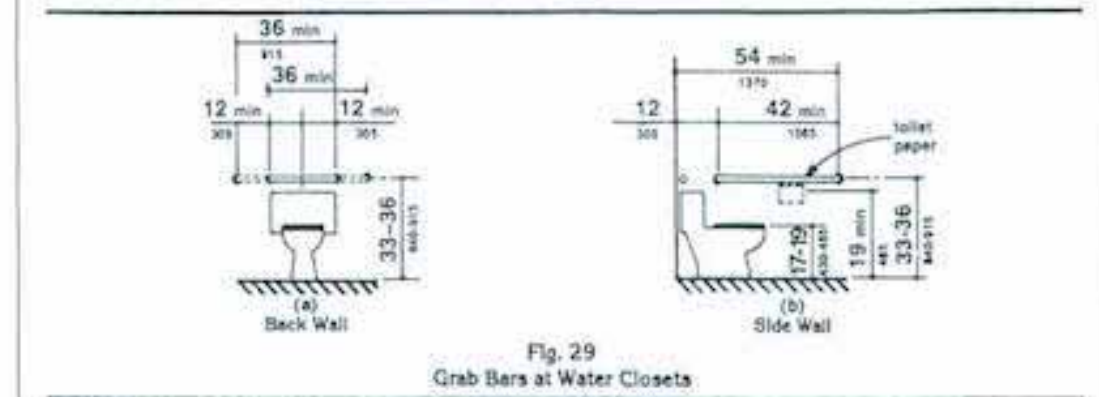
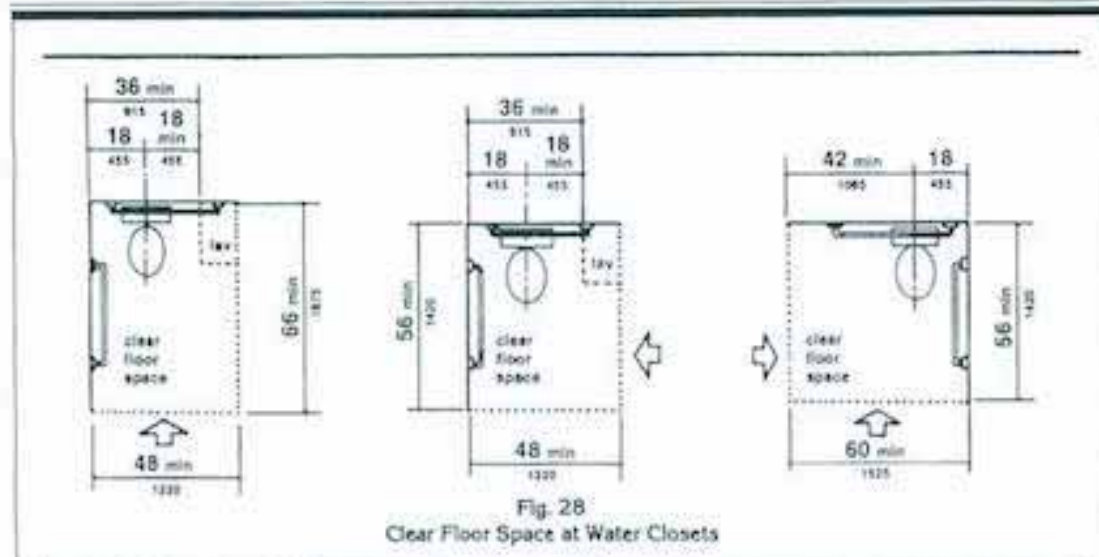


4.17 Toilet Stalls



**4.17.3\* Size and Arrangement.** The size and arrangement of the standard toilet stall shall comply with Fig. 30(a), Standard Stall. Standard toilet stalls with a minimum depth of 56 in (1420 mm) (see Fig. 30(a)) shall have wall-mounted water closets. If the depth of a standard toilet stall is increased at least 3 in (75 mm), then a floor-mounted water closet may be used. Arrangements shown for standard toilet stalls may be reversed to allow either a left- or right-hand approach. Additional stalls shall be provided in conformance with 4.22.4.

