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Bobrick is committed to providing the most up-to-date information on accessible and compliant restroom design. This 2022 update to our Planning Guide for Accessible Restrooms (Planning Guide) includes important changes that come from the 2017 Edition of *ICC A117.1 2017, Standard for Accessible and Usable Buildings and Facilities*. We are pleased to publish this, the fourth edition of our Planning Guide; the original edition having been published in 1993.

INTRODUCTION

The Americans with Disabilities Act (ADA) sets 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. In restroom design this means 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 *2017 Edition of ICC A117.1, Accessible and Usable Buildings and Facilities* (certified 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 *2017 Edition of ICC A117.1, Accessible and Usable Buildings and Facilities* (referred to as 2017 ICC 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's Architectural Representatives are available to assist with the application of appropriate product specifications and installation criteria.

Bobrick has prepared this Planning Guide for use by planners, architects, designers, specifiers, building owners and facilities/property managers.

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.

Nothing in the 2010 ADA Standards 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.

The new ICC A117.1-2017 Standards, published in May 2017, will become widely effective as jurisdictions adopt this latest version. The 2021 Edition of the International Building Code (IBC) refers to ICC 2017 A117.1. As most jurisdictions adopt IBC 2021, in 2021 and 2022, they will be enforcing 2017 ICC A117.1. In recent years, states such as California, Hawaii, Massachusetts and Texas have not adopted the A117.1 standard. Instead they have harmonized their accessibility standards with the 2010 ADA Standard or believe their states' accessibility standards exceed the minimum ADA requirements. Because the 2017 ICC 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 2017 ICC 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 2017 ICC Standards will frequently be the accessibility standard that is incorporated into or referred to by local/state building codes, the 2017 ICC 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 ICC and ADA jurisdiction, the more stringent of the two standards should be followed.

Over the next two years, most jurisdictions in the country will be transitioning from the dual accessibility requirements of the 2010 ADA Standards and the 2009 ICC Standards to the accessibility requirements of the 2010 ADA Standards and the 2017 ICC Standards. Two state jurisdictions that take a different approach are Texas and California. As referenced above, these two states' building codes refer to the 2010 ADA standards with certain changes. **To help the building industry ensure compliance with all relevant accessibility standards in restrooms, Bobrick has created an Accessibility Standards Comparison Chart that outlines important requirements for all areas of restrooms. The Chart outlines five important reference documents: 2010 ADA Standards, 2009 ICC Standards, 2017 ICC Standards, the 2012 Texas Accessibility Standard, and 2019 California Building Code Title 24. The Chart is viewable and downloadable on the Bobrick Website; located under Resource Center, Tools, Accessibility Standards Comparison https://www.bobrick.com/wp-content/uploads/Accessibility_Standards_Comparison_Chart.pdf.**

2017 ICC STANDARDS

While substantially similar, important differences between the 2009 ICC Standards and the 2017 ICC Standards are outlined here as well as being incorporated into the body of the Planning Guide. There are significant changes in the ICC A117.1-2017 Edition that impact restrooms.

For the first time, the 2017 ICC Standards make a distinction between some dimensional requirements when applied to new buildings versus existing buildings. The 2017 ICC Standards require larger clear floor space dimensions for new buildings, based on the increased size of three basic space requirements: wheelchair clear floor space; circular wheelchair turning space; and T-shaped wheelchair turning space. The 2017 ICC Standards have retained the smaller dimensions found in the 2010 ADA Standards and the ICC 2009 Standards for existing buildings. Several of the more important changes are listed here:

1. **Wheelchair Clear Floor Space** in new buildings, 30 inches by 52 inches (760 by 1320mm) minimum; in existing buildings, no change, 30 inches by 48 inches (760 by 1220mm) minimum.
2. **Circular Wheelchair Turning Space** in new buildings, 67 inches (1700mm) minimum diameter; in existing buildings, no change 60 inches (1525mm) minimum diameter.
3. **T-Shaped Wheelchair Turning Space** in new buildings, 68 inches minimum by 60 inches minimum (1725 by 1525mm) rectangle with arms and base minimum 36 inches (915mm) wide. Also, two 64 inches minimum by 60 inches minimum (1625 by 1525mm) options each with different side arm dimensions, 38 inches minimum and 40 inches (965 by 1015mm) minimum; existing buildings, no change 60 inches by 60 inches (1525 by 1525mm) minimum square space with arms and base minimum 36 inches (915mm) wide.
4. **Alternate Wheelchair Accessible Toilet Compartment**: 60 inches minimum width by 84 inches minimum (1525 by 2135mm) depth
5. **Ambulatory Accessible Toilet Compartment** width range 35 inches (890mm) minimum to 37 inches (940mm) maximum; (was 36 inches (915mm) absolute width).
6. **Toe Clearance** remains at 12 inches (305mm) high but now must extend 8 inches (205mm) (was 6 inches (150mm) beyond compartment front and one side, exclusive of partition stiles. Toe clearance at front and side is not required on compartment greater than 67 inches (1700mm) in depth and 68 inches (1725mm) in width (was 65 inches (1650mm) in depth and 66 inches (1675mm) in width).
7. **Transfer Shower Compartment Clearance** adjacent to compartment opening in new buildings, 52 inches minimum length by 36 inches (1320 by 915mm) minimum depth; in existing buildings, 48 inches minimum length by 36 inches (1220 by 915mm) minimum depth
8. **Exception added to Toilet Tissue Dispensers.** Dispensers that accommodate two rolls not more than 5 inches (125mm) in diameter are permitted to be located 7 inches (180mm) minimum to 9 inches (230mm) maximum from dispenser centerline to leading edge of the toilet. Dispenser outlet shall be 15 inches (380mm) minimum and 48 inches (1220mm) maximum above the floor.

FEDERAL BUILDINGS

Federal buildings are not covered by the ADA, following the provisions of the Architectural Barriers Act (ABA) instead. However, the requirements of the ABA are almost the same as the ADA requirements for state and local governments. In most cases, a federal project will conform to local accessibility requirements where the local requirements are stricter. Some federal agencies extend scoping and technical requirements in limited number of areas. For instance, the General Services Administration adds coverage in accessibility requirements for employee areas and additional requirements for single use restrooms. Please use this link for information on the ABA Accessibility Standards www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-aba-standards.

HYGIENE, HEALTH AND WELLNESS

After accessibility compliance, restrooms should be designed and maintained to support hygiene best practices. These practices may include:

- Adding space for maintaining 6 feet (1830mm) physical waiting distance at lavatories, toilet compartments, and urinals.
- Using full height toilet and urinal partitions to provide extra privacy as well as limiting the spread of airborne particles.
- Locating fixtures and accessories to minimize water droplets on floors and countertops after hand washing.
- Reduce touchpoints on shared surfaces multiple people touch with their hands daily and must be cleaned every day.
- Close-off alternating lavatories, toilet compartments and urinals to support physical distancing within restrooms.
- Provide a hand sanitizer dispenser, a paper towel dispenser and a waste disposal in toilet compartment interiors, at entry and exits doors to ensure optimal hand-hygiene and patrons' piece of mind inside and exiting the toilet compartment and exiting the restroom.
- Using non-porous materials that also minimize crevices and cracks.
- Limiting restroom occupancy by using occupancy indicators at entry doors and scheduling restroom use in office environments.

COVID 19's effects also emphasize design considerations that have been in use in many places for a long time:

- Proper hygiene and maintenance with increased emphasis on staff training, cleaning frequency, and use of EPA approved disinfectants
- Touchless operation, by installing touchless faucets, toilets, urinals, soap dispensers, and paper towel dispensers; using recessed hand dryers where hands are dried within a cabinet alcove.
- Doorless entries, which will help avoid possible microbe spread by avoiding doors and door hardware that are touched by many individuals
- Indoor air quality, by creating ventilation systems that maximize the introduction of outside air and help prevent microbial spread.

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.

Privacy

Shifting attitudes are compelling designers and building owners to double down on privacy efforts. A large proportion of today's restroom users view privacy as a key amenity. Further, as all-gender restrooms rise in popularity and may even be required by law in public facilities in some states, privacy has taken a key role in dialogues surrounding restroom design. Beyond gender-inclusive restrooms, patrons are desiring more privacy, especially those who have various health and/or personal needs, such as: caregivers, nursing mothers, elderly individuals with health issues, and those who suffer from chronic health conditions, such as diabetics who require insulin injections.

There are several avenues through which privacy can be achieved, including with the increasingly common practice of providing single-user restrooms. Toilet partition design, however, offers a balance of practicality and privacy that other solutions in multiple-user restrooms cannot. Door and stile designs that are "gapless" eliminate sightlines into a toilet compartment interior for added privacy and peace of mind. Because full height partitions lack toe clearance, the accessible toilet compartments in which they are used must be greater than 68 inches (1725mm) wide and 64 inches (1625mm) deep with a wall-hung toilet or 67 inches (1700mm) deep with a floor-mounted toilet.

SHIFTING DEMOGRAPHICS

Over the past sixty years, the US has seen a growth in the numbers of two important groups: people with disabilities and older adults. The disability community has been considered the primary user group for accessibility standards for 40+ years. The standards-setting groups paid particular attention to performance issues around the needs of persons with disabilities, and especially for people who used wheelchairs and the space the wheelchairs require. Wheelchair dimensions and movements 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 particular limits on the 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 increase in the numbers of older adults has contributed to the growth in the number and variety of scooters that are being used. Scooters have different sizes, use parameters and can be larger and need even more space to maneuver when compared to wheelchairs. With the 2017 ICC Standards, accessibility standards are now beginning to reflect these trends. Designers should take care to provide the extra space that larger mobility equipment devices require. Our aging society has contributed to another development in restroom requirements. The accessibility 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, sanitary napkin/tampon vendors, and toilet partition-mounted equipment, including grab bars, toilet tissue, and seat-cover dispensers, and sanitary napkin disposals.

While the accessibility standards were created to principally benefit people with particular disabilities, demographic trends and 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, as employees, visitors, and customers.
- Adults who need assistance with their restroom activities.
- Parents attending to their children using strollers and baby changing activities.
- Users of alternate mobility equipment such as 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, 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.

MULTIGENERATIONAL RESTROOMS

The aging of society means that increasingly our workforce, customers, and visitors are over 55 years old, and family and social groupings that travel together into the community include both young and old. As the United States becomes increasingly diverse, facilities must accommodate by becoming more inclusive. Accommodating these multigenerational groupings is a growing design trend in architecture and interior design.

Multigenerational design merges a number of social issues, design philosophies and facility considerations including universal design, accessibility, specialized equipment, maintenance, sustainability, privacy, health and safety, hygiene and aging in place.

Included 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 and single-user restrooms. These restrooms will accommodate the changing needs for children and adults, as well as accommodate older individuals who need assistance, particularly when the assistance comes from opposite gender caregivers.

UNIVERSAL DESIGN

The accessibility standards are often described as legal minimums and contain numerous of these 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 2017 ICC 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 pages 8 to 13).

Other Universal Design features to consider include:

Routes of travel – Plumbing fixtures and restroom accessories are arranged to allow unobstructed routes of travel through the restroom and to each element. Compliance with accessibility standards would tend to lead to this outcome but with this as an explicit objective in restroom space planning, designers can assure more convenience and greater utility.

Touchless controls – For people with limitations in reach or grasp, touchless controls mean that they successfully operate more key restroom functions.

Door-free restroom entrances in larger restrooms – For people with reach or grasp limitations, for those who use mobility equipment, or those with packages or luggage, avoiding the need to maneuver through and around hinged doors makes that path of travel much easier.

Grab bars at urinals – Ambulatory accessible compartments are required in larger restrooms. These special compartments serve the needs of people who can walk but who may have strength or balance issues that are helped by the use of horizontal and vertical bars. Similarly, some individuals may be able to use a urinal successfully with the addition of vertical bars next to a urinal.

Full height mirrors – Full-height vertical mirrors allow people who are tall, short, seated, or children to have a complete view of themselves.

Shower compartments – It is recommended shower compartments be deeper than the minimums allowed in the accessibility standards, 30 inches (760mm) deep. Preferred shower depths of 48 inches (1220mm) or 60 inches (1525mm) will better contain the water within the shower compartment, and will allow easier use for those who use shower chairs, and use by individuals and their caregivers.

NOTES FOR ALL FIGURES IN THIS PLANNING GUIDE

1. This edition of the Planning Guide for Acessible 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: 48/1220.

2. In certain figures with whole restrooms, overall room dimensions are given in feet and inches with the metric dimension listed in centimeters (cm).

3. Bobrick product references are provided for many restroom layout fixtures. See Appendix of Layout Figures with Product Legends on pages 44 to 61. Not all figures and standards' references have a corresponding Bobrick product.

4. Grab bar length is always measured to the center of the mounting flange. While neither standard requires that grab bars be located with reference to the center of the mounting flange, this Planning Guide has adopted this convention. This Guide also shows centerline dimension lines where appropriate for locating grab bars. Both standards locate the height of horizontal grab bars from finish floor to the top of the gripping surface.

5. All childrens dimensions are shown in blue

DIMENSIONAL NOTES

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 2017 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 1-1/2 inches is an absolute requirement, avoid specifying 1-1/2 inches plus or minus "X" inches.

CLEAR FLOOR SPACE AT CERTAIN RESTROOM LOCATIONS

Note: All dimensions are minimums

1. **Clear Floor Space at Lavatory and Accessories** 2017 ICC New Buildings, 30 x 52 Inches, (760 x 1320mm) 2010 ADA, 2017 ICC Existing Buildings, 30 x 48 inches, (760 x 1220mm)

2. **Clear Floor Space at Toilet in Accessible Compartment**
   56 x 60 inches (1420 x 1525mm)

3. **Clear Floor Space at Adult Changing Station** across the length of changing station and on at least one end. 36 inches (915mm) deep - proposed

4. **Clear Floor Space at Bath Tub (with permanent seat)** 30 inches (760mm) wide by length of tub, plus seat (15 inches (380mm)), plus 12 inches (305mm). For example, with a 60 inches (1525mm) long tub, 30 x 87 inches (760 x 2210mm).

5. **Clear Floor Space at Bath Tub (without permanent seat)** 30 inches (760mm) wide by length of tub. For example, with a 60 inches (1525mm) long tub, 30 x 60 inches (760 x 1525mm).

6. **Clear Floor Space Next to Shower Room Bench** 2017 ICC New Buildings, 30 x 52 Inches, (760 x 1320mm) 2010 ADA, 2017 ICC Existing Buildings, 30 x 48 inches, (760 x 1220mm)

7. **Clear Floor Space at Standard Roll-in Shower Compartment**
   30 x 60 inches, (760 x 1525mm)

8. **Clear Floor Space at Transfer Shower Compartment** 2017 ICC New Buildings, 36 x 52 Inches, (915 x 1320mm) 2010 ADA, 2017 ICC Existing Buildings, 36 x 48 inches, (915 x 1220mm)

REACH RANGES AND SPACE REQUIREMENTS

Fig.1 Mounting Heights for Restroom Accessories.

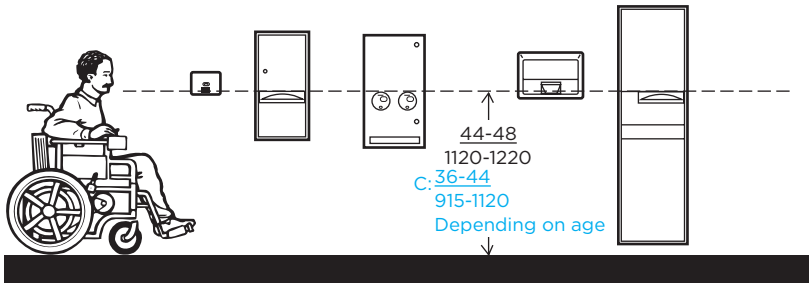


Fig.1a Upper Range of Mounting Heights for Restroom Accessories with Operable Parts.

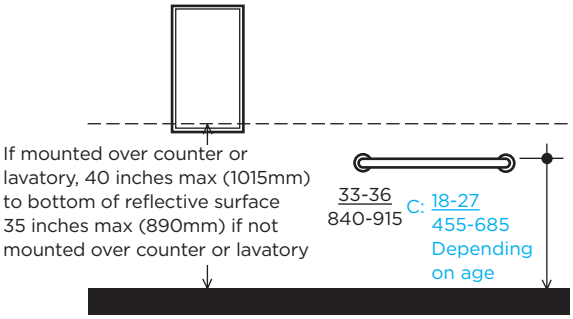


Fig.1b Mirror and Toilet Grab Bar Mounting Heights.

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, outlets, or dispenser openings – located no more than 48 inches (1220mm) above the finish floor (Fig. 1a). Where accessories are mounted above obstructions such as counters or waste receptacles, 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.

Accessories mounted on, behind and above standard depth lavatory counters of between 20 to 25 inches (510-635mm) are limited to a maximum mounting height of 44 inches (1120mm) above the floor to the operable portion, for a forward approach.

The operable portions of any accessory should be mounted no lower than 15 inches (380mm) above the floor. However, the 2017 ICC Standards limit the operable portions of dispensers in toilet compartments to no lower than 18 inches (455mm) (Fig. 17c).

The 2017 ICC Standards require that soap dispenser controls and faucets that serve certain accessible lavatories - in larger restrooms having six or more lavatories, at least one lavatory with enhanced reach ranges shall be provided - need to be installed with a reach depth of 11 inches (280mm) maximum (Figs. 2, 2a). Only one set of these controls and faucets needs to be provided in restrooms that require them, regardless of the additional fixtures provided (Fig. 2a).

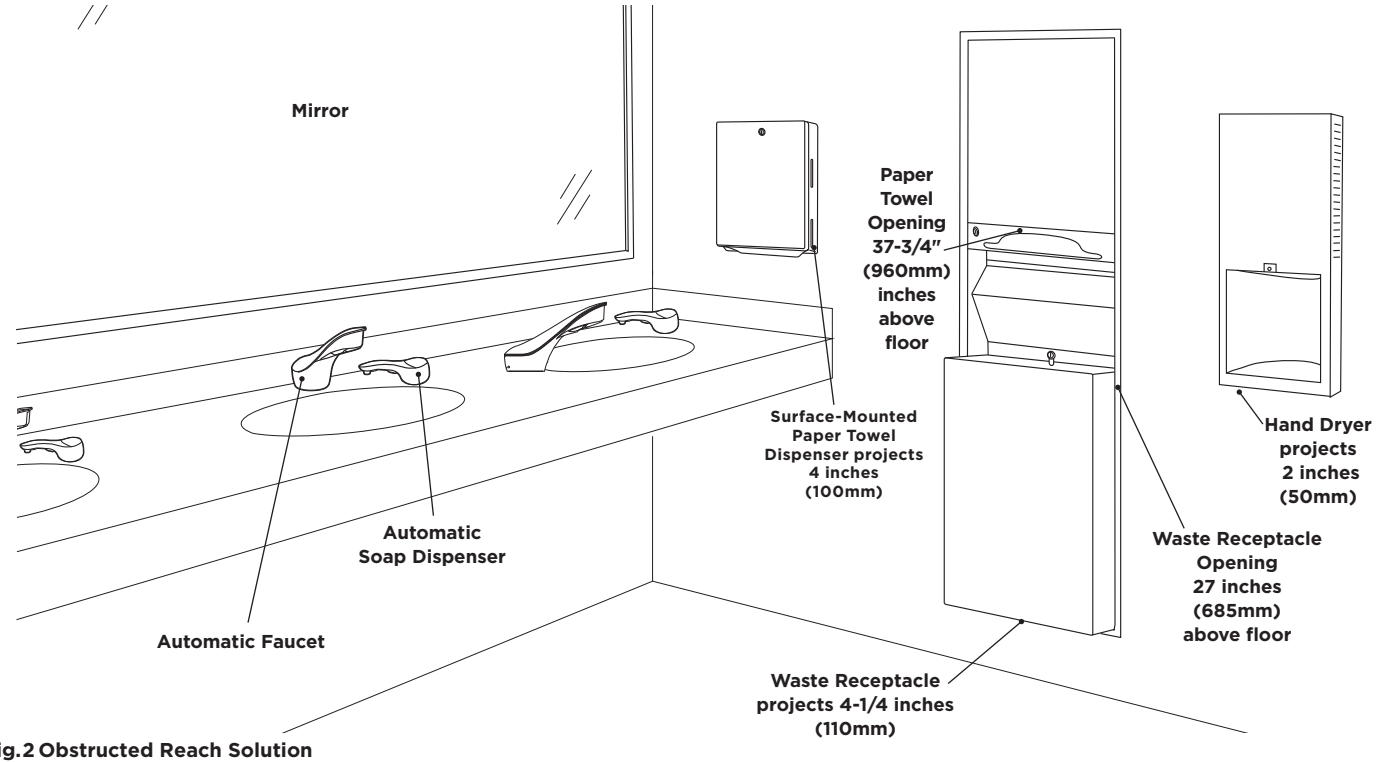
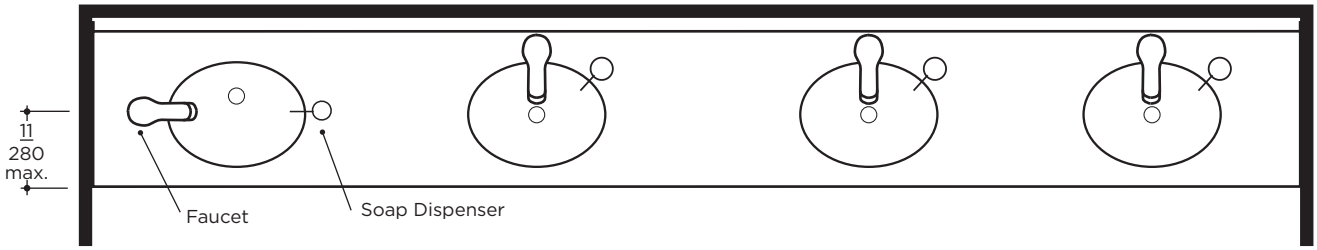


Fig.2 Obstructed Reach Solution

Figures not to scale

Fig. 2a Obstructed Reach.



Separately, the 2017 ICC Standards also require altered installation heights and locations for paper 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 (Fig. 2). The operable portions of these elements may need to be installed as low as 34 inches (865mm) 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)

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)
VERTICAL GRAB BAR HEIGHT	18 inches (455mm) grab bar. Horizontal location, 34 inches to 36 inches (865mm to 915mm) from rear wall. Vertical location, bottom 21 inches to 30 inches (535mm to 760mm) from floor.		
HORIZONTAL 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)

Figures not to scale

The 2017 ICC Standards have Established New Dimensional Requirements for Clear Floor Space to accommodate a single wheelchair in newly constructed structures while keeping the dimensions the same as the 2009 ICC Standards for existing buildings. The larger 2017 ICC Standards maintain the same minimum width of 30 inches (760mm) but the clear floor space is expanded to a minimum of 52 inches long (1320mm) for new buildings. The unchanged 2010 ADA Standards remains at minimum 30 inches wide and minimum 48 inches long (760 x 1220mm) for both new buildings and existing buildings. The 2017 ICC Standards require a minimum of at least 30 inches by 48 inches (760 by 1220mm), for existing structures. 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 (See Fig. 3 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.

Fig.3 Clear Floor Spaces.

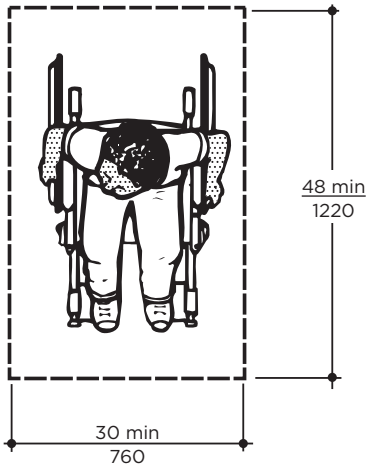


Fig.3a 2010 ADA, 2017 ICC Existing Buildings

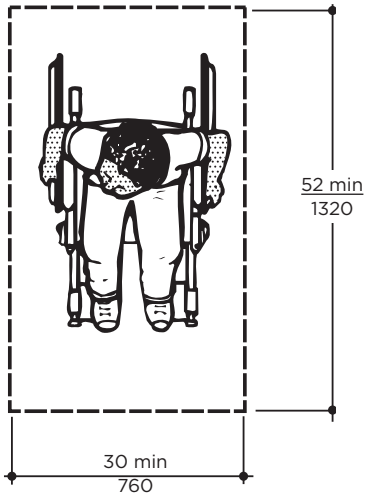


Fig.3b 2017 ICC New Buildings

TURNING SPACES

Circular turning spaces have also been enlarged in the 2017 ICC Standards for newly constructed buildings. The enlarged turning diameter is 67 inches (1700mm) (Fig. 4a). Just as with clear floor spaces, the prior standard may be used for existing buildings, in this case a 60 inches (1525mm) circular space (Fig. 4b). The circular space allows a person using a wheelchair to make a 180-degree or 360 degree turn.

Fig.4 Wheelchair Turning Spaces.

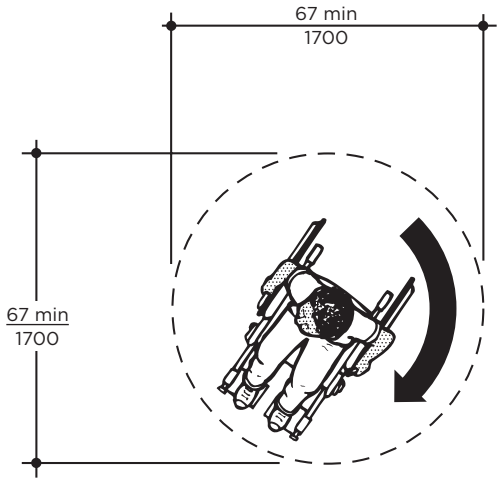


Fig.4a 67 inches (1700mm) Diameter Turning Space.
2017 ICC
New Buildings

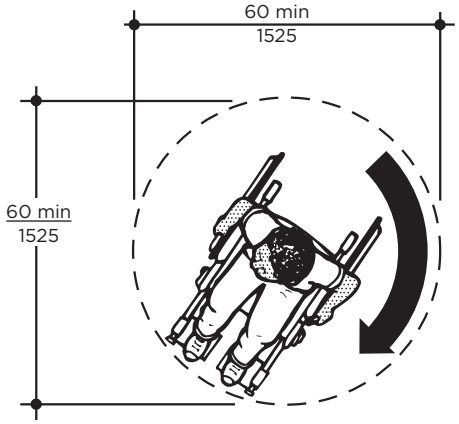


Fig.4b 60 inches (1525mm) Diameter Turning Space.
2010 ADA, 2017 ICC
Existing Buildings

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Turning Space, New Construction. The allowed knee and toe space overlap is restricted to 10 inches (255mm). (Fig 4c).

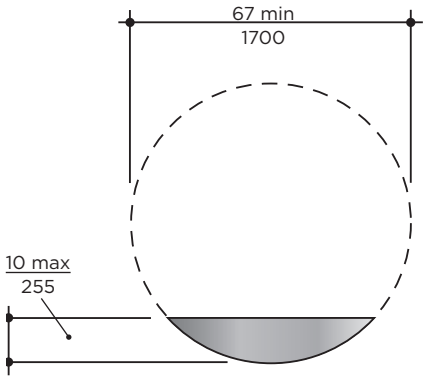


Fig. 4c 67 inches (1700mm) Overlap knee and toe clearance. 2017 ICC New Buildings

Turning space for existing buildings. The allowed knee and toe space overlap remains at a maximum of 25 inches (635mm) (Fig. 4d).

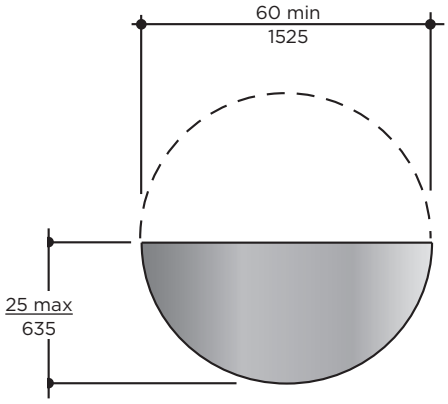


Fig. 4d 60 inches (1525mm) Overlap knee and toe clearance. 2010 ADA, 2017 ICC Existing Buildings

T-Shaped turning spaces may be used in lieu of a circular turning space. The T-Shaped space allows for a three-point-turn and may be used to conserve space in some installations. For existing buildings, the prior standard may be used with a 60 inches (1525mm) square minimum with arms and base

Fig. 5 T-Shaped Turning Spaces.

