

Universal Design Standards

For applications submitted and approved after April 16, 2007

Introduction to Universal Design

Universal design is a building concept that incorporates products, general design layouts and characteristics into residences in order to:

- Make the residence usable by the greatest number of people;
- Respond to the changing needs of the resident; and
- Improve marketability of the residence.

The goal of universal design is to build housing that meets the needs of the greatest possible portion of a community's population. It differs from accessible design, which is primarily intended to meet the needs of persons with disabilities. It is, however, inclusive of adaptable design as it strives to incorporate structural features that will allow a residence to be adapted to an individual's needs.

The West Virginia Housing Development Fund (Housing Development Fund) has determined that universal design standards are appropriate and should be utilized in the construction of affordable, newly constructed single-family homes.

These requirements are in addition to State-adopted IRC 2003 codes and any other State, county, or local regulations.

Universal Design Standards

1. **Hallways:** All hallways shall have a net clear (finish wall to finish wall) opening width of 36". Definition of hallway is any passageway that is 18" or greater in depth.
2. **Interior Doorways:** All passage doors from room to room, including all bedroom doors and closet doors, shall have a minimum net clear opening of 32".
3. **Bathrooms:** All housing shall have a minimum of one full universally designed bathroom located on the grade level.
 - a. A 30" x 48" clear floor space outside the swing of the door as it closes is required. Lavatories shall have a 30" x 48" clear floor space. Toilets shall have a 48" x 56" clear floor space. Tubs shall have a 30" x 48" clear floor space. The required clear floor spaces for each fixture may overlap the clear floor spaces for other fixtures in the room. The clear area for lavatories and tubs shall be free from all wall projections, tub, shower, toilet or the lavatory base.
 - b. Toilets shall be centered a minimum of 18" from any corner wall, base cabinet or tub. The basin for cabinet style lavatories shall be centered in the required clear floor space for this fixture or be located 24" from any adjacent wall or tub that prevents full parallel approach.
 - c. Wall reinforcement behind the toilet, tub and/or shower shall be equipped with properly anchored and supported grab bars or install 2" x 10" wood blocking, plywood or other approved material for future grab bars in the toilet, tub and/or shower area. The wall reinforcement shall be located 33" to

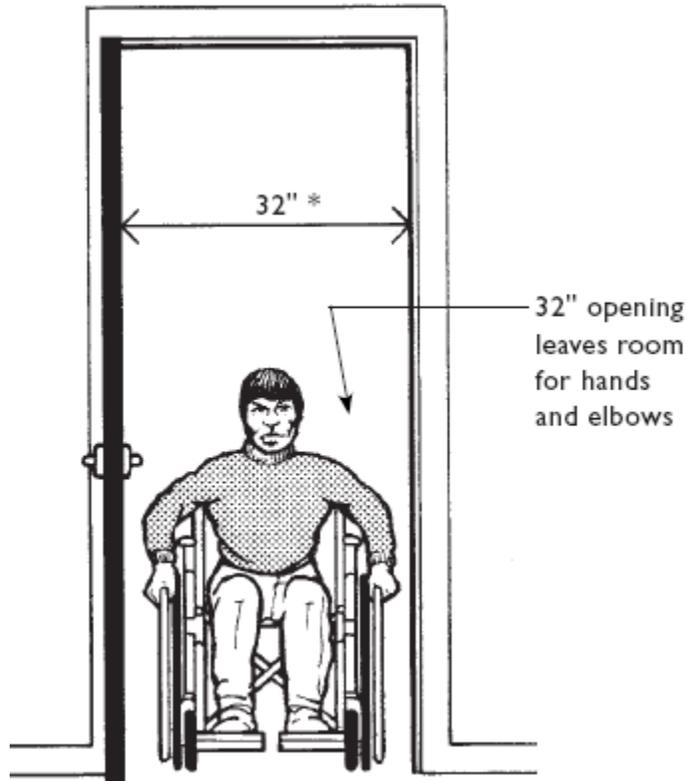
36" AFF (above finished floor). Americans with Disability Act (ADA) compliant reinforced tubs may be used.

4. **Entry Door:** The primary entry door must meet the following requirements.
 - a. An exterior level platform with a minimum of 5' x 5' clear floor space. This platform must be within 1/2" of the interior finished floor at the point of entrance and a maximum threshold rise of 1-1/4" when approaching from the outside (structural and decorative supports may overlap perimeter of the clear floor space).
 - b. The entry door threshold must not project more than 3/4" and be beveled with a slope of 1:2. At the point of entry of this door, the interior must have a 5' x 5' clear floor space.
 - c. Exterior entry doorway shall have a minimum net clear opening of 32".
5. **Faucets:** Single-lever faucets or ADA-approved faucets shall be installed at all sinks, showers and tubs.
6. **Electrical:** Light switches, fan switches and thermostats shall have a maximum height of 48" centered on the switch or thermostat face cover. Mounting heights for electrical outlets shall have minimum height of 15" AFF from the bottom outlet or a maximum height of 48" AFF from the top outlet.

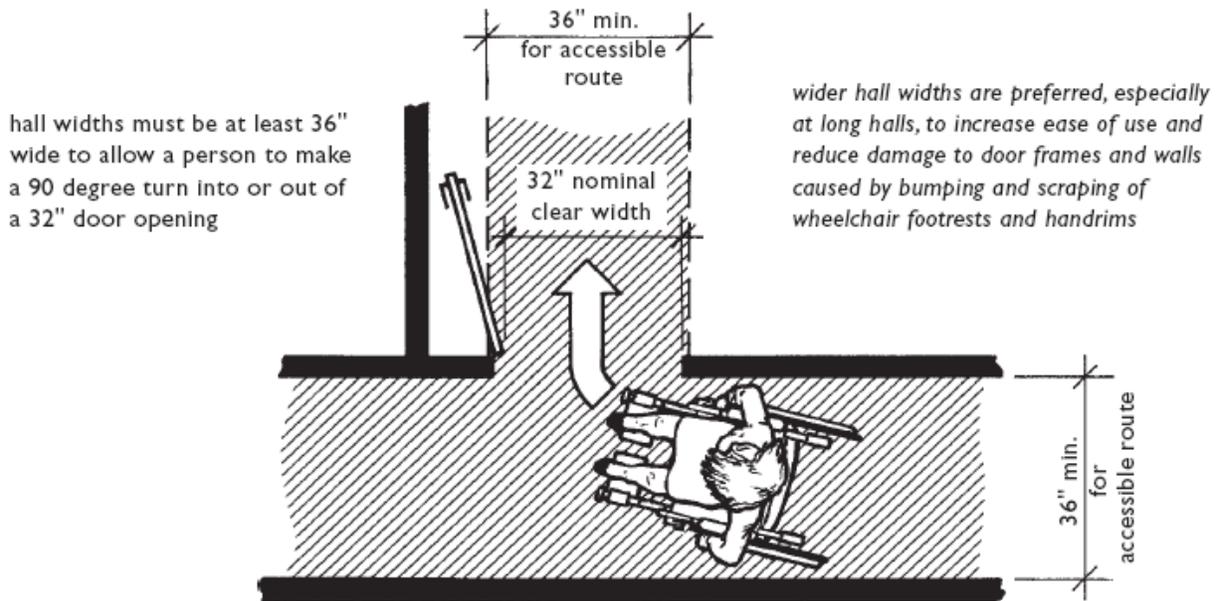
Note: If an outlet or switch is obstructed by a base cabinet or countertop, then the maximum height for a switch or outlet shall be 46" AFF.

7. **Bedroom:** All units shall have a minimum of one bedroom on the grade level.
8. **Exterior Access:** Access from the vehicular parking to the entry door shall be considered in the site design unless it is impractical to do so because of terrain or unusual characteristics of the site. The walkway from the parking area to the entry door must be 36" wide and made of concrete, asphalt, wood or other hard surface material approved by the Housing Development Fund. Any part of the accessible route with a slope greater than 1:20 shall be considered a ramp and shall comply with ANSI. Ramps cannot exceed 8.33% slope (1:12) and handrails are required on all ramps steeper than 5% and up to 8.33% slope.
9. **Kitchen Design:** The design of the kitchen must provide for 30" x 48" clear floor space at each appliance. A clearance of at least 40 inches between all opposing base cabinets, countertops, appliances, and walls is required for pass-through kitchens, L shaped kitchens, or kitchens with islands. A 60-inch diameter turning circle is required in a U-shaped kitchen that has a sink, range, or cooktop at its base.