*EXCEPTION: In instances of alteration work where provision of a standard stall (Fig. 30(a))*

*is technically infeasible or where plumbing code requirements prevent combining existing stalls to provide space, either alternate stall (Fig. 30(b)) may be provided in lieu of the standard stall.*

**4.17.4 Toe Clearances.** In standard stalls, the front partition and at least one side partition shall provide a toe clearance of at least 9 in (230 mm) above the floor. If the depth of the stall is greater than 60 in (1525 mm), then the toe clearance is not required.

**4.17.5\* Doors.** Toilet stall doors, including door hardware, shall comply with 4.13. If toilet stall approach is from the latch side of the stall door, clearance between the door side of the

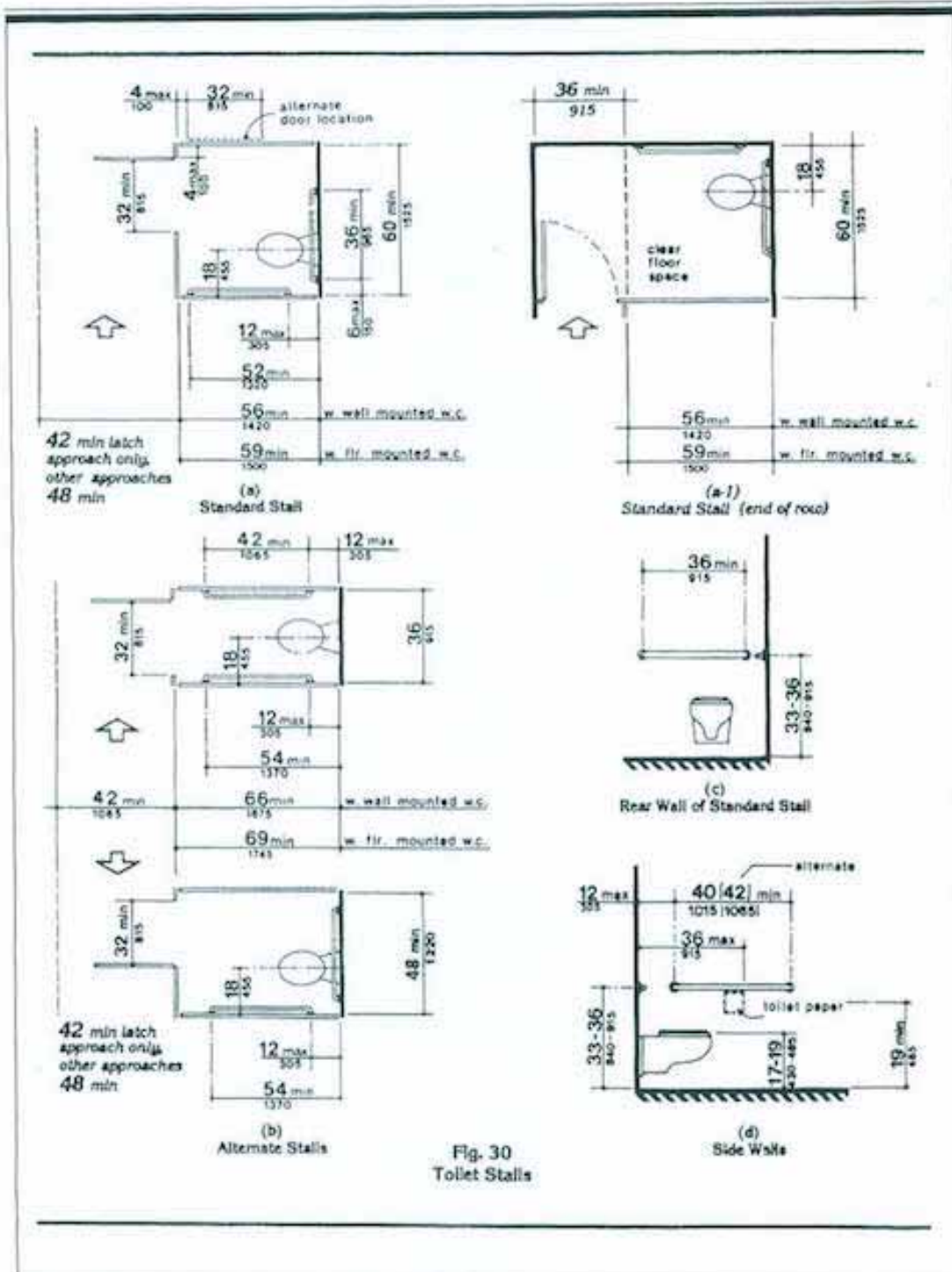


Fig. 30  
Toilet Stalls

4.19 Lavatories and Mirrors

stall and any obstruction may be reduced to a minimum of 42 in (1065 mm) (Fig. 30).

