



**The following building code requirements are the current minimum code standards, as taken from the Department of Justice ADA Title III Regulations 28 CFR Part 36, for the construction of Ramps, Landings, Handrails, Stairs, Guardrails and Curb Ramps for the “Physically Challenged” person.**

**Disclaimer:** This is not a listing of all code sections involving building or utilities which involve this subject, but only the sections most often questioned. Refer to the 2007 Kentucky Residential Code book for information not listed in this handout and for other requirements of the building code.

## Department of Justice ADA Title III Regulations 28 CFR Part 36

For an immense amount of information and more details, refer to the following website:  
<http://www.usdoj.gov/crt/ada/reg3a.html#Anchor-19425>

### 4.8 Ramps.

**4.8.1\* General.** Any part of an accessible route with a slope greater than 1:20 shall be considered a ramp and shall comply with 4.8.

**4.8.2\* Slope and Rise.** The least possible slope shall be used for any ramp. The maximum slope of a ramp in new construction shall be 1:12. The maximum rise for any run shall be 30 in (760 mm) (see Fig. 16). Curb ramps and ramps to be constructed on existing sites or in existing buildings or facilities may have slopes and rises as allowed in 4.1.6(3)(a) if space limitations prohibit the use of a 1:12 slope or less.

**4.8.3 Clear Width.** The minimum clear width of a ramp shall be 36 in (915 mm).

**4.8.4\* Landings.** Ramps shall have level landings at bottom and top of each ramp and each ramp run. Landings shall have the following features:

- (1) The landing shall be at least as wide as the ramp run leading to it.
- (2) The landing length shall be a minimum of 60 in (1525 mm) clear.
- (3) If ramps change direction at landings, the minimum landing size shall be 60 in by 60 in (1525 mm by 1525 mm).
- (4) If a doorway is located at a landing, then the area in front of the doorway shall comply with 4.13.6.

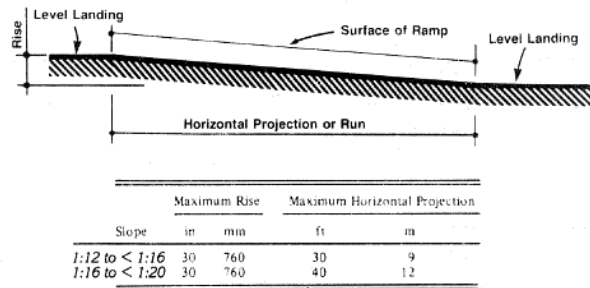


Fig. 16  
 Components of a Single Ramp Run and Sample Ramp Dimensions

[D]

**Building for the Physically Challenged**

**4.8.5\* Handrails.** If a ramp run has a rise greater than 6 in (150 mm) or a horizontal projection greater than 72 in (1830 mm), then it shall have handrails on both sides. Handrails are not required on curb ramps or adjacent to seating in assembly areas. Handrails shall comply with 4.26 and shall have the following features:

- (1) Handrails shall be provided along both sides of ramp segments. The inside handrail on switchback or dogleg ramps shall always be continuous.
- (2) If handrails are not continuous, they shall extend at least 12 in (305 mm) beyond the top and bottom of the ramp segment and shall be parallel with the floor or ground surface (see [Fig. 17](#)).
- (3) The clear space between the handrail and the wall shall be 1 - 1/2 in (38 mm).
- (4) Gripping surfaces shall be continuous.
- (5) Top of handrail gripping surfaces shall be mounted between 34 in and 38 in (865 mm and 965 mm) above ramp surfaces.
- (6) Ends of handrails shall be either rounded or returned smoothly to floor, wall, or post.
- (7) Handrails shall not rotate within their fittings.

