

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 Illustration B, 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 Illustration B, Fig. 15(c)). (ADAAG 4.7.10)

- 11) **Islands.** Any raised islands in crossings shall be cut through level with the street or having 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 Illustration B, Fig. 15(a) and (b)). (ADAAG 4.7.11)

e) **Ramps**

- 1) **General.** Any part of an accessible route with a slope greater than 1:20 shall be considered a ramp and shall comply *with the following requirements unless another means of accessible vertical access (e.g., accessible elevator or accessible platform lift) is provided.* (ADAAG 4.8.1)
- 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 Illustration B, Fig. 16). Curb ramps and *interior or exterior* ramps to be constructed on existing sites or in existing buildings or facilities *where space limitations prohibit the use of a 1:12 slope or less* may have slopes and rises as follows: (ADAAG 4.8.2)
 - A) A slope between 1:10 and 1:12 is allowed for a maximum rise of 6 in.
 - B) A slope between 1:8 and 1:10 is allowed for a maximum rise of 3 in. A slope steeper than 1:8 is not allowed. (ADAAG 4.1.6(3)(a))
- 3) **Clear Width.** The minimum clear width of a ramp shall be 36 in. (915 mm). (ADAAG 4.8.3)
- 4) **Landings.** Ramps shall have level landings at bottom and top of each ramp and each ramp run. Landings shall have the following features:

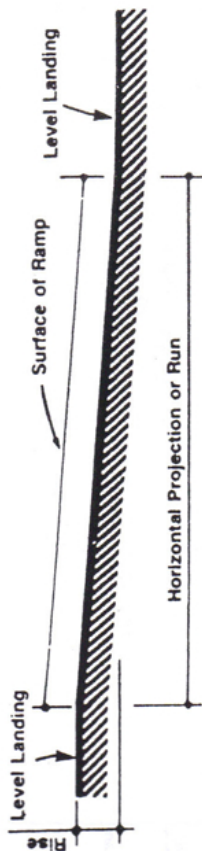
- A) The landing shall be at least as wide as the ramp run leading to it.
 - B) The landing length shall be a minimum of 60 in. (1525 mm) clear.
 - C) If ramps change direction at landings, the minimum landing size shall be 60 in. by 60 in. (1525 mm by 1525 mm).
 - D) If a doorway is located at a landing, then the area in front of the doorway shall comply with subsection (j)(5) of this Section. (ADAAG 4.8.4)
- 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 subsection (p) of this Section and shall have the following features:
- A) Handrails shall be provided along both sides of ramp segments. The inside handrail on switchback or dogleg ramps shall always be continuous.
 - B) 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 Illustration B, Fig. 17).
 - C) The clear space between the handrail and the wall shall be 1-1/2 in. (38 mm).
 - D) Gripping surfaces shall be continuous.
 - E) Top of handrail gripping surfaces shall be mounted between 34 in. and 38 in. (865 mm and 965 mm) above ramp surfaces.
 - F) Ends of handrails shall be either rounded or returned smoothly to floor, wall, or post.
 - G) Handrails shall not rotate within their fittings. (ADAAG 4.8.5)

- 6) **Cross Slope and Surfaces.** The cross slope of ramp surfaces shall be no greater than 1:50. Ramp surfaces shall comply with subsections (a)(5), (7), (11) and (12) of this Section. (ADAAG 4.8.6)
- 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 Illustration B, Fig. 17). (ADAAG 4.8.7)
- 8) **Outdoor Conditions.** Outdoor ramps and their approaches shall be designed so that water will not accumulate on walking surfaces. (ADAAG 4.8.8)
- 9) **Exceptions.** *The following areas do not have to be served by accessible ramps provided that such areas comply with Section 400.320 (a)(1), and further provided that the same functions and services are available on an accessible level of the space: temporary raised platforms; seating tiers; theater rows; stadium rows; and auditorium rows utilizing fixed seating. Ramps do not have to be provided to all levels of a multi-level platform. For requirements for restaurants and cafeterias, see Section 400.320(l).*

f) Stairs

- 1) **General.** Interior and exterior stairs connecting floors and/or levels that are not connected by an elevator, platform lift or ramp, which are required as a means of egress by the applicable building code, or which are part of an accessible route, shall comply with the following requirements. (ADAAG 4.1.3(4))
- 2) **Treads and Risers.** On any given flight of stairs, all steps shall have uniform riser heights and uniform tread widths. *Risers shall be a maximum of 7 in. (180 mm) in height.* Stair treads shall be no less than 11 in. (280 mm) wide, measured from riser to riser (see Illustration B, Fig. 18(a)). Open risers are not permitted. (ADAAG 4.9.2)
- 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 ½ 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 Illustration B, Fig. 18). (ADAAG 4.9.3)