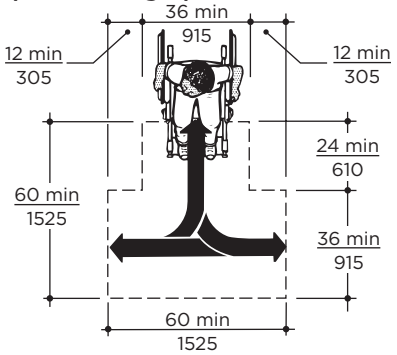


Fig. 5a T-Shaped Turning Space. 2010 ADA, 2017 ICC Existing Buildings

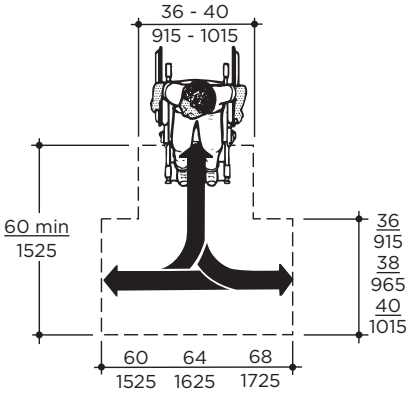


Fig. 5b T-Shaped Turning Space 2017 ICC Standards

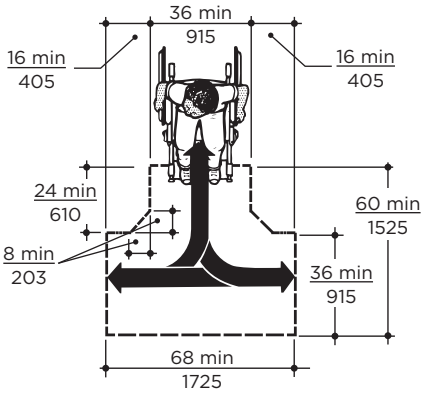


Fig. 5c T-Shaped Turning Space. 2017 ICC New Buildings

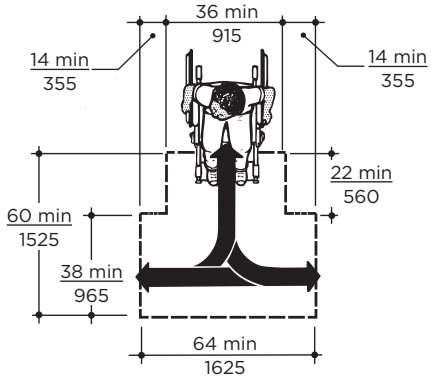


Fig. 5d T-Shaped Turning Space. 2017 ICC New Buildings

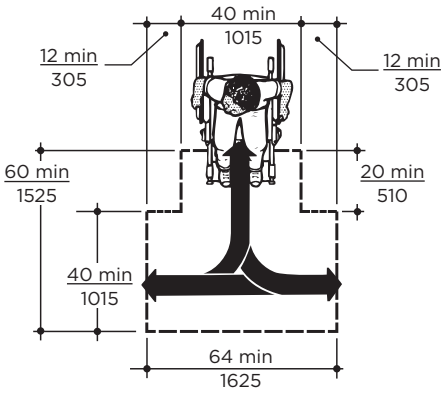


Fig. 5e T-Shaped Turning Space. 2017 ICC New Buildings

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minimum 36 inches (915mm) wide (Fig. 5a). For new buildings, three T-Shaped spaces are provided in the 2017 ICC Standards with different, larger configurations (Fig. 5b). One larger configuration has a 68 inches by 60 inches minimum (1725 by 1525mm) rectangle with arms and base minimums 36 inches (915mm) wide (Fig. 5c). Two other T-shaped turning spaces have 64 inches by 60 inches minimum (1625 by 1525mm) options each with different side arm dimensions (38 inches minimum and 40 inches minimum) (965mm and 1015mm) (Fig. 5d, 5e). A portion of the circular 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. 4c, 4d).
The end of either arm or the base may be used as part of overlapping knee and toe space.

Turning Space for Existing Buildings. The allowed knee and toe space overlap remains at a maximum of 25 inches (635mm). (Fig 4d).

Turning Space, New Construction. The allowed knee and toe space overlap is restricted to 10 inches (255mm). (Fig 4c).

Areas affected by the larger space requirements in new buildings include:

- Clear floor space at lavatories
- Clear floor space at wall mounted accessories – baby changing station, mirror, paper towel dispenser, hand dryer, soap dispenser, waste receptacle
- Clearances around some doors and doorways
- Clearances in some hallways, including around certain turns and passing locations
- Clear floor space at transfer showers
- New, larger optional Accessible Toilet Compartment, Alternate Wheelchair Accessible Toilet Compartment

Areas not affected by the larger space requirements in new buildings include:

- Size of standard accessible toilet compartments
- Clear floor space at toilets in standard accessible toilet compartments
- Clearances around toilet compartment doors
- Clear floor space next to tubs
- Shower size

PLANNING AN ACCESSIBLE RESTROOM

Begin with Restroom Entrance and Exit for all restroom entries. Note the importance of approach direction 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. Note also that, for new buildings, the 2017 ICC Standards have increased dimensional clearances around certain doors and doorways and in some hallways, including around certain turns and passing locations. Meeting or exceeding the minimum maneuvering clearances at doorways is an important aspect in design to ensure proper access. All figures in the Planning Guide meet or exceed the new clearance requirements.

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. 6a, 6b). 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. 6 Accessible Shower Thresholds.



Fig. 6a Vertical Change in Level.

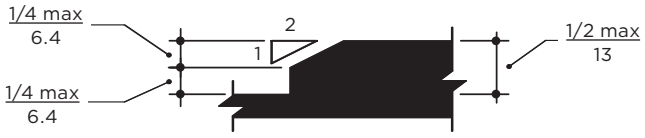


Fig. 6b Beveled Change in Level.

Doors for interior use must push or pull open with a maximum of 5 pounds of force (lbf) (22.2N). 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. The 2017 ICC Standards have added force maximums for hardware itself: 15 lbs. (66.7N) for pushing and pulling and 28 inch-pounds (315N-cm) for rotational motion. 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.

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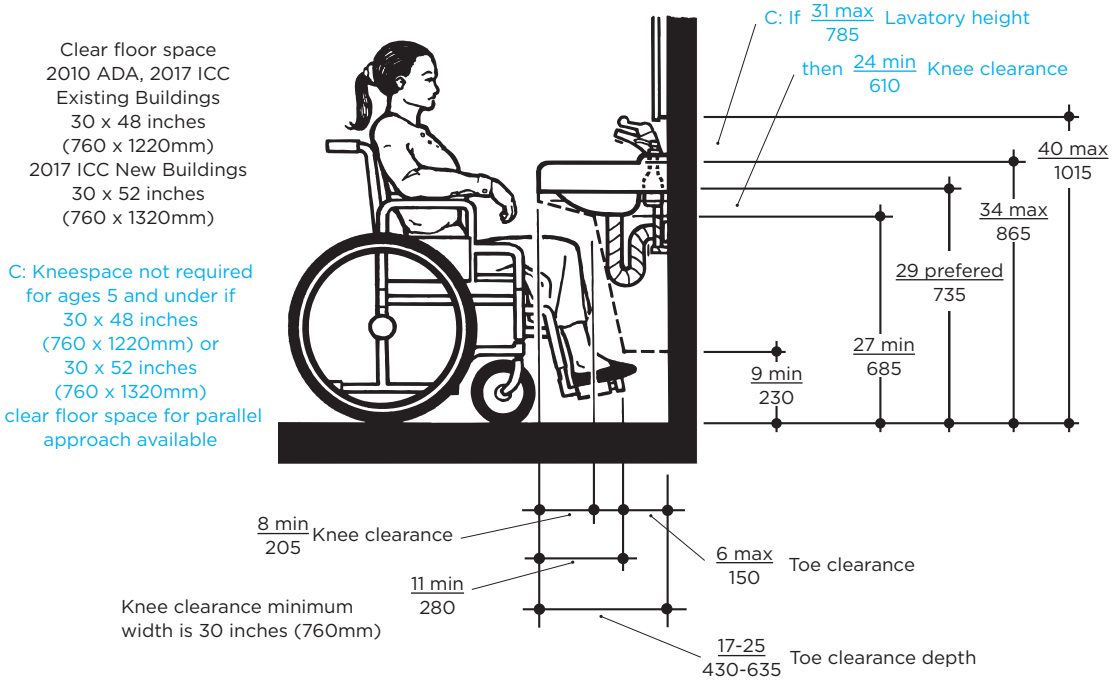
SPECIAL CONSIDERATIONS FOR LAVATORIES

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 the 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. 7). 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.

While the knee and toe clearances beneath lavatory counters has not changed, the 2017 ICC Standards limit the overlap beneath lavatories in a turning circle to only 10 inches (255mm) in new buildings. Existing buildings are allowed a 25 inches (635mm) overlap. An additional restriction in the 2017 ICC Standards limits the overlap to no more than the provided knee and toe depth. Likewise, the 2017 ICC Standards increase the required forward approach clear floor space in front and under the lavatory to 30 inches wide by 52 inches deep (760 by 1320mm) minimum. Existing buildings are allowed to maintain the previous clearance of 30 inches wide by 48 inches deep (760 by 1220mm) minimum. Complete the design by providing the required amount of toe clearance underneath the lavatory of 17 inches (430mm) to 25 inches (635mm) maximum, keeping in mind that the reach to faucets and soap dispensers can't exceed the maximum toe clearance. 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 and the 2017 ICC Standards for 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. 7). A recommended design solution is to install a removable protective panel under the lavatory (Fig. 8).

Fig. 7 Lavatory Clearances.

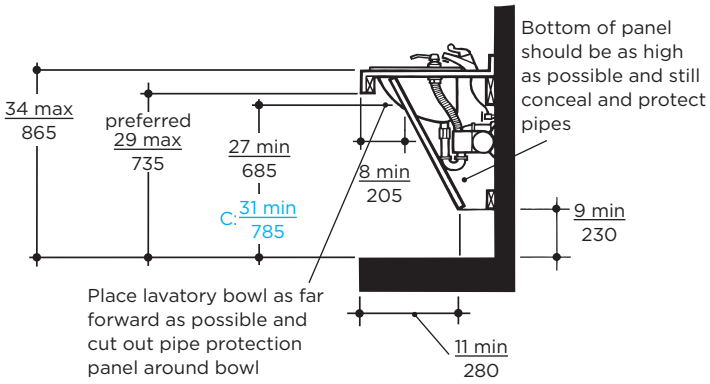


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CONTROLS AND OPERATING MECHANISMS

Faucets, toilets, and restroom accessories must meet the 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) (22.2N). 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.

Fig. 8 Protective Panel Under Lavatory.



ACCESSORIES PROVIDE AMENITIES IN RESTROOMS

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 alcoves, or between other structural elements. Fully recessed accessories are the recommended choice throughout universally designed restrooms**. When determining the mounting location of all restroom accessories, make sure to account for side and forward approaches and left- and right-hand use.

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. 7). 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 the 2010 ADA Standards for controls and operating mechanisms be used throughout restrooms to provide universal usability. When soap dispensers are mounted above a lavatory countertop that is more than 20 inches (510mm) deep, the maximum mounting height is 44 inches (1120mm) above the finish floor. The 2017 ICC 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. See Figs. 2, 2a and Reach Range Tables on page 10.

Towel Dispensers, Waste Receptacles and Warm-Air Hande 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. (See Figs. 2, 2a).

The 2017 ICC Standards require altered installation heights and locations for paper 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). See Figs. 2, 2a and Reach Range Tables on page 10.

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 the 2010 ADA Standards for operating mechanisms, clear floor space and accessible mounting heights to provide

Figures not to scale

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 are increasingly found in men's and women's restrooms and in single-user ("family") restrooms as well (Fig. 9). While not required by the accessibility standards, baby changing stations (BCS) are widely regarded as an important or even essential feature in many facilities, especially those facilities that serve families. 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 the 2010 ADA Standards and the 2017 ICC Standards, which address clear floor space in new and existing buildings. The 2017 ICC Standards require 30 inches by 52 inches (760 by 1320mm) minimum at baby changing stations in new buildings. The clear floor space required in existing buildings by the 2017 ICC Standards is 30 inches by 48 inches (760 by 1220mm), the same dimensions as the 2010 ADA Standards. Unchanged from prior accessibility standards is the 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 (the working surface is the surface where child is placed, not the rim of the changing bed) in the down position, 34 inches maximum, (865mm), knee space (27 inches to underside (685mm)) and toe space beneath (17 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.

With the 2024 IBC, Adult Changing Stations, used in a similar way as baby changing stations, are now required in accessible single-user restrooms at certain restroom locations. (See IBC 2024 sections 1110.2 - 1110.4.4) The technical requirements for the products, installation, and clearances can be found in the 2017 ICC Standards, Supplement 1, new Section 613. The adult changing stations need to be adjustable height and are subject to some of the same clearance and control standards as changing stations for children (see Fig. 27)

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. 9b). 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. 9 Accessories for Infants and Small Children.

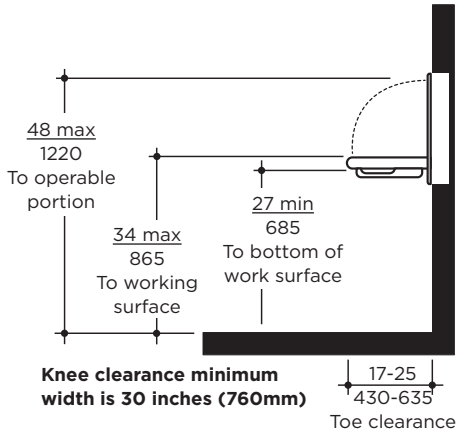


Fig. 9a Baby Changing Station.

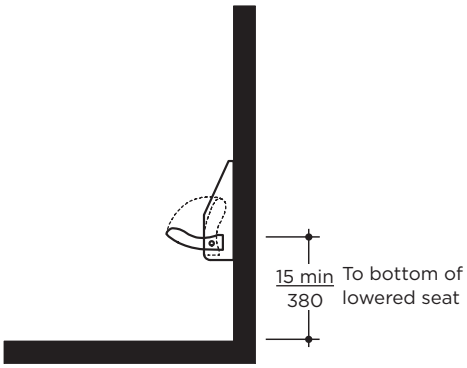


Fig. 9b Child Protection Seat.

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ACCESSIBLE TOILET COMPARTMENTS ARE REQUIRED IN ALL PUBLIC RESTROOMS

The basic wheelchair accessible toilet compartment design that is shown in accessibility standards is the Wheelchair Accessible Toilet Compartment (Fig. 10).

A variant of a wheelchair accessible compartment is shown in the 2017 ICC Standard and in this Planning Guide, labeled Large Wheelchair Accessible Toilet Compartment (Fig.11).

The 2017 ICC Standards includes these two wheelchair accessible compartments and adds a third, the Alternate Wheelchair Accessible Toilet Compartment, with 60 inches minimum width by 84 inches (1525 by 2135mm) minimum depth (Fig. 12). The wheelchair accessible compartments accommodate people who use wheelchairs and who transfer onto a toilet using a variety of positions and procedures.

Large Wheelchair Accessible Toilet Compartment (Fig. 11) 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. 11 Large Wheelchair Accessible Toilet Compartment.

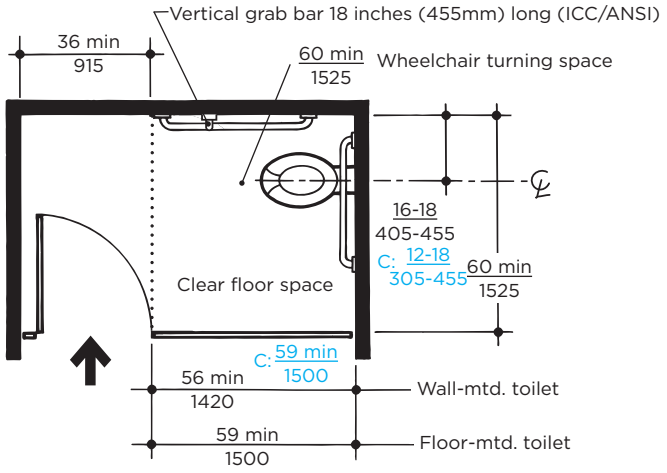


Fig. 12 Alternate Wheelchair Toilet Compartment.

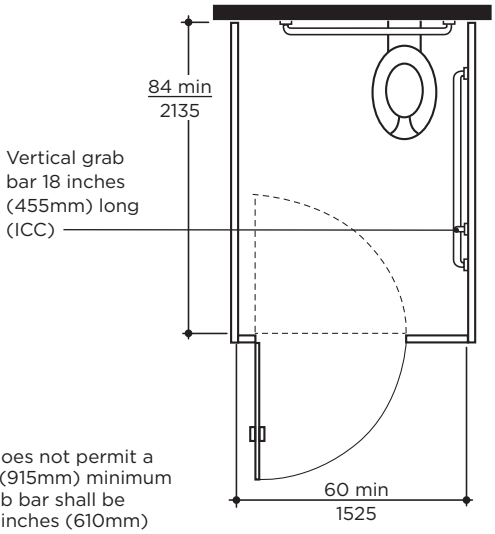
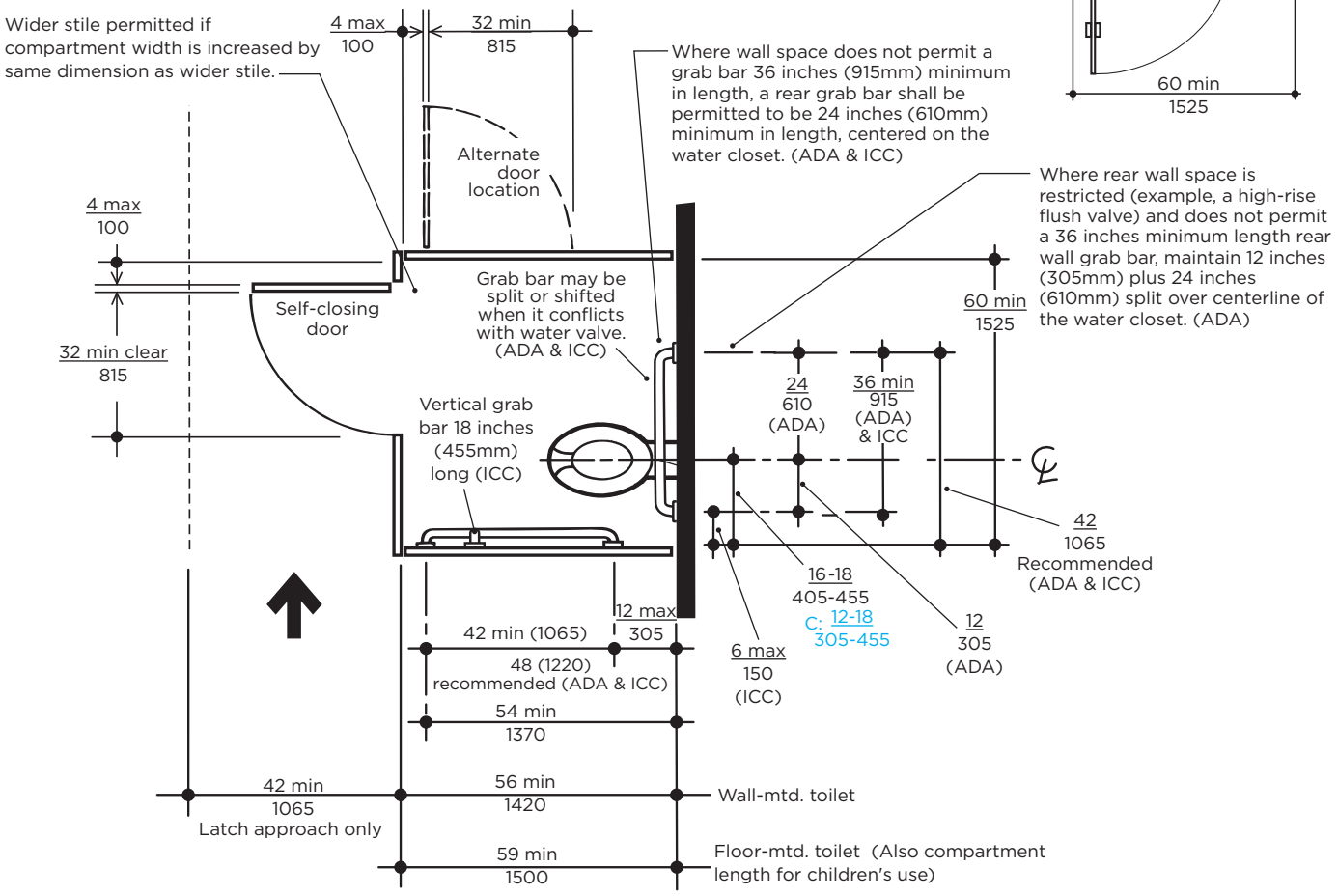


Fig. 10 Wheelchair Accessible Toilet Compartment.



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Wheelchair Accessible Toilet Compartment (Fig. 10) 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, however a circular wheelchair turning space is not required inside the wheelchair accessible toilet compartment unless a lavatory is included. **It should be noted that the larger clear floor space and turning requirements in the 2017 ICC Standards have not changed the required sizes of accessible compartments, in new construction or existing buildings.** With standard front entry wheelchair accessible toilet compartments such as shown in Fig. 10, it should be noted that the 4 inches wide stile may be increased in width if the compartment width is equally increased.

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) high projecting no more than 4 inches (100mm), to complete the design.

Intended to provide better access for forward approach to a toilet for someone who uses a mobility device, the Alternate Wheelchair Toilet Compartment requires a minimum 60 inches width (1525mm) and an 84 inches length (2135mm) (Fig. 12). As with the Large Wheelchair Accessible Toilet Compartment (Fig. 11), the 2017 ICC Standard allows for an in-swinging door in the Alternate Accessible Wheelchair Toilet Compartment.

The 2017 ICC Standard shows a side opening Wheelchair Accessible Toilet Compartment with a shorter length (Fig. 13). The side door entry allows adequate maneuvering. But this option would have to be documented as equivalent facilitation since it is not offered in the 2010 ADA Standards.

Ambulatory Accessible Toilet Compartment The 2010 ADA Standards and the 2017 ICC Standards also provide an additional compartment that addresses the needs of people who are ambulatory, the Ambulatory Accessible Toilet Compartment (Fig. 14). has a depth of 60 inches (1525mm) minimum with all accessibility standards now allowing a range of 35 inches (890mm) to 37 inches (940mm) maximum width for new and existing buildings. 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.

In addition to the Wheelchair Accessible Toilet Compartment, one Ambulatory Accessible Toilet Compartment at a minimum is required if the restroom layout includes six or more plumbing fixtures (toilets and urinals). While it is considered good practice to include more than one Ambulatory Accessible Toilet Compartment in very large restrooms, there is no requirement to do so. The 1:6 requirement ratio does not scale-up to apply to a restroom with 12, 18, or 24 plumbing fixtures.

Toe Clearance (Figs. 15a, 15b, 15c, 15d) has been increased in the 2017 ICC Standards, while the toe clearance for the 2010 ADA Standards remains the same. The 2010 ADA Standards vertical clearance remains at 9 inches (230mm) for adults and 12 inches (305mm) for children. The vertical clearance required by the 2017 ICC Standards has been increased to 12 inches (305mm) minimum

Fig. 13 Wheelchair Toilet Compartment Side Door.

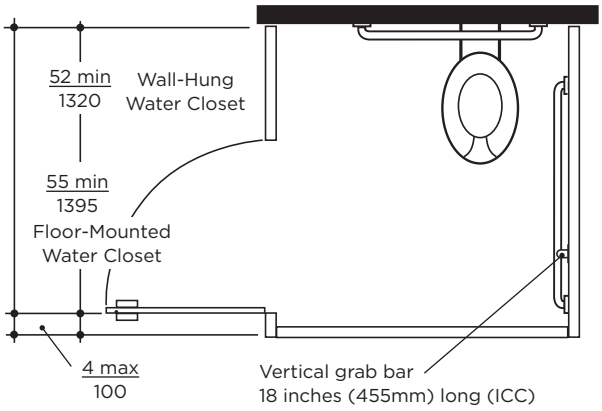
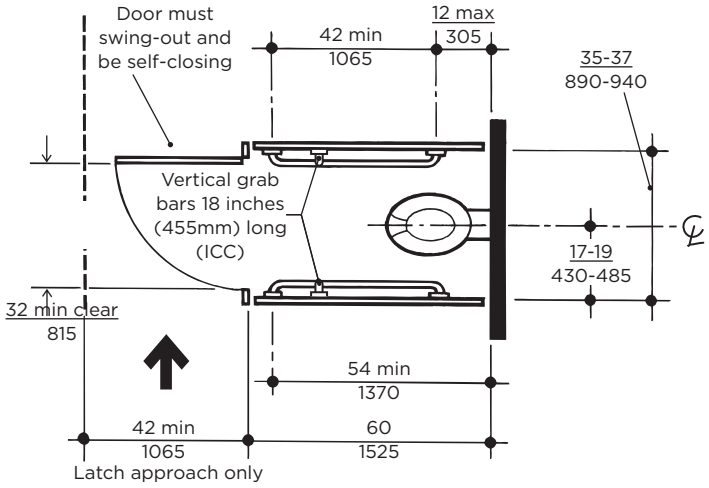


Fig. 14 Ambulatory Accessible Toilet Compartment.



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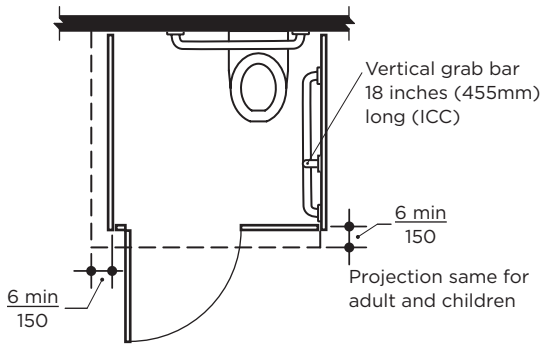


Fig. 15a Horizontal Toe Clearance. (2010 ADA Standards)

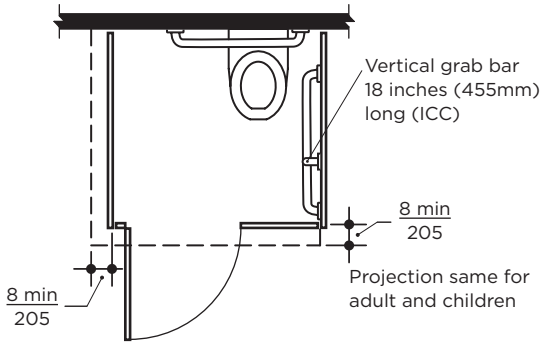


Fig. 15b Horizontial Toe Clearance. (2017 ICC Standards)

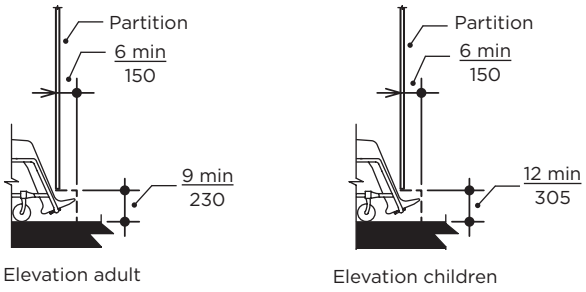


Fig. 15c Vertical Toe Clearance. (2010 ADA Standards)

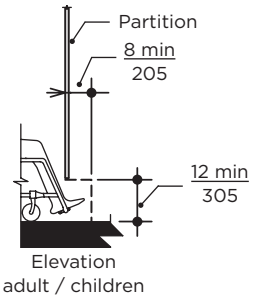


Fig. 15d Vertical Toe Clearance. (2017 ICC Standards)

above the finish floor under the front partition and one side partition of all accessible compartments for adults and children. The 2017 ICC standards has increased the horizontal toe clearance for adults and children to 8 inches (205mm) deep minimum beyond the compartment-side face of the partition. The 2010 ADA Standards maintain the horizontal clearance for both adults and children at 6 inches (150mm), minimum. Toe clearance at the front partition is not required if the depth of the compartment is greater than 64 inches (1625mm) deep with a wall-hung toilet or 67 inches (1700mm) deep with a floor-mounted toilet. Toe clearance at the side partitions is not required in a compartment greater than 68 inches (1725mm) wide. Toe clearance can be waived in children's wheelchair accessible compartments if the length is greater than 67 inches (1700mm) and the width greater than 68 inches (1725mm).

The toe clearance requirements do not include floor-supported stiles, which must necessarily extend to the floor at the stile-anchoring point itself.

Full Height Partitions There is increasing interest today in maximum height privacy partitions in many restroom compartments including wheelchair accessible compartments. These partitions use taller panels and doors that also extend lower, without toe clearance. The doors and partitions in these full height products can reach as high as 84 inches (2135mm) or 96 inches (2440mm) and can extend below the standard of 12 inches (305mm) above the floor, as low as 1 inch (25mm) above the floor (Fig. 16a). Compartments will meet or exceed the 2010 ADA Standards and the 2017 ICC Standards for all buildings if they have 67 inches by 68 inches (1700 by 1725mm) interior clear dimensions regardless of the type of toilet that is installed. For compartments using full height partitions with a wall hung toilet, the 2017 ICC Standards don't require toe clearance at front and side in compartments greater than 64 inches (1625mm) in depth and 68 inches (1725mm) in width. For compartments using full height partitions with a floor mounted toilet, toe clearance at front and side is not required on compartments greater than 67 inches (1700mm) in depth and 68 inches (1725mm) in width (Fig. 16b).

Doors on all accessible toilet compartments must meet the 2010 ADA Standards, including door pull hardware and self-closer. Accessible toilet compartment doors cannot swing into plumbing fixture clear floor space. Always use an out-swinging door, unless using an extra-long compartment or the Alternative Wheelchair Accessible Toilet Compartment.

There must be a clear width opening of 32 inches

Figures not to scale

(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 up to 60 inches (1525mm) 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. 10). Please note that the 2017 ICC Standards offer an array of door location and dimension options for accessible compartments.

Toilets (Fig. 17a) Accessible toilets with undercut bowls are recommended. Flush controls such as levers must meet the 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 10 to reference requirements for children.