Doorway Clear Opening

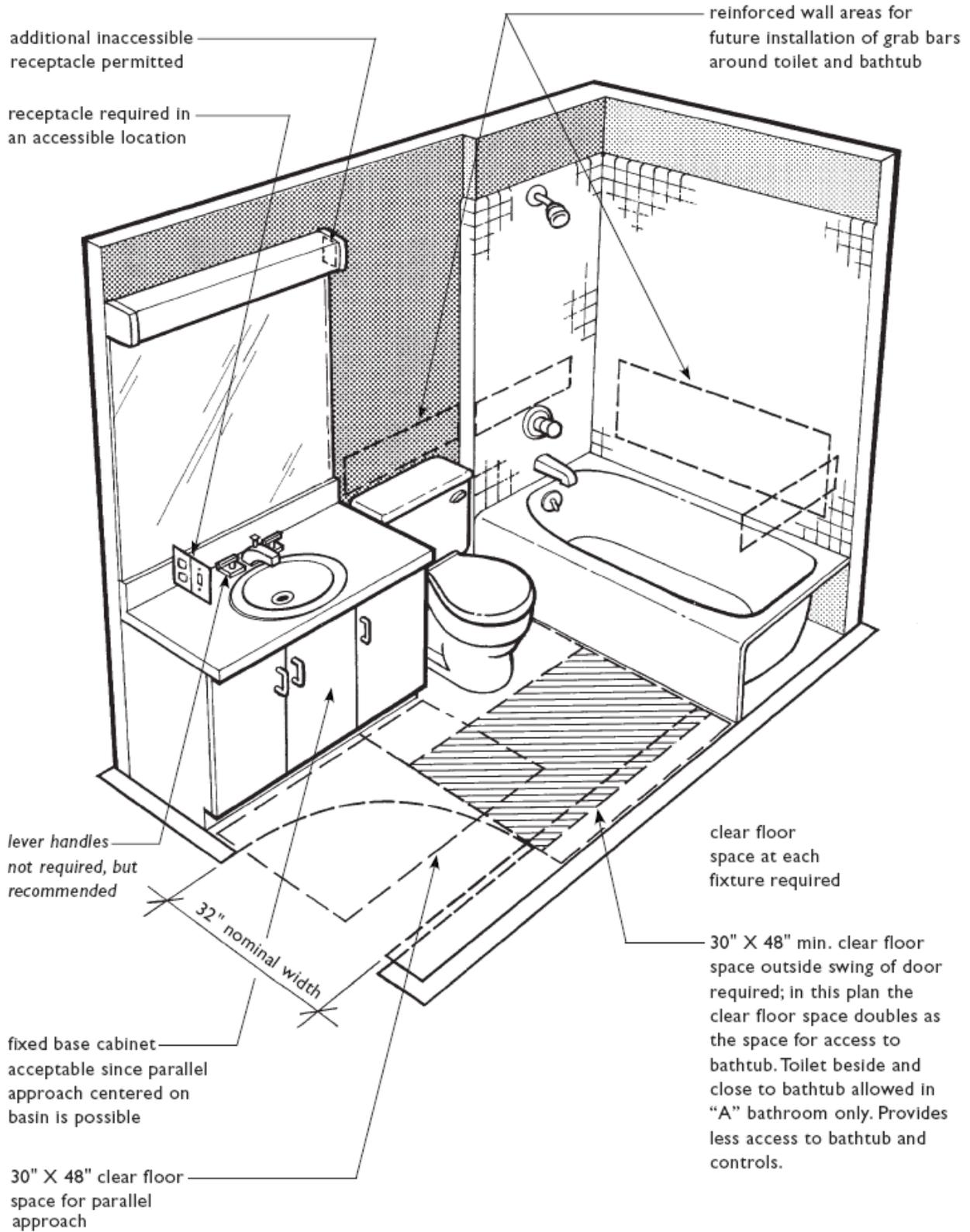


Minimum Width of Accessible Route



All Covered Switches, Outlets, and Controls Operated on a Frequent Basis Must be in Accessible Locations

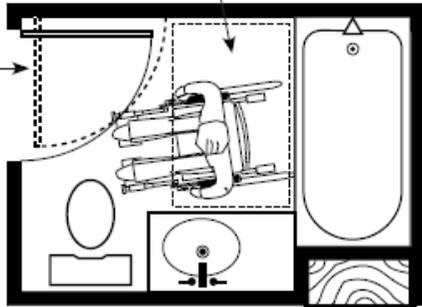
Guideline Specifications For Bathrooms



because lavatory has no knee space below, to meet the Guidelines bathtub controls must be located on this wall

clear floor space for maneuvering outside swing of door

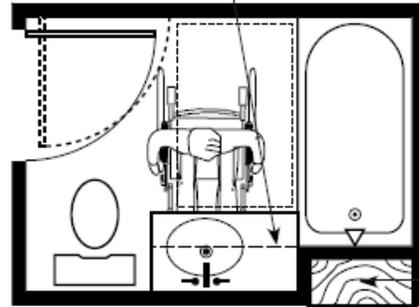
alternate door location



Option 1:
Plumbing on Opposite Walls
 Lavatory With Base Cabinet Below
 (No Knee Space)

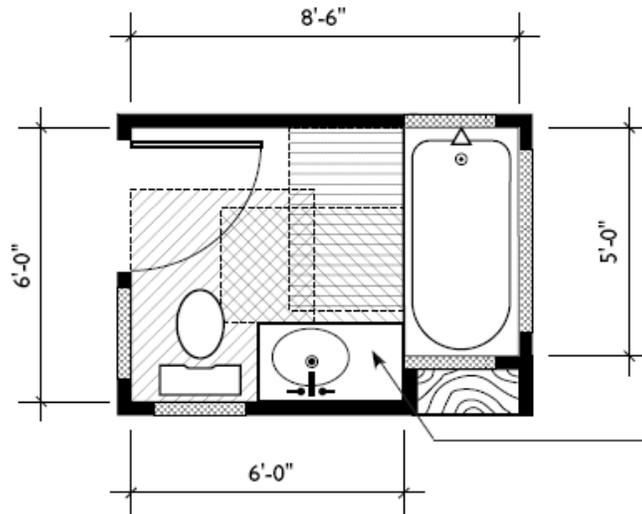
end of knee space flush with bathtub control wall permits access to controls; because knee space is not the full depth, user must still be able to execute a parallel approach to lavatory

If lavatory has knee space below, bathtub controls can be located on a common plumbing wall

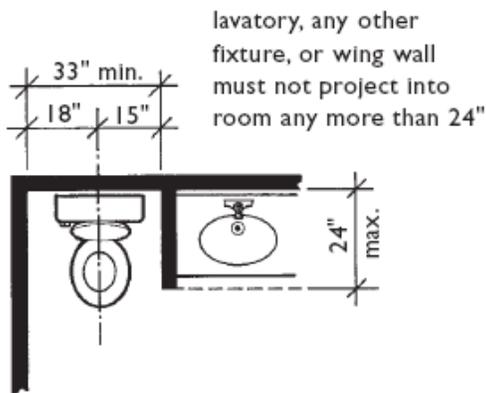
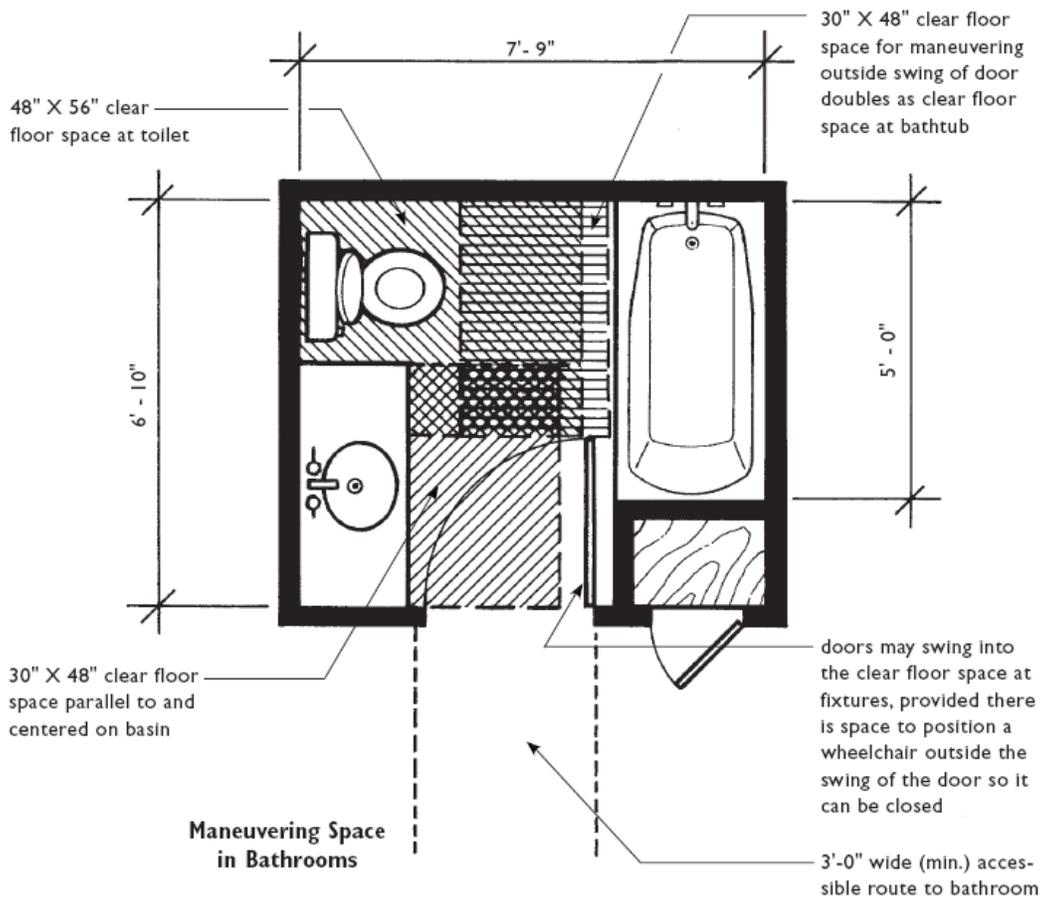


