NEVADA DOT

Field guide for Accessible Public Rights-of-Way

2015 Edition

BRIEFING MEMO

SUBJECT: Department of Justice/Department of Transportation Joint Technical
Assistance on Title II of the Americans with Disabilities Act Requirements to Provide Curb Ramps when Streets, Roads, or Highways are Altered through Resurfacing

ISSUE: Throughout the nation, there are different interpretations and inconsistencies in enforcement of when curb ramps are required.

BACKGROUND: The Americans with Disabilities Act of 1990 (ADA) is a civil rights statute prohibiting discrimination against persons with disabilities in all aspects of life, including transportation, based on regulations promulgated by the United States Department of Justice (DOJ). DOJ's regulations require accessible planning, design, and construction to integrate people with disabilities into mainstream society. Further, these laws require that public entities responsible for operating and maintaining the public rights-of-way do not discriminate in their programs and activities against persons with disabilities. FHWA's ADA program implements the DOJ regulations through delegated authority to ensure that pedestrians with disabilities have the opportunity to use the transportation system's pedestrian facilities in an accessible and safe manner.

FHWA and DOJ met in March 2012 and March 2013 to clarify guidance on the ADA's requirements for constructing curb ramps on resurfacing projects. Projects deemed to be alterations must include curb ramps within the scope of the project.

SUMMARY OF GUIDANCE CLARIFICATION: This clarification provides a single Federal policy that identifies specific asphalt and concrete-pavement repair treatments that are considered to be alterations—requiring installation of curb ramps within the scope of the project—and those that are considered to be maintenance, which do not require curb ramps at the time of the improvement.

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BRIEFING MEMO (Continue)

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PEDESTRIAN FACILITIES IN THE PUBLIC RIGHTS-OF-WAY

Pedestrian access routes (R204). A pedestrian access route (PAR) is a continuous and unobstructed path of travel provided for pedestrians with disabilities within or coinciding with a pedestrian circulation path in the public right-of-way.

Components (R302.2). Pedestrian access routes shall consist of one or more of the following components: 1) Sidewalk. 2) Pedestrian street crossing and at-grade rail crossing. 3) Pedestrian overpasses and underpasses. 4) Curb ramps and blended transitions. 5) Ramps. 6) Elevators. 7) Platform lift. 8) Doors, doorways, and gates.

Continuous Width (R302.3). Except as provided in R302.3.1 the continuous clear width of pedestrian access routes shall be 4 feet minimum, exclusive of the width of the curb.

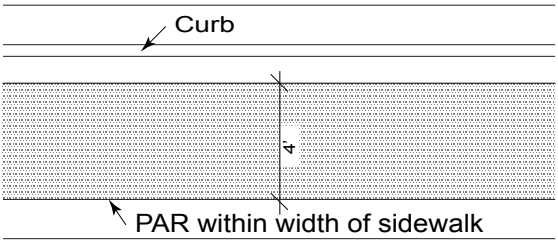


Figure R302.3
Continuous Width

Medians and Pedestrian Refuge Islands (R302.3.1). The clear width of pedestrian access routes within medians and pedestrian refuge islands shall be 5 feet minimum.

Passing Spaces (R302.4). Where the clear width of pedestrian access routes is less than 5 feet, passing spaces shall be provided at intervals of 200 feet maximum. Passing spaces shall be 5 feet minimum by 5 feet minimum. Passing spaces are permitted to overlap pedestrian access routes.

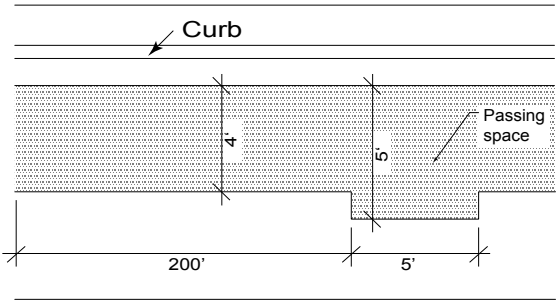


Figure R302.4
Passing Spaces

Grade (R302.5). Except as provided in R302.5.1, where pedestrian access routes are contained within a street or highway right-of-way, the grade of pedestrian access routes shall not exceed the general grade established for the adjacent street or highway. Where pedestrian access routes are not contained within a street or highway right-of-way, the grade of pedestrian access routes shall be 5 percent maximum.