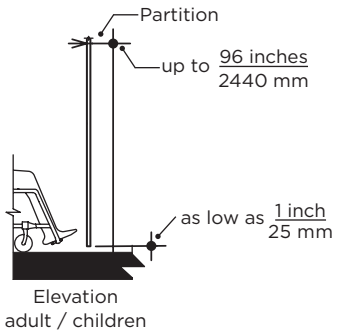


Fig. 16a Full Height Partition

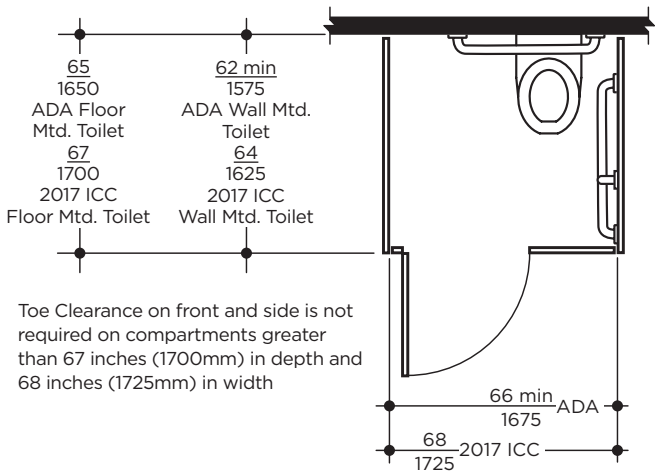


Fig 16b Full Height Partitions, Compartment Size to Avoid Toe Clearance

Figures not to scale

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 grab bar centerline. The sidewall grab bar next to an accessible toilet in a compartment must be 42 inches (1065mm) long minimum. A 48 inches (1220mm) recommended grab bar length eliminates many installation compliance problems. The grab bar must be located 12 inches (305mm) maximum from the rear wall and extending 54 inches (1370mm) minimum from the rear wall (Fig. 17a). The 2017 ICC Standard changes how to determine the location of the 36 inches (915mm) rear wall grab bar required to be mounted on the wall behind an accessible toilet A 42 inches (1065mm) recommended grab bar length eliminates many installation complliance problems. The grab bar must be mounted a maximum of 6 inches (150mm) off of the side wall, extending a minimum of 42 inches (1065mm) (Fig. 10). The 2010 ADA Standard locates the 36 inches (915mm) rear wall grab bar relative to the centerline of the toilet, requiring the grab bar to be mounted with 12 inches (305mm) on one side of the toilet center line and 24 inches (610mm) on the other side. Both the 2010 ADA and the 2017 ICC Standards allow the use of a 24 inches (610mm) minimum rear wall grab bar if fixture location and available space prevents the use of a 36 inches (915mm) grab bar. **Note that when a flush valve is located so that it would interfere with the installation of a standard rear wall grab bar, all Standards allow the grab bar to be split to either side of the flush valve or shifted to the open side.**

The 2017 ICC Standards require a vertical 18 inches (455mm) grab bar mounted on the side wall, located 39 to 41 inches (990 to 1040mm) off of the back wall (Fig. 17a). Refer to the table on page 10 to reference requirements for children.

Recessed Sanitary napkin disposals should be installed in side walls or partitions below grab bars (Fig. 17e). **The 2017 ICC Standards provide an exception that allows recessed units (including combination dispenser/disposal units) to be installed behind grab bars with grab bar wall clearance spacing less than 1-1/2 inches (38mm), within 1-1/2 inches (38mm) below or 12 inches (305mm) above the grab bar (fig. 17f). A projection of as much as 1/4 inch (6.4mm) is allowed.**

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 the side wall or partition nearest the toilet in accessible compartments, and just in front of the leading edge of the toilet seat to ensure accessible reach.

The 2010 ADA Standards require that no part of any accessory (surface mounted or recessed) 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. 17f). The space between the grab bar and projecting objects below and at the ends shall be 1-1⁄2 inches (38mm) minimum (Fig. 17f).

Fig. 17 Toilets, Grab Bars and Accessory Locations.

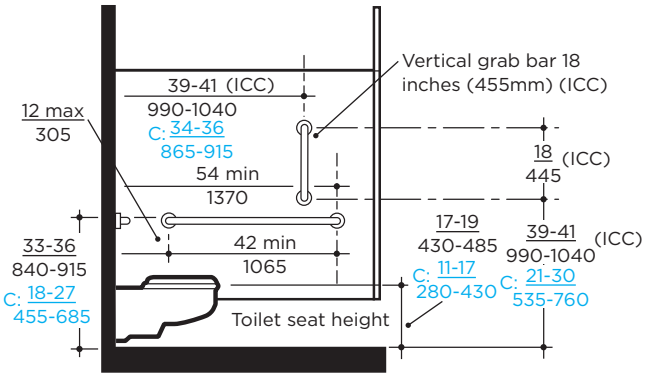


Fig. 17a Seat Height and Grab Bar Locations. (2010 ADA, 2017 ICC)

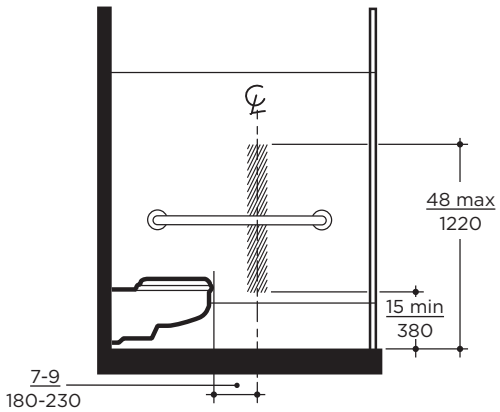


Fig. 17b Outlet Location for Toilet Paper Dispenser (2010 ADA). (2017 ICC Dispenser Two Rolls not more than 5 inches (125mm) in diameter)

The 2010 ADA Standards require that operating mechanisms and accessible openings of dispensers and disposals inside the toilet compartment should be located 15 inches (380mm) minimum to 48 inches (1220mm) maximum above the finish floor The standards require the location for toilet tissue dispensers at 1-1/2 inches minimum (38mm) below a grab bar mounted between 33 inches (840mm) and 36 inches (915mm) above the floor. Note that the 2017 ICC Standards, maintain a higher (stricter) minimum mounting height for toilet paper dispenser outlets of 18 inches (455mm) above the finish floor (Figs. 17b, 17c, 17d, 17e). See the one exception below. The bottom of the lowest toilet tissue dispenser outlet can be no lower than 18 inches (455mm) above the floor (2017 ICC Standard) or 15 inches (380mm) above the floor (2010 ADA Standard).

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. 17b, 17d, 17e). The 2017 ICC Standards maintain a different measurement procedure, locating the dispenser outlet between 24 inches (610mm) minimum and 42 inches (1065mm) maximum from the rear wall of the toilet compartment (Figs. 17c, 17e). However, the 2017 ICC Standards add a new exception in accessible toilet compartments for toilet tissue dispensers that accommodate two rolls not more than 5 inches (125mm) in diameter. These particular dispensers are now permitted to be located in accordance with the 2010 ADA Standards: 7 inches (180mm) minimum to 9 inches (230mm) maximum from dispenser centerline to leading edge of the toilet.

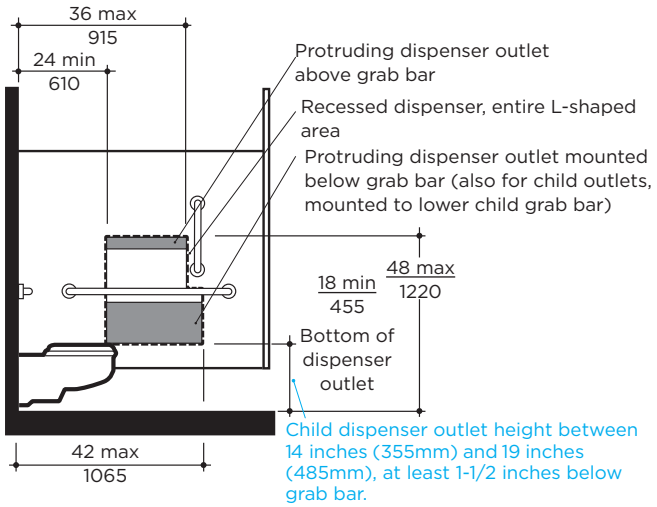


Fig. 17c Outlet Location for Toilet Paper Dispenser (2017 ICC)

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The 2017 ICC Standards also establish a new minimum mounting height for these dispensers. Toilet tissue dispensers that accommodate two rolls not more than 5 inches (125mm) in diameter can now have the bottom of the tissue outlet located 15 inches (380mm) minimum and 48 inches (1220mm) maximum above the floor. Note that the recommended measuring point for toilet tissue dispensers is the bottom of the tissue outlet and not points higher on the dispenser such as the centerline of the spindle. Mounting locations and mounting heights are the same for recessed and surface mounted dispensers.

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. 17d, 17e).

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 (Figs. 17c, 17d, 17e).

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 below grab bars (Fig. 17e).

The 2017 ICC Standards provide an exception that allows recessed units (including combination dispenser/disposal units) to be installed behind

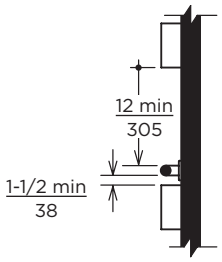


Fig. 17f Protruding Objects Mounted near Grab Bars.

grab bars with grab bar wall clearance spacing less than 1-1/2 inches (38mm), within 1-1/2 inches (38mm) below, or 12 inches (305mm) above the grab bar. A projection of as much as 1/4 inch (6.4mm) is allowed.

Urinals where provided, should include at least one wall-hung (Fig. 18) 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 (1120mm) if the urinal extends far enough to create at least 20 inches (510mm) of reach. The 2017 ICC Standards now require a clear floor space of 30 inches wide by 52 inches deep (760 by 1320mm) minimum in new buildings to allow forward approach. The clear floor space at urinals in existing buildings can be maintained at 30 inches wide by 48 inches (760 by 1220mm) minimum deep, which is also the same as the 2010 ADA Standards.

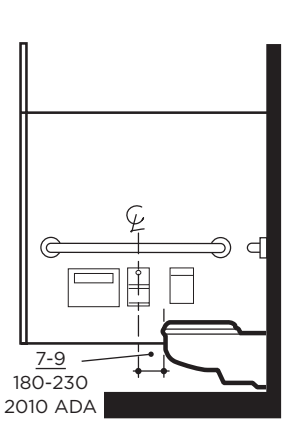


Fig. 17d Individual Accessories (2010 ADA).

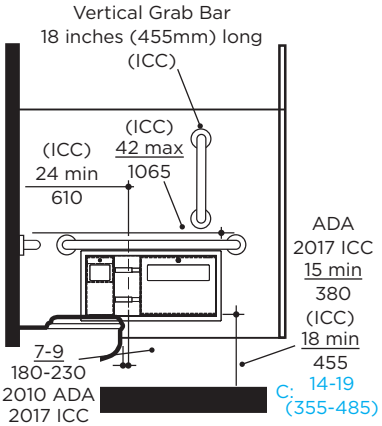
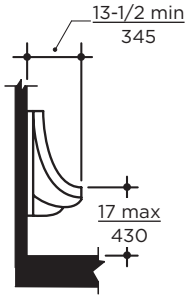


Fig. 17e Combination Accessories (2010 ADA, 2017 ICC).

Fig. 18 Wall Hung Urinal Location.



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Figures not to scale

Signage is required to provide direction to (or identifies) accessible restroom and bathing facilities where not all facilities are accessible. For example, the international Symbol of Accessibility (ISA)



Fig. 19 International Symbol of Accessibility. (ISA)

must be used to identify the accessible single user restroom(s) in a cluster of single user restrooms, where not all of restrooms are accessible. Similarly, in certain renovated buildings, the ISA needs to direct users to, and identify, accessible restrooms or bathing rooms where not all are accessible.

Neither accessible toilet compartments within restrooms nor accessible showers or tubs within bathing rooms need ISA or other signage specially identifying them.

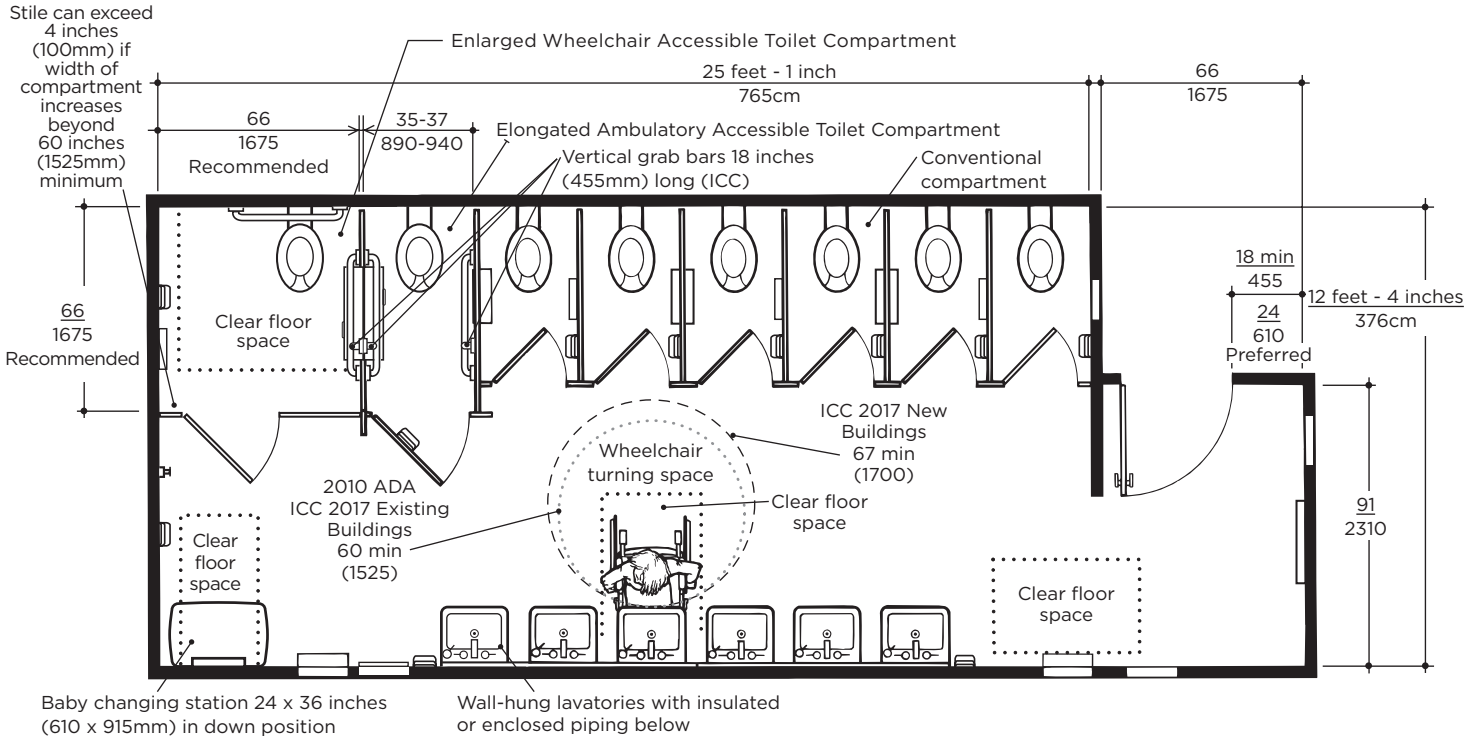
ACCESSIBLE RESTROOMS AND BATHING FACILITIES

Design for Large Public Restrooms with multiple lavatories, urinals and toilet compartments, (Figs. 20, 21, 22) include suggested universal design features that meet and exceed the 2010 ADA and the 2017 ICC Standards.

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 60 inches (1065 to 1525mm) wide.
- Minimum clear height of 80 inches (2030mm) is used throughout all circulation routes, passageways and access aisles.
- Wheelchair turning spaces are included wherever required.
- Accessories are fully recessed into the walls wherever possible.
- Each type of accessory meets or exceeds the 2010 ADA and the 2017 ICC Standards.
- Centered minimum clear floor space of 30 inches by 52 inches (760 by 1320mm) is provided for each accessory.
- Lavatories, urinals, and toilet compartments meet or exceed the 2010 ADA and the 2017 ICC Standards.
- If there are six or more toilet compartments or urinals, there needs to be at least one Ambulatory Accessible Toilet Compartment in addition to the Wheelchair Accessible Toilet Compartment. No more than one Ambulatory Accessible Toilet Compartment is required, regardless of how many additional fixtures there are.

Fig. 20 Women's Large Restroom with Single Door Entry.
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Fig. 21 Women's Large Restroom with Open Vestibule.
See page 46 for Appendix of Layout Figures

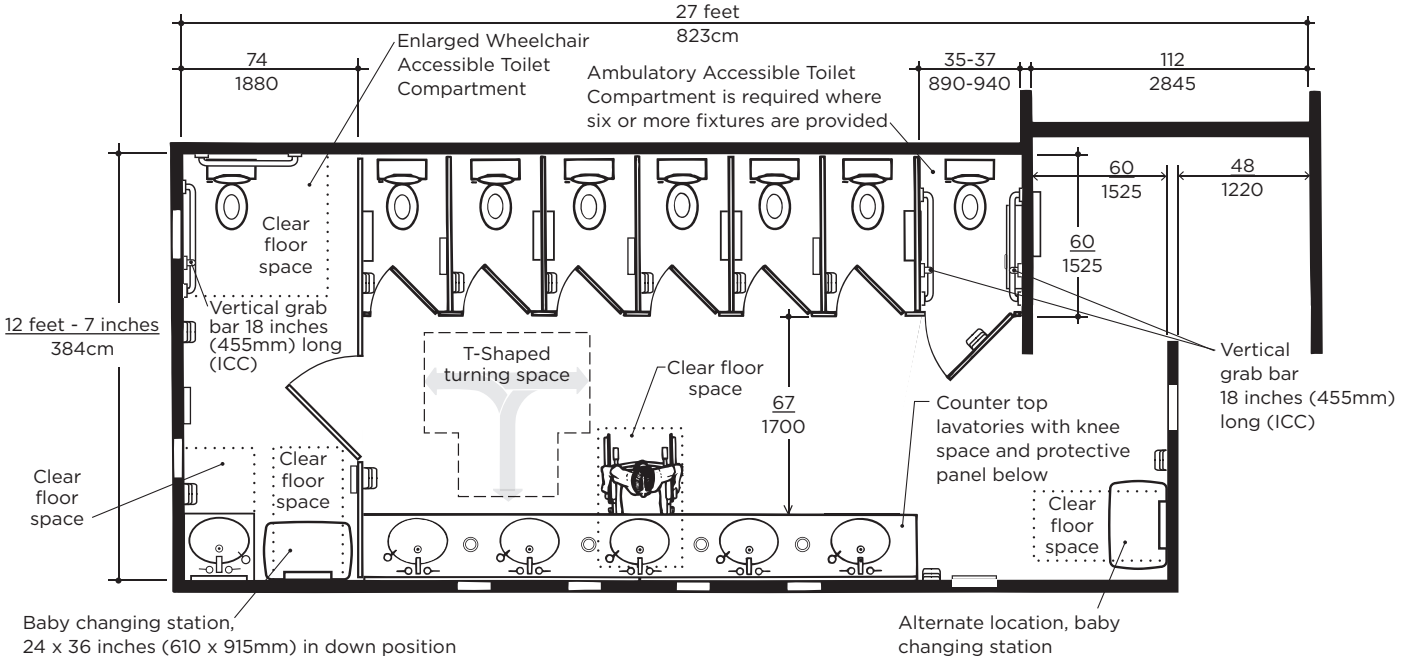
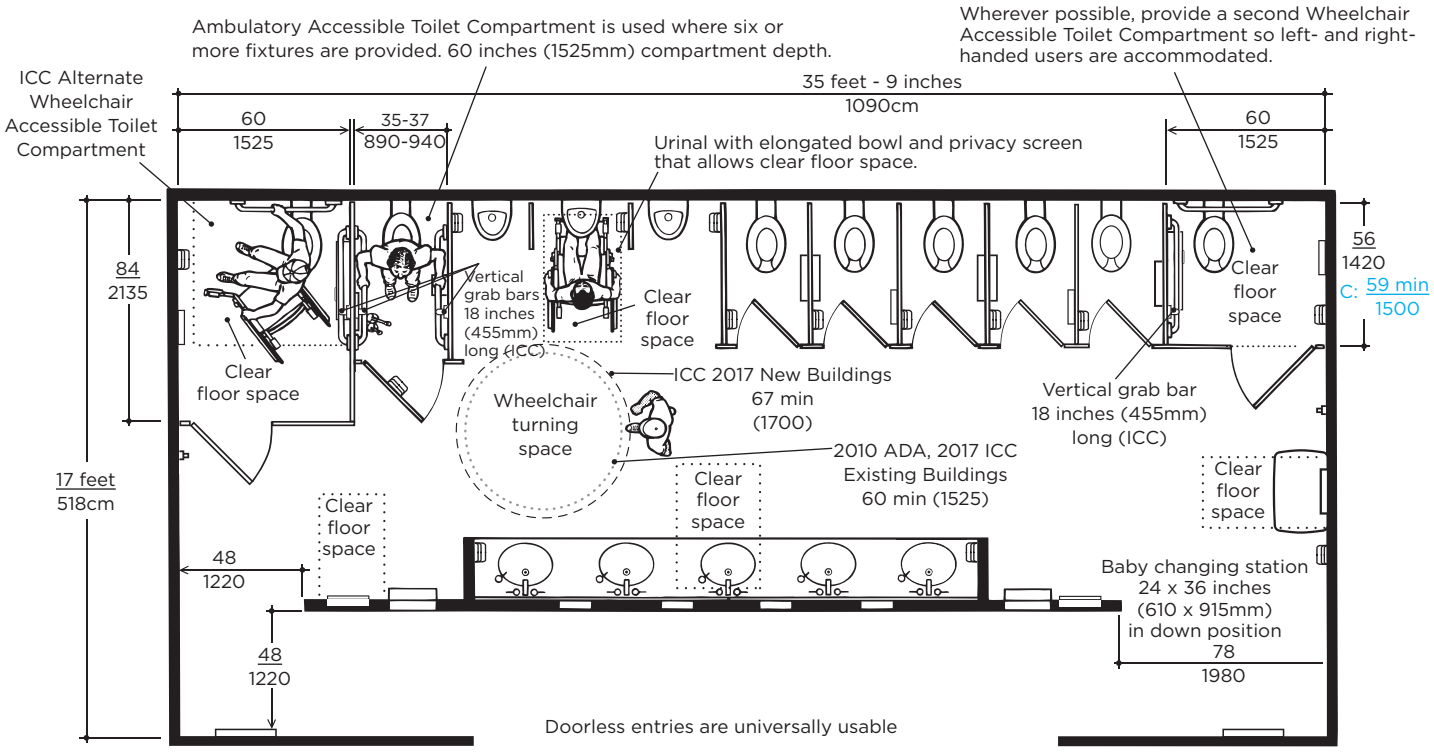


Fig. 22 Men's Large Restroom with Double Open Vestibule.
See page 47 for Appendix of Layout Figures

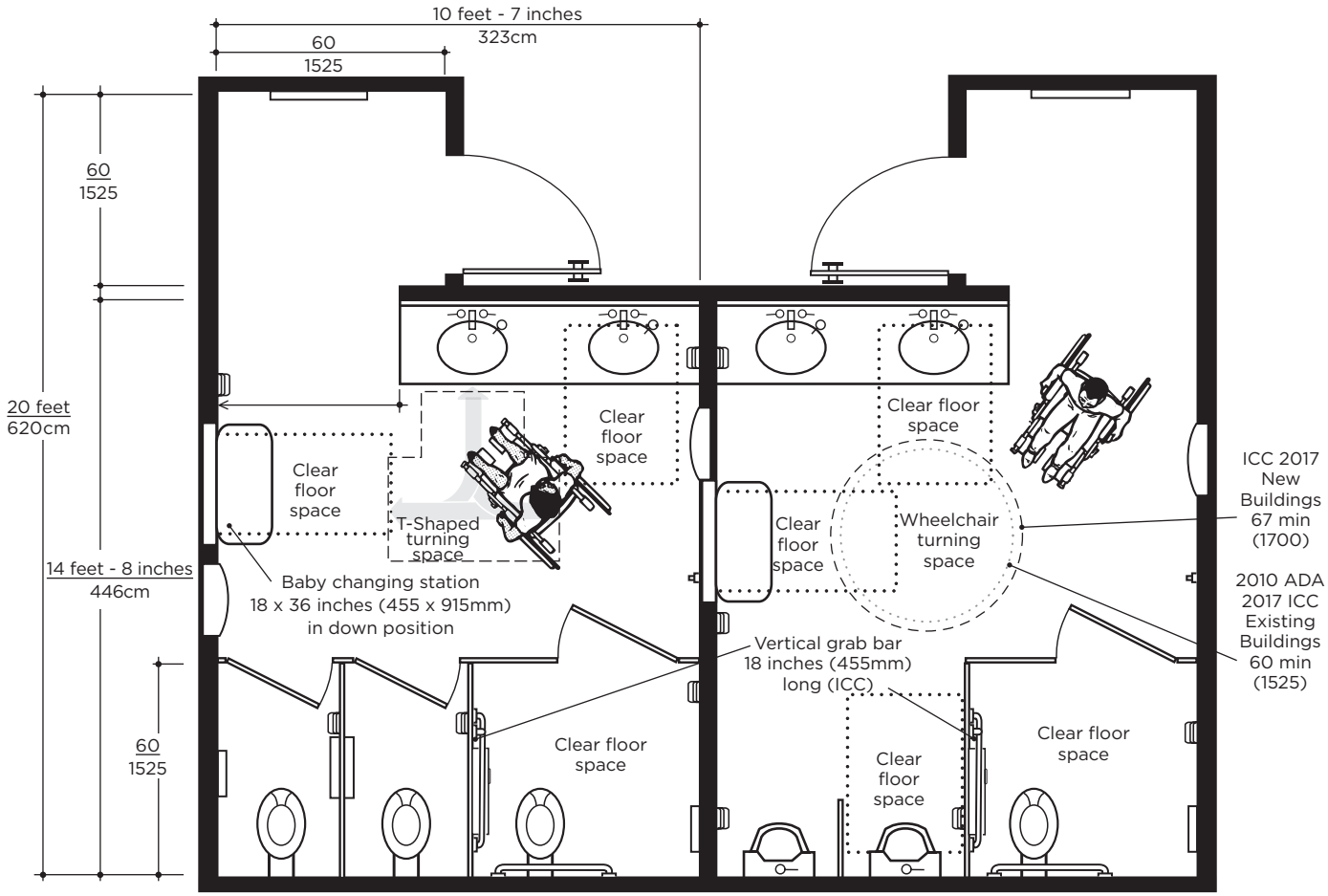


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Small Public Restrooms (Figs. 23, 24, 24a, 24b, 25, 26) all require one Wheelchair Accessible Toilet Compartment of the types described on pages 17 and 18. Wheelchair Circular Turning Spaces (Figs. 4a, 4b, 4c, 4d) or T-Shaped Turning Spaces (Figs. 5a, 5b, 5c, 5d, 5e) are also required as well as an accessible lavatory, restroom accessories, and access aisles that meet the 2010 ADA and the 2017 ICC Standards. Entry doors should swing into vestibules, not directly into corridors, access aisles, or clear floor spaces required at lavatories and other restroom accessories (Figs. 23, 24, 25).

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 or when one spouse is helping another), especially when they are of the opposite gender (Figs. 26, 27). 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. An adjustable height adult changing station can be located in individual toilet rooms as well (Fig. 27). Out-swinging entry doors may be

Fig. 23 **Small Accessible Public Restroom.**
See page 48 for Appendix of Layout Figures



Figures not to scale

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 accessory can obstruct the 56 inches by 60 inches (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 2017 ICC Standards for entrance and exit, lavatories, toilets, grab bars, restroom accessories, controls, and operating mechanisms. Refer to previous sections, Accommodating Diverse Users, Reach Ranges and Space Requirements, and Planning an Accessible Restroom, for information on specific 2010 ADA and 2017 ICC Standards as well as universal design considerations.

