

WSDOT Design Manual Chapter Revision

To: Design Manual Points of Contact (POCs)

Subj: Design Manual Chapter Revision Review

Chapter Title: 1510 Pedestrian Facilities

HQ Chapter Lead: Chris Schroedel

Reason for Revision: Minor changes include: Exhibit 1510-27 markups and notes. Changed the H:V designations in narrative to percent values. Exhibit 3 was misnamed and misnumbered last revision, and that's been fixed.

Future work is planned for Divisions 15 chapters and your comments will be used for that effort. This post is really just an FYI.

HQ Policy Review Comments Deadline: May 20, 2010

Instructions to Points of Contact (POCs):

This cover form accompanies the chapter revision for the requested policy review.

It is crucial to engage those in your region who have a stake in this topic. Step 2 below applies to them.

1. Please distribute this chapter to those in your region who have a stake in the outcomes of this policy revision.
2. **Reviewers:** *Type your changes directly in the word document and your insertions and deletions will show up as tracked changes. Then send your comments back to your POC.*
3. Compile your region's review edits & comments into one document, resolving any regional differences.
4. Complete the appropriate check boxes below, including:
 - Indicate your WSDOT entity: region / area / HQ Org
 - Select the "supportability" box that aligns with your entity's opinions
5. E-mail the completed review document, **with this form**, back to the Chapter Lead in the HQ Design Office prior to, or by, the comment deadline.

Select your region / area:

Eastern North Central South Central Southwest Olympic
 Baker SnoKing AWW FHWA Other (please specify):

Our entity has reviewed this revision and we:

Support the changes as is (we made no changes during our review)

Support the changes as we have modified them in the attached

Cannot support this policy revision because (please be specific):

Chapter 1510

Pedestrian Facilities

- 1510.01 General
- 1510.02 References
- 1510.03 Definitions
- 1510.04 Policy
- 1510.05 Pedestrian Facility Design
- 1510.06 Pedestrian Facility Design: Structures
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1510.01 General

Pedestrian travel is a vital transportation mode. It is used at some point by nearly all citizens and is the main link to everyday life for many. Washington State Department of Transportation (WSDOT) designers must be aware of the various physical needs and abilities of pedestrians. Accommodate this variation in design to allow universal access.

The Americans with Disabilities Act of 1990 (ADA) requires that pedestrian facilities be designed and constructed such that they are readily accessible and usable by individuals with disabilities. This chapter provides accessibility criteria for the design of pedestrian facilities that meet state and national standards.

In addition to the ADA requirements, design pedestrian facilities using guidance in the *Roadside Manual*, the *Design Manual*, and the *Standard Plans*.

Designers face multiple challenges developing facilities that address pedestrian needs within a limited amount of right of way. Designers must:

- Become familiar with all the accessibility criteria requirements.
- Evaluate all pedestrian facilities within project limits for compliance with ADA.
- Recognize those features and elements in existing pedestrian facilities that meet or do not meet accessibility criteria.
- Design facilities that meet accessibility criteria.
- Balance intersection designs to meet the needs of pedestrians and vehicles.
- Design pedestrian access routes to be free of obstacles.
- Avoid the use of pedestrian space for snow storage in areas of heavy snowfall. (Coordinate with region maintenance personnel.)

Consider the maintainability of all designs for all pedestrian facilities and accessible features. Coordinate designs with the responsible WSDOT or local agency maintenance entity to ensure the understanding of maintenance requirements. Title II of the Americans with Disabilities Act requires that all necessary features be accessible and maintained in operable working condition for use by individuals with disabilities.

1510.02 References

(1) Federal/State Laws and Codes

Americans with Disabilities Act of 1990 (ADA) (28 Code of Federal Regulations [CFR] Part 36, Appendix A, as revised July 1, 1994)

[23 CFR Part 652](#)

[28 CFR Part 35](#)

[49 CFR Part 27](#) (Authority: Section 504 of the Rehabilitation Act of 1973, as amended – 29 USC 794)

[Revised Code of Washington \(RCW\) 35.68](#), Sidewalks, gutters, curbs and driveways – All cities and towns

[RCW 35.68.075](#), Curb ramps for persons with disabilities – Required – Standards and requirements

[RCW 35.78](#), Streets – Classification and design standards

[RCW 46.04.160](#), Crosswalk

[RCW 46.61.235](#), Crosswalks

[RCW 46.61.240](#), Crossing at other than crosswalks

[RCW 46.61.261](#), Sidewalks, crosswalks – Pedestrians, bicycles

[RCW 47.24.010](#), City streets as part of state highways, Designation – Construction, maintenance – Return to city or town

[RCW 47.24.020](#), City streets as part of state highways – Jurisdiction, control

[RCW 47.30.030](#), Facilities for nonmotorized traffic

[RCW 47.30.050](#), Expenditures for paths and trails

(2) Design Guidance

A Policy on Geometric Design of Highways and Streets (Green Book), AASHTO, Current version

Accessible Rights-of-Way: A Design Guide, U.S. Access Board, Washington D.C.
<http://www.access-board.gov/prowac/guide/PROWGuide.htm>

Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines (ADAAG), July 23, 2004, U.S. Access Board (The 1991 ADAAG is the current standard for buildings & on-site facilities adopted by US Department of Justice, the 2004 ADA-ABAAG is expected to be adopted.)

www.wbdg.org/ccb/ASTAND/ada_aba.pdf

“Design Guidance, Accommodating Bicycle and Pedestrian Travel: A Recommended Approach,” USDOT Policy Statement, 2001

www.fhwa.dot.gov/environment/bikeped/Design.htm

Designing Sidewalks and Trails for Access – Parts I & II, USDOT, FHWA, 2001

<http://www.fhwa.dot.gov/environment/sidewalk2/index.htm>

Guide for the Planning, Design, and Operation of Pedestrian Facilities, AASHTO, 2004. Provides guidance on the planning, design, and operation of pedestrian facilities along streets and highways. Specifically, the guide focuses on identifying effective measures for accommodating pedestrians on public rights of way. It can be purchased through the AASHTO website.

Highway Capacity Manual, Transportation Research Board (TRB), 2000

Manual on Uniform Traffic Control Devices for Streets and Highways, USDOT, FHWA; as adopted and modified by Chapter 468-95 WAC “Manual on uniform traffic control devices for streets and highways” ([MUTCD](#))

Pedestrian Facilities Guidebook: Incorporating Pedestrians Into Washington’s Transportation System, OTAK, 1997

www.wsdot.wa.gov/publications/manuals/fulltext/M0000/PedFacGB.pdf

Pedestrian Facilities User’s Guide – Providing Safety and Mobility, FHWA, 2002. Provides useful information regarding walkable environments, pedestrian crashes and their countermeasures, and engineering improvements for pedestrians.

www.drusilla.hsrc.unc.edu/cms/downloads/PedFacility_UserGuide2002.pdf

Revised Draft Guidelines for Accessible Public Rights-of-Way (PROWAG), Nov. 23, 2005, U.S. Access Board

www.access-board.gov/prowac/draft.htm

Roadside Manual, M 25-30, WSDOT

“Special Report: Accessible Public Rights-of-Way – Planning & Designing for Alterations,” Public Rights-of-Way Access Advisory Committee, July 2007

www.access-board.gov/PROWAC/alterations/guide.htm

Standard Plans for Road, Bridge, and Municipal Construction (Standard Plans), M 21-01, WSDOT

Understanding Flexibility in Transportation Design – Washington, WSDOT, 2005

Washington State Bicycle and Pedestrian Plan

www.wsdot.wa.gov/bike/Bike_Plan.htm

1510.03 Definitions

accessible A facility in the public right of way that is usable by persons with disabilities.

accessible pedestrian signals A device that communicates information about the “WALK” phase in audible and vibrotactile (vibrating surface that communicates information through touch, located on the accessible pedestrian signal button) formats.

accessible route See *pedestrian access route*.

ADA An abbreviation for the Americans with Disabilities Act of 1990. The ADA is a civil rights law that identifies and prohibits discrimination based on disability. Title II of the ADA requires public entities to design new facilities or alter existing facilities, including sidewalks and trails, to be accessible to people with disabilities.

alternate pedestrian access route A temporary accessible route to be used when the existing pedestrian access route is blocked by construction, alteration, maintenance, or other temporary condition.

alterations A change to a facility in the public right of way that affects or could affect access, circulation, or use.

Alterations include, but are not limited to, renovation; rehabilitation; reconstruction; historic restoration; resurfacing of circulation paths or vehicular ways; or changes or rearrangement of structural parts or elements of a facility.

Alterations *do not* include:

- Pavement pothole patching.
- Liquid-asphalt sealing, chip seal, or crack sealing.
- Lane restriping that does not involve roadway widening.

bituminous surface treatment (BST) Also known as a seal coat or chip seal, a BST is a thin, protective wearing surface that is applied to the pavement.

blended transition A connection with a grade of 5% or less between the level of the pedestrian walkway and the level of the crosswalk.

buffer A space at least 3 feet wide from the back of the curb to the edge of sidewalk that could be treated with planting or alternate pavement.

clear width The required 4-foot minimum width to provide the pedestrian access route.

counter slope Any slope opposite the running slope of a curb ramp, such as the roadway slope or landing slope.

cross slope The slope measured perpendicular to the direction of travel.

crosswalk A marked or unmarked pedestrian crossing, typically at an intersection, that connects the designated pedestrian access route (such as a sidewalk, shoulder, or pathway) on opposite sides of a roadway. A crosswalk must meet accessibility standards.

A crosswalk is also defined as:

- "...the portion of the roadway between the intersection area and a prolongation or connection of the farthest sidewalk line or in the event there are no sidewalks then between the intersection area and a line ten feet therefrom, except as modified by a marked crosswalk" ([RCW 46.04.160](#)).
- "(a) That part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curbs, from the edges of the traversable roadway, and in the absence of a sidewalk on one side of the roadway, the part of the roadway included within the extension of the lateral lines of the sidewalk at right angles to the center line; (b) Any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by lines on the surface, which may be supplemented by contrasting pavement texture, style, or color" ([MUTCD, 2003; Guide for the Planning, Design, and Operation of Pedestrian Facilities, AASHTO, 2004](#)).

curb extension A curb and sidewalk bulge or extension out into the parking lane or shoulder used to decrease the length of a pedestrian crossing and increase visibility for the pedestrian and driver.

curb flare The sloped area that may occur between the curb ramp and the sidewalk to accommodate the change in grade.

curb line A line at the face of the curb that marks the transition between the curb and the gutter, street, or highway.

curb ramp A combined ramp and landing to accomplish a change in level at a curb. This element provides street and sidewalk access to pedestrians using wheelchairs. Curb ramp is the term used in the ADA. (The WSDOT [Standard Plans](#) and [Standard Specifications](#) use the term “sidewalk ramp.”)

parallel curb ramp A curb ramp design where the sidewalk slopes down to a landing at road level and then slopes back up to the sidewalk so that the running slope is in line with the direction of sidewalk travel.

perpendicular curb ramp A curb ramp design where the ramp path is perpendicular to the curb or meets the gutter grade break at right angles.

design area

rural design area An area that meets none of the conditions to be an urban area (see [Chapter 1140](#)).

suburban design area A term for the area at the boundary of an urban area. Suburban settings may combine the higher speeds common in rural areas with activities that are associated with urban settings.

urban design area An area defined by one or more of the following:

- Adjacent to and including a municipality or other urban place having a population of 5,000 or more, as determined by the latest available published official federal census (decennial or special), within boundaries to be fixed by a state highway department, subject to the approval of the FHWA.
- Within the limits of an incorporated city or town.
- Characterized by intensive use of the land for the location of structures and receiving such urban services as sewer, water, and other public utilities and services normally associated with an incorporated city or town.
- With not more than 25% undeveloped land (see [Chapter 1140](#)).

detectable warning surface A tactile surface feature of truncated dome material built into or applied to the walking surface to alert persons with impairments of vehicular ways. Detectable warning surfaces shall contrast visually with the adjacent gutter, street or highway, and walkway surface. Note: The only acceptable detectable warnings are truncated domes as detailed in the [Standard Plans](#).

driveway A vehicular access point to a roadway or parking facility with a curb or a slope (typically perpendicular to the curb) that cuts through or is built up to the curb to allow vehicles to effectively negotiate the elevation change between the street and the sidewalk.

element An architectural or mechanical component or design feature of a space, site, or public right of way.

facility All or any portion of buildings, structures, improvements, elements, and pedestrian or vehicular routes located in a public right of way.

feature A component of a pedestrian access route, such as a curb ramp, driveway, crosswalk, or sidewalk.

flangeway gap The space between the inner edge of a rail and the crossing surface or the gap for the train wheel.

grade break The intersection of two adjacent surface planes of different grade.

gutter slope The counter slopes of adjoining gutters and road surfaces immediately adjacent to the curb ramp.

hand rail A narrow rail for support along walking surfaces, ramps, and stairs.

landing A level (0 to 2% grade in any direction) paved area, within or at the top and bottom of a stair or ramp, designed to provide turning and maneuvering space for wheelchair users and as a resting place for pedestrians.

maximum extent feasible From the U.S. Department of Justice, [28 CFR Part 36.402](#), Alterations: The phrase “to the maximum extent feasible” applies to the occasional case where the nature of the existing facility makes it virtually impossible to comply fully with applicable accessibility standards through a planned alteration.

midblock pedestrian crossing A marked pedestrian crossing located between intersections.

passenger loading zone An area where persons can enter a vehicle safely.

pedestrian Any person afoot or using a wheelchair, power wheelchair, or means of conveyance (other than a bicycle) propelled by human power, such as skates or a skateboard.

pedestrian access route (PAR) (same as **accessible route**) A continuous, unobstructed walkway within a pedestrian circulation path that provides accessibility.

