SHA Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways

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MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

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1 Introduction

1.1 Purpose

The purpose of the State Highway Administration (SHA) Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways is to provide guidance for planners and engineers to create a safe, connected, and accessible pedestrian network in Maryland designed for users of all ages and abilities consistent with the *Maryland Department of Transportation (MDOT) Complete Streets Policy, SHA's Policy on Non-Discrimination and Equal Access Under the Americans with Disabilities Act,* the *2050 Maryland Statewide Bicycle and Pedestrian Master Plan (BPMP),* the *SHA Context Driven Guide: Access and Mobility for All Users,* and national best practices.

This guide provides design requirements and guidance to ensure SHA's projects are designed and constructed to be accessible to persons with disabilities in compliance with the Americans with Disabilities Act (ADA). The Public Right of Way Accessibility Guidelines (PROWAG) developed by the US Access Board serve as the basis for SHA's accessibility guidelines and requirements. The guide also includes pedestrian design guidance and best practices that promote the design and construction of safe, comfortable, and connected pedestrian facilities.

1.2 Policy

1.2.1 MDOT Complete Streets Policy

The MDOT Complete Streets Policy was implemented in 2024 to "facilitate the planning, design, and construction of transportation options that are safer and more accessible to all users of all ages and abilities who bike, walk, take transit, drive or use electric personal assistive mobility devices." Building on the foundation established in the MDOT Complete Streets Policy, users of these guidelines shall:

- Create a safe, connected, and accessible pedestrian network to accommodate all users in a manner that is suitable to the land use context as defined by the Context Guide.
- Provide safe and comfortable pedestrian facilities designed for users of all ages and abilities.
- Apply these guidelines on all projects within MDOT right-of-way during planning, design, construction, and reconstruction of any transportation facility where pedestrians are legally allowed.

The MDOT Complete Streets Policy can be found in the MDOT Policy Manual on the MDOT website.

1.2.2 SHA Policy on Non-Discrimination and Equal Access Under the Americans with Disabilities Act

The State Highway Administration is committed to a policy of full accessibility and does not discriminate in the provision of any of its business activities. The Administration is committed to upholding the intent and spirit of the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973 to the fullest extent possible. This commitment extends to all programs, services and activities of SHA to ensure that no qualified individual with a disability is discriminated against on the basis of disability.

It is SHA's responsibility and desire that no person in the State of Maryland be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity supported by SHA based on their disability, as provided by the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973. It is also the responsibility of each and every SHA employee to work cooperatively to achieve the goals and objectives of this statement. SHA is fully committed to the goal of achieving equal opportunity and non-discrimination for all persons in their interactions with SHA.

1.2.3 Policy for Accommodating Persons with Disabilities along State Highways

The State Highway Administration shall make the accommodation of persons with disabilities a routine and integral element of its planning, design, construction, operation and maintenance activities for all projects as outlined herein.

1.3 Design Guidelines and Resources

1.3.1 Public Right of Way Accessibility Guidelines (PROWAG)

The Public Right-of-Way Accessibility Guidelines (PROWAG) are guidelines that the U.S. Access Board has developed and published under the Americans with Disabilities Act (ADA) and the Architectural Barriers Act (ABA) that address access to sidewalks and streets, shared use paths, crosswalks, curb ramps, pedestrian signals, on-street parking, and other pedestrian components of the public right-of-way. The US Access Board issued a final rule in August 2023, that establishes PROWAG as minimum guidelines for the accessibility of pedestrian facilities in the public right-of-way. Per the final rule, "when the guidelines are adopted, with or without modifications, as accessibility standards in regulations issued by other Federal agencies implementing the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and the Architectural Barriers Act, compliance with those enforceable accessibility standards is mandatory."

The United States Department of Transportation (DOT) issued a final rule effective January 17, 2025, adopting PROWAG as a minimum requirement for accessibility of transit stops in the public right-of-way under the DOT's ADA regulations. For PROWAG to become an enforceable standard for all pedestrian facilities within the public right of way, the United States Department of Justice (DOJ) would need to adopt PROWAG into their ADA regulations. Although the DOJ has not yet completed formal rulemaking to adopt PROWAG, SHA has updated its guidelines and standards to incorporate PROWAG guidance such that the pedestrian facilities subject to the requirements of these guidelines will meet or exceed the minimum requirements established in PROWAG.

1.3.2 Americans with Disabilities Act Accessibility Standards (ADA Standards)

The Americans with Disabilities Act Accessibility Standards issued by the DOJ and DOT under the Americans with Disabilities Act (ADA) apply to places of public accommodation, commercial facilities, and state and local government facilities in new construction, alterations, and additions. The ADA Standards are based on minimum guidelines set by the US Access Board. DOJ's ADA Standards apply to all facilities except public transportation facilities, which are subject to DOT's ADA Standards. SHA applies the DOJ ADA Standards on projects that include new construction or alterations of buildings, sites, and facilities.

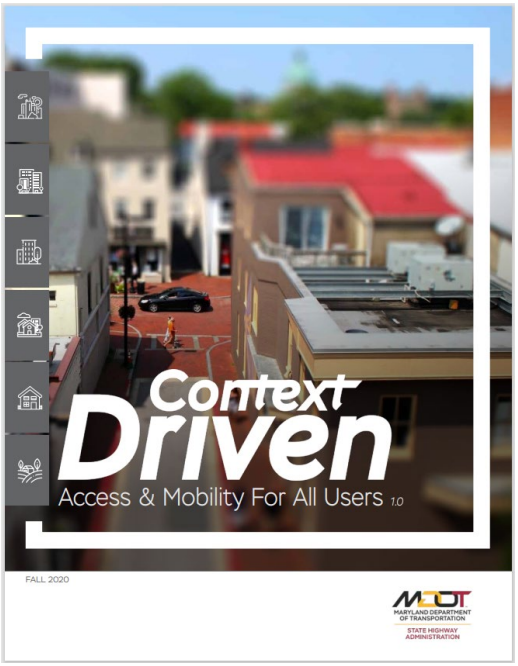

Figure 1-1 Context Driven: Access and Mobility for All Users

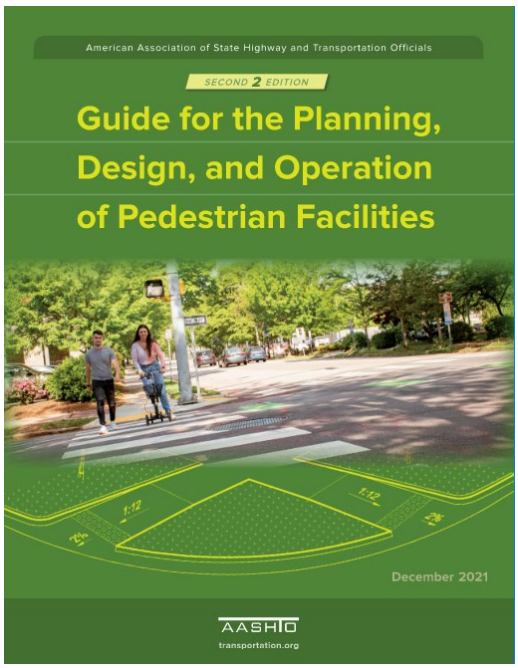

Figure 1-2 AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities

1.3.3 Context Driven Guide: Access and Mobility for All Users

The SHA Context Driven Guide is a planning and design resource that establishes SHA's context-based approach to providing safe and effective multimodal transportation systems that are appropriate for the surrounding roadway and land use environment. A toolkit has been developed as part of the Context Driven Guide that includes innovative and proactive design treatments to improve safety, accessibility, and mobility for pedestrians and bicyclists in different contexts. Designers should use the Context Driven Guide and Toolkit as part of the design development process and in conjunction with the guidance in this guide.

1.3.4 AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities, Second Edition

In 2021, The American Association of State Highway and Transportation Officials (AASHTO) published the second edition of the AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities (AASHTO Pedestrian Guide). The guide should be used as a resource for best practice design guidance in conjunction with the design guidance and requirements in this guide.

1.3.5 MUTCD and Traffic Control Device Design Guidance

SHA projects should be designed per the requirements of the latest adopted Manual on Uniform Traffic Control Devices (MUTCD) or Maryland Manual on Uniform Traffic Control Devices (MdMUTCD) as well as SHA Office of Traffic and Safety (OOTS) design guidance.

1.3.6 SHA Roadways

All County, local jurisdiction, and private development projects along SHA-owned roadways shall follow these guidelines even if the pedestrian facility is outside of the SHA right-of-way.

1.3.7 Non-SHA Roadways

Projects on County, local, or other non-SHA-owned roadways may use the pedestrian design guidelines adopted by the County or local jurisdiction, except where required by other policies, agreements, or program requirements. SHA projects that include work on County or local roadways should provide improvements on County and local roadways that follow the requirements of these guidelines or provide equivalent pedestrian accommodations per County or local pedestrian design guidelines. Where SHA right-of-way extends along a portion of a non-SHA roadway, the improvements should follow the requirements of these guidelines or provide equivalent pedestrian accommodations per County or local pedestrian design guidelines. All projects must, at a minimum, comply with the Public Right of Way Accessibility Guidelines (PROWAG) and the Americans with Disabilities Act Accessibility Standards, as applicable.

1.4 Defined Terms

Accessible - A pedestrian facility or element in the public right-of-way that complies with these guidelines.

Accessible Pedestrian Signal - A device that communicates information about pedestrian signal timing in non-visual formats such as audible tones or speech messages, and vibrating surfaces.

Alteration or altered - A change to or an addition of a pedestrian facility in an existing, developed public right-of-way that affects or could affect pedestrian access, circulation, or usability.

Back Curb – A raised feature that is typically placed along the back of the sidewalk to reduce grading impacts to adjacent parcels.

Blended Transition - A wraparound connection at a corner, or a flush connection where there is no curb to cut through, other than a curb ramp.

Block Perimeter - The near side of the streets surrounding a block. For example, on a square block bounded by Main Street to the south, Pine Street to the north, 1st Street to the east, and 2nd Street to the west, the block perimeter includes the north side of Main Street, the south side of Pine Street, the west side of 1st Street, and the east side of 2nd Street.

Boarding Platform - A platform raised above standard curb height used for transit vehicle boarding and alighting.

Building - Any structure used or intended for supporting or sheltering any use or occupancy.

Combination Curb Ramp – A curb ramp that is a combination of a parallel curb ramp and a perpendicular curb ramp. The perpendicular ramp typically connects to the curb or the street it serves with the parallel curb ramp connecting to the sidewalk or shared use path.

Crosswalk - That part of a roadway that is located at an intersection included within the connections of the lateral lines of the pedestrian circulation paths 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 pedestrian circulation path on one side of the roadway, the part of a roadway included within the extension of the lateral lines of the pedestrian circulation path at right angles to the center line; or at any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by pavement marking lines on the surface. Crosswalks at intersections may be marked or unmarked.

Cross Slope - The slope that is perpendicular to the direction of pedestrian travel.

Curb - A raised feature along the side of a street that delineates the edge of the roadway or pedestrian circulation path.

Curb Line - A line at the face of the curb that marks the transition between the curb and the gutter or street.

Curb Ramp - A sloped connection that is cut through or built up to a curb. Curb ramps may be perpendicular or parallel to the curb or to the street they serve or be a combination thereof.

Detectable Warning Surface - A standardized surface feature built in or applied to pedestrian circulation paths and other pedestrian facilities to warn of hazards.

Developed – Containing buildings, pedestrian facilities, roadways, utilities, or elements.

Driveway – A general term denoting a public or private way for purposes of vehicular travel that connects the roadway to the adjacent parcels.

Element - An architectural or mechanical component of a building, pedestrian facility, space, site, or public right-of-way.

Grade – See "Running Slope".

Grade Break - The line where two surface planes with different running slopes meet.

Highway - A general term denoting a public way for purposes of vehicular travel, including the entire area within the public right-of-way.

Median - The area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges, and at opposite approaches of the same intersection.