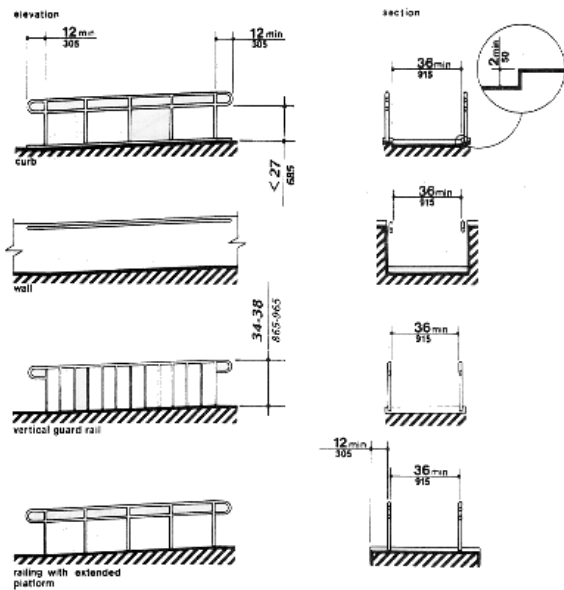


Fig. 17

Examples of Edge Protection and Handrail Extensions

**4.8.6 Cross Slope and Surfaces.** The cross slope of ramp surfaces shall be no greater than 1:50. Ramp surfaces shall comply with 4.5.

**4.8.7 Edge Protection.** Ramps and landings with drop-offs shall have curbs, walls, railings, or projecting surfaces that prevent people from slipping off the ramp. Curbs shall be a minimum of 2 in (50 mm) high (see [Fig. 17](#)).

**4.8.8 Outdoor Conditions.** Outdoor ramps and their approaches shall be designed so that water will not accumulate on walking surfaces.

## 4.26 Handrails, Grab Bars, and Tub and Shower Seats.

**4.26.1\* General.** All handrails, grab bars, and tub and shower seats required to be accessible by 4.1, 4.8, 4.9, 4.16, 4.17, 4.20 or 4.21 shall comply with 4.26.

**4.26.2\* Size and Spacing of Grab Bars and Handrails.** The diameter or width of the gripping surfaces of a handrail or grab bar shall be 1-1/4 in to 1-1/2 in (32 mm to 38 mm), or the shape shall provide an equivalent gripping surface. If handrails or grab bars are mounted adjacent to a wall, the space between the wall and the grab bar shall be 1-1/2 in (38 mm) (see [Fig. 39\(a\)](#), [\(b\)](#), [\(c\)](#), and [\(e\)](#)). Handrails may be located in a recess if the recess is a maximum of 3 in (75 mm) deep and extends at least 18 in (455 mm) above the top of the rail (see [Fig. 39\(d\)](#)).

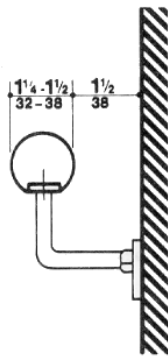


Fig. 39(a)  
Handrail

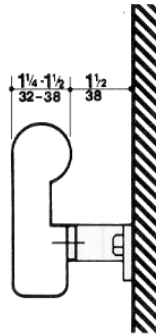


Fig. 39(b)  
Handrail

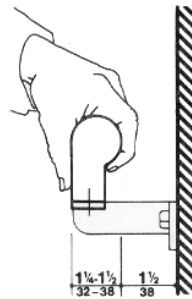


Fig. 39(c)  
Handrail

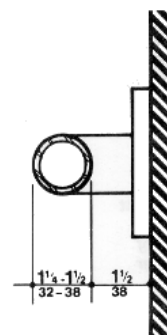


Fig. 39(e)  
Grab Bar



Fig. 39(d)  
Handrail

**4.26.3 Structural Strength.** The structural strength of grab bars, tub and shower seats, fasteners, and mounting devices shall meet the following specification:

- (1) Bending stress in a grab bar or seat induced by the maximum bending moment from the application of 250 lbf (1112N) shall be less than the allowable stress for the material of the grab bar or seat.
- (2) Shear stress induced in a grab bar or seat by the application of 250 lbf (1112N) shall be less than the allowable shear stress for the material of the grab bar or seat. If the connection between the grab bar or seat and its mounting bracket or other support is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.
- (3) Shear force induced in a fastener or mounting device from the application of 250 lbf (1112N) shall be less than the allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.
- (4) Tensile force induced in a fastener by a direct tension force of 250 lbf (1112N) plus the maximum moment from the application of 250 lbf (1112N) shall be less than the allowable withdrawal load between the fastener and the supporting structure.
- (5) Grab bars shall not rotate within their fittings.