The pedestrian access route is connected to street crossings by curb ramps or blended transitions. It may include walkways; sidewalks; street crossings and crosswalks; overpasses and underpasses; courtyards; elevators; platform lifts; stairs; ramps; and landings. Where sidewalks are not provided, pedestrian circulation paths may be provided in the shoulder unless pedestrian use is prohibited.

Not all transportation facilities need to accommodate pedestrians. However, those that do accommodate pedestrians need to have an accessible route.

pedestrian circulation path A prepared exterior or interior way of passage provided for pedestrian travel. [Includes independent walkways, sidewalks, and other types of pedestrian access routes.](#)

pedestrian facilities Walkways such as sidewalks, walking and hiking trails, shared-use paths, pedestrian grade separations, crosswalks, and other improvements provided for the benefit of pedestrian travel. Pedestrian facilities are intended to be accessible routes.

pedestrian overpass or underpass A grade-separated pedestrian facility, typically a bridge or tunnel structure, over or under a major highway or railroad, that allows pedestrians to cross at a different level.

pedestrian refuge island An island in the roadway that physically separates the directional flow of traffic, provides pedestrians with a place of refuge, and reduces the crossing distance. Note: Islands with cut-through paths are more accessible to persons with disabilities than are raised islands.

pedestrian travel zone (same as **pedestrian access route**) A continuous, unobstructed walkway within a pedestrian circulation path that provides accessibility.

person with disability An individual who has an impairment, including a mobility, sensory, or cognitive impairment, that results in a functional limitation in access to and use of a building or facility.

rail platform A level area for entering and exiting a light rail, commuter rail, and intercity rail system.

railroad track crossings Locations where a pedestrian access route intersects and crosses a railroad track.

raised median A raised island in the center of a road used to restrict vehicle left turns and side street access. Note: Islands with cut-through paths are more accessible to persons with disabilities than are raised islands.

ramp A ramp is defined as:

- A sloped transition between two elevation levels (AASHTO).
- A walking surface between two level landings with a running slope steeper than 20H:1V (5%) (*Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines*, July, 2004).

roadway See [Chapter 1140](#).

running slope A slope measured in the direction of travel, normally expressed as a percent.

sidewalk That portion of a highway, road, or street between the curb line, or the edge of a roadway and the adjacent property line that is paved or improved and intended for use by pedestrians.

sidewalk ramp See **curb ramp**.

site A parcel of land bounded by a property line or a designated portion of a public right of way.

street furniture Sidewalk equipment or furnishings, including garbage cans, benches, parking meters, and telephone booths.

traffic calming Design techniques that have been shown to reduce traffic speeds and unsafe maneuvers. These techniques can be stand-alone or used in combination, and they include lane narrowing, sidewalk extensions, surface variations, and visual clues in the vertical plane.

train dynamic envelope The clearance required for a train and its cargo overhang due to any combination of loading, lateral motion, or suspension failure.

transit stop An area designed for bus boarding and disembarking.

traveled way (same as **vehicular way**) A route provided for vehicular traffic. The portion of the roadway intended for the movement of vehicles, exclusive of shoulders and lanes for parking, turning, and storage for turning.

truncated domes Small raised protrusions of a detectible warning surface that are between $\frac{7}{8}$ inch and $1\frac{7}{16}$ inch in diameter and $\frac{3}{16}$ inch in height arranged in a distinctive pattern that is readily detected and understood by a vision-impaired person using the sense of touch guidance. The *Standard Plans* shows the appropriate pattern and dimensions.

universal access A facility that provides access to all persons regardless of ability or stature.

walk interval That phase of a traffic signal cycle during which the pedestrian is to begin crossing, typically indicated by a WALK message or the walking person symbol and its audible equivalent.

walkway The continuous portion of the pedestrian access route that is connected to street crossings by curb ramps or blended transitions (*Revised Draft Guidelines for Accessible Public Rights-of-Way*, 11-23-05, and *Pedestrian Facilities Guidebook*, WSDOT et al., 1997).

wheeled mobility device A wheelchair, scooter, walker, or other wheeled device that provides mobility to those with limited physical abilities.

1510.04 Policy

(1) General

Provide pedestrian facilities along and across sections of state routes and city streets as an integral part of the transportation system. Federal Highway Administration (FHWA) and WSDOT policy is that bicycle and pedestrian facilities be given full consideration on all highway Improvement projects. Coordinate with the region Planning and Traffic offices to identify planning studies that detail current traffic and forecast growth and pedestrian generators in the project vicinity. FHWA is designated by the Department of Justice to ensure compliance with the Americans with Disabilities Act of 1990 (ADA) for transportation projects. Design pedestrian facilities to provide universal access for all people. Provide pedestrian facilities on highway projects unless one or more of the following conditions are met:

- Pedestrians are prohibited by law from using the facility.
- Planning/land use documents indicate that low population density is projected for the area in the 20-year planning horizon.

Consider whether or not the project is within a city or an urban growth area that is ultimately intended to be developed as an urban density area with urban services, including transit. Inside incorporated cities, design pedestrian facilities in accordance with the city design standards adopted in accordance with [RCW 35.78.030](#) on the condition they comply with the most current ADA requirements. Exceptions to adopted design standards—other than ADA (see below)—require a deviation approved by the designated authority identified in [Chapter 300](#).

Title II of the Americans with Disabilities Act requires that a public entity shall maintain in operable working condition those features of facilities and equipment that are required to be readily accessible to and usable by persons with disabilities. Consider the maintenance needs of accessible pedestrian facilities during the design of those elements.

(2) ADA Compliance

Wherever pedestrian facilities are intended to be a part of the transportation facility, [28 CFR Part 35](#) requires that those pedestrian facilities meet ADA guidelines. Federal regulations require that all new construction, reconstruction, or alteration of existing transportation facilities be designed and constructed to be accessible and useable by those with disabilities and that existing facilities be retrofitted to be accessible. Design pedestrian facilities to accommodate all types of pedestrians, including children, adults, the elderly, and persons with mobility, sensory, or cognitive impairments.

(a) Improvement Projects

Improvement projects address the construction of a new roadway, reconstruction such as roadway widening to add an additional lane, and modal (transit or bicycle) or lane configuration changes that widen the existing roadway cross section. For these projects, pedestrians' needs are assessed and included in the project. Develop pedestrian facilities consistent with the accessibility criteria listed in [Exhibits 1510-23](#) and [1510-27](#).

(b) Pavement Preservation (Alteration) Projects

Preservation projects are considered alterations. Alterations include, but are not limited to, renovation; rehabilitation; reconstruction; historic restoration; lane restriping as part of an overlay; resurfacing of circulation paths or vehicular ways; or changes or rearrangement of structural parts or elements of a facility. The following guidance applies to alteration projects:

- All existing curb ramps and crosswalks (marked or not) need to be assessed to determine whether curb ramp and crosswalk design elements meet the accessibility criteria in [Exhibit 1510-27](#).
- Modify existing and proposed crosswalk slopes to meet the accessibility criteria by grinding or preleveling. Justify the reasons for not meeting the accessibility criteria for crosswalk slopes and document in the DDP. (See [Chapter 300](#) for discussion of the DDP.)
- Modify existing curb ramps that do not meet the accessibility criteria to the maximum extent feasible. Where some curb ramps exist at intersections, it is also necessary to make sure they exist on both ends of a crosswalk. A crosswalk must be accessible from both ends. This also may require reconstruction or modification of other ADA features (see [Exhibit 1510-27](#)) to ensure all elements of a curb ramp will meet the accessibility criteria. It is not always possible to build a curb ramp to full ADA standards. If such a situation is encountered, the designer needs to contact the appropriate Assistant State Design Engineer (ASDE) to confirm the finding. After the ASDE confirms the finding that it is not possible to build the curb ramp to full ADA standards, the designer then designs the curb ramp to the maximum

extent feasible and documents which elements were and which were not designed to ADA standards; include documentation in the DDP. If the project is within a city, coordinate with the city to develop an assessment of ADA compliance.

The following are not considered alterations and therefore are not subject to accessibility requirements:

- Pavement pothole patching.
- Liquid-asphalt sealing, chip seal, or crack sealing.
- Lane restriping that does not involve roadway widening.

(3) Jurisdiction

When city streets form a part of the state highway system within the corporate limits of cities and towns, the city has full responsibility for and control over any facilities beyond the curbs and, if no curb is installed, beyond that portion of the highway used for highway purposes ([RCW 47.24.020](#)). When proposed projects will damage or remove existing sidewalks or other pedestrian access routes or features within a city's jurisdiction, work with the city to reconstruct the affected facilities to meet accessibility criteria. When proposed alteration projects are within the city limits, curb ramps will be assessed, and any that do not meet the accessibility criteria for alterations will need to be modified.

The title to limited access facilities within incorporated cities and towns remains with the state. If a turnback agreement has not been completed, the state maintains full jurisdiction within these areas (see [Chapters 510, 520, and 530](#)).

(4) Access Control

Access control on highways is either *limited* or *managed* and is discussed in detail in [Division 5](#). Various designations of access control affect how and where pedestrian facilities are located, as follows:

(a) Full Limited Access Control

On roadways designated as having full limited access control, pedestrian access routes, hiking trails, and shared-use paths within the right of way are separated from vehicular traffic with physical barriers. These facilities can connect with other facilities outside the right of way once proper documentation has been obtained. Contact the Headquarters (HQ) Access and Hearings Section and HQ Real Estate Services to determine the required documentation. Grade separations are provided when the trail or path crosses the highway. (See [Chapter 530](#) for limited access.)

(b) Partial or Modified Limited Access Control

On these facilities, pedestrian access routes and shared-use paths may be located between the access points of interchanges or intersections. Pedestrian crossings are usually either at grade or grade-separated. Consider midblock pedestrian crossings at pedestrian generators when the roadway has the characteristics associated with an urban or suburban area and has appropriate operational and geometric characteristics that allow for a crossing. Note that the installation of a midblock pedestrian crossing on a state highway is a design deviation that

requires approval and documentation. Pedestrian circulation paths must include a pedestrian access route.

Consider providing sidewalks at signalized intersections. Evaluate extending sidewalks on a project-by-project basis. (See [Chapter 530](#) for limited access.)

(c) **Managed Access Control Highways**

On these routes, in rural areas, paved shoulders are normally used for pedestrian travel. When pedestrian activity is high, separate walkways may be provided. Sidewalks are typically used in urban growth areas where there is an identified need for pedestrian facilities.

Consider providing sidewalks at signalized intersections. Evaluate extending sidewalks on a project-by-project basis.

Trails and shared-use paths, separated from the roadway alignment, are used to connect areas of community development. Pedestrian crossings are typically at grade.

1510.05 Pedestrian Facility Design

(1) *Facilities*

The type of pedestrian facility provided is based on access control of the highway; local transportation plans; comprehensive plans and other plans (such as Walk Route Plans) developed by schools and school districts; the roadside environment; pedestrian volumes; user age group(s); safety-economic analyses; and the continuity of local walkways along or across the roadway. Pedestrian access routes can either be immediately adjacent to streets and highways or separated from them by a buffer.

(2) *Pedestrian Travel Along Streets and Highways*

Examples of various types of pedestrian access routes are shown in [Exhibit 1510-23](#). A generalized method of assessing the need for and adequacy of pedestrian facilities is shown in [Exhibit 1510-24](#).

To determine what type of pedestrian facility to use, consider a study that addresses roadway classification, traffic speed, collision data, pedestrian generators, school zones, transit routes, and land use designation.

[Chapter 1600](#) provides guidance on the design clear zone, based on various conditions such as rural or urban routes, speeds, traffic volumes, and jurisdiction.

(a) **Basic Criteria for Pedestrian Accessible Routes**

1. **Surfacing**

The surface of the pedestrian access route needs to be firm, stable, slip-resistant, and smooth. Use cement or asphalt concrete surfaces; crushed gravel is not considered to be a stable, firm surface.

Locate utility vaults and junction boxes outside the sidewalk. Where this is not practicable, use utility vaults and junction boxes with lids designed to reduce tripping and slipping (see the [Standard Plans](#)).

2. **Vertical Clearance**

Hanging or protruding objects within the walkway may present obstacles for pedestrians with visual impairments. The minimum vertical clearance for objects (including signs) overhanging a walkway is 7 feet (84 inches).

3. **Horizontal Encroachment**

The minimum clear width for an ADA pedestrian accessible route is 4 feet. Where the pedestrian access route is less than 5 feet wide, provide a 5-foot x 5-foot passing space at 200-foot intervals.