Operable Part - A component of an element used to insert or withdraw objects, or to activate, deactivate, or adjust the element, or to interact with the element.

Parallel Curb Ramp – A curb ramp with a running slope that is parallel to the curb or street it serves.

Passenger Loading Zone - An area that is specifically designed or designated for loading and unloading passengers, but that does not primarily serve vehicles on a fixed or scheduled route.

Pedestrian - A person on foot, travelling by wheelchair or other mobility device, on skates, or on a skateboard.

Pedestrian Access Route – An accessible, continuous, and unobstructed path of travel for use by pedestrians with disabilities within a pedestrian circulation path.

Pedestrian Activated Warning Devices - Devices that are installed in conjunction with a warning sign and are activated to alert vehicle operators to the presence of a pedestrian, such as rectangular rapid flashing beacons.

Pedestrian Change Interval - An interval during which the flashing upraised hand (symbolizing "don't walk") signal indication is displayed.

Pedestrian Circulation Path - A prepared exterior or interior surface provided for pedestrian use in the public right-of-way.

Pedestrian Facility - A structure, route, or space for pedestrian circulation or use located in the public right-of-way.

Pedestrian Hybrid Beacon - A special type of hybrid beacon used to warn and control traffic at an unsignalized location to assist pedestrians in crossing a street at a marked crosswalk.

Pedestrian Refuge Island - A defined area 72 inches long minimum in the direction of pedestrian travel located between traffic lanes for pedestrian refuge within a median, splitter island, or channelizing island.

Pedestrian Signal Head - A device containing the walking person symbol (symbolizing "walk") and the upraised hand symbol (symbolizing "don't walk"), that is installed to direct pedestrian traffic at a crosswalk.

Perpendicular Curb Ramp – A curb ramp with a running slope that is perpendicular to the curb or the street it serves.

Public Right-of-Way - Public land acquired for or dedicated to transportation purposes, or other land where there is a legally established right for use by the public for transportation purposes.

Push Button - A button to activate a device or signal timing for pedestrians, bicyclists, or others crossing a roadway.

Push Button Locator Tone - A repeating sound that informs approaching pedestrians that a push button exists to actuate pedestrian timing or receive additional information and that enables pedestrians who are blind or have low vision to locate the push button.

Qualified Historic Building or Facility – A building or facility that is listed in or eligible for listing in the National Register of Historic Places or designated as historic under an appropriate state or local law.

Ramp - A sloped walking surface with a running slope steeper than 1:20 (5.0%) that accomplishes a change in level and is not part of a pedestrian circulation path that follows the roadway grade. A curb ramp is not a ramp.

Roadway - That portion of a highway improved, designed, or ordinarily used for vehicular travel and parking lanes, but exclusive of the sidewalk, berm, or shoulder.

Roundabout - A circular intersection with yield control at entry, which permits a vehicle on a circular roadway to proceed, and with deflection of the approaching vehicle counterclockwise around a central island.

Running Slope - The slope that is parallel to the direction of pedestrian travel.

Shared Use Path (transportation trail) - A multi-use path designed primarily for use by bicyclists, pedestrians, and other authorized motorized and non-motorized users, for transportation purposes, and that may also be used for recreation. Shared use paths are physically separated from motor vehicle traffic by an open space or barrier and are either within the highway or other public right-of-way. This includes a shared use path that is on private property but serves as the pedestrian facility along the public roadway.

Side path – A shared use path located within highway right-of-way that is adjacent and parallel to a roadway.

Sidewalk - That portion of a highway between the curb line, or the lateral line of a roadway, and the adjacent property line, or on easements of private property, that is paved or improved and intended for use by pedestrians. This includes sidewalk that is on private property but serves as the pedestrian facility along the public roadway.

Splitter Island – A median island used to separate opposing directions of traffic entering and exiting a roundabout.

Stair - A change in elevation comprised of at least one tread and riser. A curb is not a stair.

Standard Curb Height - The typical height of a curb according to local standards for a given road type, but usually between 3 inches and 8 inches high relative to the surface of the roadway or gutter.

Street – See "Roadway".

Transit Shelter - A structure provided at a transit stop to provide passengers protection from the weather.

Transit Stop - An area that is designated for passengers to board or alight from buses, rail cars, and other transportation vehicles that operate on a fixed route or scheduled route, including bus stops and boarding platforms. This definition does not include intercity rail except where a stop is located in the public right-of-way.

Transitional Segment - The portion of a pedestrian circulation path that connects adjacent surfaces with different slopes or dimensions to provide a smooth transition.

Traveled Way - The portion of the roadway for the movement of vehicles, exclusive of the shoulder, berm, sidewalk, and parking lane.

Vibrotactile - A method of communicating information by touch using a vibrating surface.

Walk Interval - An interval during which the walking person (symbolizing "walk") signal indication is displayed.

2 Scoping

This section discusses when and where accessible pedestrian facilities are required based on the nature of improvements. Some of the information provided in this section is adapted from PROWAG and the AASHTO Pedestrian Guide. Not all sections of PROWAG and the AASHTO Pedestrian Guide are present, and both should be reviewed, in addition to these guidelines, when scoping pedestrian facilities. For reference purposes, the PROWAG sections which start with the letter 'R' followed by the section number are included below. These are typically shown in parentheses.

In addition to the requirements for scoping accessible pedestrian facilities included in this section, the scope of pedestrian improvements on a project should also be selected based on the pedestrian-related performance measures established in the project's Objective Statement. Pedestrian Route Directness and Pedestrian Level of Service are common performance measures used to measure pedestrian connectivity and comfort.

2.1 General (R201)

2.1.1 Scope (R201.1)

All newly constructed pedestrian facilities and altered portions of existing pedestrian facilities for pedestrian circulation and use located in the public right-of-way shall comply with these guidelines.

2.1.2 Temporary and Permanent Pedestrian Facilities (R201.2)

The requirements in these guidelines shall apply to temporary and permanent pedestrian facilities and elements in the public right-of-way. Where a pedestrian circulation path or transit stop is temporarily closed by construction, maintenance operations, or similar conditions, an alternate pedestrian access route (PAR) or transit stop shall be provided in accordance with section 4.

2.2 Alterations (R202)

An alteration is defined as a change to or an addition of a pedestrian facility in an existing, developed public right-of-way that affects or could affect pedestrian access, circulation, or usability.

Therefore, if a project alters an existing facility or part of a facility, the altered area must be accessible to and usable by people who have disabilities in accordance with these guidelines.

Basic repair or maintenance activities such as repairing a pothole or repairing traffic barrier does not require upgrades to pedestrian accessibility. However, new construction, reconstruction and resurfacing the roadway will require full compliance with these guidelines as noted in section 2.4 below.

2.2.1 Connection to Pedestrian Circulation Path (R202.2)

Where pedestrian facilities are altered, they shall be connected by a pedestrian access route complying with section 3.1 to an existing pedestrian circulation path. A transitional segment may be used in the connection.

2.2.2 Existing Physical Constraints (R202.3)

In alterations, where existing physical constraints make compliance with applicable requirements technically infeasible, compliance with these requirements is required to the maximum extent feasible. Existing physical constraints include, but are not limited to, underlying terrain, underground structures, adjacent developed facilities, drainage, or the presence of a significant natural or historic feature. A design waiver will be required where full compliance with these guidelines cannot be provided. See section 5 for information on design waivers.

2.2.3 Reduction in Access Prohibited (R202.4)

An alteration to pedestrian facilities or elements shall not decrease the accessibility of an existing pedestrian facility or element or an accessible connection to an adjacent building or site below the requirements in these guidelines. Negative impacts are unacceptable and will not be granted a design waiver.

2.3 Scoping Guidance and Logical Termini

The scope and limits of accessible pedestrian facilities in a project will typically be determined by the overall scope and limits of the project and in most instances this is acceptable. The limits for pedestrian accessibility should not be set arbitrarily but should be based on connectivity to logical termini. In some cases, it may be necessary to modify or extend a project's limits or scope to maintain existing accessibility, to provide the next level of pedestrian accessibility, or to access a logical terminus. Examples of logical termini include the end of a block, a bus stop, an existing sidewalk, a driveway entrance, a school, a public-use facility, or a major commercial or residential area.

When a sidewalk ends at the end of a block, a receiving ramp shall be provided on the opposite side of the roadway crossing.

Where the limits of roadway work stop at a mid-block location, the construction or reconstruction of pedestrian facilities should extend to the next intersection, within a reasonable distance (maximum 500 feet).

If the curb ramps at one leg of an intersection are upgraded, all existing non-compliant curb ramps shall be upgraded at every leg of the intersection. New curb ramps shall be constructed where required to provide a compliant pedestrian access route.

2.4 Scoping for Different Project Types

The following provides scoping guidance by categorizing projects into levels, each with a progressively higher degree of obligation to integrate accessibility into the project. The obligation to provide access is a function of the type of work undertaken, the potential impact on pedestrian usability, and the opportunity to integrate accessibility features into the design.

A project's scope of work will determine the category (Level 1, 2 or 3) it falls under rather than the funding source for the project. For example, a Fund 77 project for spot patching a roadway would be considered a Level 1 project; a Fund 77 project for roadway resurfacing that includes minor drainage or traffic barrier improvements would be considered a Level 2 project; and a Fund 77 project that includes geometric improvements, new sidewalks, or roadway widening would be considered a Level 3 project.

2.4.1 Level 1 Activities

Level 1 activities do not alter existing pedestrian facilities and therefore do not require those facilities to be upgraded.

Examples of Level 1 activities include (but are not limited to) the following:

- Crack Sealing
- Line Striping that does not impact crosswalk
- Off Road SWM/drainage
- Landscaping
- Lighting Projects
- Interconnect Projects
- Traffic Barrier Projects
- Traffic projects that do not alter pedestrian usability

2.4.2 Level 2 Activities

Level 2 activities include alterations that affect pedestrian usability. When an existing element is replaced, it must meet the minimum accessibility requirements in these guidelines. Level 2 projects shall install new curb ramps or upgrade existing non-compliant curb ramps at any location where an altered pedestrian access route crosses a curb. Consider providing pedestrian improvements to adjacent transit stops and driveways. If more than 50% of a run of sidewalk is being upgraded, the entire length should be upgraded. Bus stops, driveway crossings, and other pedestrian facilities within the run of sidewalk should be upgraded, as well.

Examples of Level 2 projects include (but are not limited to) the following:

- Resurfacing
    - Per guidance from US Department of Justice and US Department of Transportation, resurfacing is considered an alteration that triggers the requirement to install or upgrade curb ramps when it involves work on a street or roadway spanning from one intersection to another and includes overlays of additional material to the road surface, with or without milling. Examples include but are not limited to the following treatments or their equivalents: addition of a new layer of asphalt, concrete pavement rehabilitation, open-graded surface course, micro-surfacing and thin lift overlays, cape seals, and in-place asphalt recycling.
        - Asphalt driveway entrances with pedestrian crossings along the resurfaced roadway shall be upgraded to meet the requirements of these guidelines.
- Line Striping that impacts crosswalks
- Maintenance activities that alter the existing pedestrian access route
- Utility activities that alter the existing pedestrian access route
- Traffic Signal upgrades that alter the existing pedestrian access route, crosswalk, or accessible pedestrian signals.

2.4.3 Level 3 Activities

Level 3 activities are held to the highest standards for pedestrian connectivity and accessibility. Level 3 projects shall provide a complete pedestrian access route between logical termini. All pedestrian features within the Limit of Work should be upgraded to meet minimum accessibility requirements in these guidelines. Limits of Work may need to be extended to install a complete pedestrian access route to logical termini.

Examples of Level 3 projects include (but are not limited to) the following:

- New Roadway Construction
- Roadway Reconstruction, Widening, or Narrowing
- New Sidewalk and Shared Use Path Projects
- Sidewalk and Shared Use Path Reconstruction Projects

3 Pedestrian Accessibility Design Guidelines

The information provided in this section is adapted from PROWAG and the AASHTO Pedestrian Guide. Not all sections of PROWAG and the AASHTO Pedestrian Guide are present, and both should be reviewed, in addition to these guidelines, when designing pedestrian facilities. For reference purposes, the PROWAG sections which start with the letter 'R' followed by the section number are included below. These are typically shown in parentheses.

