minimum	
Spacing Between Driveways[c]		Limited to one driveway per property (except where a circular driveway is approved, then the maximum is two)	
DUPLEXES AND TOWNHOMES[c]			
Width	15’	18’	25’
Throat Length[a]		(Extended to property R.O.W. line-minimum)	
Spacing Between Driveways	10’	-	-

[a] Distance from street to first conflict point.

[b] Semicircular driveways acceptable with minimum spacing between driveway entrance and exit of thirty-five (35) feet. (measured from inside edge to inside edge of driveway approach at the property line).

[c] When two (2) driveways are used (one (1) per unit/two (2) maximum), single family standards for width shall apply.

Source: City of Round Rock, Transportation Services Department.

TABLE 5-2
TYPE II COMMERCIAL DRIVEWAY CRITERIA

	Roadway Type									
Driveway Type	**Local Street, Local Collector**		**Major Collector**		**Major Collector (4-Lane w/Median)**		**MAD 4, MAD 6**		**MAD 8**	
	Min.	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**
ONE WAY										
Width	15[a]	20	15[a]	20	18[a]	25	18[a]	25[b]	18[a]	25[b]
Curb Return Radius	10	25	15	25[c]	15	30[c]	20	30[c]	20	30[c]
Throat Length[d]	–	–	20	–	20	–	40	–	50	–
Distance Between Entry and Exit Drive	50	–	50	–	50	–	75	–	75	–
Driveway Spacing [g]	100	–	150	–	150	–	200	–	400	–
TWO WAY UNDIVIDED										
Width	25	40	25	40	30	40	30	45	30	45
Curb Return Radius	10	25	15	25[c]	15	30[c]	20	30[c]	20	30[c]
Throat Length[d]	–	–	20	–	20	–	40	–	50	
Driveway Spacing [g]	100	–	150	–	150	–	200	–	400	–

TABLE 5-2 (continued)
TYPE II COMMERCIAL DRIVEWAY CRITERIA

TWO WAY DIVIDED										
Width (each side of median)[e]	20	24[f]	20	24[f]	20	24[f]	20	30[f]	20	30[f]
Curb Return Radius	15	25[c]	15	25[c]	15	25[c]	20	30[c]	20	30[c]
Throat Length[d]	20	–	20	–	20	–	40	–	50	–
Median Width[e]	4	15	4	15	4	15	4	15	4	15
Median Length	10	–	10	–	10	–	20	–	20	–
Driveway Spacing[f,g]	100	–	150	–	150	–	200	–	400	–

a Greater width may be required for Fire Department emergency access.

b Thirty (30) foot minimum width may be required on state highways.

c Radius may be increased to forty (40) feet at driveways serving large trucks.

d Distance from the edge of pavement to first conflict point.

e On state highways, state standards may vary from City standards.

f When a divided driveway is the fourth leg of an intersection, a thirty-six (36) foot width may be permitted to match the opposing street configuration

g Driveway spacing may be reduced as required due to pre-existing use or developmental conditions.

