

## CHAPTER 3. DRIVEWAYS, SIDEWALKS, AND NON-MOTORIZED FACILITIES

### 3.1 Driveways

This section provides driveway standards for connections to public and private roads. It is not the intent of these Standards to govern design or location of driveways on private property except where they connect to the road right-of-way. However, fire access requirements governed by the Uniform Fire Code and **Zoning Code (KCC21A)**, establish criteria for driveway widths. No new driveway connection shall be constructed which does not conform to this chapter and minimum sight distance criteria established in 2.12 and 2.13.

- A. Dimensions, slope, and detail shall be as indicated in **Figures 3-003**, through **3-009**, as further specified in the following subsections. See Section 2.13 for entering sight distance and 2.12 for stopping sight distance requirements.
- B. New Driveways Requirements:
  - 1. Driveways directly giving access on to arterials may be denied if alternate access is available.
  - 2. All abandoned driveway areas on the same frontage shall be removed, and the curbing and sidewalk or shoulder and ditch section shall be properly restored.
  - 3. Maintenance of driveway approaches shall be the responsibility of the owner whose property they serve.
  - 4. Driveways shall be paved with asphalt between the edge of the paved surface and the right-of-way line, except when on curb and gutter section roadways. **See Figure 3-003**.
  - 5. For driveways crossing an open ditch section, culverts shall be adequately sized to carry anticipated storm water flows and in no case be less than 12 inches) in diameter, and at a minimum the culvert shall be equal to or larger than existing pipes within 500 feet upstream. Pipe should be long enough to allow for the minimum 3:1 beveled ends, **figure 7-001**. The property owner making the installation shall be responsible for determining proper pipe size. The Engineering Review Manager may require the owner to verify the adequacy of pipe size.
  - 6. Storm drainage from driveway surfaces must be accounted for in the roadway drainage design. Direct discharge to roadway surfaces and sidewalks are not allowed.
- C. Location and Width of New Driveways. Refer to **Figure 3-008**.
  - 1. A residential driveway shall typically serve only one parcel except as noted below. The minimum width of a residential driveway is **10-feet** and

the maximum width is 30 feet. A driveway serving more than one parcel shall be classed as a commercial driveway, or a private street, except as provided in 3.a. below.

2. On frontages 75 feet or less, no more than one driveway per lot shall be constructed. On frontages over 75 feet, the Engineering Review Manager may permit two or more driveways per lot, subject to approval.
3. No portion of driveway width shall be allowed within 5 feet of side property lines where it intersects with the street right-of-way line in residential areas or 9 feet in commercial areas except as follows:
  - a. A joint-use driveway tract may be used to serve two parcels:
    - i. Minimum driveway tract width shall be 20 feet with an 18-foot paved surface cross slope in one direction and curb or thickened edge on one side. Minimum driveway length shall be 20 feet from right-of-way line. When required, radius returns on paved apron shall have 10-foot radii.
    - ii. The Engineering Review Manager may allow use of an easement if the only access to a serving roadway is through an adjacent parcel not owned by the applicant, or for urban residential short plats to satisfy minimum lot width requirements.
  - b. Driveways may utilize full width of narrow "pipe-stem" parcels or easements if approved by Engineering Review Manager.
  - c. On cul-de-sac bulbs, eyebrows, or hammerheads as necessary for proposed residential access.
4. Grade transitions, excluding the tie to the roadway, shall be constructed as smooth vertical curves. Ties to the roadway shall be constructed as shown in driveway figures 3-003 through 3-009. The maximum change in driveway grade, within the right-of-way, shall be 8 percent within any 10 feet of distance on a crest and 12 percent within any 10 feet of distance in a sag vertical curve. Whenever there is a potential for future roadway widening, the driveway shall be graded to match the future widened road section without encroachment into graded shoulder or sidewalk. The design engineer for proposed developments shall consider the access driveway profile when designing the serving road to ensure that required grade transitions can be complied with considering building set back and lot terrain conditions. Driveways with slope exceeding 2 percent shall be

designed to ensure surface water does not impact the right-of-way adjacent to the driveway.