Any pedestrian facilities subject to the requirements of these guidelines that do not meet SHA's minimum requirements must have an approved design waiver.

3.1 Pedestrian Access Routes

A pedestrian access route (PAR) is an accessible, continuous, and unobstructed path of travel for use by pedestrians with disabilities within a pedestrian circulation path. The pedestrian access route runs through the sidewalk, shared use path, or other linear pedestrian facility, curb ramps, crosswalks, driveway crossings, median cut-throughs, and any other portion of the pedestrian circulation path that is designed to be accessible and intended for use by pedestrians.

The pedestrian access route and the pedestrian circulation path are often one and the same. For a standard 5 foot wide sidewalk, the pedestrian access route should extend the full width and length of the sidewalk. In some cases where there is a wider sidewalk or pedestrian facility, the pedestrian access route may only take up a portion of the facility. For example, a 15 foot wide sidewalk in an urban area may only have 10 feet of the sidewalk designated as the pedestrian access route. The remaining 5 foot width of sidewalk is part of the pedestrian circulation path, but may not meet all accessibility requirements for a pedestrian access route. Ideally, as much of the pedestrian circulation path as possible should be made accessible to maximize the area that can be used by pedestrians with disabilities.

A pedestrian facility must have certain fundamental characteristics to be accessible to pedestrians with disabilities and to be considered a pedestrian access route. These fundamental characteristics are based on the functional needs and operating abilities of pedestrians with disabilities, ensuring accessibility and usability for all users.

The surface of a pedestrian access route must be firm, stable, and slip resistant so that pedestrians with disabilities can maintain solid footing or operate their mobility devices without tripping, slipping, or tipping and can stand still or travel along the pedestrian access route comfortably and with minimal effort.

The width of a pedestrian access route must be at least 48 inches wide to provide the necessary operating space for pedestrians with disabilities to navigate through the pedestrian access route. The minimum width of a pedestrian access route that allows for pedestrians to pass each other or walk side by side is 60 inches. The mobility devices that pedestrians use, including wheelchairs, canes, and walkers, require a minimum amount of physical space to operate. Providing less than that minimum amount of space could make a pedestrian facility impassable and therefore unusable by pedestrians with disabilities.

The cross slope of a pedestrian access route can affect a pedestrian's ability to effectively operate their mobility device or may require a pedestrian to exert more effort to travel along the pedestrian facility. If the cross slope of a sidewalk is too steep, a pedestrian using a wheelchair may need to push one wheel twice as hard as the other just to maintain a straight path of travel and to keep their wheelchair from turning or shifting to one side of the sidewalk.

The grade or running slope of a pedestrian access route must be gradual enough so that pedestrians with disabilities are able to ascend and descend the grade and stop and start in a controlled manner while remaining stable and not exerting too much effort.

SHA's goal is to provide continuous, accessible pedestrian facilities to connect to existing sidewalks, transit stations, bus stops, and pedestrian destinations like schools, hospitals, public-use facilities, commercial centers,

and residential areas. Pedestrian facilities shall be designed to provide a smooth, clear and predictable accessible route for pedestrians of all ability levels.

3.1.1 Pedestrian Circulation Paths (R203.3)

Pedestrian access routes shall be provided within pedestrian circulation paths, including sidewalks and shared use paths. Transitional segments may be used to connect new or altered pedestrian access routes to existing pedestrian circulation paths, and the differences between adjacent surface characteristics shall be minimized to provide a smooth transition. The transitional segment between the altered and existing facilities should be limited to a minimum of 5 feet and a maximum of 10 feet.

3.1.2 Continuous Clear Width (R302.2)

The continuous clear width of pedestrian access routes shall be 60 inches minimum, exclusive of the width of any curb. When sidewalk is poured monolithically, for example on a bridge, the width of the curb shall be added to the minimum 60 inch width.

Multiple parallel pedestrian access routes, each with a continuous clear width of 48 inches minimum, within a single pedestrian circulation path that are separated by an obstruction such as a utility pole, light pole, or other area of non-compliance may be provided in lieu of a single 60 inch wide pedestrian access route. Obstructions within a pedestrian circulation path should be removed to provide a single connected pedestrian access route, where feasible.

Where a continuous clear width of 60 inches minimum for a single pedestrian access route or 48 inches minimum for multiple parallel pedestrian access routes cannot be provided, a design waiver will be required. The absolute minimum continuous clear width for a pedestrian access route with a design waiver shall be 48 inches.

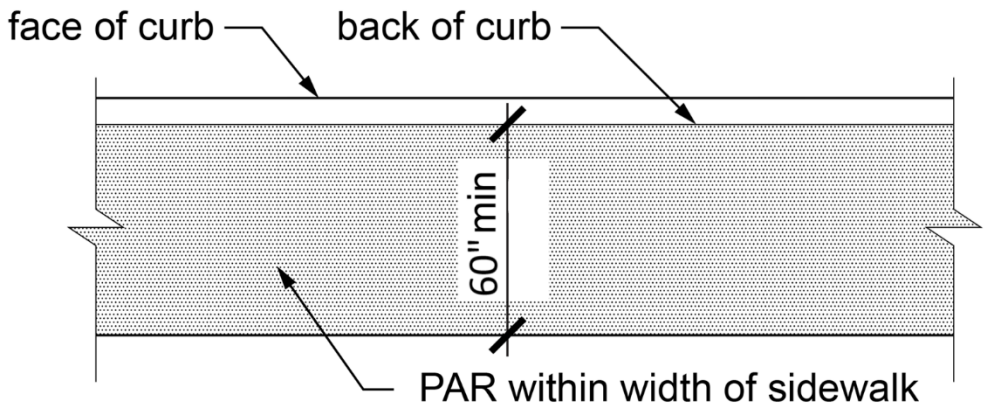

Figure 3-1 Continuous Clear Width. Source: PROWAG Figure R302.2.

3.1.2.1 Medians and Pedestrian Refuge Islands (R302.2.1)

Pedestrian refuge islands help pedestrians by reducing the crossing distance from one side of the road to the other. When a crosswalk crosses through a median, a pedestrian refuge island shall be installed or the median shall be cut back behind the crosswalk.

The length of the pedestrian refuge island shall be 72 inches minimum in the direction of pedestrian travel measured from the face of curb to face of curb. The clear width of pedestrian access routes crossing medians and pedestrian refuge islands shall be 60 inches minimum. Where shared use paths cross medians and pedestrian refuge islands the clear width of the pedestrian access route shall be 120 inches minimum or at least as wide as the shared use path, whichever is greater.

3.1.2.2 Shared Use Paths (R302.2.2)

On shared use paths, the clear width of the pedestrian access route shall extend the full width provided for pedestrian circulation on the path. Obstructions, such as bollards, shall not reduce the clear width of the pedestrian access route to less than 60 inches measured from the edge of the obstruction. See the SHA Bicycle Policy and Design Guidelines for additional design guidance for shared use paths. Wider shared use paths may be required per the SHA Bicycle Policy and Design Guidelines based on anticipated user volumes.

3.1.2.3 Driveway Entrances

Where a pedestrian access route crosses a driveway entrance, the clear width of the pedestrian access route across the entrance shall be 48 inches minimum and the cross slope shall be 1:48 (2.1%) maximum.

3.1.2.4 Passing Spaces (R302.3)

Where the clear width of pedestrian access routes is less than 60 inches, passing spaces shall be provided at intervals of 200 feet maximum. Passing spaces shall be 60 inches minimum by 60 inches minimum. Passing spaces and pedestrian access routes are permitted to overlap. Driveways and transit stops qualify as acceptable passing spaces as long as the size and slope requirements are compliant.

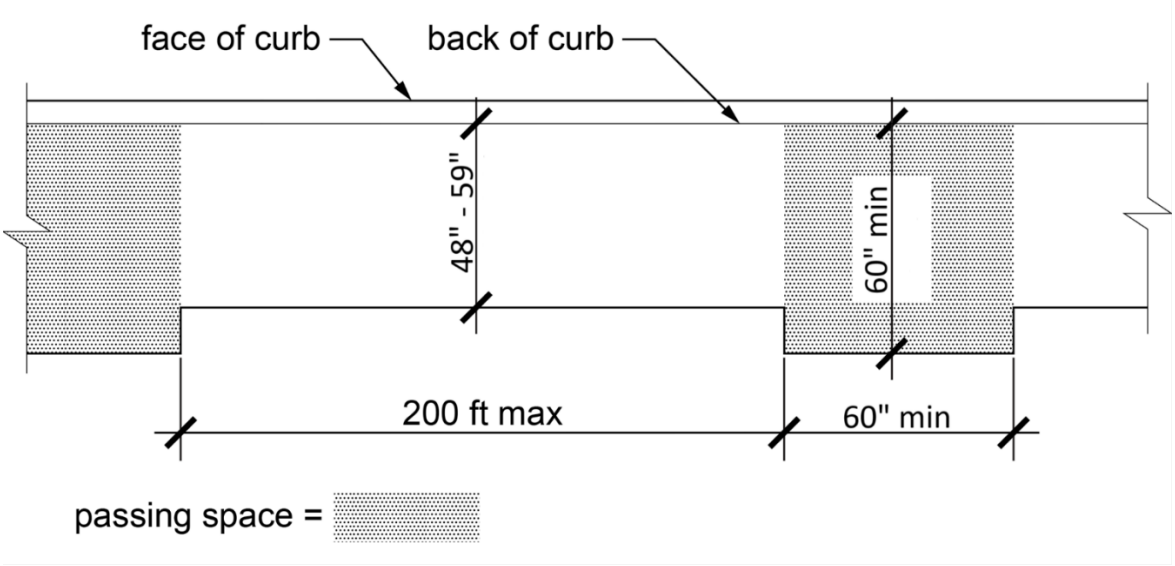

Figure 3-2 Passing Spaces. Source: PROWAG Figure R302.3.

3.1.3 Grade (R302.4)

The grade of pedestrian access routes shall comply with this section, except the grade of curb ramps shall comply with section 3.2 and the grade of ramps shall comply with section 3.8.

3.1.3.1 Within Highway Right-of-Way (R302.4.1)

Pedestrian access routes along state roadways and other roadways subject to the requirements of these guidelines do not always fall within the right-of-way established for the roadway. For the purposes of applying these guidelines, pedestrian access routes "within highway right-of-way" shall refer to any pedestrian access route that generally runs parallel to the roadway and serves as a primary pedestrian access route for the adjacent roadway, regardless of whether SHA owns the underlying property rights for the pedestrian facility.

Except as provided in section 3.1.3.3, where a pedestrian access route is provided along the state highway, the grade of the pedestrian access route shall not exceed 1:20 (5.0%).

EXCEPTION: Where the grade established for the adjacent street exceeds 1:20 (5.0%), the grade of the pedestrian access route shall not exceed the grade established for the adjacent street.

3.1.3.2 Not Within Highway Right-of-Way (R302.4.2)

Where a pedestrian access route is not contained within a highway right-of-way, the grade of the pedestrian access route shall not exceed 1:20 (5.0%).

3.1.3.3 Within a Crosswalk (R302.4.3)

Where a pedestrian access route is contained within a crosswalk, the grade of the pedestrian access route shall be 1:20 (5.0%) maximum.

EXCEPTION: Where roadway design requires superelevation greater than 1:20 (5.0%) at the location of a crosswalk, the grade of the pedestrian access route within the crosswalk may be the same as the superelevation.

3.1.4 Cross Slope (R302.5)

3.1.4.1 Not Contained Within a Crosswalk (R302.5.1)

The cross slope of a pedestrian access route not contained within a crosswalk (i.e. Sidewalk or Shared Use Path) shall be 1:48 (2.1%) maximum.

