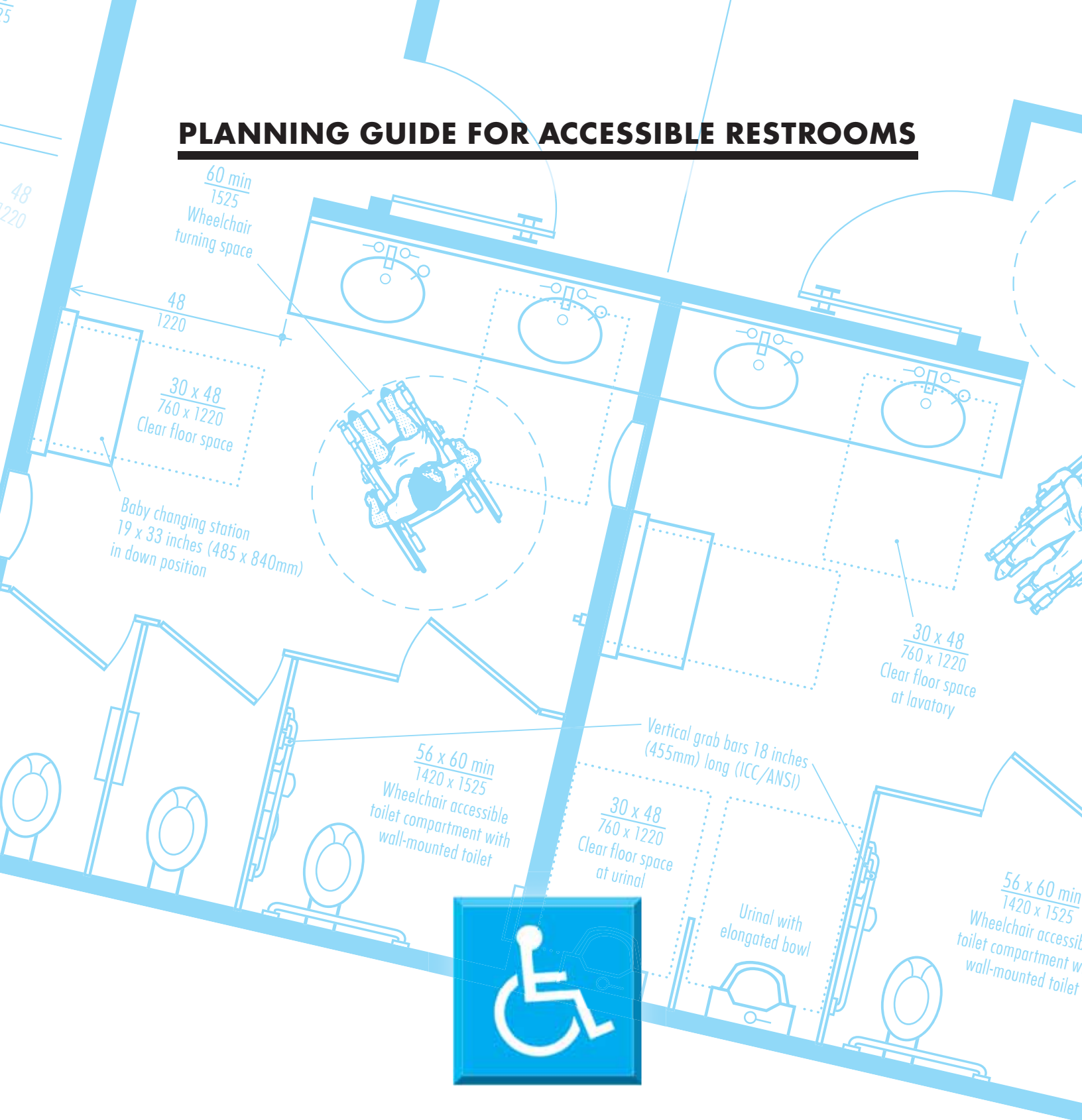


# PLANNING GUIDE FOR ACCESSIBLE RESTROOMS



REFERENCING:

2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

ICC A117.1-2009 – ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES



BUILDING VALUE SINCE 1906

# INTRODUCTION

The Americans with Disabilities Act (ADA) set the minimum requirements — both scoping and technical — for newly designed and constructed or altered state and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities. This means in restroom design some of each type of fixture or feature — as well as the installation location — must meet accessibility requirements contained in the *2010 ADA Standards for Accessible Design*. In addition, many projects must also follow the provisions of the 2009 revision of *ICC A117.1, Accessible and Usable Buildings and Facilities* (produced by the American National Standards Institute or ANSI).

The information contained herein is of an advisory nature only and represents Bobrick Washroom Equipment, Inc.'s interpretation of the *2010 ADA Standards for Accessible Design* (referred to as, 2010 ADA Standards) and the *ICC A117.1, Accessible and Usable Buildings and Facilities* (referred to as 2009 ICC/ANSI Standards). **Use of this document is not a substitute for the study and understanding of the two accessibility standards that are referenced.** In addition, all building plans should be reviewed by local jurisdictions to ensure compliance. This Planning Guide does not refer to the International Plumbing Code, the International Residential Code, International Building Code, or any other model code or state building code. Differences may be present and need to be thoroughly researched.

Bobrick has prepared this Planning Guide for use by planners, architects, designers, specifiers, building owners and facilities/property managers. In addition, Bobrick's Architectural Representatives are available to assist with the application of appropriate product specifications and installation criteria.

## ACCESSIBILITY STANDARDS

The Americans with Disabilities Act (ADA) is a federal civil rights law that prohibits discrimination against people with disabilities by ensuring equal access to goods and services. It recognizes inaccessible facilities as a form of discrimination, since these facilities can prohibit participation by people with disabilities. The regulations for implementing the ADA include both scoping and technical specifications for new or altered State and local government facilities, public accommodations and commercial facilities to be accessible to and usable by individuals with disabilities. Originally known as ADA Accessibility Guidelines for Buildings and Facilities (ADAAG) in 1991, the 2010 ADA Standards are the latest in a series of Guidelines and Standards that have been issued by the United States Access Board (the Access Board) and adopted by the Department of Justice to enforce the ADA. The law applies to most buildings and facility types nationwide regardless of state or local code requirements, but it is not a building code. Facilities that are newly constructed or altered on or after March 15, 2012 must comply with the 2010 ADA Standards.

Authority has been left with each state and local government to adopt and enforce its own building codes, but the office of the U.S. Assistant Attorney General for Civil Rights has the authority under the ADA to certify that a state or local building code meets or exceeds the minimum requirements of ADA, and such certification of equivalency can be used as rebuttable evidence in any subsequent litigation. For public accommodations and commercial facilities, the ADA Standards, or a state or local building code that has been certified as equivalent to the ADA Standards by the Assistant Attorney General, must be used.

Nothing in the 2010 ADA Standard requirements prevents the use of designs, products, or technologies as alternatives to those prescribed, provided they result in substantially equivalent or greater accessibility and usability. This is referred to as equivalent facilitation and is the covered entities' responsibility to demonstrate equivalent facilitation in the event of a challenge. It is also important to note there is no process for certifying that an alternative design provides equivalent facilitation.

Because the 2009 ICC/ANSI Standards will soon be adopted by many states and local jurisdictions, there will be significant jurisdictional overlap with the 2010 ADA Standards for many projects. The 2010 ADA standards and the 2009 ICC/ANSI Standards are similar; however, there are some differences in the scope of their requirements and in technical specifications. Therefore, it is imperative that all relevant standards be used in conjunction with this Planning Guide to ensure compliance with both accessibility standards. The primary dimensions in this Guide are taken from the 2010 ADA Standards. However, because the 2009 ICC/ANSI Standards will frequently be the accessibility standard that is incorporated

into or referred to by local/state building codes, the 2009 ICC/ANSI Standard's dimensions are also shown where they deviate or where complying with the 2010 ADA Standards would not accomplish the same outcome. When working on projects with both ANSI and ADA jurisdiction, the more stringent of the two standards should be followed. While substantially similar for restrooms, we have noted throughout the document where differences occur. For purposes of simplicity and readability, we refer primarily to the 2010 ADA Standards in the text and in the Figures.

Accessibility standards contain many prescriptive dimensional or scoping requirements that are legal, design, or construction minimums. Where requirements allow, it is good practice to avoid designing and building to the minimums of the dimensional specifications in accessibility standards. Doing so places the design, construction and ownership team at risk of non-compliance. In general, accessibility tolerances can be much narrower than tolerances found in common practice. (We recommend a thorough review of the 2010 ADA Standards: 104.1.1 Construction and Manufacturing Tolerances and the related Advisory). Note that some items are listed as absolutes, and other dimensions are listed as ranges. For example, if 1-½ inches was an absolute requirement, avoid specifying 1-½ inches plus or minus "X" inches.

## ACCOMMODATING DIVERSE USERS

Public restrooms are one of the most critical building amenities because they need to be responsive to a wide range of human needs and abilities.

The needs of a person using a wheelchair and the space the wheelchairs require are used as a primary source of design information for accessible restrooms in terms of amount of space and paths of travel. The fixed nature of the equipment imposes finite space requirements and limits reach ranges of users. The number of individuals who use wheelchairs has grown considerably in recent years, as has the variety of wheelchair types and sizes. The trend has been dwarfed by the growth in the number and variety of people who use scooters, which have different sizes and use parameters. Scooters can be larger and need even more space to maneuver. The accessibility standards have not reflected these trends. Designers should provide extra space that mobility equipment devices require, and not rely on minimum standards.

The 2010 ADA Standards require the provision of ambulatory accessible toilet compartments to support the needs of individuals who are ambulatory and may require the use of a cane, walker or crutches. Mounting locations and the proximity of equipment are important for people who use wheelchairs and who may have limited reach range. The design standards reflect these users' needs in the mounting heights for common accessories, such as mirrors, paper towel dispensers, waste receptacles, soap dispensers, napkin/tampon vendors, and toilet partition-mounted equipment, including grab bars, toilet tissue, and seat-cover dispensers, and sanitary napkin disposals.

While the 2010 ADA Standards are principally intended to benefit people with disabilities, experience has shown that environments built with accessible and universal design features often benefit a wide range of users, including:

- People with stability and balance issues
- Children and people who are short or tall
- People who are large or heavy
- People with temporary health problems, such as broken bones or those who are recovering from surgery
- Older people
- Individuals who need assistance with their restroom activities
- Parents attending to their children using strollers and baby changing activities.
- Users of mobility equipment such as manual or power wheelchairs, scooters, crutches, canes and walkers

Also important are the sensory aspects of a person's abilities that include people with visual impairments such as low vision and or those who are blind as well as individuals who are hard of hearing or deaf. Designing restrooms to avoid protruding objects and providing strobe lights on the fire alarm system are examples that support safety for users with sensory disabilities.

Often overlooked in these considerations are the family, companions, or caregivers who may accompany an individual who expects and relies on accessibility features in restrooms. One trend that recognizes the need for assistance for many restroom users is the increased presence of family restrooms. These restrooms will accommodate diaper changing and children and older individuals who need assistance, particularly from opposite gender caregivers.

## SPACE REQUIREMENTS AND REACH RANGES

**THE STANDARDS DESIGNATE CLEAR FLOOR SPACE** to accommodate a single wheelchair of at least 30 inches by 48 inches (760 by 1220mm). The space can be positioned for a forward or parallel approach to restroom elements. A portion of the clear floor space may be located under fixtures, lavatories, or accessories as long as the required knee and toe clearance is provided (Fig. 14 and many others). If properly centered in front of controls and operating mechanisms, the clear floor space will allow both left- and right-hand access.

**REACH RANGES AND MOUNTING HEIGHTS** for restroom accessories may vary within a facility depending on the location of individual accessories and the direction of reach required for their use. To allow use by people with limited reach range, it is required that accessories be mounted with their “operable parts” — dispensing mechanisms, start buttons, coin slots, or dispenser openings — located no more than 48 inches (1220mm) above the finish floor (Fig. 1a.). Where accessories are mounted over obstructions such as counters, depending on the nature and depth of the obstruction it is required that they be located between 44 inches and 48 inches (1120 and 1220mm) maximum above the finish floor. The operable portions of any accessory should be mounted no lower than 15 inches (380mm) above the floor. However, the 2009 ICC/ANSI Standards limit the operable portions of dispensers in toilet compartments to no lower than 18 inches (455mm). When determining the mounting location of restroom accessories, make sure to account for side and forward approaches.

Fig.1 Mounting Heights for Restroom Accessories.

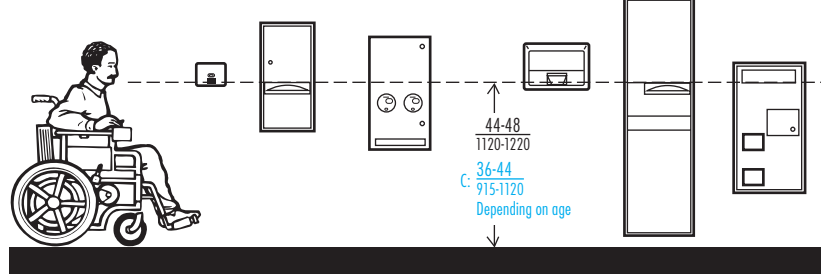


Fig. 1a Upper Range of Mounting Heights for Restroom Accessories with Operable Parts.

The 2009 ICC/ANSI Standards require that soap dispenser controls and faucets that serve certain accessible lavatories - larger restrooms determined by scoping such as IBC that require an enhanced reach range - need to be installed with a reach depth of 11 inches (280mm) maximum.

Separately, the 2009 ICC/ANSI Standards also require altered installation heights and locations for towel dispensers and hand dryers — at or near an accessible lavatory - where reaching is obstructed, such as units mounted on perpendicular walls adjacent to accessible lavatories. The operable portions of these elements may need to be installed as low as 34 inches (865 mm) as shown in the table below, depending on how far back from the front edge of a lavatory or counter a unit is mounted.

### OBSTRUCTED REACH

MAXIMUM REACH DEPTH	0.5 inches (13mm)	2 inches (51mm)	5 inches (125mm)	6 inches (150mm)	9 inches (230mm)	11 inches (280mm)
MAXIMUM REACH HEIGHT	48 inches (1220mm)	46 inches (1170mm)	42 inches (1065mm)	40 inches (1015mm)	36 inches (915mm)	34 inches (865mm)

**TURNING SPACES IN RESTROOMS** may be either a 60 inch (1525mm) circular space or a T-Shaped turning space within a 60 inch (1525mm) square minimum with arms and base minimum 36 inches (915mm) wide. The circular space allows a person using a wheelchair to make a 180-degree or 360 degrees turn (Fig. 2a). The T-Shaped space allows for a three-point-turn (Fig. 2b) and may be used to conserve space in some installations. A portion of the 60 inches (1525mm) diameter or T-Shaped turning spaces may be located under fixtures, lavatories, or accessories as long as the required knee and toe clearance is provided.

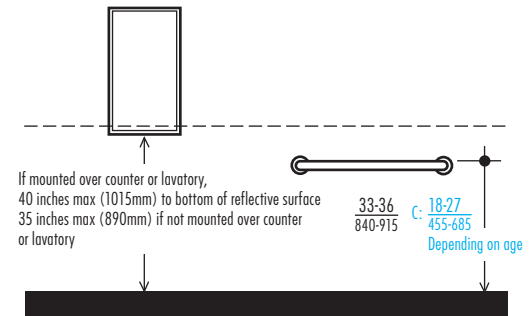


Fig. 1b Mirror and Toilet Grab Bar Mounting Heights.

Fig.2 Wheelchair Turning Spaces.

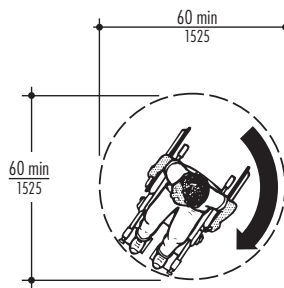


Fig.2a 60 inch (1525mm) Diameter Turning Space.

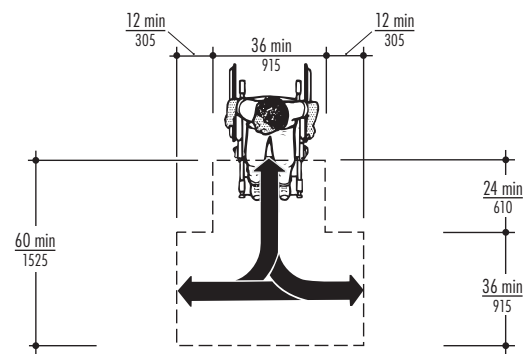


Fig.2b T-Shaped Turning Space.

### NOTES FOR ALL FIGURES IN THIS PLANNING GUIDE

- This edition of the Planning Guide for Accessible Restrooms has adopted the simple measurement notation for figures that is found in the current standards. This notation eliminates the use of English and metric notation, substituting inch and millimeter dimensions with the inch always appearing over the millimeter in this manner:  $\frac{48}{1220}$
- In certain figures with whole restrooms, overall room dimensions are given in feet and inches with the metric dimension listed in centimeters (cm).
- Bobrick product references are provided for many restroom layout fixtures. Not all figures and standards' references have a corresponding Bobrick product.
- Neither standard requires that grab bars be located with reference to the center of the escutcheon. This Planning Guide shows centerline dimension lines where appropriate for locating grab bars. Both standards locate horizontal grab bars from finish floor to top of gripping surface.

# CHILDREN'S REACH RANGES

Refer to these tables to find the dimensions when designing restrooms primarily for children's use. Select the dimensions that are most appropriate for the specific children's age group for which you are designing. Mounting heights for children vary depending on age. The age groups are 3 and 4, 5 through 8 and 9 through 12 years.