Pedestrian Street Crossings (R302.5.1). Where pedestrian access routes are contained within pedestrian street crossings, the grade of the pedestrian access route shall be 5 percent maximum.

Cross Slope (R302.6). Except as provided in R302.6.1 and R302.6.2 the cross slope of pedestrian access routes shall be 2 percent maximum.

Advisory R302.6.1. Pedestrian street crossings without yield or stop control are crossings where there is no yield or stop sign, or where there is a traffic signal that is designed for the green phase. At pedestrian street crossings without yield or stop control, vehicles can proceed through the intersection without slowing or stopping. Where pedestrian access routes are contained within pedestrian street crossings with yield or stop control, the cross slope of the pedestrian access route must be 2 percent maximum (see R302.6). At pedestrian street crossings with yield or stop control, vehicles slow or stop before proceeding through the intersection.

Pedestrian Street Crossings Without Yield or Stop Control (R302.6.1). Where pedestrian access routes are contained within pedestrian street crossings without yield or stop control, the cross slope of the pedestrian access route shall be 5 percent maximum.

Midblock Pedestrian Street Crossings (R302.6.2). Where pedestrian access routes are contained within mid block pedestrian street crossings, the cross slope of the pedestrian access route shall be permitted to equal the street or highway grade.

Surfaces (R302.7). The surfaces of pedestrian access routes and elements and spaces required to comply with R302.7 that connect to pedestrian access routes shall be firm, stable, and slip resistant and shall comply with R302.7.

Vertical Surface Discontinuities (R302.7.2). Vertical surface discontinuities shall be 1/2 inch maximum. Vertical surface discontinuities between 1/4 inch and 1/2 inch shall be beveled with a slope not steeper than 50 percent. The bevel shall be applied across the entire vertical surface discontinuity.

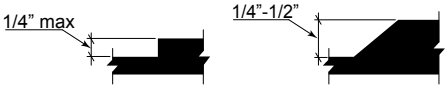


Figure R302.72
Vertical Surface Discontinuities

Horizontal Openings (R302.7.3). Horizontal openings in gratings and joints shall not permit passage of a sphere more than 1/2 inch, in diameter. Elongated openings in gratings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

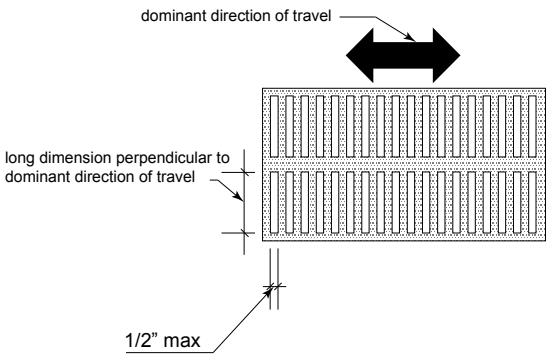
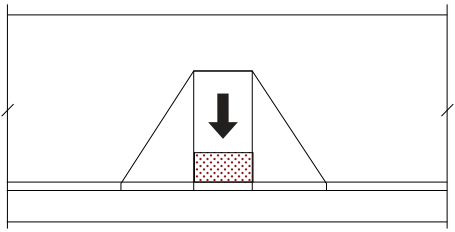


Figure R302.7.3
Horizontal Openings

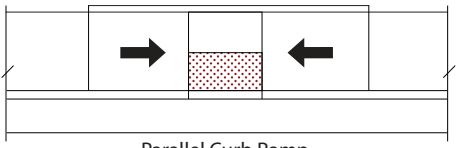
CURB RAMPS

Advisory (R304.1) General. There are two types of curb ramps:



Perpendicular Curb Ramp

- Perpendicular curb ramps have a running slope that cuts through or is built up to the curb at right angles or meets the gutter break at right angles where the curb is curved. On large corner radiuses, it will be necessary to indent the gutter break on one side of the curb ramp in order for the curb ramp to meet the gutter break at right angles.