3.1.4.2 Contained Within a Crosswalk (R302.5.2)

Sections 3.1.4.2.1 through 3.1.4.2.4 provide requirements for the maximum allowable cross slope where the pedestrian access route crosses the roadway. These requirements vary based on the traffic control present at the intersection. Providing an accessible cross slope in the roadway crossing may be difficult due to existing terrain and other physical constraints. Use the following guidance to determine whether a project is required to meet the maximum cross slope requirements for pedestrian crossings.

Projects that involve new roadway construction or full reconstruction of the roadway or intersection must meet the requirements of section 3.1.4.2. If the requirements of section 3.1.4.2 cannot be met for projects that involve new roadway construction or full reconstruction, a design waiver will be required.

Where crosswalks are being resurfaced, if the existing crosswalk cross slope meets the requirements of section 3.1.4.2, the proposed construction cannot negatively impact the crosswalk cross slope such that the requirements of section 3.1.4.2 are no longer met. If there are opportunities to improve the crosswalk cross slope during a resurfacing project, the crosswalk cross slope should be improved to the maximum extent feasible.

If a crosswalk is altered by restriping or relocation of the crossing, the crosswalk cross slope requirements in section 3.1.4.2 must be met to the maximum extent feasible. When relocating a pedestrian crossing, consider the cross slope of the roadway at the new crossing location and strive to meet the requirements of section 3.1.4.2 to the maximum extent feasible. Generally, relocation of the crosswalk should not cause a negative impact to the accessibility of the pedestrian crossing.

Design plans should include slopes for roadways where there is an existing or proposed pedestrian crossing so that the cross slope of the pedestrian crossing is shown and the best location for the pedestrian crossing can be evaluated.

3.1.4.2.1 Crosswalk with Yield or Stop Control Devices (R302.5.2.1)

Where a pedestrian access route is contained within a crosswalk at an intersection approach with yield or stop control devices, the cross slope of the pedestrian access route shall be 1:48 (2.1%) maximum.

3.1.4.2.2 Crosswalk at Uncontrolled Approach (R302.5.2.2)

Where a pedestrian access route is contained within a crosswalk at an uncontrolled approach, the cross slope of the pedestrian access route shall be 1:20 (5.0%) maximum.

3.1.4.2.3 Crosswalk with Traffic Control Signal or Pedestrian Hybrid Beacon (R302.5.2.3)

Where a pedestrian access route is contained within a crosswalk at an intersection approach controlled by a traffic control signal or pedestrian hybrid beacon, the cross slope of the pedestrian access route shall be 1:20 (5.0%) maximum. This applies to signalized driveway entrances.

3.1.4.2.4 Midblock and Roundabout Crosswalks (R302.5.2.4)

The cross slope of a pedestrian access route within a midblock crosswalk or a crosswalk at a roundabout shall not exceed the street grade.

3.1.5 Surfaces (R302.6)

The walking surfaces of pedestrian access routes, elements, and spaces that are required to be accessible shall be stable, firm, and slip resistant and shall comply with section 3.1.5.

3.1.5.1 Grade Breaks (R302.6.1)

Grade breaks shall be flush.

3.1.5.2 Changes in Level (R302.6.2)

Changes in level of ¼ inch maximum shall be permitted to be vertical. Changes in level between ¼ inch and ½ inch shall be beveled with a slope not steeper than 1:2 (50.0%). Changes in level greater than ½ inch up to 6 inches shall have a 1:12 (8.3%) maximum slope. Changes in level greater than 6 inches shall comply with section 3.8.

3.1.5.3 Horizontal Openings (R302.6.3)

Horizontal openings in ground surfaces, such as those in gratings and joints, other than flangeway gaps (see R302.6.4.2), shall not allow passage of a sphere larger than ½ inch in diameter. Except where multiple directions of travel intersect, elongated openings are permitted and shall be placed so that the long dimension is perpendicular to the dominant direction of travel. Avoid placing horizontal openings within the pedestrian access route whenever possible.

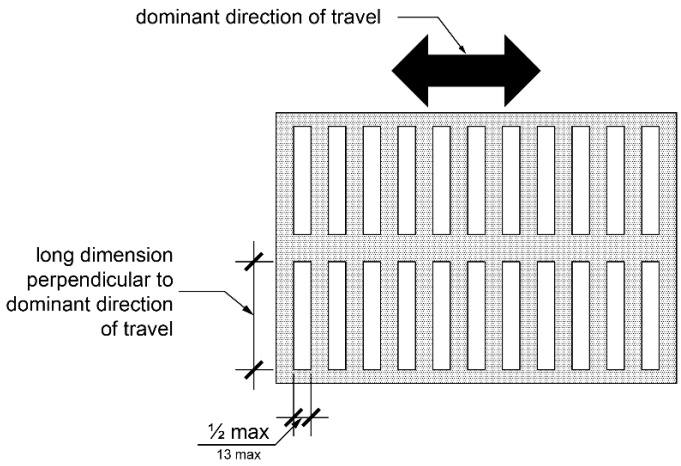

Figure 3-3 Horizontal Openings. Source: PROWAG Figure R302.6.3.

3.1.6 Pedestrian Buffer

A landscape or hardscape buffer shall be provided between the roadway and the pedestrian circulation path, wherever feasible. Buffer space enhances pedestrian comfort, especially adjacent to roadways with high traffic volumes and speeds. A buffer of 48 inches or wider is recommended and a buffer of no less than 24 inches shall be provided, wherever feasible. Buffer widths should be maximized on high speed and high-volume roadways. See the AASHTO Pedestrian Guide for additional guidance on recommended buffer widths.

3.1.7 Maintaining Positive Drainage

The surface of the pedestrian circulation path, including the pedestrian access route, should be as level as possible while still providing positive drainage and minimizing the potential for ponding, collection of sediment, and the formation of ice on the pedestrian surface. To provide sufficient drainage, the pedestrian facility surfaces should have a cross slope between 1% and 2%.

3.1.8 Drop-Off Protection (AASHTO Pedestrian Guide Section 3.3.7)

In some instances, there may be steep slopes adjacent to sidewalks and shared use paths if the roadway is elevated relative to the roadside area (e.g., a bridge or where a retaining wall is used to match an existing grade in a constrained area), there is open drainage adjacent to the sidewalk, or on the approach to a highway bridge. In these situations, engineering judgement should be used to assess the need for a physical barrier such as a railing or fence to separate pedestrians from the adjacent drop-off. Depending upon the height of the embankment, slope of the adjacent roadside, and the conditions at the bottom of the slope, barriers or rails are recommended if any of the following situations occur within 2 feet of the sidewalk or shared use path (see Figure 3-4):

- Slopes between 1V:3H and 1V:2H, with a drop of 6 feet or greater;
- Slopes between 1V:3H and 1V:2H, adjacent to a parallel body of water or other substantial obstacle;
- Slopes between 1V:2H and 1V:1H with a drop of 4 feet or greater; or
- Slopes of 1V:1H or steeper with a drop of 1 foot or greater.

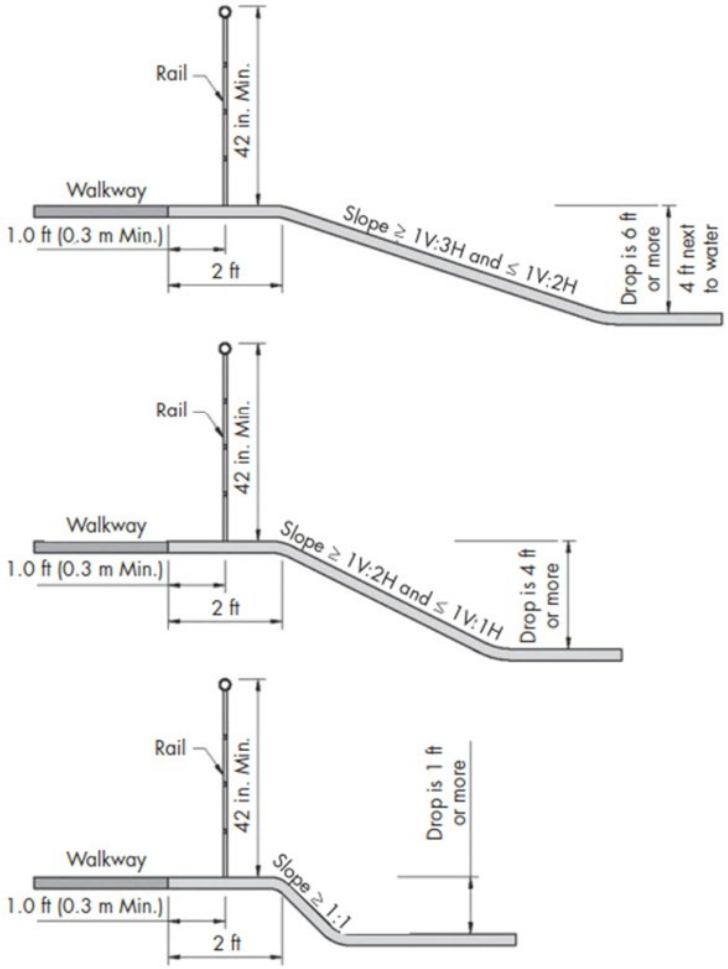

Figure 3-4 Pedestrian Rail between Walkway and Adjacent Slope.
Source: AASHTO Pedestrian Guide Figure 3-7.

3.2 Curb Ramps

Curb ramps are a fundamental part of the pedestrian access route, providing a transition between the roadway and an elevated sidewalk or shared use path. The accessibility requirements for curb ramps are the same as the requirements for pedestrian access routes with a few exceptions.

3.2.1 General Design Guidance

Curb ramps should be oriented so that they are perpendicular to the roadway they are crossing. This is generally best achieved by providing a perpendicular curb ramp for each crosswalk at an intersection corner. If parallel or combination ramps are used, they should be placed on the tangent section of the curb rather than the curb radius so that the ramp is aligned perpendicular to the roadway it is crossing. The curb ramps should also be aligned to direct vision impaired pedestrians to the receiving ramp. Provide smaller curb radii at intersections where practical so that parallel and combination curb ramps can be placed closer to the intersection, in-line with the pedestrian circulation path.

No portion of the curb ramp shall have a running slope greater than 1:12 (8.3%). Designers should strive to design curb ramps with running slopes more gradual than 1:12 (8.3%) where feasible to provide a more comfortable and accessible facility for pedestrians. Curbs ramps with 3-inch to 6-inch curb heights, rather than 8-inch curb heights, allow for more gradual ramp slopes that require less energy for pedestrians to ascend and allow for a more controlled descent. Curb ramps with lower curb heights can also be used in constrained areas because the length of ramp required to reach full curb height is less than that for an 8 inch high curb.

Curb ramps should be designed to allow for variations in construction. For example, a curb ramp designed with a 7.0% running slope will allow for up to 1.3% variation in construction. Landing areas designed to have 1.5% running slope and cross slope will allow for 0.6% variation in construction.

One common issue with curb ramp construction is the running slope of the depressed curb at the curb ramp opening. The running slope of the depressed curb shall not exceed 1:12 (8.3%). On reconstruction projects, existing curbs should be reconstructed as part of curb ramp reconstruction or measured to confirm that the existing curb is compliant to ensure the reconstructed ramp meets requirements.

Curb ramps should be designed to provide positive drainage and to avoid ponding in the pedestrian circulation path.

3.2.2 Placement (R203.6.1)

3.2.2.1 Crosswalks at an Intersection (R203.6.1.1)

At an intersection corner, one curb ramp shall be provided for each crosswalk.

Where pedestrian crossing is prohibited, curb ramps shall not be provided, and the pedestrian circulation path shall be either (a) separated from the roadway with landscaping or other non-prepared surface or (b) separated from the roadway by a detectable vertical edge treatment with a bottom edge 15 inches maximum above the pedestrian circulation path.

EXCEPTION: In alterations, where existing physical constraints make compliance with section 3.2.2.1 technically infeasible, a single curb ramp shall be permitted at the apex of the intersection corner.

