Contents

SECTION 5 – DRIVEWAY DESIGN AND ACCESS MANAGEMENT

5.1 GENERAL

The design and location of driveways must balance the need for access to and from an abutting property with the safe, efficient flow of traffic on the adjoining street. This section provides both the design criteria for driveways and the access management policy for driveways that provide access from abutting property to streets and highways within the City of Round Rock.

The number, location, or spacing of driveways may be limited for arterial street classifications to ensure their primary function of mobility. Conversely, the primary function of local streets is to provide access, and therefore driveway spacing is less restrictive.

Site plans submitted to the City for review shall include dimensions, radii, and grades for all proposed driveways.

When a development is located adjacent to a public street, the parking facility must accommodate full internal vehicular circulation and storage. Vehicular circulation must be located completely within the property and vehicles within one portion of the development must have access to all other portions of the same development without using the adjacent street system.

Adequate storage areas must be provided for both inbound and outbound vehicles to facilitate the safe and efficient movement between the street and the development. Inbound vehicle storage areas must be of sufficient size to ensure that vehicles will not obstruct the adjacent street, sidewalk, or circulation within the facility. Outbound vehicle storage areas must be provided to eliminate backup and delay of vehicles within the development.

All site/civil and building plans shall meet the submittal requirements of the City of Round Rock Planning Department and Fire Department. The driveway and fire lane dimensions, percent grades, turning radii and design specifications, including load capacity, shall be clearly identified on the plans. The following criteria shall apply to the design of driveways and fire lanes:

- Thirteen and one-half feet (13’-6”) minimum vertical clearance;
- Existing and proposed traffic patterns of driveways, and/or proposed fire lanes identifying and labeling all physical barriers to vehicular access including, but not limited to, gates, bollards, landscaping and similar items. The driveway and fire lane must provide access to all aspects of the building within one hundred fifty feet (150’) of the fire lane;
- Fire lanes shall have a minimum unobstructed width of twenty feet (20’) for one way traffic, and twenty six feet (26’) for two-way traffic with twenty five feet (25’) inside turning radii and fifty feet (50’) outside turning radii;
- Dead-end fire lanes shall be a maximum length of one hundred fifty feet (150’);
- No grade breaks greater than seven percent (7%); and,
- Driveways and fire lanes shall have all-weather surface during and after construction.

Emergency access drives shall be at least twenty four feet (24’) in width.

These are the primary design criteria for driveway design. The Planning Department, Transportation Department, Fire Department or Transportation Director reserve the right to modify or add design criteria as necessary to enforce the applicable life and fire safety codes during plan review or construction inspection.

5.2 TYPES OF DRIVEWAYS

There are three types of driveways used in the City of Round Rock:

5.2.1 Type I:

A concrete driveway approach intended to provide vehicular access from a roadway to a lot or parcel of land which is a location for a one (1) or two (2) family residence. Refer to Table 5-1: Type I Driveway Criteria for further information.

5.2.2 Type II:

A concrete driveway approach intended to provide vehicular access from a roadway to a lot or parcel of land used for any development or purpose other than one or two family residences. Refer to Table 5-2: Type II Driveway Criteria for further information.

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. Typically, these driveways will be reconstructed as a Type I or Type II driveway as part of a project that reconstructs the abutting street to permanent line and grade with concrete curb and gutter.

Type III driveways serving one or two-family residences shall be designed using Type I criteria. Type III driveways serving other land uses shall be designed using Type II criteria.

5.3 DRIVEWAY DESIGN CRITERIA

Driveways constructed within public ROW shall conform to the following criteria:

A. If a curb inlet is present, the driveway shall be located such that the gutter depression is maintained and ten feet (10') of separation remains between the inlet opening and the driveway.

B. The angle of driveway approach shall be between 80 and 90 degrees for two-way driveways and 60 to 90 degrees for one-way driveways. Under special situations, a driveway angle as acute as 75 degrees will be permitted for two-way driveways.

C. On all streets and alleys where Type I driveways are not appropriate, head-in/back-out parking is generally prohibited. Such a condition requires the approval of the Transportation Director. Other alternatives, however, should be encouraged when possible.

D. All driveways must be constructed within the street frontage of the subject property, as determined by extending the side property lines perpendicular to the curb line. Neither the driveway nor the curb returns shall overlap adjacent property frontage.