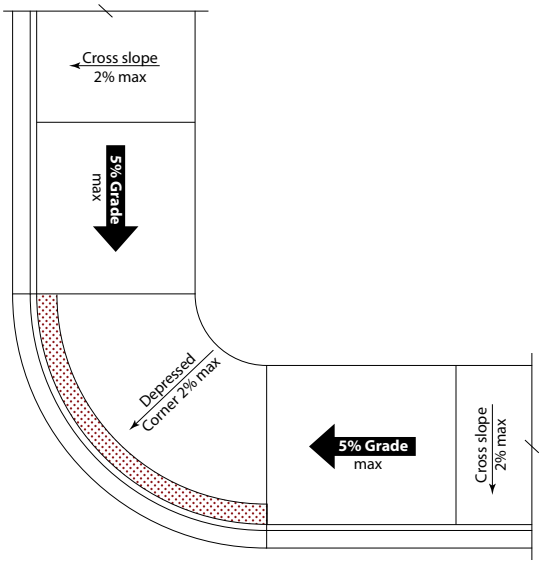


Parallel Curb Ramp

- Parallel curb ramps have a running slope that is in line with the direction of sidewalk travel and lower the sidewalk to a level turning space where a turn is made to enter the pedestrian street crossing.

Perpendicular curb ramps can be provided where the sidewalk is at least 12 feet wide. Parallel curb ramps can be provided where the sidewalk is at least 4 feet wide. Parallel and perpendicular curb ramps can be combined. A parallel curb ramp is used to lower the sidewalk to a mid-landing and a short perpendicular curb ramp connects the landing to the street. Combination curb ramps can be provided where the sidewalk is at least 6 feet wide.

BLENDED TRANSITIONS

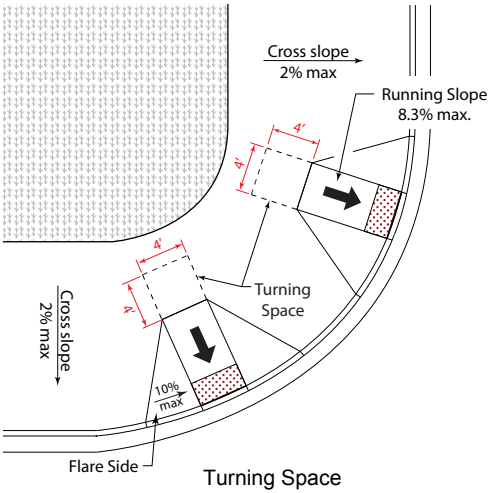


Blended Transition

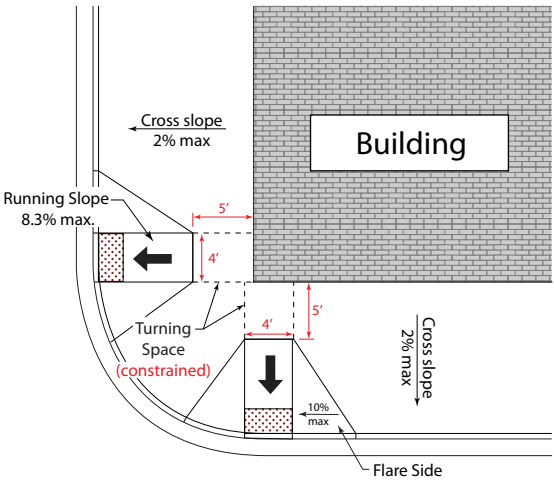
Advisory (R304.1) General (continued)

Blended transitions are raised pedestrian street crossings, depressed corners, or similar connections between pedestrian access routes at the level of the sidewalk and the level of the pedestrian street crossing that have a grade of 5 percent or less. Blended transitions are suitable for a range of sidewalk conditions.

PERPENDICULAR CURB RAMPS



Turning Space



Constrained
Turning Space

PERPENDICULAR CURB RAMPS

Turning Space (R304.2.1). A turning space 4 feet minimum by 4 feet minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other turning spaces and clear spaces. Where the turning space is constrained at the back-of-sidewalk, the turning space shall be 4 feet minimum by 5 feet minimum. The 5 feet dimension shall be provided in the direction of the ramp run.

Running Slope (R304.2.2). The running slope of the curb ramp shall cut through or shall be built up to the curb at right angles or shall meet the gutter grade break at right angles where the curb is curved. The running slope of the curb ramp shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15 feet). The running slope of the turning space shall be 2 percent maximum.

Flared Sides (R304.2.3). Where a pedestrian circulation path crosses the curb ramp, flared sides shall be sloped 10 percent maximum, measured parallel to the curb line.