Option 2:
Plumbing on Common Wall
 Lavatory With Shallow Knee Space

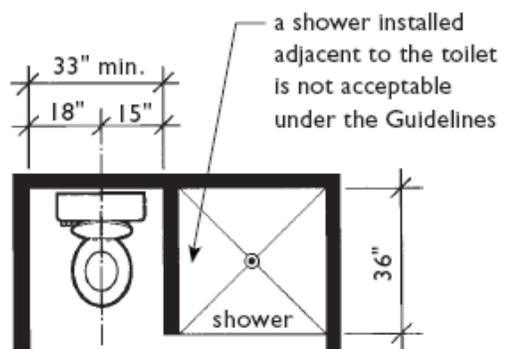
storage shelves



36" wide vanity with offset basin to permit parallel approach centered on basin



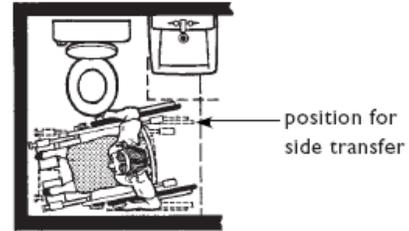
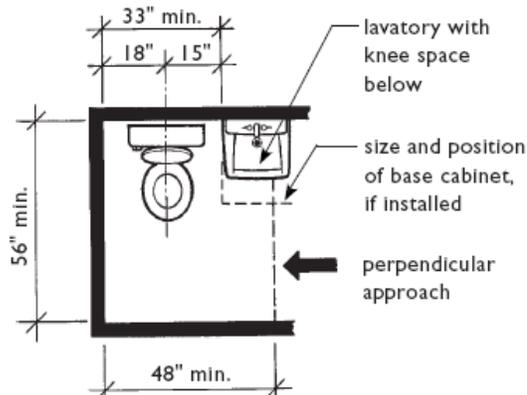
Acceptable



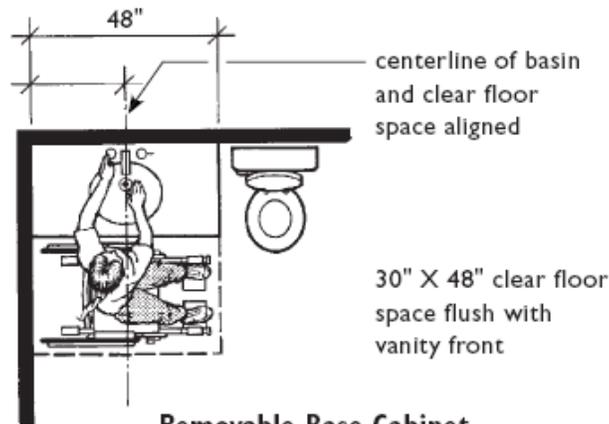
Not Acceptable

Some Features May Overlap Clear Floor Space at Toilet

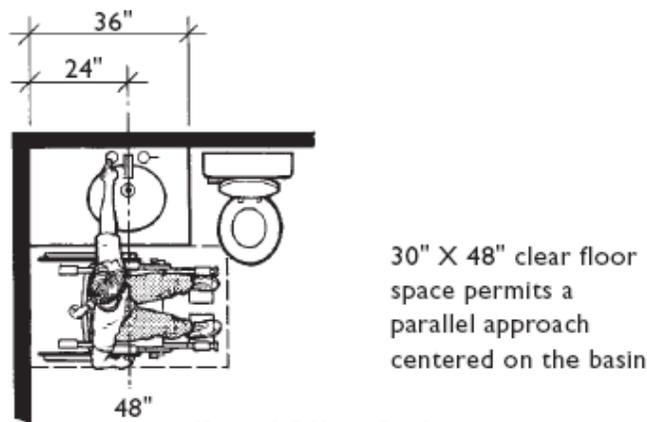
the primary approach that can be executed in a 48" X 56" clear floor space is perpendicular