E. Joint-use (common) driveways may be approved provided that a permanent, dedicated 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 three (3) or more 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 the fiscal surety will be released.

2. The developer must construct a driveway that is designed by a Professional Engineer to have an all-weather surface and a pavement structure meeting, at a minimum, the design standards of a private street as defined in the Code of Ordinances. The driveway must be designed to have no more than nine inches (9") of water overtopping the driveway during the one-hundred year storm event as defined in the City of Round Rock Design and Construction Standards Drainage Specifications and the Code of Ordinances, latest editions.

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

4. The developer must obtain, in writing, acknowledgement and approval from the area fire service providers regarding the proposed joint-use driveway.

5. 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 Transportation Director. 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.

6. 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.

7. The developer must erect signs, approved by the City of Round Rock, indicating "private driveway" at the driveway entrance and include a plat note stipulating that maintenance of the driveway will not be the responsibility of the City.

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

G. All Type II and III driveways on arterial streets shall be designed to align with opposing streets or driveways or be offset by a minimum of two hundred and fifty feet (250', measured from edge to edge).

All Type II and III driveways on collector streets shall be designed to align with opposing streets or driveways or be offset by a minimum of two hundred feet (200', measured from edge to edge).

Alignment of driveways with opposing streets is discouraged for signalized intersections unless approved by the Transportation Director. 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.

H. Driveway approaches constructed in public ROW for premises used as a drive-through bank or parking garage shall be as approved by the Transportation Director.

I. The throat lengths in Table 5-2 may be reduced, if approved by the Transportation Director, 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 Transportation Director, if justified by the findings of a city-approved TIA or queuing study.

Throat length shall be measured from the ROW line to the point of first conflict within the parking lot on the site.

J. Acceleration/deceleration lanes shall be provided along existing and proposed arterial streets when required by the findings of a city-approved TIA or per Section 1.13 of the Transportation Criteria Manual.

Additional ROW shall be dedicated by plat or separate instrument if required to accommodate acceleration/deceleration lanes or turning lanes.

For commercial and industrial sites, if it is determined that a right-turn deceleration lane is not warranted, a minimum of one driveway shall be designated as a truck delivery access drive and shall meet the minimum turning path for a WB-62 design vehicle, or another appropriate design vehicle as designated by the Transportation Director, without requiring maneuvering outside of the travel lane.

K. Driveway spacing shall conform to the dimensions shown in Tables 5-1 and 5-2. The minimum distance from a cross street to an adjacent driveway shall be fifty feet (50') for residential, one hundred feet (100') for local, two hundred feet (200') for collector and two hundred fifty feet (250') for arterial, measured from the curb line of the cross street to the edge of the nearest driveway, measured at the property line.

L. Site topography, design vehicle characteristics, traffic volume, and site circulation must be considered in the driveway design process. The maximum grade for driveways should be limited to ten percent (10%) for residential driveways and seven percent (7%) for commercial driveways.

The maximum change in grade should be limited to ten percent (10%) for residential driveways and seven percent (7%) for commercial driveways. If excessive grades or grade breaks are used, a tangent length between grade breaks shall be required in order to reduce the possibility of vehicle underbodies striking the pavement surface. Typically, a change in grade of three percent (3%) or less and a distance between grade changes of at least eleven feet (11') accommodates most vehicles.

Where a driveway crosses or adjoins a sidewalk, walkway, or an accessible path of travel, as defined by the ADA, the driveway grade shall not exceed two percent (2%), over a minimum throat length of three feet (3') 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.

Driveways adjacent to roadways without sidewalks shall meet these criteria such that an accessible route is provided across the driveway at such time that the sidewalk is constructed.

The City of Round Rock Fire Department shall be consulted when a grade change of greater than seven percent (7%) is proposed.

Driveways shall not include grade breaks which contain a high point that will cause vehicle or trailer 'high centering'.

Abrupt grade changes, which result in vehicles entering and exiting driveways at extremely slow speeds, shall be avoided.

Refer to Figure 5-2, Driveway Profiles, for further information.

M. Channelized islands for limited movement driveways may be utilized, provided that the applicant establishes a maintenance agreement with the City.