Advisory R304.2.3. The flared sides are part of the pedestrian circulation path, but are not part of the pedestrian access route. Curb ramps whose sides have returned curbs provide useful directional cues where they are aligned with the pedestrian street crossing and are protected from cross travel by landscaping, street furniture, chains, fencing, or railings.

PARALLEL CURB RAMPS

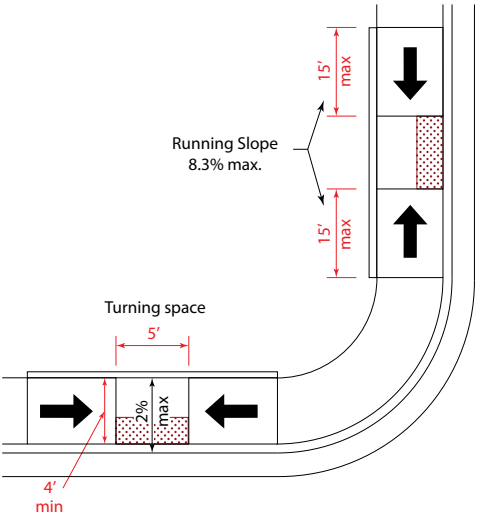


Figure R304.3.1
Turning Space

Turning Space (R304.3.1). A turning space 4 feet minimum by 4 feet minimum shall be provided at the bottom of the curb ramp and shall be permitted to overlap other turning spaces and clear spaces. If the turning space is constrained on 2 or more sides, the turning space shall be 4 feet minimum by 5 feet. The 5 feet dimension shall be provided in the direction of the pedestrian street crossing.

Running Slope (R304.3.2). The running slope of the curb ramp shall be in-line with the direction of sidewalk travel. The running slope of the curb ramp shall be 5 percent mimmum and 8.3 percent maximum but shall not require the ramp length to exceed 15 feet minimum. The running slope of the turning space shall be 2 percent maximum.

BLENDED TRANSITIONS

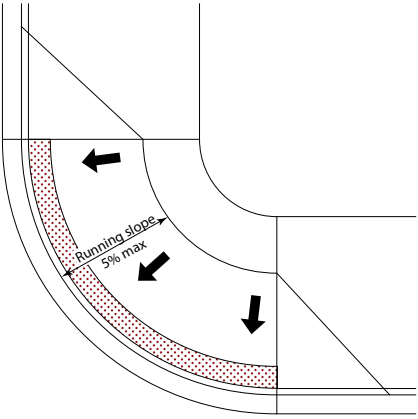


Figure R304.4.1
Running Slope

Running Slope (R304.4.1). The running slope of blended transitions shall be 5 percent maximum.

COMMON REQUIREMENTS

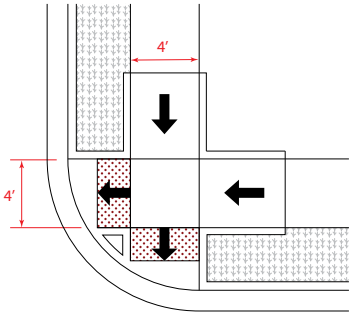
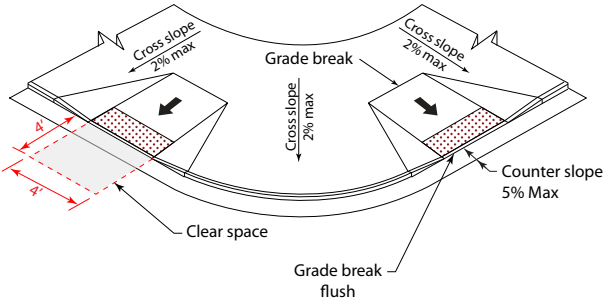


Figure R304.5.1
Width

Width (R304.5.1). The clear width of a curb ramp runs (excluding any flare sides), blended transitions, and turning spaces shall be 4 feet minimum .

COMMON REQUIREMENTS



Common Requirements
(continued)

Grade Breaks (R304.5.2). Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces.
Surface slopes that meet at grade breaks shall be flush.

Cross Slope (R304.5.3). The cross slope of curb ramps, blended transitions, and turning spaces shall be 2 percent maximum. At pedestrian street crossings without yield or stop control and at midblock pedestrian street crossings, the cross slope shall be permitted to equal the street or highway grade.

Counter Slope (R304.5.4). The counter slope of the gutter or street at the foot of curb ramp runs, blended transitions, and turning spaces shall be 5 percent maximum.