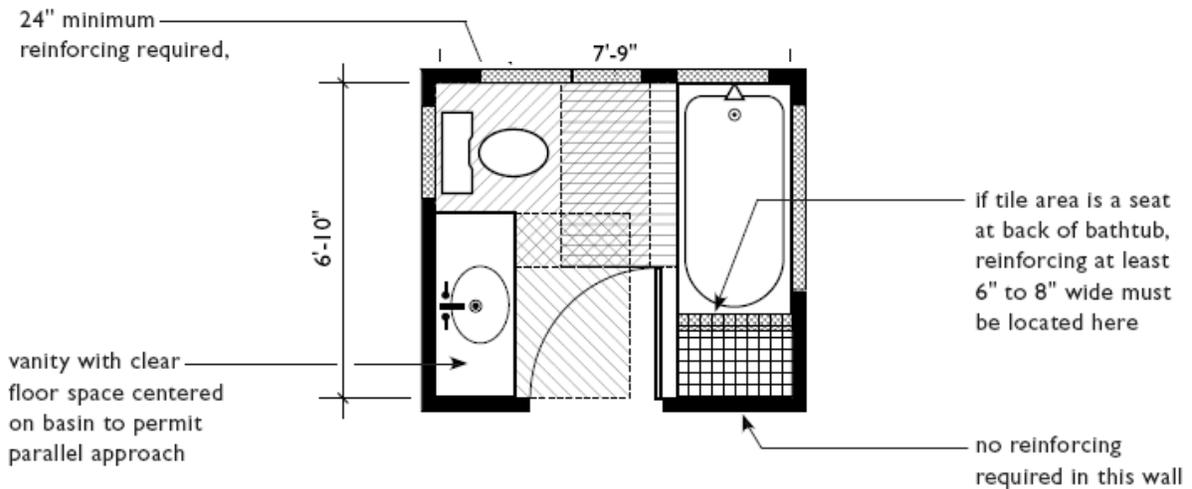
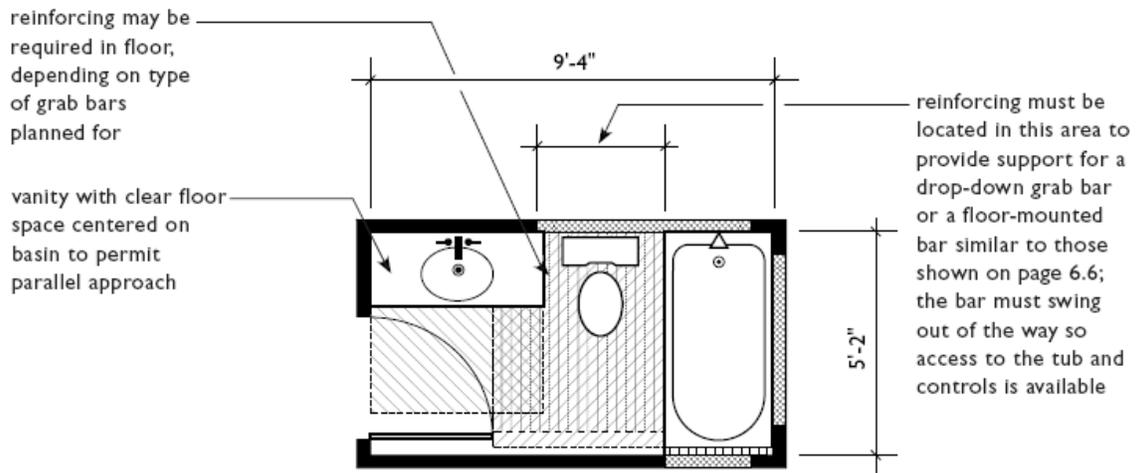
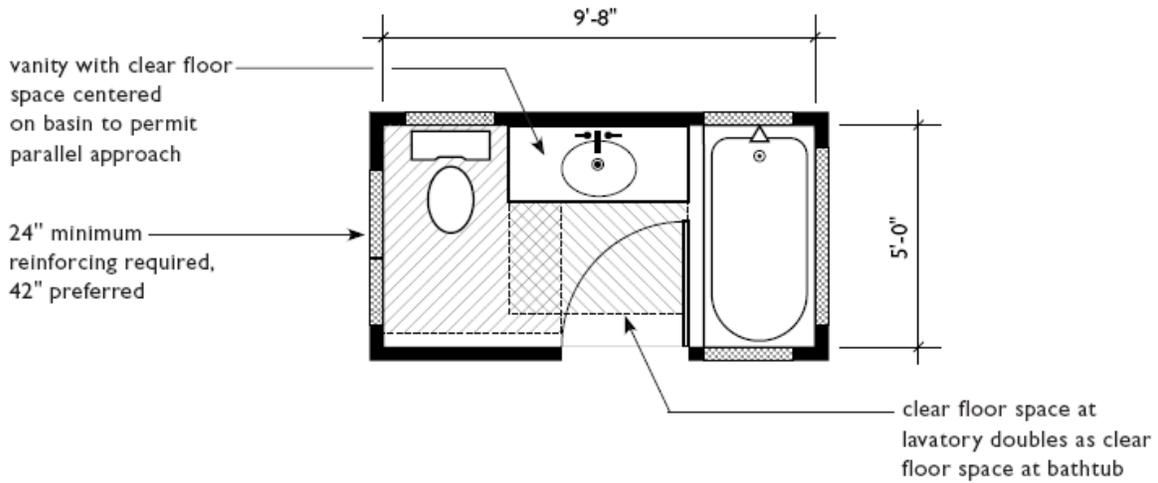
48" X 56" Clear Floor Space (with Overlapping Lavatory)



Removable Base Cabinet Not Required Because Clear Floor Space Centered on Basin



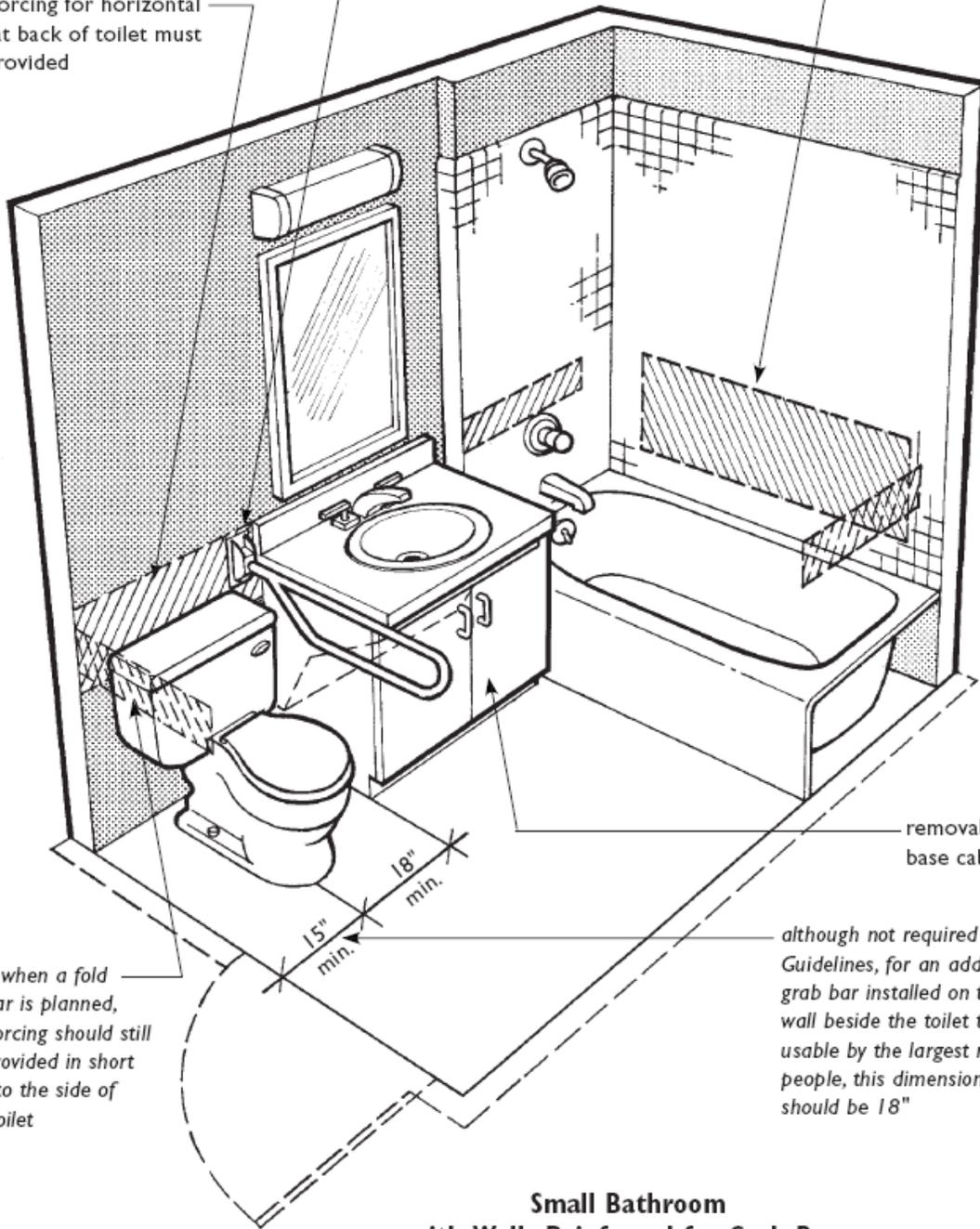
Use of Offset Basin to Reduce Lavatory Length



where toilets do not have full side walls, reinforcing behind toilet must be enlarged to support a folding grab bar

reinforcing for horizontal bar at back of toilet must be provided

minimum reinforced areas at conventional bathtub

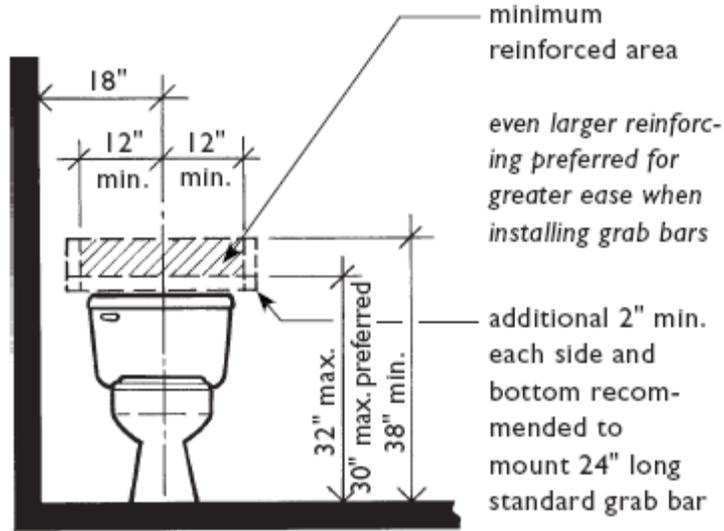


even when a fold up bar is planned, reinforcing should still be provided in short wall to the side of the toilet