5. Driveways in rolled curb sections may be constructed abutting and flush with sidewalk or back of curb without gapping or lowering height of curb.
- D. Existing driveways may be reconstructed at their existing location provided such reconstruction is compatible with the adjacent road. For new development and/or changes in land use, existing driveway connections, which do not conform to this chapter, shall be reconstructed to the requirements for new driveways.
- E. The minimum width for a commercial/business district driveway is 25 feet, and the maximum width is 35-feet.
- F. For commercial or industrial driveways with heavy traffic volumes or significant numbers of trucks, the Engineering Review Manager may require construction of the access as a road intersection. This requirement will be based on traffic engineering analysis submitted by the applicant that considers, among other factors, intersection spacing, sight distance, and traffic volumes.
- G. Notwithstanding any other provisions, driveways will not be allowed where they are prohibited by separate City Council action or where they are determined by the City Engineer or Engineering Review Manager to create a hazard or impede the safe operation of traffic on the roadway.

### 3.2 Concrete Sidewalks

Sidewalks shall be required and constructed on urban category, curb and gutter type streets, Figures 2-002 and 2-003, unless otherwise allowed by these Standards or the City Engineer. They shall be located and constructed as follows:

1. On all arterial streets, both sides.
2. On local streets (commercial), both sides unless alternative routes are provided for pedestrians.
3. On local and private streets (residential) exceeding 150 feet, both sides.
4. On any cul-de-sacs, both sides.
5. Extended off-street walkways may be required by the Engineering Review Manager to provide direct connections for ease and safety of pedestrians.
6. Sidewalks shall be constructed next to the curb except in those situations where the City Engineer approves the construction of a planting strip adjacent to the curb.
7. Sidewalks shall be a minimum width of 5 feet on collector arterials, local and private streets. Minimum sidewalk width shall be six feet on

minor arterials and eight feet on principal arterials.

8. At least 8 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 wheelchair access to transit services.
9. With specified width greater than 8 feet where the City Engineer or Engineering Review Manager determines this is warranted by expected pedestrian traffic volume.
10. With Portland cement concrete surfacing as provided in Sections 3.3 and 4.1. See specifications for joints in Section 3.4 and figure 3-001.

### 3.3 Construction of Curbs, Gutters, and Sidewalks

- A. Subgrade compaction for curbs, gutters, and sidewalks shall meet a minimum 95 percent of maximum density. A minimum 4-inch section of crushed surfacing is required below the curb, gutter and sidewalk.
- B. Concrete for curbs, gutters, and sidewalks shall be Class 4000, furnished and placed in accordance with WSDOT/APWA Standard Specifications, Sections 6-02, 8-04, and 8-14. Cold and hot weather precautions as set forth in WSDOT/APWA Standard Specifications Sections 5-05.3(14) and 6-02.3(6) A shall apply. Once concrete is placed it shall be troweled smooth with a steel trowel. Before jointing or edging, the surface of the walk shall be lightly brushed in a transverse direction with a soft brush. Concrete sidewalks shall be cured for at least 72 hours. Curing shall be by means of moist burlap or quilted blankets or other approved methods. During this curing period, all traffic, both pedestrian and vehicular, shall be excluded.
- 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. Joints shall be spaced at ten (10) foot intervals and in accordance with **figure 3-001**.
- D. Extruded asphalt curbs shall be constructed in accordance with WSDOT/APWA Standard Specification Section 8-04 and anchored by means of a tack coat of asphalt.
- E. Transitions between curb streets or curbs with sidewalks to rural road sections shall meet the following:
  1. At intersections, curb wraps shall extend around the radius to better define the lane edge and enhance safe turning movements. The appropriate access ramp described in Section 3.6 shall be provided at terminus.

2. For straight connections, end section shall conform to [figure 3-013](#).
3. The minimum shy distance between the edge of traveled way and the curb shall be 1.5 feet.

### 3.4 Expansion and Contraction Joints.

- A. An expansion joint consisting of 3/8 inch or 1/4 inch of pre-molded joint material shall be placed full depth 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). See [figure 3-001](#).
- B. An expansion joint consisting of 3/8 inch or 1/4 inch of pre-molded joint material shall be placed in the upper two inches of curbs and sidewalks at 10-foot intervals and at sides of drainage inlets. When curbs and/or sidewalks are placed by slip forming, a pre-molded strip up of 1/2 inch thick expansion joint, with a 2 inch to full depth section as described above.
- C. Expansion 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 inch V-grooves must be made in sidewalk at five-foot intervals, intermediate to the expansion joints.
- E. Interface between curb and adjacent sidewalk on integral pour construction shall be formed with 1- inch radius edging tool. On separate pour construction an expansion joint consisting of 3/8 inch or 1/4 inch of pre-molded joint material shall be placed full depth between the curb or thickened edge and the adjacent sidewalk.