Fig. 24 Accessible Restroom with Entry Clearance Space
See page 49 for Appendix of Layout Figures

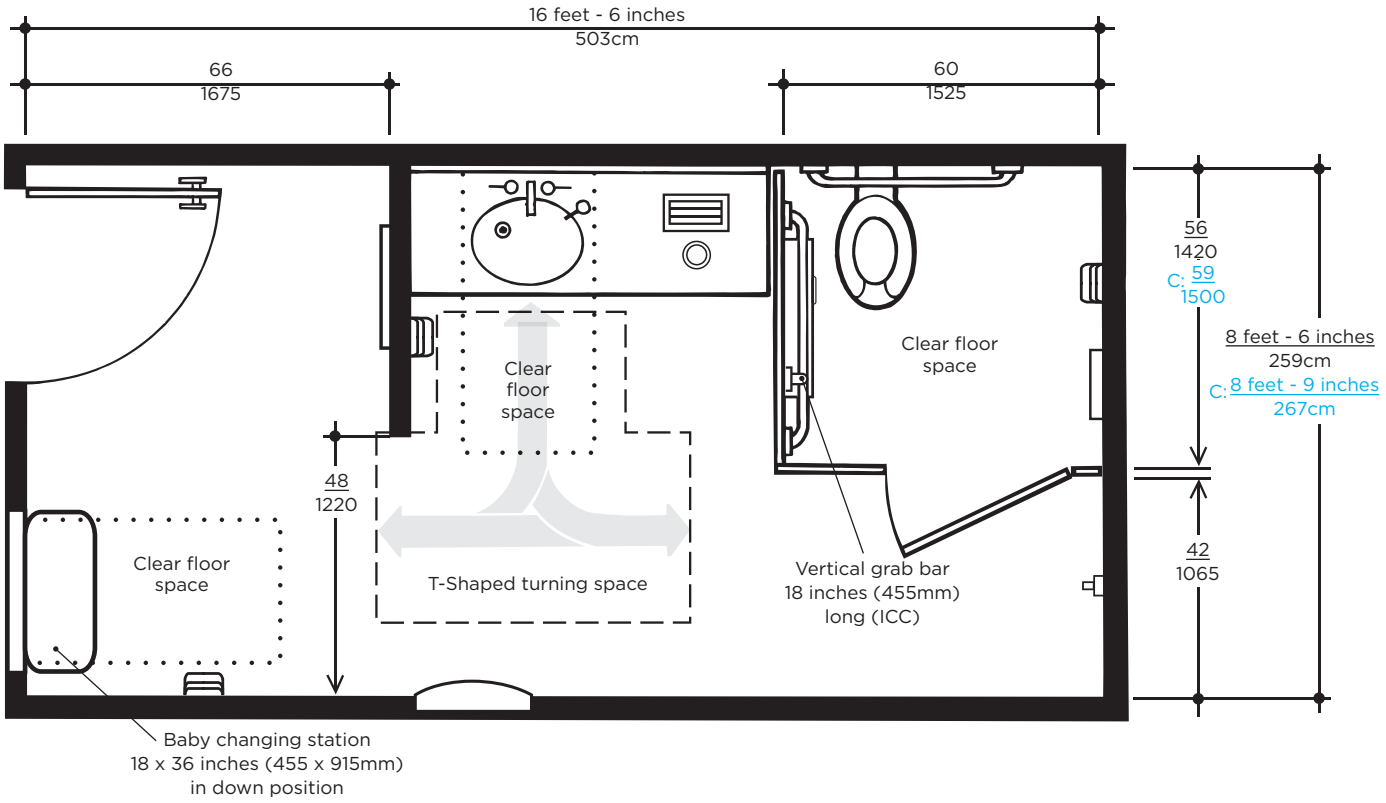


Fig. 24a Accessible Restroom with Additional Entry Clearance Space

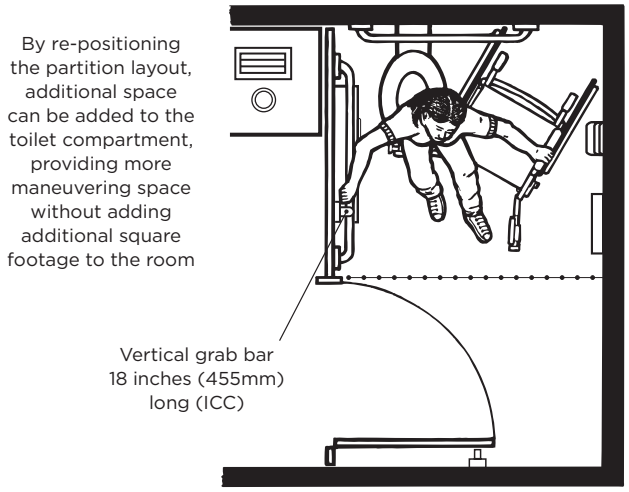


Fig. 24b Larger Size Compartment with Alternate Door Opening.

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Fig. 25 **Small Public Restroom Provides Accessible Toilet Compartment and Ambulatory Accessible Compartment.**
See page 50 for Appendix of Layout Figures

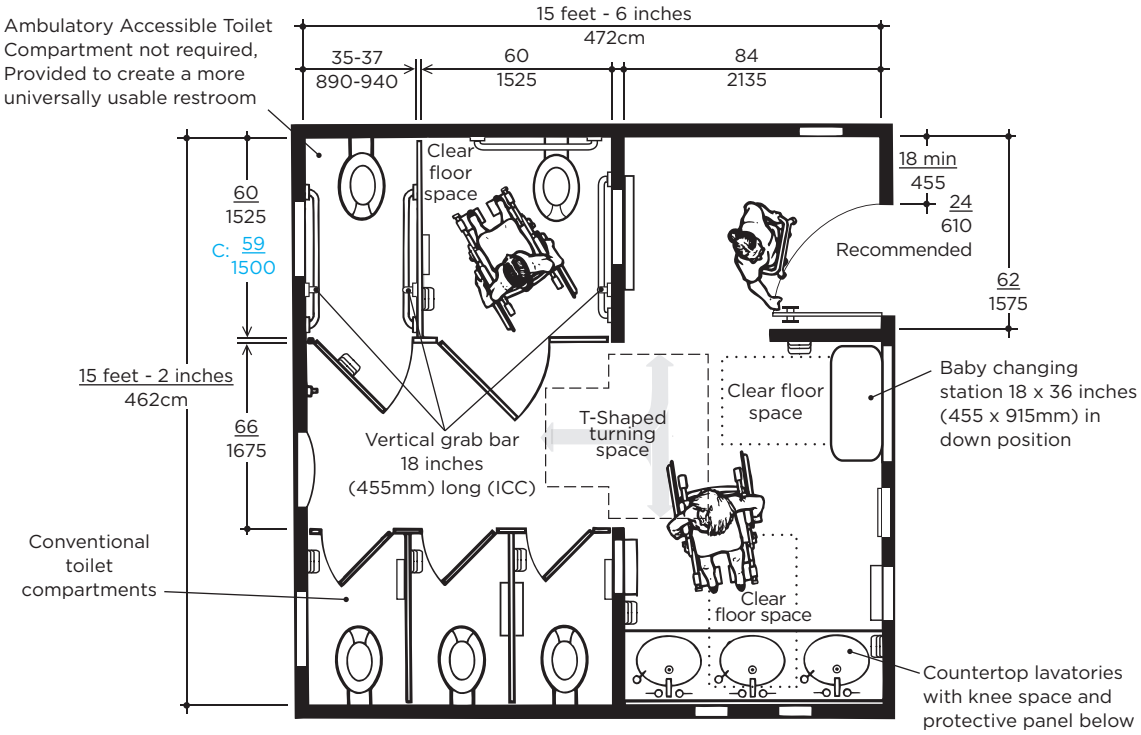
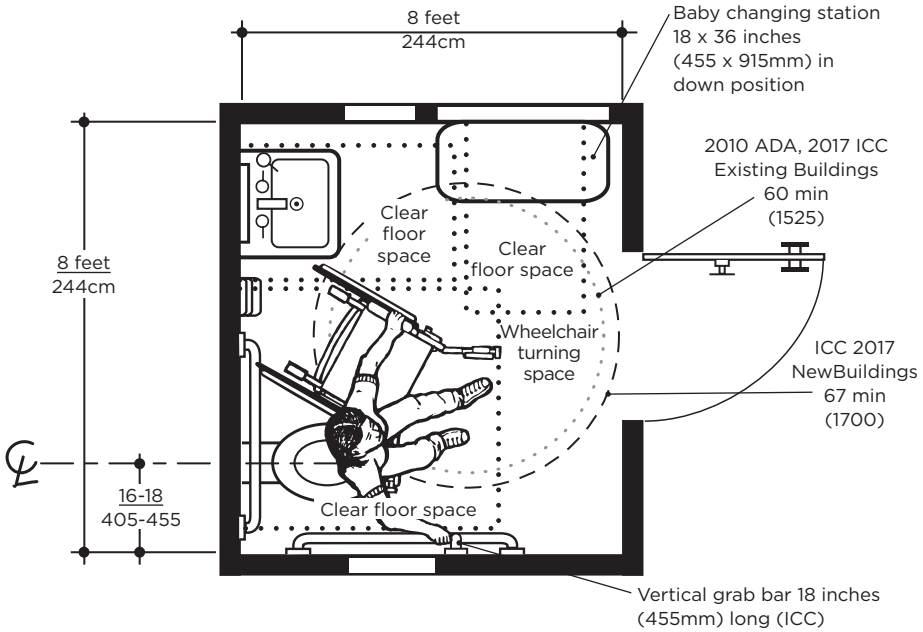
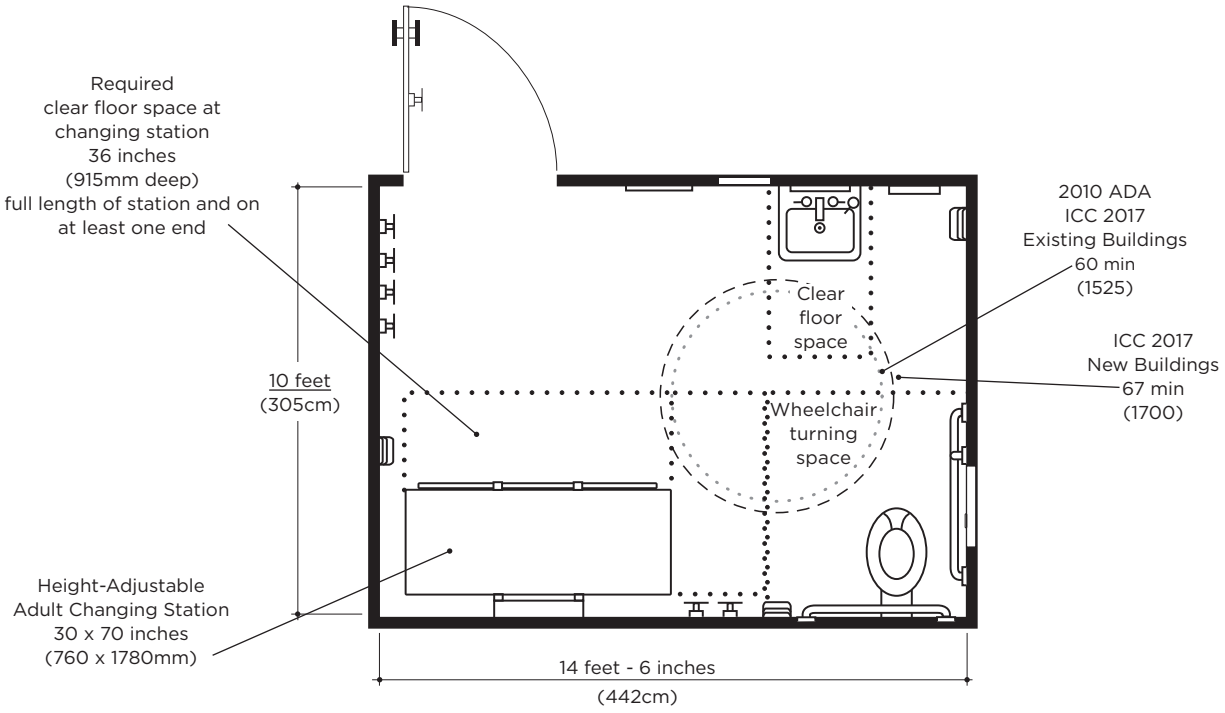


Fig. 26 **Individual Toilet Room with Baby Changing Station.**
See page 51 for Appendix of Layout Figures



Figures not to scale

Fig. 27 Individual Toilet Room with Adult Changing Station.
See page 52 for Appendix of Layout Figures



ACCESSIBLE BATHING FACILITIES

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 compact-grade laminate, 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. Portable shower seats and chairs are not permitted by the 2010 ADA Standards.

Supplement 1 to the ICC A117.1-2017 standard introduces Section 613, which establishes the technical design requirements for accessible adult changing stations required in certain accessible single-user/family/assisted-use toilet rooms. The new Section 613 includes mandatory requirements for the assistive table and the room environment, which include:

1. Where required.
   Not fewer than one adult changing stations shall be provided in the following locations:
   - In assembly and mercantile occupancies, where family or assisted-use toilet or bathing rooms are required to comply with Section 1110.2.1.
   - In Group B occupancies providing educational facilities for students above the 12th grade, where an aggregate of 12 or more male and female water closets are required to serve the classrooms and lecture halls.
   - In Group E occupancies, where a room or space used for assembly purposes requires an aggregate of six or more male and female water closets for that room or space.
   - In highway rest stops and highway service plazas.
2. Toilet Room Amenities (Single-User Rooms)
   When installed in a family or assisted-use toilet room, the room must contain:
   - Soap dispenser and hand towel dispenser/ dryer complying with Section 308.
   - A coat hook and waste receptacle.
   - Tactile and visual signage indicating "Adult Changing Stations".

Clearance: Adult changing stations and their supporting structures cannot obstruct required turning spaces, door clearances, or clear floor spaces at other plumbing fixtures.

Figures not to scale

INDIVIDUAL SHOWER COMPARTMENTS

Transfer Shower Compartments (Figs. 28a through 28g) are a 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 showerhead 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. When equipped with a folding seat, the transfer shower compartment can also be used comfortably by people who are standing and seated. The clear floor space changes in the 2017 ICC Standard also apply to the space requirements in front of a transfer shower. The length of the minimum clear floor space in new buildings has been increased to 52 inches (1320mm). The 2017 ICC Standard has maintained the depth at 36 inches (915mm). For existing buildings, the 2017 ICC Standards retain the minimum clear floor space 36 inches by 48 inches (915 by 1220mm) which is the same as the 2010 ADA Standards. This space must still be positioned outside the shower compartment to allow proper wheelchair positioning for transfer to shower seat. Raised thresholds may be installed, but they must be no higher than 1/2 inch (13mm) (Figs. 6a, 6b). 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. 28f, 30b, 32b).

Fig. 28 Transfer Shower Compartment.

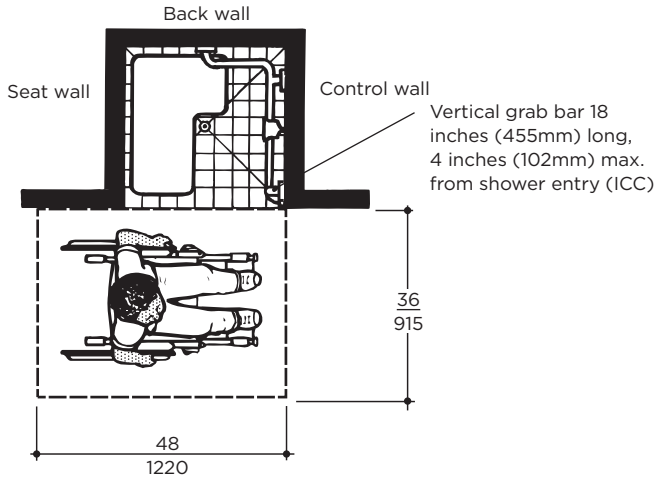


Fig. 28a Required Clear Floor Space. 2010 ADA, 2017 ICC Existing Buildings

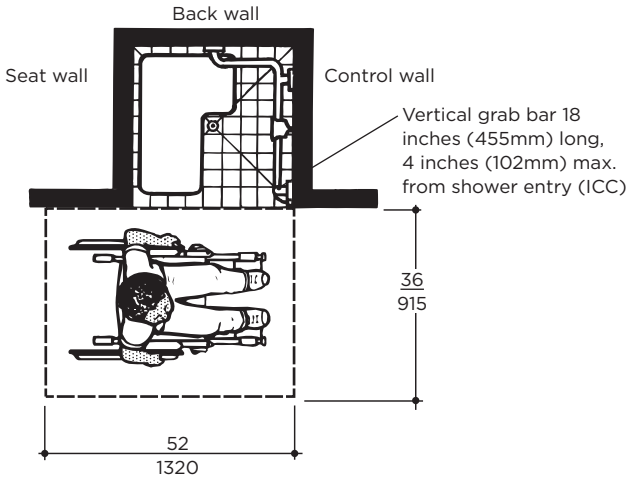


Fig. 28b Required Clear Floor Space. 2017 ICC New Buildings

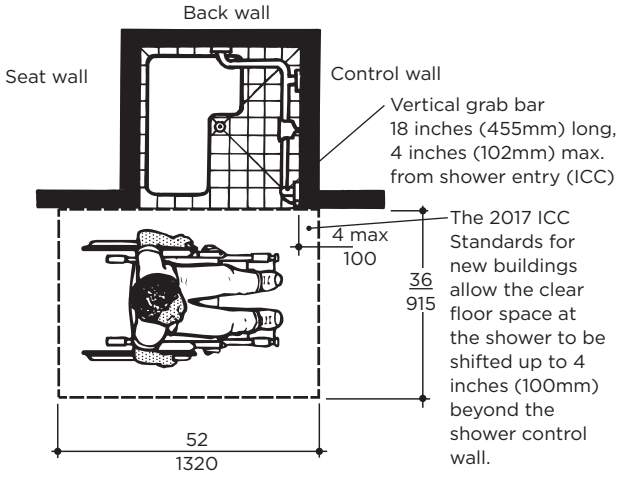


Fig. 28c Required Clear Floor Space. 2017 ICC New Buildings

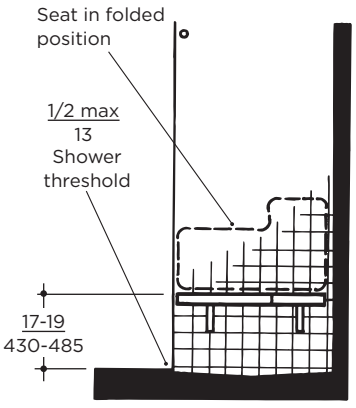


Fig. 28d Seat Wall.

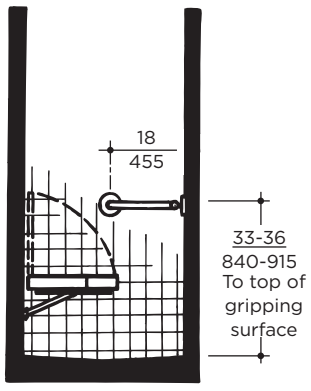


Fig. 28e Back Wall.

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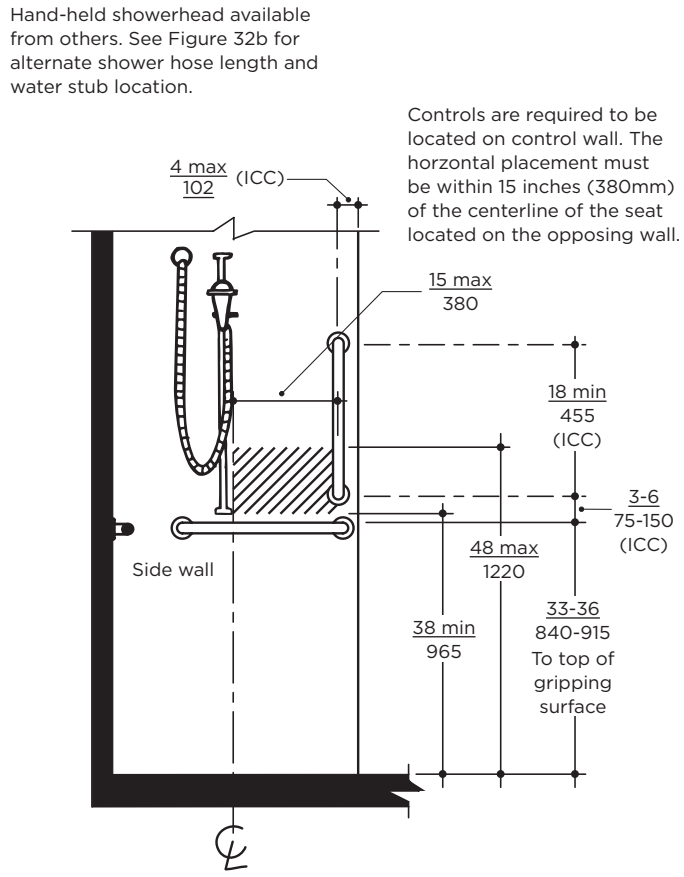


Fig. 28f Control Locations.

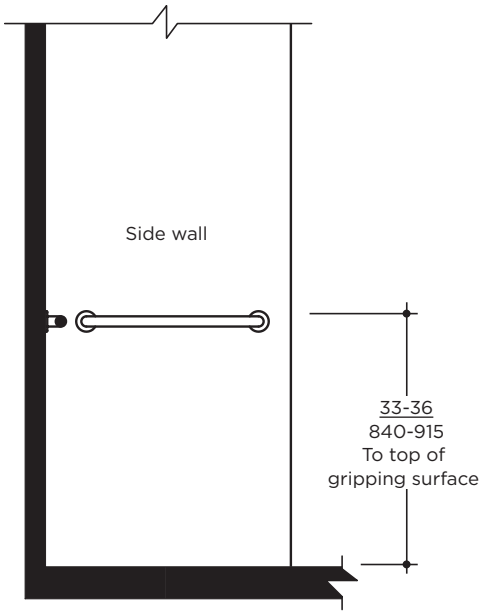


Fig. 28g Grab bar locations

Roll-in Shower Compartments (Fig. 30) 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, the 2010 ADA and the 2017 ICC 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). Raised thresholds should be avoided or minimized. If it is necessary to include them, then curbs should be 1/2 inch (13mm) high maximum (Figs. 6a, 6b). Note that thresholds higher than 1/4 inch (6.4mm) will need to incorporate a bevel no steeper than 1:2 (Fig. 6b). Recommended methods for containing water include 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.

The 2017 ICC Standards have clarified the length and positioning of grab bars, and has added an additional grab bar in roll-in showers. A vertical grab bar must be installed opposite the seat wall, 18 inches long (455mm) minimum, between 3 inches (75mm) and 6 inches (150mm) above the horizontal bar and 4 inches (100mm) maximum inward from the front edge of the shower.

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.

The 2017 ICC Standards have restricted the location of controls in alternate roll-in type shower compartments. The controls are no longer allowed near corners or over the seat (Figs. 31b, 31c).

Figures not to scale

Fig. 6 Accessible Shower Thresholds.



Fig. 6a Vertical Change in Level.

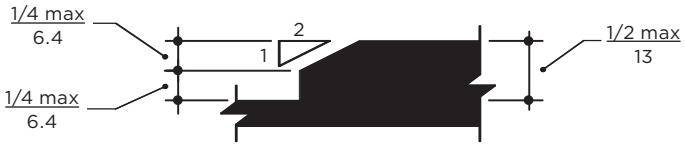


Fig. 6b Beveled Change in Level.

Fig. 29 Folding Shower Seats.

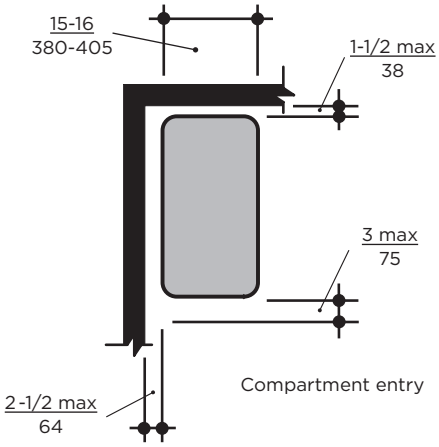


Fig. 29a Rectangular.

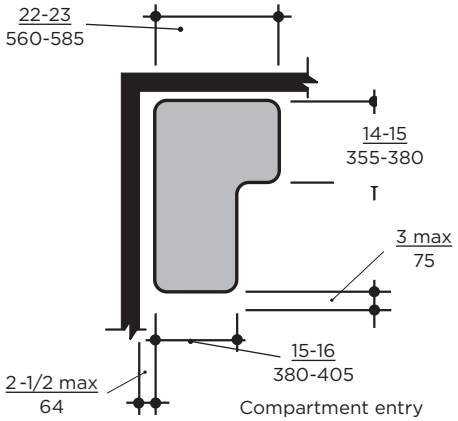


Fig. 29b L-Shaped.

Fig. 30 60 inches (1525mm) Wide Roll-In Shower Compartments.

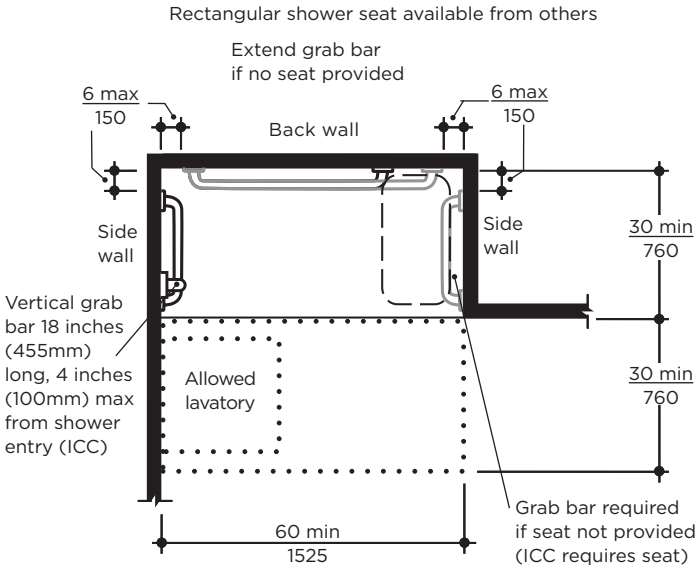
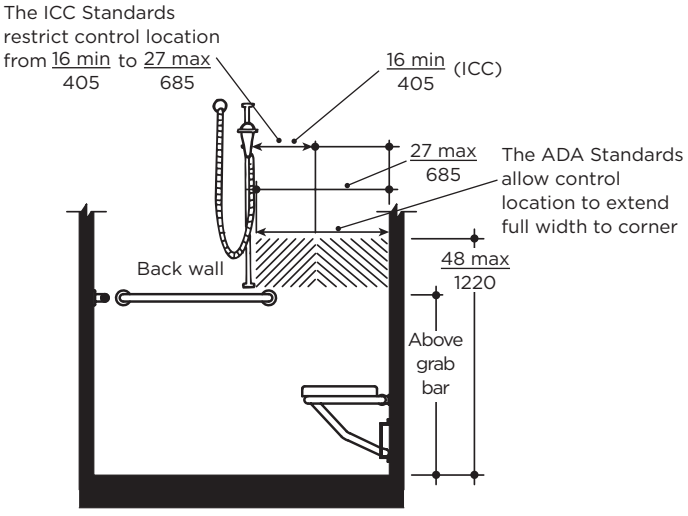


Fig. 30a Standard Roll-In Type Shower Compartment.



Hand-held showerhead and rectangular shower seat available from others. See Figure 32b for alternate shower hose length and water stub location.

Fig. 30b Control Locations (with Seat).

Figures not to scale

Fig. 31 Alternate Roll-In Type Shower Compartment.

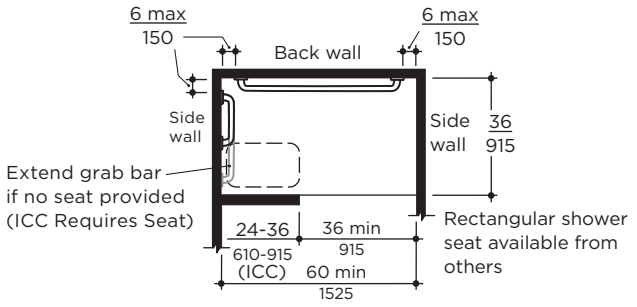


Fig. 31a Alternate Roll-In Type Shower Compartment (with seat).

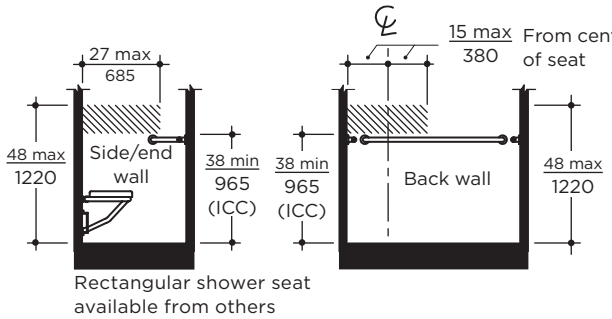


Fig. 31b Alternate Roll-In Type Shower Compartment (with seat), Control Locations, Side/End Wall. Control locations now limited by the 2017 ICC standards

Fig. 31c Alternate Roll-In Type Shower Compartment Control Locations, Back Wall. Control locations now limited by the 2017 ICC standards

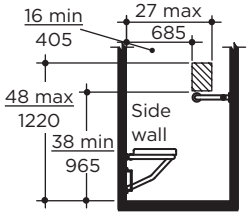


Fig. 31d Alternate Roll-In Type Shower Compartment (with seat), Control Locations, Side/End Wall. Control locations now limited by the 2017 ICC standards

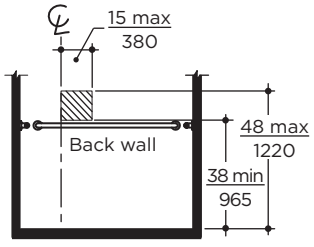


Fig. 31e Alternate Roll-In Type Shower Compartment Control Locations, Back Wall. Control locations now limited by the 2017 ICC standards

COMBINATION TUB/SHOWER 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. 32a). 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 minimum and are usually built-in structural extensions (Figs. 33a, 40). 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 (Figs. 33a, 40).

Fig. 32 Bathtub with Removable In-Tub Seat.