**4.17.6 Grab Bars.** Grab bars complying with the length and positioning shown in Fig. 30(a), (b), (c), and (d) shall be provided. Grab bars may be mounted with any desired method as long as they have a gripping surface at the locations shown and do not obstruct the required clear floor area. Grab bars shall comply with 4.26.

**4.18 Urinals.**

**4.18.1 General.** Accessible urinals shall comply with 4.18.

**4.18.2 Height.** Urinals shall be stall-type or wall-hung with an elongated rim at a maximum of 17 in (430 mm) above the finish floor.

**4.18.3 Clear Floor Space.** A clear floor space 30 in by 48 in (760 mm by 1220 mm) shall be provided in front of urinals to allow forward approach. This clear space shall adjoin or overlap an accessible route and shall comply with 4.2.4. *Urinal shields that do not extend beyond the front edge of the urinal rim may be provided with 29 in (735 mm) clearance between them.*

**4.18.4 Flush Controls.** Flush controls shall be hand operated or automatic, and shall comply with 4.27.4, and shall be mounted no more than 44 in (1120 mm) above the finish floor.

**4.19 Lavatories and Mirrors.**

**4.19.1 General.** The requirements of 4.19 shall apply to lavatory fixtures, vanities, and built-in lavatories.

**4.19.2 Height and Clearances.** Lavatories shall be mounted with the rim or counter surface no higher than 34 in (865 mm) above the finish floor. Provide a clearance of at least 29 in (735 mm) above the finish floor to the bottom of the apron. Knee and toe clearance shall comply with Fig. 31.

**4.19.3 Clear Floor Space.** A clear floor space 30 in by 48 in (760 mm by 1220 mm) complying with 4.2.4 shall be provided in front of a lavatory to allow forward approach. Such clear floor

space shall adjoin or overlap an accessible route and shall extend a maximum of 19 in (485 mm) underneath the lavatory (see Fig. 32).

**4.19.4 Exposed Pipes and Surfaces.** Hot water and drain pipes under lavatories shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories.

**4.19.5 Faucets.** Faucets shall comply with 4.27.4. Lever-operated, push-type, and electronically controlled mechanisms are examples of acceptable designs. *If self-closing*