Where a sidewalk, walkway, or an accessible route, as defined by the Americans With Disabilities Act, crosses a limited movement driveway island, the sidewalk shall be a minimum of four feet (4') wide across the island and shall provide a continuous, uninterrupted detectable warning at the boundaries between the sidewalks and the driveways.

N. Driveway design and location shall provide safe sight distance for vehicles entering the roadway from the driveway in accordance with Section 1.

O. Existing driveways may be required to conform to the standards in this Manual, including driveway closing, or sidewalk and curb construction where appropriate, as a condition of the approval of any application for zoning, rezoning, or site plan approval.

P. The most common design vehicle for driveways is the Passenger Car (P) and the Single Unit Truck (SU), however if larger vehicles will use the driveway more frequently than four (4) per hour, the larger design vehicle shall be used.

5.4 CRITERIA FOR VARIOUS TYPES OF DRIVEWAYS

Table 5-1 and Table 5-2 summarize the design criteria for the various driveway classes.

TABLE 5-1:
TYPE I DRIVEWAY CRITERIA

	Minimum	Desirable	Maximum
SINGLE FAMILY			
Width[d]	12’	18’	25’
Curb Return Radius	5’	5’	10’
Throat Length[a]		Extended to property ROW line-minimum	
Spacing Between Driveways[b]		Limited to one driveway per property (except where a circular driveway is approved, then the maximum is two)	
Distance from Intersecting Street[e]		50’	
DUPLEXES AND TOWNHOMES[c]			
Width[d]	15’	18’	27’
Throat Length[a]		(Extended to property R.O.W. line-minimum)	
Spacing Between Driveways [b,c]	10’	-	-
Distance from Intersecting Street[e]		50’	

[a] Distance from street to first conflict point.

[b] Semicircular driveways acceptable with minimum spacing between driveway entrance and exit of thirty-five feet (35’). (measured from inside edge to inside edge of driveway approach at the property line). Minimum lot width for semicircular drives is one hundred feet (100’).

[c] When two (2) driveways are used (one (1) per unit; two (2) maximum), single family standards for width and curb return radius shall apply. Distances are measured edge to edge.

[d] Driveway width is the width of the paved surface exclusive of curb radii or wings.

[e] Distance from intersection measured edge to edge.

TABLE 5-2:
TYPE II COMMERCIAL DRIVEWAY CRITERIA

	Roadway Type					
Driveway Type	**Local Street**		**Collector**		**Arterial**	
	Min.	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**
ONE WAY						
Width	15'[a]	20'	15'[a]	20'	18'[a]	25'[b]
Curb Return Radius	10'	25'	15'	25'[c]	20'	30'[c]
Throat Length[d]	–	–	50'	–	50'	–
Distance Between Entry and Exit Drive	50'	–	50'	–	75'	–
Driveway Spacing[g]	100'	–	200'	–	250'	–
Distance from Intersecting Street[h]	100'	–	200'	–	250'	–
TWO WAY UNDIVIDED						
Width	25'	40'	25'	40'	30'	45'
Curb Return Radius	10'	25'	15'	25'[c]	20'	30'[c]
Throat Length[d]	–	–	50'	–	50'	–
Driveway Spacing[g]	100'	–	200'	–	250'	–
Distance from Intersecting Street[h]	100'	–	200'	–	250'	–

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

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

[c] Radius shall be increased to accommodate appropriate design vehicle using full driveway width. Use WB-62 vehicle unless otherwise approved by the Transportation Director.

[d] Distance from the ROW to first conflict point. Provide minimum stated herein unless another value is required by the findings of a City-approved TIA.

[e] Refer to TxDOT Standards for driveways constructed on TxDOT roadways.

[f] When a divided driveway is the fourth leg of an intersection, a thirty-six foot (36') 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, as approved by the Transportation Department.

[h] Distance from intersection measured edge to edge.

TABLE 5-2 (Continued):
TYPE II COMMERCIAL DRIVEWAY CRITERIA

	Roadway Type					
Driveway Type	**Local Street**		**Collector**		**Arterial**	
	Min.	**Max.**	**Min.**	**Max.**	**Min.**	**Max.**
TWO WAY DIVIDED						
Width (each side of median)[e]	20’	24’[f]	20’	24’[f]	20’	30’[f]
Curb Return Radius	15’	25’[c]	15’	25’[c]	20’	30’[c]
Throat Length[d]	50’	–	50’	–	50’	–
Median Width[e]	4’	15’	4’	15’	4’	15’
Median Length	10’	–	10’	–	20’	–
Driveway Spacing[f,g]	100’	–	200’	–	250’	–
Distance from Intersecting Street[h]	100’	–	200’	–	250’	–

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

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

[c] Radius shall be increased to accommodate appropriate design vehicle using full driveway width. Use WB-62 vehicle unless otherwise approved by the Transportation Director.

