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ATTACHMENT B

2.03 RESIDENTIAL ACCESS STREETS [II] Serving Single-Family Dev., see Drawings No. 1-001 through 1-006. For Multiple-Dwelling Dev., see Sec. 2.04, Commercial Access Streets.

| CLASSIFICATION   | LOCAL ACCESS STREETS   |   |   |   | MINOR ACCESS STREETS (RESIDENTIAL) |
|--|--|---|---|---|------------------------------------|
|  | NEIGHBORHOOD COLLECTORS  | SUBCOLLECTORS   | SUBACCESS STREETS   | STREETS (RESIDENTIAL)   |                                    |
| FUNCTION   | Streets connecting two or more neighborhoods and typically connecting to arterials or other neighborhood collectors. | Streets providing circulation within neighborhoods typically connecting to neighborhood collectors. | Permanent cul-de-sacs, or short loops [2], connecting to subcollectors and not supportive of through traffic. | Permanent cul-de-sacs or loops [2], with low traffic, providing circulation and access to off-street parking within residential development boundaries. |                                    |
| Public or Private  | Public streets   | Public streets  | Typically public streets  | Public or private streets.  |                                    |
| Access   | Restricted, Lots front on Local Access street where feasible.  | As needed with some restrictions.   | As needed with only minimal restrictions.   | As needed with only minimal restrictions.   |                                    |
| <b>Land Use Area</b>                                     | <b>Rural</b>   | <b>Urban</b>  | <b>Rural</b>  | <b>Urban</b>  | <b>Rural</b>                       |
| Serving Potential Number of Single-Family Dwelling Units | Over 100 [3]   | Over 100 [3]  | 100 Max.  | 100 Max. [4]  | 16 Max.                            |
| <b>CRITERIA</b>  | <b>Rural</b>   | <b>Urban</b>  | <b>Rural</b>  | <b>Urban</b>  | <b>Urban</b>                       |
| A. Typical Road Type                                     | Shoulder   | Curb  | Shoulder  | Curb  | Shoulder                           |
| B. Design Speed [5] (MPH)                                | 35   | 35  | 30  | 30  | Low Speed Curve See Sec. 2.10      |
| C. Max. Superelevation (Ft./Ft.)                         | 0.06   | See Sec. 2.05B  | 0.06  | See Sec. 2.05B  | Low Speed Curve See Sec. 2.10      |
| D. Horizontal Curvature Min. Radius (Ft.)                | See Table 2.1  | See Table 2.2   | See Table 2.1   | See Table 2.2   | Low Speed Curve See Sec. 2.10      |
| E. Max. Grade [6]  | 11   | 12  | 12  | 15  | 15                                 |
| F. Standard Stopping Sight Distance (Ft.) [7]            | See Table 2.1  | See Table 2.2   | See Table 2.1   | See Table 2.2   | 150 ft.                            |
| G. Standard Entering Sight Distance (Ft.) [8]            | See Table 2.1  | See Table 2.2   |   |   |                                    |
| H. Min. Pavement Width (Ft.)                             | 22   | 32[9]   | 22  | 20  | 20[10]                             |
| I. Min. Roadway Width (Ft.) [11]                         | 38   | 32[9]   | 38  | 28  | 28 [10]                            |
| J. Min. Right-of-Way Width (Ft.)                         | 60   | 56  | 60  | 48 [12]   | 48 [12]                            |
| K. Type of Curb or Shoulder and Ditch [11]               | 8' Shoulder & Ditch [13]   | Vertical Curb & Gutter  | 8' Shoulder & Ditch [13]  | Vertical or Rolled Curb & Gutter  | 4' Shoulder & Ditch [13]           |
| L. Min. Half St. Paved Width (Ft.)                       | 20   | 20  | 20  | 20  | 20                                 |
| M. Min. One-Way Paved Width (Ft.)                        | 20   | 20  | 20  | 20  | 20                                 |