### 3.5 Curb Ramps

On all curbed streets, ramped sections to facilitate passage of disabled persons shall be constructed through curb and sidewalk at street intersections and other crosswalk locations, [figure 3-010](#). Where a ramp is constructed on one side of the street, a ramp shall also be provided on the opposite side of the street. Two ramps shall be provided per radii.

Curb ramps shall be positioned so that a ramp opening is situated within the marked crosswalk or crossing area if unmarked, [figure 3-010](#). The ramps shall have detectable warnings consisting of raised truncated domes with a minimum diameter of 0.9 inches and a height of 0.2 inches and center-to-center spacing of a minimum 2.35 inches and are required to have contrasting surfaces. The detectable warning surface shall contrast visually with the adjacent gutter, street or roadway, or walkway surfaces. The detectable warning pattern shall be yellow and in compliance with WSDOT/APWA Standard Specification Section 8.14.3(3), except that painting of the truncated domes will not be allowed due to ongoing maintenance costs associated with painting the domes. Placement of gratings, access covers, and other appurtenances shall not be located on curb

ramps, landings and gutters within the pedestrian access route. Additionally, the following requirements apply to perpendicular and parallel curb ramps.

Perpendicular Curb Ramps:

1. Perpendicular curb ramps shall have a running slope that cuts through or is built up to the curb at right angles or meets the gutter grade break at right angles.
2. The running slope shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 4.5 m (15.0 ft).
3. The cross slope at intersections shall be 2 percent maximum. The cross slope at midblock crossings shall be permitted to be warped to meet street or highway grade.
4. A landing 1.2 m (4.0 ft) minimum by 1.2 m (4.0 ft) minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings and clear space. Running and cross slopes at intersections shall be 2 percent maximum. Running and cross slope at midblock crossings shall be permitted to be warped to meet street or highway grade.
5. Flared sides with a slope of 10 percent maximum, measured parallel to the curb line, shall be provided where a pedestrian circulation path crosses the curb ramp.
6. Grade breaks at the top and bottom of perpendicular curb ramps shall be perpendicular to the direction of ramp run. At least one end of the bottom grade break shall be at the back of curb. Grade breaks shall not be permitted on the surface of curb ramps, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush.
7. The counter slope of the gutter or street at the foot of a curb ramp or landing shall be 5 percent maximum.
8. Beyond the curb face, a clear space of 4.0 ft minimum by 4.0 ft minimum shall be provided within the width of the crosswalk and wholly outside the parallel vehicle travel lane.

Parallel Curb Ramps:

1. Parallel curb ramps shall have a running slope that is in-line with the direction of sidewalk travel.
2. The running slope shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15.0 ft.
3. The cross slope shall be 2 percent maximum.
4. A landing 4.0 ft minimum by 4.0 ft minimum shall be provided at the bottom of the ramp run and shall be permitted to overlap other landings and clear floor or ground space. Running slope and cross slopes at intersections shall be 2 percent maximum.

Running and cross slope at mid-block crossings shall be permitted to be warped to meet street or highway grade.

5. Where a parallel curb ramp does not occupy the entire width of a sidewalk, drop-offs at diverging segments shall be protected.
6. Grade breaks shall not be permitted on the surface of curb ramps, landings, and gutter areas within the pedestrian access route. Surface slopes that meet at grade breaks shall be flush.
7. The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transition shall be 5 percent maximum.
8. Beyond the curb face, a clear space of 4.0 ft minimum by 4.0 ft minimum shall be provided within the width of the crosswalk and wholly outside the parallel vehicle travel lane.

In general, when a feature in the right-of-way is altered, the requirements for new construction must be applied to the maximum extent feasible within the scope or boundary of the project that has been planned. The ADA Guidelines state that an alteration is a change in a space or element that affects, or could affect, the accessibility or usability of that space or element.