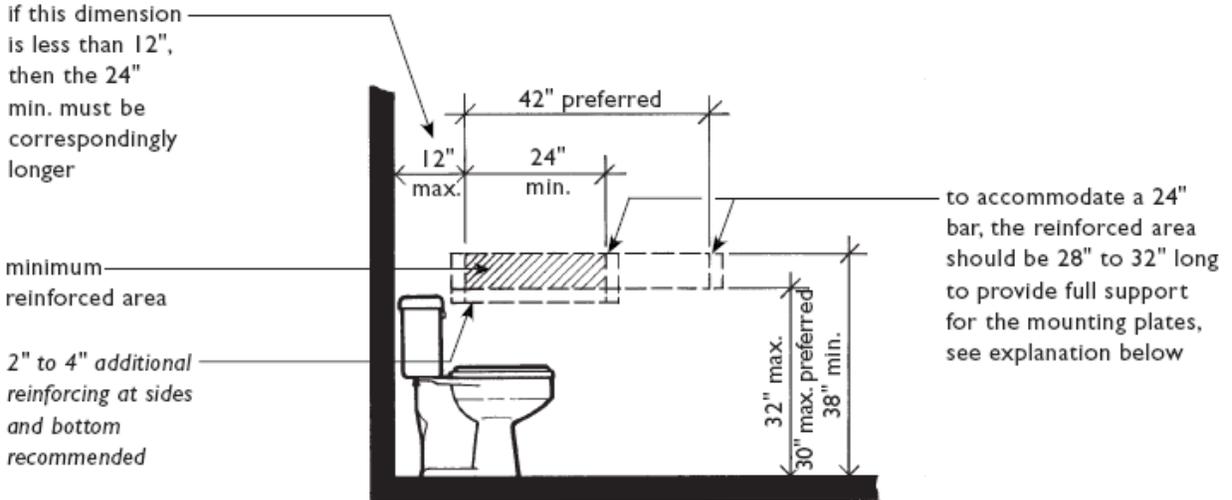
although not required by the Guidelines, for an additional grab bar installed on the short wall beside the toilet to be usable by the largest number of people, this dimension also should be 18"

**Small Bathroom
with Walls Reinforced for Grab Bars**

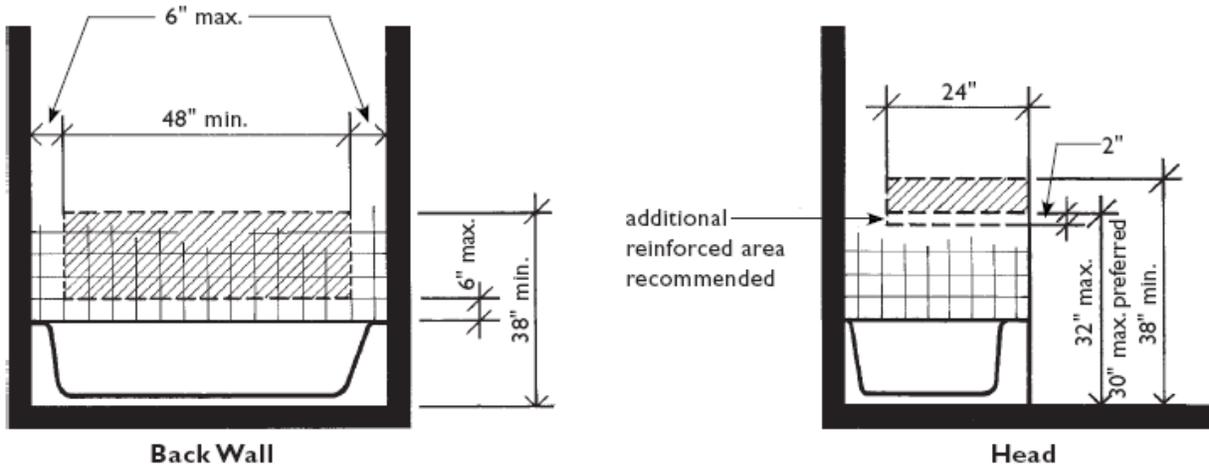
Minimum Reinforcing Behind Toilets Located Beside a Wall



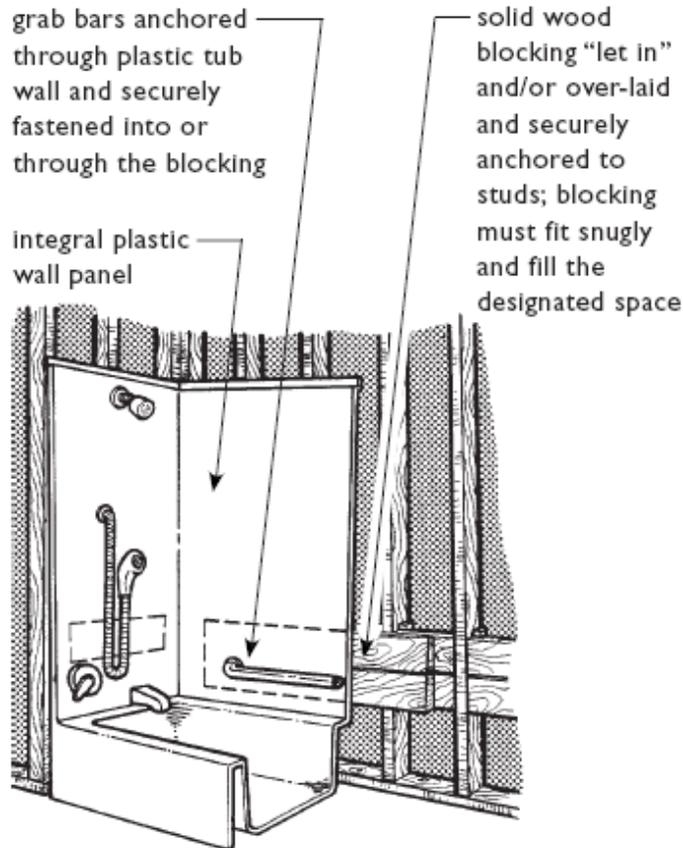
Minimum Reinforcing to the Side of Toilets



Reinforced Areas Required by the Guidelines at Conventional Bathtubs



Reinforcing for Grab Bars Behind Fiberglass or Acrylic Tub and Shower Surrounds



good general illumination

color contrast between door and frame

door closer with safe sweep period, ANSI 4.13.10

low force to open door, ANSI 4.13.11

clear width of open doorway min. 32", ANSI 4.13.5

clear, readable, high contrast signage

lever or other easy to use door hardware, ANSI 4.13.9

low or no threshold, see Chapter 4

maneuvering space on exterior side of door next to latch varies depending upon direction of approach to door, ANSI 4.13.6

outside landing 0" to 1/2" below interior floor level depending upon construction of porch or landing surface, see Chapter 4

adequate slope to prevent ice build-up

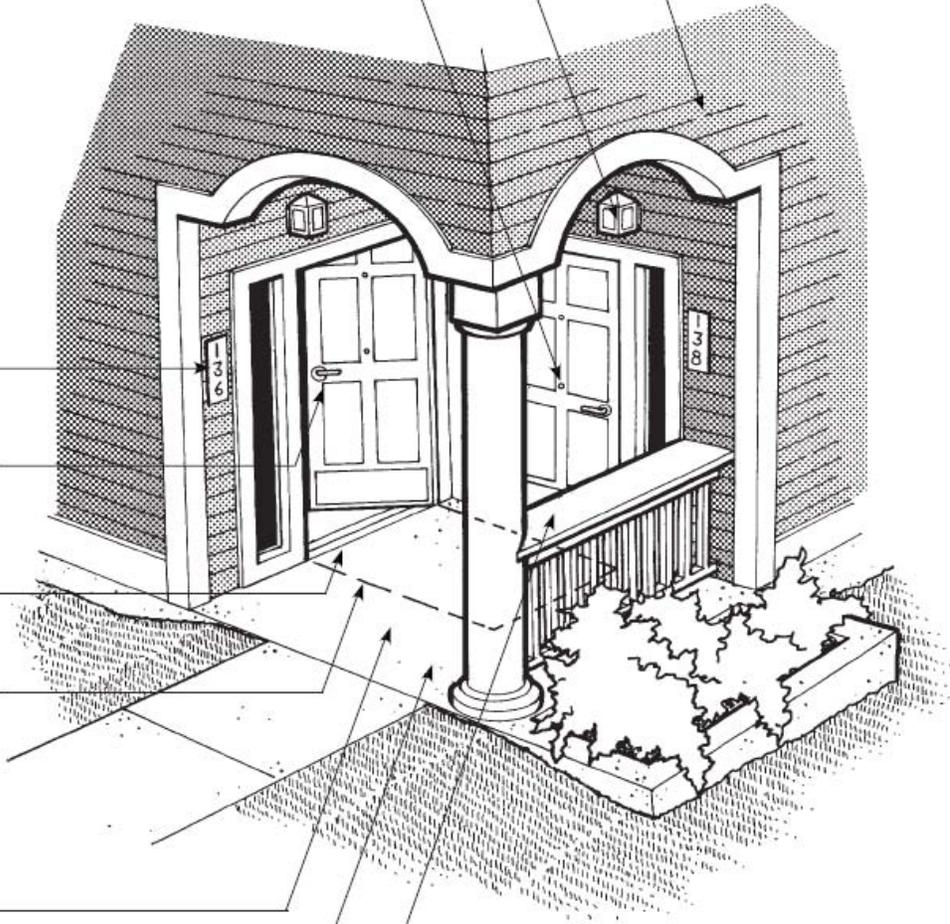
package shelf

high intensity lighting focused at locks for people with low vision

view window (or wide angle peep hole)