**NOTES:**

- 1 - Within the above parameters, geometric design for specific streets shall be consistent with AASHTO Policy on Geometric Design of Highways and Streets.
- 2 - See Section 2.15 for one-way loops.
- 3 - See Section 2.20 for residential access connection requirements.
- 4 - See Section 2.21 for urban exception criteria.
- 5 - Design speed is a basis for determining geometric elements and does not imply posted or legally permissible speed. Curves shall be designed within parameters of B, C and D above. (See Section 2.05)
- 6 - Maximum grade may be exceeded for short distances. (See Section 2.11)
- 7 - Standard Stopping Sight Distance (SSD) shall apply unless otherwise approved by the Engineer. (See Section 2.12)
- 8 - Standard Entering Sight Distance (ESD) shall apply at intersections and driveways on neighborhood collectors unless otherwise approved by the Engineer (See Section 2.13)
- 9 - Neighborhood collectors intersecting with arterials shall be 36 feet wide for the first 150 feet. See Section 4.05 for tapers.
- 10 - Exception to paving requirement on minor access shoulder type streets: (See Section 2.17)
- 11 - For guardrail installation, shoulders shall be two feet wider.
- 12 - Right-of-way (or easement) may be reduced to minimum roadway width, plus sidewalks, provided that all potential serving utilities and necessary drainage are otherwise accommodated on permanent easements within the development. (See Section 2.19)
- 13 - As alternative to shoulder and ditch, underground pipe drainage with either Thickened Edge, Dwg. 1-005 or Extruded Curb, Dwg. 1-006 is acceptable.

2.19 Slope, Wall, & Drainage Easements and Right-of-Way Reduction

A. Easements

Either the functional classification or particular design features of a road may necessitate slope, sight distance, wall or drainage easements beyond the right-of-way line. Such easements may be required by the Engineer or Reviewing Agency in conjunction with dedication or acquisition of right-of-way.

B. Right-of-way reduction on subcollectors, local access (residential) and minor access (commercial)

In proposed developments served by underground utilities within easements, the right-of-way may be reduced, as allowed in Sections 2.03 and 2.04, with the approval of the Reviewing Agency. Where it is desired to reduce right-of-way to a minimum width, the right-of-way, plus easement, shall allow for construction and maintenance of the following as appropriate, sidewalks, planter strips, drainage facilities, sign placement, and also allow sidewalk widening around mailbox locations. On subcollectors, installation of fixed objects, other than required above ground utility structures and landscaping contained in planter strips, greater than four inches in diameter within four feet of back of sidewalk shall not be permitted.

2.20 Access and Circulation Requirements

In order to provide a second access to a residential subdivision, short subdivision, binding site plan or planned unit development, no residential street shall serve more than 100 lots or dwelling units unless the street is connected in at least two locations with another street that functions at a level consistent with Sections 2.02 and 2.03.

A. The second access requirement may be satisfied through use of connecting a new street to an existing street in an adjacent neighborhood if:

1. No other practical alternative exists, or
2. Existing street was previously stubbed indicating intent for future access, or
3. An easement has been recorded specifically for said purpose.

The second access requirement may not be satisfied through use of an existing roadway network in the existing adjacent neighborhood if:

1. A more practical alternative exists, or
2. Existing streets do not meet Section 2.03

These provisions are not intended to preclude the state statute on land-locking.

B. This section does not preclude a commercial project from gaining access through a residential development. Traffic impacts for such projects will be analyzed during the SEPA process.

2.21 Exception for Maximum Dwelling Units on Urban Subcollectors

Proposed subcollectors serving new urban area developments with an average density of seven to eight dwelling units per acre and which meet the access requirements of Section 2.20 may serve up to 250 single-family dwelling units, if approved by the Reviewing Agency. Prior to approval, the Reviewing Agency may require a traffic circulation study showing a balanced traffic flow of less than 1500 vehicles per day past any access point. Street trees shall be mandatory along subcollectors serving higher densities of seven to eight dwelling units per acre and shall be in conformance with Section 5.03.

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requirement will be based on traffic engineering analysis submitted by the applicant that considers, among other factors, intersection spacing, sight distance and traffic volumes.