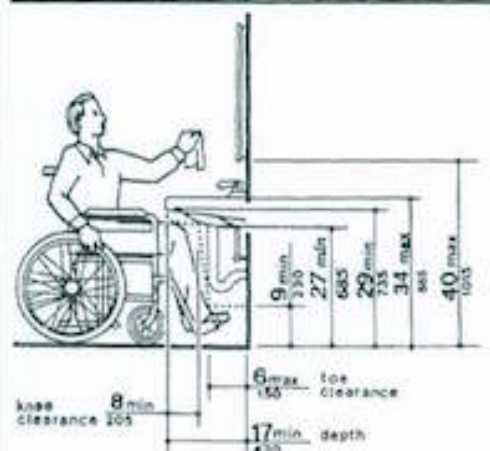


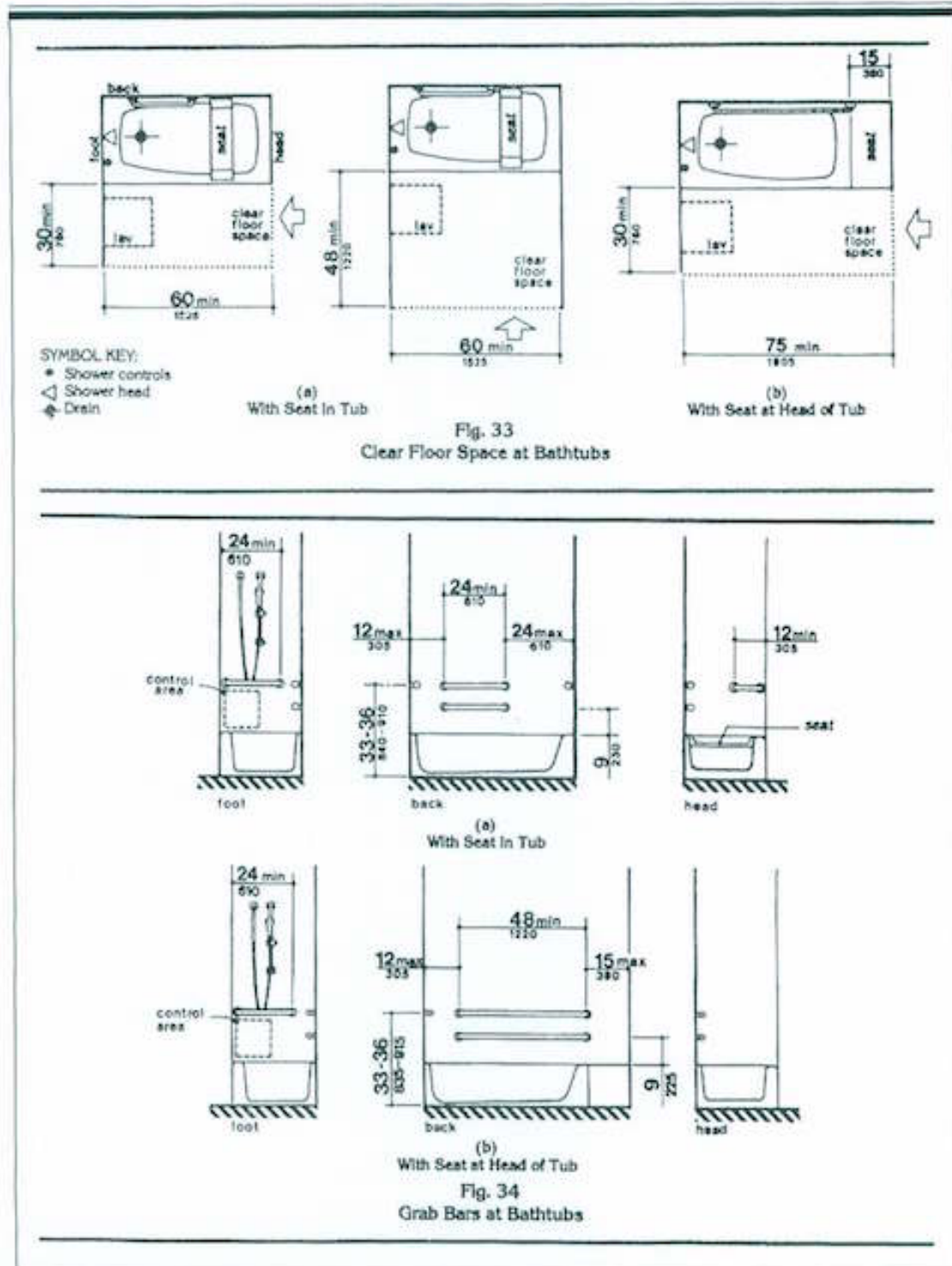
Fig. 31  
Lavatory Clearances



Fig. 32  
Clear Floor Space at Lavatories

<p>valves are used the faucet shall remain open for at least 10 seconds.</p> <p><b>4.19.6* Mirrors.</b> Mirrors shall be mounted with the bottom edge of the reflecting surface no higher than 40 in (1015 mm) above the finish floor (see Fig. 31).</p> <p><b>4.20 Bathtubs.</b></p> <p><b>4.20.1 General.</b> Accessible bathtubs shall comply with 4.20.</p> <p><b>4.20.2 Floor Space.</b> Clear floor space in front of bathtubs shall be as shown in Fig. 33.</p> <p><b>4.20.3 Seat.</b> An in-tub seat or a seat at the head end of the tub shall be provided as shown in Fig. 33 and 34. The structural strength of seats and their attachments shall comply with 4.26.3. Seats shall be mounted securely and shall not slip during use.</p> <p><b>4.20.4 Grab Bars.</b> Grab bars complying with 4.26 shall be provided as shown in Fig. 33 and 34.</p> <p><b>4.20.5 Controls.</b> Faucets and other controls complying with 4.27.4 shall be located as shown in Fig. 34.</p> <p><b>4.20.6 Shower Unit.</b> A shower spray unit with a hose at least 60 in (1525 mm) long that can be used both as a fixed shower head and as a hand-held shower shall be provided.</p> <p><b>4.20.7 Bathtub Enclosures.</b> If provided, enclosures for bathtubs shall not obstruct controls or transfer from wheelchairs onto bathtub seats or into tubs. Enclosures on bathtubs shall not have tracks mounted on their rims.</p> <p><b>4.21 Shower Stalls.</b></p> <p><b>4.21.1* General.</b> Accessible shower stalls shall comply with 4.21.</p> <p><b>4.21.2 Size and Clearances.</b> Except as specified in 9.1.2, shower stall size and clear floor space shall comply with Fig. 35(a) or (b). The shower stall in Fig. 35(a) shall be 36 in by 36 in (915 mm by 915 mm). Shower stalls required by 9.1.2 shall comply with Fig. 57(a)</p>	<p>or (b). The shower stall in Fig. 35(b) will fit into the space required for a bathtub.</p> <p><b>4.21.3 Seat.