lighted doorbell buttons

weather protection



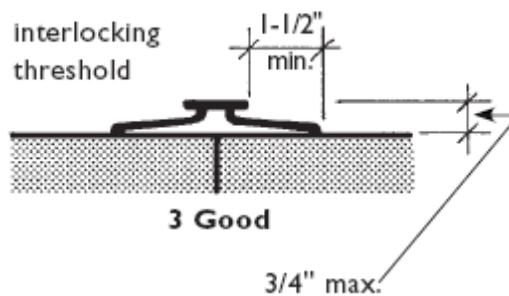
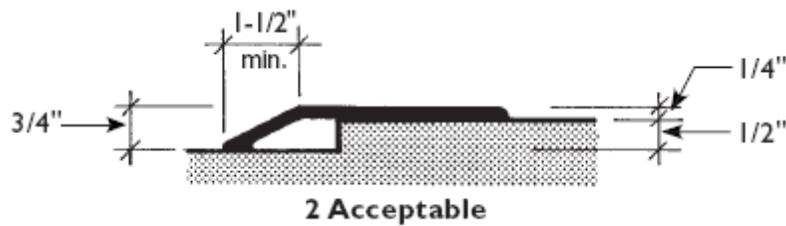
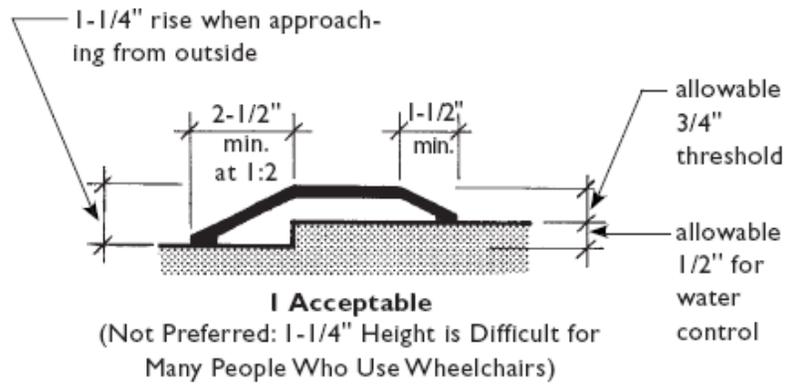
**Accessible Primary Entry Door
at Covered Dwelling Unit
See ANSI 4.13 Doors**

Notes in italic type are recommendations only and are not required by ANSI or the Guidelines. All recommended features are helpful to people with and without disabilities.

Threshold Details at Primary Entry

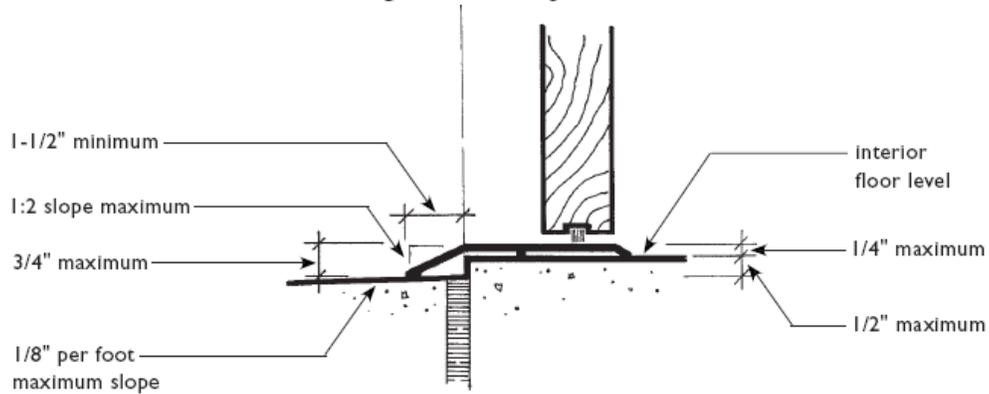
Maximum Allowable Height Difference Between Interior Floor Level and Exterior Floor Level

	level difference	at primary entry door	
	0"		pervious construction (e.g., wood decking with spaces)
	1/2"		impervious construction (e.g., concrete, brick, or flagstone)
	level difference	at secondary door	
	1/2"		pervious construction
	4"		impervious construction



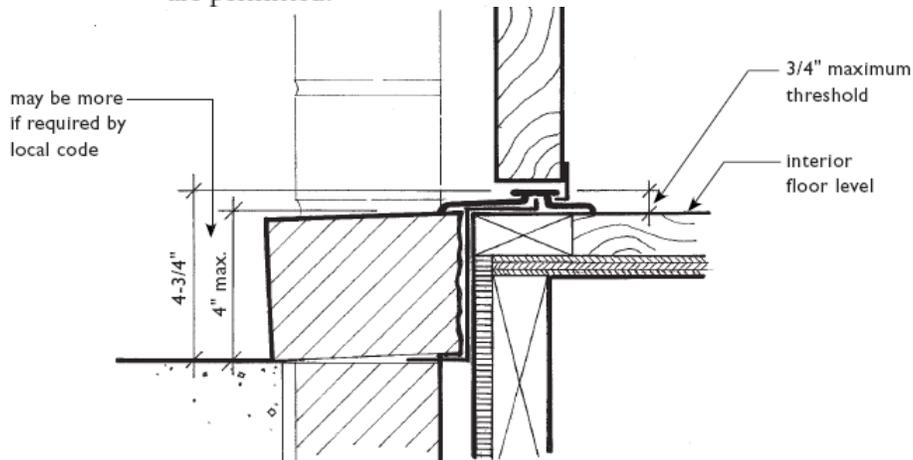
Swinging Primary Entry Door at Concrete Landing