3.2.2.2 Mid-Block and Roundabout Crosswalks (R203.6.1.2)

At a mid-block or roundabout crosswalk, curb ramps shall be provided on both ends of the crosswalk. Where pedestrian crossing is not intended, curb ramps shall not be provided, and the pedestrian circulation path shall be either (a) separated from the roadway with landscaping or other non-prepared surface or (b) separated from the roadway by a detectable vertical edge treatment with a bottom edge 15 inches maximum above the pedestrian circulation path.

3.2.2.3 Alterations to Crosswalks (R203.6.2)

When alterations are made to crosswalks, curb ramps shall be provided on both ends of the crosswalk where the pedestrian access route crosses a curb.

3.2.3 Perpendicular Curb Ramps (R304.2)

3.2.3.1 Running Slope (R304.2.1)

The running slope of a curb ramp shall be perpendicular to the curb or gutter grade break. The running slope of the curb ramp shall be 1:12 (8.3%) maximum.

EXCEPTION: Where the curb ramp length must exceed 15 feet to achieve a 1:12 (8.3%) running slope, the curb ramp length shall extend at least 15 feet and may have a running slope greater than 1:12 (8.3%). The 15-foot measurement shall be measured at the shortest leg of the curb ramp.

3.2.3.2 Cross Slope (R304.2.2)

The cross slope of a curb ramp run shall be 1:48 (2.1%) maximum.

EXCEPTION: At crosswalks, the cross slope of the curb ramp run shall be permitted to be equal to or less than the cross slope of the crosswalk as specified by section 3.1.4.

3.2.3.3 Grade Breaks (R304.2.3)

Grade breaks at the top and bottom of a curb ramp run shall be perpendicular to the direction of the curb ramp run. Grade breaks shall not be permitted on the surfaces of curb ramp runs and landings. Surface slopes that meet at grade breaks shall be flush.

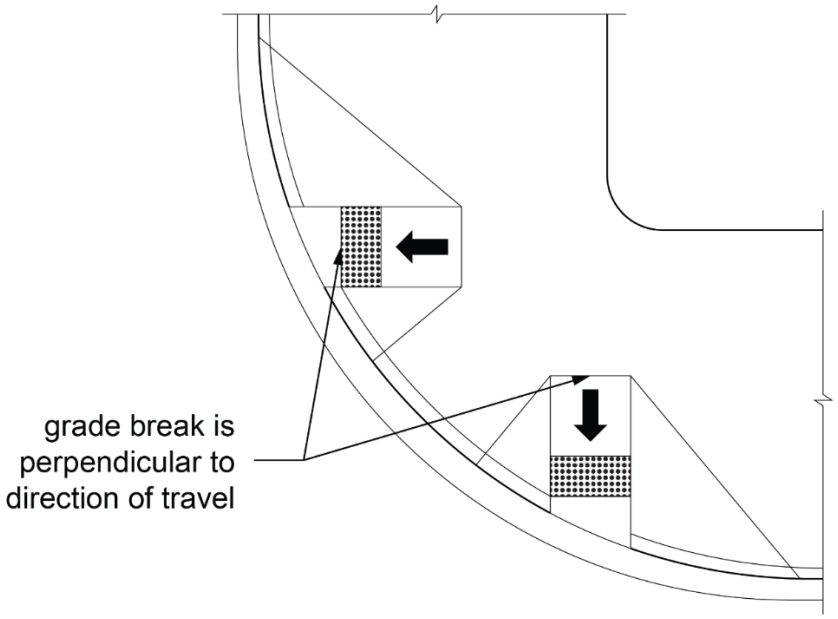

Figure 3-5 Grade Breaks. Source: PROWAG Figure R304.2.3.

3.2.3.4 Clear Area (R304.2.4)

A clear area 60 inches wide minimum by 48 inches long minimum shall be provided beyond the bottom grade break of the perpendicular curb ramp run and within the width of the crosswalk. At shared use paths, the clear area shall be as wide as the shared use path. The clear area shall be located wholly outside the vehicle travel lanes, including bicycle lanes, that run parallel to the crosswalk. The running slope of the clear area shall be 1:20 (5.0%) maximum. The cross slope of the clear area shall be as specified by section 3.1.4.

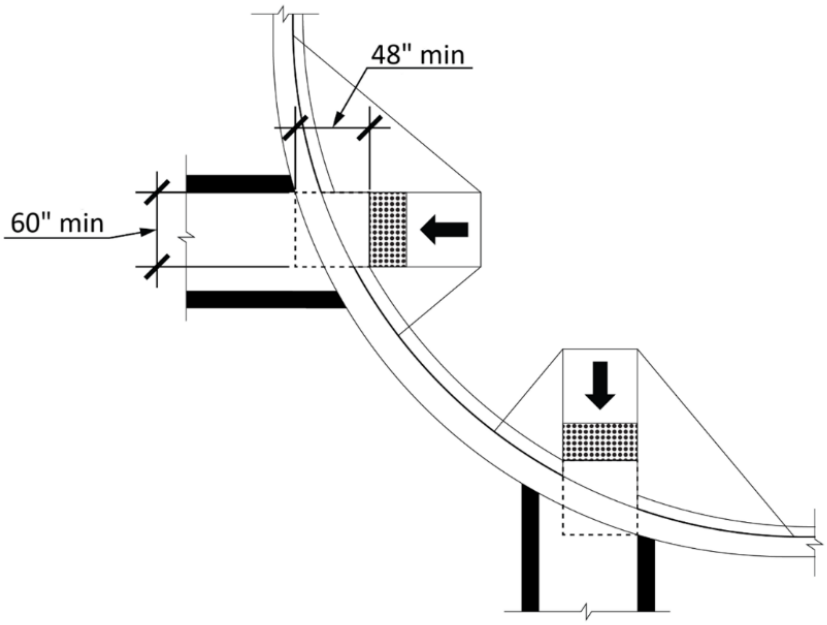

Figure 3-6 Clear Area for Perpendicular Curb Ramp. Source: PROWAG Figure R304.2.4(a)

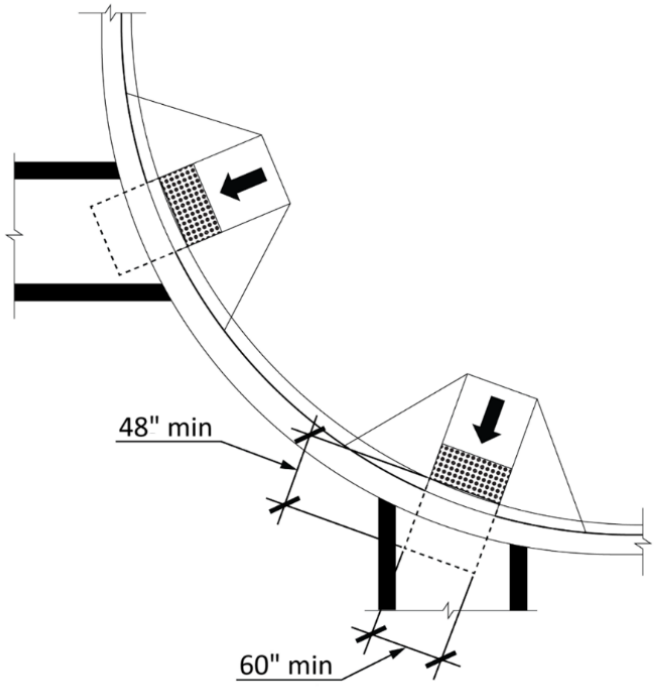

Figure 3-7 Clear Area for Angled Curb Ramp. Source: Figure R304.2.4(b).

3.2.3.5 Landing (R304.2.5)

When a change in direction is necessary to access a curb ramp from a pedestrian access route, a landing shall be provided at the top of the curb ramp. The landing shall be 60 inches wide minimum by 60 inches long minimum. At shared use paths, the landing shall be as wide as the shared use path. Where a landing serves only one curb ramp, the landing slope measured perpendicular to the curb ramp run shall be equal to or less than the cross slope of the curb ramp run, and the landing slope measured parallel to the curb ramp run shall be 1:48 (2.1%) maximum. Where a landing serves two curb ramps, the landing slope in either direction of travel shall not exceed the cross slope of the crosswalk parallel to the direction of travel as specified by section 3.1.4.2.

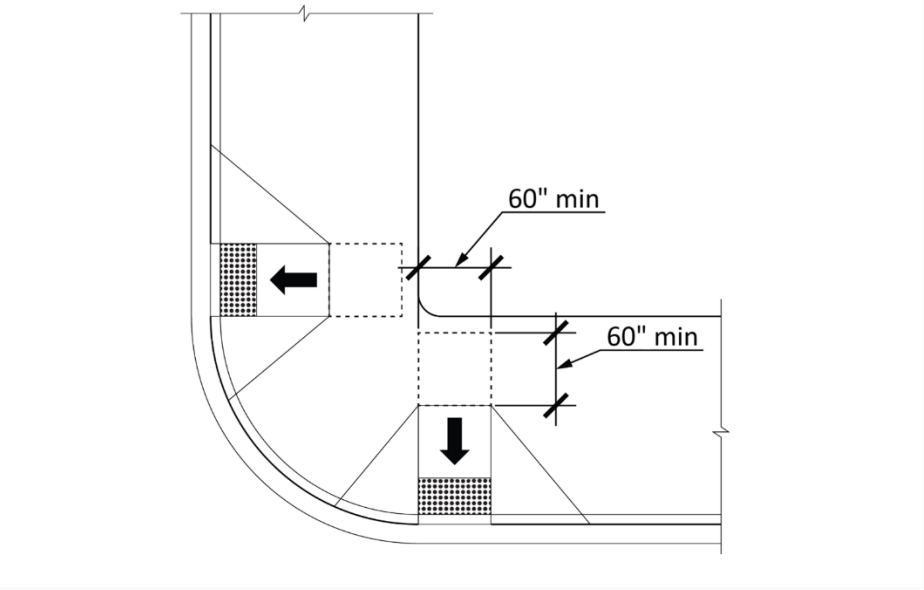

Figure 3-8 Landing. Source: PROWAG: Figure R304.2.5.

3.2.3.6 Side Treatments (R304.2.6)

Where a pedestrian circulation path crosses the side of a curb ramp, the side of the curb ramp shall be flared. The slope of the flared side shall be 1:10 (10.0%) maximum, measured parallel to the adjacent curb line.

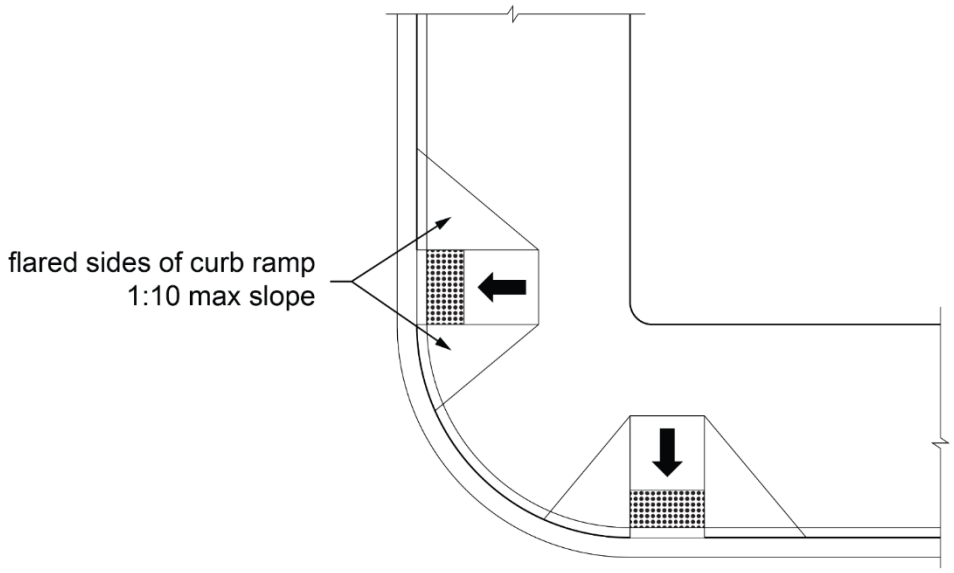

Figure 3-9 Side Treatment. Source: PROWAG: Figure R304.2.6.