[d] Distance from the ROW to first conflict point. Provide minimum stated herein unless another value is required by the findings of a city-approved TIA.

[e] Refer to TxDOT standards for driveways constructed on TxDOT roadways.

[f] When a divided driveway is the fourth leg of an intersection, a thirty-six foot (36’) 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, as approved by the Transportation Department.

[h] Distance from intersection measured edge to edge.

5.5 DROP-OFF AND TURNAROUND DRIVEWAY TYPES

When a site plan proposes use of a drop-off or turn around type driveway for a commercial use such as drive-through bank, car wash, or school drop-off, the designer shall consider the vehicle queuing length and storage requirements so that the queue does not extend back onto the street impeding free flow of traffic. Depending on the nature of the project, the City may require a TIA or queuing analysis to ensure the site plan design provides adequate storage and internal circulation to mitigate traffic impacts. Refer to Figure 5-1 for further information.

5.6 ACCESS MANAGEMENT

5.6.1 Access Management for State Highways

Driveway design and location for State Highways within the City limits and extraterritorial jurisdiction is covered by current policy as described in the document: Access Management Manual for State Highways (see Bibliography). The City of Round Rock grants permits for driveways providing access to State Highways.

5.6.2 Access Management for City Streets

Single-family lots shall have only one driveway to one abutting roadway, except when a circular driveway is approved by the City.

Single-family, two-family and single-unit townhouse residences are permitted on local streets and local collector streets only. Residential driveways for double frontage lots and corner lots must be located on the lesser classification street. Driveways serving single-family, two-family or single-unit townhouse residences are not permitted on major collectors or arterial streets unless the Transportation Director determines no other access is possible.

Multi-unit townhouse, multi-family and nonresidential driveways are permitted on all streets; however, the driveways must have a minimum of two hundred foot (200') spacing between driveways on arterial streets and from the street centerline at an intersection.

Access to alleys requires approval by the Transportation Director. Access to and from unimproved alleys is not allowed.

Unless approved by the Transportation Director, 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. 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, on-site circulation and fire lanes. 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 feet (15', measured from inside edge to inside edge) must be signed for one-way operation.

Type I driveways are to be located no closer to the corner of intersecting rights-of-way than sixty percent (60%) of parcel frontage or fifty feet (50'), whichever is less. All other driveways are to be located no closer to the corner of intersecting rights-of-way than sixty percent (60%) of parcel frontage or one hundred feet (100') for a local road, two hundred

feet (200') for a collector and two hundred fifty feet (250') for an arterial; whichever is less. Also, driveways shall not be constructed within the curb return of a street intersection.

It is desirable to minimize the number of driveways on an arterial street 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.