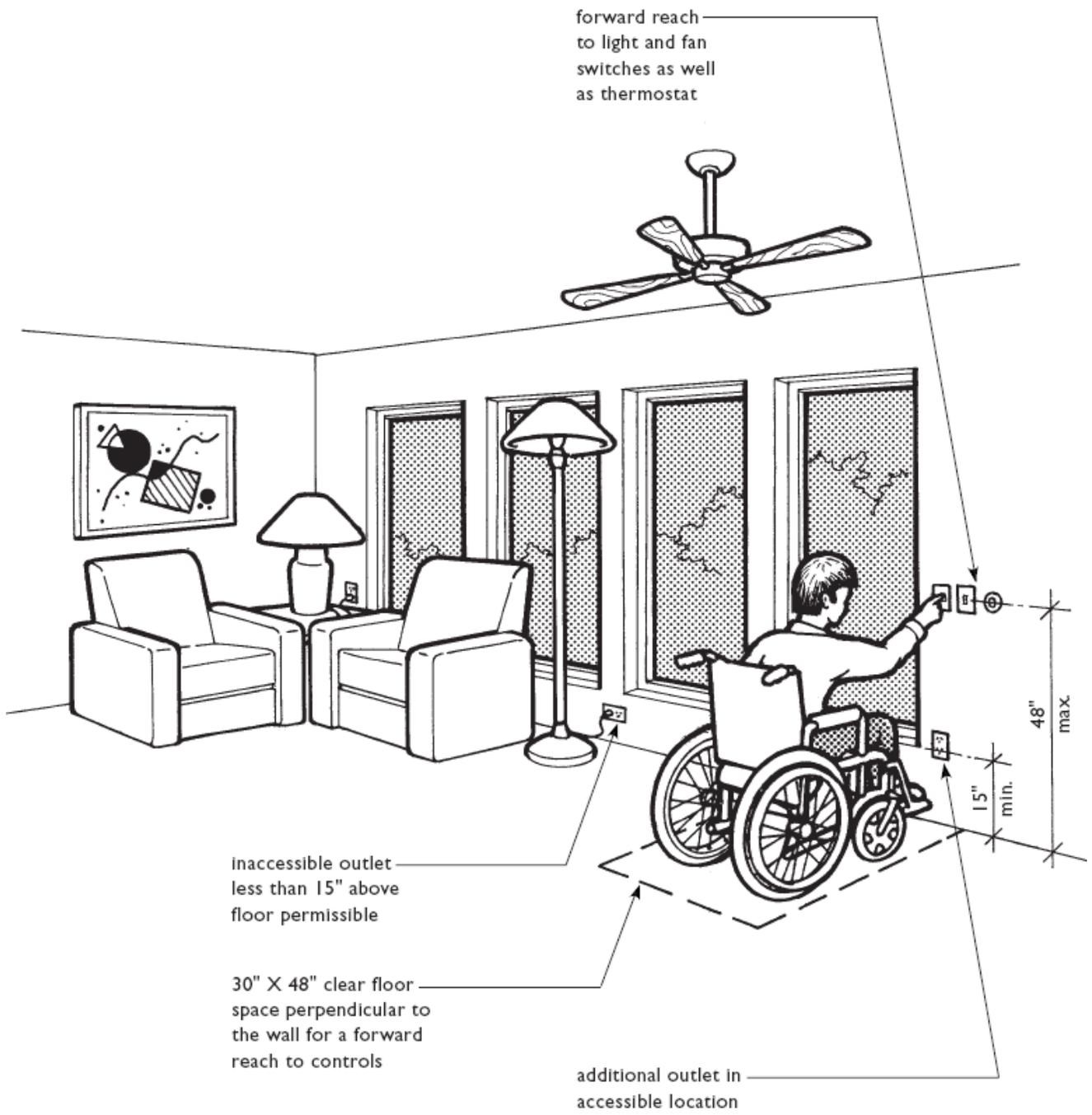
showing allowable changes in level at primary entry doors with direct exterior access onto concrete or other impervious landing surface where 1/2-inch maximum changes in level are permitted.



Swinging Secondary Door at Concrete Landing

showing allowable changes in level at exterior swinging doors onto concrete or other impervious landing surface where 4-inch changes in level are permitted.





Guideline Specifications For Kitchens

counters may be at the standard height of 36" (counter height of 34" as shown in Fig. 2(c) of the Guidelines does not apply)

lever hardware, although preferred and more usable by everyone, is not required

kitchens in covered units must be on an accessible route and have door openings at least 32" clear to allow passage; see Chapter 4 "Usable Doors" and Chapter 5 "Accessible Route"

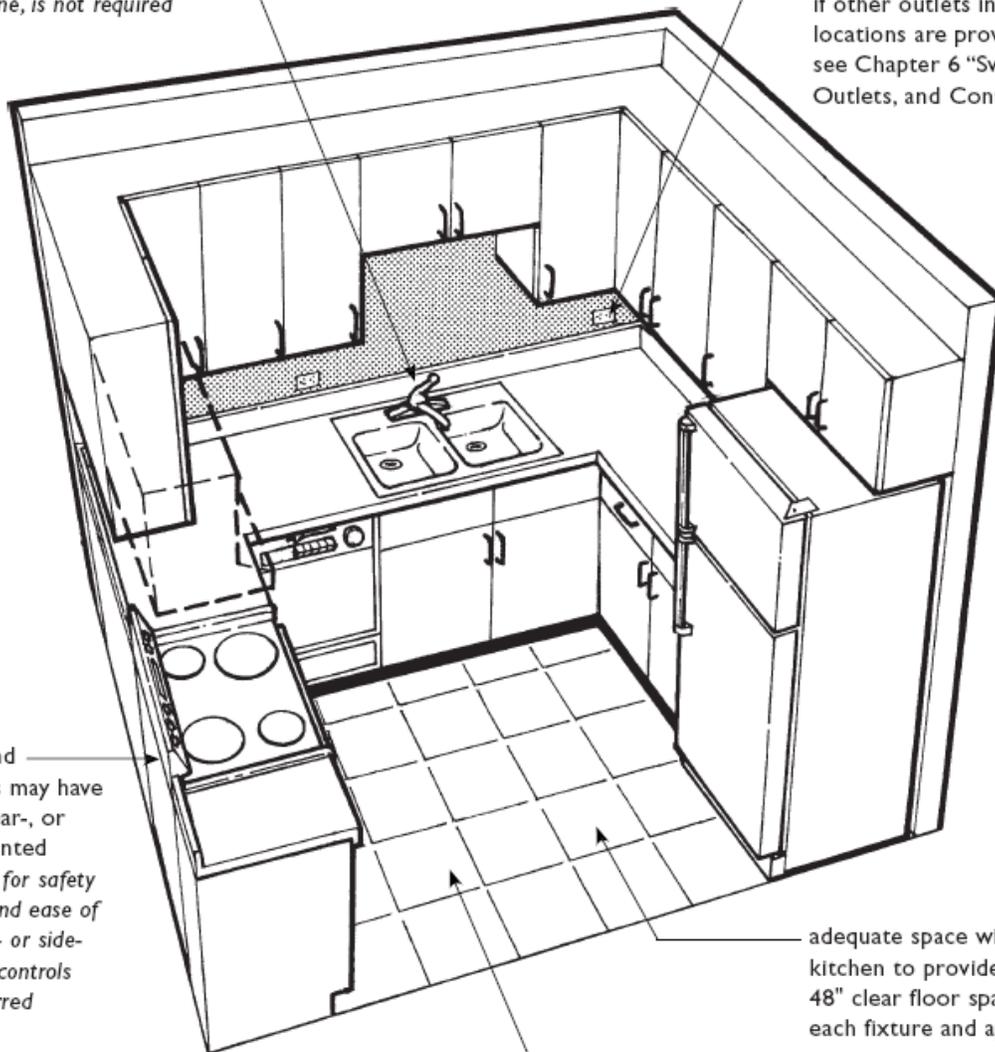
outlet located beyond reach of seated person permitted if other outlets in accessible locations are provided, see Chapter 6 "Switches, Outlets, and Controls"

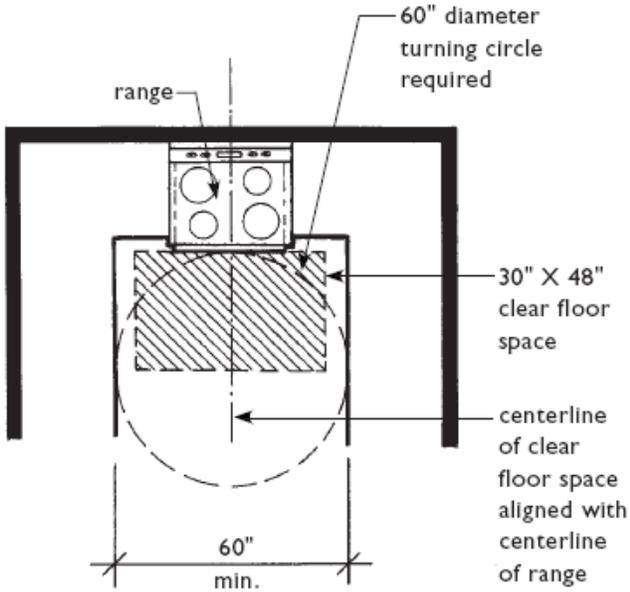
ranges and cooktops may have front-, rear-, or side-mounted controls; *for safety reasons and ease of use, front- or side-mounted controls are preferred*

adequate space within the kitchen to provide 30" X 48" clear floor space at each fixture and appliance