**4.26.4 Eliminating Hazards.** A handrail or grab bar and any wall or other surface adjacent to it shall be free of any sharp or abrasive elements. Edges shall have a minimum radius of 1/8 in (3.2 mm).

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**4.9 Stairs.**

**4.9.1\* Minimum Number.** Stairs required to be accessible by 4.1 shall comply with 4.9.

**4.9.2 Treads and Risers.** On any given flight of stairs, all steps shall have uniform riser heights and uniform tread widths. Stair treads shall be no less than 11 in (280 mm) wide, measured from riser to riser (see Fig. 18(a)). Open risers are not permitted.

**4.9.3 Nosings.** The undersides of nosings shall not be abrupt. The radius of curvature at the leading edge of the tread shall be no greater than 1/2 in (13 mm). Risers shall be sloped or the underside of the nosing shall have an angle not less than 60 degrees from the horizontal. Nosings shall project no more than 1-1/2 in (38 mm) (see Fig. 18).

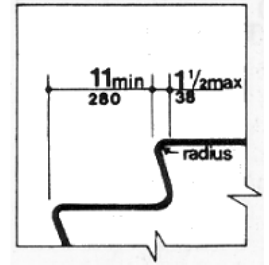


Fig. 18(a)  
Flush Riser

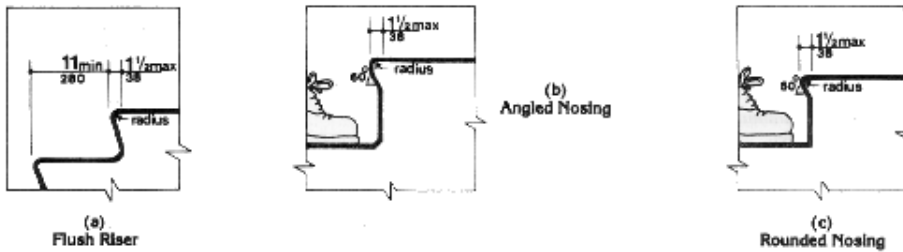


Fig. 18  
Usable Tread Width and Examples of Acceptable Nosings

**4.9.4 Handrails.** Stairways shall have handrails at both sides of all stairs. Handrails shall comply with 4.26 and shall have the following features:

(1) Handrails shall be continuous along both sides of stairs. The inside handrail on switchback or dogleg stairs shall always be continuous (see Fig. 19(a) and (b)).

(2) If handrails are not continuous, they shall extend at least 12 in (305 mm) beyond the top riser and at least 12 in (305 mm) plus the width of one tread beyond the bottom riser. At the top, the extension shall be parallel with the floor or ground surface. At the bottom, the handrail shall continue to slope for a distance of the width of one tread from the bottom riser; the remainder of the extension shall be horizontal (see Fig. 19(c) and (d)). Handrail extensions shall

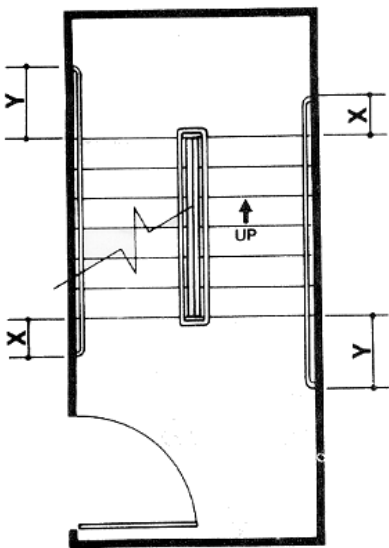


Fig. 19(a)  
Plan

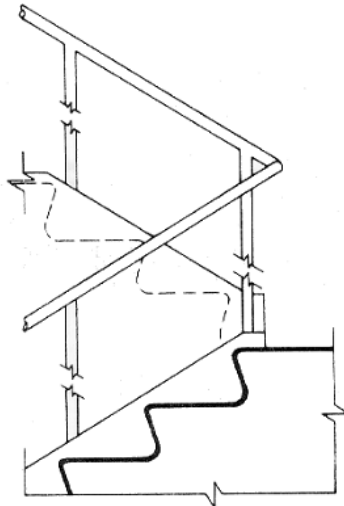


Fig. 19(b)  
Elevation of Center Handrail

comply with 4.4.