## CHILDREN'S REACH RANGES

FORWARD OR SIDE REACH	AGES 3 and 4	AGES 5 through 8	AGES 9 through 12
HIGH (maximum)	36 inches (915mm)	40 inches (1015mm)	44 inches (1120mm)
LOW (minimum)	20 inches (510mm)	18 inches (455mm)	16 inches (405mm)

## DIMENSIONS AT WATER CLOSETS SERVING CHILDREN AGES 3 THROUGH 12

	AGES 3 and 4	AGES 5 through 8	AGES 9 through 12
WATER CLOSET CENTERLINE	12 inches (305mm)	12 inches to 15 inches (305 to 380mm)	15 inches to 18 inches (380 to 455mm)
TOILET SEAT HEIGHT	11 inches to 12 inches (280 to 305mm)	12 inches to 15 inches (305 to 380mm)	15 inches to 17 inches (380 to 430mm)
GRAB BAR HEIGHT	18 inches to 20 inches (455 to 510mm)	20 inches to 25 inches (510 to 635mm)	25 inches to 27 inches (635 to 685mm)
TOILET TISSUE DISPENSER HEIGHT	14 inches (355mm)	14 inches to 17 inches (355 to 430mm)	17 inches to 19 inches (430 to 485mm)

The blue notations beginning with "C:" in many of the figures that follow in this Planning Guide refer to children's measurements.

# UNIVERSAL DESIGN

The accessibility standards are often described as minimums and contain numerous minimum requirements. These minimum requirements are often usability minimums as well, with requirements below which many cannot operate easily, safely or at all. In spite of this, nationwide accessibility mandates have created the widespread expectation for more usable environments. In the interests of an even wider reach for more accommodating designs, and to extend those designs beyond accessibility minimums, the concept of universal design arose. A universal approach includes improved usability characteristics and/or options in all products, building elements, and spaces to ensure that they are usable to the greatest extent possible by people of all ages and abilities. A universal approach will also produce improved usability features that are integrated with the overall design of a facility, even if a particular element or feature clearly has a more limited target group. To provide diverse examples, this Planning Guide displays designs that conform to minimums and those that exceed minimums, achieving more universal results.

**UNIVERSAL DESIGN** can be accomplished in some instances by simply using the same item for everyone; sometimes by positioning an item differently; at other times by modifying or replacing a single manufactured feature of an item; and in some circumstances by replacing an item with one that is more adjustable or adaptable. In most cases a universal approach mainstreams universal features by eliminating radically different looking items and the stigma associated with them while providing choices for all users.

## LEFT- AND RIGHT-HAND USE OF FIXTURES

Some people with disabilities can only use certain features of fixtures and accessories if they can approach them from the left or right side. This limitation affects the usability of toilet and shower compartments and restroom accessories that are not symmetrical. Both the 2010 ADA and the 2009 ICC/ANSI Standards require both left- and right-handed facilities be available in restrooms. The concept of universal design suggests that when restrooms are planned, both left- and right-handed versions should be provided to the greatest extent possible (see Clear Floor Space on page 3).

# PLANNING AN ACCESSIBLE RESTROOM

**BEGIN WITH RESTROOM ENTRANCE AND EXIT** For all restroom entries, note the importance of approach direction (indicated in the figures by arrows) and the presence of closers or latches in determining minimum clearances. The accessibility standards should be studied carefully because they offer numerous dimensional options to consider. Meeting or exceeding the minimum maneuvering clearances at doorways is an important aspect in design to ensure proper access.

**SINGLE-DOOR ENTRIES** (Fig. 3a), where the door swings into the restroom, are common. A level and clear corridor or passageway leading to the door is recommended to be 48 inches (1220mm) minimum wide. The doorway must have a clear opening 32 inches (815mm) minimum width when the door is open 90 degrees. A minimum access aisle 48 inches (1220mm) wide is also recommended inside the restroom to allow people using wheelchairs to maneuver around obstructions, such as sight-barriers, and to accommodate simultaneous in and out traffic.

**OPPOSING DOORS** (Fig. 3b), one for entrance and the other for exit with an alcove between them, is another popular configuration. In this instance, make sure no hazard is created in the alcove by the simultaneous entry and exit of two people. The width of the alcove must be a minimum of 48 inches (1220mm) plus the width of the door. It is difficult for a person using a wheelchair or crutches to back up and pull open a door, so it is recommended that opposing doors swing in the same direction. This opposing door layout provides doors that always open in the direction of travel, for restroom entrance and exit.

**OPEN VESTIBULES** (Fig. 3c), free of doors, are by far the most universally usable because they don't require manipulating door hardware or maneuvering around door clearances. It is recommended that the entire passageway be 48 inches (1220mm) minimum width to accommodate simultaneous in and out traffic.

**RAISED THRESHOLDS** at doorways should be avoided wherever possible. If it is necessary to include them, then they should be beveled, 1/2 inch (13mm) high maximum (Figs. 21a, b). Existing or altered thresholds can be beveled and up to 3/4 inch (19mm) high, provided they conform to the change of level requirements for accessible routes. Note that thresholds higher than 1/4 inches (6.4mm) will need to incorporate a bevel no steeper than 1:2.

Fig. 3 Restroom Entrance and Exit Maneuvering Clearances.

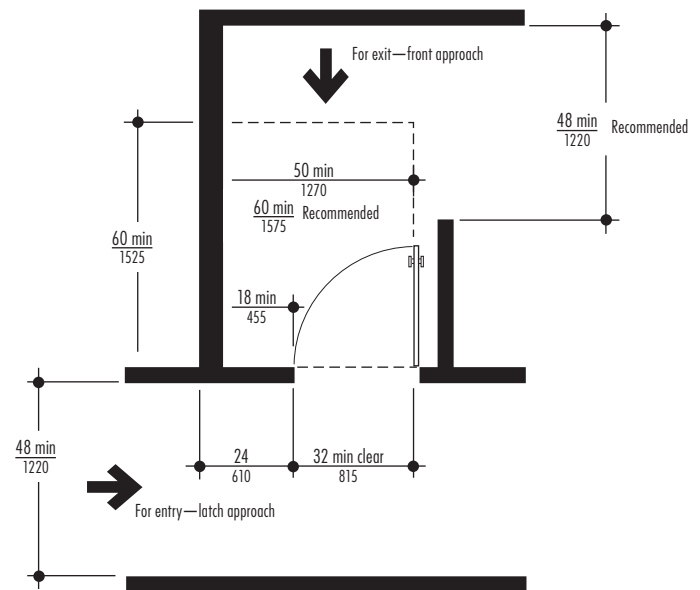


Fig. 3a Single Door. (Door has closer and latch)

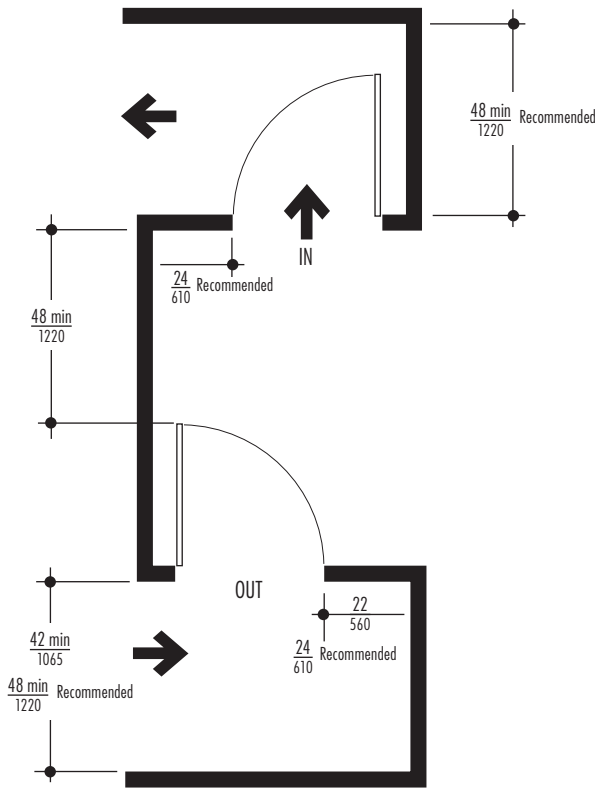


Fig. 3b Opposing Doors. (Door has closer and no latch)

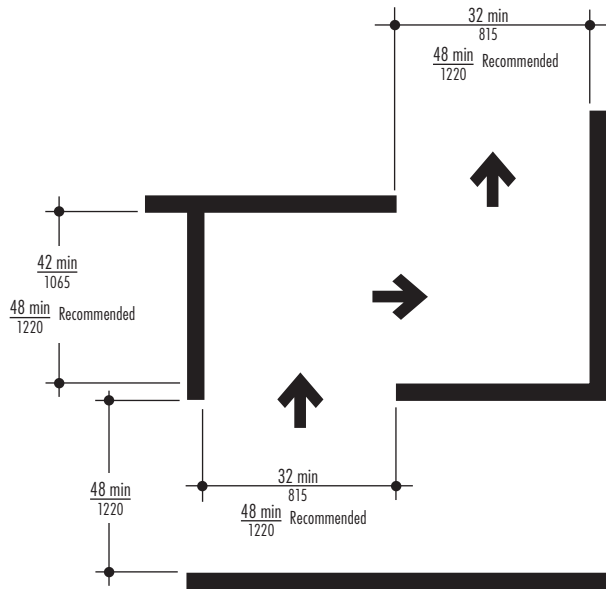


Fig. 3c Open Vestibule.

**DOORS** for interior use must push or pull open with a maximum of 5 pounds of force (lbf) (22.2 N). Door handles, pulls, latches, locks, and other operable parts must have a shape that is easy to operate with one hand, and not require tight grasping, pinching, or twisting of the wrist. Operable parts of door hardware are to be mounted at 34 inches (865mm) minimum and 48 inches (1220mm) maximum above the finish floor. Lever-operated mechanisms, push-type mechanisms, and U-shaped handles are acceptable designs. If a door has a closer or spring hinge it must be adjusted to meet the minimum opening and closing requirements.

## SPECIAL CONSIDERATIONS FOR LAVATORIES

**LAVATORIES** are important features in public restrooms to provide convenient hygienic facilities for all people. At least one area in each restroom must meet or exceed 2010 ADA Standards for accessible lavatories. If the lavatory is to be installed in a countertop, place it as close as possible to the front edge so it is accessible. An accessible lavatory must be installed with the front of the highest point of either the rim or counter surface, 34 inches (865mm) maximum above the finish floor, and have a knee clearance of at least 27 inches (685mm) minimum from the bottom of the apron to the finish floor (Fig. 4). The knee clearance must extend at least 8 inches (203mm) under the front edge of the lavatory. The protrusion of the overflow (in the Standards, the “dip in the overflow”) shall not be considered in determining knee and toe clearance. The required forward approach must provide clear floor space in front and under the lavatory 30 inches wide by 48 inches deep (760 by 1220mm) minimum. Except in residential dwelling units, a lavatory with a knee space can no longer overhang the clear floor space for an accessible toilet. Complete the design by providing the required amount of toe clearance underneath the lavatory of 17 inches (430mm) to 25 inches (635mm) maximum. Toe clearance at least 9 inches (230mm) above the finish floor must be provided for the full depth. Washfountains must also meet the 2010 ADA Standards clearance and reach requirements.

**WATER SUPPLY, DRAIN PIPES AND EXPOSED SURFACES** under lavatories must be insulated or otherwise configured to protect against contact. There should be no sharp or abrasive surfaces. This is particularly important to prevent burns and other injuries to people who have may have decreased sensation in their legs. One solution is wrapped pipes (Fig. 4). A recommended design solution is to install a removable protective panel under the lavatory (Fig. 5).

Fig. 4 Lavatory Clearances.

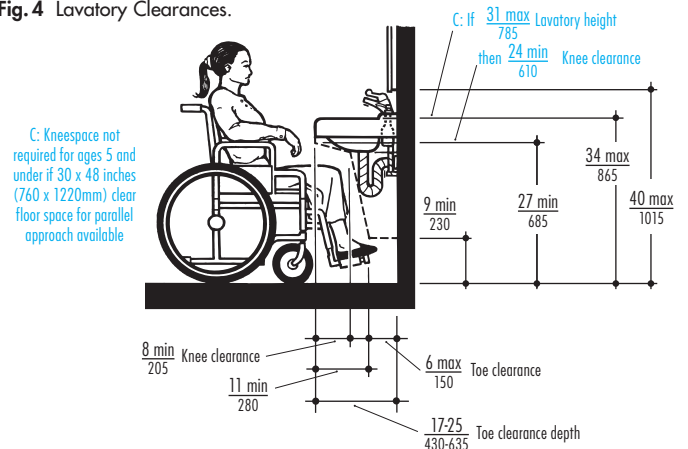
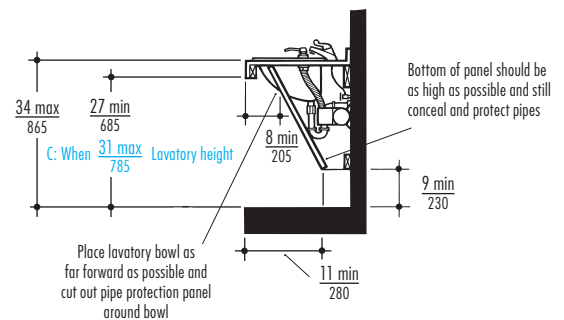


Fig. 5 Protective Panel Under Lavatory.





# CONTROLS AND OPERATING MECHANISMS

Faucets, toilets, and restroom accessories must meet 2010 ADA Standards for controls and operable parts such as (push buttons, valves, knobs, and levers); operable with one hand, without tight grasping, pinching, or twisting of the wrist, and do not exceed 5 pounds of force (lbf) (22.2 N). Hand-operated (and self-closing) metering faucets are acceptable if they remain open for 10 seconds minimum. It is recommended that controls be a contrasting color with the countertop material and lavatory so they are easily identified. Controls should also be centered over sufficient clear floor space to ensure both left- and right-hand approaches; or two of the same accessory should be provided, one for each type of approach.

## ACCESSORIES PROVIDE ADDITIONAL SERVICE AMENITIES TO RESTROOM INSTALLATIONS

Restroom accessories with leading edges more than 27 inches (685mm) and not more than 80 inches (2030mm) above the finish floor shall protrude 4 inches (100mm) maximum horizontally into the circulation path. Should the leading edge be at or below 27 inches (685mm) then they may project any amount as long as the required minimum width of an adjacent clear access aisle is maintained. This standard is specifically designed to ensure detection by people who use a cane so as not to be a hazard; but beneficiaries also include people who are inattentive. For these reasons and to avoid interference with access aisles or wheelchair turning areas, it is recommended that all floor-standing and surface-mounted units protruding more than 4 inches (100mm) be located in corners, alcoves, or between other structural elements. Fully recessed accessories are the recommended choice throughout universally designed restrooms.

**MIRRORS** located above lavatories or countertops must be installed with the bottom edge of the reflecting surface 40 inches (1015mm) maximum above the finish floor (Fig. 4). Mirrors not located over lavatories or countertops must be installed with the bottom edge of the reflecting surface no more than 35 inches (890mm) above the finish floor (Fig. 1b). A single full-length mirror is recommended in each restroom because all people can use it, including children.

**SOAP DISPENSERS** installed over lavatories must be mounted so push buttons or operable parts meet specified reach ranges. Lavatory-mounted soap dispensers and lever-handle faucets should be spaced far enough apart to avoid interference with their operations and are usable by a person using the accessible lavatory. It is recommended that soap dispensers that meet 2010 ADA Standards for controls and operating mechanisms be used throughout restrooms to provide universal usability. Mounting height is at 44 inches (1120) maximum above the finish floor but the 2009 ICC/ANSI Standards require that soap dispenser controls, and faucets, that serve certain accessible lavatories incorporate "enhanced reach ranges", determined by scoping requirements need to be installed with a reach depth of 11 inches (280mm) maximum.

Fig. 6 Accessories for Infants and Small Children.

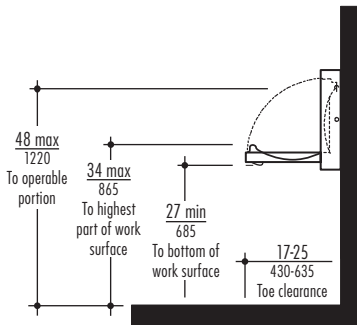


Fig. 6a Baby Changing Station.

**PAPER TOWEL DISPENSERS, WASTE RECEPTACLES AND WARM-AIR HAND DRYERS** should be conveniently located in an area that is accessible to people using wheelchairs, preferably adjacent to an accessible lavatory. It is recommended that one hand dryer be mounted with sufficient clear floor space to allow both left- and right-hand approaches; or provide two dryers, one for each type of approach. When a single hand dryer is installed in a restroom, it is recommended the operable part be located at 40 inches (1015mm) above the finish floor; when two or more dryers are installed, mount one dryer so the operable part is 40 inches (1015mm) and the other dryer at 48 inches (1220mm) maximum above the finish floor.

The 2009 ICC/ANSI Standards require altered installation heights and locations for towel dispensers and hand dryers where reaching is obstructed. The operable portions of these elements may need to be installed as low as 34 inches (865mm) as shown in the Reach Range tables on pages 3 and 4.

**SANITARY NAPKIN/TAMPON VENDORS** are recommended in all women's restrooms to provide convenient access to hygienic products. It is recommended that all units meet 2010 ADA Standards for operating mechanisms, clear floor space and accessible mounting heights to provide universal usability. Vendors with push-button operation mechanisms that are activated with less than 5 lbs (22.2 N) of force are the recommended choice for universally designed women's restrooms.