</b> A seat shall be provided in shower stalls 36 in by 36 in (915 mm by 915 mm) and shall be as shown in Fig. 36. The seat shall be mounted 17 in to 19 in (430 mm to 485 mm) from the bathroom floor and shall extend the full depth of the stall. In a 36 in by 36 in (915 mm by 915 mm) shower stall, the seat shall be on the wall opposite the controls. <i>Where a fixed seat is provided in a 30 in by 60 in minimum (760 mm by 1525 mm) shower stall, it shall be a folding type and shall be mounted on the wall adjacent to the controls as shown in Fig. 57.</i> The structural strength of seats and their attachments shall comply with 4.26.3.</p> <p><b>4.21.4 Grab Bars.</b> Grab bars complying with 4.26 shall be provided as shown in Fig. 37.</p> <p><b>4.21.5 Controls.</b> Faucets and other controls complying with 4.27.4 shall be located as shown in Fig. 37. In shower stalls 36 in by 36 in (915 mm by 915 mm), all controls, faucets, and the shower unit shall be mounted on the side wall opposite the seat.</p> <p><b>4.21.6 Shower Unit.</b> A shower spray unit with a hose at least 60 in (1525 mm) long that can be used both as a fixed shower head and as a hand-held shower shall be provided.</p> <p><i>EXCEPTION: In unmonitored facilities where vandalism is a consideration, a fixed shower head mounted at 48 in (1220 mm) above the shower floor may be used in lieu of a hand-held shower head.</i></p> <p><b>4.21.7 Curbs.</b> If provided, curbs in shower stalls 36 in by 36 in (915 mm by 915 mm) shall be no higher than 1/2 in (13 mm). Shower stalls that are 30 in by 60 in (760 mm by 1525 mm) minimum shall not have curbs.</p> <p><b>4.21.8 Shower Enclosures.</b> If provided, enclosures for shower stalls shall not obstruct controls or obstruct transfer from wheelchairs onto shower seats.</p> <p><b>4.22 Toilet Rooms.</b></p> <p><b>4.22.1 Minimum Number.</b> <i>Toilet facilities required to be accessible by 4.1 shall comply</i></p>
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4.21 Shower Stalls



with 4.22. Accessible toilet rooms shall be on an accessible route.

**4.22.2 Doors.** All doors to accessible toilet rooms shall comply with 4.13. Doors shall not swing into the clear floor space required for any fixture.

**4.22.3\* Clear Floor Space.** The accessible fixtures and controls required in 4.22.4, 4.22.5, 4.22.6, and 4.22.7 shall be on an accessible route. An unobstructed turning space complying with 4.2.3 shall be provided within an accessible toilet room. The clear floor space at fixtures and controls, the accessible route, and the turning space may overlap.