Figure 5.1 Design Criteria for Semicircular Drop-offs

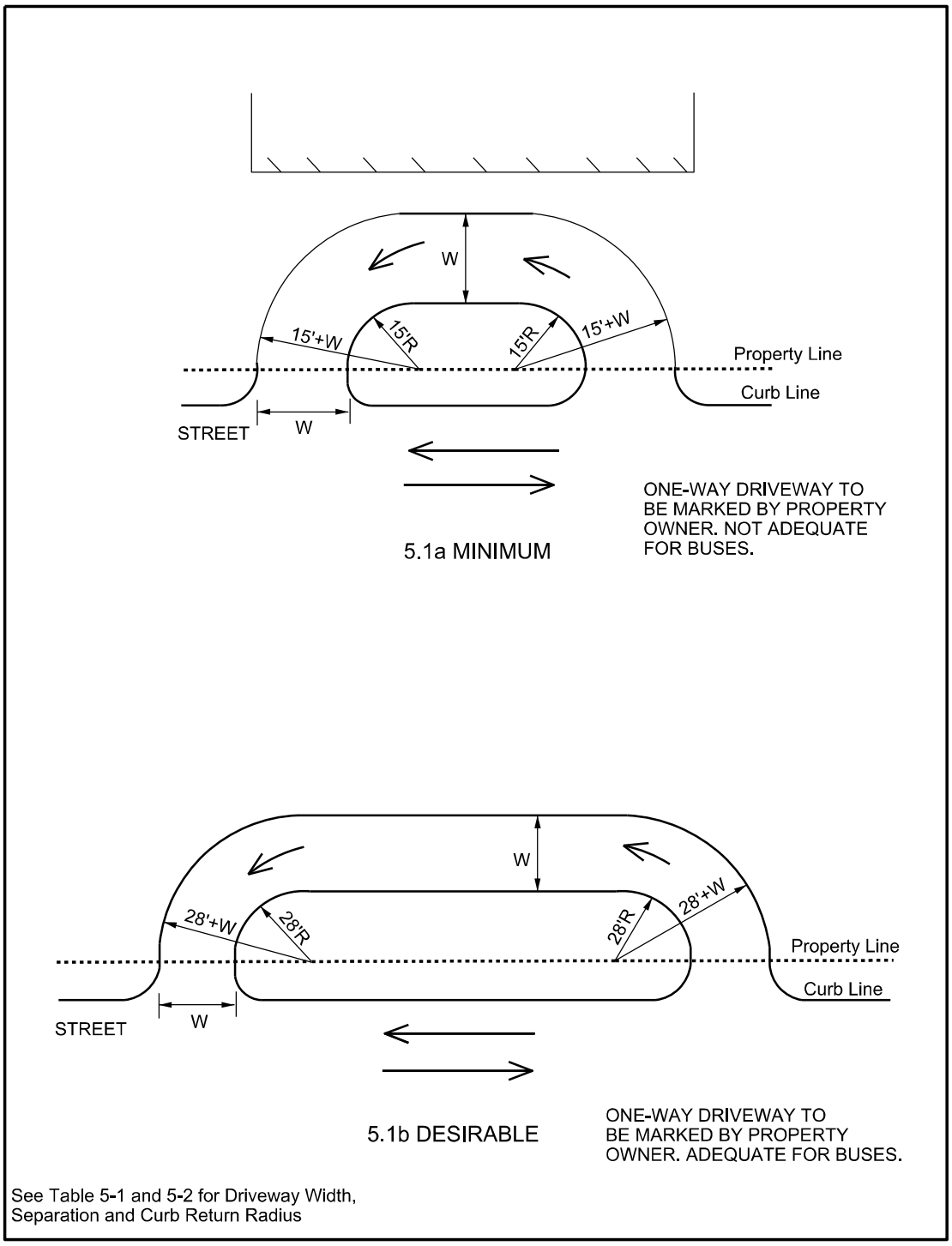
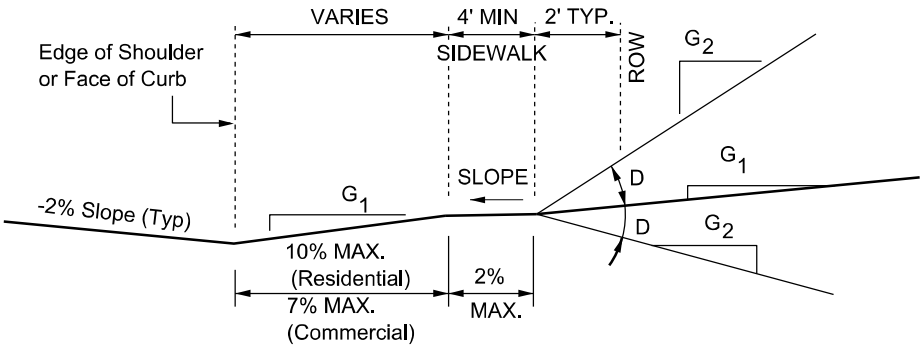


Figure 5-2 Driveway Profiles



DRIVEWAY VOLUME (ADT)	D = GRADE CHANGE	
	STANDARD	MAXIMUM
> 1500	0%	3%
500-1500	3%	7%
< 500	7%	15%

NOTE: THE FIRE DEPARTMENT SHOULD BE CONSULTED WHEN A GRADE CHANGE OF GREATER THAN 7% IS PROPOSED.