Clear Space (R304.5.5). Beyond the bottom grade break, a clear space 4 feet minimum by 4 feet minimum shall be provided within the width of the pedestrian street crossing and wholly outside the parallel vehicle travel lane.

DETECTABLE WARNING SURFACES

General (R305.1). Detectable warning surfaces shall consist of truncated domes aligned in a square or radial grid pattern.

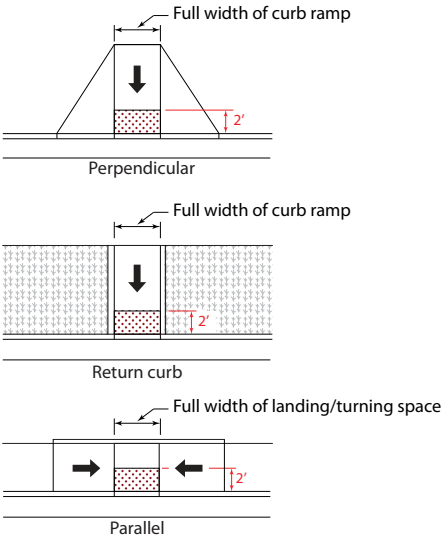


Figure R305.1.4
Size

Contrast (R305.1.3). Detectable warning surfaces shall contrast visually with adjacent gutter, street or highway, or pedestrian access route surface, either light-on-dark or dark-on-light.

Size (R305.1.4). Detectable warning surfaces shall extend 2 feet minimum in the direction of pedestrian travel. At curb ramps and blended transitions, detectable warning surfaces shall extend the full width of the ramp run (excluding any flared sides), blended transition, or turning space.
At pedestrian at-grade rail crossings not located within a street or highway, detectable warnings shall extend the full width of the crossing.

DETECTABLE WARNING SURFACES

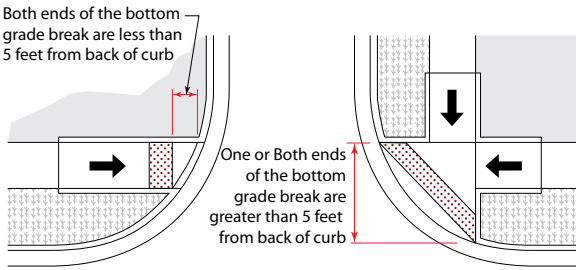


Figure R305.2.1
Perpendicular Curb Ramps

Perpendicular Curb Ramps (R305.2.1) On perpendicular curb ramps, detectable warning surfaces shall be placed as follows:

- Where the ends of the bottom grade break are in front of the back of curb, detectable warning surfaces shall be placed at the back of curb.
- Where the ends of the bottom grade break are behind the back of curb and the distance from either end of the bottom grade brake to the back of curb is 5 feet or less, detectable warning surfaces shall be placed on the ramp run within one dome spacing of the bottom grade break.
- Where the ends of the bottom grade break are behind the back of curb and the distance from either end of the bottom grade brake to the back of curb is more than 5 feet, detectable warning surfaces shall be placed on the lower landing at the back of curb.

DETECTABLE WARNING SURFACES

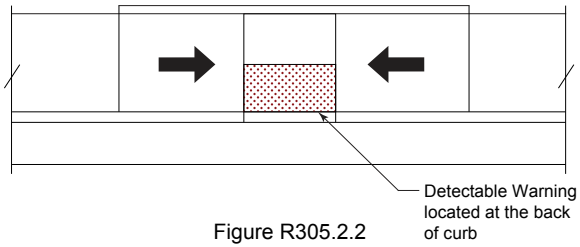


Figure R305.2.2
Parallel Curb Ramps

Parallel Curb Ramps (R305.2.2). On parallel curb ramps, detectable warning surfaces shall be placed on the turning space at the flush transition between the street and sidewalk.