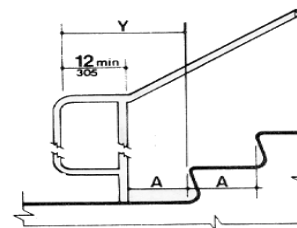


Fig. 19(c)  
Extension at Bottom of Run

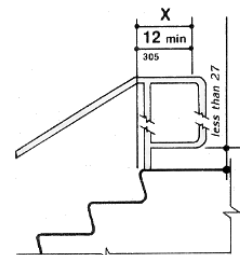


Fig. 19(d)  
Extension at Top of Run

- (3) The clear space between handrails and wall shall be 1-1/2 in (38 mm).
- (4) Gripping surfaces shall be uninterrupted by newel posts, other construction elements, or obstructions.
- (5) Top of handrail gripping surface shall be mounted between 34 in and 38 in (865 mm and 965 mm) above stair nosings.
- (6) Ends of handrails shall be either rounded or returned smoothly to floor, wall or post.
- (7) Handrails shall not rotate within their fittings.

**4.9.5 Detectable Warnings at Stairs. (Reserved).**

**4.9.6 Outdoor Conditions.** Outdoor stairs and their approaches shall be designed so that water will not accumulate on walking surfaces.

**4.3 Accessible Route.**

**4.3.1\* General.** All walks, halls, corridors, aisles, skywalks, tunnels, and other spaces that are part of an accessible route shall comply with 4.3.

**4.3.2 Location.**

- (1) At least one accessible route within the boundary of the site shall be provided from public transportation stops, accessible parking, and accessible passenger loading zones, and public streets or sidewalks to the accessible building entrance they serve. The accessible route shall, to the maximum extent feasible, coincide with the route for the general public.
- (2) At least one accessible route shall connect accessible buildings, facilities, elements, and spaces that are on the same site.
- (3) At least one accessible route shall connect accessible building or facility entrances with all accessible spaces and elements and with all accessible dwelling units within the building or facility.
- (4) An accessible route shall connect at least one accessible entrance of each accessible dwelling unit with those exterior and interior spaces and facilities that serve the accessible dwelling unit.

**4.3.3 Width.** The minimum clear width of an accessible route shall be 36 in (915 mm) except at doors (see 4.13.5 and 4.13.6). If a person in a wheelchair must make a turn around an obstruction, the minimum clear width of the accessible route shall be as shown in [Fig. 7](#), [Fig. 7\(a\)](#) and [Fig 7\(b\)](#).

