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## **MEMORANDUM**

**DATE:** December 11, 2006

**TO:** Anchorage Contractors, Builders, Designers, and Land Owners

**FROM:** Robert E. Kniefel, P.E., Municipal Traffic Engineer

**SUBJECT:** Municipal Driveway Standards

Pursuant to AMC Title 21.45.080.X.4.h the Traffic Engineer has the authority to set driveway standards. Many factors are weighed when dealing with driveway location and design. Residential driveways, for example, would have very different design criteria than a commercial or industrial driveway. The location and design of driveways is based upon many factors including:

- ▶ land use,
- ▶ location of individual property lines,
- ▶ available street frontage,
- ▶ on-street parking,
- ▶ requirements of internal site design,
- ▶ number of vehicles expected to use the driveway,
- ▶ vehicle volumes on the street,
- ▶ functional class of the roadway, and
- ▶ traffic safety.

The purpose of this standard is to detail the parameters to be used for the design of driveways within the Municipality of Anchorage Right of Way. The permittee should contact the Alaska Department of Transportation and Public Facilities (ADOT) for driveway permits on State of Alaska Right of Way. The ADOT has established driveway standards in *Chapter 1190 Preconstruction Manual*. (A copy can be found at <http://www.dot.state.ak.us/stwddes/dcspubs/manuals.shtml#>)

Driveway standards found in ADOT Preconstruction Manual Chapter 1190 are hereby adopted for the design of driveways within the Municipality of Anchorage. Following is a summary of some of the requirements as well as some minor additions/changes from the ADOT requirements including:

- ▶ curb return requirements (required under certain conditions),
- ▶ driveway widths (wider under certain conditions),
- ▶ driveway profiles (more restrictive grades),
- ▶ sight distance (more restrictive).

## 1. Functional Classification:

- 1.a. Highways, roads, and streets are classified according to their intended function as shown in the Municipality of Anchorage *Official Streets and Highways Plan* (OSHP). Functional classification is an important factor when considering driveway access on arterials, collectors, or local roads.
  - **Arterials** are primarily for moving large volumes of vehicles and goods along the roadway. For safety and efficiency, arterials should have few, if any, private driveways.
  - **Collectors** serve as a bridge between arterials and the local road system providing only limited access to abutting property.
  - **Local roads** are primarily to provide access to the public road system from the property adjacent to the roadway.
- 1.b. Driveways will not be allowed on arterials if other access is available.
- 1.c. If driveways directly accessing the arterials are necessary, then, due to concerns of safety and the need to move through traffic efficiently, their number, location, and design will be strictly controlled to minimize the effect on the movement of through traffic and goods.

## 2. Curb Cuts and Curb Returns:

- 2.a. **Driveways for single family up to 7-plex residential use** may provide curb returns or curb cuts. If curb returns are used, they will use the following radius:
  - Single Family and Duplex – 5'
  - Triplex through 7-plex – 15'
- 2.b. **Driveways for commercial structures (including 8-plex and greater)** shall provide curb return driveways as follows:
  - Low volume residential/commercial developments – 5' up to 15' curb returns.
  - Large volume commercial developments – 15' curb returns (Large-truck traffic may require larger radii to accommodate truck base turning radius for largest vehicle required to use the driveway.)

## 3. Driveway Widths (up to 7-plex):

- 3.a. 14' – 20' maximum curb cuts
- 3.b. 21' – 28' widths are allowed if:
  - The driveway width is less than  $\frac{2}{5}$  of the lot frontage, and snow storage is available within the right-of-way (in the direction of anticipated snow removal) and is equal to the driveway width.
  - The availability of snow storage area can be determined in one of two ways:
    - 3.b..1. Snow storage equal or greater than the driveway width is available in the right-of-way associated with the property; or
    - 3.b..2. Snow storage equal to or greater than the driveway width is available beyond the driveway within the right-of-way associated with the adjacent property, excluding driveways, mailboxes or other permitted uses within the right-of-way.