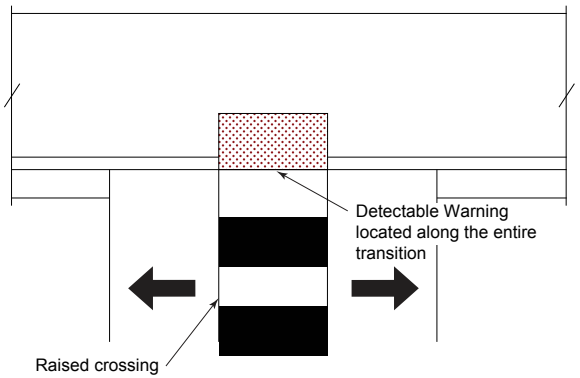


Figure R305.2.3
Blended Transitions

Blended Transitions (R305.2.3). On blended transitions, detectable warning surfaces shall be placed at the back of curb. Where raised pedestrian street crossings, depressed corners, or other level pedestrian street crossings are provided, detectable warning surfaces shall be placed at the flush transition between the street and the sidewalk.

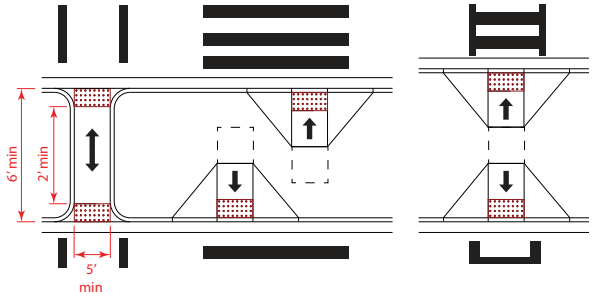


Figure R305.2.4
Pedestrian Refuge Island

Pedestrian Refuge Islands (R305.2.4). At cut-through pedestrian refuge islands, detectable warning surfaces shall be placed at the edges of the pedestrian island and shall be separated by a 2 feet minimum length of surface without detectable warnings.

PEDESTRIAN SIGNALS

General (R209.1). Where pedestrian signals are provided at pedestrian street crossings, they shall include accessible pedestrian signals and pedestrian pushbuttons complying with sections *4E.08 through 4E.13 of the MUTCD*. *OPERABLE PARTS* shall comply with R403.

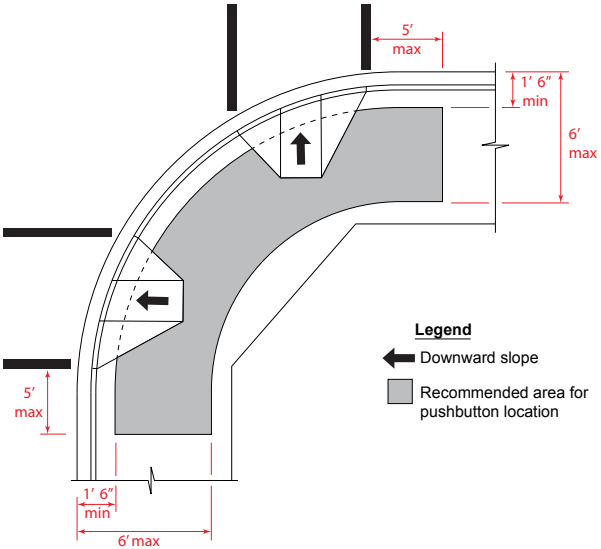


Figure 4E-3. Pushbutton Location Area
(2009 MUTCD Pages 500 -501).

Notes:

1. Where there are constraints that makes it impractical to place the pedestrian pushbutton between 1 foot 6 inch and 6 feet from the edge of the curb, shoulder, or pavement it should not be further than 10 feet from the edge of the curb, shoulder, or pavement.
2. Two buttons on a corner should be separated by 10 feet.
4. Figures 4E-4 (2009 MUTCD pages 502 - 503) show typical pushbutton locations.

Alterations (R209.2). Existing pedestrian signals shall comply with R209.1 when the signal controller and software are altered, or the signal head is replaced.

ON-STREET PARKING SPACES

Advisory R309.2 Parallel Parking Spaces. The sidewalk adjacent to accessible parallel parking spaces should be free of signs, street furniture, and other obstructions to permit deployment of a van side-lift or ramp or the vehicle occupant to transfer to a wheelchair or scooter. Accessible parallel parking spaces located at the end of the block face are usable by vans that have rear lifts and cars that have scooter platforms.

Wide Sidewalks (R309.2.1). Where the width of the adjacent sidewalk or available right-of-way exceeds 14 feet, an access aisle 5 feet wide minimum shall be provided at street level the full length of the parking space and shall connect to a pedestrian access route. The access aisle shall comply with R302.7 and shall not encroach on the vehicular travel lane.