- 4) **Handrails.** Stairways shall have handrails at both sides of all stairs. Handrails shall comply with subsection (q) of this Section and shall have the following features:
- A) Handrails shall be continuous along both sides of stairs. The inside handrail on switchback or dogleg stairs shall always be continuous (see Illustration B, Fig. 19(a) and (b)).
 - B) 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 Illustration B, Fig. 19(c) and (d)). Handrail extensions shall comply with subsection (a)(10) of this Section.
 - C) The clear space between handrails and wall shall be 1-1/2 in. (38 mm).
 - D) Gripping surfaces shall be uninterrupted by newel posts, other construction elements, or obstructions.
 - E) Top of handrail gripping surface shall be mounted between 34 in. and 38 in. (865 mm and 965 mm) above stair nosings.
 - F) Ends of handrails shall be either rounded or returned smoothly to floor, wall or post.
 - G) Handrails shall not rotate within their fittings. (ADAAG 4.9.4)
- 5) **Detectable Warnings at Stairs.** See subsection (t) (3) of this Section.
- 6) **Outdoor Conditions.** Outdoor stairs and their approaches shall be designed so that water will not accumulate on walking surfaces. (ADAAG 4.9.6)
- g) **Elevators**



Slope	Maximum Rise		Maximum Horizontal Projection	
	in	mm	ft	m
1:12 to < 1:16	30	760	30	9
1:16 to < 1:20	30	760	40	12