**BABY CHANGING STATIONS** (in standards and elsewhere also referred to as Baby Changing Table and Diaper Changing Table) are increasingly found in men's and women's restrooms and in single-user ("family") restrooms as well (Fig. 6a). While not required by the accessibility standards, baby changing stations (BCS) are widely regarded as an important or even essential feature in many facilities. They need to be located with care to provide for the needs of BCS users (including people who use wheelchairs) while not preventing other restroom users from gaining access to and using the fixtures and dispensers in the restrooms. Their installation and use must comply with 2010 ADA Standards, which address clear floor space (30 inches by 48 inches (760 by 1220mm)), design of handles and controls (operable with one hand, without tight grasping, pinching, or twisting of the wrist), required force (maximum of 5 pounds of force (lbf) (22.2 N)), mounting height (working surface in the down position, 34 inches maximum, (865mm)), knee space (27 inches to underside (685mm)) and toe space beneath (17 inches to 25 inches, (430 to 685mm)). Design guidance includes:

- Accounting for the space that a unit occupies when in the down position and with the caregiver (whether standing or seated) in front of the unit.
- Locating the unit so that paths of travel are maintained around it when being used.
- Positioning near a lavatory and a waste receptacle.
- Avoiding placement of a BCS within any toilet compartment so as not to unnecessarily tie-up the compartment's use. Placing a BCS in the public parts of the restroom, out of the paths of travel is a good choice. A BCS located in a family restroom is also a good choice.

**CHILD PROTECTION SEATS** are also found in public restrooms to provide a safe, secure and convenient location for a child, generally weighing up to 50 pounds (Fig. 6b). Unlike the BCS, they should be installed inside a toilet compartment to provide visual and physical access. Like the BCS, they should be assessed for operability and reach in the up and down position. When in the down position, make sure there is adequate space to maneuver around the seated child. For easier reaching, the bottom of the lowered seat should be no less than 15 inches (380mm) above the floor.

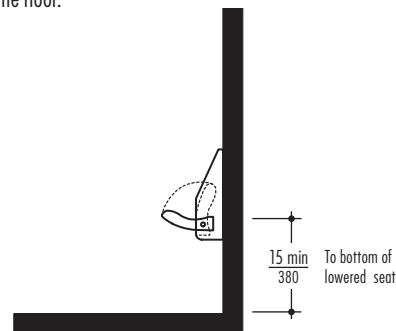


Fig. 6b Child Protection Seat.

# ACCESSIBLE TOILET COMPARTMENTS ARE REQUIRED IN ALL PUBLIC RESTROOMS

There are two basic toilet compartment designs that are named and shown in the standards: the Wheelchair Accessible Toilet Compartment (Fig. 8) and the Ambulatory Accessible Toilet Compartment (Fig. 10). A third variant is described in this Planning Guide, labeled Large Wheelchair Accessible Toilet Compartment (Fig. 9). The wheelchair accessible compartments should accommodate people who use wheelchairs and who transfer onto a toilet using a variety of positions and procedures. Three common transfer positions are diagonal, side and perpendicular (Fig. 7 a, b, c).

**WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT** (Fig. 8) the depth must be 56 inches (1420mm) minimum for wall-hung toilets and 59 inches (1500mm) minimum depth for floor-mounted toilets. The minimum width measured at right angle from the side wall is 60 inches (1525mm). The minimum space required in toilet compartments is provided so that a person using a wheelchair can maneuver into position at the toilet. The toilet must be offset on the back wall with the toilet centerline 16 inches (405mm) minimum to 18 inches (455mm) maximum from the side wall or partition. Grab bars must be mounted on the rear wall and on the closest side wall or partition to the toilet. Install coat hooks and shelves maximum 48 inches (1220mm) – projecting no more than 4 inches (100mm) – to complete the design.

**LARGE WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT** (Fig. 9) is one of many types of larger wheelchair accessible toilet compartments that are possible. Note that in-swinging doors must not overlap the required toilet clearances.

Fig. 7 Transfers to Toilet from Wheelchair.

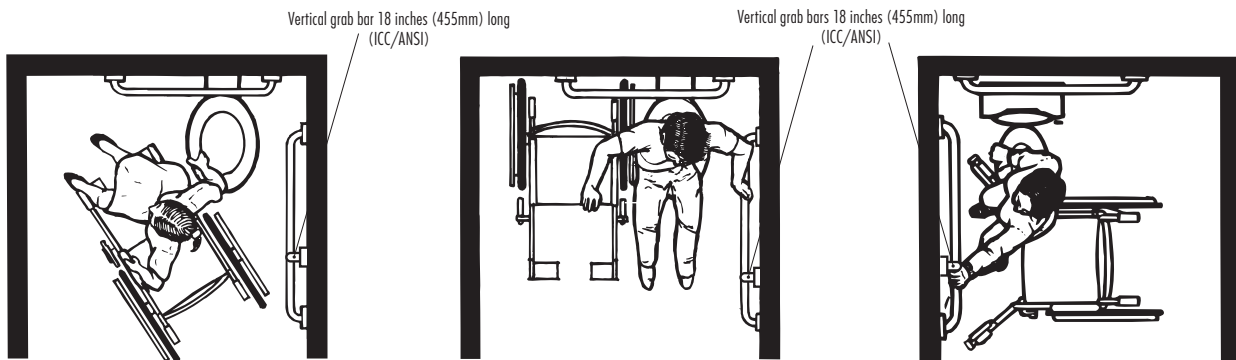


Fig. 7a Reverse Diagonal Approach.

Fig. 7b Side Approach.

Fig. 7c Perpendicular Transfer.

Fig. 8 Wheelchair Accessible Toilet Compartment.

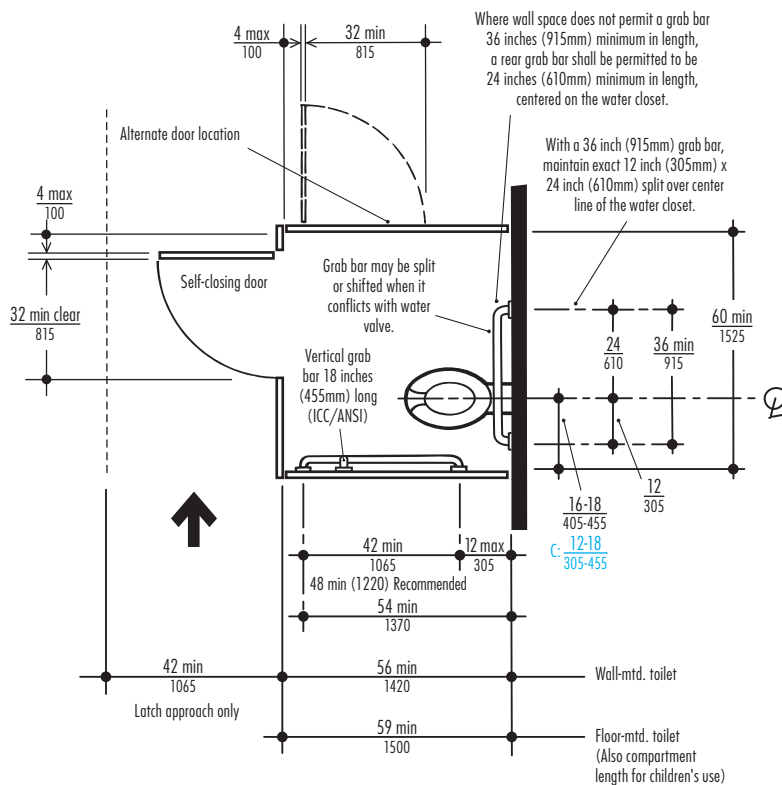
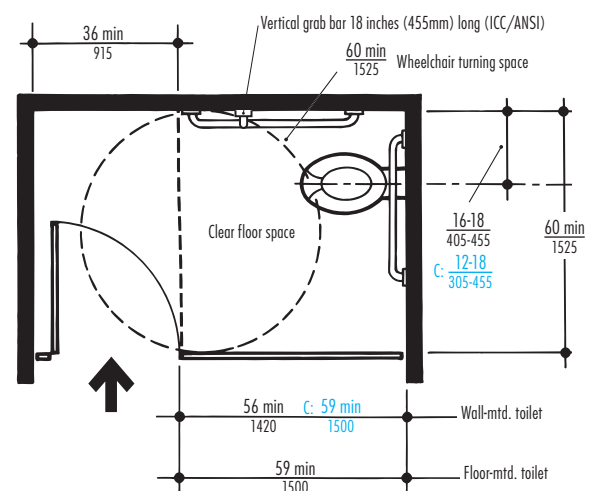


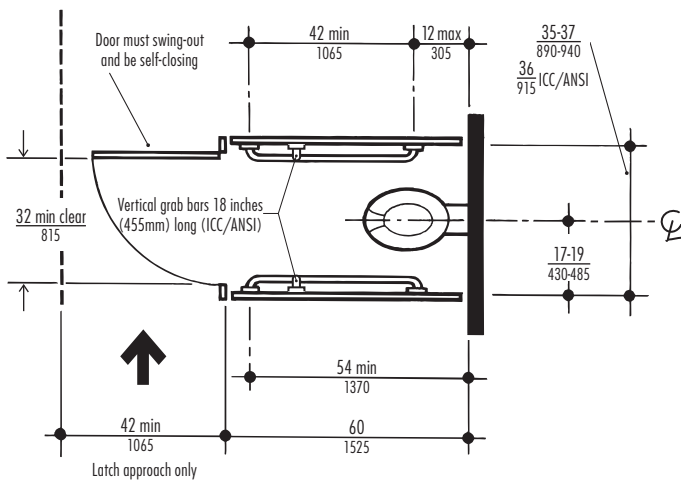
Fig. 9 Large Wheelchair Accessible Toilet Compartment.



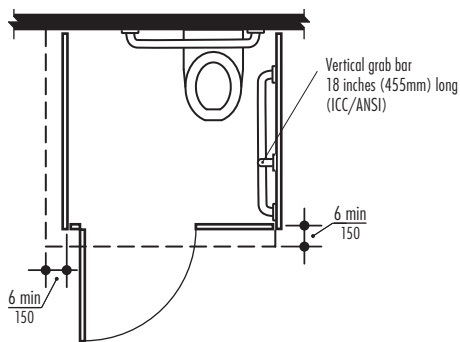
**AMBULATORY ACCESSIBLE TOILET COMPARTMENT** (Fig. 10) has a depth of 60 inches (1525mm) minimum with 2009 ICC/ANSI Standards retaining the 36 inches (915mm) absolute width dimension (the 2010 ADA Standards allow a range of 35 inches (890mm) to 37 inches (940mm) maximum width). Doors must not swing into the minimum required compartment area. Door pull hardware must be installed on both sides of the door near the latch. The toilet must be located on the back wall with the toilet centerline of 17 inches (430mm) minimum and 19 inches (485mm) maximum from the side wall or partition. Grab bars must be provided on both sides per side wall requirements. Install coat hooks and shelves to complete the design.

**TOE CLEARANCE** (Figs. 11a, 11b) of 9 inches (230mm) minimum above the finish floor is required under the front partition and one side partition of all accessible compartments. The toe clearance must extend 6 inches (150mm) deep minimum beyond the compartment-side face of the partition. Toe clearance at the front partition is not required if the depth of the compartment is greater than 62 inches (1575mm) deep with a wall-hung toilet or 65 inches (1650mm) deep with a floor-mounted toilet. Toe clearance at the side partition is not required in a compartment greater than 66 inches (1675mm) wide.

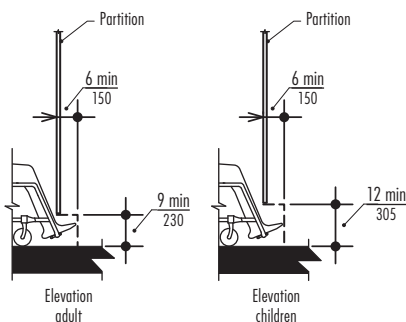
**Fig. 10** Ambulatory Accessible Toilet Compartment.



**Fig. 11** Toe Clearance Under Partitions.



**Fig. 11a** Horizontal Toe Clearance.



**Fig. 11b** Vertical Toe Clearance.

**DOORS** on all accessible toilet compartments must meet 2010 ADA Standards, including door pull hardware and self-closer. There must be a clear width opening of 32 inches (815mm) minimum with the door open 90 degrees. Out-swinging doors approached from the latch side must have an access aisle 42 inches (1065mm) wide minimum; other approaches require an access aisle 48 inches (1220mm) wide minimum. It is recommended that all out-swinging doors close completely as a partially open door may encroach into the required maneuvering clearances and impede access. An alternate door location is shown in (Fig. 8). Please note that the 2009 ICC/ANSI Standards offer an array of door location and dimension options for accessible compartments.

**TOILETS** (Fig. 12) with undercut bowls are recommended. Flush controls such as levers must meet 2010 ADA Standards for controls and operable parts and reach range requirements. Flush controls must be located on the open side of the toilet, except in the ambulatory compartments. Providing an ideal seat height in multi-use facilities is a design challenge as people have varying abilities and needs. The height of toilet seats above the finish floor must be 17 inches (430mm) minimum to 19 inches (485mm) maximum measured to the top of the seat. Toilet seats cannot be sprung to return to lifted position. Refer to the table on page 4 to reference requirements for children.

## GRAB BARS ARE REQUIRED IN ALL ACCESSIBLE TOILET COMPARTMENTS

**GRAB BARS** with circular cross-sections must have an outside diameter of 1-¼ inches (32mm) minimum and 2 inches (51mm) maximum. Non-circular profiles such as ovals and rounded rectangles are allowed. Also note that maximum and minimum horizontal mounting heights of grab bars are set to the top of the gripping surface instead of the centerline. The sidewall grab bar next to an accessible toilet in a compartment must be 42 inches (1065mm) long minimum (48 inch recommended grab bar length eliminates many installation compliance problems) located 12 inches (305mm) maximum from the rear wall and extending 54 inches (1370mm) minimum from the rear wall (Fig. 12a). The location of the 36 inch (915mm) grab bar required to be mounted on the rear wall behind an accessible toilet is now more clearly defined with the inclusion of a 24 inch (610mm) minimum requirement to the open side of the fixture centerline (Fig. 8). Grab bar length and location are now the same regardless of whether the installation is in a toilet compartment or in an individual toilet room or bathroom.

The 2009 ICC/ANSI Standards now require a vertical 18 inch bar located 39 to 41 inches (990 to 1040mm) off of the back wall (Fig. 12a)

Refer to the table on page 4 to reference requirements for children.

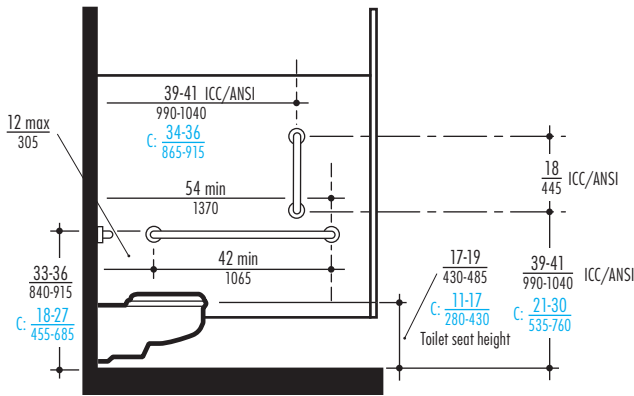
## ACCESSORIES COMPLETE THE SPECIFICATION OF TOILET COMPARTMENT INSTALLATIONS

A number of accessories should be included in every toilet compartment. All accessories must be located on a side wall or partition, preferably the one nearest the toilet in accessible compartments, and just in front of the leading edge of the toilet seat to ensure universal usability.

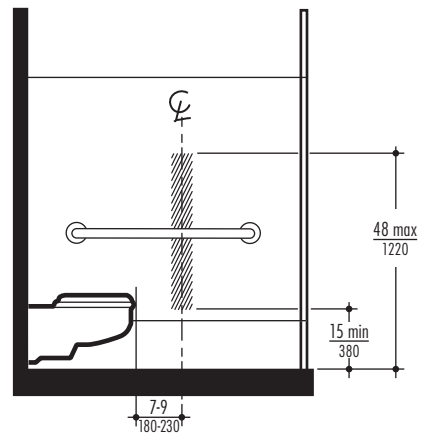
Regardless of location of dispenser outlets, no part of any accessory that projects from the wall or partition can be installed so as to interfere with maneuvering space or access to grab bars. If mounted above grab bars, no part of a protruding accessory can extend closer than 12 inches (305mm) to the top of the grab bar (Fig. 12f). The space between the grab bar and projecting objects below and at the ends shall be 1-½ inches (38mm) minimum (Fig. 12f). The operating mechanisms and accessible openings of most units should be located 18 inches (455mm) minimum to 48 inches (1220mm) maximum above the finish floor, except that the 2010 ADA Standards allow the outlet for toilet paper dispensers be mounted no lower than 15 inches (380mm) above the floor. Recessed objects above the grab bar are permitted within the 12 inch (305mm) area (Fig. 12g). The 2009 ICC/ANSI Standards allows recessed dispensers to project as much as ¼ inch (6.4mm).



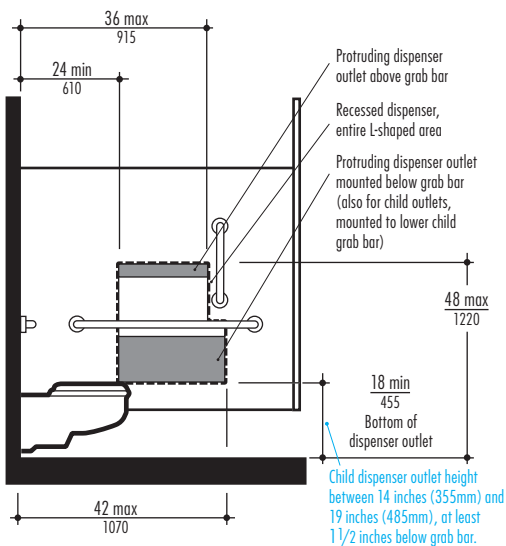
**Fig. 12** Toilets, Grab Bars and Accessory Locations.