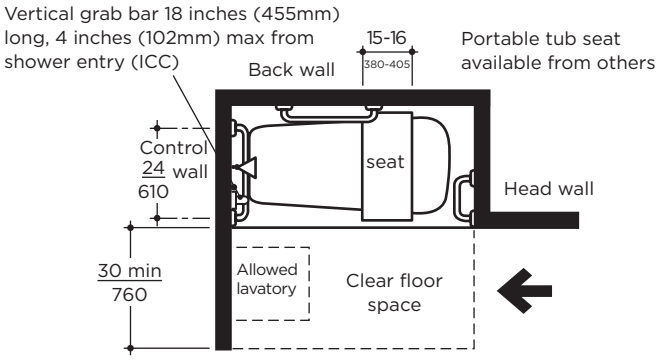


Fig. 32a Clear Floor Space.

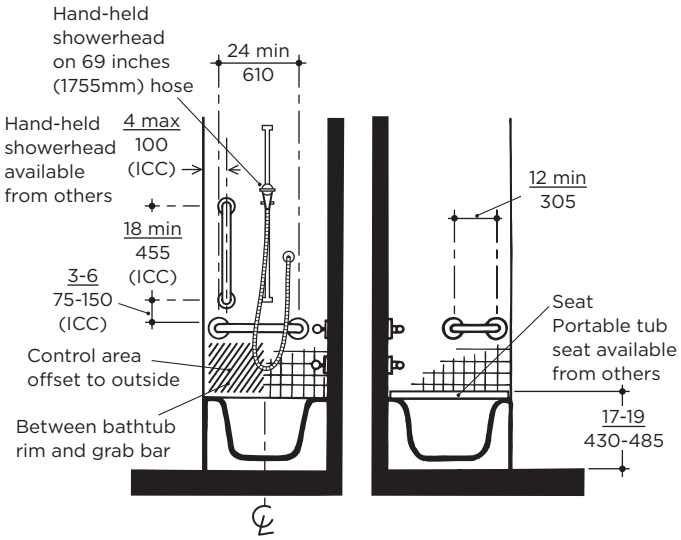


Fig. 32b Control Wall. **Fig. 32c Head of Tub.**

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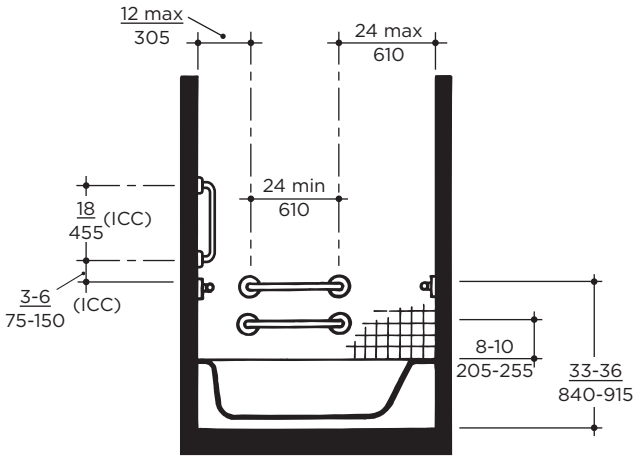


Fig. 32d Back Wall.

Fig. 33 Bathtub with Permanent Seat.

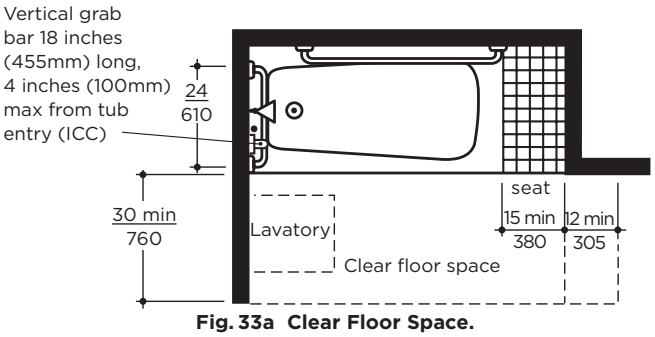


Fig. 33a Clear Floor Space.

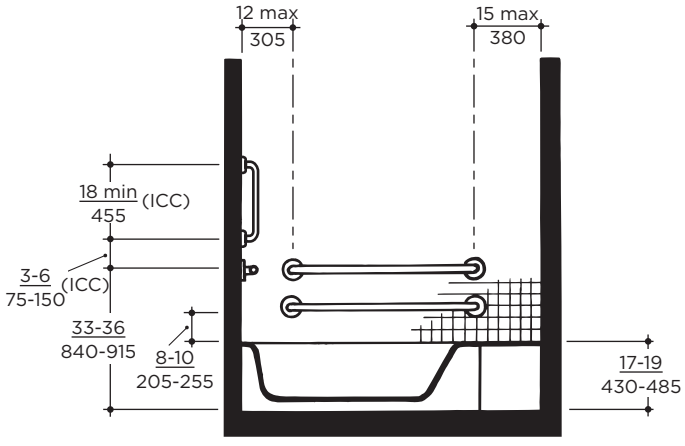


Fig. 33b Back Wall.

CONTROLS AND ACCESSORIES COMPLETE SHOWER AND BATHTUB INSTALLATIONS

Controls must meet the 2010 ADA Standards and the 2017 ICC Standards (refer to Controls and Operating Mechanisms on page 15). The control areas must be located on the side wall opposite the shower seat in transfer shower compartments (Fig. 28f); on the back or side walls of roll-in shower compartments (Fig. 30b); on the wall adjacent to the shower seat in alternate roll-in type shower compartments (Figs. 31b, 31c, 31d, 31e); and on the wall at the foot of bathtubs (Fig. 32b). 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. 30b). Controls with anti-scald, pressure balanced or similar features should be used. The standards require water to be 120°F maximum.

Showerheads in accessible bathing facilities must be usable in a fixed position as a hand-held model with a 59 inches (1500mm) minimum long hose (Figs. 28f, 30b). To allow for easier manipulation of the shower unit, it is recommended that a longer, 69 inches (1755mm), hose be used (Fig. 32b). 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 showerhead at various heights (Fig. 28f, 30b, 32b). 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. 32b). The accessibility standards allow an exception: A fixed showerhead mounted 48 inches (1220mm) above the finish floor may be installed in lieu of a hand-held unit in facilities such as athletic facilities and corporate bathing facilities. The fixed showerheads are prohibited in medical care facilities, long-term care facilities, transient lodging guest rooms, or residential dwelling units.

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. 28e, 28f, 28g, 30b, 32d, 33b), 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 shower

Figures not to scale

compartments (Figs. 28a, 28b, 28c show the single bar). Standard roll-in shower compartments must have grab bars installed 6 inches (150mm) maximum from the corners (Figs. 30a, 31a).

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. 32a, 32b, 32d, 33a, 33b); and two parallel, horizontal grab bars, mounted on the back wall (Figs. 32b, 32c, 32d, 33b). 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. 33a, 33b). In tubs with removable seats the back wall grab bar lengths are specified at 24 inches (610mm) (Fig. 32a). 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 (Figs.32a, 32c, 32d).

Transfer shower compartments, tubs, and standard roll-in type showers 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. 28a, 28b, 28c, 28f; 30a; 32a, 32b, 32d; 33a, 33b).

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. 28d, 28e). Permanent or folding seats are now required by the 2017 ICC Standards. For both roll-in and transfer shower compartments, seats must have a 3 inches (75mm) maximum space between the seat edge and compartment entry-opening and a larger permissible 2-1/2 inches (64mm) maximum gap between the seat and seat wall (Figs. 29a, 29b). Roll-in type shower compartments with seats can now use a rectangular seat design as well as the previously required L-Shaped design (Figs. 29a, 29b). Upholstered, cushioned seats are preferred by many people with disabilities, while water-resistant solid phenolic seats are vandal-resistant and more sanitary.

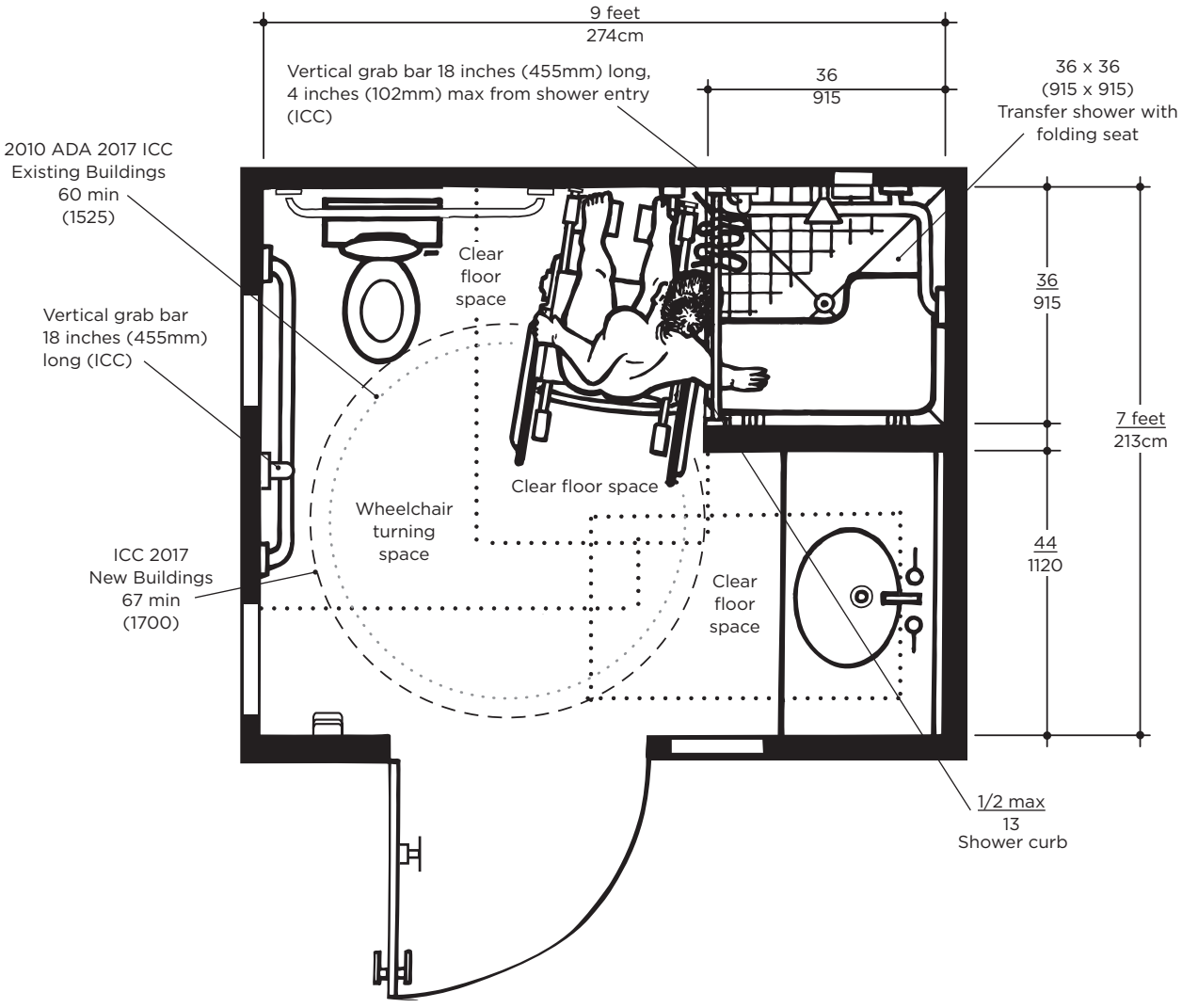
Soap Dishes are normally placed on the same wall as the showerhead and controls where they are least likely to collect standing water. It is recommended soap dishes be recessed and mounted 38 inches to 48 inches (965 to 1220mm) above the finish floor when installed in shower compartments, or they should be mounted between the grab bar and the rim of the bathtub (Figs. 28f; 30b; 31b, 31c, 31d, 31e; 32b).

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.

DESIGN SOLUTIONS FOR BATHROOMS WITH SHOWER COMPARTMENTS

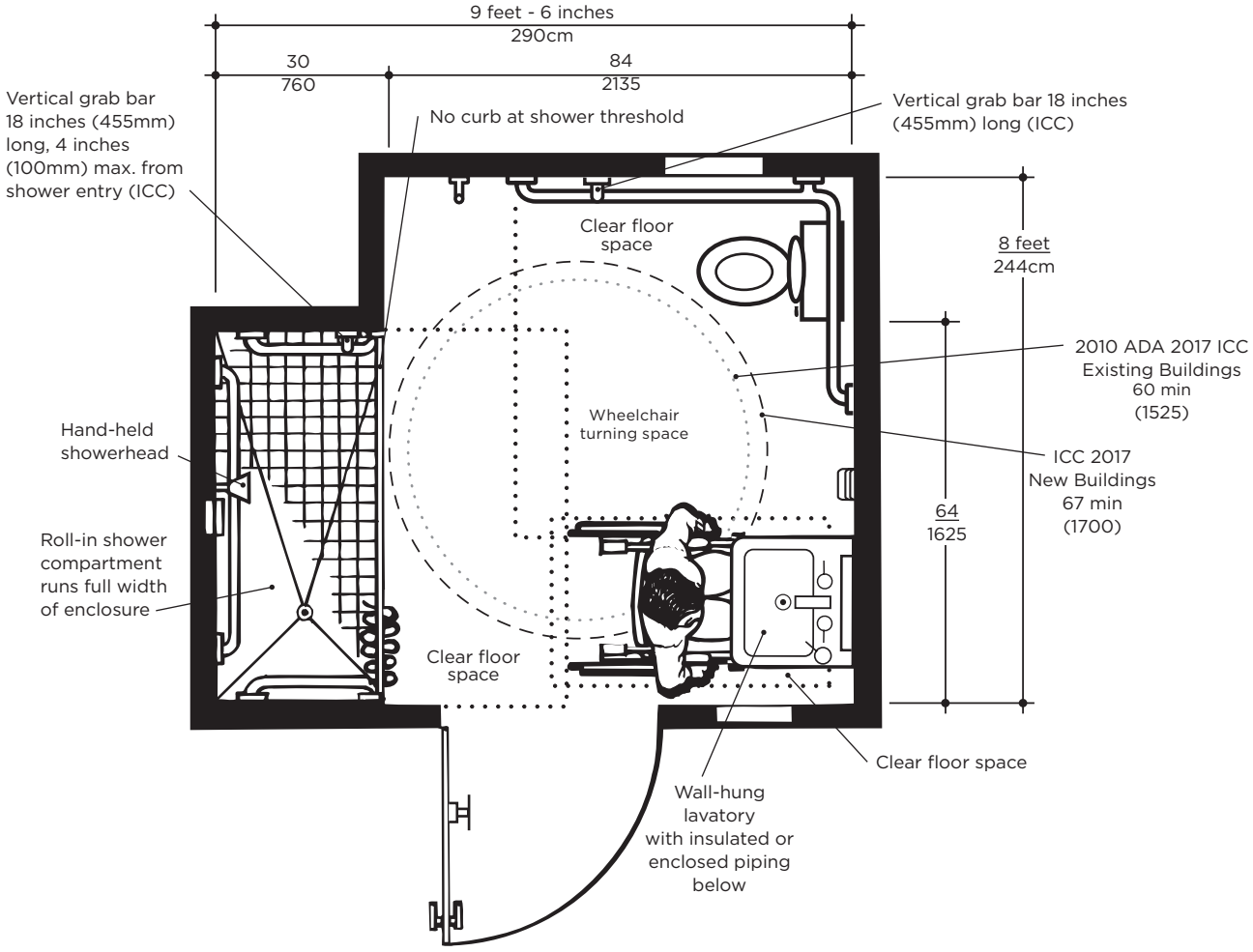
Fig. 34 Bathroom with Transfer Shower Compartment.
See page 53 for Appendix of Layout Figures



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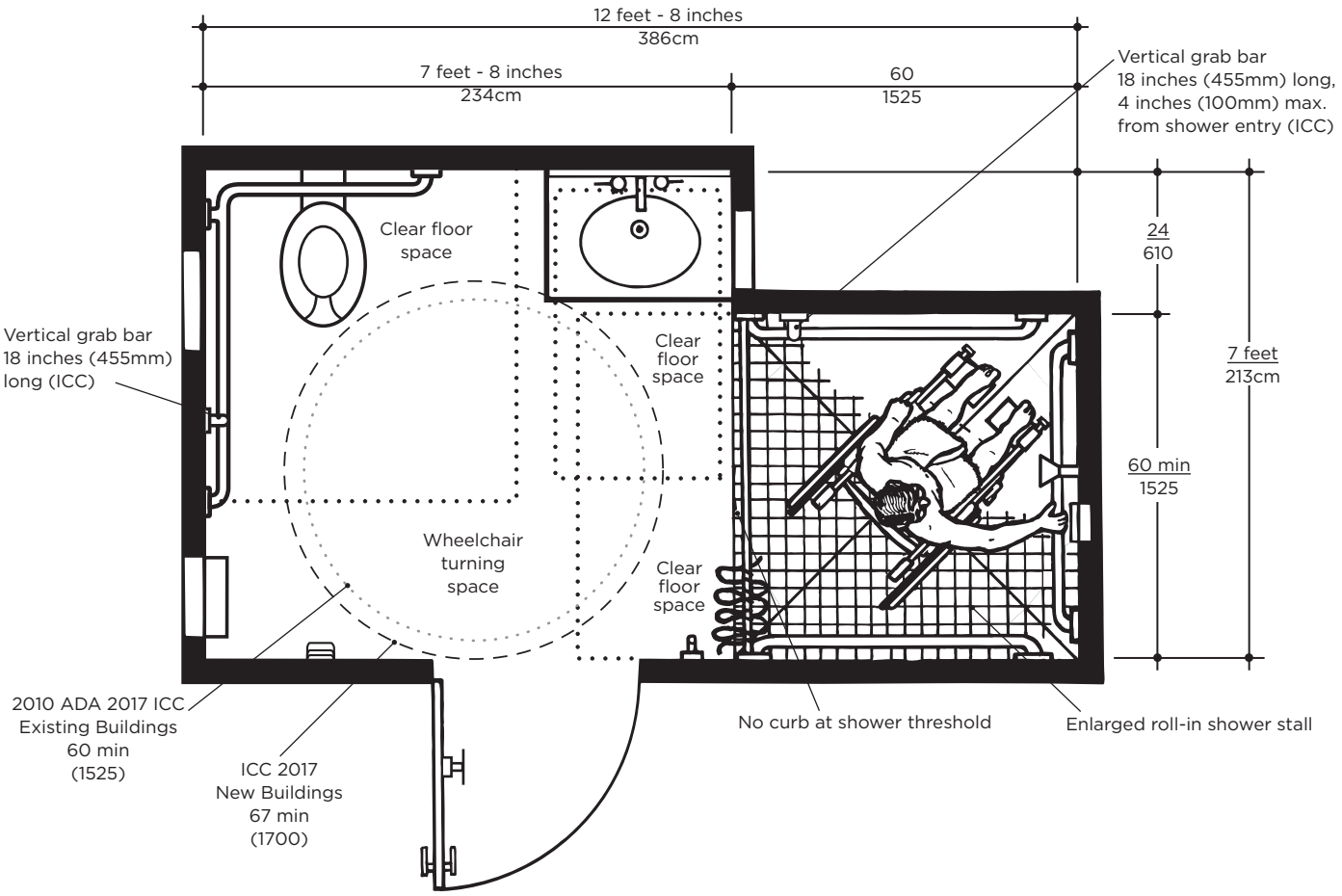
DESIGN SOLUTIONS FOR BATHROOMS WITH SHOWER COMPARTMENTS

Fig. 35 Bathroom with Wet-Area Shower Compartment.
See page 54 for Appendix of Layout Figures



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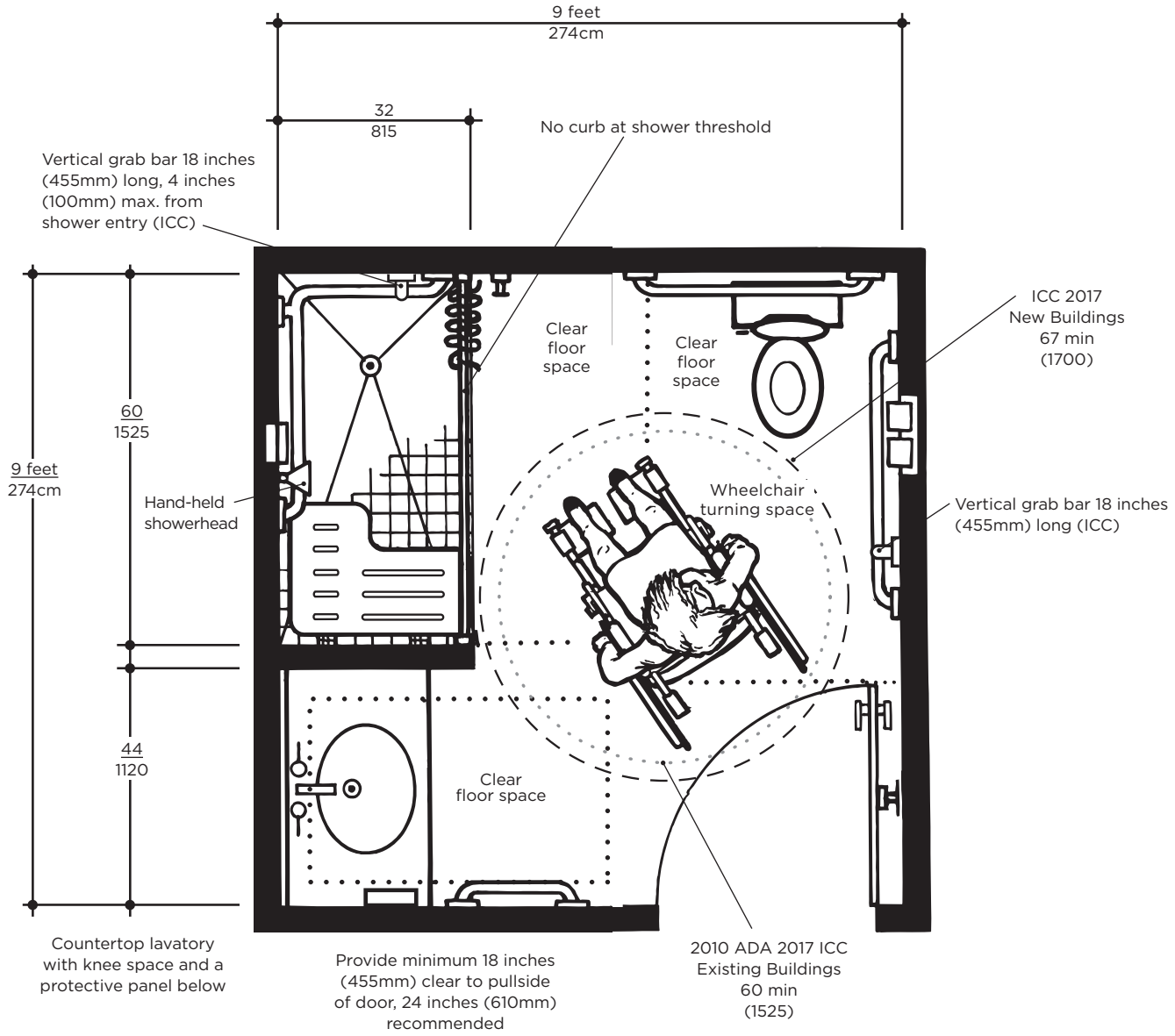
Fig. 36 Bathroom with Enlarged Roll-in Shower Compartment.
See page 55 for Appendix of Layout Figures



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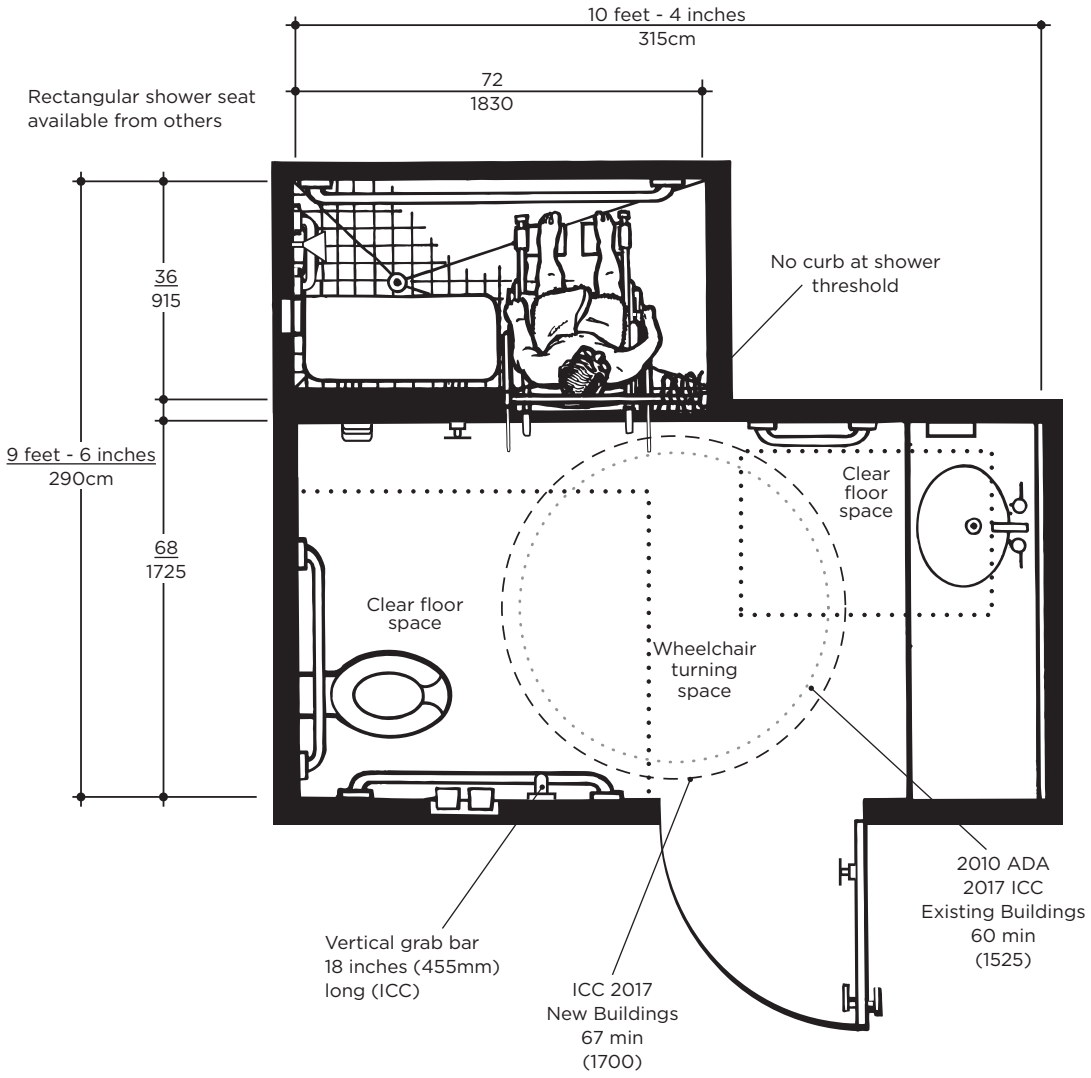
DESIGN SOLUTIONS FOR BATHROOMS WITH SHOWER COMPARTMENTS

Fig. 37 Bathroom with Roll-in Shower Compartment.
See page 56 for Appendix of Layout Figures



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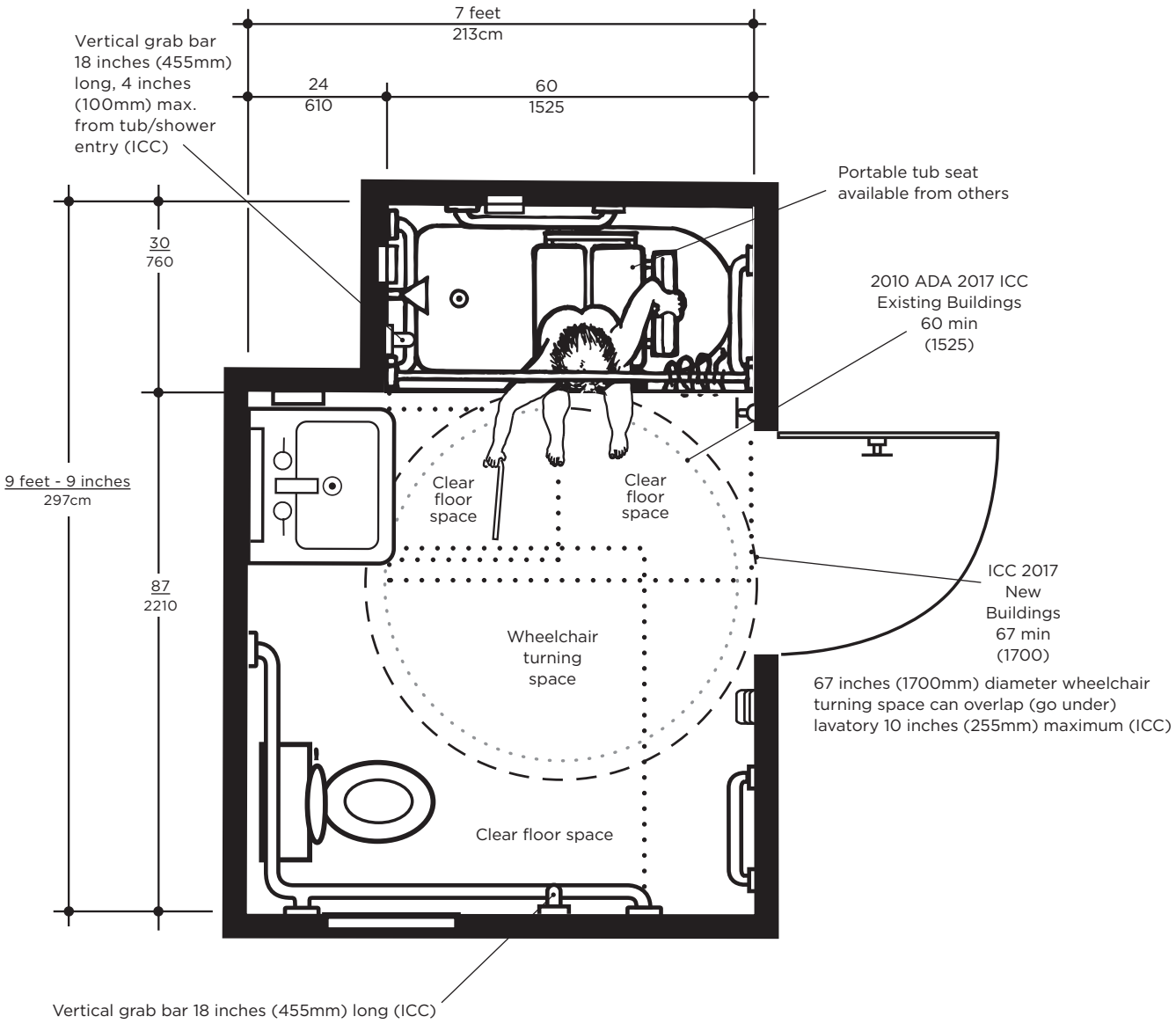
Fig. 38 Bathroom with Enlarged Alternate Roll-in Shower Compartment.
See page 57 for Appendix of Layout Figures