3.2.3.7 Connection to Pedestrian Facilities (R304.2.7)

Perpendicular curb ramps or their landings shall be connected to adjacent pedestrian facilities by pedestrian access routes complying with section 3.1. A transitional segment may be used in the connection.

3.2.4 Parallel Curb Ramps (R304.3)

3.2.4.1 Running Slope (R304.3.1)

The running slope of the curb ramp run shall be parallel to the curb and shall be 1:12 (8.3%) maximum.

EXCEPTION: Where the curb ramp run length must exceed 15 feet to achieve a 1:12 (8.3%) running slope, the curb ramp run length shall extend at least 15 feet and may have a running slope greater than 1:12 (8.3%). The 15-foot measurement shall be measured at the shortest leg of the curb ramp.

3.2.4.2 Cross Slope (R304.3.2)

The cross slope of the curb ramp run shall be 1:48 (2.1%) maximum.

3.2.4.3 Grade Breaks (R304.3.3)

Grade breaks at the top and bottom of a curb ramp run shall be perpendicular to the direction of the curb ramp run. Grade breaks shall not be permitted on the surfaces of curb ramp runs or landings. Surface slopes that meet at grade breaks shall be flush.

3.2.4.4 Landings (R304.3.4)

Landings shall be provided at the bottom of parallel curb ramps. Landings shall be 60 inches wide minimum by 60 inches long minimum. The slope of the landing, measured parallel to the direction of travel on the curb ramp run, shall be permitted to be equal to or less than the slope of the roadway or the cross slope of the crosswalk as specified by section 3.1.4. The cross slope of the landing shall be 1:48 (2.1%) maximum measured perpendicular to the direction of travel on the curb ramp run.

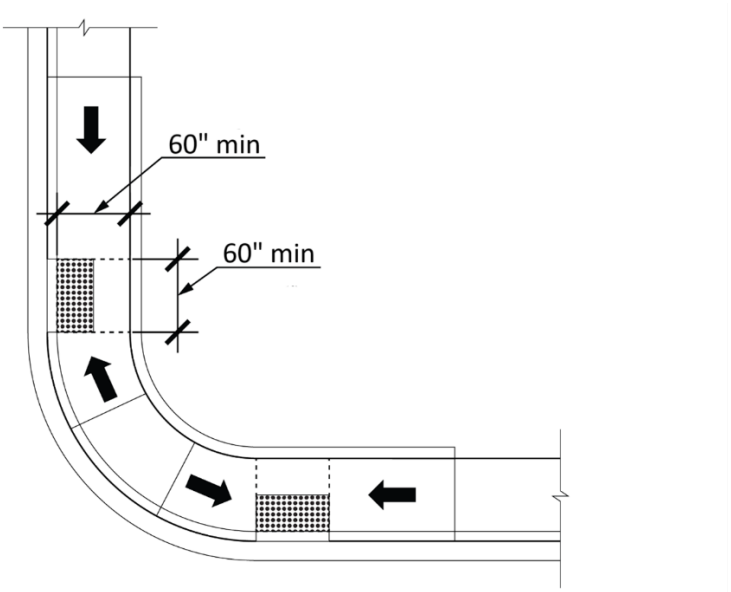

Figure 3-10 Landings. Source: Figure R304.3.4.

3.2.5 Common Requirements (R304.5)

3.2.5.1 Width (R304.5.1)

The width of curb ramp runs (excluding any flared sides) shall comply with section 3.2.5.1.1 or section 3.2.5.1.2, as applicable.

3.2.5.1.1 Curb Ramps Not on Shared Use Paths (R304.5.1.1)

The clear width of curb ramp runs (excluding any flared sides) not on shared use paths shall be 60 inches minimum.

3.2.5.1.2 Curb Ramps on Shared Use Paths (R304.5.1.2)

On shared use paths, the width of curb ramp runs (excluding any flared sides) shall be equal to the width of the shared use path.

3.2.5.2 Change of Grade (R304.5.2)

At gutters and streets where a change of grade occurs adjacent to curb ramps, the change of grade shall comply with the requirements contained in (A) or (B) below:

A. The change of grade shall not exceed 13.3%, or
B. A transitional space shall be provided at the bottom of the running slope of the curb ramp run. The transitional space shall extend 24 inches minimum in the direction of pedestrian travel and the full width of the curb ramp run. Transitional spaces shall have running slopes of 1:48 (2.1%) maximum and cross slopes no greater than the cross slope of the crosswalk as specified by section 3.1.4.

3.2.5.3 Crosswalks (R304.5.3)

Perpendicular curb ramp runs and parallel curb ramp landings, except those at shared use paths, shall be contained wholly within the width of the crosswalks they serve. At shared use paths, the full width of a perpendicular curb ramp run and parallel curb ramp landing shall be contained wholly within the width of the crosswalk it serves.

3.3 Detectable Warning Surfaces

3.3.1 General

Detectable warning surfaces shall consist of truncated domes in a square or radial grid pattern and shall comply with R305.

3.3.2 Dome Size, Spacing and Contrast

For guidance on Detectable Warning Surface dome size, dome spacing, and contrast, see PROWAG sections R305.1.1 through R305.1.3.

3.3.3 Surface Size (R305.1.4)

Detectable warning surfaces shall extend 24 inches minimum in the direction of pedestrian travel. The width of detectable warning surfaces shall be as follows:

A. At curb ramps, detectable warning surfaces shall extend the full width of the curb ramp run (excluding any flared sides) or landing.
B. At cut-through pedestrian refuge islands, detectable warning surfaces shall extend the full width of the pedestrian circulation path opening.
C. At pedestrian at-grade rail crossings not located within a street, detectable warning surfaces shall extend the full width of the pedestrian circulation path.
D. Where required at boarding platforms, detectable warning surfaces shall extend the full length of the unprotected areas of the platform.
E. At boarding and alighting areas at sidewalk or street level transit stops for rail vehicles, detectable warning surfaces shall extend the full length of the unprotected area of the transit stop.

3.3.4 Curb Ramps (R205.2.1)

Curb ramps located at crosswalks shall have detectable warning surfaces complying with section 3.3.1 and section 3.3.4.

3.3.4.1 Perpendicular Curb Ramps (R305.2.1)

On perpendicular curb ramps, detectable warning surfaces shall be located as follows:

A. Where the ends of the bottom grade break are in front of the back of curb or at the edge of pavement where there is no curb, the detectable warning surface shall be placed at the back of curb or no greater than 6 inches from the edge of pavement where there is no curb.

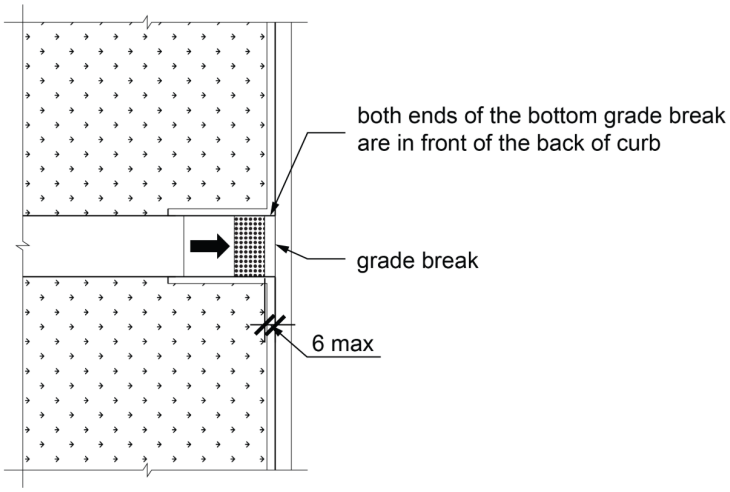

Figure 3-11 Perpendicular Curb Ramp with Returned Sides. Source: PROWAG Figure R305.2.1(a).

B. Where the ends of the bottom grade break are located behind the back of curb or edge of pavement where there is no curb and the distance from both ends of the bottom grade break to the back of curb or edge of pavement is 60 inches or less, the detectable warning surface shall be placed on the ramp run at the bottom grade break.

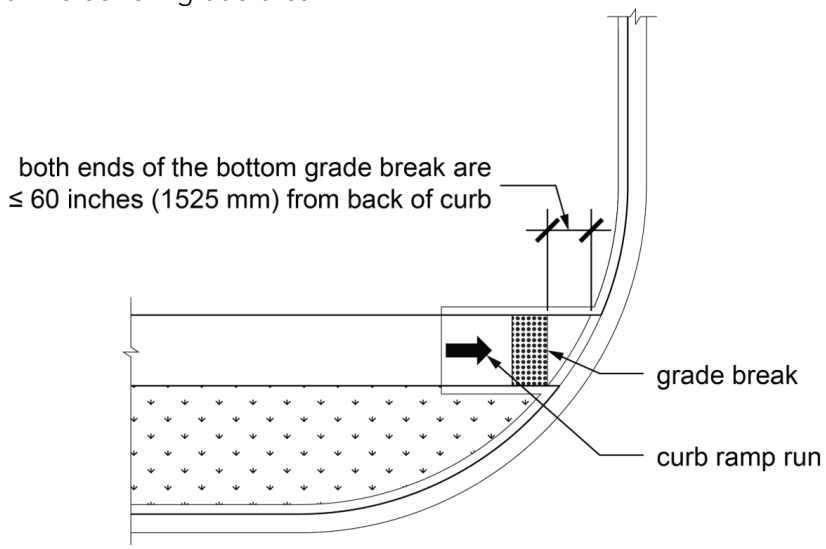

Figure 3-12 Perpendicular Curb Ramp at Street Corner. Source: PROWAG Figure R305.2.1(b).

C. Where the ends of the bottom grade break are behind the back of curb or edge of pavement where there is no curb and the distance from either end of the bottom grade break to the back of curb or edge of pavement where there is no curb is more than 60 inches, the detectable warning surface shall be placed on the clear area so that both front corners of the detectable warning surfaces are at the back of curb or no greater than 6 inches from the edge of pavement where there is no curb.

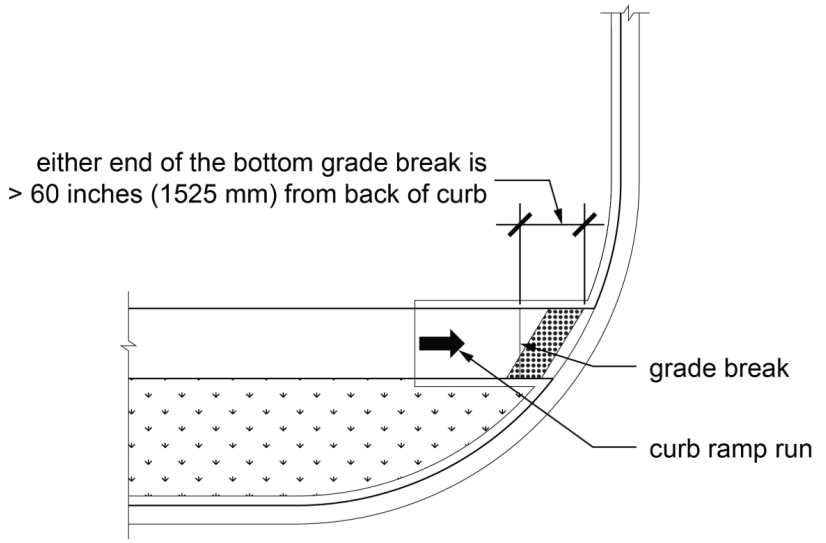

Figure 3-13 Perpendicular Curb Ramp. Source: PROWAG Figure R305.2.1(c).

3.3.4.2 Parallel Curb Ramps (R305.2.2)

On parallel curb ramps, detectable warning surfaces shall be located on the landing at either the back of curb or the edge of pavement where there is no curb.