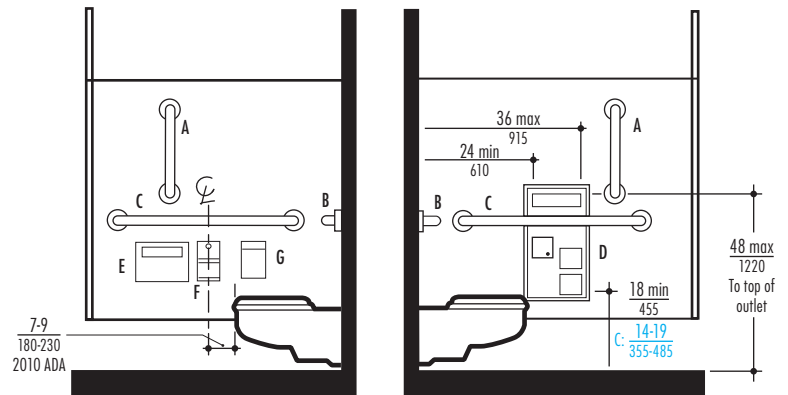
**Fig. 12a** Seat Height and Grab Bar Locations.



**Fig. 12b** Outlet Location for Toilet Paper Dispenser (2010 ADA Standards).



**Fig. 12c** Outlet Location for Toilet Paper Dispenser (ICC/ANSI).



**Fig. 12d** Surface Mounted Dispensers.

**Fig. 12e** Recessed Dispensers (ICC/ANSI).

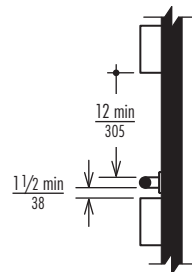
**LEGEND**

- A B-5806 x 18 Vertical Grab Bar
- B B-5806 x 36 Horizontal Grab Bar
- C B-5806 x 42 Horizontal Grab Bar
- D 819839 Partition-Mounted Toilet Seat Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser on right when facing unit with Theft-Resistant Spindle (serves two compartments)
- E B-221 Surface-Mounted Toilet-Seat-Cover Dispenser (mounts below grab bar)
- F B-2888 Surface-Mounted Multi-Roll Toilet Tissue Dispenser (mounts below grab bar)
- G B-270 Surface-Mounted Sanitary Napkin Disposal (mounts below grab bar)

**ROLL TOILET TISSUE DISPENSERS** that do not control delivery or do not allow continuous paper flow are required in all accessible toilet compartments. The 2010 ADA Standards require that roll toilet tissue dispensers must be installed with the dispenser centerline 7 inches (180mm) minimum and 9 inches (230mm) maximum in front of the leading edge of the toilet (Figs. 12b, 12d). The 2009 ICC/ANSI Standards establish a different measurement procedure, locating the dispensers between 24 inches (610mm) minimum and 42 inches (1070mm) maximum from the rear wall of the toilet compartment (Figs. 12c, 12e). The 2009 ICC/ANSI Standards locate the outlet of the dispenser no lower than 18 inches (455mm) above the finish floor (Figs. 12c, 12e). The 2010 ADA Standards allow the outlet on the roll toilet tissue dispenser to be mounted as low as 15 inches (380mm) above the finish floor (Fig. 12b).

**SANITARY NAPKIN DISPOSALS** are recommended in all women's toilet compartments. They should be within reach from a sitting position, and it is recommended that they be mounted below grab bars (Figs. 12d, e).

**TOILET SEAT COVER DISPENSERS** are an optional hygienic amenity that can easily be provided in all toilet compartments. The opening for toilet seat covers needs to be mounted between 15 inches and 48 inches (380 and 1220mm) above the floor, in an accessible location in the accessible compartment, typically away from the vicinity of the toilet itself (Figs. 12c, d, e).



**Fig. 12f** Protruding Objects Mounted Near Grab Bars.

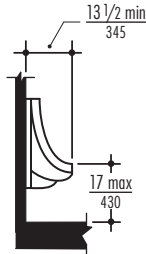


**Fig. 12g** Recessed Objects Mounted Near Grab Bars.

**COMBINATION UNITS** can organize and unify installations by incorporating several accessories at one convenient location, such as toilet tissue dispensers, toilet-seat-cover dispensers, and sanitary napkin disposals. Recessed units should be installed in side walls or partitions with grab bars (Fig. 12e). Note that recessed units are allowed to project only 1/4 inch.

**URINALS**, where provided, should include at least one wall-hung (Fig. 13) or stall-type urinal installed with the rim 17 inches (430mm) maximum above the finish floor. Urinals must be 13-1/2 inches (345mm) minimum deep measured from the outer face of the urinal to the back of the fixture. The operable portion of the flush valve must be mounted no higher than 48 inches (1220mm) maximum above the floor, or no higher than 44 inches if the urinal extends far enough to create at least 20 inches (510mm) of reach. A clear floor space of 30 inches wide by 48 inches deep (760 by 1220mm) minimum must be provided to allow forward approach.

**Fig. 13** Wall Hung Urinal Location.



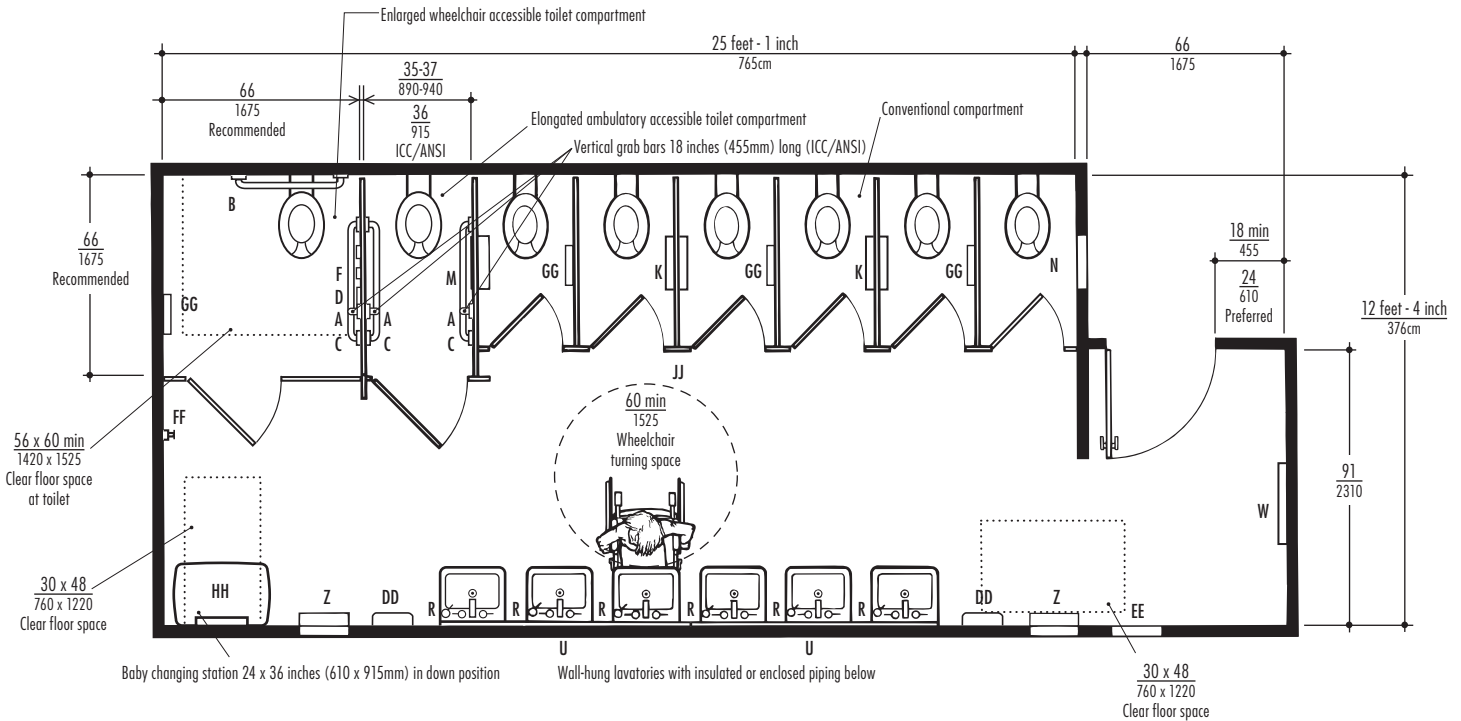
## DESIGN FOR LARGE PUBLIC RESTROOMS

When designing large restrooms with multiple lavatories, urinals and toilet compartments, the following guidelines are recommended:

- Entrances and exits are laid out to minimize congestion and for universal access;
- Passageways and access aisles are a minimum 42 inches to 48 inches (1065 to 1220mm) wide;
- Minimum clear height of 80 inches (2030mm) throughout all circulation routes, passageways and access aisles;
- Wheelchair turning spaces wherever required;
- Accessories are fully recessed into the walls wherever possible;
- Each type of accessory meets or exceeds 2010 ADA and 2009 ICC/ANSI Standards;
- Centered minimum clear floor space of 30 inches by 48 inches (760 by 1220mm) is provided for each accessory;
- Lavatories, urinals, and toilet compartments meet or exceed 2010 ADA and 2009 ICC/ANSI Standards;
- If there are 6 or more toilet compartments or urinals, there is at least one ambulatory accessible toilet compartment in addition to the standard accessible compartment.

Figures 14, 15, and 16 illustrate accessible restrooms with suggested universal design features that meet and exceed 2010 ADA and 2009 ICC/ANSI Standards.

**Fig. 14** Women's Large Restroom with Single Door Entry.



### LEGEND

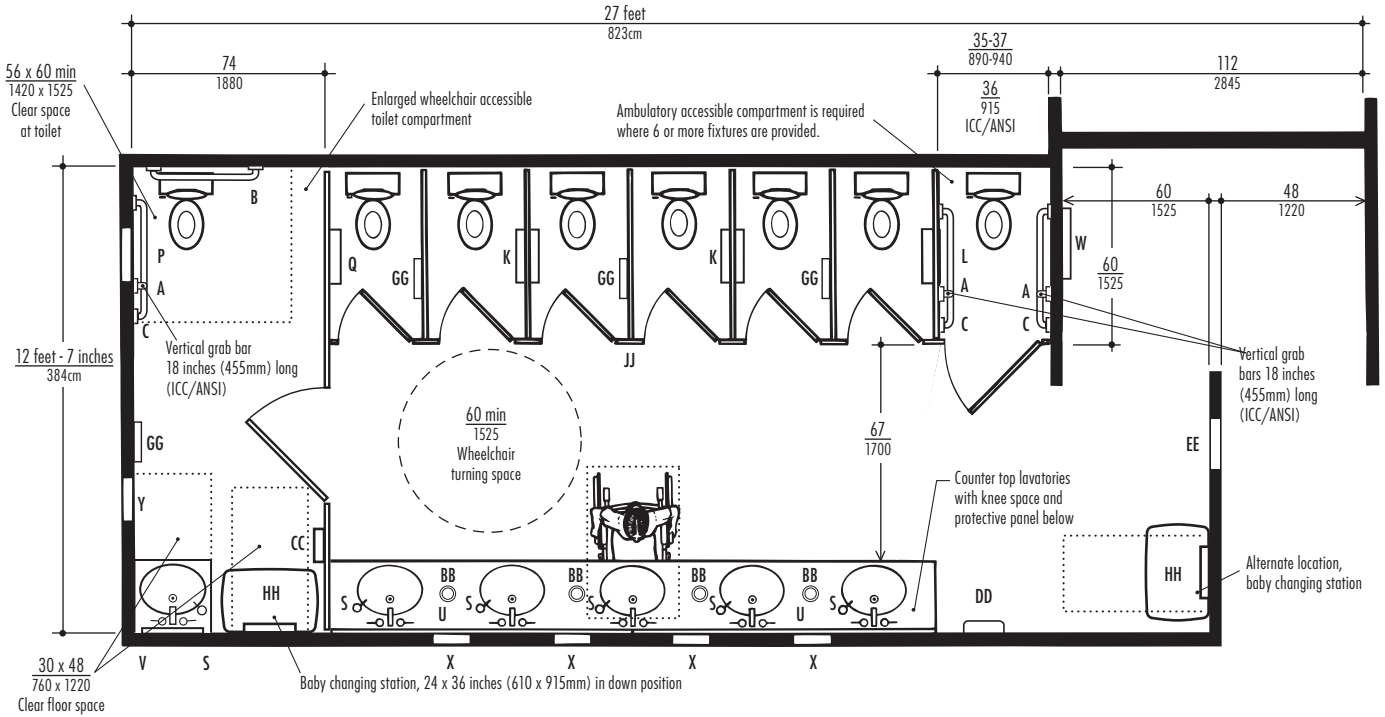
- A B-5806 x 18 Vertical Grab Bar
- B B-5806 x 36 Horizontal Grab Bar
- C B-5806 x 42 Horizontal Grab Bar
- D B-221 Surface-Mounted Toilet Seat Cover Dispenser (mounts below grab bar)
- E B-270 Surface-Mounted Sanitary Napkin Disposal (mounts below grab bar)
- F B-2888 Surface-Mounted Multi-Roll Toilet Tissue Dispenser (mounts below grab bar)
- G B-301 Recessed Toilet Seat Cover Dispenser (mounts below grab bar)
- H B-347 Partition-Mounted Toilet Seat Cover Dispenser, Toilet Tissue Dispenser with Theft-Resistant Spindle
- J B-3471 Partition-Mounted Toilet Seat Cover Dispenser, Toilet Tissue Dispenser, on left when facing unit with Theft-Resistant Spindle (serves two compartments)

- K B-357 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindle (serves two compartments)
- L B-3571 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser on left when facing unit with Theft-Resistant Spindle (serves two compartments)
- M 819839 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser on right when facing unit with Theft-Resistant Spindle (serves two compartments)
- N B-3574 Recessed Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser on right when facing unit with Theft-Resistant Spindle (serves two compartments)
- P 819843 Recessed Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser on left when facing unit with Theft-Resistant Spindle

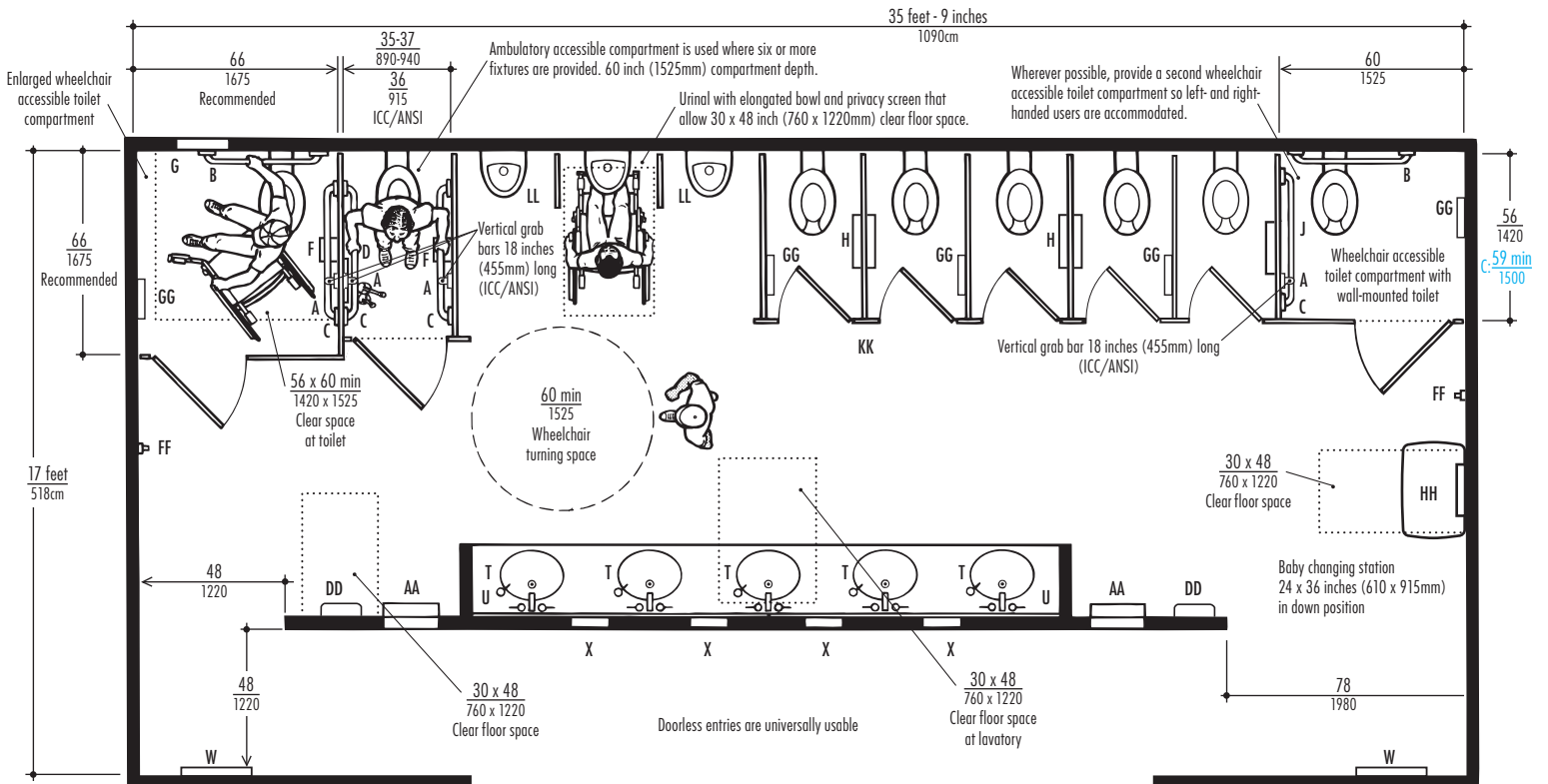
- Q B-3579 Surface-Mounted Recessed Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindle
- R B-822 Lavatory-Mounted Soap Dispenser
- S B-824 Automatic, Universal Countertop-Mounted Soap Dispenser
- T B-830 Series SureFlo® Lavatory-Mounted Soap Dispensing System
- U B-165 Series Wall-to-Wall Mirror
- V B-165 Series Mirror, 24" W x 36" H (610 x 915mm)
- W B-165 Series Full-Length Mirror, 24" W x 60" H (610 x 1525mm)
- X B-318 Recessed Paper Towel Dispenser
- Y B-369 Recessed Paper Towel Dispenser and Waste Receptacle
- Z B-3974 Automatic, Universal Roll Paper Towel Dispenser and Waste Receptacle