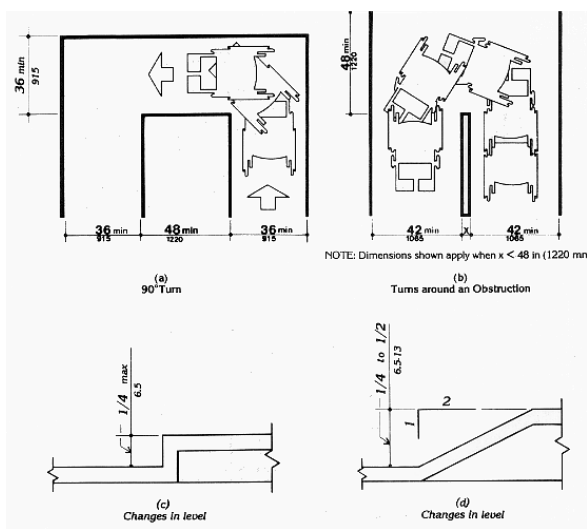


Fig. 7  
Accessible Route

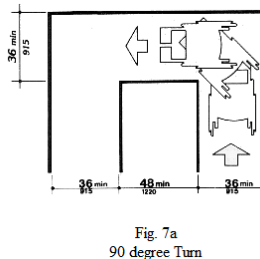


Fig. 7a  
90 degree Turn

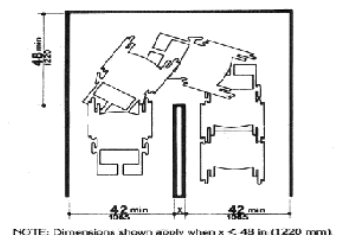


Fig. 7b  
Turns around an Obstruction

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**4.3.4 Passing Space.** If an accessible route has less than 60 in (1525 mm) clear width, then passing spaces at least 60 in by 60 in (1525 mm by 1525 mm) shall be located at reasonable intervals not to exceed 200 ft (61 m). A T-intersection of two corridors or walks is an acceptable passing place.

**4.3.5 Head Room.** Accessible routes shall comply with 4.4.2.

**4.3.6 Surface Textures.** The surface of an accessible route shall comply with 4.5.

**4.3.7 Slope.** An accessible route with a running slope greater than 1:20 is a ramp and shall comply with 4.8. Nowhere shall the cross slope of an accessible route exceed 1:50.

**4.3.8 Changes in Levels.** Changes in levels along an accessible route shall comply with 4.5.2. If an accessible route has changes in level greater than 1/2 in (13 mm), then a curb ramp, ramp, elevator, or platform lift (as permitted in 4.1.3 and 4.1.6) shall be provided that complies with 4.7, 4.8, 4.10, or 4.11, respectively. An accessible route does not include stairs, steps, or escalators. See definition of "egress, means of" in 3.5.

**4.3.9 Doors.** Doors along an accessible route shall comply with 4.13.

**4.3.10\* Egress.** Accessible routes serving any accessible space or element shall also serve as a means of egress for emergencies or connect to an accessible area of rescue assistance.

**4.4 Protruding Objects.**

**4.4.1\* General.** Objects projecting from walls (for example, telephones) with their leading edges between 27 in and 80 in (685 mm and 2030 mm) above the finished floor shall protrude no more than 4 in (100 mm) into walks, halls, corridors, passageways, or aisles (see [Fig. 8\(a\)](#)). Objects mounted with their leading edges at or below 27 in (685 mm) above the finished floor may protrude any amount (see [Fig. 8\(a\)](#) and [\(b\)](#)).

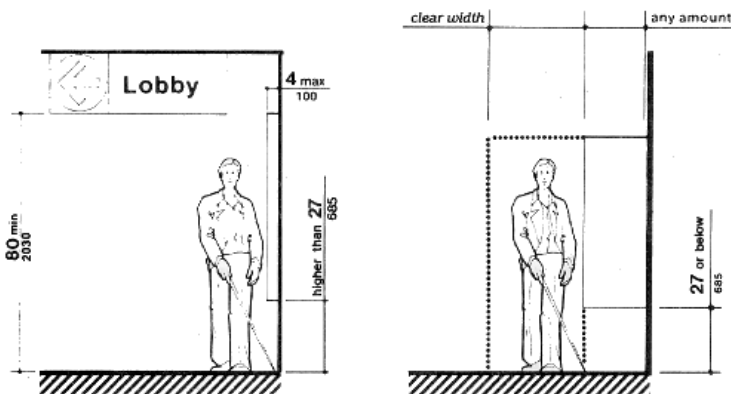


Fig. 8(a)  
Walking Parallel to a Wall

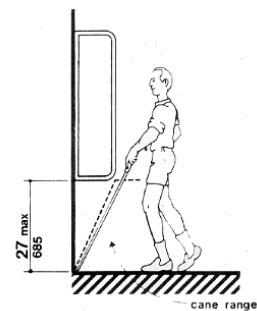


Fig. 8(b)  
Walking Perpendicular to a Wall

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Free-standing objects mounted on posts or pylons may overhang 12 in (305 mm) maximum from 27 in to 80 in (685 mm to 2030 mm) above the ground or finished floor (see Fig. 8(c) and (d)). Protruding objects shall not reduce the clear width of an accessible route or maneuvering space (see Fig. 8(e)).