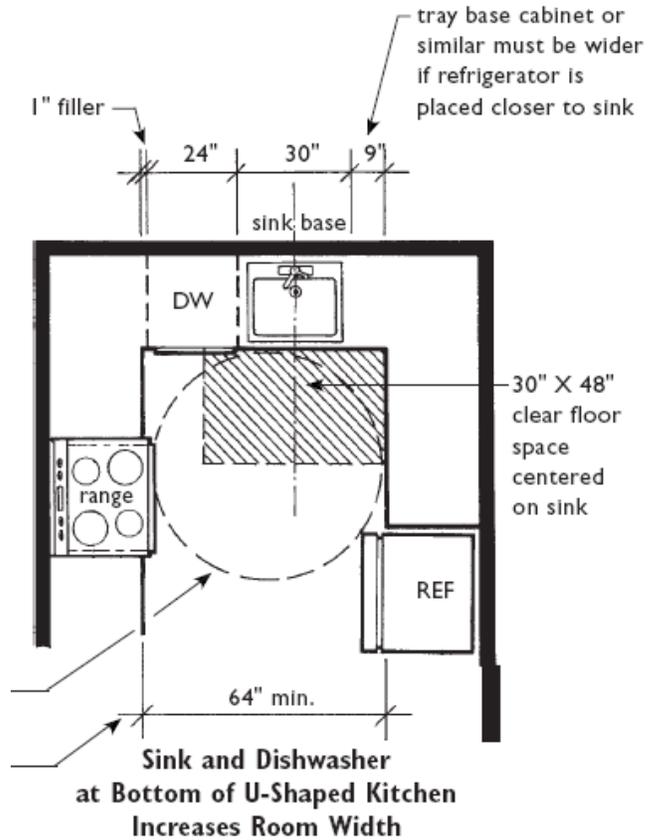
Notes in italic type are recommendations only and are not required by ANSI or Guidelines.

in U-shaped kitchens, if less than 60" between the two legs of the U, then sink base must be removable, see page 7.12





60" Diameter Turning Circle when Sink (Only), Cooktop, or Range is at Bottom of U-Shaped Kitchen

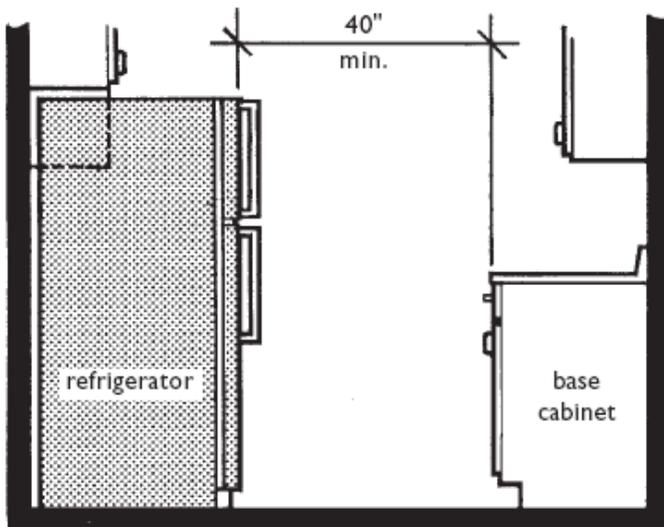
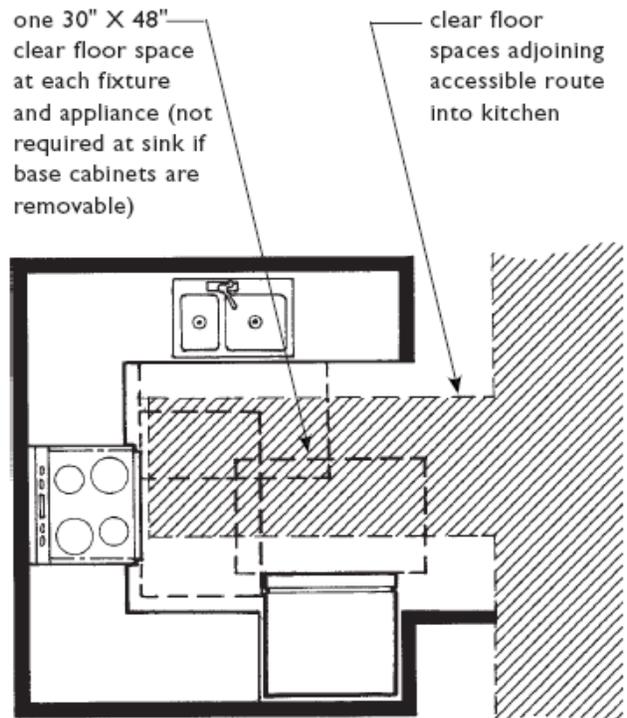


refrigerator must be selected and positioned so it does not encroach upon the 60" diameter turning circle or the clear floor space at the sink

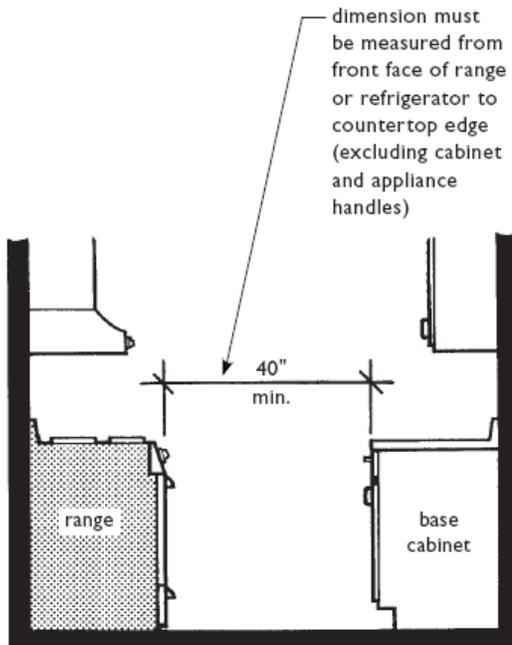
60" diameter turning circle

this dimension may need to be increased slightly for a double basin sink if wider than 30"

Overlapping Clear Floor Spaces and Accessible Route Provide Maneuvering Space

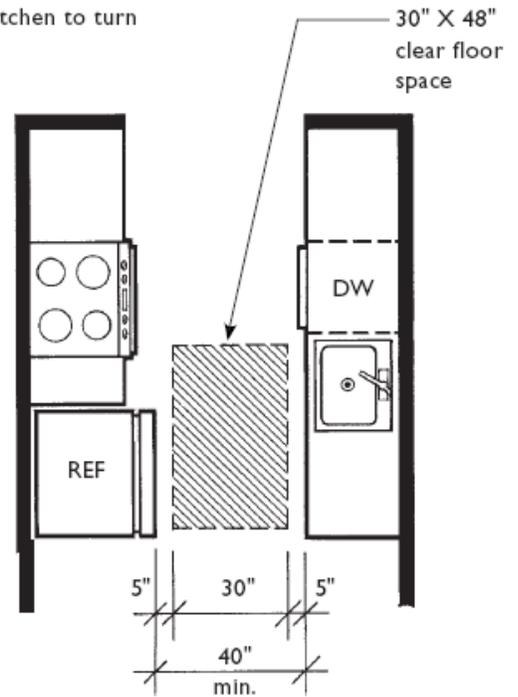


Minimum Clearance between Refrigerator and Opposing Base Cabinet

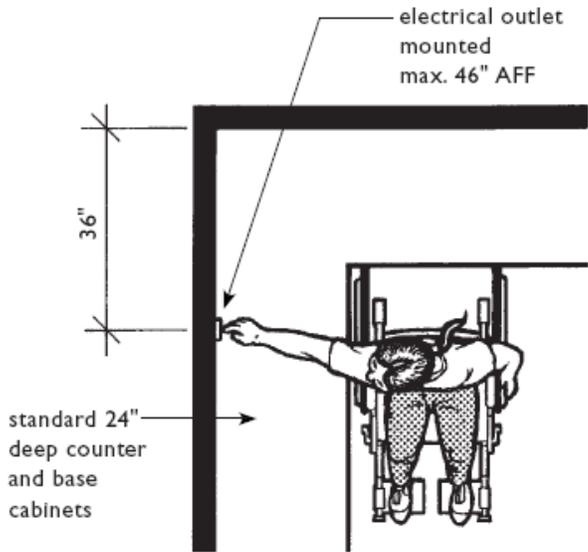


Minimum Clearance between Range and Opposing Base Cabinet

wheelchair user must leave kitchen to turn around



40" Minimum Clearance Between all Counters, Base Cabinets, Appliances, and Walls



Electrical Outlets on Walls Over Cabinets Must Be a Minimum of 36" from a Corner

Mounting Height for Outlets

Mounting Height for Outlets