- AA B-3644 Recessed Waste Receptacle
- BB B-529 Circular Waste Chute
- CC B-8397 Surface-Mounted Facial Tissue Dispenser
- DD B-7128 Surface-Mounted Hand Dryer
- EE B-3706 Recessed Sanitary Napkin/Tampon Vendor
- FF B-687 Door Bumper
- GG KB102-00 Wall-Mounted Child Protection Seat
- HH KB200-00 Horizontal, Wall-Mounted Baby Changing Station
- JJ 1092 Series Overhead-Braced Solid Color Reinforced Composite Toilet Compartments
- KK 1541 Series Floor-Anchored Laminated Plastic Toilet Compartments
- LL 1545 Series Wall-Hung Urinal Screen

**Fig. 15 Women's Large Restroom with Open Vestibule.**



**Fig. 16 Men's Large Restroom with Double Open Vestibule.**



# DESIGN SOLUTIONS FOR SMALL PUBLIC RESTROOMS AND INDIVIDUAL TOILET ROOMS

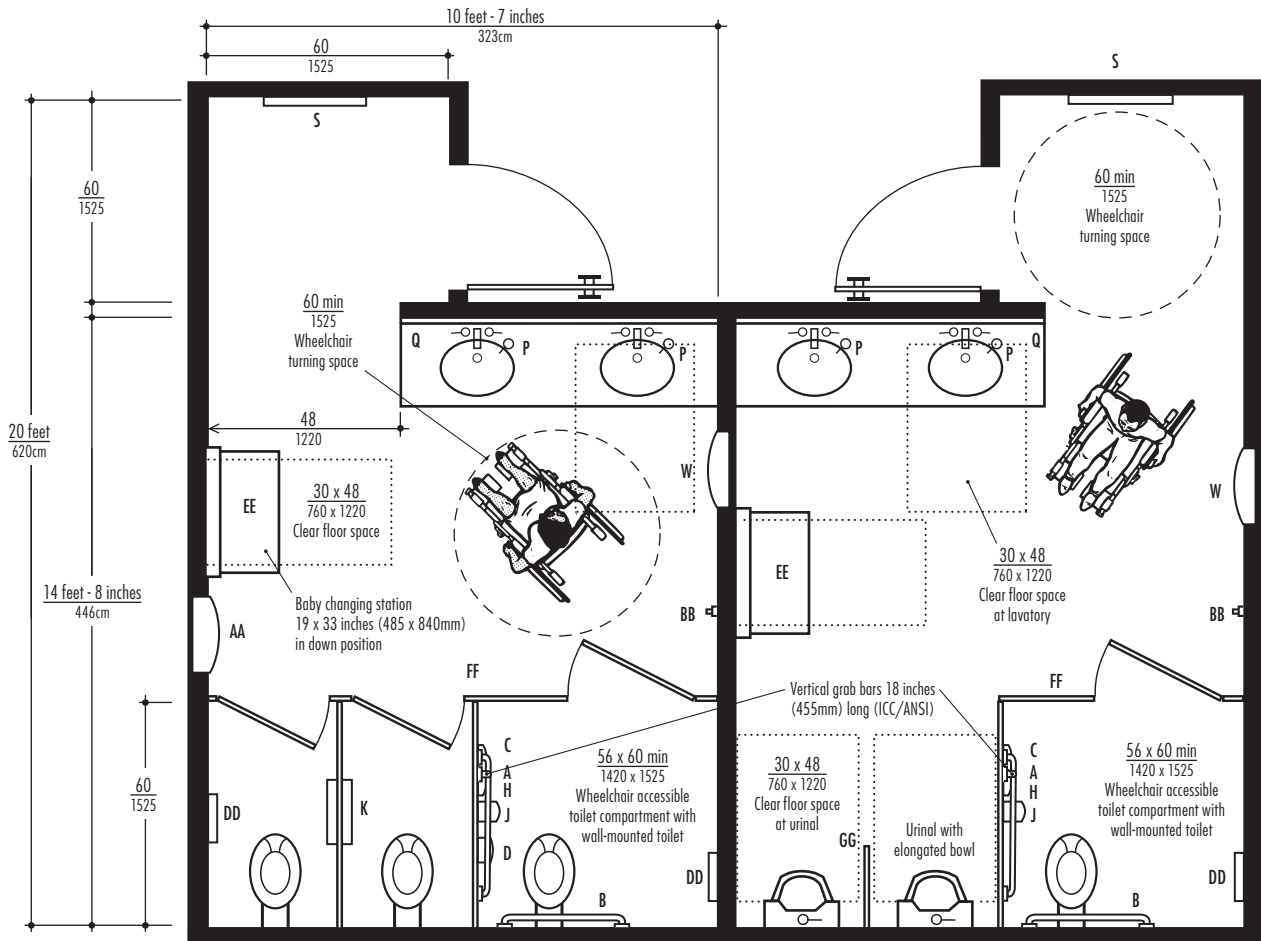
**SMALL PUBLIC RESTROOMS** (Figs. 17-19) require one standard 60 inch (1525mm) wide toilet compartment. Minimum 60 inch (1525mm) diameter or T-Shaped turning spaces are also required, as well as an accessible lavatory, restroom accessories, and access aisles that meet 2010 ADA and 2009 ICC/ANSI Standards. Entry doors should swing into vestibules, not directly into corridors, access aisles, or clear floor spaces required at lavatories and other restroom accessories.

**INDIVIDUAL TOILET ROOMS** (also known as unisex or family toilet rooms) provide privacy for all persons who need the help of an assistant or caregiver (for example a child who needs the help of a parent), especially when they are of the opposite gender (Fig. 20).

Individual toilet rooms may be useful additions to multi-compartment restrooms in many large public buildings. Although it can be challenging, the size of an individual toilet room is determined by locating the clear floor spaces required at each feature or fixture, the wheelchair turning space, and maneuvering clearances at doors. Baby changing stations are often conveniently located in these restrooms. Out-swinging entry doors may be used only if they swing into another room, such as a patient's room or a private office, vestibule or alcove, but never directly into a corridor. No fixture can obstruct the 56 inch by 60 inch (1420 by 1525mm) minimum clear floor space at toilets.

As in all accessible facilities, small public restrooms and individual toilet rooms should meet or exceed the 2010 ADA and the 2009 ICC/ANSI Standards for entrance and exit, lavatories, toilets, grab bars, restroom accessories, controls, and operating mechanisms. Refer to previous sections, Accommodating Diverse Users, Space Requirements and Reach Ranges, and Planning an Accessible Restroom, for information on specific 2010 ADA and 2009 ICC/ANSI Standards as well as universal design considerations.

Fig. 17 Small Accessible Public Restroom.



## LEGEND

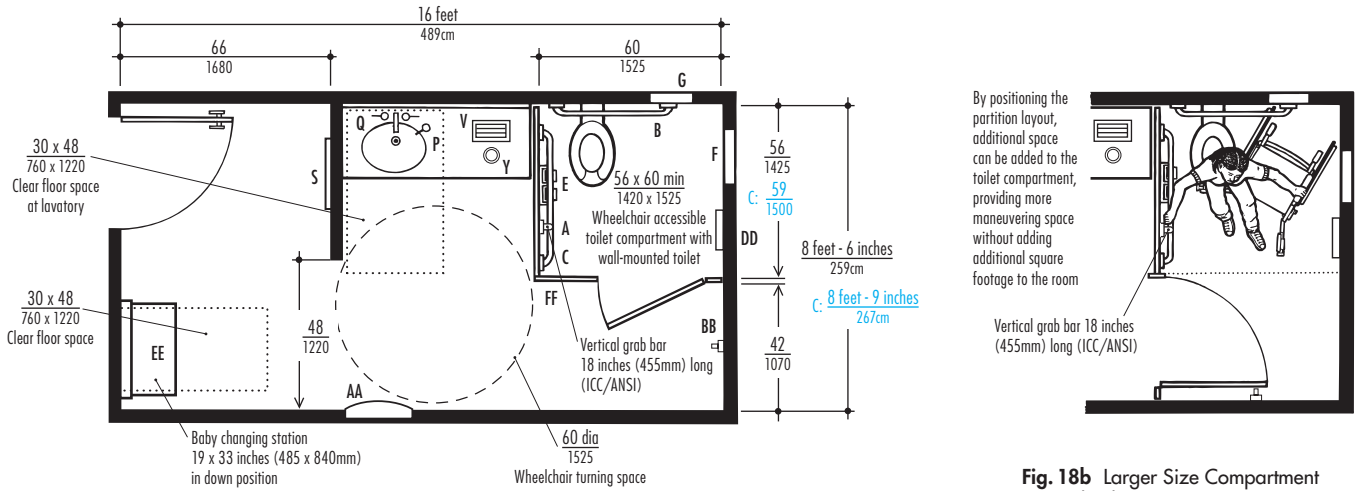
- A B-5806 x 18 Vertical Grab Bar
- B B-5806 x 36 Horizontal Grab Bar
- C B-5806 x 42 Horizontal Grab Bar
- D B-270 Surface-Mounted Sanitary Napkin Disposal (mounts below grab bar)
- E B-2740 Surface-Mounted Double-Roll Toilet Tissue Dispenser, no controlled delivery (mounts below grab bar)
- F B-301 Recessed Toilet Seat Cover Dispenser (mounts below grab bar)
- G B-353 Recessed Sanitary Napkin Disposal (mounts below grab bar)
- H B-4221 Surface Mounted Toilet Seat Cover Dispenser (mounts below grab bar)

- J B-4288 Surface-Mounted Multi Roll Toilet Tissue Dispenser (mounts below grab bar)
- K B-357 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindle (serves two compartments)
- L B-3574 Recessed Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser on right when facing unit with Theft-Resistant Spindle
- M 819843 Recessed Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser on left when facing unit with Theft-Resistant Spindle
- N B-822 Lavatory-Mounted Soap Dispenser
- P B-824 Automatic, Universal Countertop-Mounted Soap Dispenser

- Q B-165 Series Wall-to-Wall Mirror
- R B-165 Series Mirror, 18" W x 36" H (455 x 915mm)
- S B-165 Series Full-Length Mirror, 24" W x 60" H (610 x 1525mm)
- T B-318 Recessed Paper Towel Dispenser
- U B-369 Recessed Paper Towel Dispenser and Waste Receptacle
- V B-526 Paper Towel Dispenser
- W B-43944 Recessed Paper Towel Dispenser and Waste Receptacle
- X B-3644 Recessed Waste Receptacle
- Y B-529 Circular Waste Chute
- Z B-7128 Surface-Mounted Hand Dryer
- AA B-4706 Recessed Sanitary Napkin/Tampon Vendor

- BB B-687 Door Bumper
- CC B-76727 Double Robe/Clothes Hook
- DD KB102-00 Wall-Mounted Child Protection Seat
- EE KB110-SSWM Horizontal, Wall-Mounted Baby Changing Station
- FF 1031 Series Floor-Anchored Laminated Plastic Toilet Compartments
- GG 1035 Series Wall-Hung Urinal Screen
- HH 1542 Series Overhead-Braced Laminated Plastic Toilet Compartments

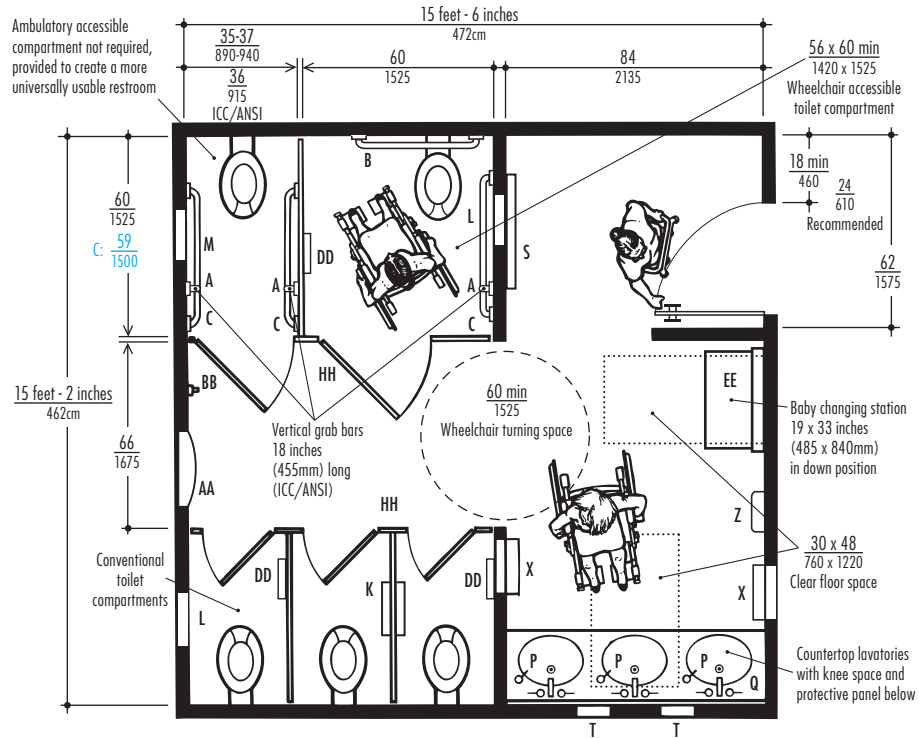
**Fig. 18** Accessible Restroom with Additional Entry Clearance Space.



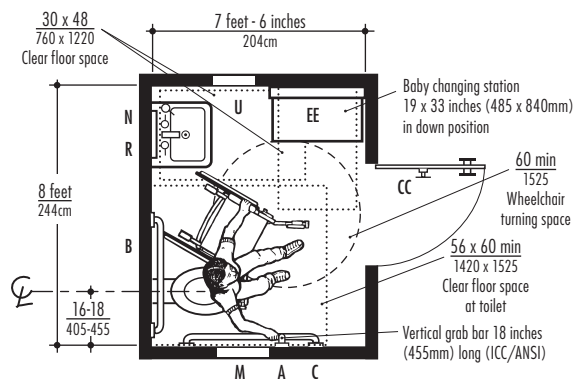
**Fig. 18a** Accessible Restroom with Additional Entry Clearance Space.

**Fig. 18b** Larger Size Compartment with Alternate Door Opening.

**Fig. 19** Small Public Restroom Provides Accessible Toilet Compartment and Ambulatory Accessible Compartment.



**Fig. 20** Individual Toilet Room with Baby Changing Station.





# ACCESSIBLE BATHING FACILITIES REQUIRED IN A WIDE VARIETY OF BUILDINGS

Hotels, athletic clubs, school gymnasiums and dormitories, parks and campgrounds, long-term care facilities, and hospitals are examples of the many buildings that must meet accessible bathing requirements for people with disabilities. Accessible bathing facilities fall into two basic categories: individual shower compartments or combination tub/shower units. Shower compartments may be constructed of conventional water-resistant wall and flooring materials, or shower dividers may be specified that are manufactured of solid phenolic, fiberglass, acrylic, or other water-resistant material. If more than one shower compartment is provided in a facility, it is recommended that the control and seat locations be alternated for left- and right-hand use to ensure universal usability. In buildings for transient lodging, a percentage of the sleeping rooms must be accessible and equipped with either an individual shower compartment or combination tub/shower unit.

## INDIVIDUAL SHOWER COMPARTMENTS

**TRANSFER SHOWER COMPARTMENTS** (Fig. 23) are the most common type of individual shower compartment used to accommodate people with disabilities. They must be 36 inches by 36 inches (915 by 915mm) with a fixed or folding L-shaped shower seat mounted on a side wall opposite the shower head and controls. The 36 inches by 36 inches (915 by 915mm) inside dimension addresses the reach and safety needs of adult users. Note that both accessibility standards require that interior dimensions of accessible showers use the centerline of each wall as the starting point. Curbs may be installed, but they must be no higher than 1/2 inch (13mm) (Fig. 21). When equipped with a folding seat, the transfer shower compartment can also be used comfortably by people who are standing and seated. Minimum clear floor space 36 inches by 48 inches (915 by 1220mm) must be positioned outside the shower compartment to allow proper wheelchair positioning for transfer to shower seat. A threshold 2 inches (51mm) high maximum shall be permitted in transfer type shower compartments in existing facilities where provision of a 1/2 inch (13mm) high threshold would disturb the structural reinforcement of the floor slab. Hand-held showers on a hose are required in accessible showers. Use of an adjustable vertical slide bar for the hand-held unit is optional (Figs. 23d, 24b, 25b).

Fig. 21 Accessible Shower Thresholds.

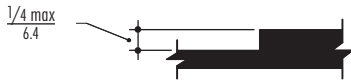


Fig. 21a Vertical Change in Level.