### **3.6 Concrete Steps, Metal Handrail and Barrier-Free Access Ramps**

- A. Steps shall only be used where acceptable alternative access is available for barrier-free access, and there is a need for a separate stairway. Where used, concrete steps shall be approved by the City Engineer and constructed in accordance with **figure 5-007** or other design acceptable to the City Engineer or Engineering Review Manager and consistent with the WSDOT/APWA Standard Specifications. Handrails, whether for steps or other applications, shall be provided consistent with Figure 5-007 and the WSDOT/APWA Standard Specifications.
- B. Ramps used to provide barrier-free access shall have a maximum slope of 12:1 with a maximum rise of 30 inches between landings. Landings shall have a minimum length of 4-feet and should be of sufficient width to allow wheelchairs to pass, generally 4-feet minimum width for two-way traffic.

### **3.7 Roadway Shoulders**

When allowed, paved shoulders shall be placed in conformance with Sections 2.02.

- A. Asphalt paved shoulders may be used where approved by the City Engineer on existing roads to provide for bicycle and pedestrian use.
- B. Where shoulders are paved on one side only, they shall be delineated by a four-inch white thermoplastic edge line.

### 3.8 Separated Pedestrian Walkways and Trails

Separated pedestrian walkways and trails shall be provided where designated in the City of SeaTac Comprehensive Plan or where required by the City Engineer or Engineering Review Manager because of anticipated significant public usage.

Separated facilities are typically located on an easement or within the right-of-way when separated from the roadway by a drainage ditch or barrier. Where multi-purpose trails intersect with motorized traffic, sight distance, marking and signalization (if warranted) shall be as provided in MUTCD.

Separated asphalt walkways are designed primarily for pedestrians and are typically located within the right-of-way or easement. Minimum width shall be 5 feet with asphalt surfacing as indicated in Section 4.1.

### 3.9 School Access

When school access is required as part of development approval, the surfacing shall be an asphalt walkway, concrete sidewalk or full-width delineated shoulder unless another alternative is available and approved by the City Engineer or Engineering Review Manager through an engineering variance request.

### 3.10 Bikeways

Every effort shall be made to include safe bikeways on all new roadways and reconstruction projects, unless bicyclists are prohibited by law from using the roadway. An exception also may be granted if the designers can demonstrate that there is no need for accommodation or the cost exceeds 20 percent of the project's construction cost. They shall be located and designed according to the **Non-motorized Transportation Plan**, City of SeaTac Comprehensive Plan, Capital Improvement Program, or as directed by other City code or policy.

The planning and design of bikeways in any category shall be in accordance with the WSDOT Design Manual and the AASHTO Guide for the Development of Bicycle Facilities, current edition.

Bikeways are generally shared with other transportation modes. When substantial bike usage is expected, which would benefit from construction of a bikeway, the facility may be required to be designed exclusively for bicycle use. However, where there is limited right-of-way availability or environmental constraints the bikeway may be a shared roadway facility. Bikeways are categorized below based on degree of separation from motor vehicles and other transportation modes. This classification does not denote preference of one type over another.



The Standards classify bikeways into five groups:

1. Shared Roadway: A roadway that accommodates bicyclists without special markings or designations. Shared roadways accommodate bicycles by either providing a wide paved shoulder or a wide curb lane. A paved shoulder should be at least 4 feet wide to accommodate bicycle travel. A wide curb lane should have a total width of 14 feet without parking. See **Figure 3-020**.
2. Signed Shared Roadway: Shared roadways that are identified by signing as preferred bicycle routes.
3. Bike Lanes: A portion of the road that is designated by pavement striping for exclusive bicycle use. Bicycle lanes may be signed as part of a directional route system. Bicycle lanes are 5 feet wide on a curbed road and minimum of 4 feet wide as a shoulder bike lane. See **figure 3-019**.
4. Bike Path: Bicycle facilities on exclusive rights of way and with minimal cross flow by motor vehicles. However, they may be useful extensions of the road network in some situations, such as providing bicycle connections between roads in places where motor-vehicle travel is prohibited.
5. Shared Use Path: Shared use paved tread trails, double track, are typically designated for bicycle and pedestrian use and in general follow a right-of- way independent from any road. They shall be designed to meet the requirements of **figure 3-017**.
6. Striping and signing shall be implemented as follows:
  1. Pavement markings shall be used on bike lanes and paths according to MUTCD and AASHTO Guide for the Development of Bicycle Facilities, current edition.
  2. The design of all signalized intersections will address bicycle usage.