5.4.0 FIGURES

Figure 5-1 General Driveway Layouts

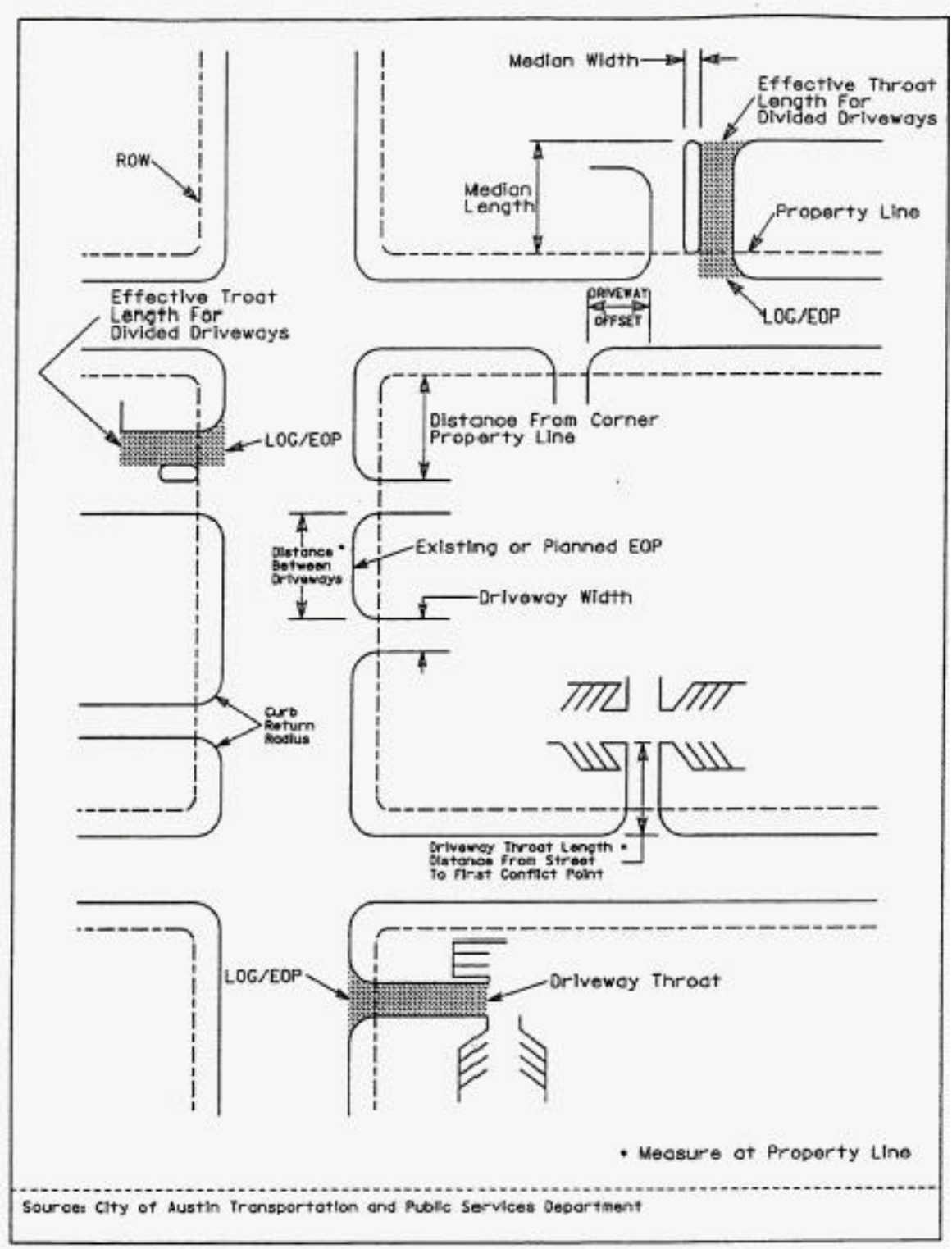


Figure 5-2 Design Criteria for Semicircular Drop-offs

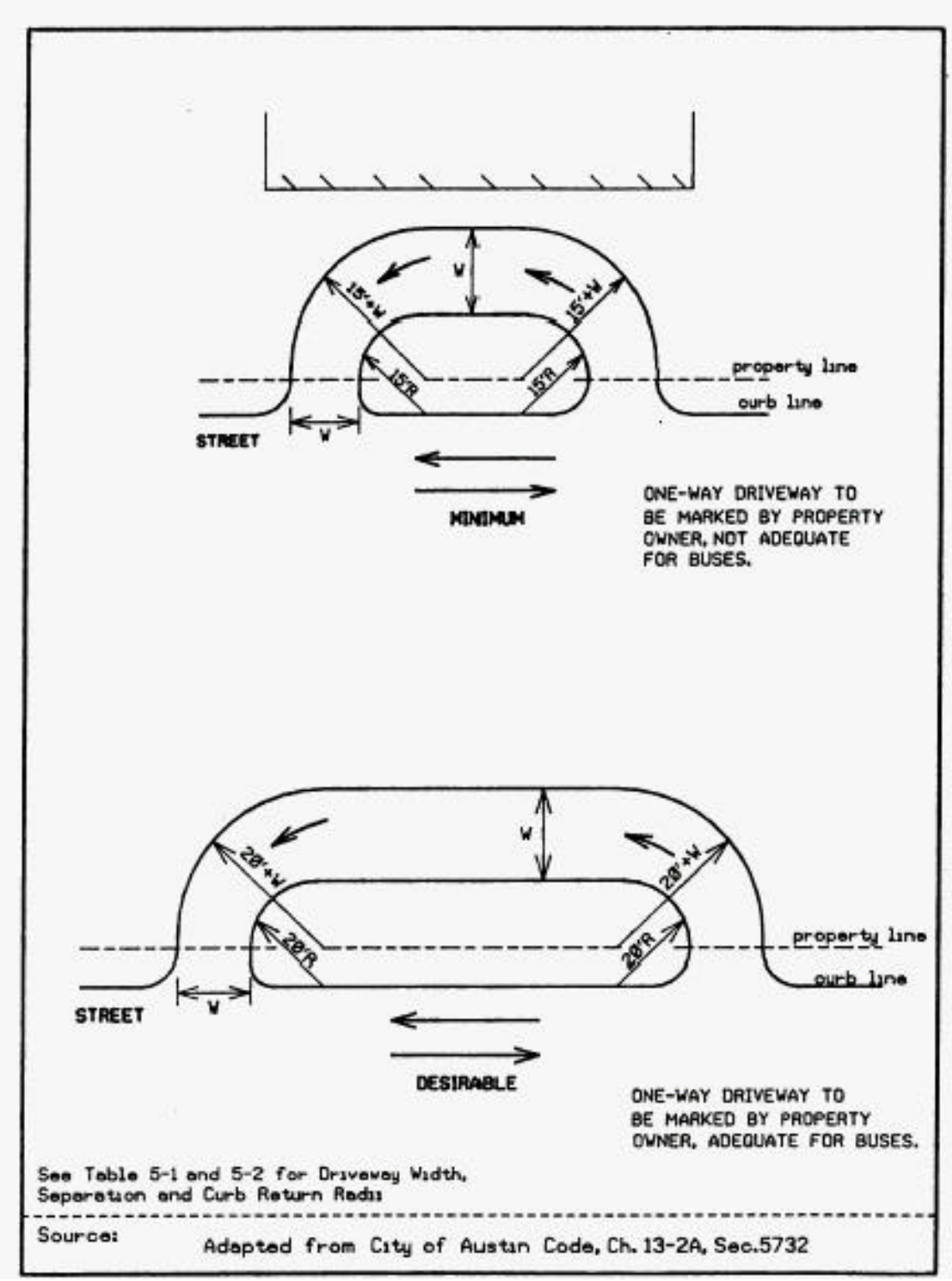


Figure 5-3 Volume Warrants for Right-Turn Deceleration Lanes