- 3.b..3. These two determinations can only be applied when the driveway of the adjacent property (in the direction of anticipated snow removal) has been permitted and constructed.

#### 4. Driveway Widths – Rural farm:

- 4.a. 14' – 24' maximum width.

#### 5. Driveway Widths – Commercial/Residential (8-plexes or greater):

- 5.a. 24' – 34' maximum width.

#### 6. Driveway Angle:

- 6.a. The driveway angle should be 90 degrees, and should not be less than 60 degrees except where designed as a one-way right-turn in only.

#### 7. Driveway Profile:

- 7.a. **Residential** – Maximum grade of  $\pm 10\%$ .
- 7.b. **Commercial** – Maximum grade of  $\pm 8\%$ .
  - Algebraic difference of  $\leq 6\%$  - transition curve is optional.
  - Algebraic difference of  $> 6\%$  - transition curve is required.

#### 8. Landing Grades:

- 8.a. **Residential** – for passenger cars a minimum 12 foot long landing area where the driveway intersects with the roadway must be provided with a  $\pm 2\%$  maximum grade.
  - Where hillside lots exceed the maximum grade of  $\pm 10\%$ , the required parking spaces will be provided adjacent to the  $\pm 2\%$  landing grade.
- 8.b. **Commercial** – Provide a 20 foot long landing area of  $\pm 2\%$  maximum grade where the driveway intersects with the roadway. For semi-tractors or trailers, provide a 30 foot long landing area of  $\pm 2\%$  maximum grade where the driveway intersects with the roadway.

#### 9. Number of Driveways:

- 9.a. Frontages of 50 feet or less – 1 driveway
- 9.b. Frontages of 50 feet to 1000 feet – 2 driveways (refer to *Distances Between Driveways*)
- 9.c. Frontages over 1000 feet – 2+ driveways (refer to *Distances Between Driveways*)

#### 10. Distance Between Driveways:

- 10.a. The minimum distance between two adjacent driveways, on the same parcel, measured along the right-of-way line between the adjacent edges of the driveways, should conform to the following table (Trip rates are found in the Institute of Transportation Engineers – *Trip Generation Manual*, latest edition):

<b>Hourly Volume &gt; 10 vph</b>			
<b>Speed (mph)</b>	<b>Rural Arterial and Collector Roads (feet)</b>	<b>Urban Arterial and Collector Roads (feet)</b>	<b>Urban and Rural Local Streets and Roads (feet)</b>
25	350	150	150
30	370	200	200
35	400	260	250
40	440	340	310
45	540	430	390
50	690	510	490
<b>Hourly Volume ≤ 10 vph</b>			
<b>Functional Classification</b>		<b>Distance (feet)</b>	
Arterial Roadways		75	
Collector Roadways		50	
Local Roadways		35	

**11. Corner Clearance:**

11.a. The minimum distance from the nearest face of curb, or nearest edge of traveled way for uncurbed roadways, of an intersecting public roadway to the nearest edge of driveway should conform to the following table:

<b>Hourly Volume &gt; 10 vph</b>			
<b>Speed (mph)</b>	<b>Major Generator &gt;250 vph (feet)</b>	<b>Medium Generator 100-250 vph (feet)</b>	<b>Small Generator &lt;100 vph (feet)</b>
25	150	120	60
30	200	150	80
35	260	210	110
40	330	260	150
45	390	310	180
50	460	340	230
<b>Hourly Volume ≤ 10 vph</b>			
<b>Functional Classification</b>	<b>Curbed Crossroad (feet)</b>	<b>Uncurbed Crossroad</b>	
		<b>Urban (feet)</b>	<b>Rural (feet)</b>
Arterial Roadways	60	70	100
Collector roadways	50	60	60
Local Roadways	40	50	60