**4.22.4 Water Closets.** If toilet stalls are provided, then at least one shall be a standard

toilet stall complying with 4.17; where 6 or more stalls are provided, in addition to the stall complying with 4.17.3, at least one stall 36 in (915 mm) wide with an outward swinging, self-closing door and parallel grab bars complying with Fig. 30(d) and 4.26 shall be provided. Water closets in such stalls shall comply with 4.16. If water closets are not in stalls, then at least one shall comply with 4.16.

**4.22.5 Urinals.** If urinals are provided, then at least one shall comply with 4.18.

**4.22.6 Lavatories and Mirrors.** If lavatories and mirrors are provided, then at least one of each shall comply with 4.19.

**4.22.7 Controls and Dispensers.** If controls, dispensers, receptacles, or other

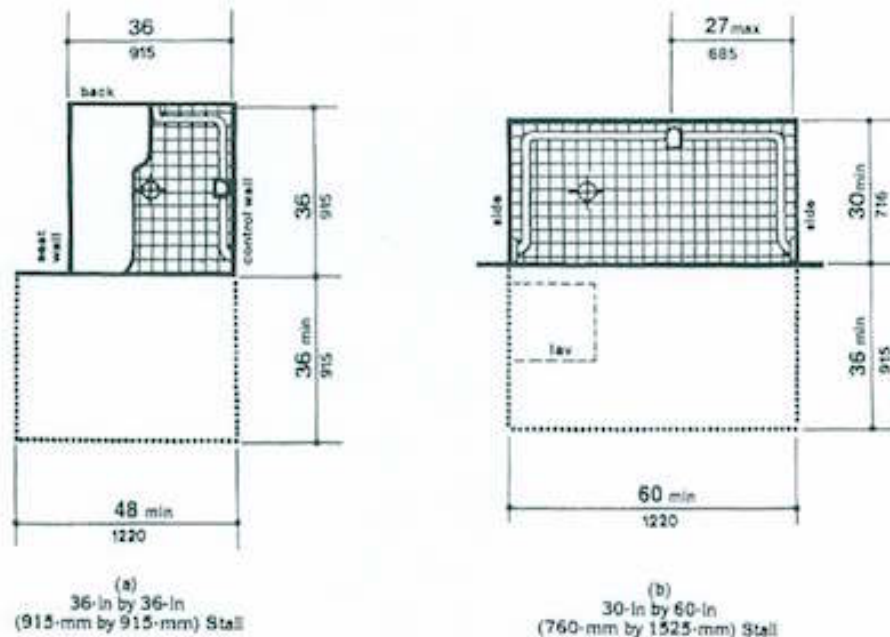
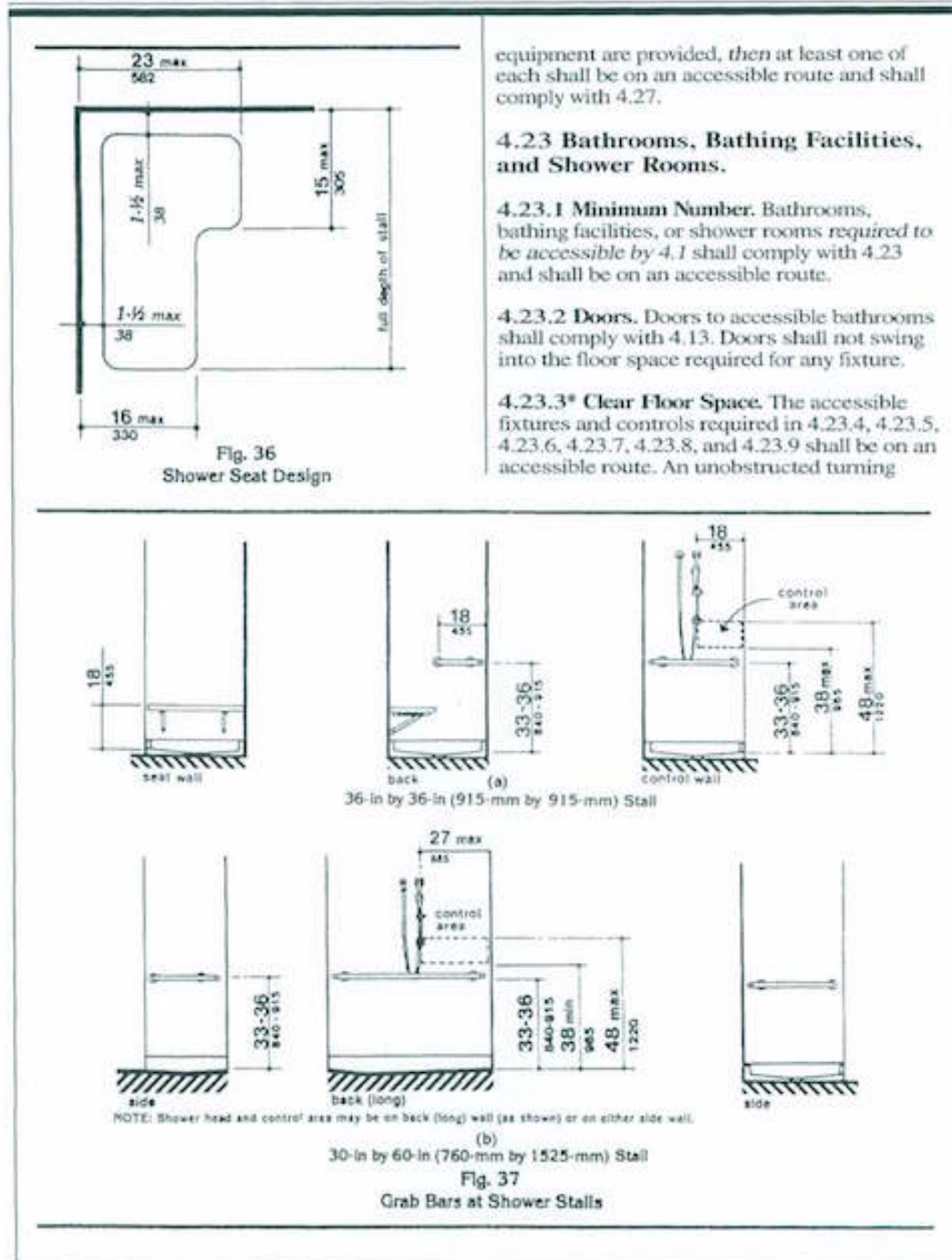