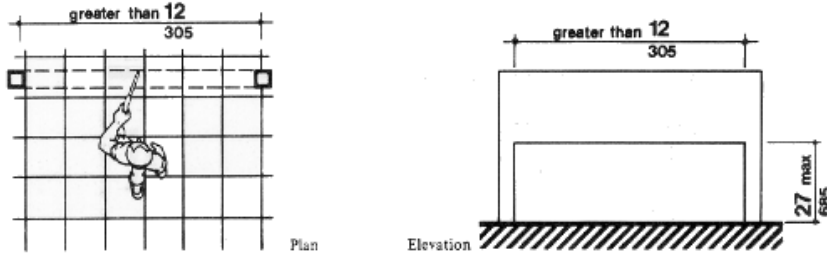


Fig. 8(c)  
Free-Standing Overhanging Objects

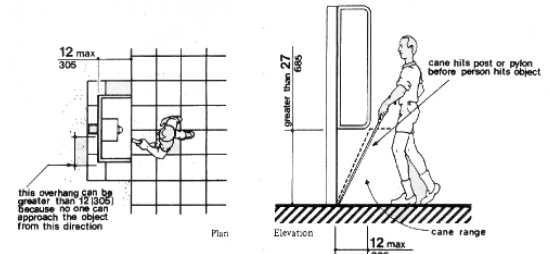
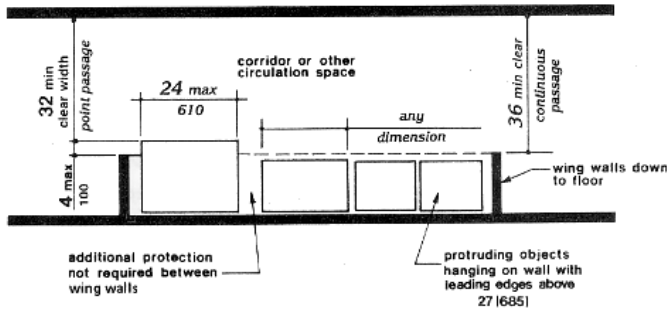


Fig. 8(d)  
Objects Mounted on Posts or Pylons



[D]

Fig. 8(e)  
Example of Protection around Wall-Mounted Objects and Measurements of Clear Widths

**4.4.2 Head Room.** Walks, halls, corridors, passageways, aisles, or other circulation spaces shall have 80 in (2030 mm) minimum clear head room (see Fig. 8(a)). If vertical clearance of an area adjoining an accessible route is reduced to less than 80 in (nominal dimension), a barrier to warn blind or visually-impaired persons shall be provided (see Fig. 8(c-1)).

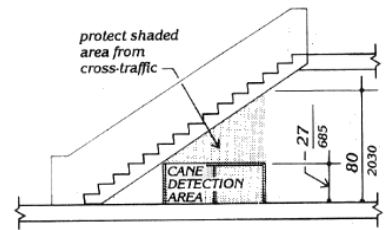


Fig. 8(c-1)  
Overhead Hazards

**4.5 Ground and Floor Surfaces.**

**4.5.1\* General.** Ground and floor surfaces along accessible routes and in accessible rooms and spaces including floors, walks, ramps, stairs, and curb ramps, shall be stable, firm, slip-resistant, and shall comply with 4.5.

**4.5.2 Changes in Level.** Changes in level up to 1/4 in (6 mm) may be vertical and without edge treatment (see Fig. 7(c) pg 5). Changes in level between 1/4 in and 1/2 in (6 mm and 13 mm) shall be beveled with a slope no greater than 1:2 (see Fig. 7(d) pg 5). Changes in level greater than 1/2 in (13 mm) shall be accomplished by means of a ramp that complies with 4.7 or 4.8.