Fixtures located in the sidewalk are obstacles for pedestrians, and they reduce the clear width of the sidewalk. Provide a continuous, unobstructed route for pedestrians. When an unobstructed route is not possible, provide the minimum clear width for an accessible route around obstructions.

Objects that protrude more than 4 inches into the walkway are considered to be obstacles, and warning devices are necessary wherever feasible. Equip wall-mounted and post-mounted objects that protrude 4 inches or more into the walkway between 27 inches and 80 inches above the sidewalk with warning devices detectable by persons with impaired vision using a cane (see [Exhibit 1510-1](#)).

When relocation of utility poles and other fixtures is necessary for a project, determine the impact of their new location on all pedestrian walkways. Look for opportunities to eliminate obstructions, including existing utilities that obstruct the pedestrian route.



Acceptable Pedestrian Access Route



Unacceptable Pedestrian Access Route



Accessible Sidewalk



Sidewalk With Obstructions

Pedestrian Route Geometrics

Exhibit 1510-1

4. Geometrics of the Pedestrian Accessible Route

When considering both new and existing pedestrian-accessible routes, the geometric elements need to be evaluated for the running slope of the route, cross slope, width, amount of vertical rise over the length of the route, vertical differences at changes in surface grades (tripping hazards), and access across and through a vertical barrier (curb ramps).

Where the walkway is located behind guardrail, address guardrail bolts or install a rub rail to prevent snagging. Consider the installation of “W” beam guardrail on the pedestrian side of the posts to reduce snagging and as a guide for sight-impaired pedestrians. Specify these construction requirements in the contract.

Provide a nonsnagging finish to vertical surfaces adjacent to a pedestrian facility to prevent snagging or abrasive injuries from accidental contact with the surface.

(3) Shoulders

Paved shoulders are an extension of the roadway and are not considered pedestrian facilities; however they can be used by pedestrians and may serve as a pedestrian access route. Although pedestrians are allowed to travel along the shoulder, its main purpose is to provide an area for disabled vehicles, a recovery area for errant vehicles, and positive drainage away from the roadway.

Determine whether the roadway shoulders are of sufficient width and condition to permit travel for pedestrians. Paved shoulders are preferable. A 4-foot-wide shoulder is acceptable where pedestrian activity is minimal and where school and other pedestrian generators are not present. Wider shoulders are desirable along high-speed highways, particularly when truck volumes or pedestrian activities are high.

Longitudinal travel along shoulders with cross slopes greater than 2% can be difficult for people with disabilities. Horizontal curves are usually superelevated and can have cross slopes steeper than 2%. The shoulders on these curves often have the same cross slope as the roadway. If pedestrians will use the shoulder frequently, consider a separate pedestrian access route.

(4) Shared-Use Paths

Shared-use path A facility physically separated from motorized vehicular traffic within the highway right of way or on an exclusive right of way with minimal crossflow by motor vehicles. Primarily used by pedestrians and bicycles, shared-use paths are also used by joggers, skaters, wheelchair users (both nonmotorized and motorized), equestrians, and other nonmotorized users.

See Chapter 1515 for the geometries design elements and other design paramators and considerations for of a shared use paths.

~~Shared-use paths are used by pedestrians and other users such as bicyclists (see Exhibit 1510-2). Comply with accessibility criteria in their design. Pedestrian facilities differ from bicycle facilities in their design criteria and goals, and they are not always compatible. When it is determined that a shared-use path is in the best interests of both groups, see Chapter 1520, Bicycle Facilities, AASHTO's Guide for the~~

Comment [mtg1]: Keep header, plug for 1515

*Development of Bicycle Facilities, and FHWA's Designing Sidewalks and Trails for**Access, Part II.***Shared-Use Path****Exhibit 1510-2**

Comment [CS2]: Keeping pic to avoid renumbering all others.

(5) Sidewalks

Plan the design of sidewalks carefully to include a pedestrian access route that provides universal access. Sidewalk design elements are found in Exhibits 1510-23 and 1510-27, and details for raised sidewalks are shown in the *Standard Plans*. Wherever appropriate, make sidewalks continuous and provide access to side streets. The most desirable installation for the pedestrian is a sidewalk separated from the traveled way by a planted buffer. This provides a greater separation between vehicles and pedestrians than curb alone.

(a) Buffers and Widths

Where a sidewalk is separated from the travelled way with only a curb, the WSDOT minimum sidewalk width is 6 feet.

The WSDOT minimum width for a sidewalk is 5 feet, when used with a buffer at least 3 feet wide. (See the *Standard Plans* and Exhibit 1510-23).

**Driveway/Sidewalk Crossings Sidewalk With Buffer****Exhibit 1510-43**

Wider sidewalks are preferable in areas of high pedestrian traffic, such as a central business district (CBD) and along parks, schools, and other major

Comment [s3]:
We messed this up for Dec 09 publication, this shows it corrected to Exhibit 1510-3.

pedestrian generators. Coordinate with the city for appropriate sidewalk and buffer designs and funding participation in these cases.

Consider buffers of 4 feet for collector routes and 6 feet for arterial routes. If trees or shrubs are included, coordinate with the region or HQ Landscape Architect and refer to the *Roadside Manual*. Plants should not limit the visibility of motorists or pedestrians or pose obstructions on the pedestrian access route (see Chapter 1340). Design subsurface infrastructure (such as structural soils), and select plants whose root systems do not cause sidewalks to buckle or heave. Coordinate buffer planting with maintenance personnel.

In areas with snowfall consider wider sidewalks or a sidewalk with a buffer to accommodate snow storage while at the same time keeping the pedestrian route free of snow accumulation. Make sure maintenance access is not obstructed.

Shoulders, bike lanes, and on-street parking are not considered buffer, but they do offer the advantage of further separation between vehicles and pedestrians.

(b) Alignment, Grade, and Cross Slope

Where the walkway (sidewalk) of a pedestrian access route is adjacent to a street, ~~or~~ highway, or on a bridge, its running slope ~~either can match, but not exceed~~, the general grade established for the adjacent roadway street or highway ~~or the running slope must comply with ADA standards~~. On roadways with prolonged grades greater than 8.3%, consider providing hand railings* ~~and~~ level landings in-line with the sidewalk, ~~and rest areas~~ adjacent to the level landings ~~sidewalk as resting areas~~.

~~If the~~ Where the walkway (sidewalk or pedestrian circulation path) follows a separate and independent horizontal or vertical alignment from the street or highway, the running slope must comply with ADA standards. The maximum running slope allowed is 8.3%. (See Exhibit 15150-27, Building and Facilities Ramp for more detail design element requirements.)

Design sidewalks with cross slopes no more than 2%. Steeper cross slopes are difficult for people in wheelchairs to negotiate.

(c) Driveways

Driveways can be a barrier for persons with disabilities. Provide accessible crossings in locations where a sidewalk meets a driveway. An accessible route is 4 feet wide minimum with a cross slope of 2% or less. (See Exhibit 1510-4 for examples of driveway/sidewalk crossings.)

Consider limiting or consolidating driveways (vehicle access points). Construct driveways in accordance with ADA requirements, or provide an ADA accessible route. (See Chapter 520 for access control information and the *Standard Plans* for vehicle approach details and ADA requirements.) Where a driveway is present within the longitudinal limits of the sidewalk, provide a pedestrian-accessible route to maintain continuity along the sidewalk. (See Exhibit 1510-27 for design element requirements.)

*Guide for the Planning, Design, and Operation of Pedestrian Facilities, AASHTO, 2004



Driveway/Sidewalk Crossings

Exhibit 1510-4

(d) Sideslopes, Railing, and Barriers

The sideslope adjacent to the sidewalk is a critical design element. [Exhibit 1510-23](#) provides guidance on slope rounding and railings for various conditions. When there is a vertical drop-off of 2 feet 6 inches or more directly behind the sidewalk, provide a pedestrian railing when embankment widening is not possible (see [Exhibit 1510-23](#)).

The pedestrian railing is installed between the walkway and the vertical drop-off. Ensure pedestrian railing does not encroach on the sidewalk width.

Pedestrian railings are not always designed to withstand vehicular impacts or redirect errant vehicles. [Chapter 1600](#) addresses the Design Clear Zone for vehicles. A crashworthy traffic barrier is required if the drop-off is within the Design Clear Zone.

Where the walkway is adjacent to a vertical drop-off and is separated from the roadway, consider installing the traffic barrier between the traveled way and the walkway. The pedestrian railing is installed between the walkway and the vertical drop-off.

(6) Curb Ramps (Sidewalk Ramps)

Curb ramps provide an accessible connection from a raised sidewalk down to the roadway surface. A curb ramp is required at every corner of all intersections where curbs and sidewalks are present, except where pedestrian crossing is prohibited. (See [1510.05\(8\)\(b\)](#), [Exhibit 1510-7](#), and [Chapter 1330](#) for guidance on closed crossings.) For new construction, a curb ramp oriented in each direction of pedestrian travel aligned with the crosswalk it serves is required. For alterations, a separate curb ramp oriented in each direction of pedestrian travel aligned with the crosswalk it serves is required if feasible. Every curb ramp must have a curb ramp at the other end of the crosswalk it serves unless there is no curb or sidewalk on the opposite side. Curb ramps are also required at midblock crossings where sidewalks are present.

(a) Types of Curb Ramps

Different types of curb ramps can be used: perpendicular, parallel, and combination. Wherever possible, it is desirable to provide a buffer around the corner to separate the sidewalk from the curb, allowing the curb ramp to be installed with curb returns that facilitate direction-finding for the visually impaired.

1. Perpendicular

This curb ramp is commonly used to provide access from the sidewalk to the street. The landing is to be located at the top of the curb ramp.

a. Advantages

- Ramp aligned with the crosswalk.
- Straight path of travel on tight radius.
- Two ramps per corner.

b. Disadvantage

- May not provide a straight path of travel on larger-radius corners.
- May not fit with the required flares on small radius corners.

2. Parallel

This curb ramp works well in a narrower area with right of way limitations or where blending a curb ramp into steep grades is required. The landing is to be located at the bottom of the curb ramp.

a. Advantages

- Requires minimal right of way.
- Provides a level area that aligns with the crossing. The landing is contained in the sidewalk and not the street.
- Allows ramps to be extended to reduce ramp grade or blend into steep grades of sidewalk.
- Provides edges on the side of the ramp that are clearly defined for pedestrians with vision impairments.

b. Disadvantages

- Pedestrians need to negotiate two or more ramp grades possibly making it more difficult to traverse.
- Improper design/construction of the landing can result in the accumulation of water or debris at the bottom of the ramp.

3. Combination

This combines the use of perpendicular and parallel types of curb ramps. The landing may be shared in this application.

a. Advantages

- Works well in areas where grades may be a problem.
- Does not require turning or maneuvering on the ramp.
- Ramp aligned perpendicular to the crosswalk.
- Level maneuvering area between ramps.

- Allows transition of running slopes in steep terrain
- b. **Disadvantage**
- Generally require more space.
 - Might require more extensive alterations in retrofits.

(b) **Curb Ramp Common Elements**

To comply with ADA requirements, the following represents the design requirements for curb ramps:

1. **Clear Width**

- 4 feet wide minimum

2. **Landings**

A level landing is necessary at the top of a perpendicular ramp or the bottom of a parallel curb ramp as noted above for the type of curb ramp used. The top landing is provided to allow a person in a wheelchair room to maneuver into a position to use the ramp or bypass it. The lower landing allows a wheelchair user to transition from the ramp to the roadway crossing.

- The width of the landing matches the width of the curb ramp.
- In Preservation projects on existing landings, the length of the landing must be at least 3 feet. The width of the landing needs to match the width of the curb ramps.
- In new construction, provide a **minimum** 4-foot-square landing.
- When right of way constraints are not an issue, it is desirable to provide a larger landing.
- If the landing is next to a vertical wall, a 5-foot-wide clear area is desirable to allow a person in a wheelchair more room to maneuver and change directions.
- The running and cross slopes of landings for curb ramps on midblock crossings are permitted to be warped to meet street or highway grade.

3. **Running Slope**

- ~~12H:1V or flatter~~ **Maximum Not to exceed 8.3%** (in new construction and Preservation projects).

4. **Cross Slope**

- Not greater than 2%.

5. **Curb Ramp Flares**

- Do not exceed 10%.

6. **Counter Slope**

- Provide a counter slope of the gutter or street at the foot of the curb ramp or landing of 5% maximum. When the algebraic difference between the counter slope of the gutter or street and ramp running slope is equal to or greater than 11%, consider a 2-foot level strip at the base of the ramp (see [Exhibits 1510-8](#) and [1510-27](#)).

7. Detectable Warning Surfaces

- Are to be installed where curb ramps or landings connect to a roadway.

In all cases, detectable warning surfaces are to be installed, including at channelizing islands (median and right-turn lanes as shown in [Exhibit 1510-14](#)). Detectable warning surfaces must contrast visually with the background material. ADAAG requires that detectable warnings “shall contrast visually with adjoining surfaces either light-on-dark or dark-on-light.” WSDOT requires the use of federal yellow as the visual contrast on its projects. Other contrasting colors may be used on projects where cities have jurisdiction.