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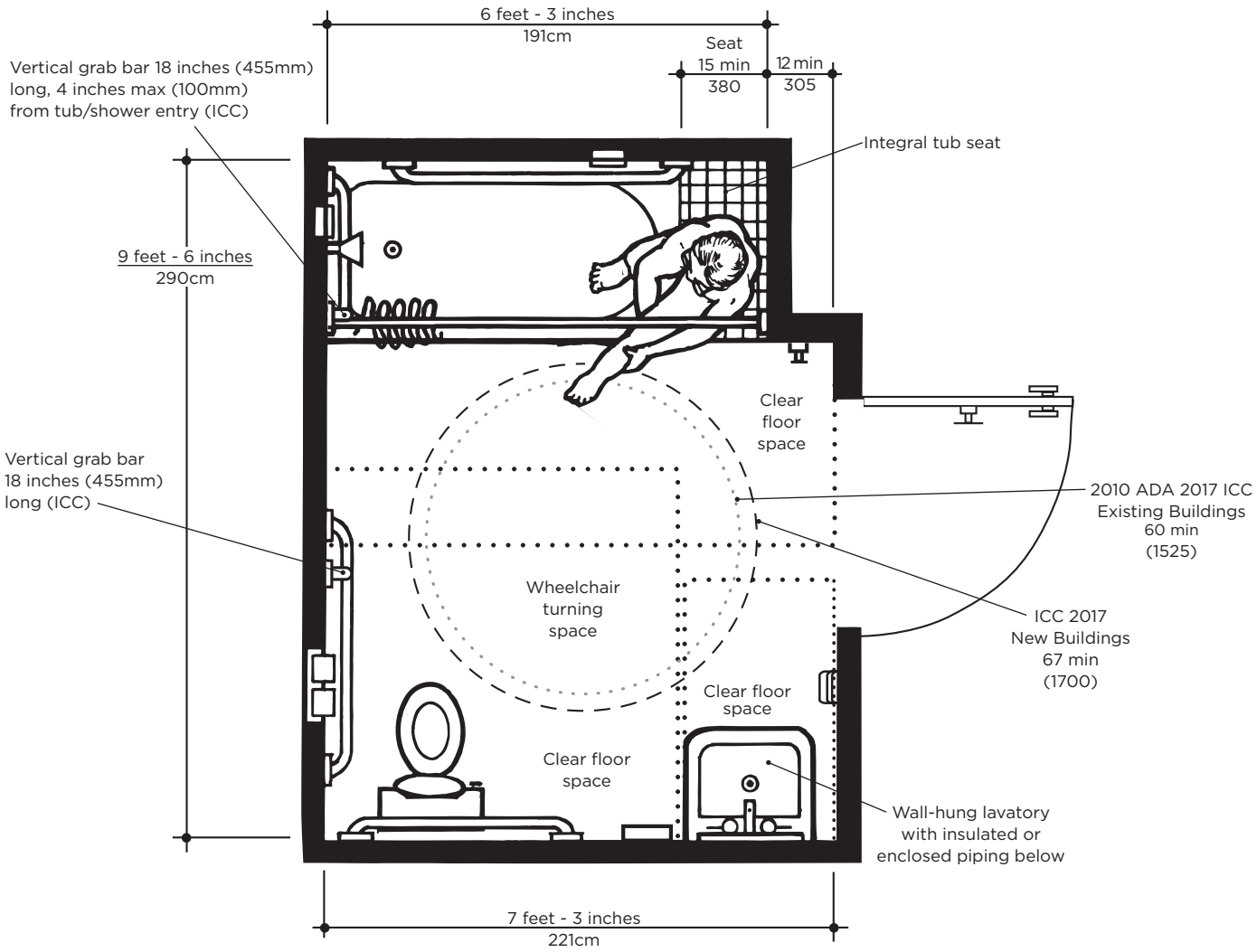
DESIGN SOLUTIONS FOR BATHROOMS WITH TUB/SHOWER UNITS

Fig. 39 Bathroom with Combination Tub/Shower Unit and Portable Seat.
See page 58 for Appendix of Layout Figures



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Fig. 40 Bathroom with Combination Tub/Shower Unit with Permanent Seat.
See page 59 for Appendix of Layout Figures



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DESIGN SOLUTIONS FOR MULTIPLE SHOWER COMPARTMENTS AND DRESSING COMPARTMENTS

Fig. 41 Multiple Shower Installation with Enlarged Roll-in Shower Compartment and Dressing Compartment.
See page 60 for Appendix of Layout Figures

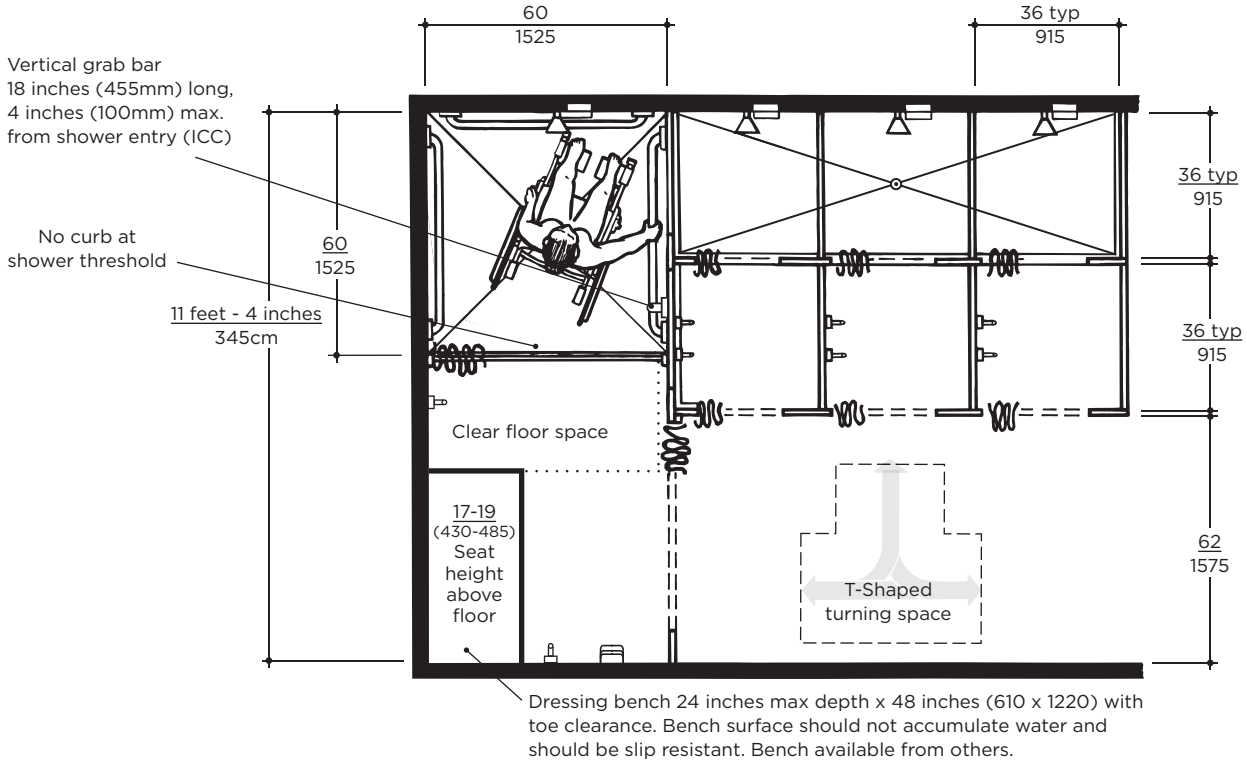
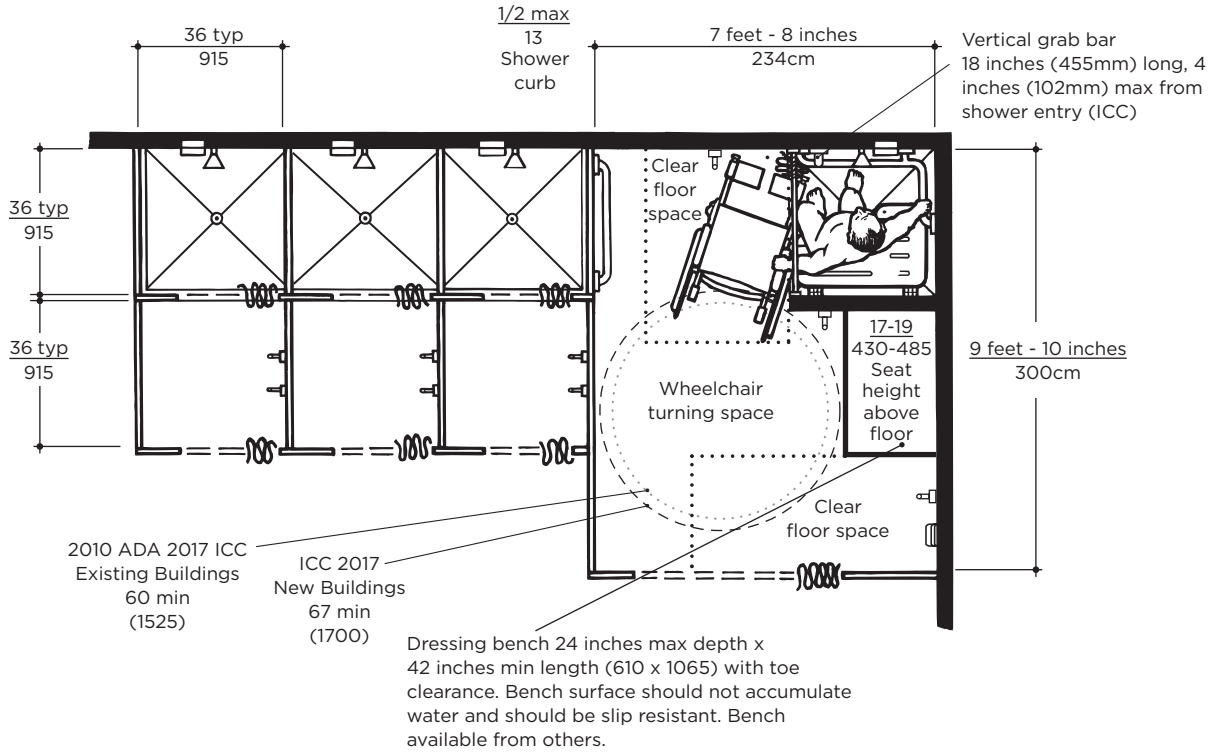


Fig. 42 Multiple Shower Installation with Transfer Shower Compartment and Dressing Compartment.
See page 61 for Appendix of Layout Figures



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BIBLIOGRAPHY AND RESOURCES

Standard for Accessible and Usable Buildings and Facilities

International Code Council
500 New Jersey Avenue, NW, 6th Floor Washington, DC 20001
(Approved March 28, 2017)
Including 2024 Supplement 1, added Section 613, Accessible Adult Changing Station requirements.
ICC A117.1–2017.
For questions and technical information:
888-422-7233, Ext. 4306
Website: https://www.iccsafe.org/

Significant Changes to the A117.1 Accessibility Standard, 2017 Edition

Woodward, Jay.
ICC International Code Council.
500 New Jersey Avenue, NW, 6th Floor.
Washington, DC 20001. (2017)

2010 ADA Standards for Accessible Design

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

Guidance on the 2010 ADA Standards for Accessible Design

U.S. Department of Justice (September 15, 2010)
Website: www.ADA.gov
Additional copies may be obtained by calling the ADA Information Line: 800-514-0301 (voice) or 800-514-0383 (TTY)

ADA National Network

Regional Information Line:
800-949-4232 (voice/tty)
Website: www.adata.org

Universal Design Principles

NC State University (1997)
Website: www.udinstitute.org

ARCHITECTURAL REPRESENTATIVES

Bobrick has Architectural Representatives located throughout North America available for 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 acknowledge Ronald L. Mace, FAIA (1941-1998) and Rex J. Pace for their invaluable contributions to the initial creation and previous editions of this planning guide. Bobrick wishes to thank Richard Duncan, MRP, Executive Director, RL Mace Universal Design Institute, Asheville, NC for assistance with the development of the 2012 and 2021 publications.

APPENDIX OF LAYOUT FIGURES WITH PRODUCT LEGENDS

ACCESSORIES COMPLETE THE SPECIFICATION OF TOILET COMPARTMENT INSTALLATIONS

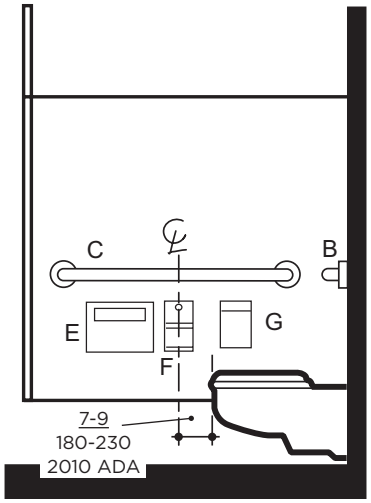


Fig. 17d Individual Accessories (2010 ADA).

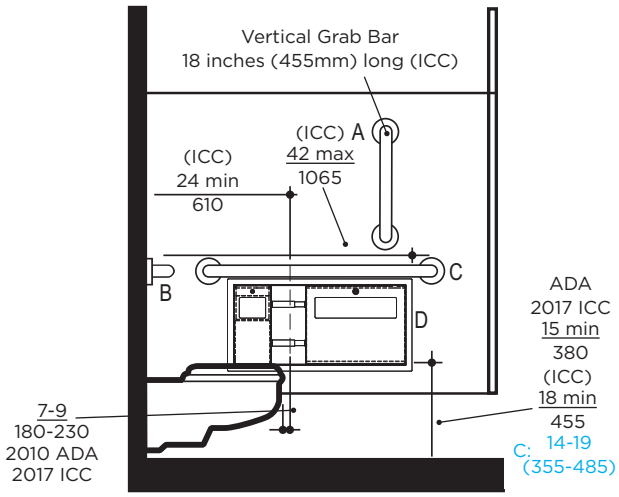


Fig. 17e Combination Accessories (2010 ADA, 2017 ICC).

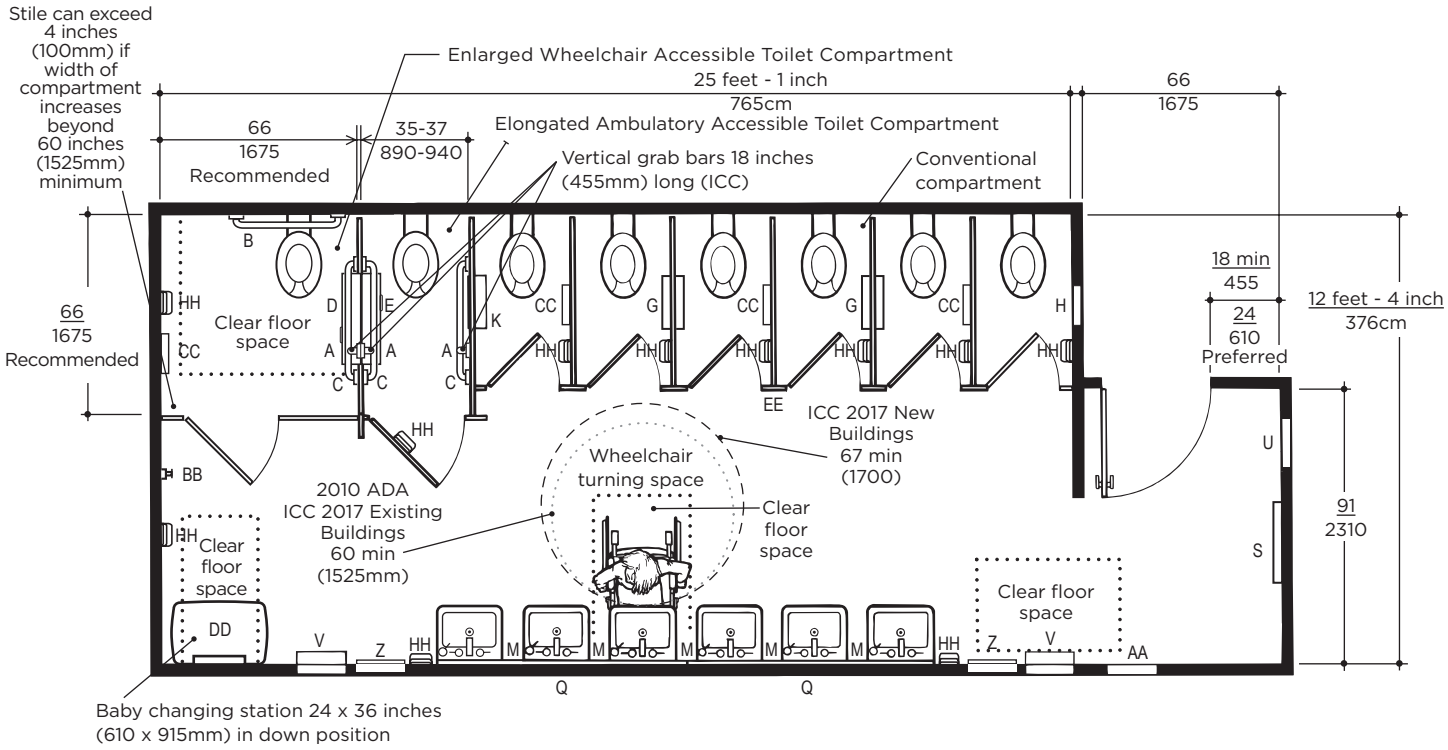
LEGEND

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-30919 Surface-Mounted Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindle on left when seated on toilet (mounts below grab bar)
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)

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DESIGN SOLUTIONS FOR LARGE PUBLIC RESTROOMS

Fig. 20 Women's Large Restroom with Single Door Entry.



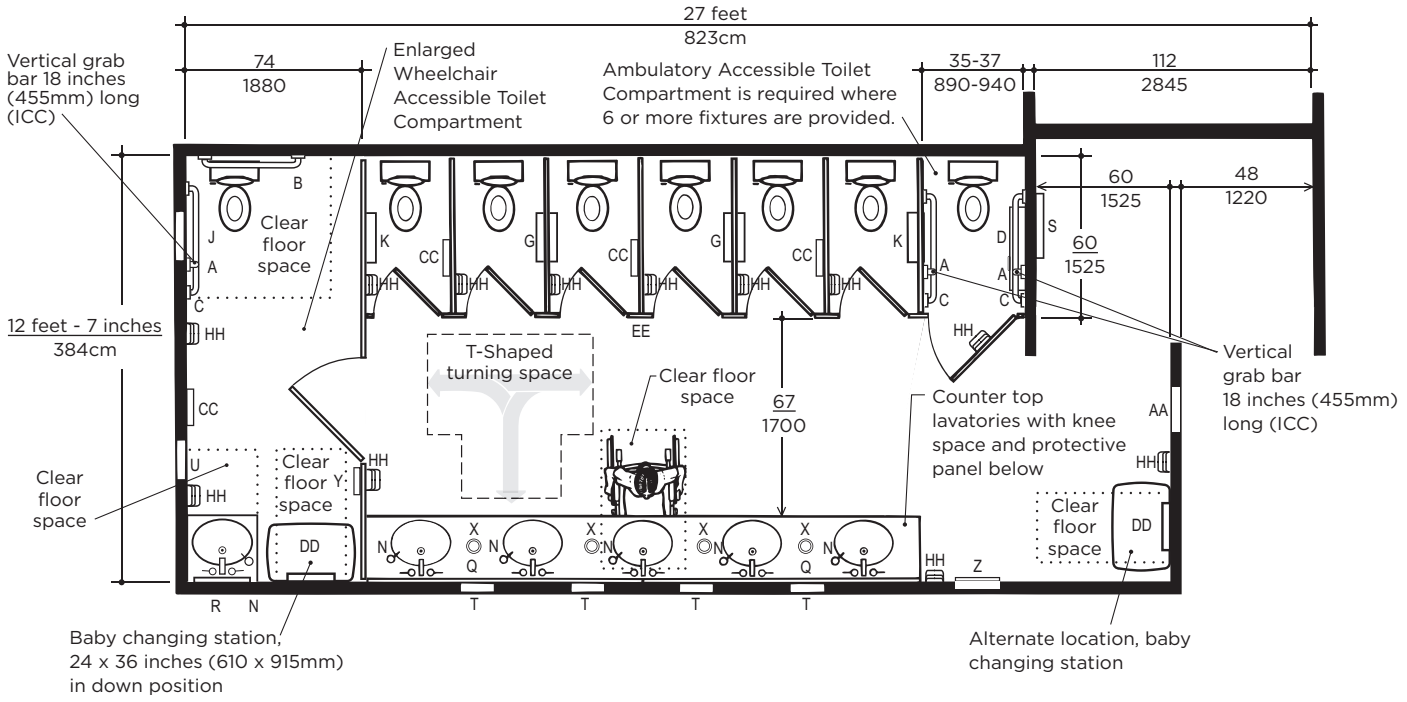
LEGEND

- 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-30919 Surface-Mounted Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on left when seated on toilet (mounts below grab bar)
- E B-30929 Surface-Mounted Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right when seated on toilet (mounts below grab bar)
- G B-357 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles (serves two compartments)
- H B-3574 Recessed Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles
- K B-3579 Surface-Mounted, Toilet Seat-Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles
- M B-822 Lavatory-Mounted Soap Dispenser
- Q B-165 Series Wall-to-Wall Mirror
- S B-165 Series Full-Length Mirror, 24" W x 60" H (610 x 1525mm)
- U B-369 Recessed Paper Towel Dispenser and Waste Receptacle
- V B-3974 Automatic, Roll Paper Towel Dispenser and Waste Receptacle
- Z B-3725 Recessed Hand Dryer
- AA B-3706 Recessed Sanitary Napkin/Tampon Vendor
- BB B-687 Door Bumper
- CC KB102-00 Wall-Mounted Child Protection Seat
- DD KB300-SS Wall-Mounted, Horizontal, Baby Changing Station with Stainless Steel Veneer
- EE 1092 Series Overhead-Braced, Solid Color Reinforced Composite Toilet Compartments
- HH B-635 Mobile Device Holder

Figures not to scale

DESIGN SOLUTIONS FOR LARGE PUBLIC RESTROOMS

Fig. 21 Women's Large Restroom with Open Vestibule.

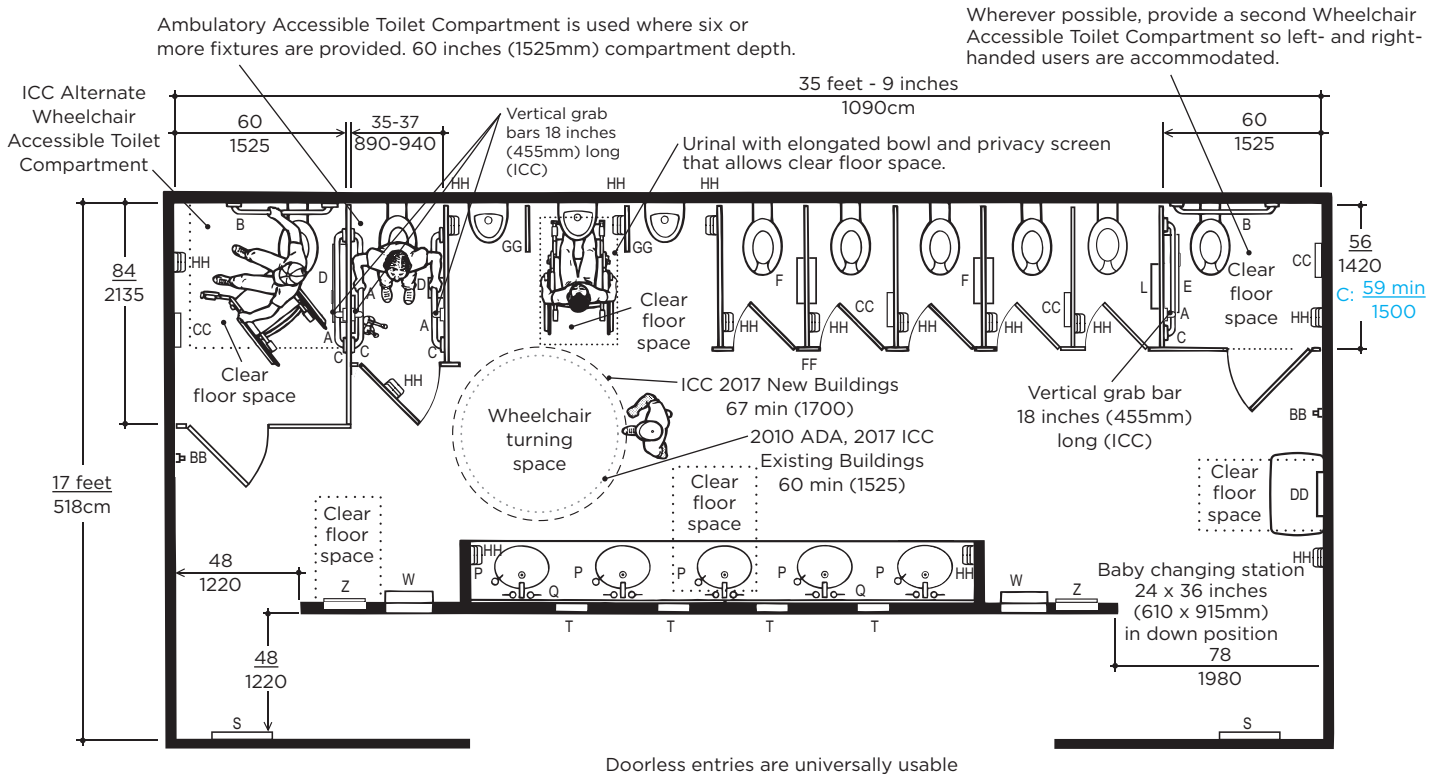


LEGEND

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-30919 Surface-Mounted Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenserwith Theft-Resistant Spindles on left when seated on toilet (mounts below grab bar)
G B-357 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles (serves two compartments)
J B-3092 Recessed Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right when seated on toilet (mounts below grab bar)
K B-3579 Surface-Mounted, Toilet Seat-Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles
N B-824 Automatic, Countertop-Mounted Soap Dispenser
Q B-165 Series Wall-to-Wall Mirror
R B-165 Series Mirror, 24" W x 36" H (610 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
X B-529 Circular Waste Chute
Y B-8397 Surface-Mounted Facial Tissue Dispenser
Z B-3725 Recessed Hand Dryer
AA B-3706 Recessed Sanitary Napkin/Tampon Vendor
CC KB102-00 Wall-Mounted Child Protection Seat
DD KB300-SS Wall-Mounted, Horizontal, Baby Changing Station with Stainless Steel Veneer
EE 1092 Series Overhead-Braced, Solid Color Reinforced Composite Toilet Compartments
HH B-635 Mobile Device Holder

Figures not to scale

Fig. 22 Men's Large Restroom with Double Open Vestibule.