F. Notwithstanding any other provisions, driveways will not be allowed where they are prohibited by separate County Council action or where they are determined by the Engineer or Reviewing Agency to create a hazard or impede the operation of traffic on the roadway.

3.02 Concrete Sidewalks

A. Shall be required on urban category, curb and gutter type streets as follows:

1. On all arterials, neighborhood collectors, subcollectors, multiple-dwelling and business access streets, both sides.
2. On subaccess streets and industrial access streets, one side.
3. On minor access streets (commercial), both sides unless alternative routes are provided for pedestrians.
4. On minor access streets (residential) exceeding 150 feet and on any cul-de-sacs with off-street walkways extending from their termini to other streets, parks, schools, bus stops, or other pedestrian traffic generators, one side. On cul-de-sacs, sidewalks shall extend around bulb to intersect off-street walkway. Other extended off-street walkways may be required by the Reviewing Agency to provide direct connections for ease and safety of pedestrians.

B. Shall be constructed:

1. Next to the curb unless planting strips are part of the design and are approved by the Engineer as part of a landscaping plan.
2. Back of planting strips where planting strips are to be constructed.
3. At least five feet wide on residential and commercial access streets. This means five feet clear of mailboxes or other obstructions, except where approved as a variance. Width shall be minimum six and one-half feet on arterials if curb is next to traveled lane (but not necessary next to designated parking or bike lanes). The additional width, one and one-half feet or more, may be finished to match the sidewalk or may be finished with contrasting texture, asphalt concrete, brick, or paving blocks as approved by the Reviewing Agency or Engineer.
4. At least eight feet wide:
  - a. In business/commercial districts where most of the store frontage is within 80 feet of the street right-of-way.

- b. Within the curb radius returns of all arterial intersections where curb ramps are required.
  - c. Within designated bus zones to provide a landing area for wheel chair access to transit services.
5. With specified width greater than eight feet where Engineer or Reviewing Agency determines this is warranted by expected pedestrian traffic volume.
  6. With portland cement concrete surfacing as provided in Sections 3.03 and 4.01. See specifications for joints in Section 3.04 and Drawing No. 3-001.

### 3.03 Curbs, Gutters and Sidewalks

- A. Subgrade compaction for curbs, gutters, and sidewalks shall meet a minimum 90 percent of maximum density.
- B. Concrete for curbs, gutters, and sidewalks shall be Class 3000, furnished and placed in accordance with WSDOT/APWA Standard Specifications, Sections 6-02, 8-04, and 8-14. Cold weather precautions as set forth in WSDOT/APWA Standard Specifications Sections 5-05.3(14) and 6-02.3(6)A shall apply.
- C. Extruded cement concrete curb shall be anchored to existing pavement by either steel tie bars or adhesive in conformance with WSDOT/APWA Standard Specification Section 8-04.
- D. Extruded asphalt curbs shall be anchored by means of a tack coat of asphalt in accordance with WSDOT/APWA Standard Specification Section 8-04.

### 3.04 Expansion and Dummy Joints. See Drawing No. 3-001.

- A. An expansion joint consisting of 3/8" or 1/4" x full depth of premolded joint material shall be placed around fire hydrants, poles, posts, and utility castings and along walls or structures in paved areas. Joint material shall conform to the requirements of ASTM D994 (AASHTO M33).
- B. A dummy joint consisting of 3/8" or 1/4" x 2" of premolded joint material shall be placed in curbs and sidewalks at a minimum of 15 foot intervals and at sides of drainage inlets. When curbs and/or sidewalks are placed by slip-forming, a premolded strip up to 1/2" thick and up to full depth may be used.
- C. Dummy joints in sidewalk shall be located so as to match the joints in the curb whether sidewalk is adjacent to curb or separated by planting strip.
- D. Tool marks consisting of 1/4" V-grooves shall be made in sidewalk at five foot intervals, intermediate to the dummy joints.