Fig. 35  
Shower Size and Clearances

4.23 Bathrooms, Bathing Facilities, and Shower Rooms



space complying with 4.2.3 shall be provided within an accessible bathroom. The clear floor spaces at fixtures and controls, the accessible route, and the turning space may overlap.

**4.23.4 Water Closets.** If toilet stalls are provided, then at least one shall be a standard toilet stall complying with 4.17; where 6 or more stalls are provided, in addition to the stall complying with 4.17.3, at least one stall 36 in (915 mm) wide with an outward swinging, self-closing door and parallel grab bars complying with Fig. 30(d) and 4.26 shall be provided. Water closets in such stalls shall comply with 4.16. If water closets are not in stalls, then at least one shall comply with 4.16.

**4.23.5 Urinals.** If urinals are provided, then at least one shall comply with 4.18.

**4.23.6 Lavatories and Mirrors.** If lavatories and mirrors are provided, then at least one of each shall comply with 4.19.

**4.23.7 Controls and Dispensers.** If controls, dispensers, receptacles, or other equipment are provided, then at least one of each shall be on an accessible route and shall comply with 4.27.

**4.23.8 Bathing and Shower Facilities.** If tubs or showers are provided, then at least one accessible tub that complies with 4.20 or at least one accessible shower that complies with 4.21 shall be provided.

**4.23.9\* Medicine Cabinets.** If medicine cabinets are provided, at least one shall be located with a usable shelf no higher than 44 in (1120 mm) above the floor space. The floor space shall comply with 4.2.4.

#### 4.24 Sinks.

**4.24.1 General.** Sinks required to be accessible by 4.1 shall comply with 4.24.

**4.24.2 Height.** Sinks shall be mounted with the counter or rim no higher than 34 in (865 mm) above the finish floor.

**4.24.3 Knee Clearance.** Knee clearance that is at least 27 in (685 mm) high, 30 in (760 mm) wide, and 19 in (485 mm) deep shall be pro-

vided underneath sinks.