At signalized intersections, it is desirable to provide pedestrian push buttons on separate poles located near each curb ramp landing for ADA accessibility. Provide paved access to the pedestrian push button. (See [Chapter 1330](#) for information on pedestrian guidelines at traffic signal locations.)



Perpendicular Ramps

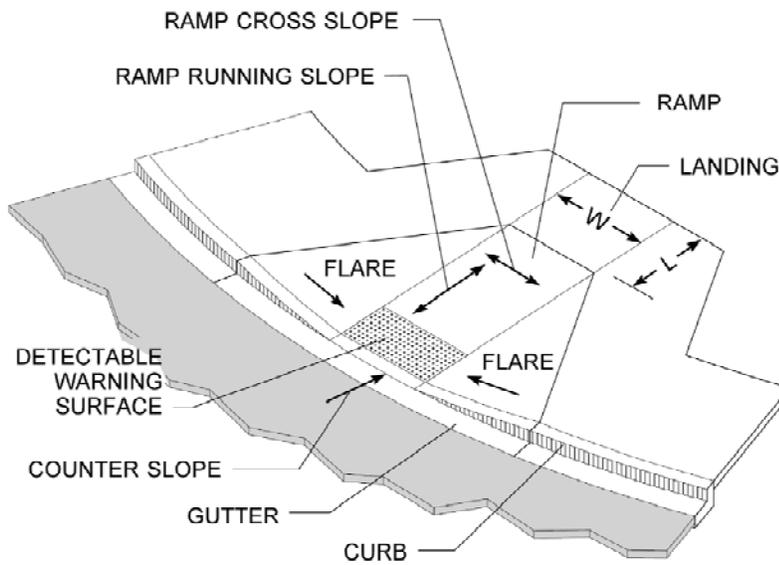


Parallel Ramp

Combination Ramp

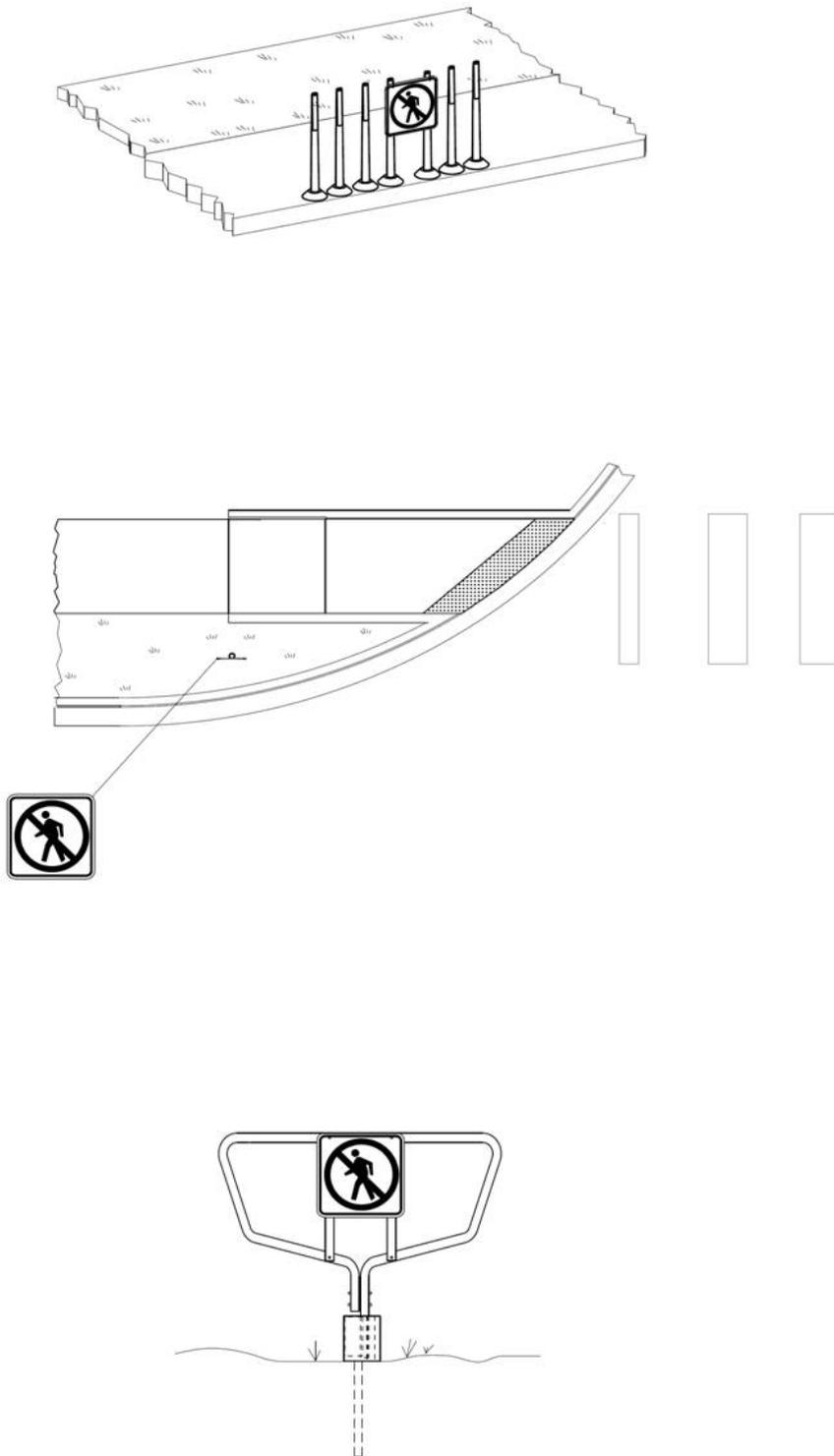
Curb Ramps

Exhibit 1510-5

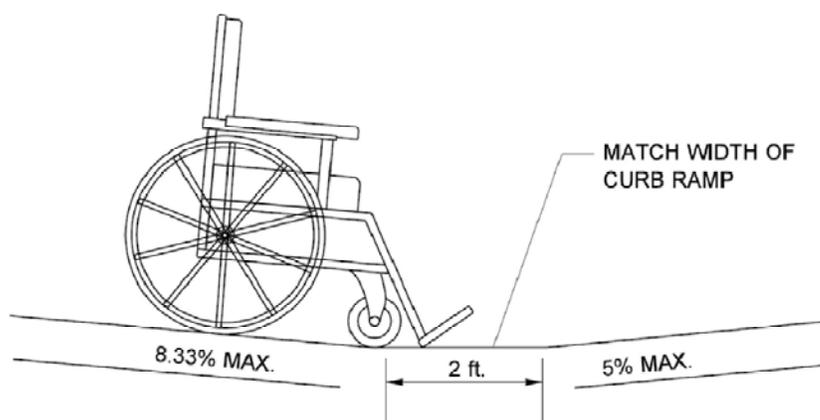


Curb Ramp Common Elements

Exhibit 1510-6



Examples of Acceptable Barriers Closing Pedestrian Crossings
Exhibit 1510-7



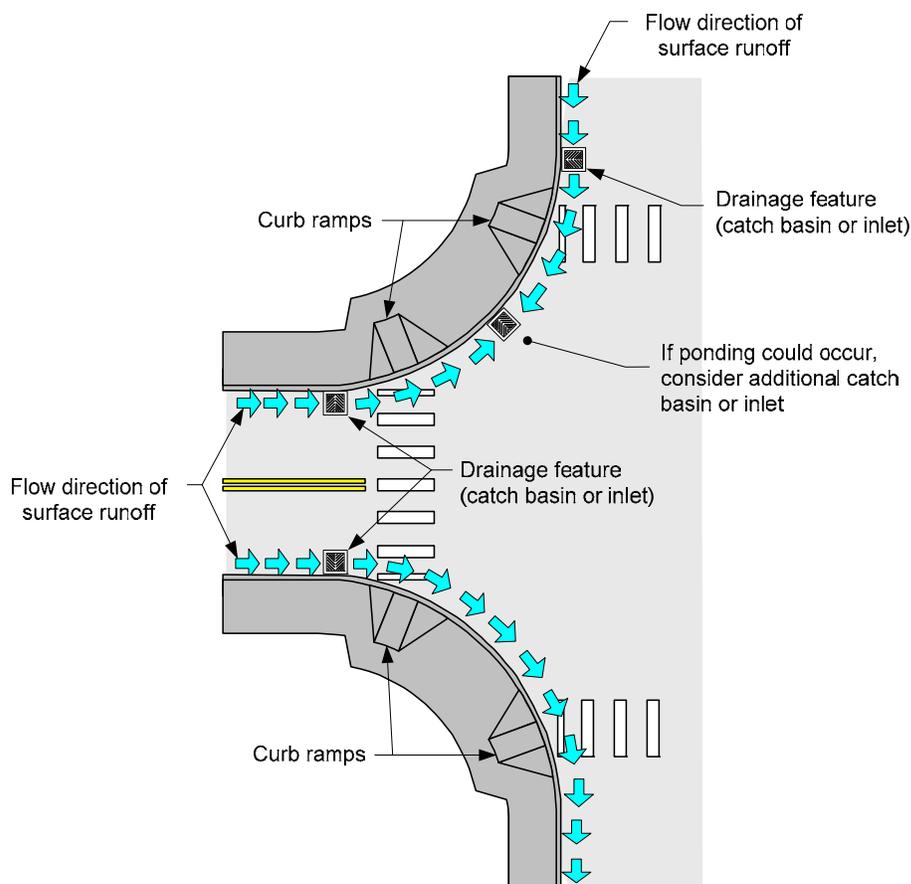
Consider a 2-foot level strip if algebraic difference $\geq 11\%$.

Source: *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, AASHTO

Counter Slope Alternative

Exhibit 1510-8

The lower terminus of the curb ramp is located at the beginning of a marked or unmarked crosswalk. Surface water runoff from the roadway can flood the lower end of a curb ramp. Determine the grades along the curb line and verify that the base of the curb ramp is not the lowest point of the gutter. Provide catch basins or inlets to prevent the flooding of the ramps. [Exhibit 1510-9](#) shows examples of how drainage structures are located. Verify that drainage structures will not be in the pedestrian access route.



Curb Ramp Drainage
Exhibit 1510-9

(7) Vehicle Bridges and Underpasses

Provide for pedestrians on vehicle bridges and underpasses where pedestrians are allowed (contact the HQ Bridge and Structures Office). Provide either raised sidewalks or ramps on the approaches to bridges when there are raised sidewalks, [pedestrian circulation paths](#), or [shared use paths](#) on the bridge. The ramp is constructed of either asphalt or cement concrete and has a slope of ~~20H:1V~~ or ~~flatter~~ [5% or less](#). These ramps can also be used as a transition from a raised sidewalk down to a paved shoulder. The ramp provides pedestrian access and mitigates the raised, blunt end of the concrete sidewalk for vehicles.

In underpasses where pedestrians are allowed, it is desirable to provide sidewalks and to maintain the full shoulder width. When bridge columns are placed on either side of the roadway, consider placing the walkway between the roadway and the columns for pedestrian visibility and security. Provide adequate lighting and drainage for pedestrian safety and comfort.

(8) Pedestrian Crossings at Grade

(a) Design Considerations for Crossing Facilities

Designing intersections for the needs of all users, including pedestrians, requires various considerations and tradeoffs. The following list presents design considerations for creating crossing facilities that meet pedestrian needs:

- Minimize turning radii to keep speeds low (see [Chapter 1310](#) for design vehicle guidance).
- Place crosswalks such that they are visible and adjacent to the pedestrian facility.
- Use a separate left-turn phase along with a “WALK/DON’T WALK” signal.
- Restrict or prohibit turns.
- Shorten crossing distance.
- Use a raised median for a pedestrian refuge in the median.
- Use pedestrian signals (APS).
- Use signage.
- Place crosswalks as close as practicable to the intersection traveled way.
- Provide pedestrian-level lighting.

(b) Closed Crossings

To meet ADA requirements, equal access to cross the highway shall be provided to all pedestrians unless pedestrian crossing is prohibited. Consult with the region Traffic Office when considering a prohibited crossing. Also:

- Provide an accessible alternative to the closed crossing.
- Make the leg on each side of the crossing inaccessible to all pedestrians.
- Install signs and a barrier detectable to persons with visual disabilities, restricting all pedestrians from crossing at that location (see [Exhibit 1510-7](#)).

All pedestrian crossings need to provide a pedestrian access route that meets ADA guidelines. [Exhibit 1510-25](#) provides recommendations for determining pedestrian markings based on vehicular traffic volume and speed. Pedestrian crossings at grade are permitted along the length of most highways. Pedestrian crossing on all legs of an intersection is also permitted. An illegal pedestrian crossing only occurs when signs prohibit a particular crossing at an intersection or the crossing occurs between two adjacent signalized intersections ([RCW 46.61.240](#)).