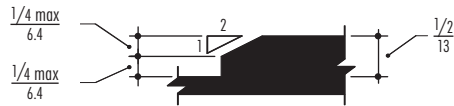


Fig. 21b Beveled Change in Level.

Fig. 22 Folding Shower Seats.

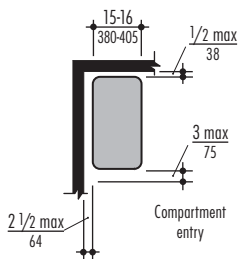


Fig. 22a Rectangular.

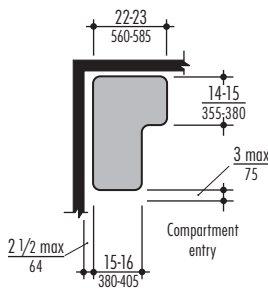


Fig. 22b L-Shaped.

**ROLL-IN SHOWER COMPARTMENTS** (Fig. 24) are functional for all users including some people who use a special castered shower chair for bathing. The accessibility standards refer to the standard roll-in type shower compartment and the alternate roll-in type shower compartment. Also referred to as curbless showers, 2010 ADA and 2009 ICC/ANSI Standards require roll-in shower compartments to be at least 30 inches by 60 inches (760 by 1525mm), which is intended primarily for remodeling purposes to allow replacement of an existing tub with a roll-in shower compartment. This minimum size is inadequate in most cases due to the difficulty in containing water within the 30 inches (760mm) depth. If the minimum size is used, it is recommended that the floor of the entire room be waterproofed (also referred to as a wet-area shower). Curbs should be avoided or minimized. If it is necessary to include them, then curbs should be 1/2 inch (13mm) high maximum (Fig. 21 a, b). Note that thresholds higher than 1/4 inch (6.4mm) will need to incorporate a bevel no steeper than 1:2 (Fig. 21b). Recommended methods for containing water include warped tile, grout berms, trench drains, and sloping floor surfaces. Consider larger sizes for easier maneuvering and less water spillage such as 36 inches by 60 inches (915 by 1525mm), 48 inches by 60 inches (1220 by 1525mm) and 60 inches by 60 inches (1525 by 1525mm) which are better shower sizes. Minimum clear floor space of 30 inches wide by 60 inches (760 by 1525mm) must be positioned outside the shower compartment to allow wheelchair maneuvering space. This space may incorporate knee clearance under adjacent lavatories or countertops, and may be part of the total floor space in wet-area showers.

Fig. 23 Transfer Shower Compartment.

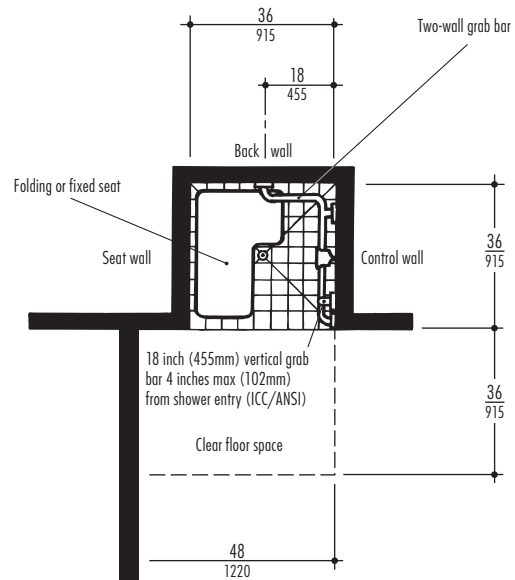


Fig. 23a Required Clear Floor Space.

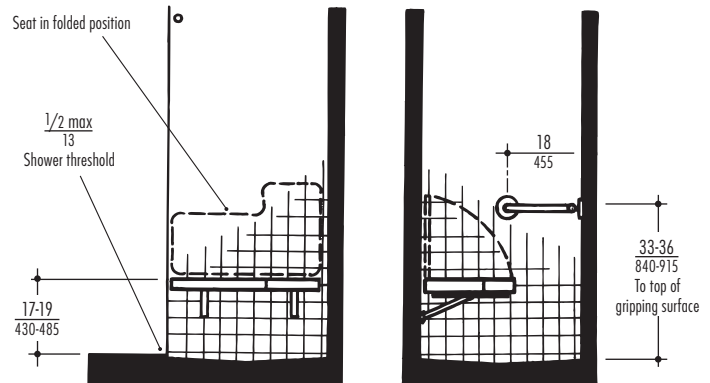


Fig. 23b Seat Wall.

Fig. 23c Back Wall.

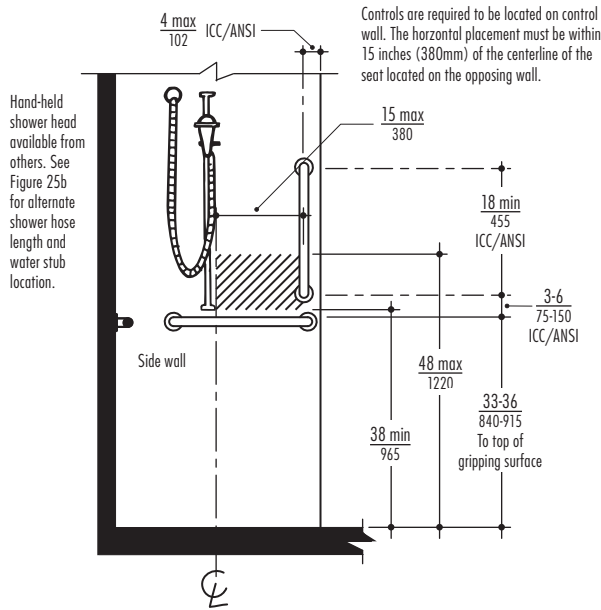


Fig. 23d Control Locations.

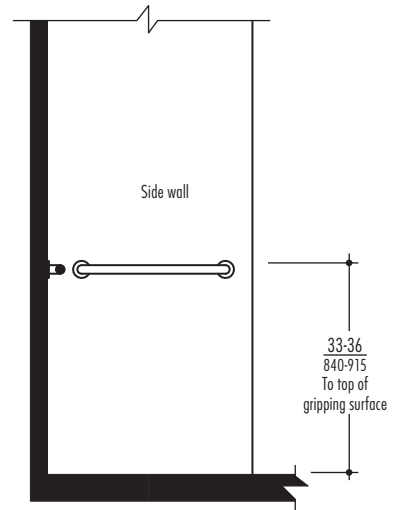


Fig. 23e Grab Bar Locations

Fig. 24 60 inch Wide Roll-In Shower Compartments.

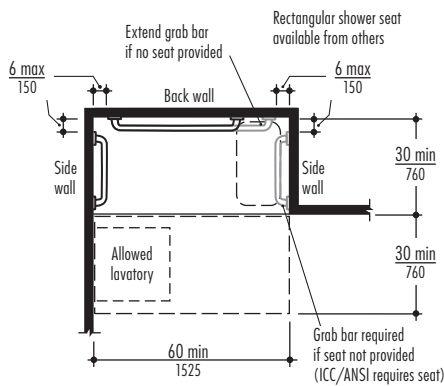


Fig. 24a Standard Roll-In Type Shower Compartment.

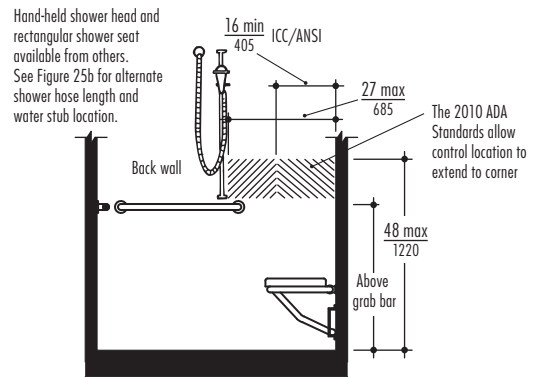


Fig. 24b Control Locations (with Seat).

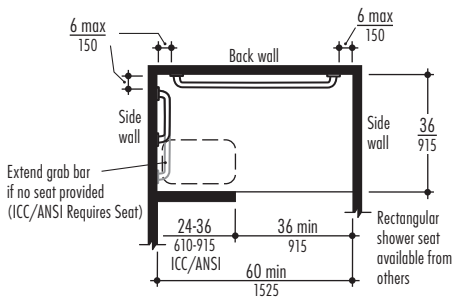


Fig. 24c Alternate Roll-In Type Shower Compartment (with seat).

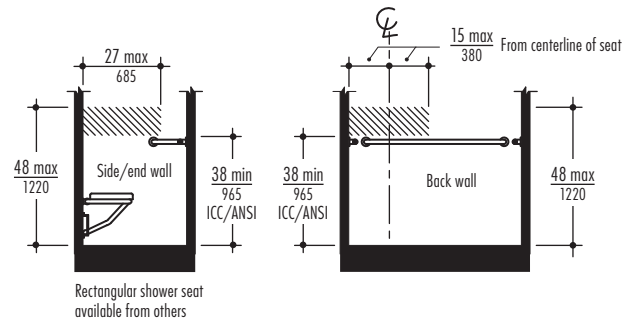


Fig. 24d Alternate Roll-In Type Shower Compartment (with seat) Control Locations, Side/End Wall.

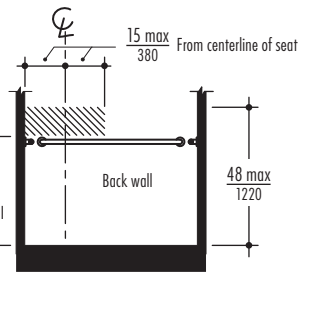


Fig. 24e Alternate Roll-In Type Shower Compartment Control Locations, Back Wall.

# COMBINATION TUB/SOWER UNITS

No required length is given for combination tub/shower units located in accessible bathrooms, however, the accessibility standards specify a minimum width of 30 inches (760mm). Combination tub/shower units must have either a removable in-tub seat or a permanent seat at the head of the bathtub. In-tub seats should attach to the rim of the bathtub (Fig. 25a). This type of seat is generally used to sit on while showering. Seats at the head of the bathtub must be 15 inches (380mm) wide maximum and are usually built-in structural extensions, making the total width of a bathtub 75 inches (1910mm) (Figs. 26a, 33). They are used only while transferring into the bathtub. Adjacent clear floor space must extend the full width of the bathtub and be at least 30 inches (760mm) deep. The clear floor space for fixtures with permanent seats at the head of the bathtub must extend at least 12 inches (305mm) beyond the back of the built-in seat (Fig. 26a).

Fig. 25 Bathtub with Removable In-Tub Seat.

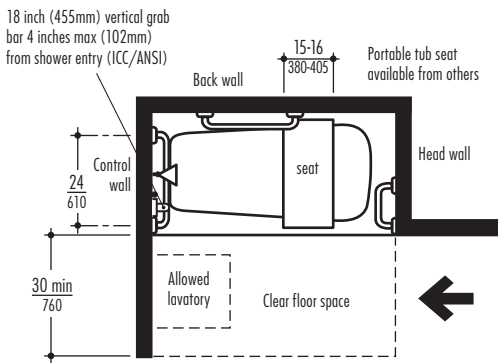


Fig. 25a Clear Floor Space.

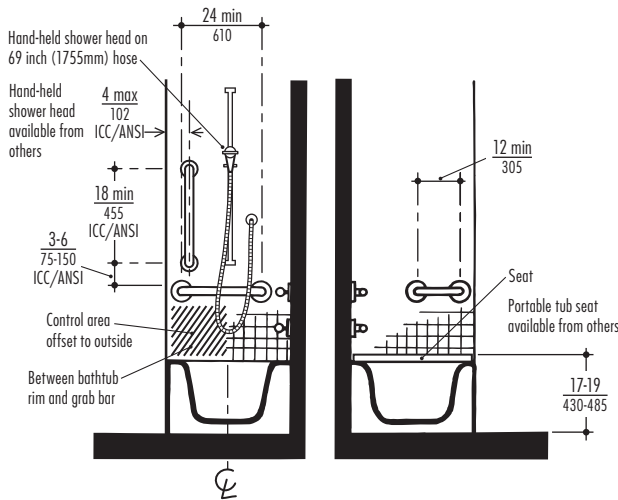


Fig. 25b Control Wall.

Fig. 25c Head of Tub.

# CONTROLS AND ACCESSORIES COMPLETE SHOWER AND BATHTUB INSTALLATIONS

**CONTROLS** must meet 2010 ADA Standards and 2009 ICC/ANSI Standards (refer to Controls and Operating Mechanisms on page 6). The control areas must be located on the side wall opposite the shower seat in transfer shower compartments (Fig. 23d); on the back or side walls of roll-in shower compartments (Figs. 24b, 24d, 24e); on the wall adjacent to the shower seat in alternate roll-in type shower compartments (Fig. 24d); and on the wall at the foot of bathtubs (Fig. 25b). In standard roll-in shower compartments with seats the control must be located on the back wall above the seat and no more than 27 inches (685mm) from the adjacent side wall. The control location must be above the grab bar (Fig. 24b). Controls with anti-scald, pressure balanced or similar features should be used. The standards require water to be 120°F maximum.

**SHOWER HEADS** in accessible bathing facilities must be usable in a fixed position as a hand-held model with a 59 inch (1500mm) minimum long hose (Figs. 23d, 24b). To allow for easier manipulation of the shower unit, it is recommended that a longer, 69 inch (1755mm), hose be used (Fig. 25b). An optional vertical slide-bar with a recommended length of 36 to 40 inches (915 to 1015mm) will allow the spray unit to be used as a fixed shower head at various heights (Fig. 25b). Where a slide bar is used, an alternate location for the water union is 12 to 16 inches (305 to 405mm) above the horizontal grab bar to allow for a longer reach for the hand-held shower (Fig. 25b). The accessibility standards allow an exception: A fixed shower head mounted 48 inches (1220mm) above the finish floor may be installed in lieu of a hand-held unit in facilities that are not medical care facilities, long-term care facilities, transient lodging guest rooms, or residential dwelling units.

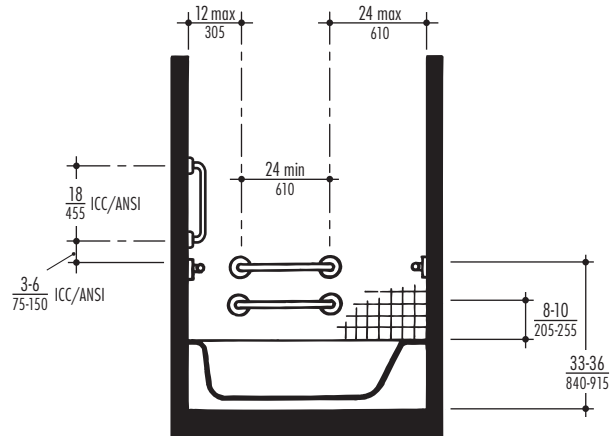


Fig. 25d Back Wall.

**GRAB BARS** must be installed in all accessible bathing facilities. They must have a diameter (or cross section if non circular) of 1-1/4 inches to 2 inches (32 to 51mm) and a clearance of 1-1/2 inches (38mm) between the grab bar and wall. At least one and as many as three bars in showers and tubs must be mounted 33 inches to 36 inches (840 to 915mm) above the finish floor (Figs. 23c, 23d, 23e; 24b, 24d, 24e; 25b, 25c, 25d; 26b), measured to the top of the gripping surface.

Two horizontal grab bars or a single two-wall grab bar must be installed on the walls next to and opposite the folding shower seat in transfer compartments (Fig. 23a shows the single bar). Standard roll-in shower compartments must have grab bars installed 6 inches (150mm) maximum from the corners (Fig. 24a, 24c).

Bathtubs must have a horizontal grab bar mounted at the foot that extends at least 24 inches (610mm) from the front edge of the tub (Figs. 25a, 26a); and two parallel, horizontal grab bars, mounted on the back wall (Figs. 25d, 26b). The upper grab bar is mounted at standard height and the lower grab bar is mounted 8 inches to 10 inches (205 to 255mm) above the tub rim, measured to the top of the gripping surface. There is no specified length for the back wall grab bars in tubs with permanent seats (Figs. 26a, 26b). In tubs with removable seats the back wall grab bar lengths are specified at 24 inches (610mm) (Fig. 25d). Bathtubs with removable in-tub seats must have a fourth grab bar mounted at the head that extends at least 12 inches (305mm) from the front edge of the tub (Fig. 25a).

Transfer shower compartments and tubs must also have a vertical grab bar, 18 inches long (455mm) minimum mounted at the control wall, 4 inches (102mm) maximum from the front edge (Figs. 23a, 23d; 25a, 25b, 25d; 26a, 26b).

**SHOWER SEATS** must be mounted with the top surface of the seat 17 inches to 19 inches (430 to 485mm) above the finish floor (Fig. 23b). Permanent or folding seats are now required by the 2009 ICC/ANSI Standards. For both roll-in and transfer compartments, seats must have a 3 inch (75mm) maximum space between the seat edge and compartment entry-opening and a larger permissible 2-1/2 inch (64mm) maximum gap between the seat and seat wall (Figs. 22a, b). Roll-in type shower compartments with seats can now use a rectangular seat design as well as the previously required "L"-Shaped design (Figs. 22a, b). Upholstered, cushioned seats are preferred by many people with disabilities, while water-resistant solid phenolic seats are vandal-resistant and more sanitary.

**SOAP DISHES** are normally placed on the same wall as the shower head and controls where they are least likely to collect standing water. It is recommended soap dishes be recessed and mounted 38 inches to 48 inches (965 to 1220mm) above the finish floor when installed in shower compartments, or they should be mounted between the grab bar and the rim of the bathtub (Figs 23d; 24b, 24d, 24e; 25b).