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

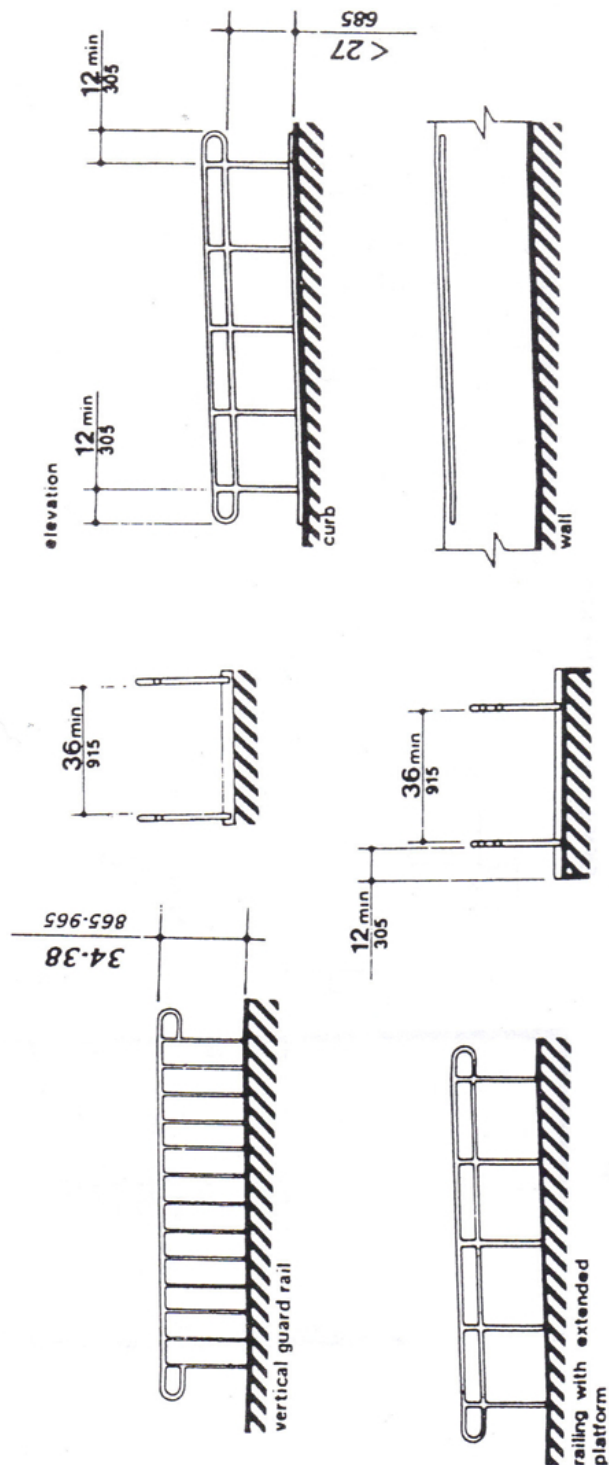


Fig. 17
Examples of Edge Protection and Handrail Extensions

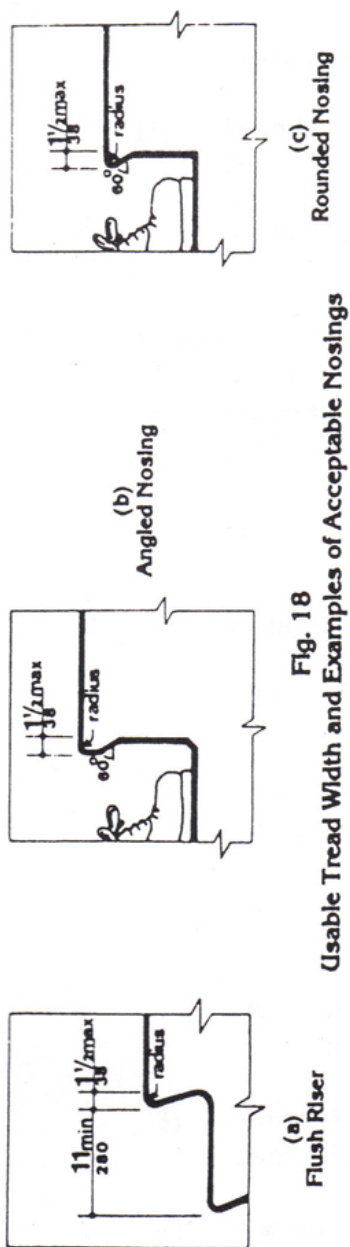


Fig. 18
Usable Tread Width and Examples of Acceptable Nosings

NOTE:
X Is the 12 in minimum handrail extension required at each top riser.
Y Is the minimum handrail extensor of 12 in plus the width of one tread that is required at each bottom riser.

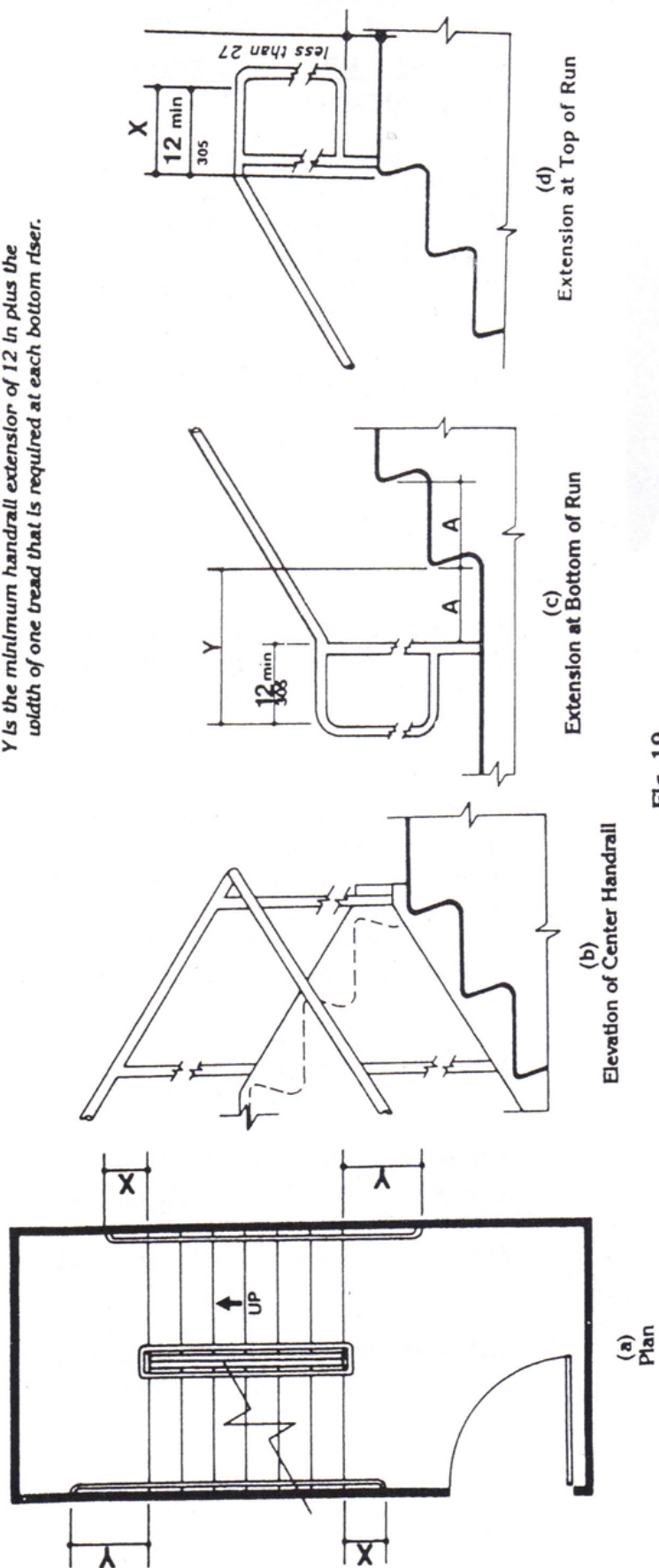


Fig. 19
Stair Handrails