**4.5.3\* Carpet.** If carpet or carpet tile is used on a ground or floor surface, then it shall be securely attached; have a firm cushion, pad, or backing, or no cushion or pad; and have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. The maximum pile thickness shall be 1/2 in (13 mm) (see Fig. 8(f)). Exposed edges of carpet shall be fastened to floor surfaces and have trim along the entire length of the exposed edge. Carpet edge trim shall comply with 4.5.2.

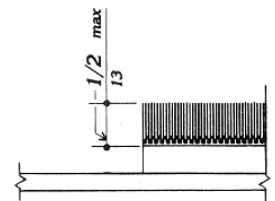


Fig. 8(f)  
Carpet Pile Thickness

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**4.5.4 Gratings.** If gratings are located in walking surfaces, then they shall have spaces no greater than 1/2 in (13 mm) wide in one direction (see Fig. 8(g)). If gratings have elongated openings, then they shall be placed so that the long dimension is perpendicular to the dominant direction of travel (see Fig. 8(h)).

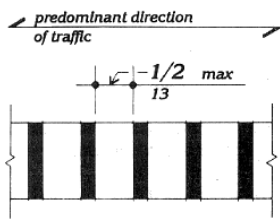


Fig. 8(g)  
Gratings

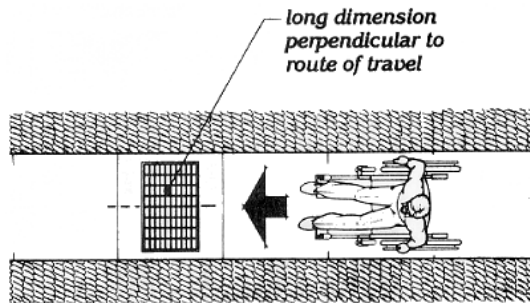


Fig. 8(h)  
Grating Orientation

**4.7 Curb Ramps.**

**4.7.1 Location.** Curb ramps complying with 4.7 shall be provided wherever an accessible route crosses a curb.

**4.7.2 Slope.** Slopes of curb ramps shall comply with 4.8.2. The slope shall be measured as shown in Fig. 11. Transitions from ramps to walks, gutters, or streets shall be flush and free of abrupt changes. Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed 1:20.

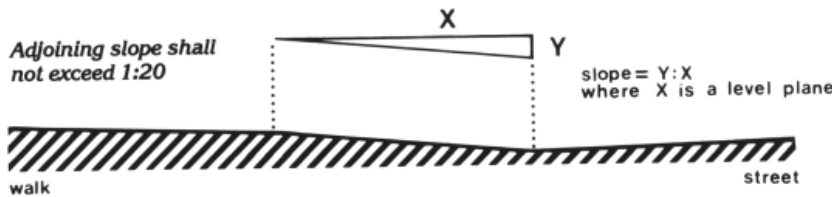


Fig. 11  
Measurement of Curb Ramp Slopes

**4.7.3 Width.** The minimum width of a curb ramp shall be 36 in (915 mm), exclusive of flared sides.

**4.7.4 Surface.** Surfaces of curb ramps shall comply with 4.5.

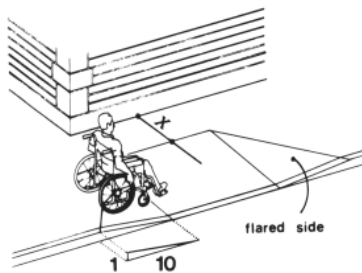


Fig. 12(a)  
Flared Sides

**4.7.5 Sides of Curb Ramps.** If a curb ramp is located where pedestrians must walk across the ramp, or where it is not protected by handrails or guardrails, it shall have flared sides; the maximum slope of the flare shall be 1:10 (see Fig. 12(a)). Curb ramps with returned curbs may be used where pedestrians would not normally walk across the ramp (see Fig. 12(b)).