## 12. Sight Distance:

- 12.a. Figure 1 illustrates the unobstructed sight distance along the public roadway which must be provided at all streets, driveways, or allies for motorist entering the roadway.
- Please note, Mugo Pine, or other landscaping plant that requires aggressive maintenance, cannot be placed where it will obstruct sight distance.
- 12.b. **Definition:** The term “sight distance triangle” refers to the roadway area visible to the driver. The required length is the distance necessary to allow **safe vehicular egress from a street, driveway, or alley to a major street.**
- 12.c. **Criteria:** The sight triangle is shown in Figure 1 and described as follows:
- Point A is located on the minor approach 14.5 feet back from the edge of the major road travelway with no sidewalk, or 12 feet from edge of back of sidewalk;
  - Point B<sub>1</sub> is located in the center of lane 1;
  - Point B<sub>2</sub> is located in the center of lane 2;
  - Point C<sub>1</sub> and C<sub>2</sub> are located based on design speed of the major road and is the distance shown in Table 1;
  - Point A is connected to Points C<sub>1</sub> and C<sub>2</sub> by a straight line.

Figure 1

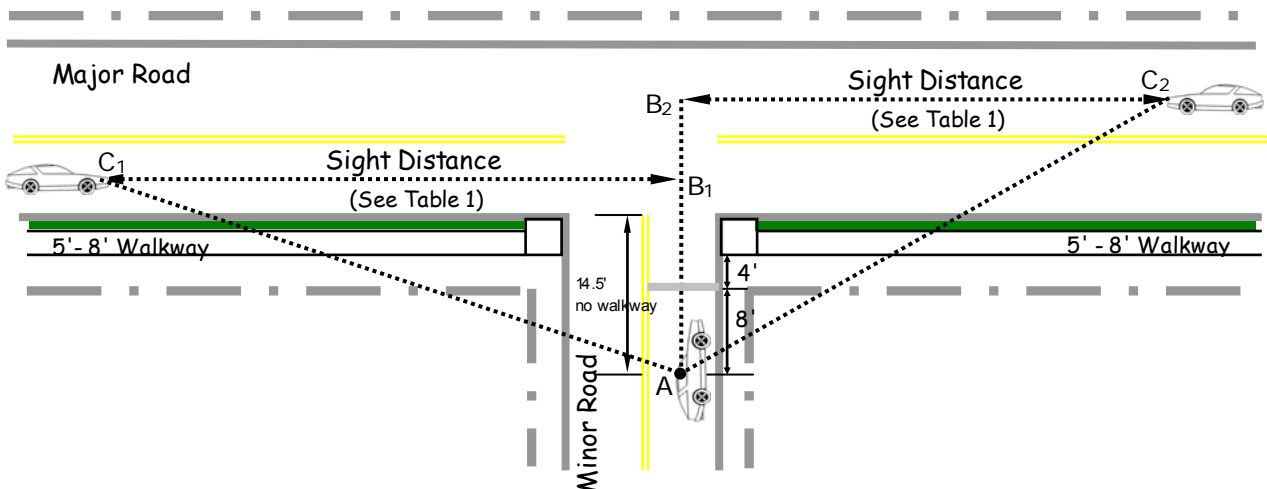
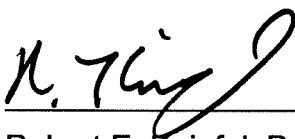


Table 1

Posted Speed (mph)	Sight Distance (feet)
65	720
60	665
55	610
50	555
45	500
40	445
35	390
30	335
25	280
20	225

- 12.d. **Note:** Sight distance is measured from height of eye of 3.5 feet on minor road and height of object of 3.5 feet on the major road. Trees in the sight triangle are acceptable if trunk is less than 4 inches in diameter at maturity and branches are trimmed within 2.5 feet to 8 feet per AASHTO – *A Policy on the Geometric Design of Highways and Streets, 2004* (or latest edition).
- 12.e. **Note:** Sight distance shown is for a stopped passenger car to turn left onto a two-lane roadway with no median and grades of 3% or less. For other conditions and vehicle types (trucks), the time gap must be adjusted and required sight distance recalculated per AASHTO – *A Policy on the Geometric Design of Highways and Streets, 2004* (or latest edition).



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