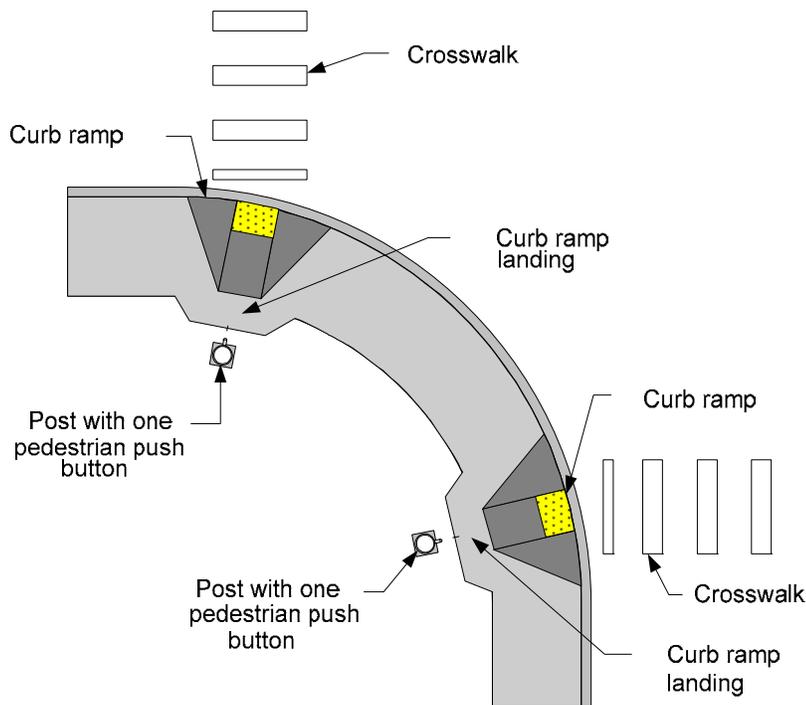
(c) Accessible Pedestrian Signals (APS)

In locations of pedestrian facilities, use ADA-compliant audible/vibrotactile pedestrian signals at all locations where pedestrian signals are newly installed or replaced. Consult with region and city maintenance personnel regarding maintenance requirements for these devices. Installation of these devices may require improvements to existing sidewalks and ramps to ensure ADA compliance. (See [Chapter 1330](#) and the MUTCD for additional information.)

When designing pedestrian signals, consider the needs of older pedestrians and pedestrians with disabilities as they might walk at a significantly slower pace than the average pedestrian. Determine whether there are pedestrian generators in the project vicinity that might attract older and disabled pedestrians. Adjust signal timing accordingly, and include countdown clocks where appropriate. Consult with region and city maintenance personnel regarding maintenance requirements for these devices.

- Locate pedestrian push buttons within reasonable proximity to the curb ramp and crosswalk (see [Exhibit 1510-10](#), [Chapter 1330](#) and the [MUTCD](#)).
- Clearly identify which crossing is controlled by the push button.
- Provide a level surface at each push button for wheelchair users.
- Locate push button a maximum height of 3 feet 6 inches from level landing surface.*

*FHWA, Designing Sidewalks and Trails for Access, Pedestrian-Actuated Traffic Controls, 1999



Pedestrian Push Button Locations
Exhibit 1510-10

(9) Crosswalks at Intersections

Legal crosswalks, whether marked or not, exist at all intersections. An unmarked crosswalk is the 10-foot-wide area across the intersection behind a prolongation of the curb or edge of the through traffic lane ([RCW 46.04.160](#)). At roundabouts and intersections with triangular refuge islands or slip lanes (see [Chapter 1310](#)), the desired pedestrian crossings are not consistent with the definition of an unmarked crosswalk, and marked crossings are necessary. Inside city limits where the population exceeds 25,000, coordinate the decision to mark crosswalks with the city. WSDOT approves the installation and type only ([RCW 47.24.020\(13\)](#)). In unincorporated areas and within cities with populations less than 25,000, WSDOT has decision authority. WSDOT maintains decision authority in limited access areas. Coordinate with the city regardless of population.

ADA requires that a pedestrian access route be provided at all marked and unmarked pedestrian crossings. This can be part or all of the crosswalk width. The accessibility criteria require a pedestrian access route within crosswalks of 4 feet minimum, with a running slope less than or equal to 5% and a cross slope less than or equal to 2% (see [Exhibits 1510-26](#) and [1510-27](#)).

Marked crosswalks are not to be used indiscriminately. Marked crosswalks are used at signalized intersections, intersections with triangular refuge islands, and roundabouts so pedestrians know where they are to cross. Perform an engineering study before installing marked crosswalks away from highway traffic signals or stop signs. Note that the installation of a midblock pedestrian crossing on a state highway is a design deviation that requires approval and documentation. When considering a marked crosswalk, at a minimum evaluate the following factors:

- The crosswalk would serve 20 pedestrians per hour during the peak hour, 15 elderly and/or children per hour, or 60 pedestrians total for the highest consecutive 4-hour period.
- The crossing is on a direct route to or from a pedestrian generator such as a school, library, hospital, senior center, community center, shopping center, park, employment center, or transit center (see the MUTCD). Generators in the immediate proximity of the highway are of primary concern. Pedestrian travel distances greater than ¼ mile do not generally attract many pedestrians.
- The local agency's comprehensive plan includes the development of pedestrian facilities in the project vicinity.
- The location is 300 or more feet from another crossing.
- Safety considerations do not preclude a crosswalk.

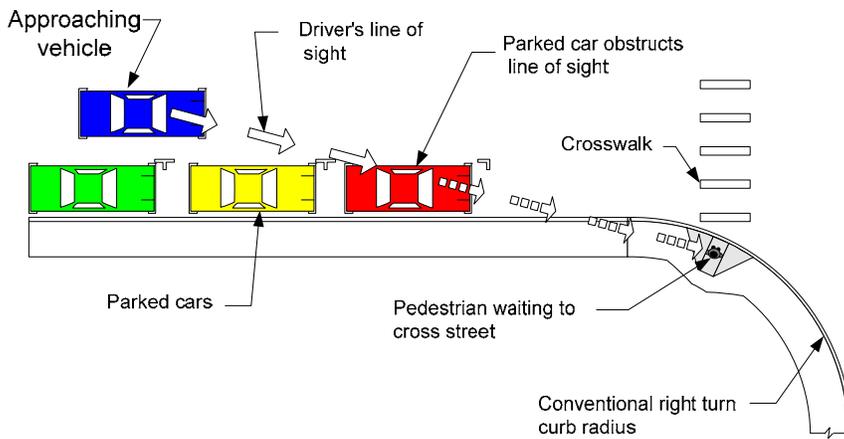
For marked crosswalks, the standard crosswalk marking consists of a series of wide white lines parallel with the longitudinal axis of the roadway. Crosswalk widths are at least 8 feet. A width of 10 feet is preferred in central business districts.* The lines are positioned at the edges and centers of the traffic lanes to place them out of the normal wheel path of vehicles. The preferred type of crosswalk is a longitudinal pattern known as a Ladder Bar and is shown in the [Standard Plans](#). Set back “stop” and “yield” lines to provide for sight distance to all approaches to an intersection. Stop and yield line dimensions and placement must conform to the MUTCD and are shown in the [Standard Plans](#).

**Guide for the Planning, Design, and Operation of Pedestrian Facilities, AASHTO, 2004: 6 feet minimum, 10 feet desirable.*

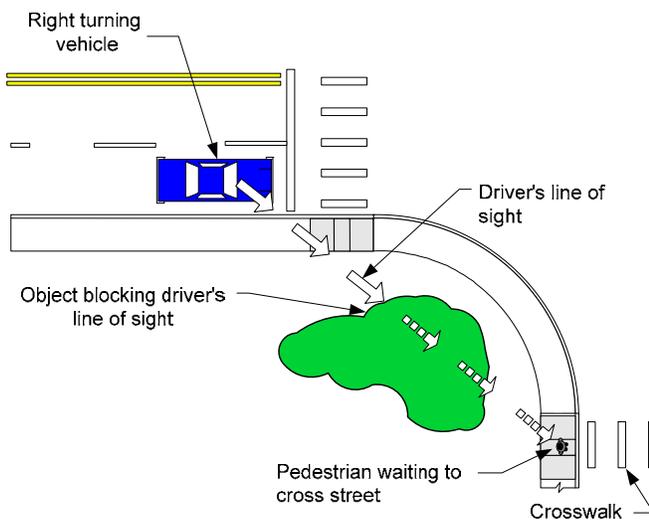
**MUTCD crosswalks should be at least 6 feet wide.*

Communities sometimes request specially textured crosswalks (such as colored pavement, bricks, or other materials). Consider that some textured materials may cause confusion for visually impaired pedestrians and can create discomfort for wheelchair users. These crosswalks do not always fall within the legal definition of a marked crosswalk, and parallel white crosswalk lines are recommended to enhance visibility and delineate the crosswalk (see the [MUTCD](#) or Local Agency Crosswalk Options website: www.wsdot.wa.gov/Design/Standards/PlanSheet/PM-2.htm). Provide a nonslip surface on crosswalk markings appropriate for wheelchair use.

When locating crosswalks at intersections, consider the visibility of the pedestrian from the motorist's point of view. Shrubbery, signs, parked cars, and other roadside appurtenances can block the motorist's view of the pedestrian. [Exhibit 1510-11](#) illustrates these sight distance considerations.



Parked car blocking line of sight



Obstructed line of sight

Obstructed Line of Sight at Intersection
Exhibit 1510-11

(10) Midblock Crossings

On roadways with pedestrian crossing traffic caused by nearby pedestrian generators, consider a midblock pedestrian crossing. (See [1510.05\(9\)](#) for crosswalk criteria and [Exhibit 1510-25](#) for marked crosswalk recommendations at unsignalized intersections.) For midblock crossings, the pedestrian access route may have a cross slope that matches the running slope of the roadway (PROWAG R305.2.2.3). Note that the installation of a midblock pedestrian crossing on a state highway is a design deviation that requires ASDE approval and documentation. An example of a midblock crossing is shown in [Exhibit 1510-12](#).



Midblock Pedestrian Crossing
Exhibit 1510-12

Conditions that might favor a midblock crossing include the following:

- Significant pedestrian crossings demand.
- Pedestrians fail to recognize the best or safest place to cross along a highway and it is advisable to delineate the optimal location.
- The adjacent land use creates high concentrations of pedestrians needing to cross the highway at that location.
- The proposed crossing can concentrate or channel multiple pedestrian crossings to a single location.
- The crossing is at an approved school crossing on a school walk route.
- There is adequate sight distance for motorists and pedestrians.
- It is farther than 300 feet from an existing intersection.
- Speeds are less than 40 mph.

Consider the use of a warning beacon, as shown in [Exhibit 1510-13](#).



Midblock Crossing With Beacon
Exhibit 1510-13

(11) Raised Medians/Traffic Islands

Wide, multilane streets are often difficult for pedestrians to cross, particularly when there are insufficient gaps in vehicular traffic because of heavy volumes. Consider the use of raised medians and traffic islands with a pedestrian refuge area (see [Exhibit 1510-14](#)) on roadways with the following conditions:

- Two-way, multilane arterial with high speeds (above 45 mph), high average daily traffic (ADT), and large pedestrian volumes.
- Significant pedestrian collision history, especially near a school or other community center.
- Crossing distance exceeds 60 feet.
- Complex or irregularly shaped intersections.

The pedestrian access route through a raised median or traffic island can be either raised with curb ramps or a pass-through type (see [Exhibit 1510-14](#)). The edges of pass-throughs and curb ramps are useful as cues to the direction of a crossing. Consider this when designing an angled route through a median or island. Curb ramps in medians and islands can add difficulty to the crossing for some users. There are many factors to consider when deciding whether to ramp up to the median or island grade or create a pass-through median or island matching the roadway grade. Those factors may include profile grade and cross slope of the road, drainage and width, and length of the median or island.

The minimum length of a pedestrian access route through a raised median or traffic island is 6 feet. This provides for a 2-foot detectable warning surface, 2 feet of pedestrian refuge, and 2 feet for another detectable warning surface. Lengths greater than the 6-foot minimum provide more refuge and pedestrian comfort. The width of the pedestrian access route is 5 feet minimum, with a running slope not to exceed 5% (with the exception of curb ramps, if used) and a cross slope not steeper than 2%.

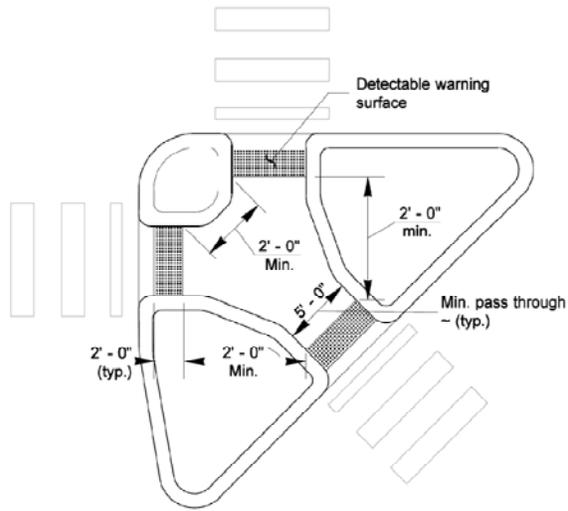
When the pedestrian access route of a shared-use path goes through a raised median or traffic island, the width should be the same as the shared-use path.

Detectable warning surfaces are located at each curb ramp or roadway entrance of a pedestrian access route through a raised median or traffic island. The detectable warning surface shall be located at the back of curb line or at the edge of the roadway where there is no curb.