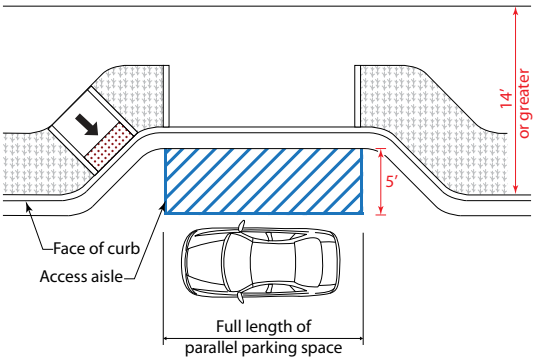


Figure R309.2.1
Wide Sidewalks

Alterations (R309.2.1.1). In alterations where the street or sidewalk adjacent to the parking spaces is not altered, an access aisle shall not be required provided the parking spaces are located at the end of the block face.

ON-STREET PARKING SPACES

Width at Narrow Sidewalks (R309.2.2). An access aisle is not required where the width of the adjacent sidewalk or the available right-of-way is less than or equal to 14 feet. When an access aisle is not provided, the parking spaces shall be located at the end of the block face.

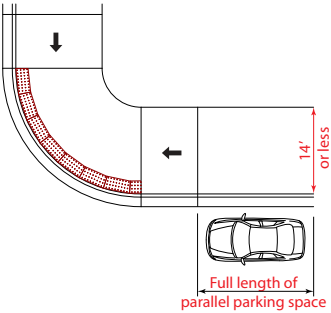


Figure R309.2.2
Narrow Sidewalks

Perpendicular or Angled Parking Spaces (R309.3). Where perpendicular or angled parking is provided, an access aisle 8 feet wide minimum shall be provided at street level the full length of the parking space and shall connect to a pedestrian access route. The access aisle shall comply with R302.7 and shall be marked so as to discourage parking in the access aisle. Two parking spaces are permitted to share a common access aisle.

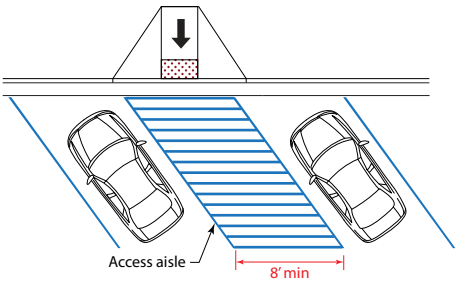


Figure R309.3
Perpendicular or Angled Parking Spaces

ON-STREET PARKING SPACES

Curb Ramps or Blended Transitions (R309.4). Curb ramps or blended transitions complying with R304 shall connect the access aisle to the pedestrian access route. Curb ramps shall not be located within the access aisle.

Access Aisle (R310.3). Passenger loading zones shall provide access aisles complying with R310.3 adjacent to the vehicle pull-up space. Access aisles shall be at the same level as the vehicle pull-up space they serve and shall not overlap the vehicular travel lane. Curb ramps or blended transitions complying with R304 shall connect the access aisle to the pedestrian access route. Curb ramps are not permitted within the access aisle.

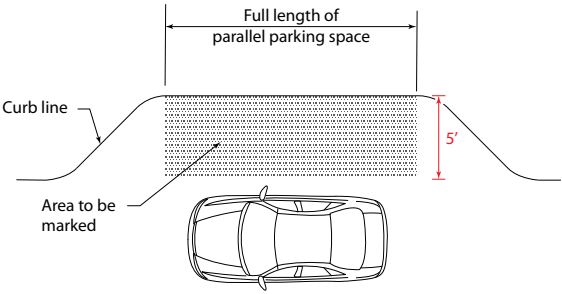
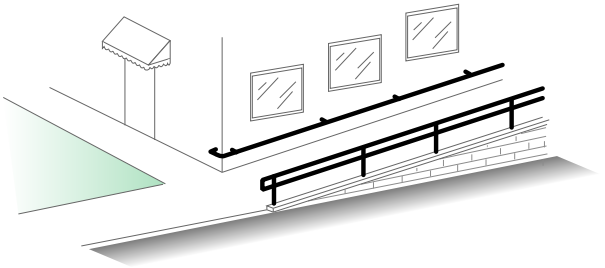


Figure R310.3
Access Aisle

HANDRAILS

Advisory (R409.1) General. Handrails are required on ramp runs with a rise greater than 6 inch (see R407.8) and stairways (see R408.6). Handrails are not required on pedestrian circulation paths. However, if handrails are provided on pedestrian circulation paths, the handrails must comply with R409 (see R217). The requirements in R409.2, R409.3, and R409.10 apply only to handrails at ramps and stairways, and do not apply to handrails provided on pedestrian circulation paths.