**SHOWER CURTAINS** generally work well as enclosures for all users including people who use wheelchairs. If other types of shower enclosures are used, they should fold back completely out of the way so as not to obstruct transfer to shower seats or interfere with controls, and they must not incorporate a track along the floor or the rim of bathtubs.

**MEDICINE CABINETS** installed in bathrooms must be mounted so at least one accessible shelf is no higher than 44 inches (1120mm) above the finish floor and the bottom edge of the mirror is no higher than 40 inches (1015mm) above the finish floor.

Fig. 26 Bathtub with Permanent Seat.

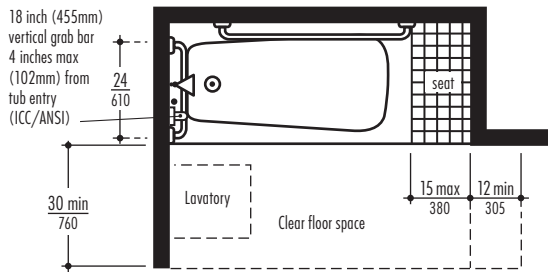


Fig. 26a Clear Floor Space.

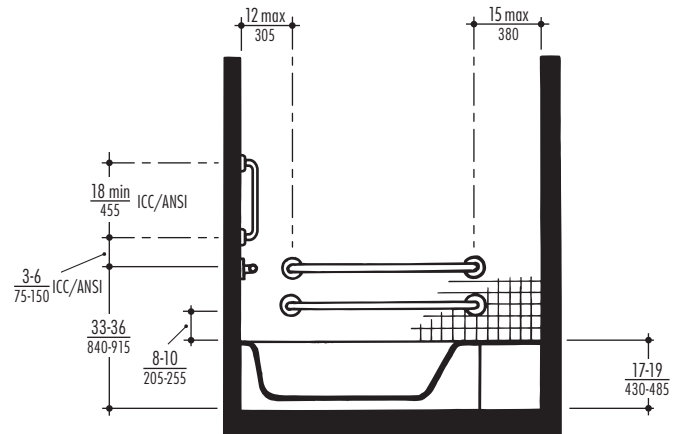
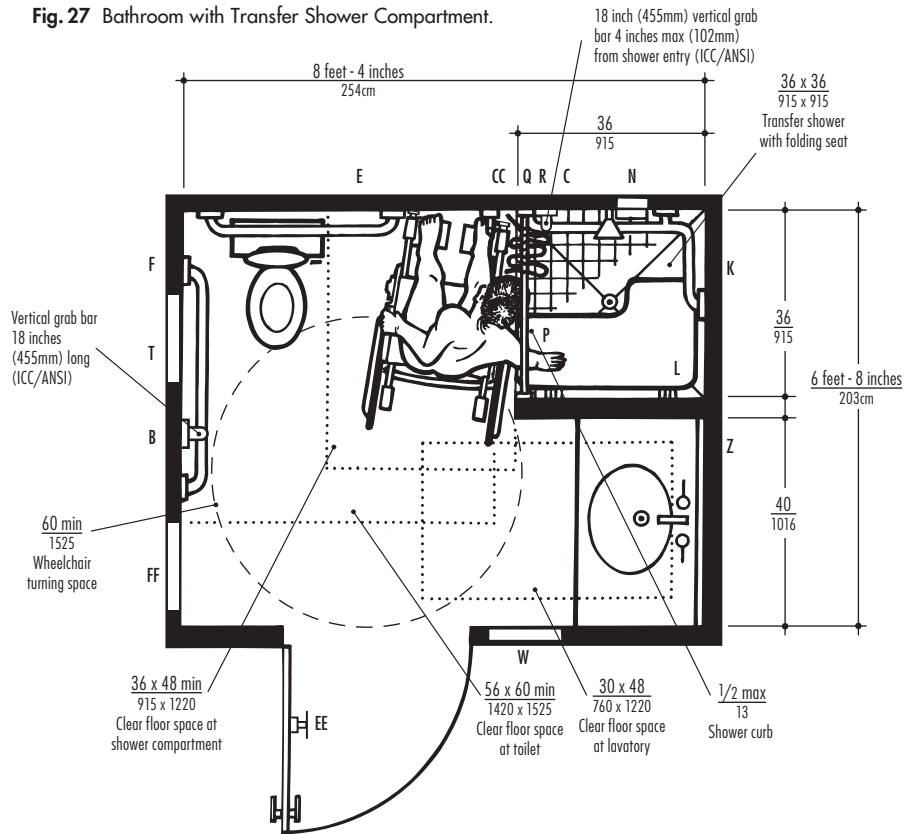


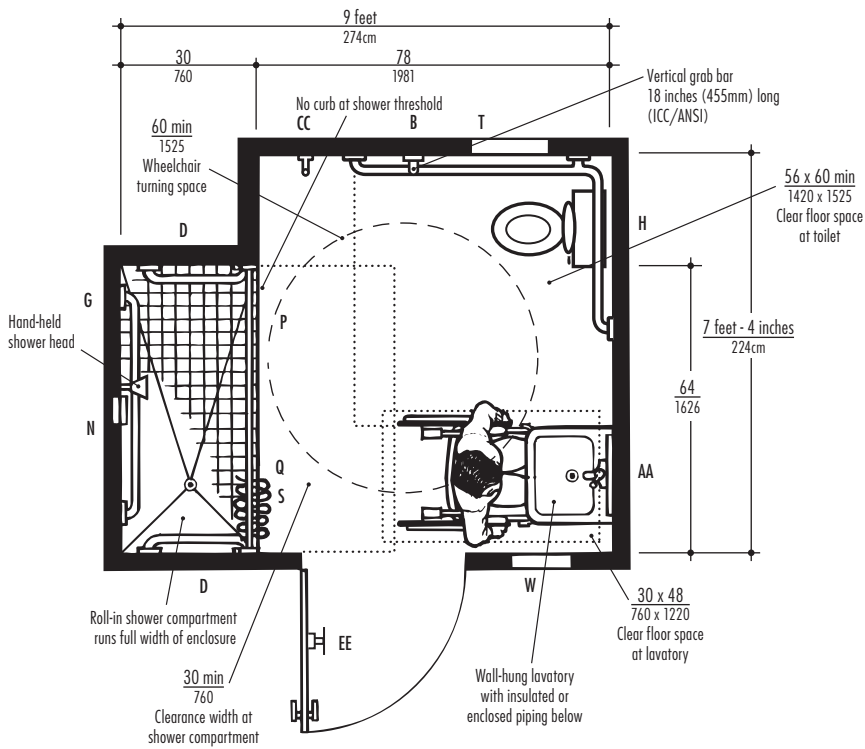
Fig. 26b Back Wall.

# DESIGN SOLUTIONS FOR BATHROOMS WITH SHOWER COMPARTMENTS

**Fig. 27** Bathroom with Transfer Shower Compartment.



**Fig. 28** Bathroom with Wet-Area Shower Compartment.



**LEGEND**

- A B-5806 x 18 Horizontal Grab Bar used as towel bar
- B B-5806 x 18 Vertical Grab Bar
- C B-5806.99 x 18 Vertical Grab Bar with Peened Grip
- D B-5806.99 x 24 Horizontal Grab Bar with Peened Grip
- E B-5806 x 36 Horizontal Grab Bar
- F B-5806 x 42 Horizontal Grab Bar
- G B-5806.99 x 48 Horizontal Grab Bar with Peened Grip
- H B-5837 Horizontal Two-Wall Grab Bar, 36" x 54" (915 x 1370mm)

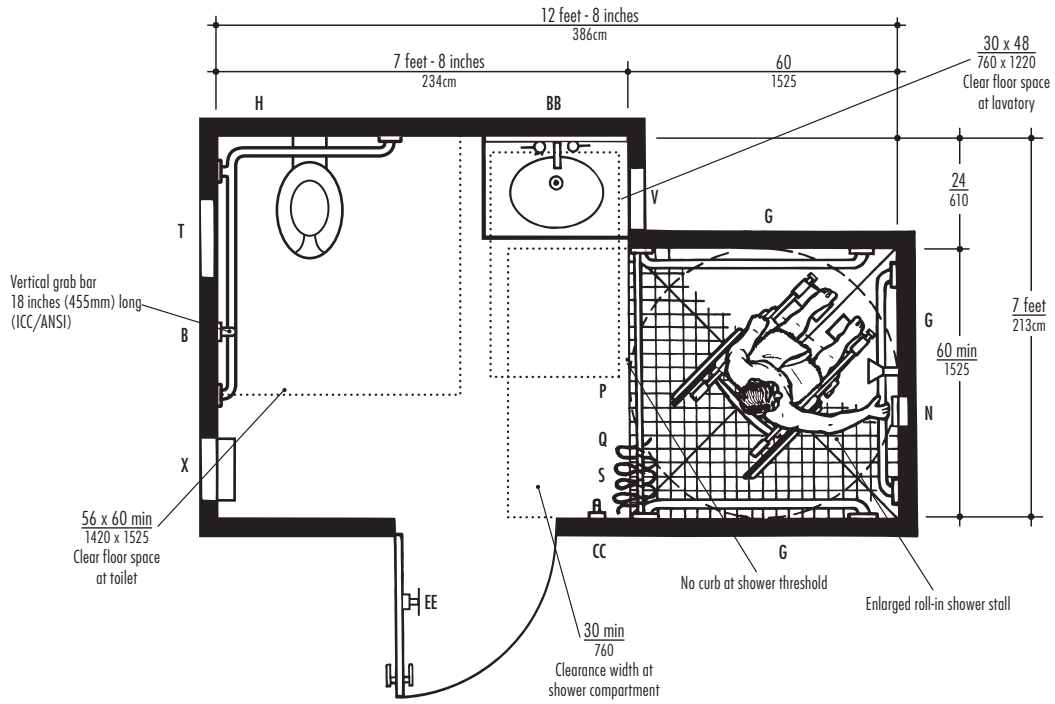
- J B-58616.99 Shower Grab Bar with Peened Grip, 24" x 36" (610 x 915mm)
- K B-6861.99 Shower Grab Bar with Peened Grip, 15-1/8" x 30-1/8" (405 x 785mm)
- L B-517 Folding Shower Seat, Padded Seat, Right-Hand Seat
- M B-5181 Reversible Folding Shower Seat, Solid Phenolic, Left-Hand Seat
- N B-4380 Recessed Soap Dish
- P B-6107 Shower Curtain Rod
- Q 204-1 Shower Curtain Hooks

- R 204-2 Vinyl Shower Curtain, 42" W x 72" H (1065 x 1830mm)
- S 204-3 Vinyl Shower Curtain, 70" W x 72" H (1780 x 1830mm)
- T 819843 Recessed Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser on left when facing unit with Theft-Resistant Spindle
- U B-6977 Recessed Toilet Tissue Dispenser for Two Rolls
- V B-359 Recessed Paper Towel Dispenser
- W B-369 Recessed Paper Towel Dispenser and Waste Receptacle

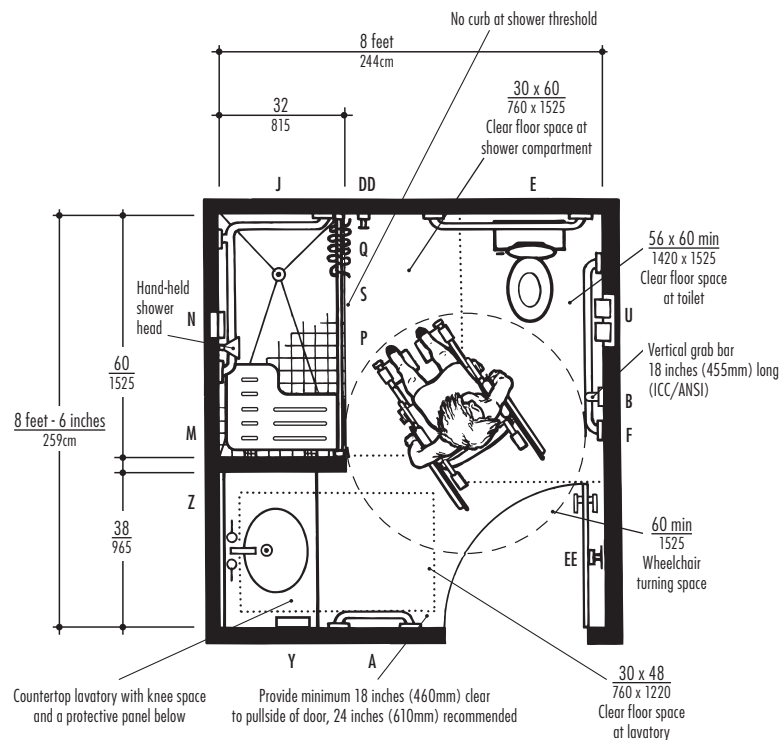
- X B-3644 Recessed Waste Receptacle
- Y B-8397 Surface-Mounted Facial Tissue Dispenser
- Z B-165 Series Wall-to-Wall Mirror
- AA B-165 Series Mirror, 18" W x 36" H (455 x 915mm)
- BB B-165 Series Mirror, 33" W x 36" H (840 x 915mm)
- CC B-2116 Single Robe/Clothes Hook with Concealed Mounting
- DD B-76717 Single Robe/Clothes Hook
- EE B-76727 Double Robe/Clothes Hook
- FF B-3706 Recessed Sanitary Napkin/Tampon Vendor



**Fig. 29** Bathroom with Enlarged Roll-in Shower Compartment.

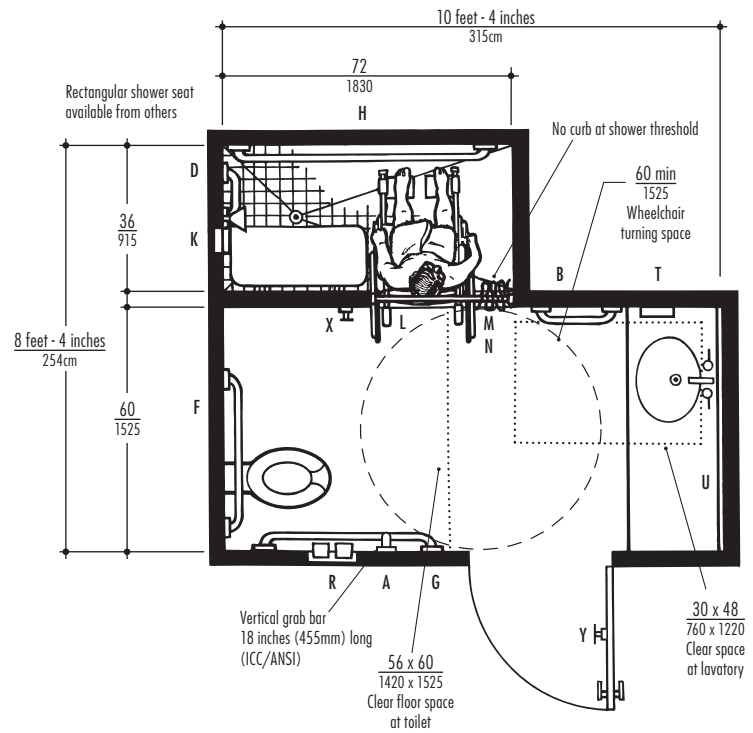


**Fig. 30** Bathroom with Roll-in Shower Compartment.

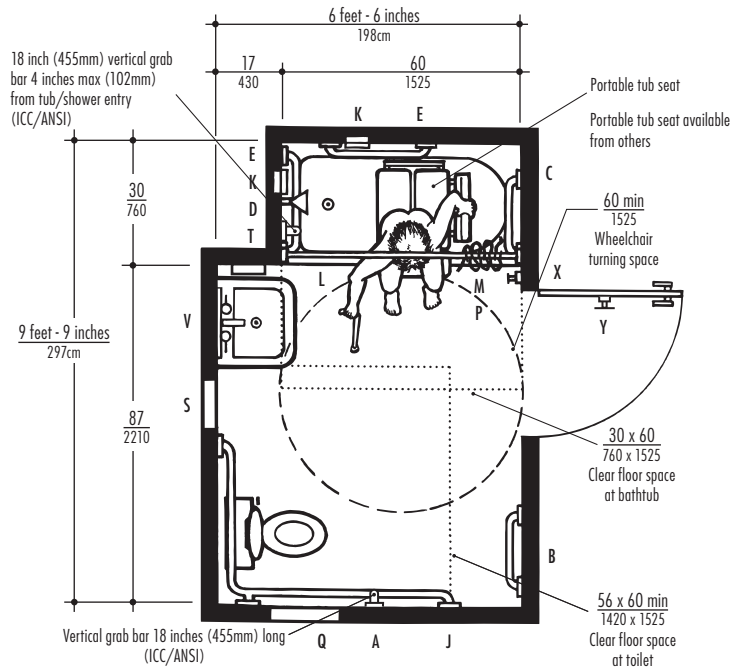


# DESIGN SOLUTIONS FOR BATHROOMS WITH TUB/SHOWER UNITS

**Fig. 31** Bathroom with Enlarged Alternate Roll-in Shower Compartment.



**Fig. 32** Bathroom with Combination Tub/Shower Unit and Portable Seat.



**LEGEND**

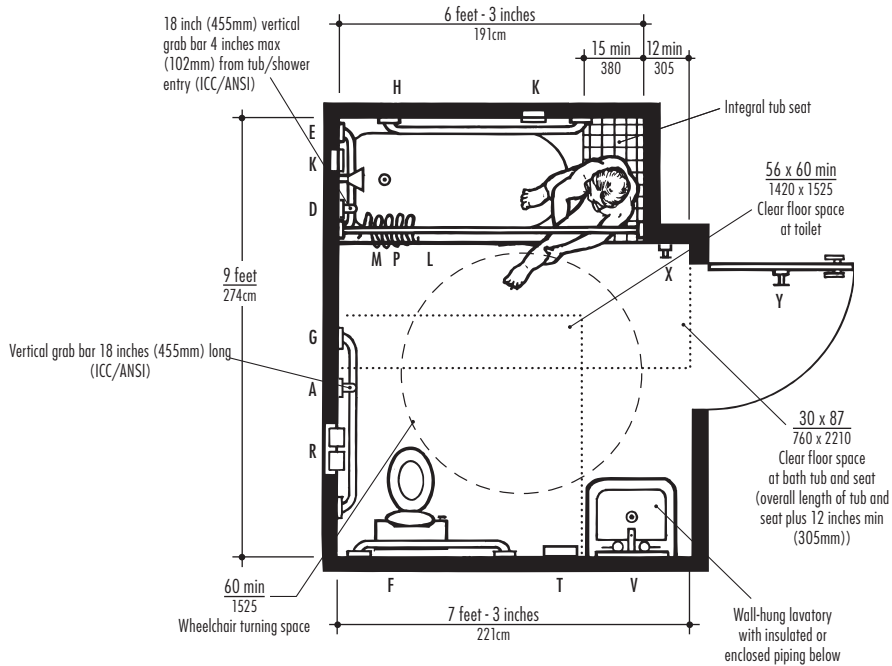
- A B-5806 x 18 Vertical Grab Bar
- B B-5806 x 18 Horizontal Grab Bar used as towel bar
- C B-5806.99 x 18 Horizontal Grab Bar with Peened Grip
- D B-5806.99 x 18 Vertical Grab Bar with Peened Grip
- E B-5806.99 x 24 Horizontal Grab Bar with Peened Grip
- F B-5806 x 36 Horizontal Grab Bar
- G B-5806 x 42 Horizontal Grab Bar
- H B-5806.99 x 48 Horizontal Grab Bar with Peened Grip