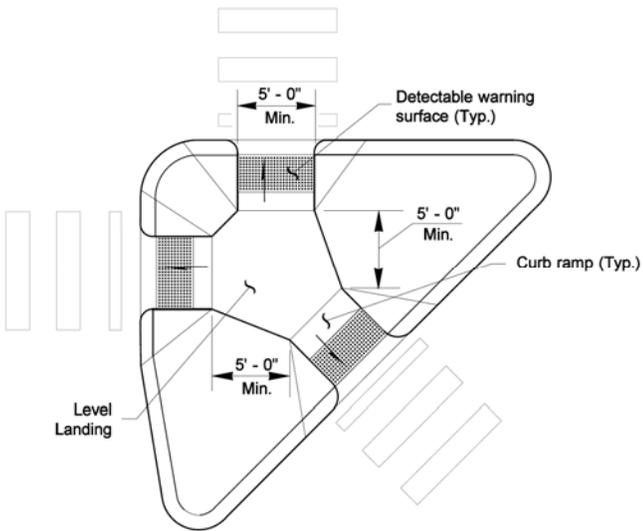
A traffic island used for channelized right-turn slip lanes can provide a pedestrian refuge, but may promote faster turning speeds. Minimize turning radii as much as possible to keep speeds as low as possible. To reduce conflicts, keep the slip lane as narrow as practicable and attempt to maintain a 90° crosswalk angle. (See [Chapter 1310](#) for turn lanes, [Chapter 1360](#) for interchange ramps, and [Chapter 1320](#) for pedestrian accommodations in roundabouts.)



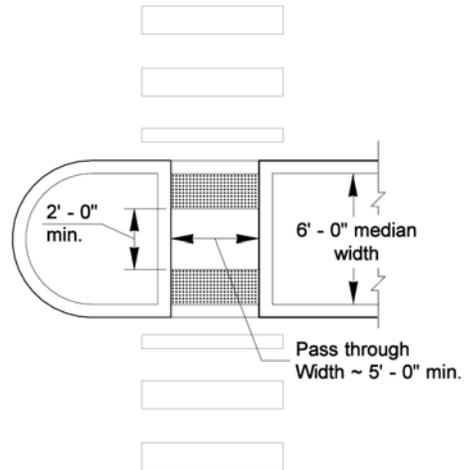
Island Pass-Through



Island Pass-Through



Raised Traffic Island With Curb Ramps



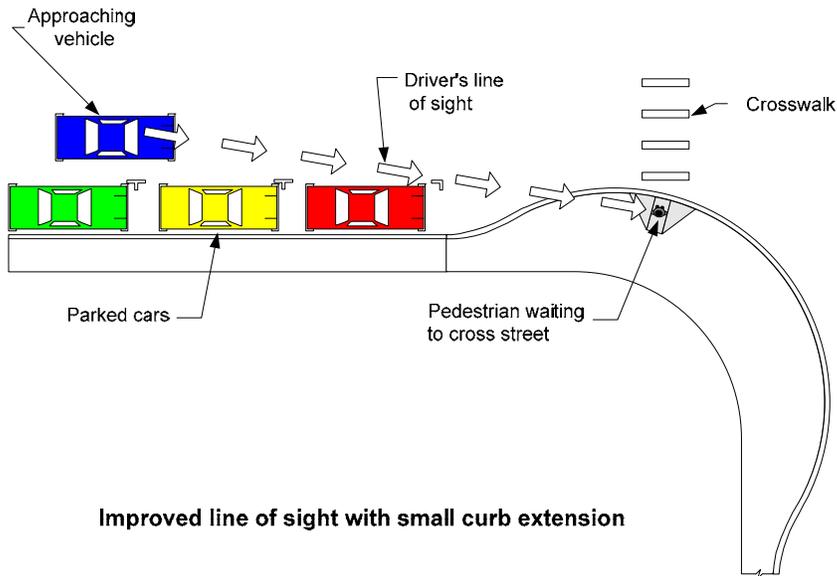
Median Island Pass-Through

Raised Island With Pedestrian Pass-Through
Exhibit 1510-14

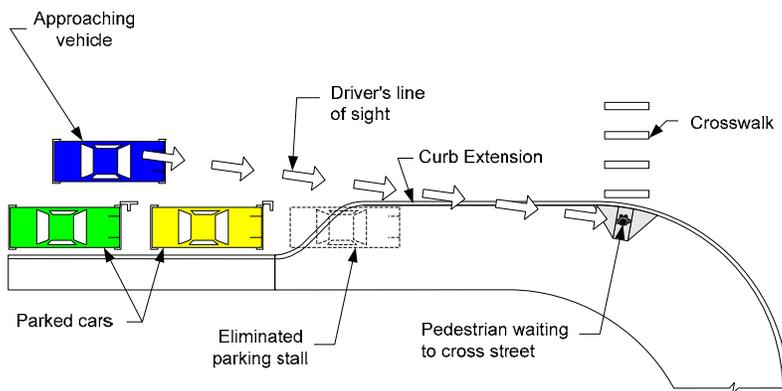
(12) Curb Extensions

Curb extensions are traffic calming measures that may improve sight distance and reduce pedestrian crossing times, which limits pedestrian exposure. Designing a curb extension will help eliminate the sight distance problem with parked cars that limit driver/pedestrian visibility. Curb extensions may allow for better curb ramp design.

Extend the curb no farther than the width of the parking lane. (See Chapter 1140 for shoulder width guidance.) Consider an approach nose and low-level landscaping that does not create a sight obstruction. At intersections with traffic signals, the curb extensions can be used to reduce pedestrian signal timing. Examples of sidewalk curb extensions are shown in Exhibits 1510-15 and 1510-16.



Improved line of sight with small curb extension



Improved line of sight with longer curb extension

Improved Line of Sight at Intersection

Exhibit 1510-15



Curb Extension Examples

Exhibit 1510-16

The right-turn path of the design vehicle or the vehicle most likely to make this turn is a critical element in determining the size and shape of the curb extension. Sidewalk curb extensions tend to restrict the width of the roadway and can make right turns difficult for large trucks.

Avoid interrupting bicycle traffic with curb extensions. Do not use curb extensions on state highways when:

- The design vehicle (see [Chapter 1310](#)) is required to encroach on curbs, opposing lanes, or same-direction lanes, and mountable curbs or other solutions will not improve the circumstances.
- Parking is not present.
- The posted speed is above 35 mph.

Plantings that do not obstruct the vision of pedestrians or drivers may be used within curb extension areas. Consider motorist and pedestrian visibility and Design Clear Zone guidelines (see [Chapter 1600](#)).

(13) Railroad Crossings at Grade

The design of pedestrian facilities across railroad tracks often presents challenges due to the conflicting needs of pedestrians and trains. In particular, the flangeway gap required for trains to traverse a crossing surface may create a significant obstacle for a person who requires a wheelchair, crutches, or walking aids for mobility. Whenever practicable, make crossings perpendicular to the tracks in order to minimize potential problems related to flangeway gaps (see [Exhibit 1510-18](#)). Crossing surfaces may be constructed of timber planking, rubberized materials, or concrete. Concrete materials generally provide the smoothest and most durable crossing surfaces. When detectable warning surfaces are used at railroad crossings, place them according to the stop line placement requirements in the [MUTCD](#).

There are a number of railroad crossing warning devices intended specifically for pedestrian facilities (see the [MUTCD](#)). When selecting warning devices, consider such factors as train and pedestrian volumes, train speeds, available sight distance, number of tracks, and other site-specific characteristics. Coordinate with the HQ Design Office Railroad Liaison early in the design process so that all relevant factors

are considered and agreement may be reached regarding design of warning devices and crossing surfaces.



Pedestrian Railroad Warning Device
Exhibit 1510-17

Except for crossings located within the limits of [first-class cities](#),* the Washington Utilities and Transportation Commission (WUTC) must approve proposals for any new railroad at-grade crossings or changes to warning devices or geometry at existing crossings. Additionally, any project that requires the railroad to perform work such as installation of warning devices or crossings surfaces will require a railroad construction and maintenance agreement. Contact the HQ Design Office Railroad Liaison to coordinate with both WUTC and the railroad company. Coordinate with the HQ Utilities, Railroad, and Agreements Section.

*[RCW 35.10.010](#): A first class city is a city with a population of ten thousand or more at the time of its organization or reorganization that has a charter adopted under Article XI, section 10, of the state Constitution.

There are few first-class cities in the state of Washington. Consult with the HQ Railroad Liaison.



Undesirable



Recommended

Pedestrian Railroad Crossings
Exhibit 1510-18

1510.06 Pedestrian Facility Design: Grade Separations (Structures)

(1) Pedestrian Grade Separations

In extreme cases where there is a pedestrian collision history and the roadway, [like freeways and other high speed facilities](#), cannot be redesigned to accommodate pedestrians at grade, consider providing a [separate pedestrian grade separated structure on crossing](#) (See Exhibits 1510-19 & 20.) ~~along freeways and other high-speed facilities~~. When considering a pedestrian [grade-separation](#) structure, determine whether the conditions that require the crossing are permanent. If there is a likelihood that pedestrians will not use a grade separation, consider less-costly solutions.

Locate the grade-separated crossing where pedestrians are most likely to cross the roadway. A crossing might not be used if the pedestrian is required to deviate significantly from a more direct route.

It is sometimes necessary to install fencing or other physical barriers to channel the pedestrians to the structure and reduce the possibility of undesired at-grade crossings. The HQ Bridge and Structures Office is responsible for the design of pedestrian structures.

Consider grade-separated crossings where:

- There is moderate-to-high pedestrian demand to cross a freeway or expressway.
- There are large numbers of young children, particularly on school routes, who regularly cross high-speed or high-volume roadways.
- The traffic conflicts that would be encountered by pedestrians are considered unacceptable (such as on wide streets with high pedestrian volumes combined with high-speed traffic).*
- The crossing conditions are extremely hazardous for pedestrians.
- There are documented collisions or close calls involving pedestrians and vehicles.
- One or more of the conditions stated above exists in conjunction with a well-defined pedestrian origin and destination (such as a residential neighborhood across a busy street from a school).*

(2) Pedestrian Bridges

Pedestrian grade-separation bridges (see [Exhibit 1510-19](#)) are more effective when the roadway is below the natural ground line, as in a “cut” section. Elevated grade separations, where pedestrians are required to climb stairs or use long approach ramps, tend to be underutilized. Pedestrian bridges require adequate right of way to accommodate accessible ramp [approaches leading up to and off the structure](#). [The bridge structure must comply with ADA requirements and shall meet the design requirements in \(See Exhibit 1510-27 for either a pedestrian circulation path \(5.0% or less\) or a Building and Facilities Ramp \(between 5.01% and 8.3%\)\) for pedestrian access route parameters.](#)

For the minimum vertical clearance from the bottom of the pedestrian structure to the roadway beneath, see [Chapter 720](#). This minimum height requirement can affect the

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**Guide for the Planning, Design, and Operation of Pedestrian Facilities, AASHTO, 2004*

length of the pedestrian ramp [approaches](#) to the structure. To comply with ADA requirements, the approaches to the pedestrian bridge are identified as either a pedestrian ~~access-circulation route-path (5.0% or less)~~ or a ~~pedestrian access~~[building and facilities](#) ramp [\(between 5.01% and 8.3%\)](#) and shall meet the requirements of [1510.07\(2\) and Exhibit 1510-27](#). When ramps are not feasible, provide both elevators and stairways. Stairways are to be designed in accordance with the *Standard Plans*.

Railings are provided on pedestrian bridges. Protective screening is sometimes desirable to deter objects from being thrown from an overhead pedestrian structure (see [Chapter 720](#)). The minimum clear width for pedestrian bridges is 8 feet.

Consider a clear width of 14 feet where a pedestrian bridge is enclosed or shared with bicycles or equestrians.

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Pedestrian Bridges

Exhibit 1510-19

(32) Pedestrian Tunnels

Tunnels are an effective method of providing crossings for roadways located in embankment sections. Well-designed tunnels can be a desirable crossing for pedestrians. When possible, design the tunnel with a nearly level profile to provide complete vision from portal to portal (see [Exhibit 1510-20](#)). Some pedestrians may be reluctant to enter a tunnel with a depressed profile because they are unable to see whether the tunnel is occupied. Police officers also have difficulty patrolling depressed profile tunnels. [\(See Exhibit 1515-27. Building and Facilities Ramp for pedestrian access route parameters.\)](#)

Provide vandal-resistant daytime and nighttime illumination within the pedestrian tunnel. Installing gloss-finished tile walls and ceilings can also enhance light levels within the tunnel. The minimum overhead clearance for a pedestrian tunnel is 10 feet. The minimum width for a pedestrian tunnel is 12 feet. Consider a tunnel width between 14 and 18 feet depending on usage and the length of the tunnel.

[Pedestrian tunnels require adequate right of way to accommodate accessible ramp approaches leading to the tunnel structure. The tunnel structure must comply with ADA requirements and shall meet the design requirements in Exhibit 1510-27 for either a pedestrian circulation path \(between 5.01% and 8.3%\) or a building and facilities ramp \(between 5.01% and 8.3%\).](#)

The approaches to the pedestrian tunnel are identified as either a pedestrian [access route/circulation path \(between 5.01% and 8.3%\)](#) or a [pedestrian-access/building and facilities ramp \(between 5.01% and 8.3%\)](#) and shall comply with ADA requirements as outlined in [1510.07\(2\) and Exhibit 1510-27](#).