3.3.5 Pedestrian Refuge Islands (R205.3)

Cut-through pedestrian refuge islands shall have detectable warning surfaces complying with section 3.3.1. At cut-through pedestrian refuge islands, detectable warning surfaces shall be located no greater than 6 inches from the edges of the pedestrian refuge island or at back of curb and shall be separated by a 24-inch minimum length of surface in the direction of travel without detectable warning surfaces. If the 24-inch separation between detectable warning surfaces cannot be provided, the detectable warning surfaces should not be installed since the space does not provide a refuge area.

3.3.6 Pedestrian At-Grade Rail Crossings (R205.4)

Pedestrian at-grade rail crossings not located within a street shall have detectable warning surfaces complying with section 3.3.1. A pedestrian at-grade rail crossing not located within a street refers to a pedestrian facility such as a sidewalk or shared use path that crosses a rail at grade outside the paved roadway area used for vehicular travel (see Figure R305.2.5).

At pedestrian at-grade rail crossings not located within a street, detectable warning surfaces shall be located on each side of the rail crossing. The edge of the detectable warning surface nearest the rail crossing shall be 6 feet minimum and 15 feet maximum from the centerline of the nearest rail. Where pedestrian gates are provided, detectable warning surfaces shall be located on the side of the gate opposite the rail. Pedestrian gates shall not overlap detectable warning surfaces.

Pedestrian at-grade rail crossings located within a street at a crosswalk shall not have detectable warning surfaces adjacent to the railway. Pedestrian at-grade rail crossings located within a street refers to a pedestrian circulation path that crosses a rail at grade within the within the paved roadway area used for vehicular travel. The detectable warning surfaces for these pedestrian at-grade rail crossings shall be placed at the curb ramps or pedestrian refuge islands at the edge of the paved roadway area as required per this section.

See Chapter 8 of the MUTCD for additional guidance on the design of pedestrian at-grade rail crossings and the placement of detectable warning surfaces at pedestrian at-grade rail crossings.

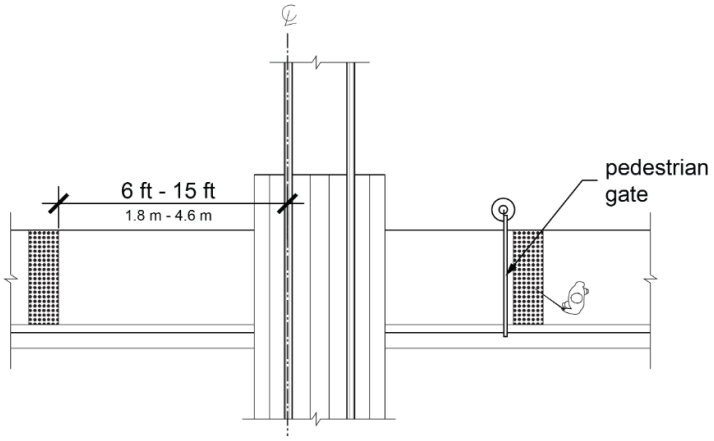

Figure 3-14 Pedestrian At-Grade Rail Crossings Not Located Within a Street.
Source: PROWAG Figure R305.2.5.

3.3.7 Driveways (R205.7)

Pedestrian circulation paths at driveways controlled with yield or stop control devices or traffic signals shall have detectable warning surfaces complying with section 3.3.1. Where driveways are controlled with yield or stop control devices or traffic signals, detectable warning surfaces shall be provided on the pedestrian circulation path where the pedestrian circulation path meets the driveway.

3.4 Roundabouts

Where pedestrian circulation paths are provided at roundabouts, they shall comply with section 3.4.

3.4.1 Edge Detection (R306.4.1)

The street side edge of the pedestrian circulation path at the approach and along the circulatory roadway of the roundabout shall comply with section 3.4.1.1 where not attached to the curb, or 3.4.1.2 where attached to the curb. Detectable warning surfaces shall not be used for roundabout edge detection.

3.4.1.1 Separation (R306.4.1.1)

Where pedestrian crossing is not intended, the pedestrian circulation path shall be separated from the curb, crosswalk to crosswalk, with landscaping or other nonprepared surface 24 inches wide minimum.

3.4.1.2 Vertical Edge Treatment (R306.4.1.2)

Where pedestrian crossing is not intended, a curb-attached pedestrian circulation path shall have a continuous and detectable vertical edge treatment along the street side of the pedestrian circulation path, from crosswalk to crosswalk. The bottom edge of the vertical edge treatment shall be no more than 15 inches above the pedestrian circulation path.

3.5 Transit Stops and Transit Shelters

This section provides guidance and requirements for the design of accessible transit stops. For additional information on the design of transit stops, coordinate with the transit agency and refer to applicable transit agency design guidance such as the Maryland Transit Administration (MTA) Bus Stop Design Guide or the Washington Metropolitan Area Transit Authority (WMATA) Guidelines for the Design and Placement of Transit Stops.

3.5.1 Boarding and Alighting Areas (R309.1.1)

Boarding and alighting areas at sidewalk or street-level transit stops must serve each accessible vehicle entry and exit and shall comply with section 3.5.1.

3.5.1.1 Dimensions (R309.1.1.1)

Boarding and alighting areas shall have a clear length of 96 inches minimum, measured perpendicular to the face of the curb or street edge, and a clear width of 60 inches minimum, measured parallel to the street. The boarding and alighting area may extend into the transit shelter as long as the required space and slopes are provided.

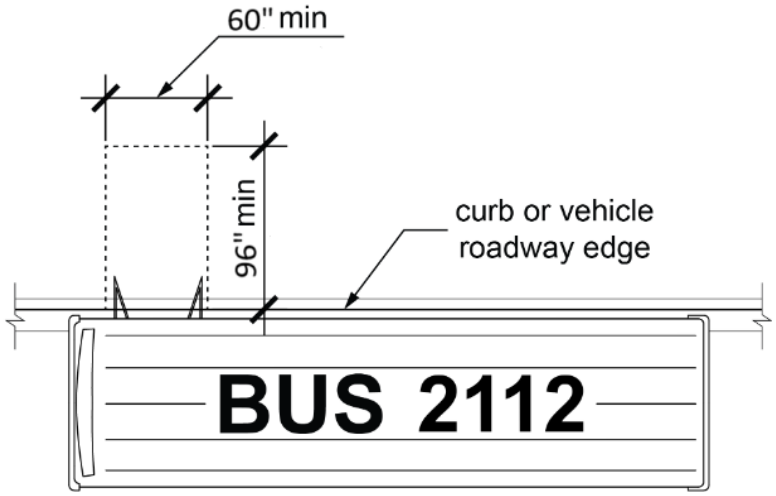

Figure 3-15 Boarding and Alighting Area Dimensions. Source: PROWAG Figure R309.1.1.1.

3.5.1.2 Slope (R309.1.1.2)

The slope of boarding and alighting areas measured parallel to the street shall be the same as the grade of the street. The slope of boarding and alighting areas measured perpendicular to the street shall be 1:48 (2.1%) maximum.

3.5.1.3 Surfaces (R309.1.3.1)

The surfaces of boarding and alighting areas shall comply with section 3.1.5.

3.5.1.4 Connection to Existing Pedestrian Circulation Paths (R309.1.3.2)

In alterations, boarding and alighting areas shall be connected to existing pedestrian circulation paths by pedestrian access routes complying with section 3.1.

3.5.2 Transit Shelters (R309.2)

3.5.2.1 Connection to Boarding and Alighting Areas (R309.2.1)

Transit shelters shall be connected by pedestrian access routes complying with section 3.1 to boarding and alighting areas complying with section 3.5.1.

3.5.2.2 Clear Space (R309.2.2)

Transit shelters shall provide a minimum clear space in compliance with R404 entirely within the shelter. Where seating is provided within transit shelters, the clear space shall be located either at one end of a seat or so as to not overlap the area within 18 inches from the front edge of the seat.

3.6 Protruding Objects and Vertical Clearance

3.6.1 Protrusion Limits (R402.2)

Objects with leading edges more than 27 inches and less than 80 inches above the walking surface shall not protrude horizontally more than 4 inches into pedestrian circulation paths.

EXCEPTION: Handrails shall be permitted to protrude 4 ½ inches maximum. Handrails may extend into the pedestrian circulation path; however, they cannot extend into the PAR.

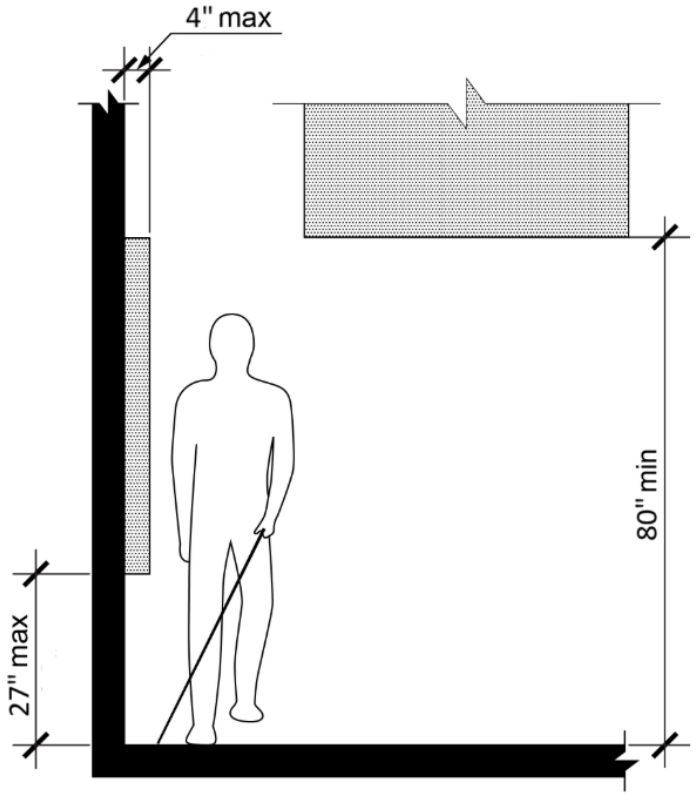

Figure 3-16 Protrusion Limits. Source: PROWAG Figure R402.2.

3.6.2 Post-Mounted Objects (R402.3)

Where objects are mounted on posts or pylons, they shall comply with section 3.6.2.

EXCEPTION: The sloping portions of handrails serving stairs and ramps shall not be required to comply with section 3.6.2.

3.6.2.1 Objects Mounted on Single Post or Pylon (R402.3.1)

Where objects are mounted on a single post or pylon and the objects are more than 27 inches and less than 80 inches above the walking surface, the objects shall not protrude into the pedestrian circulation path more than 4 inches measured horizontally from the post or pylon or more than 4 inches measured horizontally from the outside edge of the base where the base height is 2 ½ inches minimum.

3.6.2.2 Objects Mounted Between Posts or Pylons (R402.3.2)

Where objects are mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches, the lowest edge of the object shall be 27 inches maximum or 80 inches minimum above the walking surface.

EXCEPTION: Objects mounted with the lowest edge greater than 27 inches and less than 80 inches above the walking surface are permitted if a barrier with its lowest edge at 27 inches maximum above the walking surface is provided between the posts or pylons.

3.6.3 Vertical Clearance (R402.4)

Vertical clearance shall be 80 inches high minimum. Guards or other barriers to prohibit pedestrian travel shall be provided where the vertical clearance is less than 80 inches high above the walking surface. The lowest edge of the guard or barrier shall be located 27 inches maximum above the walking surface.

3.6.4 Required Clear Width (R402.5)

Protruding objects shall not reduce the clear width required for pedestrian access routes.

3.7 Pedestrian Push Buttons

3.7.1 Location (R307.4)

Pedestrian push buttons shall be located no greater than 5 feet from the side of a curb ramp run or the edge of the farthest associated crosswalk line from the center of the intersection. Pedestrian push buttons shall be located between 1.5 feet and 10 feet from the edge of the curb or pavement.