**4.24.4 Depth.** Each sink shall be a maximum of 6-1/2 in (165 mm) deep.

**4.24.5 Clear Floor Space.** A clear floor space at least 30 in by 48 in (760 mm by 1220 mm) complying with 4.2.4 shall be provided in front of a sink to allow forward approach. The clear floor space shall be on an accessible route and shall extend a maximum of 19 in (485 mm) underneath the sink (see Fig. 32).

**4.24.6 Exposed Pipes and Surfaces.** Hot water and drain pipes exposed under sinks shall be insulated or otherwise configured so as to protect against contact. There shall be no sharp or abrasive surfaces under sinks.

**4.24.7 Faucets.** Faucets shall comply with 4.27.4. Lever-operated, push-type, touch-type, or electronically controlled mechanisms are acceptable designs.

#### 4.25 Storage.

**4.25.1 General.** Fixed storage facilities such as cabinets, shelves, closets, and drawers required to be accessible by 4.1 shall comply with 4.25.

**4.25.2 Clear Floor Space.** A clear floor space at least 30 in by 48 in (760 mm by 1220 mm) complying with 4.2.4 that allows either a forward or parallel approach by a person using a wheelchair shall be provided at accessible storage facilities.

**4.25.3 Height.** Accessible storage spaces shall be within at least one of the reach ranges specified in 4.2.5 and 4.2.6 (see Fig. 5 and Fig. 6). Clothes rods or shelves shall be a maximum of 54 in (1370 mm) above the finish floor for a side approach. Where the distance from the wheelchair to the clothes rod or shelf exceeds 10 in (255 mm) (as in closets without accessible doors) the height and depth to the rod or shelf shall comply with Fig. 38(a) and Fig. 38(b).

**4.25.4 Hardware.** Hardware for accessible storage facilities shall comply with 4.27.4. Touch latches and U-shaped pulls are acceptable.



4.26 Handrails, Grab Bars, and Tub and Shower Seats

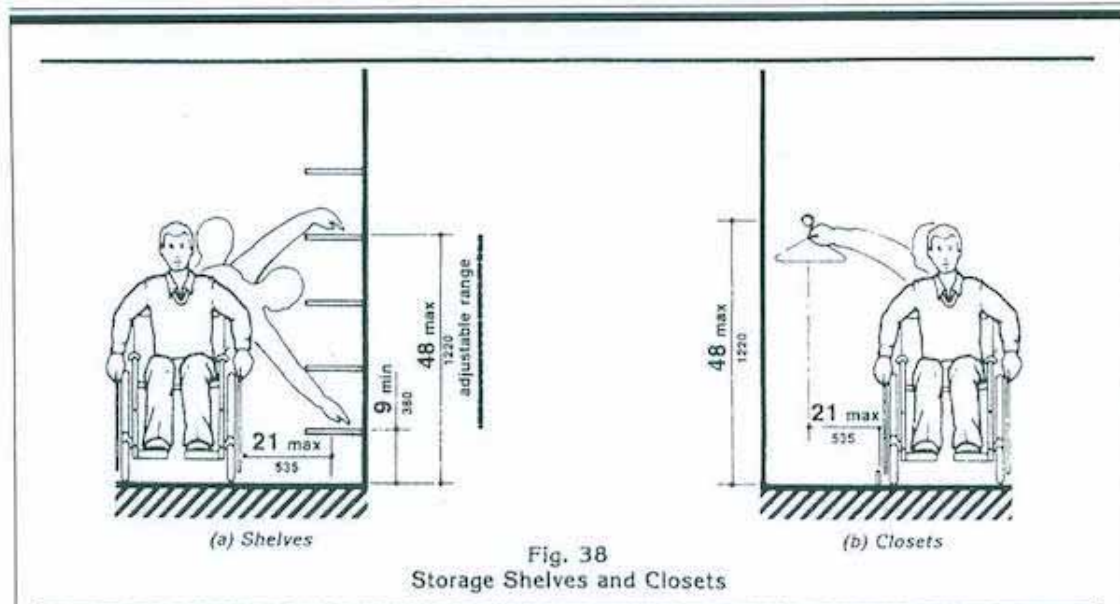


Fig. 38  
Storage Shelves and Closets

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)).

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.