## 5.02 Side Slopes

- A. Side slopes shall generally be constructed no steeper than 2:1 on both fill slopes and cut slopes. Steeper slopes may be approved by the Engineer upon showing that the steeper slopes, based on soils analyses, will be stable. Side slopes on projects funded by federal grants shall be constructed in conformance with Local Agency Guidelines.
- B. Side slopes shall be stabilized by grass sod or seeding or by other planting or surfacing materials acceptable to the Engineer.

## 5.03 Street Trees & Landscaping

- A. Street trees and landscaping should be incorporated into the design of road improvements for all classifications of roads. Such landscaping in the right-of-way shall be coordinated with off-street landscaping required on developer's property under the provisions of King County Code Chapter 21.51.
- B. Planting strips are optional along all classifications of roads and may be considered as part of the landscape mitigation requirements established during the SEPA review process. The design of planting strips must be approved by the Engineer and must include a landscaping plan in which plant maintenance, utilities and traffic safety requirements are discussed.
- C. Existing trees and landscaping shall be preserved where desirable and placement of new trees shall be compatible with other features of the environment. In particular, maximum heights and spacing shall not conflict unduly with overhead utilities, or root development with underground utilities. If street trees are planted, they shall conform reasonably to standards in Drawing No. 5-009.
- D. New trees shall not include poplar, cottonwood, soft maples, gum, any fruit bearing trees or any other tree or shrub whose roots are likely to obstruct sanitary or storm sewers. See King County Code 13.04.230.
- E. Street tree plans on bus routes shall be reviewed by Metro Service Planning, phone 684-1622.

## 5.04 Mail Boxes

- A. The responsibilities for location and installation of mailboxes in connection with the construction or reconstruction of County roads are as follows:
  1. County Road Engineer or his representative will:
    - a. Require road improvement plans, whether for construction by the Department of Public Works or by a private builder, to show clearly the designated location or relocation of mailboxes, whether single or in clusters.

openings that will discourage public entry. Where job site access is provided through the Type III barricades, the developer/contractor shall assure proper closure at the end of each working day.

- C. In the general case, Type III permanent barricades shall be installed to close arterials or other through streets hazardous to traffic. They shall also be used to close off lanes where tapers are not sufficiently delineated.
- D. Type III barricades shall be used at the end of a local access street terminating abruptly without cul-de-sac bulb or on temporarily stubbed off streets. Each such barricade shall be used together with an end-of-road marker.

#### 5.08 Bollards

When necessary to deny motor vehicle access to an easement, tract, or trail, except for maintenance or emergency vehicles, the point of access shall be closed by a line of bollards. These shall include one or more fixed bollards on each side of the traveled way and removable, locking bollards across the traveled way. Spacing shall provide one bollard on centerline of trail and other bollards spaced at minimum 50 inches on center on trails 10 feet wide or less. Spacing shall be 60 inches on center on trails wider than 10 feet. Bollard design shall be in accordance with Drawing No. 5-013 or other design acceptable to the Engineer or Reviewing Agency. No fire apparatus access roads shall be blocked in this manner without the concurrence of the Fire Marshal. Bollards shall be located at least 10 feet laterally from the paved edge of roadway.

#### 5.09 Guardrail/Embankment Heights

Guardrail installations shall conform to WSDOT/APWA Standard Plan C-1, Beam Guardrail Type 1 and C-2, Guardrail Placement. End anchors shall conform to WSDOT/APWA Standard Plan C-6, Beam Guardrail Anchor Type 1.

Evaluation of embankments for guardrail installations shall be in accordance with Figure 710-6 of the WSDOT Design Manual.

#### 5.10 Off-Street Parking Spaces

The number of off-street parking spaces required shall conform to King County Code Title 21.50. The specifications for off-street parking spaces shall be as provided in King County Code Title 16.74 and implementing document entitled "King County Specifications for Off-Street Parking, 1982," as updated.

#### 5.11 Roadside Obstacles

Non-yielding or non-breakaway structures, including rockeries and retaining walls, which may be potential hazards to the traveling public shall be placed with due regard to safety. On roads with a shoulder or mountable curb, hazardous objects shall be placed as close to the right-of-way line as practicable and a minimum of 10 feet from the edge of the traveled way or auxiliary lane. On urban roads with a vertical