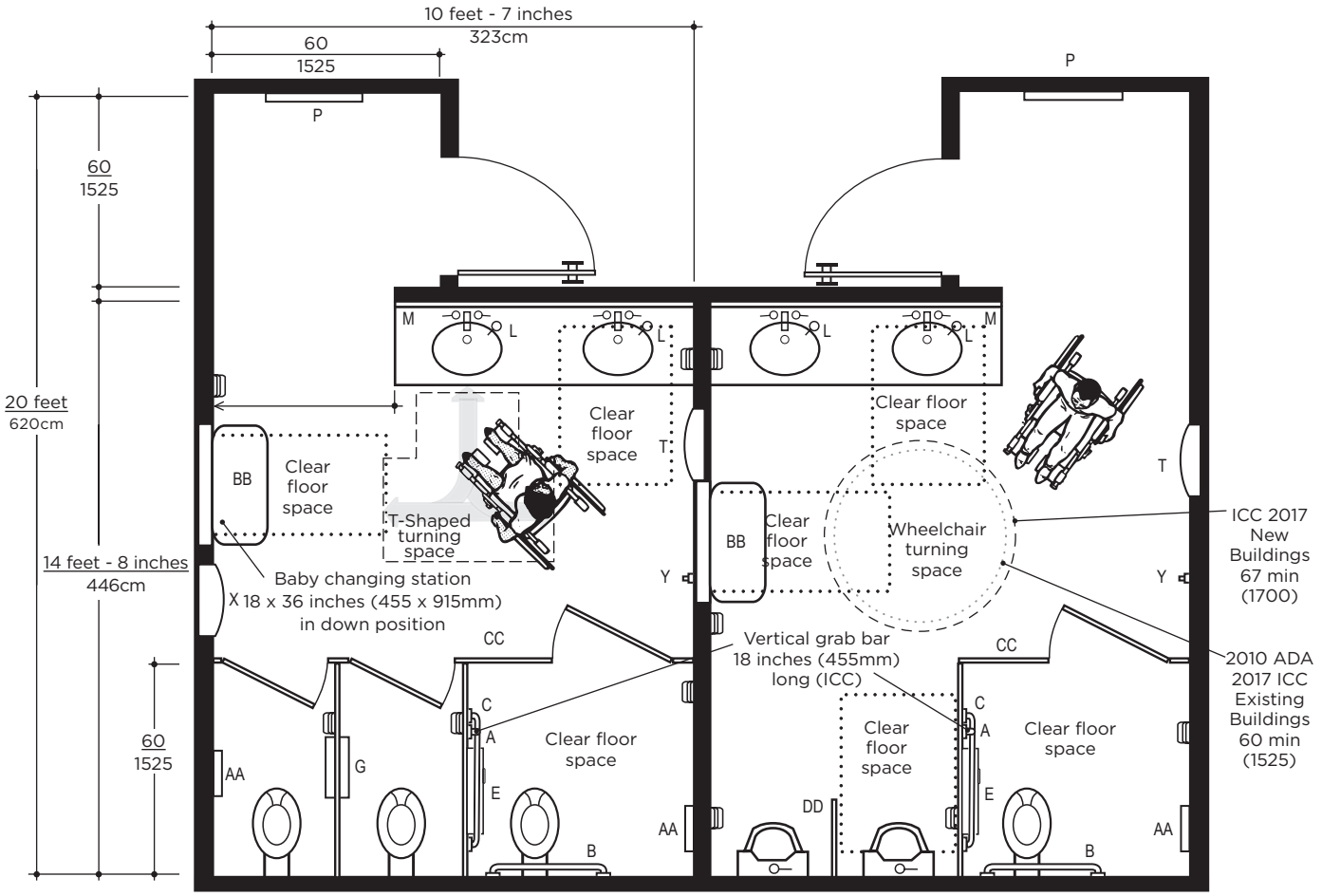
LEGEND

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-30919 Surface-Mounted Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on left when seated on toilet (mounts below grab bar)
E B-30929 Surface-Mounted Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right when seated on toilet (mounts below grab bar)
F B-347 Partition-Mounted Toilet Seat Cover Dispenser, Toilet Tissue Dispenser with Theft-Resistant Spindles (serves two compartments)
L B-3479 Surface-Mounted, Toilet Seat-Cover Dispenser, Toilet Tissue Dispenser with Theft-Resistant Spindles
P B-830 Series SureFlo® Lavatory-Mounted Soap Dispensing System
Q B-165 Series Wall-to-Wall Mirror
S B-165 Series Full-Length Mirror, 24" W x 60" H (610 x 1525mm)
T B-318 Recessed Paper Towel Dispenser
W B-3644 Recessed Waste Receptacle
Z B-3725 Recessed Hand Dryer
BB B-687 Door Bumper
CC KB102-00 Wall-Mounted Child Protection Seat
DD KB300-SS Wall-Mounted, Horizontal, Baby Changing Station with Stainless Steel Veneer
FF 1082 Series Overhead-Braced, Compact Grade Laminate Toilet Compartments
GG 1085 Series Wall-Hung, Compact Grade Laminate Urinal Screens
HH B-635 Mobile Device Holder

Figures not to scale

DESIGN SOLUTIONS FOR SMALL PUBLIC RESTROOMS

Fig. 23 Small Accessible Public Restrooms.



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
E B-30919 Surface-Mounted Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on left when seated on toilet (mounts below grab bar)
F B-635 Mobile Device Holder
G B-357 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles (serves two compartments)
L B-824 Automatic, Countertop-Mounted Soap Dispenser
M B-165 Series Wall-to-Wall Mirror
P B-165 Series Full-Length Mirror, 24" W x 60" H (610 x 1525mm)
T B-43944 Recessed Paper Towel Dispenser and Waste Receptacle
X B-4706 Recessed Sanitary Napkin/Tampon Vendor
Y B-687 Door Bumper
AA KB102-00 Wall-Mounted Child Protection Seat
BB KB310-SSRE Recessed, Horizontal, Baby Changing Station
CC 1542 Series Overhead-Braced, Laminated Plastic Toilet Compartments
DD 1045 Series Wall-Hung Urinal Screen

Figures not to scale

Fig. 24 Accessible Restroom with Additional Entry Clearance Space.

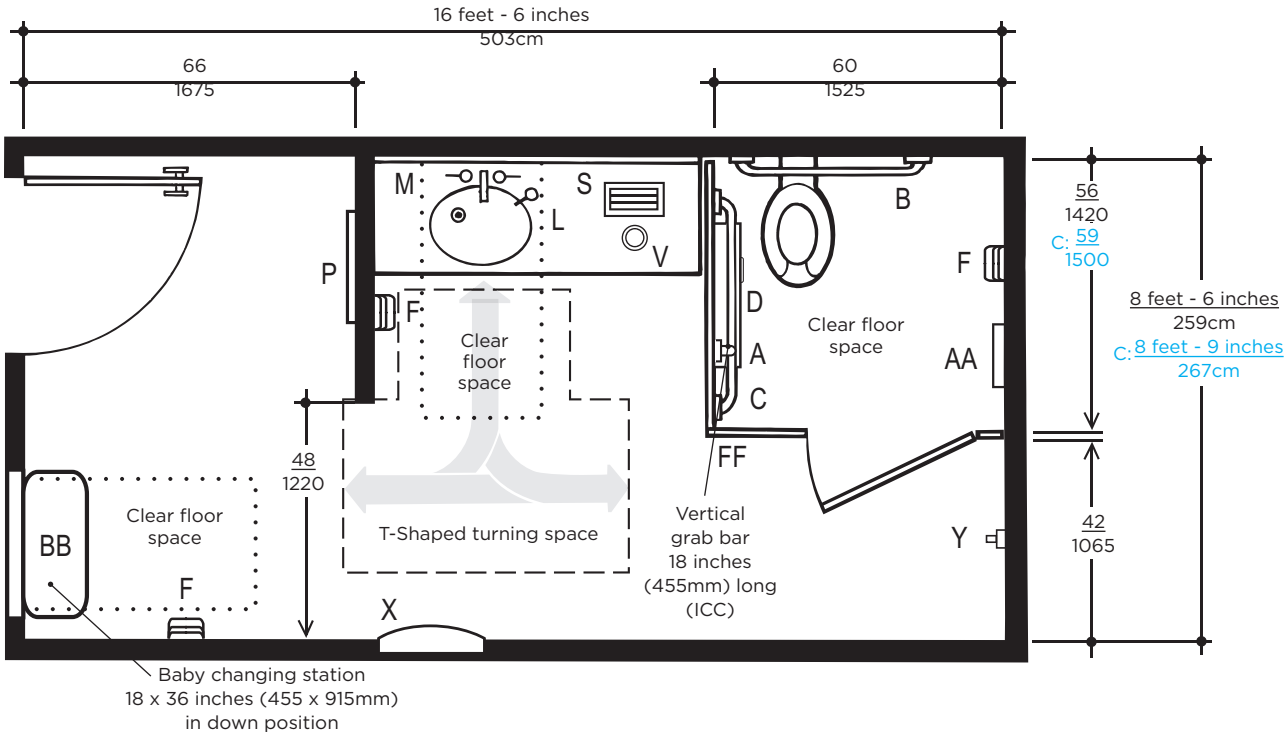


Fig. 24a Accessible Restroom with Additional Entry Clearance Space.

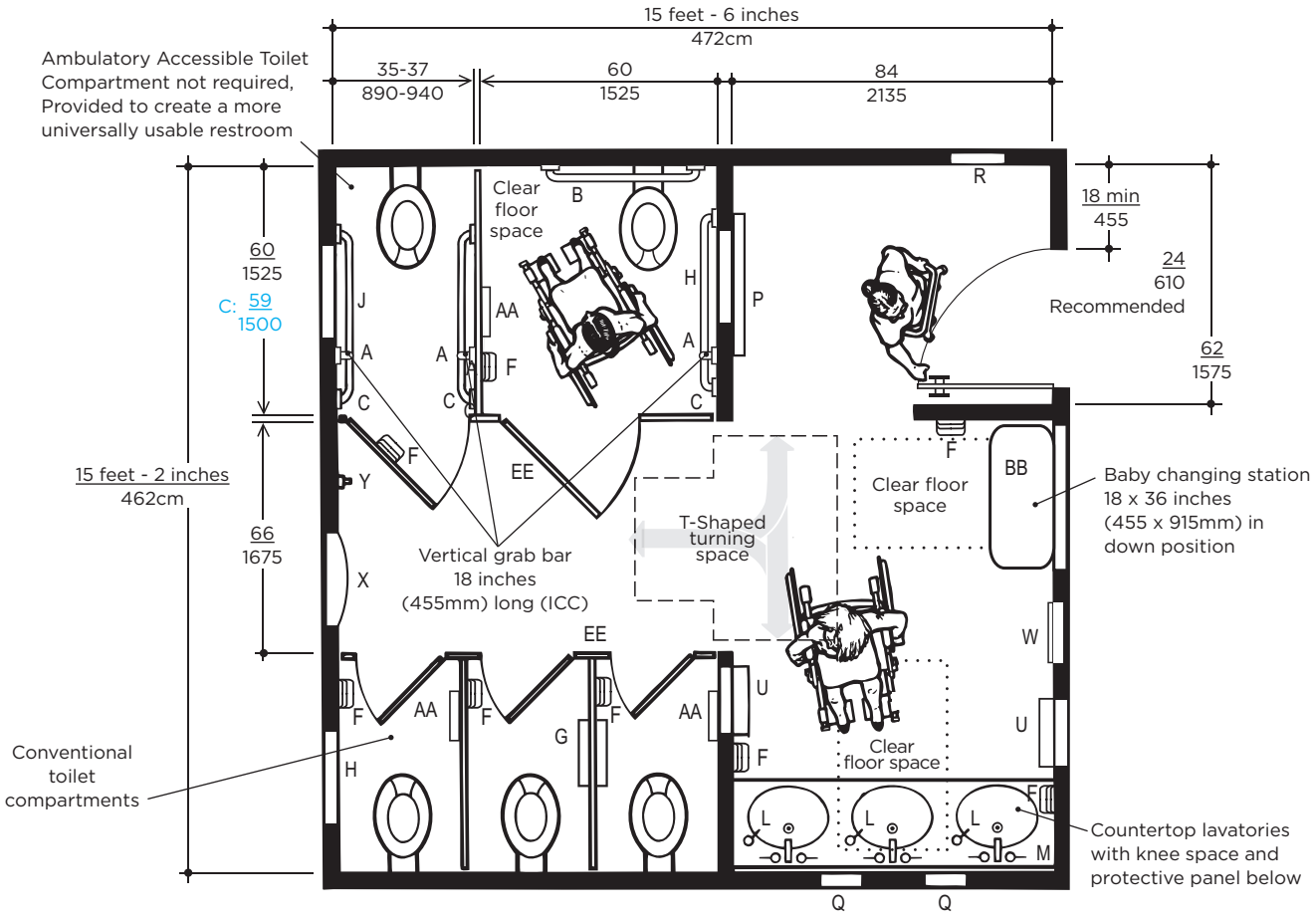
LEGEND

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-30929 Surface-Mounted Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right when seated on toilet (mounts below grab bar)
F B-635 Mobile Device Holder
L B-824 Automatic, Countertop-Mounted Soap Dispenser
M B-165 Series Wall-to-Wall Mirror
P B-165 Series Full-Length Mirror, 24″ W x 60″ H (610 x 1525mm)
S B-526 Paper Towel Dispenser
V B-529 Circular Waste Chute
X B-4706 Recessed Sanitary Napkin/Tampon Vendor
Y B-687 Door Bumper
AA KB102-00 Wall-Mounted Child Protection Seat
BB KB310-SSRE Recessed, Horizontal, Baby Changing Station
FF 1031 Series Floor-Anchored Laminated Plastic Toilet Compartment

Figures not to scale

DESIGN SOLUTIONS FOR SMALL PUBLIC RESTROOMS

Fig. 25 Small Public Restroom Provides Accessible Toilet Compartment and Ambulatory Accessible Compartment.



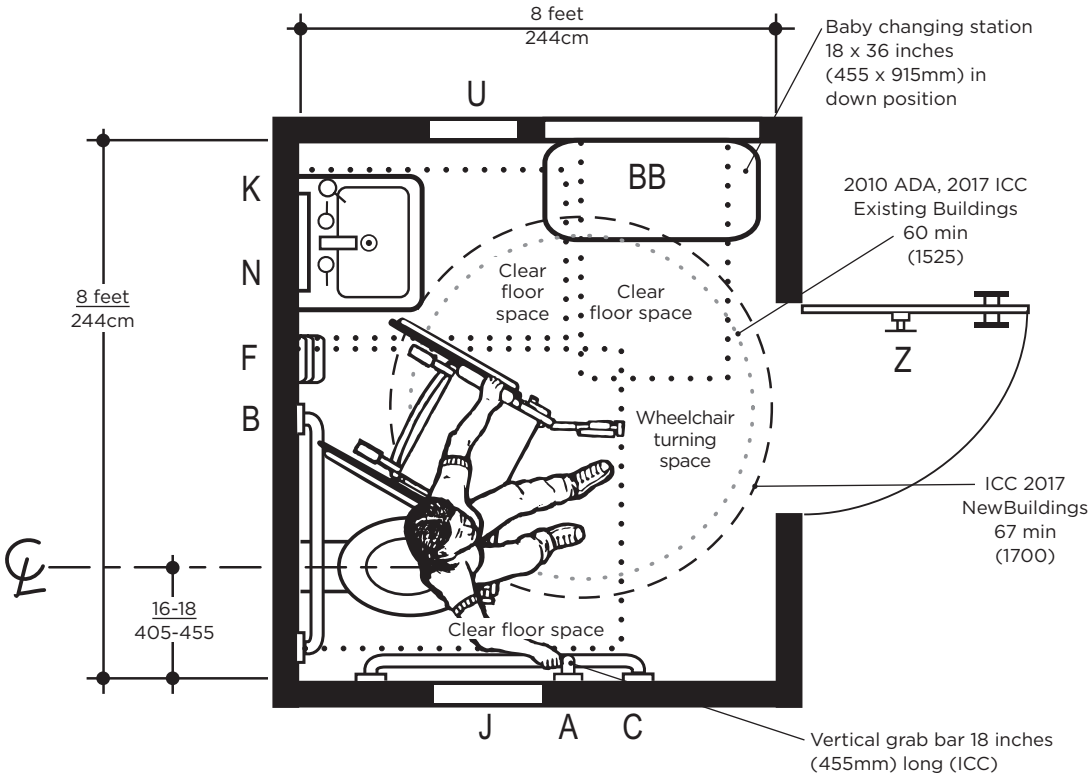
LEGEND

- A B-5806 x 18 Vertical Grab Bar
- B B-5806 x 36 Horizontal Grab Bar
- C B-5806 x 42 Horizontal Grab Bar
- F B-635 Mobile Device Holder
- G B-357 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles (serves two compartments)
- H B-3091 Recessed Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on left when seated on toilet (mounts below grab bar)
- J B-3092 Recessed Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right when seated on toilet (mounts below grab bar)
- L B-824 Automatic, Countertop-Mounted Soap Dispenser
- M B-165 Series Wall-to-Wall Mirror
- P B-165 Series Full-Length Mirror, 24" W x 60" H (610 x 1525mm)
- Q B-318 Recessed Paper Towel Dispenser
- R B-369 Recessed Paper Towel Dispenser and Waste Receptacle
- U B-3944 Recessed Waste Receptacle
- W B-3725 Recessed Hand Dryer
- X B-4706 Recessed Sanitary Napkin/Tampon Vendor
- Y B-687 Door Bumper
- AA KB102-00 Wall-Mounted Child Protection Seat
- BB KB310-SSRE Recessed, Horizontal, Baby Changing Station
- EE 1082 Series Overhead-Braced, Compact Grade Laminate Toilet Compartments

Figures not to scale

DESIGN SOLUTIONS FOR INDIVIDUAL TOILET ROOM

Fig. 26 Individual Toilet Room with Baby Changing Station.



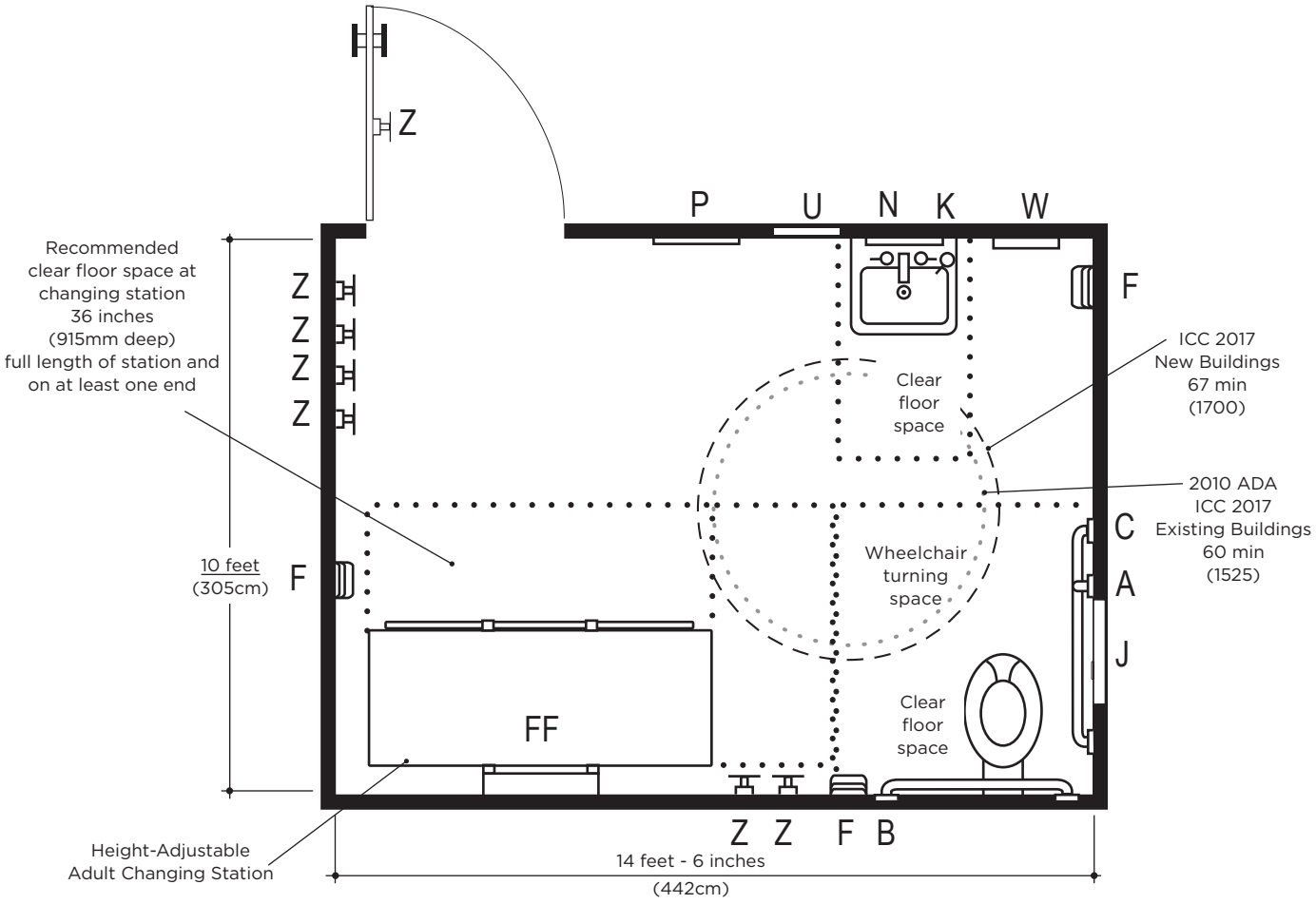
LEGEND

A B-5806 x 18 Vertical Grab Bar
B B-5806 x 36 Horizontal Grab Bar
C B-5806 x 42 Horizontal Grab Bar
F B-635 Mobile Device Holder
J B-3092 Recessed Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right when seated on toilet (mounts below grab bar)
K B-822 Lavatory-Mounted Soap Dispenser
N B-165 Series Mirror, 18" W x 36" H (455 x 915mm)
U B-3944 Recessed Waste Receptacle
Z B-76727 Double Robe/Clothes Hook
BB KB310-SSRE Recessed, Horizontal, Baby Changing Station

Figures not to scale

DESIGN SOLUTIONS FOR BATHROOM WITH ADJUSTABLE HEIGHT ADULT CHANGING STATION

Fig. 27 Individual Toilet Room with Adult Changing Station.



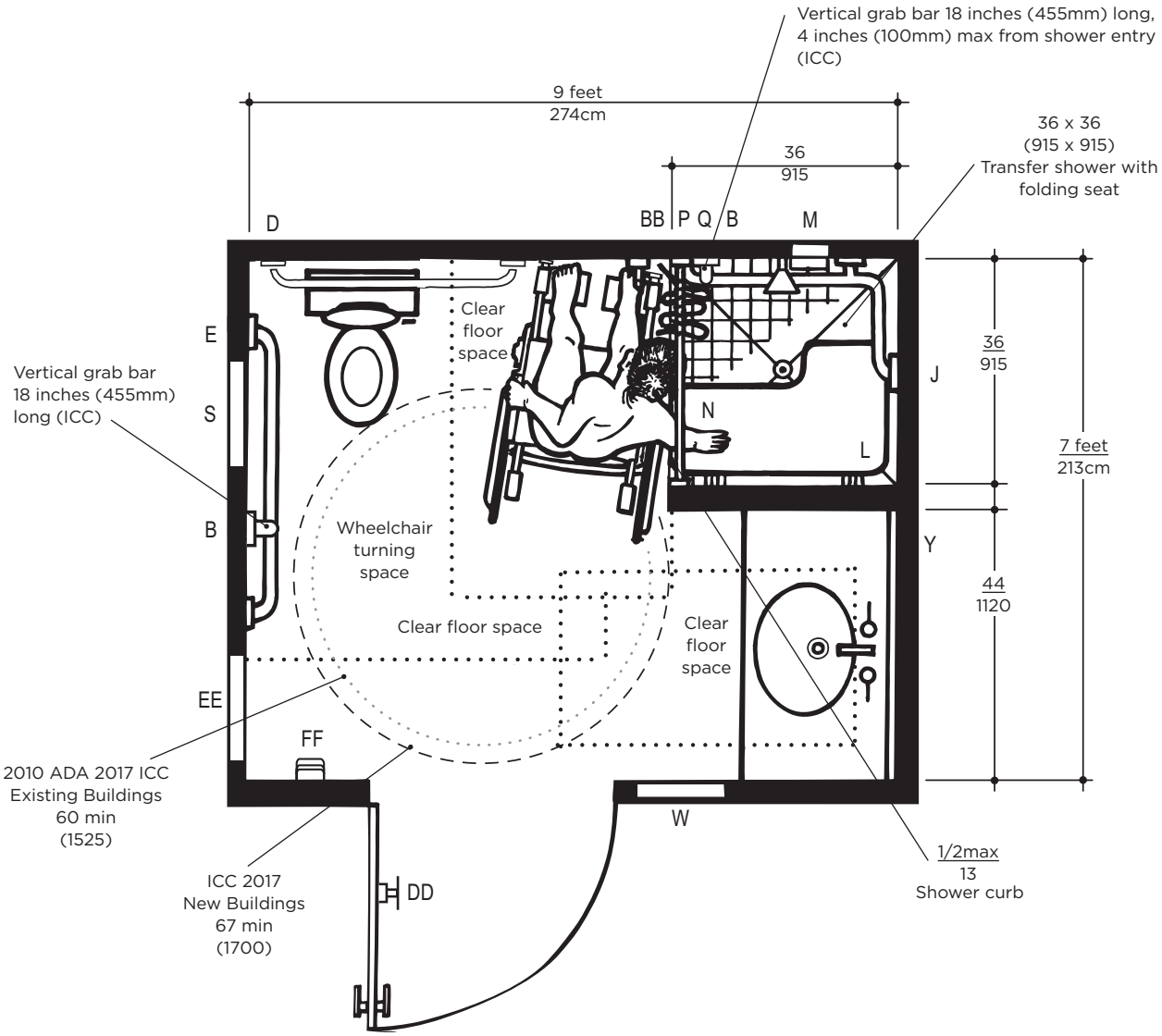
LEGEND

A B-5806 x 18 Vertical Grab Bar
B B-5806 x 36 Horizontal Grab Bar
C B-5806 x 42 Horizontal Grab Bar
F B-635 Mobile Device Holder
J B-3092 Recessed Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right when seated on toilet (mounts below grab bar)
K B-822 Lavatory-Mounted Soap Dispenser
N B-165 Series Mirror, 18" W x 36" H (455 x 915mm
P B-165 Series Full-Length Mirror, 24" W x 60" H (610 x 1525mm)
U B-3944 Recessed Waste Receptacle
W B-3725 Recessed Hand Dryer
Z B-76727 Double Robe/Clothes Hook
FF KB3000-AHL Adjustable Height Adult Changing Station

Figures not to scale

DESIGN SOLUTIONS FOR BATHROOMS WITH SHOWER COMPARTMENTS

Fig. 34 Bathroom with Transfer Shower Compartment.



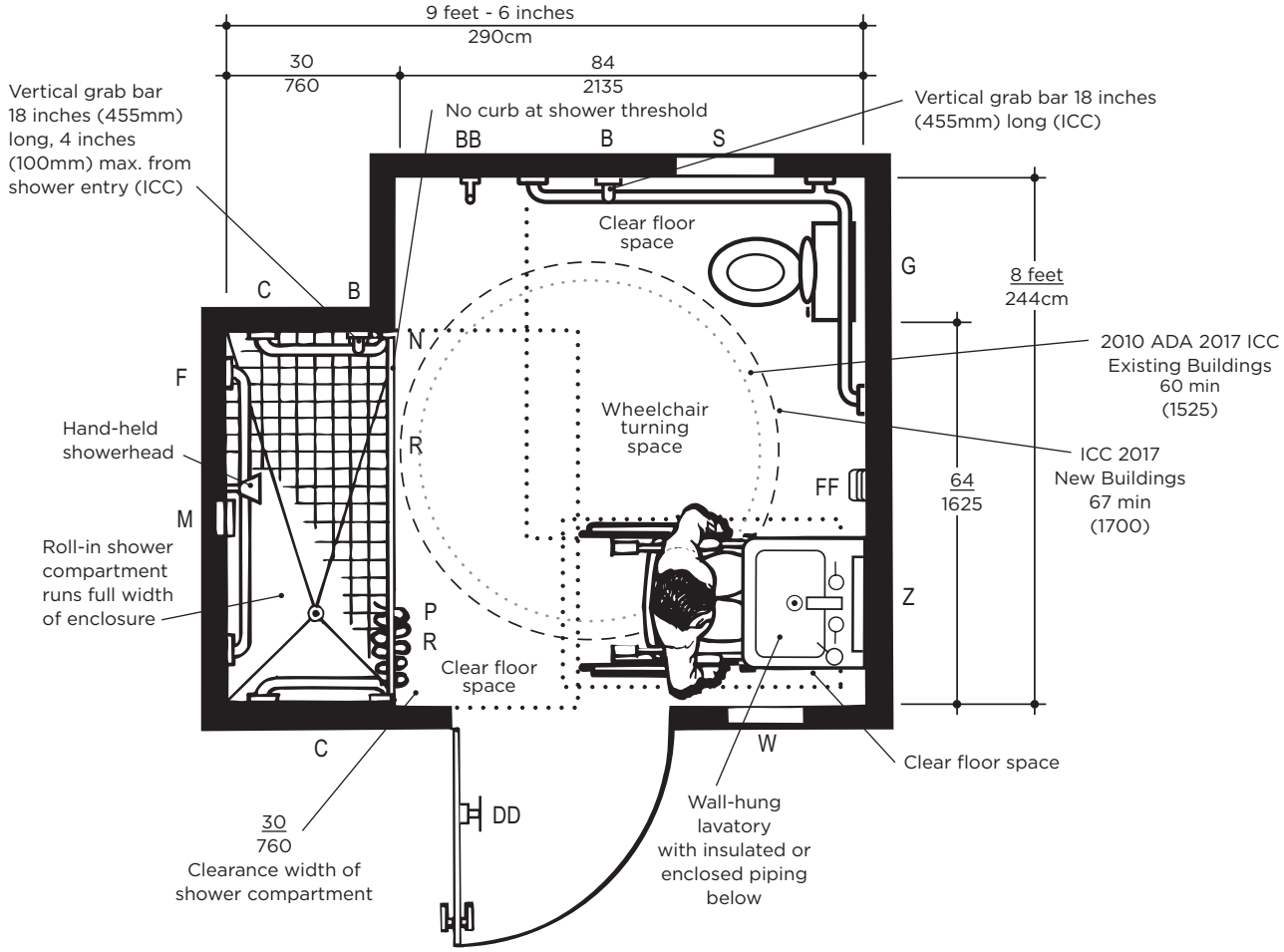
LEGEND

- B B-5806 x 18 Vertical Grab Bar
- D B-5806 x 36 Horizontal Grab Bar
- E B-5806 x 42 Horizontal Grab Bar
- J B-6861 Horizontal Shower Grab Bar, 15-7/8″ x 34-2/4″ (405 x 785mm)
- L B-5181 Reversible Folding Shower Seat, Compact-Grade Laminate, Left-Hand Seat
- M B-4380 Recessed Soap Dish
- N B-6107 Shower Curtain Rod
- P 204-1 Shower Curtain Hooks
- Q 204-2 Vinyl Shower Curtain, 42″ W x 72″ H (1065 x 1830mm)
- S B-3092 Recessed Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right when seated on the toilet
- W B-3644 Recessed Waste Receptacle
- Y B-165 Series Wall-to-Wall Mirror
- BB B-2116 Single Robe/Clothes Hook with Concealed Mounting
- DD B-76727 Double Robe/Clothes Hook
- EE B-3706 Recessed Sanitary Napkin/Tampon Vendor
- FF B-635 Mobile Device Holder

Figures not to scale

DESIGN SOLUTIONS FOR BATHROOMS WITH SHOWER COMPARTMENTS

Fig. 35 Bathroom with Wet-Area Shower Compartment.