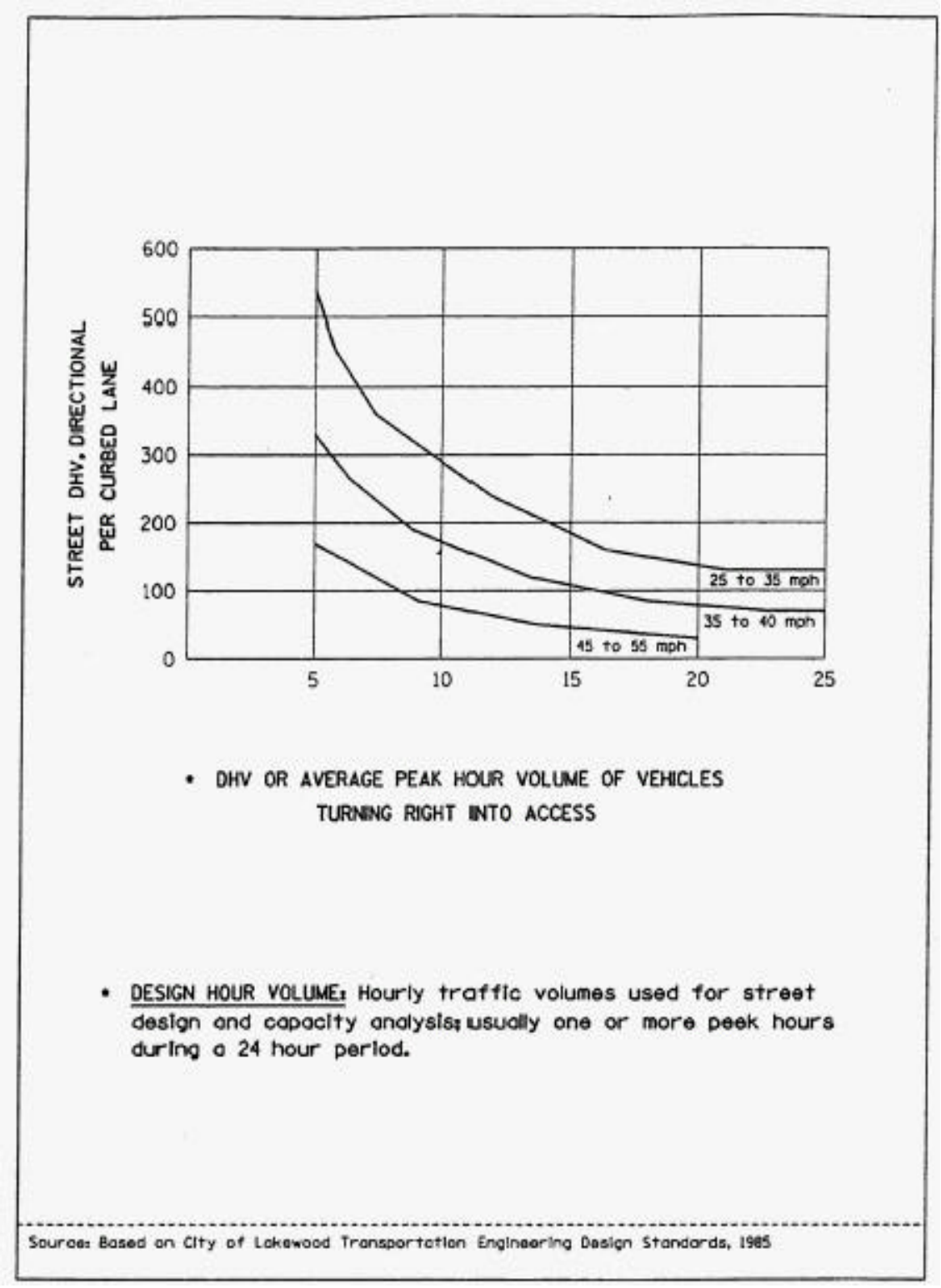
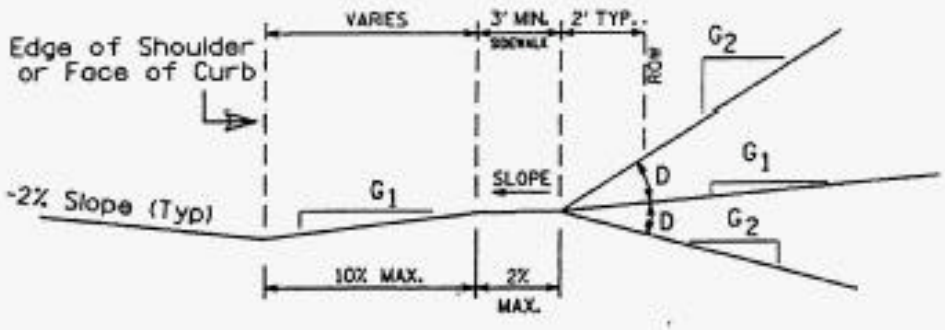


Figure 5-4 Driveway Profiles



DRIVEWAY VOLUME (ADT)	D = GRADE CHANGE STANDARD	MAXIMUM
>1500	0%	3%
500-1500	3%	6%
<500	6%	15%

NOTE: THE FIRE DEPARTMENT SHOULD BE CONSULTED WHEN A GRADE CHANGE OF GREATER THAN 6% IS PROPOSED.

Source: Based on ITE, Guidelines for Urban Major Street Design, 1983

Figure 5-5 Design Criteria for Limited Movements Driveways