- J B-5837 Horizontal Two-Wall Grab Bar, 36" x 54" (915 x 1370mm)
- K B-4380 Recessed Soap Dish
- L B-6107 Shower Curtain Rod
- M 204-1 Shower Curtain Hooks
- N 204-2 Vinyl Shower Curtain, 42" W x 72" H (1065 x 1830mm)
- P 204-3 Vinyl Shower Curtain, 70" W x 72" H (1780 x 1830mm)

- Q 819843 Recessed Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser on left when facing unit with Theft-Resistant Spindle
- R B-6977 Recessed Toilet Tissue Dispenser for Two Rolls
- S B-369 Recessed Paper Towel Dispenser and Waste Receptacle
- T B-8397 Surface-Mounted Facial Tissue Dispenser
- U B-165 Series Wall-to-Wall Mirror
- V B-165 Series Mirror, 18" W x 36" H (455 x 915mm)

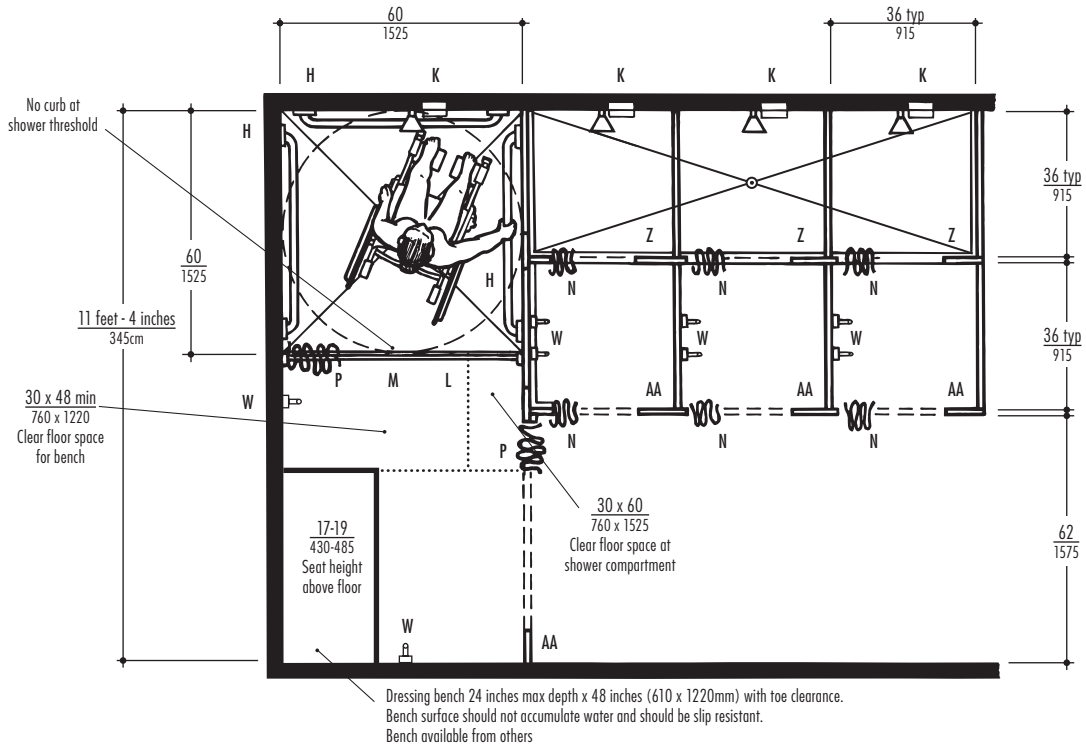
- W B-2116 Single Robe/Clothes Hook with Concealed Mounting
- X B-76717 Single Robe/Clothes Hook
- Y B-76727 Double Robe/Clothes Hook
- Z 1082 Series Solid Phenolic Shower Dividers with Shower Curtain Track in underside of headrail
- AA 1082 Series Solid Phenolic Dressing Compartments with Curtain Track in underside of headrail

**Fig. 33** Bathroom with Combination Tub/Shower Unit with Permanent Seat.



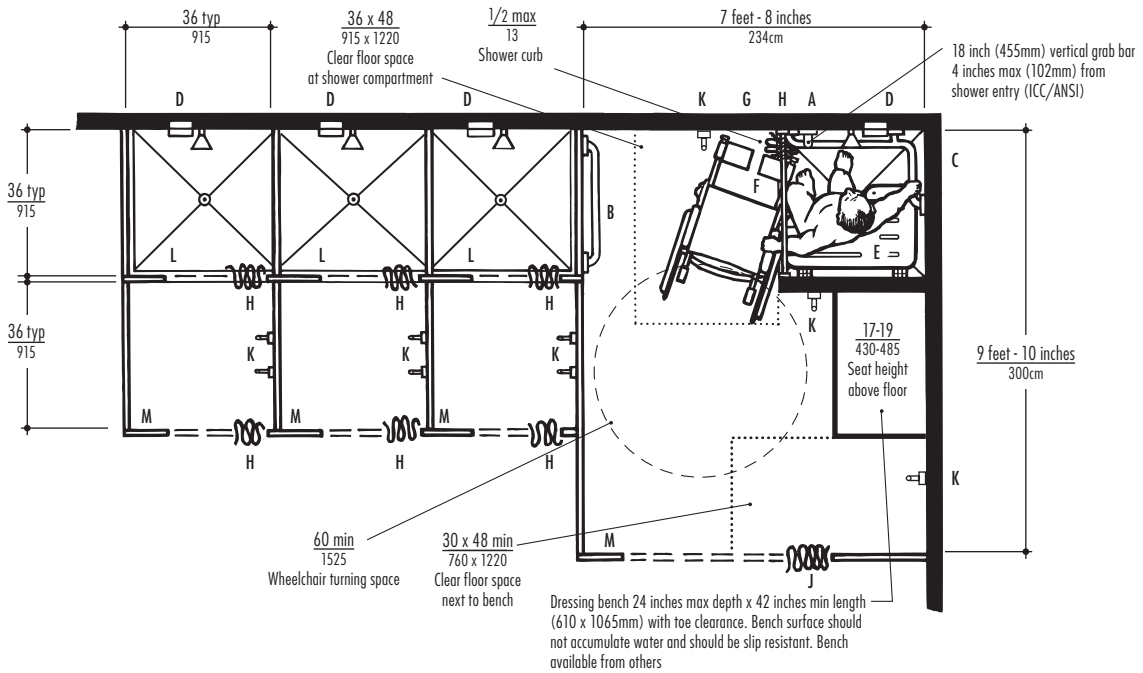
## DESIGN SOLUTIONS FOR MULTIPLE SHOWER COMPARTMENTS AND DRESSING COMPARTMENTS

**Fig. 34** Multiple Shower Installation with Enlarged Roll-in Shower Compartment and Dressing Compartment.



# DESIGN SOLUTIONS FOR MULTIPLE SHOWER COMPARTMENTS AND DRESSING COMPARTMENTS

Fig. 35 Multiple Shower Installation with Transfer Shower Compartment and Dressing Compartment.



## LEGEND

A B-5806.99 x 18 Vertical Grab Bar with Peened Grip  
 B B-5806.99 x 30 Horizontal Grab Bar with Peened Grip  
 C B-6861.99 Shower Grab Bar with Peened Grip,  
 15-7/8" x 30-1/8" (405 x 785mm)  
 D B-4380 Recessed Soap Dish

E B-5181 Reversible Folding Shower Seat, Solid Phenolic,  
 Right-Hand Seat  
 F B-6107 Shower Curtain Rod  
 G 204-1 Shower Curtain Hooks  
 H 204-2 Vinyl Shower Curtain, 42" W x 72" H  
 (1065 x 1830mm)

J 204-3 Vinyl Shower Curtain, 70" W x 72" H  
 (1780 x 1830mm)  
 K B-2116 Single Robe/Clothes Hook with  
 Concealed Mounting  
 L 1082 Series Solid Phenolic Shower Dividers with  
 Shower Curtain Track in underside of headrail

M 1082 Series Solid Phenolic Dressing Compartments  
 with Curtain Track in underside of headrail

## BIBLIOGRAPHY AND RESOURCES

*Accessible And Usable Buildings And Facilities, ICC/ANSI A117.1–2009.*

International Code Council  
500 New Jersey Avenue, NW, 6th Floor  
Washington, DC 20001  
American National Standard Institute  
25 West 43rd Street  
New York, NY 10036  
(Approved October 20, 2010)

For questions and technical information: 888-422-7233, Ext. 4306

*Significant Changes to the A117.1 Accessibility Standard, 2009 Edition.*

Woodward, Jay. ICC International Code Council.  
500 New Jersey Avenue, NW, 6th Floor.  
Washington, DC 20001. (2011)

*2010 ADA Standards for Accessible Design.*

U.S. Department of Justice  
(September, 2010)  
Website: [www.ADA.gov](http://www.ADA.gov)  
ADA Information Line 800-514-0301  
(Voice) or 800-514-0383 (TTY)

ADA National Network

(formerly, Disability and Business Technical Assistance Centers [DBTAC])

Website: [www.adata.org](http://www.adata.org)

Regional Information Line  
800-949-4232 [voice/tty]

*Guidance on the 2010 ADA Standards for Accessible Design.*

U.S. Department of Justice

(September 15, 2010)

Website: [www.ADA.gov](http://www.ADA.gov)

Additional copies may be obtained by calling the ADA Information Line:

800-514-0301 (voice)

800-514-0383 (TTY)

*Inclusive Child Care: Design Solutions for Creating More Usable Child Care Facilities,*

Young, Leslie C., Hawley, Marsha.

National Easter Seals Society,

Chicago, Illinois.

(2003).

<http://www.easterseals.com>

*Universal Design Principles.*

NC State University

(1997)

Website: [www.udinstitute.org](http://www.udinstitute.org)

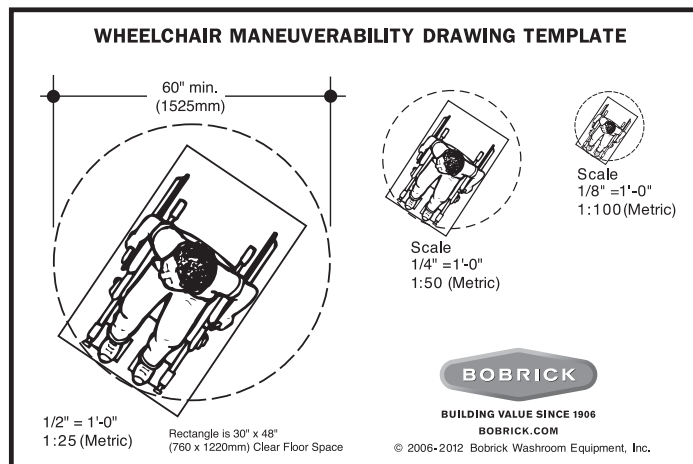
## ARCHITECTURAL REPRESENTATIVES

Bobrick has Architectural Representatives located throughout North America available to provide technical assistance with compliance of washroom layouts and equipment selection. They are backed by Bobrick's Architectural Services Department, which maintains extensive up-to-date files on building codes and engages in ongoing dialogue with code originators and enforcement agencies on a regular basis.

## CREDITS

Bobrick wishes to thank Ronald L. Mace, FAIA and Rex J. Pace for their invaluable contributions to the initial creation and previous editions of this planning guide. Bobrick also wishes to thank Richard Duncan, MRP, Executive Director, RL Mace Universal Design Institute, Chapel Hill, NC for assistance with the development of the 2012 publication.

## BOBRICK'S WHEELCHAIR MANEUVERABILITY DRAWING TEMPLATE



Three plan views of a person in a wheelchair are illustrated in scales of  $\frac{1}{8}'' = 1'-0''$  (1:100 metric),  $\frac{1}{4}'' = 1'-0''$  (1:50 metric), and  $\frac{1}{2}'' = 1'-0''$  (1:25 metric). The template is printed on clear rigid plastic so it can be placed over drawings to confirm proper wheelchair clearance and maneuverability. It is especially helpful in designing entrances, lavatory areas, and toilet compartments.



# BOBRICK WASHROOM EQUIPMENT, INC.

## LOS ANGELES:

### BOBRICK WASHROOM EQUIPMENT, INC.

11611 Hart Street, North Hollywood, CA 91605-5882

Corporate Offices: (818) 764-1000, FAX: (818) 765-2700

Customer Service: (818) 982-9600, FAX: (818) 503-9287

e-mail: [BobrickCustomerService@bobrick.com](mailto:BobrickCustomerService@bobrick.com)

## JACKSON, TN: 100 Bobrick Drive

Jackson, TN 38301-5625

(731) 424-7000, FAX: (731) 424-7800

## NEW YORK:

### BOBRICK WASHROOM EQUIPMENT, INC.

200 Commerce Drive, Clifton Park, NY 12065-1350

Customer Service: (518) 877-7444, FAX: (518) 877-5029

e-mail: [BobrickCustomerService@bobrick.com](mailto:BobrickCustomerService@bobrick.com)

## GAMCO COMMERCIAL RESTROOM ACCESSORIES

A Division of Bobrick

One Gamco Place, Durant, OK 74701-1910

(800) 451-5766, FAX: (580) 920-2050

e-mail: [mail@gamcousa.com](mailto:mail@gamcousa.com)

[WWW.GAMCOUSA.COM](http://WWW.GAMCOUSA.COM)

## KOALA KARE PRODUCTS

A Division of Bobrick

6982 S. Quentin St.

Centennial, CO 80112-3945

(888) 733-3456, FAX: (303) 539-8399

e-mail: [customerservice@koalabear.com](mailto:customerservice@koalabear.com)

[WWW.KOALABEAR.COM](http://WWW.KOALABEAR.COM)

## CANADA:

### BOBRICK WASHROOM EQUIPMENT COMPANY

45 Rolark Drive, Scarborough, Ontario M1R 3B1

Ontario East: (877) 423-6555, FAX: (877) 423-8555

e-mail: [customerserviceeca@bobrick.com](mailto:customerserviceeca@bobrick.com)

Manitoba West: (877) 423-6444, FAX: (877) 423-8444

e-mail: [customerservicewca@bobrick.com](mailto:customerservicewca@bobrick.com)

## INTERNATIONAL SALES: 11611 Hart Street

North Hollywood, CA 91605-5882 USA

+1 (818) 764-1000, FAX: +1 (818) 503-9941

e-mail: [international@bobrick.com](mailto:international@bobrick.com)

## AUSTRALIA:

### BOBRICK WASHROOM EQUIPMENT PTY.LTD.

1800 353158, FAX: 1800 221926

e-mail: [international@bobrick.com](mailto:international@bobrick.com)

## GERMANY:

### BOBRICK WASHROOM EQUIPMENT

0800 79 00 456, FAX 0800 79 00 789

e-mail: [info@bobrick.de](mailto:info@bobrick.de)

[WWW.BOBRICK.DE](http://WWW.BOBRICK.DE)

## UNITED KINGDOM:

### BOBRICK WASHROOM EQUIPMENT LTD.

+44 (0)20 8366 1771, FAX: +44 (0)20 8363 5794

e-mail: [uksales@bobrick.com](mailto:uksales@bobrick.com)

[WWW.BOBRICK.CO.UK](http://WWW.BOBRICK.CO.UK)



**BUILDING VALUE SINCE 1906**

**BOBRICK.COM**

NOTE: The information contained herein is of an advisory nature only and represents Bobrick's interpretation of the 2010 ADA and 2009 ICC/ANSI Standards referred to herein as of the date of publication. Bobrick assumes no responsibility for final code compliance. Users of this Planning Guide are advised to confirm all specifications with appropriate authorities. Due to the complexity of the Standards, and the potential for multiple, and even conflicting, interpretations of the Americans with Disabilities Act and 2010 ADA Standards for Accessible Design and ICC/ANSI A117.1 2009, it is recommended the layout of a restroom involve the services of a design professional proficient in accessible design.