3.7.1.1 Two Pedestrian Push Buttons on Same Corner (R307.4.1)

Where two pedestrian push buttons are provided on the same corner, they shall be 10 feet or more apart.

EXCEPTION: In alterations, where technically infeasible to provide 10 feet separation between pedestrian push buttons on the same corner, a pedestrian push button information message complying with R308.3.2 shall be provided.

3.7.1.2 Reach Requirements

Push buttons shall be located within a 10-inch reach of the level landing area of a curb ramp or median treatment. Push buttons shall comply with the requirements in R403 Operable Parts and R406 Reach Ranges.

3.7.1.2.1 Reach Range Limits (R406.2)

For forward and parallel approaches, the high reach shall be 48 inches maximum and the low reach shall be 15 inches minimum above the ground surface.

3.7.1.2.2 Side Reach (R406.3.2)

Where a clear space is configured for a parallel approach to an element, an obstruction shall be permitted between the clear space and the element where the depth of the obstruction is 10 inches maximum and the height of the obstruction is 34 inches maximum.

3.7.2 Push Button Orientation (R307.5)

The face of the push button shall be parallel to its associated crosswalk.

3.8 Ramps

3.8.1 Ramps
This section does not apply to curb ramps or pedestrian access routes following the grade established for the adjacent street consistent with the requirements of section 3.1.3.1.

3.8.2 Running Slope (R407.2)
The running slope of each ramp run shall be 1:12 (8.3%) maximum.

3.8.3 Cross Slope (R407.3)
The cross slope of ramp runs shall be 1:48 (2.1%) maximum.

3.8.4 Clear Width (R407.4)
The clear width of a ramp run shall be 60 inches minimum. Where handrails are provided, the clear width between handrails shall be 60 inches minimum.

EXCEPTION: Where a ramp only serves a building entrance, the clear width of the ramp run shall be permitted to be 36 inches minimum. Where handrails are provided, the clear width between handrails shall be permitted to be 36 inches minimum.

3.8.5 Rise (R407.5)
The rise for any ramp run shall be 30 inches maximum.

3.8.6 Landings (R407.6)
Ramps shall have landings at the top and the bottom of each ramp run. Landings shall comply with section 3.8.6.

3.8.6.1 Slope (R407.6.1)
Landing slopes shall be 1:48 (2.1%) maximum parallel and perpendicular to the ramp running slope.

3.8.6.2 Width (R407.6.2)
The landing clear width shall be at least as wide as the widest ramp run leading to the landing.

3.8.6.3 Length (R407.6.3)
The landing clear length shall be 60 inches long minimum.

3.8.6.4 Change in Direction (R407.6.4)
Ramps that change direction between runs at landings shall have a clear landing 60 inches minimum by 60 inches minimum.

3.8.7 Surfaces (R407.7)
Surfaces of ramp runs and landings shall comply with section 3.1.5, except that changes in level are not permitted.

3.8.8 Handrails (R407.8)
Ramp runs with a rise greater than 6 inches shall have handrails complying with section 3.9.

3.8.9 Edge Protection (R407.9)
Edge protection complying with section 3.8.9.1 or section 3.8.9.2 shall be provided on each side of ramp runs and each side of ramp landings except those serving an adjoining ramp run, stairway, or other pedestrian circulation path.

3.8.9.1 Extended Ramp Surface (R407.9.1)

The surface of the ramp run or landing shall extend 12 inches minimum beyond the inside face of a handrail complying with section 3.9.

3.8.9.2 Curb or Barrier (R407.9.2)

A curb that is 4 inches high minimum, or a barrier that prevents the passage of a 4-inch diameter sphere, where any portion of the sphere is within 4 inches of the surface of the ramp run or landing, shall be provided.

3.9 Handrails

3.9.1 General (R409.1)

Handrails required at ramps and stairs, and handrails provided on pedestrian circulation paths shall comply with section 3.9. Section 3.9 does not apply to curb ramps. Refer to PROWAG section R409 for additional handrail design guidance.

3.9.2 Where Required (R409.2)

Handrails shall be provided on both sides of ramps and stairs.

3.9.3 Continuity (R409.3)

Handrails shall be continuous within the full length of each ramp run or stair flight. Inside handrails on switchback or dogleg ramps and stairs shall be continuous between ramp runs or stair flights.

3.9.4 Height (R409.4)

The top of gripping surfaces of handrails shall be 34 inches minimum and 38 inches maximum vertically above walking surfaces, ramp surfaces, and stair nosings. Handrails shall be at a consistent height above walking surfaces, ramp surfaces, and stair nosings.

4 Accessible Pedestrian Maintenance of Traffic

It is incumbent on SHA, when developing contract documents for a project; to not only address maintenance of traffic (MOT) for vehicles, but to address maintenance of access for all roadway users, including pedestrians, as well. This includes ensuring that persons with disabilities can navigate the project site throughout all construction phases. Development of accessible pedestrian MOT plans is strongly encouraged on projects that have an extended impact to pedestrian facilities and should be coordinated with the MOT plan.

This work shall consist of providing and maintaining an accessible pedestrian access route, to the maximum extent feasible, throughout the project's limits. The access route must comply with the traffic control plans, applicable standards, and the requirements outlined in this section. Where an existing pedestrian access route is disrupted by construction activities, all pedestrians, including persons with disabilities, shall be provided with a reasonably safe, convenient and accessible path throughout the limits of the work zone.

The phrase to the maximum extent feasible applies to the occasional case where the nature of an existing facility or site conditions makes it virtually impossible to comply fully with applicable accessibility standards through a planned alteration. In these circumstances, the alternate accessible pedestrian access route shall provide the maximum physical accessibility that is feasible, or a design waiver must be approved.

4.1 Alternate Pedestrian Access Routes

4.1.1 Signs (R303.2)

Signs identifying alternate pedestrian access routes shall be provided in advance of decision points and shall comply with R410. Proximity actuated audible signs or other non-visual means within the public right-of-way of conveying the information that identifies the alternate pedestrian access route shall also be provided.

4.1.2 Surface (R303.3)

Alternate pedestrian access route surfaces shall comply with section 3.1.5 or shall not be less accessible than the surface of the temporarily closed pedestrian circulation path.

4.1.3 Continuous Clear Width (R303.4)

The minimum continuous clear width of alternate pedestrian access routes shall be 60 inches exclusive of the width of any curb.

EXCEPTION: Where the alternate pedestrian access route utilizes an existing pedestrian circulation path, the width shall not be less than the width of the temporarily closed pedestrian circulation path.

4.1.4 Curb Ramp (R303.5)

Where an alternate pedestrian access route crosses a curb, a curb ramp complying with section 3.2 shall be provided.

4.1.5 Detectable Edging of Channelizing Devices (R303.6)

Where a channelizing device is used to delineate an alternate pedestrian access route, continuous detectable edging complying with section 4.1.5 shall be provided throughout the length of the route.

EXCEPTION: Where pedestrians or vehicles turn or cross, gaps in the detectable edging are permitted.

4.1.5.1 Top (R303.6.1)

The top of the detectable edging shall be no lower than 32 inches above the walking surface and be free of sharp or abrasive surfaces.

4.1.5.2 Bottom (R303.6.2)

The bottom of the bottom detectable edging shall be 2 inches maximum above the walking surface.

4.1.6 Pedestrian Signal Heads (R303.7)

Where temporary pedestrian signal heads are provided at a crosswalk that is part of an alternate pedestrian access route, pedestrian push buttons or passive detection devices shall be provided and shall comply with R307.

4.1.7 General Considerations

The following considerations should be taken into account when addressing accessible pedestrian maintenance of traffic:

a. Whenever an existing pedestrian access route in the public right of way is blocked by construction, alteration, or maintenance activity, an alternate accessible pedestrian route must be provided.
b. If adequate, the width of the existing pedestrian facility should be maintained. When it is not possible to maintain a minimum width of 60 inches throughout the entire length of the pedestrian route, a minimum width of 48 inches shall be provided with 60 inch by 60 inch passing zones at least every 200 feet, to allow individuals in wheelchairs to pass.
c. Traffic control devices and other construction materials and features shall not intrude into the usable width of the sidewalk, temporary pathway or other pedestrian facility.
d. Signs and other devices mounted lower than 80 inches above the temporary pedestrian pathway shall not project more than 4 inches into accessible pedestrian access route.
e. There shall be no curbs or vertical elevation changes greater than ¼" in grade or terrain that could cause tripping or be a barrier to wheelchair use.
f. To the maximum extent feasible, an accessible pedestrian route shall be provided on the same side of the street as the disrupted route. Where it is not feasible to provide a same-side accessible pedestrian route an accessible pedestrian detour route shall be provided.
g. Information regarding closed pedestrian routes, alternate crossings, relocated transit stops, and sign and signal information shall be communicated to pedestrians with visual disabilities by providing devices such as audible information devices, accessible pedestrian signals and/or detectable barriers and channelizing devices in accordance with the requirements of the work zone plan and the SHA Standard Specifications for Construction and Materials section 104.31 (Accessible Pedestrian Maintenance of Traffic).
h. Access to existing and/or temporary transit stops shall be maintained and/or provided.

5 Design Waivers

5.1 General

SHA is committed to providing accommodations in compliance with the Americans with Disabilities Act (ADA) on all projects. If it is determined that full ADA compliance is technically infeasible as described in these guidelines, a design waiver must be requested and approved for each non-compliant element. The design waiver shall demonstrate that the element has been designed to meet full compliance to the maximum extent feasible. Blanket design waivers will not be granted on a project-wide or program-wide basis. A project can only proceed to advertisement and/or construction if it has achieved full compliance with these guidelines or has been granted a design waiver for each non-compliant element.

A design waiver should only be requested after all reasonable alternatives to provide the required ADA accommodations have been evaluated and exhausted. The documentation of these alternatives will be required to support the design waiver request. Design waiver requests shall be prepared by the lead design office and approved by the Director or District Engineer of the lead design office. Waiver requests for local public agency projects subject to the requirements of these guidelines shall be prepared by the local public agency and approved by the Director of the Office of Highway Development except when a separate approving authority is defined in program-specific guidance.

Design waivers are not intended to bypass the requirements to accommodate persons with disabilities as described in these guidelines. Even with a design waiver, a project shall be designed as close as practical to the requirements in these guidelines.

Projects that do not meet the pedestrian-related performance measures identified in the project's Objective Statement will require a Complete Streets Waiver. A Complete Streets Waiver does not constitute an exemption from meeting the requirements of these guidelines when new pedestrian facilities or alterations to existing pedestrian facilities are proposed.

5.1.1 Existing Physical Constraints (R202.3)

For alterations, a design waiver may be considered where existing physical constraints make compliance with applicable ADA requirements technically infeasible. However, pedestrian facilities must still be designed to meet these guidelines to the maximum extent feasible. Existing physical constraints include, but are not limited to, underlying terrain, underground structures, adjacent developed facilities, drainage, or the presence of a significant natural or historic feature.

5.2 Design Waiver Process

1. The lead design division determines that full ADA compliance cannot be provided at certain locations within the project.
2. The lead design division will then make a formal request in writing to the Director or District Engineer of the lead design office for consideration. The formal waiver request should include at minimum the following information:
    - Summary
        - Project description
        - Length/Scope
        - SHA Guideline requirements and minimum requirements defined in PROWAG or other applicable federal ADA requirements such as the ADA Standards.
    - Description of non-compliant design for each element location.
    - Photograph of each non-complaint element showing dimensions.
    - Reason for non-compliance.
    - Design value to meet minimum requirements.
    - Mitigating Conditions - To what degree will compliance be met if granted a waiver.
    - Signature line for each non-compliant element.

3. If the Director/District Engineer agrees that full ADA compliance cannot be provided, a waiver will be approved. If the Director/District Engineer does not agree, the Lead Project Manager will modify the project to include full compliance, or a partial compliance alternate suggested by the Director/District Engineer.

The Office of Highway Development's ADA and Bicycle Compliance team is available as a resource to provide guidance on the design waiver process and design waiver content as requested by the lead design office.

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