Pedestrian Tunnel
Exhibit 1510-20

1510.07 Other Pedestrian Facilities

(1) *Transit Stops and School Bus Stops*

The location of transit stops is an important consideration in providing appropriate pedestrian facilities. (Coordinate with the local transit provider.) Newly constructed transit stops must conform to ADA requirements (see [Chapter 1430](#)). On new construction, design the transit stop such that it is accessible from the sidewalk or paved shoulder. A transit stop on one side of a street usually has a counterpart on the opposite side because transit routes normally function in both directions on the same roadway. Provide adequate crossing facilities for pedestrians.

When locating transit stops, consider transit ridership and land use demand for the stop. Also, consider compatibility with the following roadway/traffic characteristics:

- ADT
- Traffic speed
- Crossing distance
- Collision history
- Sight distance
- Connectivity to a pedestrian access route
- Traffic generator density

If any of these suggests an undesirable location for a pedestrian crossing, consider a controlled crossing or another location for the transit stop.

When analyzing locations with high pedestrian collision rates, consider the presence of nearby transit stops and opportunities for pedestrians to reasonably safely cross the street. At-grade midblock pedestrian crossings may be effective at transit stop locations on roadways with lower vehicular volumes. Pedestrian grade separations are appropriate at midblock locations when vehicular traffic volumes prohibit pedestrian crossings at grade. (See [Exhibit 1510-25](#) for recommendations for marked crosswalks at unsignalized intersections.)

School bus stops are typically adjacent to sidewalks in urban areas and along shoulders in rural areas. Determine the number of children using the stop and provide a waiting area that allows the children to wait for the bus. Coordinate with

the local school district. Because of their smaller size, children might be difficult for motorists to see at crossings or stops. Determine whether utility poles, vegetation, and other roadside features interfere with the motorist's ability to see the children. When necessary, remove or relocate the obstructions or move the bus stop. Parked vehicles can also block visibility, and parking prohibitions might be advisable near the bus stop.

(2) Access Ramps Within Transit, Park & Ride, Rest Areas, and Buildings and Facilities

An access ramp provides an accessible pedestrian route from a sidewalk [or pedestrian circulation path](#) to a facility such as a transit stop, park & ride, rest area, pedestrian overcrossing/undercrossing structure, building, or other facilities. When the running slope is 5% or less, it is a pedestrian [access circulation route/path](#); when the running slope is greater than 5% [to a maximum of 8.3% \(between 5.01 % and 8.3%\)](#), it is a [pedestrian access ramp/building and facilities ramp](#). (See [Exhibit 1510-27, Building and Facilities Ramp](#) for the design requirements.)

- Provide a running slope [of not steeper than 12H:1V \(8.3%\) or less](#) on newly constructed pedestrian access ramps. The cross slope is not to exceed 2%.
- The minimum clear width of ramps is 3 feet; however, it is desirable to match the width of the connecting pedestrian facility.
- Do not exceed 2 feet 6 inches on the vertical rise of ramps between landings.
- Provide landings at the top and bottom of each access ramp run.
- Provide handrails on all ramp runs with a rise greater than 6 inches.

Match ramp landing widths to the widest ramp entering the landing. Landings must have a minimum clear length of 5 feet with a 2% maximum cross slope. If a change in direction is needed, a 5-foot x 5-foot landing is required (see [Exhibit 1510-27](#)).



Pedestrian Access Ramp
Exhibit 1510-21

1510.08 Illumination and Signing

In Washington State, the highest number of collisions between vehicles and pedestrians occur during November through February when there is poor visibility and fewer daylight hours. Illumination of pedestrian crossings and other walkways is an important design consideration because lighting has a major impact on a pedestrian's safety and sense of security. Illumination provided solely for vehicular traffic is not always effective in lighting parallel walkways for pedestrians. Consider pedestrian-level (mounted at a lower level) lighting for walkways, intersections, and other pedestrian crossing areas with high nighttime pedestrian activity, such as shopping districts, transit stops, schools, community centers, and other major pedestrian generators or areas with a history of pedestrian collisions (See [Chapter 1040](#) for design guidance on illumination and [Chapter 1020](#) and the [MUTCD](#) for pedestrian-related signing.)

1510.09 Work Zone Pedestrian Considerations

Providing access and mobility for pedestrians through and around work zones is an important design concern and must be addressed in the temporary traffic control plans if the project occurs in a location accessible to pedestrians. The designer must determine pedestrian needs in the proposed work zone during the public process and through field visits. In work zones:

- Separate pedestrians from conflicts with work zone equipment and operations.
- Separate pedestrians from traffic moving through or around the work zone.
- Provide pedestrians with alternate routes that provide accessible and convenient travel paths duplicating, as closely as feasible, the characteristics of the existing pedestrian facilities.

Provide walkways that are clearly marked and pedestrian barriers that are continuous, nonbendable, and detectable to persons with impaired vision using a cane. Also, keep:

- The pedestrian head space clear.
- Walkways free from pedestrian hazards such as holes, debris, and abrupt changes in grade or terrain.
- Access along sidewalks clear of obstructions such as construction traffic control signs.
- A minimum clear width path throughout: 4 feet for pedestrians or 10 feet for pedestrians and bicyclists.

Temporary pedestrian facilities within the work zone must meet accessibility criteria (see [Exhibits 1510-22](#) and [1510-27](#)).

Consider the use of flaggers if pedestrian generators such as schools are in the work zone vicinity. Consider spotters prepared to help pedestrians through the work zone.

Provide the requirement of advance public notification of sidewalk closures in the contract special provisions and plans.

Where transit stops are affected or relocated because of work activity, provide an accessible route to temporary transit stops.

For further information or guidance on work zone pedestrian considerations, see [Chapter 1010](#) and the [MUTCD](#).



Meets ADA Requirements



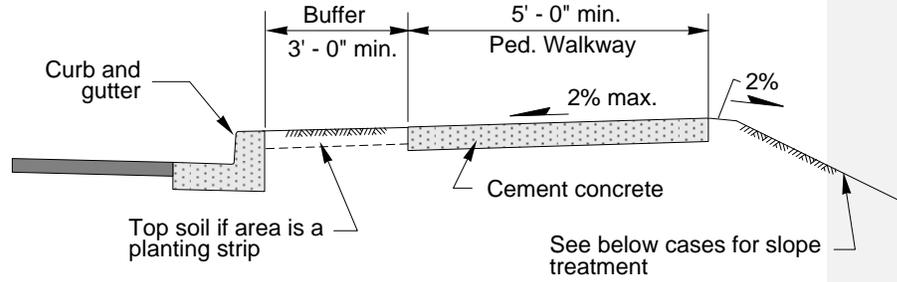
Does Not Meet ADA Requirements

Work Zones and Pedestrian Facilities *Exhibit 1510-22*

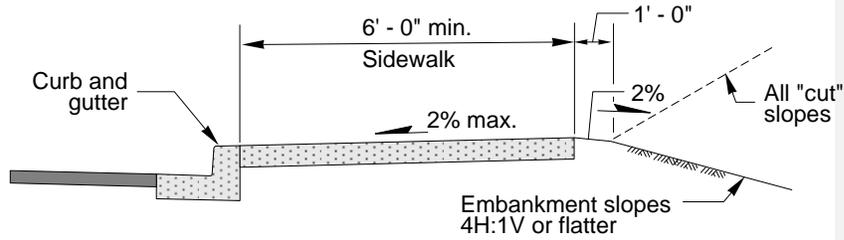
1510.10 Documentation

For the list of documents required to be preserved in the Design Documentation Package and the Project File, see the Design Documentation Checklist:

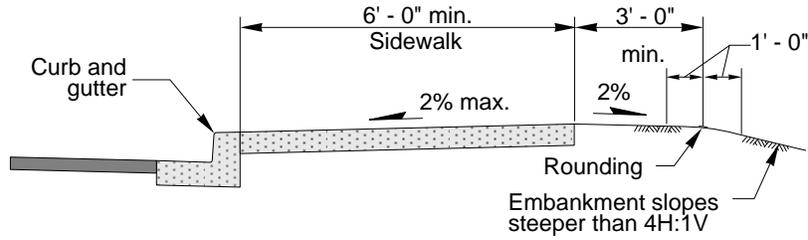
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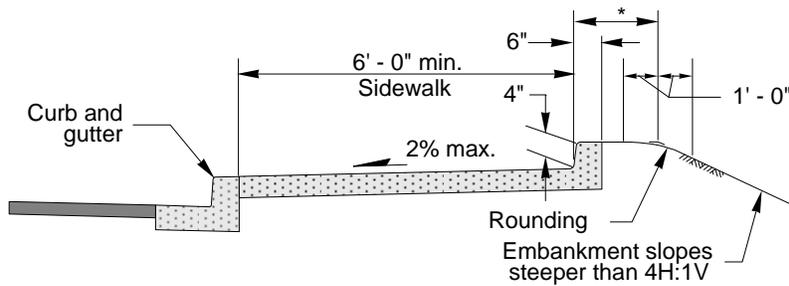
Case A



Case B



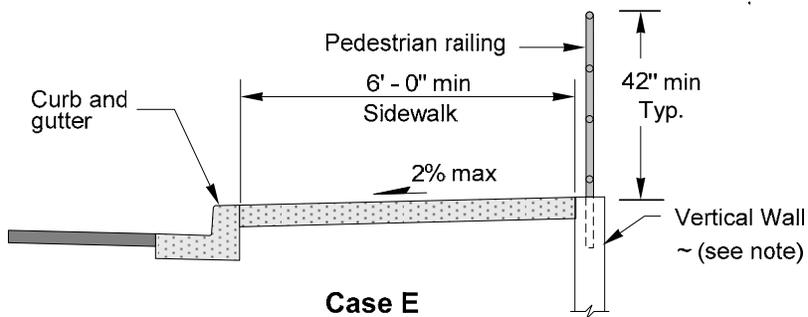
Case C



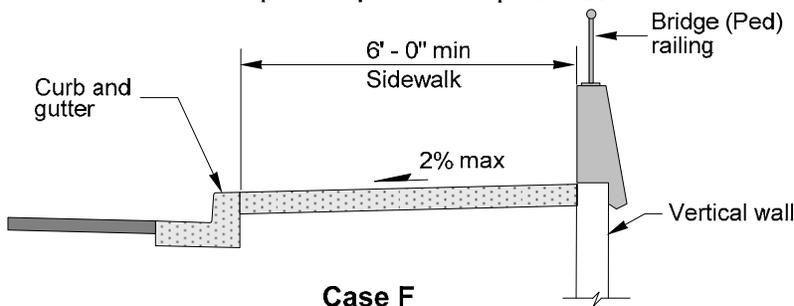
Case D

*See the [Standard Plans](#).

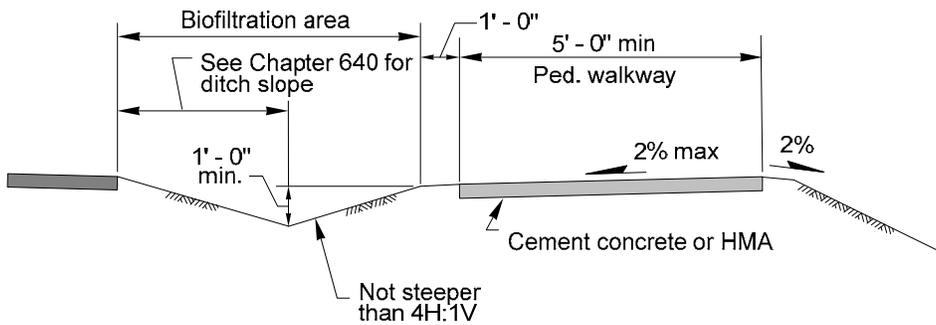
Pedestrian Access Route
Exhibit 1510-23



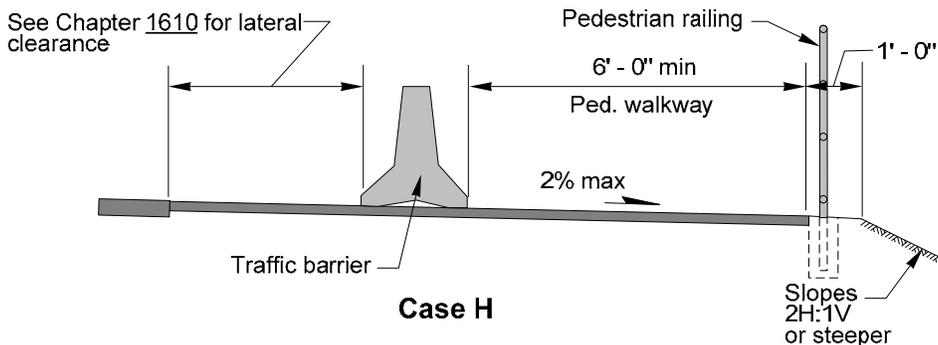
Case E
When the wall is outside the Design Clear Zone
Or when posted speed is 35 mph or less



Case F
When the wall is within the Design Clear Zone



Case G



Case H

Notes for Case E:

- If vertical drop is >2 feet 6 inches, railing is indicated.
- If vertical drop is < 2 feet 6 inches, a 4-inch curb is adequate.