Handrails

Where Required (R409.2). Handrails shall be provided on both sides of ramps and stairways.

HANDRAILS

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 stairways shall be continuous between ramp runs or stair flights.

Height (R409.4). Top of gripping surfaces of handrails shall be 34 inch minimum and 38 inch maximum vertically above walking surfaces, ramp surfaces, and stair nosings. Handrails shall be at a consistent height above walking surfaces, ramp surfaces, and stair nosing .

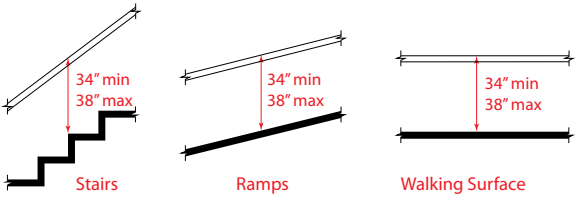
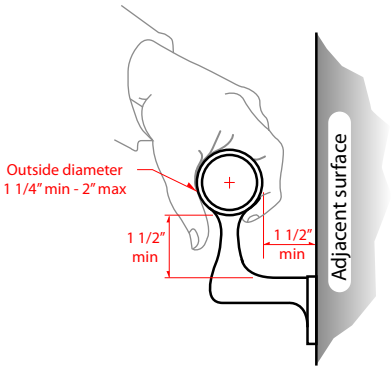


Figure R409.4
Height

Clearance (R409.5). Clearance between handrail gripping surfaces and adjacent surfaces shall be 1 1/2 inch minimum.



Clearance

HANDRAILS

Gripping Surface (R409.6). Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 1 1/2 inch minimum below the bottom of the handrail gripping surface.

Cross Section (R409.7). Handrail gripping surfaces shall have a cross section complying with R409.7.1 or R409.7.2. Where expansion joints are necessary for large spans of handrails, the expansion joint is permitted to be smaller than the specified cross section diameters for a 1 inch length.

Circular Cross Section (R409.7.1). Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1 1/4 inch minimum and 2 inch maximum.

Non-Circular Cross Sections (R409.7.2). Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension 4 inch minimum and 6 1/4 inch maximum, and a cross-section dimension 2 1/4 inch maximum.

Surfaces (R409.8). Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.

Fittings (R409.9). Handrails shall not rotate within their fittings. Where expansion joints are necessary for large spans of handrails, the expansion joint is permitted to rotate in its fitting.

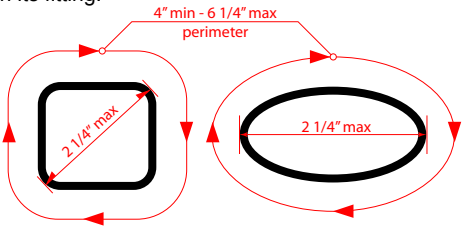


Figure R409.7.2
Non-Circular Cross Sections

HANDRAILS

Handrail Extensions (R409.10). Handrail gripping surfaces shall extend beyond and in the same direction of ramp runs and stair flights. Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg ramps and stairways. In alterations where handrail extensions would reduce the clear width required for pedestrian access routes, handrail extensions shall not be required.

Top and Bottom Extension at Ramps (R409.10.1). Ramp handrails shall extend horizontally above the landing for 1 foot minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run

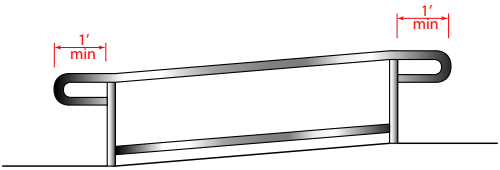


Figure R409.10.1
Top and Bottom Extension at Ramps

Nevada Department of Transportation

Standards and Manuals

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The content of this guide is based on "The 2011, Proposed Accessibility for Pedestrian Facilities in the Public Rights-of-Way" and the Nevada Department of Transportation design criteria. Users are cautioned that transportation design and the associated safety policy, criteria, and technology is a rapidly changing field of study.