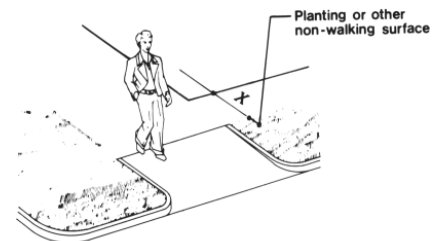


Fig. 12(b)  
Returned Curb



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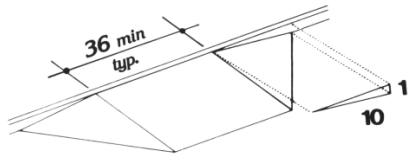


Fig. 13  
Built-Up Curb Ramp

**4.7.6 Built-up Curb Ramps.** Built-up curb ramps shall be located so that they do not project into vehicular traffic lanes (see Fig. 13).

**4.7.7 Detectable Warnings.** A curb ramp shall have a detectable warning complying with 4.29.2. The detectable warning shall extend the full width and depth of the curb ramp.

**4.7.8 Obstructions.** Curb ramps shall be located or protected to prevent their obstruction by parked vehicles.

**4.7.9 Location at Marked Crossings.** Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides (see Fig. 15).

**4.7.10 Diagonal Curb Ramps.** If diagonal (or corner type) curb ramps have returned curbs or other well-defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have 48 in (1220 mm) minimum clear space as shown in Fig. 15(c) and (d). If diagonal curb ramps are provided at marked crossings, the 48 in (1220 mm) clear space shall be within the markings (see Fig. 15(c) and (d)). If diagonal curb ramps have flared sides, they shall also have at least a 24 in (610 mm) long segment of straight curb located on each side of the curb ramp and within the marked crossing (see Fig. 15(c)).

**4.7.11 Islands.** Any raised islands in crossings shall be cut through level with the street or have curb ramps at both sides and a level area at least 48 in (1220 mm) long between the curb ramps in the part of the island intersected by the crossings (see Fig. 15(a) and (b)).

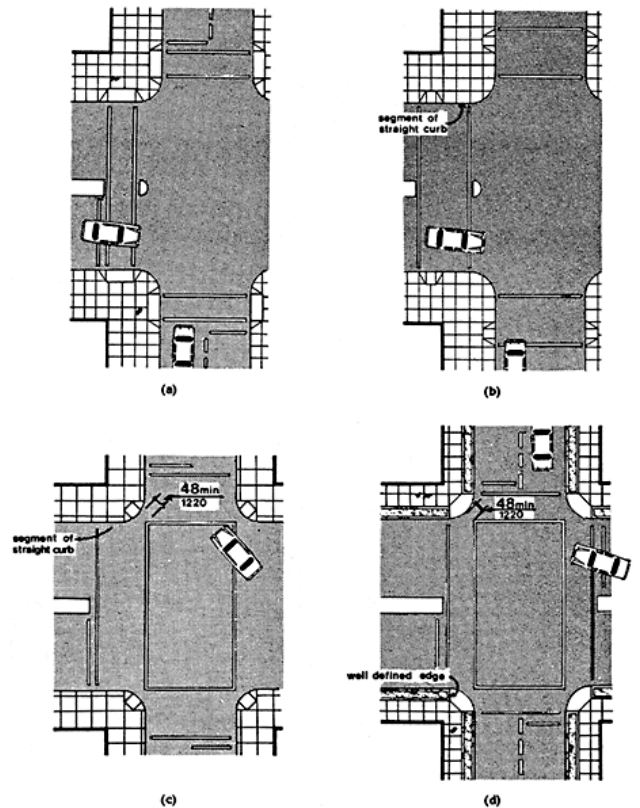


Fig. 15

**BUILDING CODE CLARIFICATION HANDOUTS AVAILABLE LISTING, 01-31-08**

- #2008.001, Crawlspace and Basement Requirements
- #2008.002, Energy Efficiency Requirements
- #2008.003, Accessory Structures on Residential Lots
- #2008.004, Dryer Vent Requirements
- #2008.005, Footing Inspection Checklist
- #2008.006, Deck and Stair Guide
- #2008.007, Windows and Doors – Safety Glazing
- #2008.008, Egress Windows and Window Wells
- #2008.009, 2007 Top Residential Code Requirements (Booklet)
- #2008.010, Inspection Checklist
- #2008.011, Building for the Physically Challenged