Pedestrian Access Route
Exhibit 1510-23 (continued)

Roadway Classification and Land Use Designation	Sidewalk Recommendations					
	No sidewalk recommended	4-foot-wide paved shoulders adequate	Desirable		Recommended	
			Sidewalk on one side	Sidewalks on both sides	Sidewalk on one side	Sidewalks on both sides
Rural highways/interchanges outside urban growth areas	X ^[1]	X ^[1]				
Suburban highways with 1 or less dwelling unit per acre		X	X			
Suburban highways with 2–4 dwelling units per acre				X	X	
Major arterial in residential area						X
Collector or minor arterial in residential area						X
Local street in residential area with less than 1 dwelling unit per acre		X	X			
Local street in residential area with 1–4 dwelling units per acre				X	X	
Local street in residential area with more than 4 dwelling units per acre						X
Streets in commercial area						X
Streets in industrial area				X	X	

Note:

[1] Consider an engineering study to identify a need.

Sidewalk Recommendations
Exhibit 1510-24

Traffic Volume (ADT)	Posted Speed	Roadway Type			
		2 lanes	2 lanes, raised median ^[1]	4 lanes, raised median ^[1]	6 lanes, raised median ^[1]
Less than or equal to 9,000	30 mph and lower	Marked crosswalk	Marked crosswalk	Additional enhancement	
	35 mph to 40 mph	Marked crosswalk	Marked crosswalk	Additional enhancement	
	45 mph and higher	Additional enhancement	Additional enhancement	Active enhancement	
9,000 to 15,000	30 mph and lower	Marked crosswalk	Marked crosswalk	Additional enhancement	
	35 mph to 40 mph	Marked crosswalk	Marked crosswalk	Additional enhancement	
	45 mph and higher	Additional enhancement	Additional enhancement	Active enhancement	
15,000 to 30,000	30 mph and lower	Additional ^[2] enhancement	Additional enhancement	Additional ^[2] enhancement	Active ^[4] enhancement
	35 mph to 40 mph	Additional ^[2] enhancement	Additional enhancement	Active enhancement	Active ^[4] enhancement
	45 mph and higher	Active ^[5] enhancement	Active enhancement	See note ^[3]	See note ^[3]
Greater than 30,000	45 mph and lower	Active ^[5] enhancement	Active enhancement	Pedestrian ^[6] traffic signal	Pedestrian ^[6] traffic signal

Inside city limits where the population exceeds 25,000, the decision to mark crosswalks resides with the city, subject to WSDOT approval of the installation and type. Provide documentation for all marked crosswalks. For additional considerations that may be appropriate based on site-specific engineering analyses, see [1510.05\(3\)](#).

Notes:

- [1] Raised median/traffic island with a pass-through path minimum width of 5 feet and a median width of 6 feet..
- [2] Consider active enhancement treatment for roadways exceeding 20,000 ADT.
- [3] Provide alternate routes for pedestrian crossings or construct a grade-separated facility.
- [4] Location may be approaching the need for a controlled crossing. A pedestrian signal may be appropriate, based on engineering analysis.
- [5] Raised median/traffic island required.
- [6] Refer to region Traffic Engineer for approval and design of a pedestrian traffic signal. Midblock pedestrian crossings are deviations that require ASDE approval.

Minimum Guidelines (additive for each level):**“Marked crosswalk”**

- Marked/signed in accordance w/MUTCD (signed @ crossing only)
- Pedestrian-view warning signs
- Illumination

“Additional enhancement”

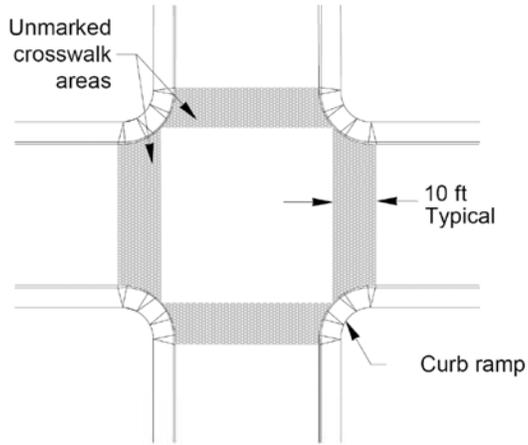
- Minimum guidelines listed under “Marked crosswalk”
- Stop line in accordance w/MUTCD
- Advance signing in accordance w/MUTCD

“Active enhancement”

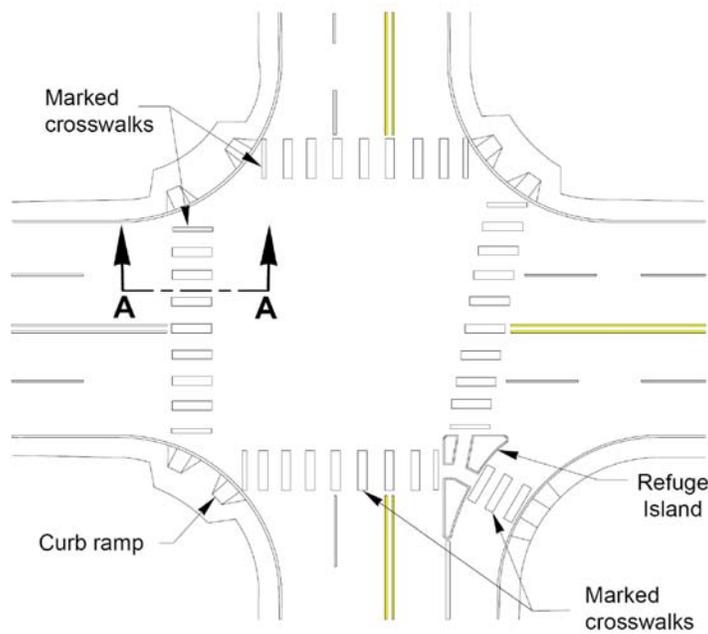
- Minimum guidelines listed under “Additional enhancement”
- Pedestrian-actuated warning beacons—overhead for roadway w/4 or more lanes

Crosswalk Guidelines

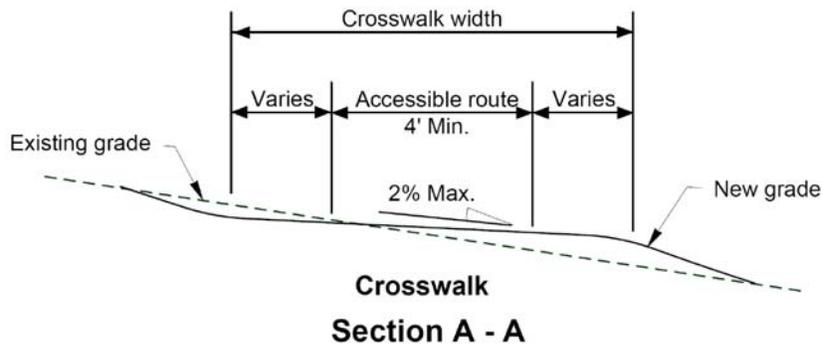
Exhibit 1510-25



Unmarked Crosswalks



Marked Crosswalk



Crosswalks and Pedestrian Access Route Cross Slope

Exhibit 1510-26

Design Feature Design Element	Curb Ramp	Sidewalk	Driveway Crossing	Crosswalk	Landing	Crossing Through Island/Median	Pedestrian Circulation Path (Inc. Shared-Use Paths)[14]	Building and Facilities Ramp ^{[11][2][14]}
Clear Width	4 ft Min [1510.05(6)]	4 ft Min for accessible route within sidewalk width ^{[3][5]} [1510.05(5)]	4 ft Min – See Std Plans	4 ft Min for accessible route within crosswalk ^[4] [1510.05(8),(9),(10)]	See Curb Ramp or Building and Facilities Ramp requirements	Pass-through: 5 ft Min – Island: 6 ft Min [1510.05(11)]	4 ft Min ^[5] [1510.05(2)] [1510.05(4)]	At least the width of widest ramp run connected to landing – 3 ft Min
Cross Slope	2% Max [1510.05(6)]	2% Max [1510.05(5)]	2% Max – See Std Plans	2% Max for accessible portion	2% Max	2% Max	2% Max	2% Max
Running Slope	8.3% Max ^{[7][13]} (+2H:1V) [1510.05(4)]	5% Max ^[6] [1510.05(5)]	See Note 6 [1510.05(5)]	5% Max	2% Max	5% Max [1510.05(11)] If curb ramp is used, see Curb Ramp requirements	5% Max ^[6] [1510.05(2)] [1510.05(4)]	8.3% Max ^[7]
Maximum Vertical Rise	N/A	N/A	N/A	N/A	N/A	N/A	2.5 ft ^[6] when grade is greater than 5%N/A	Landing every 2.5 ft vertical rise [1510.07(2)]
Grade Break	Flush – See Std Plans	Flush	½ inch between roadway gutter & curb	Flush	Flush	Flush	Flush	Flush
Surface Discontinuities	N/A	New: Flush Existing: See Note 8	N/A	N/A	N/A	N/A	New: Flush Existing: See Note 8	New: Flush Existing: See Note 8
Curb Flare Slope	10% Max	N/A	10% Max ^[9]	N/A	N/A	If curb ramp is used, see Curb Ramp requirements	N/A	N/A
Horizontal [12] Encroachment	4 inches Max [1510.05(2)(a)(3)]	4 inches Max	4 inches Max	4 inches Max	4 inches Max	4 inches Max	4 inches Max	4 inches Max

U.S. Access Board Accessibility Requirements for Pedestrian Facility Design
(For WSDOT guidance, see referenced chapter sections in table)

Exhibit 1510-27

Design Element \ Design Feature	Curb Ramp	Sidewalk	Driveway Crossing	Crosswalk	Landing	Crossing Through Island/Median	Pedestrian Circulation Path ^[14] (Inc. Shared-Use Paths)	Building and Facilities Ramp ^{[1][2][14]}
Vertical Clear Area	80 inches Min ^[10] [1510.05(2)]	80 inches Min ^[10] [1510.05(2)]	80 inches Min ^[10]	80 inches Min ^[10]	80 inches Min ^[10]	80 inches Min ^[10]	80 inches Min ^[10]	80 inches Min ^[10]
Counter Slope	5% Max [1510.05(6)]	N/A	N/A	See Curb Ramp	N/A	N/A	N/A	N/A
Landing	Width: Min match curb ramp width Length: New: 4 ft min Alteration: 3 ft [1510.05(6)]	N/A	N/A	Diag. curb ramp: Provide 4 ft by 4 ft clear area within crosswalk markings or outside traveled way [1510.05(6)]	-----	N/A unless a curb ramp is used – See Curb Ramp requirements	When grade > 5% & for separate alignment, provide level landing every 2.5 ft vertical rise^[6] N/A	Level landing required for every 2.5 ft vertical rise – Match landings to the width of the widest ramp leading into the landing ^[11]
Detectable Warning Surface	2 ft wide, 6 inches behind face of curb, full width of ramp	N/A	N/A	N/A	N/A	2 ft wide, each side, 6 inches behind face of curb, full width of opening	2 ft wide, full width when path joins roadway shoulder	N/A

Notes:

- [1] A ramp with a rise greater than 6 inches in this context is on a walkway on a separate alignment that is not adjacent to or parallel to a roadway; ramps may have slopes greater than 5% and 8.3% max.
- [2] Ramps with a rise greater than 6 inches. Also, ramps require edge protection and shall have handrails.
- [3] Required sidewalk width: 5 ft where buffer is included, 6 ft when sidewalk is next to curb.
- [4] Unmarked crosswalks require a 10 ft wide area across intersection. Marked crosswalks are required to be 8 ft min., 10 ft desirable. (See [RCW 46.04.160](#) and the [MUTCD](#) for crosswalks.)
- [5] If less than 5 ft wide, provide 5 ft x 5 ft passing areas every 200 ft.
- [6] Allowed to match the roadway grade when located adjacent to and parallel to the roadway; landings would not be required.
- [7] For Preservation projects: ~~10%^H:1^V~~ to ~~8.33%^H:1^V~~ for rises to 6 inches; ~~12.5%^H:1^V~~ to ~~10%^H:1^V~~ for rises to 3 inches.
- [8] Changes in level of ¼ inch max are allowed to be vertical; changes between ¼ inch and ½ inch max to be beveled at 2H:1V.
- [9] Required when sidewalk is provided behind the driveway.
- [10] 7 ft min. vertical clearance required to bottom of signs (see the [MUTCD](#) and the [Standard Plans](#)).
- [11] Change of direction requires 5 ft x 5 ft landing.
- [12] Shall not reduce the clear width required for pedestrian access routes.
- [13] ~~The curb ramp maximum running slope shall not require the ramp length to exceed 15 feet.~~ [14] For additional Shared Use Path information see chapter 1515.

U.S. Access Board Accessibility Requirements for Pedestrian Facility Design
(For WSDOT guidance, see referenced chapter sections in table)
Exhibit 1510-27 (continued)