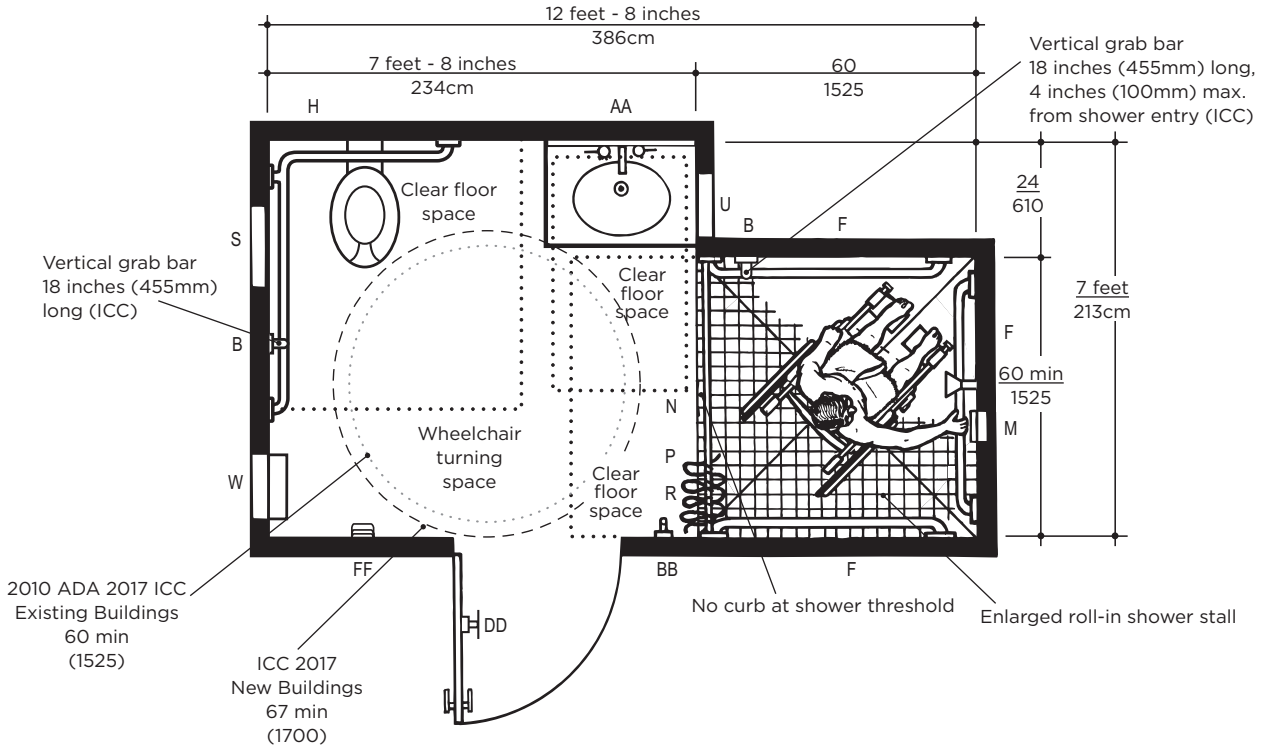


LEGEND

- B B-5806 x 18 Vertical Grab Bar
- C B-5806x 24 Horizontal Grab Bar
- F B-5806 x 48 Horizontal Grab Bar
- G B-5837 Horizontal Two-Wall Grab Bar, 36″ x 54″ (915 x 1370mm)
- M B-4380 Recessed Soap Dish
- N B-6107 Shower Curtain Rod
- P 204-1 Shower Curtain Hooks
- R 204-3 Vinyl Shower Curtain, 70″ W x 72″ H (1780 x 1830mm)
- S B-3092 Recessed Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right side when seated on the toilet
- W B-3644 Recessed Waste Receptacle
- Z B-165 Series Mirror, 18″ W x 36″ H (455 x 915mm
- BB B-2116 Single Robe/Clothes Hook with Concealed Mounting
- DD B-76727 Double Robe/Clothes Hook
- FF B-635 Mobile Device Holder

Figures not to scale

Fig. 36 Bathroom with Enlarged Roll-in Shower Compartment.



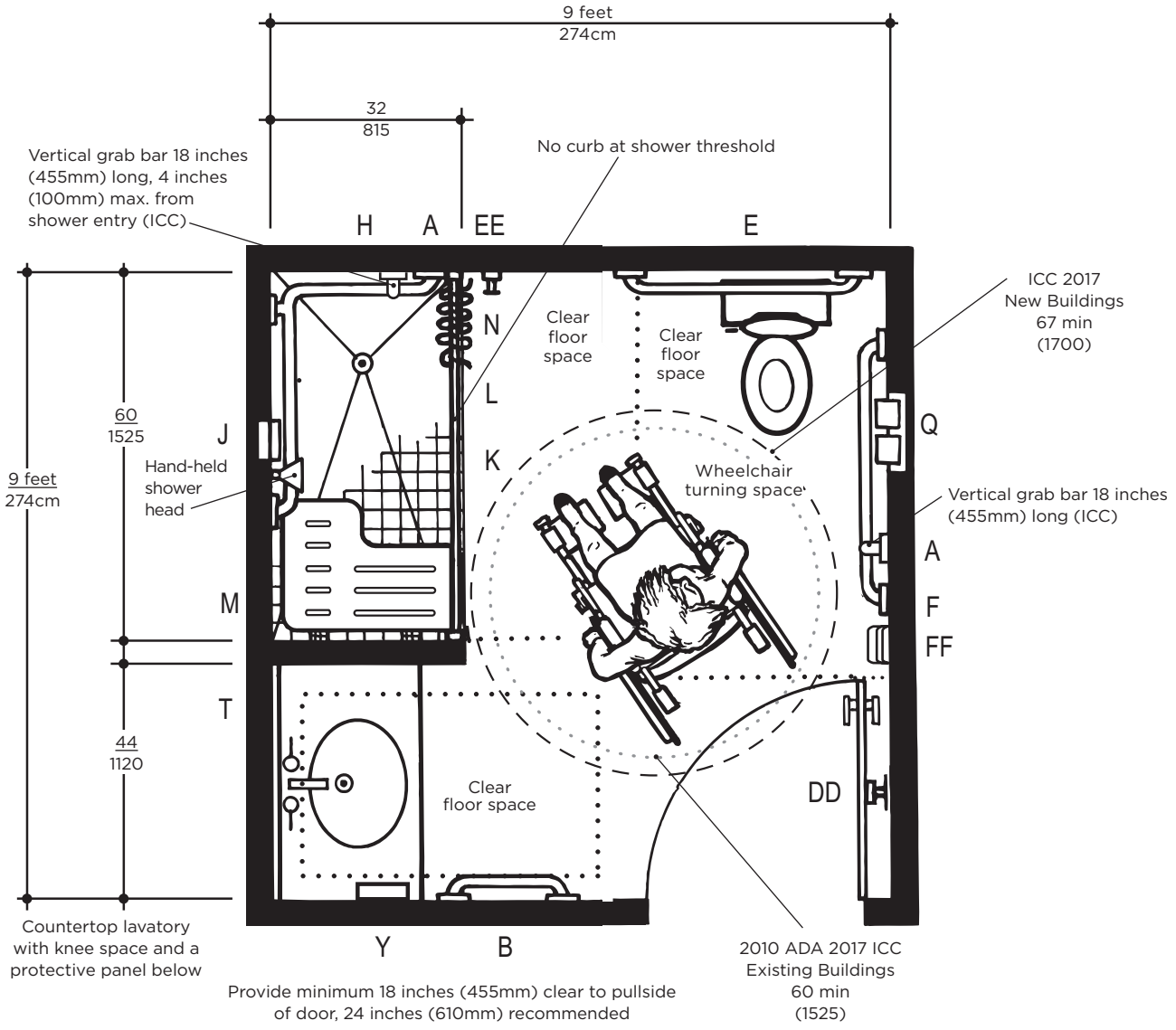
LEGEND

- B B-5806 x 18 Vertical Grab Bar
- F B-5806 x 48 Horizontal Grab Bar
- H B-5837 Horizontal Two-Wall Grab Bar, 36″ x 54″ (915 x 1370mm)
- M B-4380 Recessed Soap Dish
- N B-6107 Shower Curtain Rod
- P 204-1 Shower Curtain Hooks
- R 204-3 Vinyl Shower Curtain, 70″ W x 72″ H (1780 x 1830mm)
- S B-3092 Recessed Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right side when seated on the toilet
- U B-359 Recessed Paper Towl Dispenser
- W B-3644 Recessed Waste Receptacle
- AA B-165 Series Mirror, 33″ W x 36″ H (840 x 915mm)
- BB B-2116 Single Robe/Clothes Hook with Concealed Mounting
- DD B-76727 Double Robe/Clothes Hook
- FF B-635 Mobile Device Holder

Figures not to scale

DESIGN SOLUTIONS FOR BATHROOMS WITH SHOWER COMPARTMENTS

Fig. 37 Bathroom with Roll-in Shower Compartment.



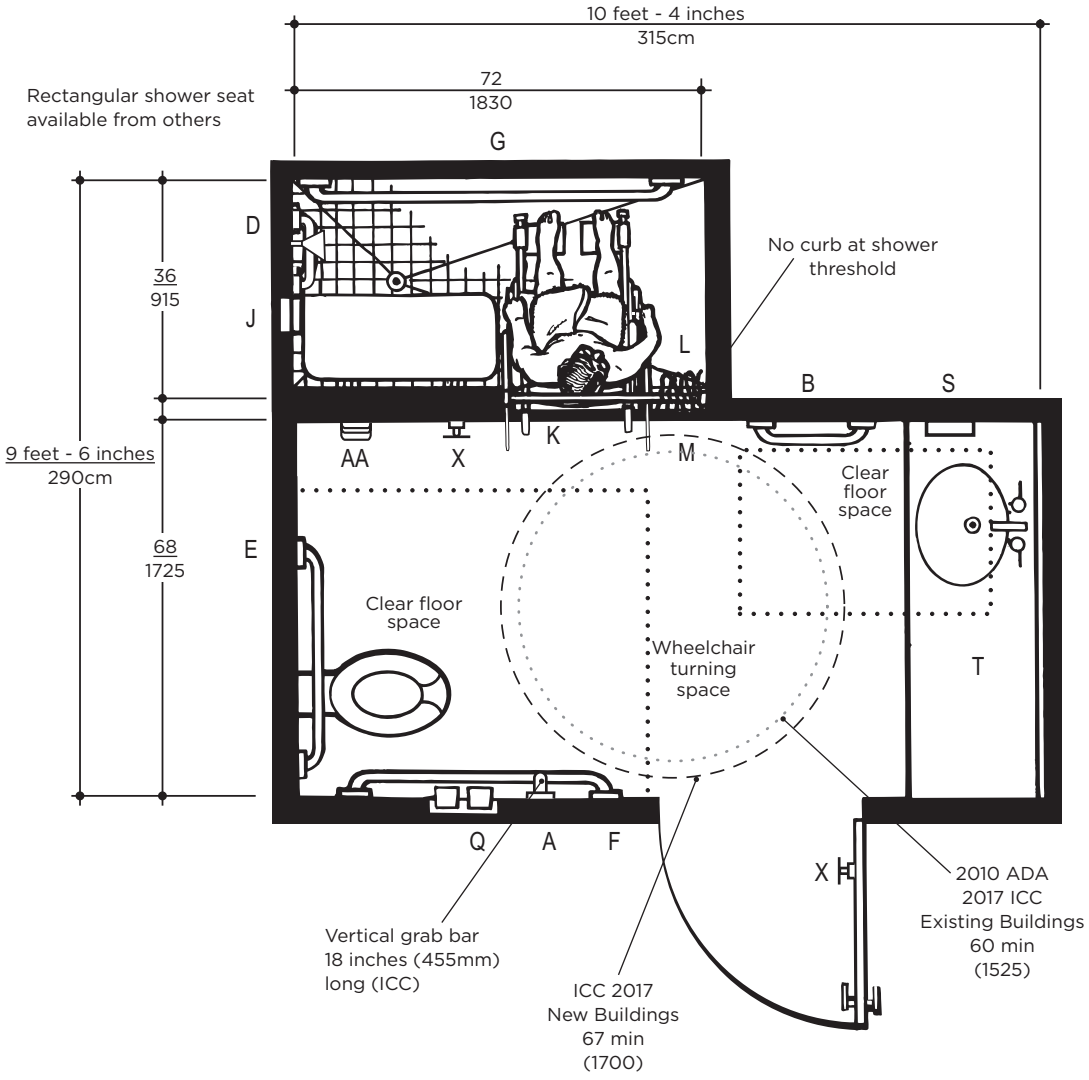
LEGEND

- A B-5806 x 18 Vertical Grab Bar
- B B-5806 x 18 Horizontal Grab Bar used as towel bar
- E B-5806 x 36 Horizontal Grab Bar
- F B-5806 x 42 Horizontal Grab Bar
- H B-5837 Horizontal, Two-Wall Grab Bar, 36″ x 54″ (915 x 1370mm)
- J B-4380 Recessed Soap Dish
- K B-6107 Shower Curtain Rod
- L 204-1 Shower Curtain Hooks
- M B-5181 Reversible Folding Shower Seat, Compact Grade Laminate, Right-Hand Seat
- N 204-3 Vinyl Shower Curtain, 70″ W x 72″ H (1780 x 1830mm)
- Q B-6977 Recessed Toilet Tissue Dispenser for Two Rolls
- T B-165 Series Wall-to-Wall Mirror
- Y B-8397 Surface-Mounted Facial Tissue Dispenser
- DD B-76727 Double Robe/Clothes Hook
- EE B-2116 Single Robe/Clothes Hook with Concealed Mounting
- FF B-635 Mobile Device Holder

Figures not to scale

DESIGN SOLUTIONS FOR BATHROOMS WITH TUB/SHOWER UNITS

Fig. 38 Bathroom with Enlarged Alternate Roll-in Shower Compartment.



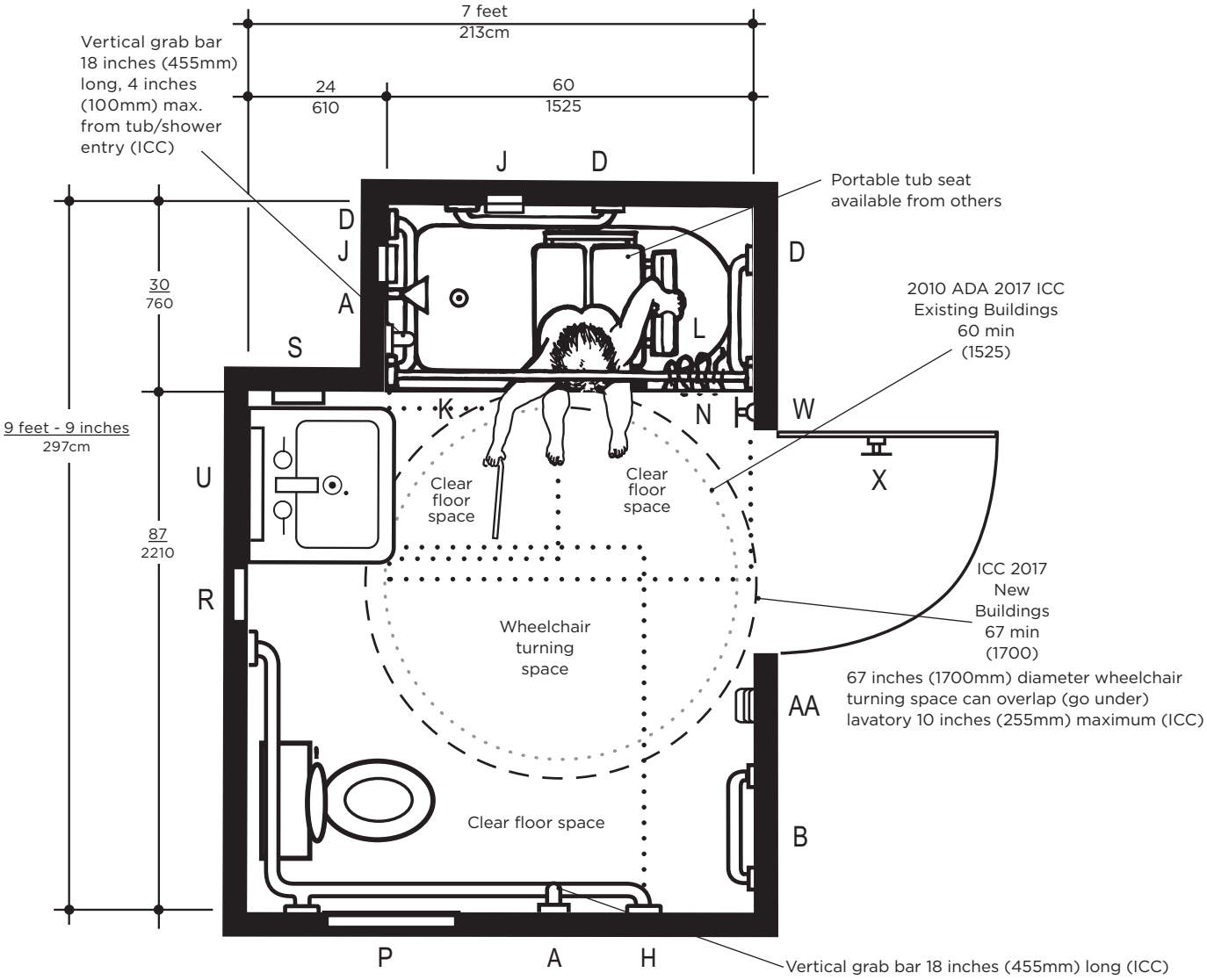
LEGEND

A B-5806 x 18 Vertical Grab Bar
B B-6806 x 18 Horizontal Grab Bar used as a towel bar
D B-5806 x 24 Horizontal Grab Bar
E B-5806 x 36 Horizontal Grab Bar
F B-5806 x 42 Horizontal Grab Bar
G B-5806 x 48 Horizontal Grab Bar
J B-4380 Recessed Soap Dish
K B-6107 Shower Curtain Rod
L 204-1 Shower Curtain Hooks
M 204-2 Vinyl Shower Curtain, 42" W x 72" H (1065 x 1830mm)
Q B-6977 Recessed Toilet Tissue Dispenser for Two Rolls
S B-8397 Surface-Mounted Facial Tissue Dispenser
T B-165 Series Wall-to-Wall Mirror
X B-76727 Double Robe/Clothes Hook
AA B-635 Mobile Device Holder

Figures not to scale

DESIGN SOLUTIONS FOR BATHROOMS WITH TUB/SHOWER UNITS

Fig. 39 Bathroom with Combination Tub/Shower Unit and Portable Seat.

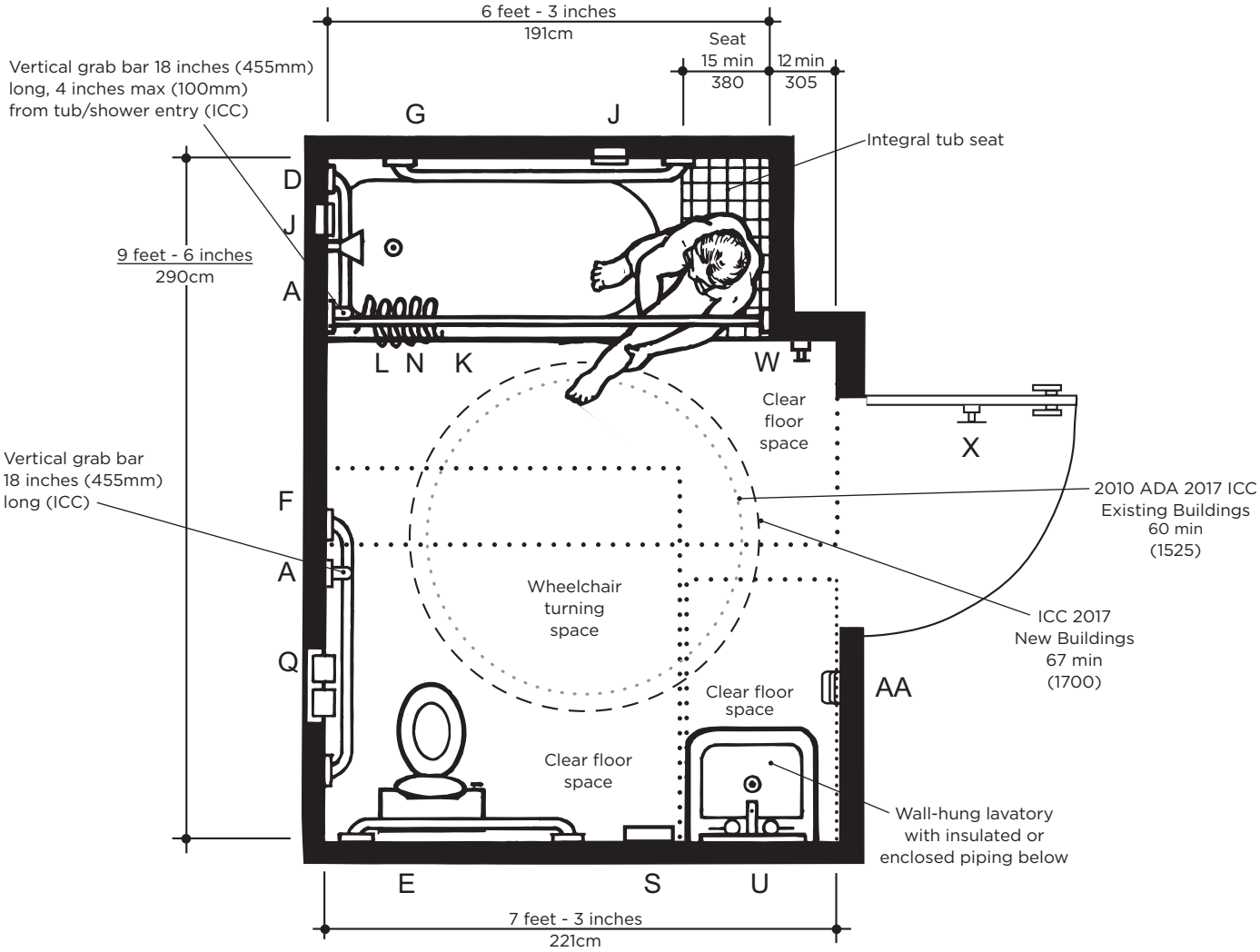


LEGEND

A B-5806 x 18 Vertical Grab Bar
B B-6806 x 18 Horizontal Grab Bar used as a towel bar
D B-5806 x 24 Horizontal Grab Bar
H B-5837 Horizontal Two-Wall Grab Bar, 36″ x 54″ (915 x 1370mm)
J B-4380 Recessed Soap Dish
K B-6107 Shower Curtain Rod
L 204-1 Shower Curtain Hooks
N 204-3 Vinyl Shower Curtain, 70″ W x 72″ H (1780 x 1830mm)
P B-3092 Recessed Toilet Seat Cover Dispenser, Waste Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindles on right side when seated on toilet
R B-369 Recessed Paper Towel Dispenser and Waste Receptacle
S B-8397 Surface-Mounted Facial Tissue Dispenser
U B-165 Series Mirror, 18″ W x 36″ H (455 x 915mm)
W B-76717 Single Robe/Clothes Hook
X B-76727 Double Robe/Clothes Hook
AA B-635 Mobile Device Holder

Figures not to scale

Fig. 40 Bathroom with Combination Tub/Shower Unit with Permanent Seat.



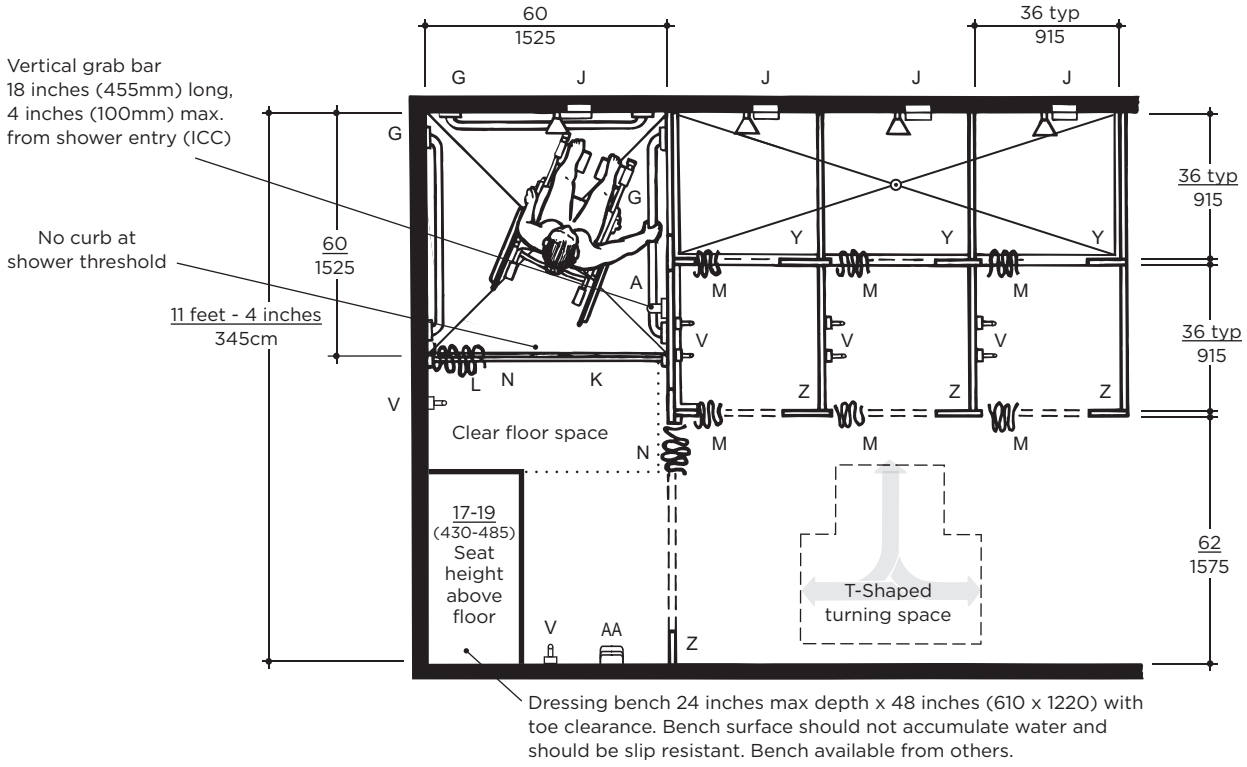
LEGEND

A B-5806 x 18 Vertical Grab Bar
D B-5806 x 24 Horizontal Grab Bar
E B-5806 x 36 Horizontal Grab Bar
F B-5806 x 42 Horizontal Grab Bar
G B-5806 x 48 Horizontal Grab Bar
J B-4380 Recessed Soap Dish
K B-6107 Shower Curtain Rod
L 204-1 Shower Curtain Hooks
N 204-3 Vinyl Shower Curtain, 70″ W x 72″ H (1780 x 1830mm)
Q B-6977 Recessed Toilet Tissue Dispenser for Two Rolls
S B-8397 Surface-Mounted Facial Tissue Dispenser
U B-165 Series Mirror, 18″ W x 36″ H (455 x 915mm)
W B-76717 Single Robe/Clothes Hook
X B-76727 Double Robe/Clothes Hook
AA B-635 Mobile Device Holder

Figures not to scale

DESIGN SOLUTIONS FOR MULTIPLE SHOWER COMPARTMENTS AND DRESSING COMPARTMENTS

Fig. 41 Multiple Shower Installation with Enlarged Roll-in Shower Compartment and Dressing Compartment.

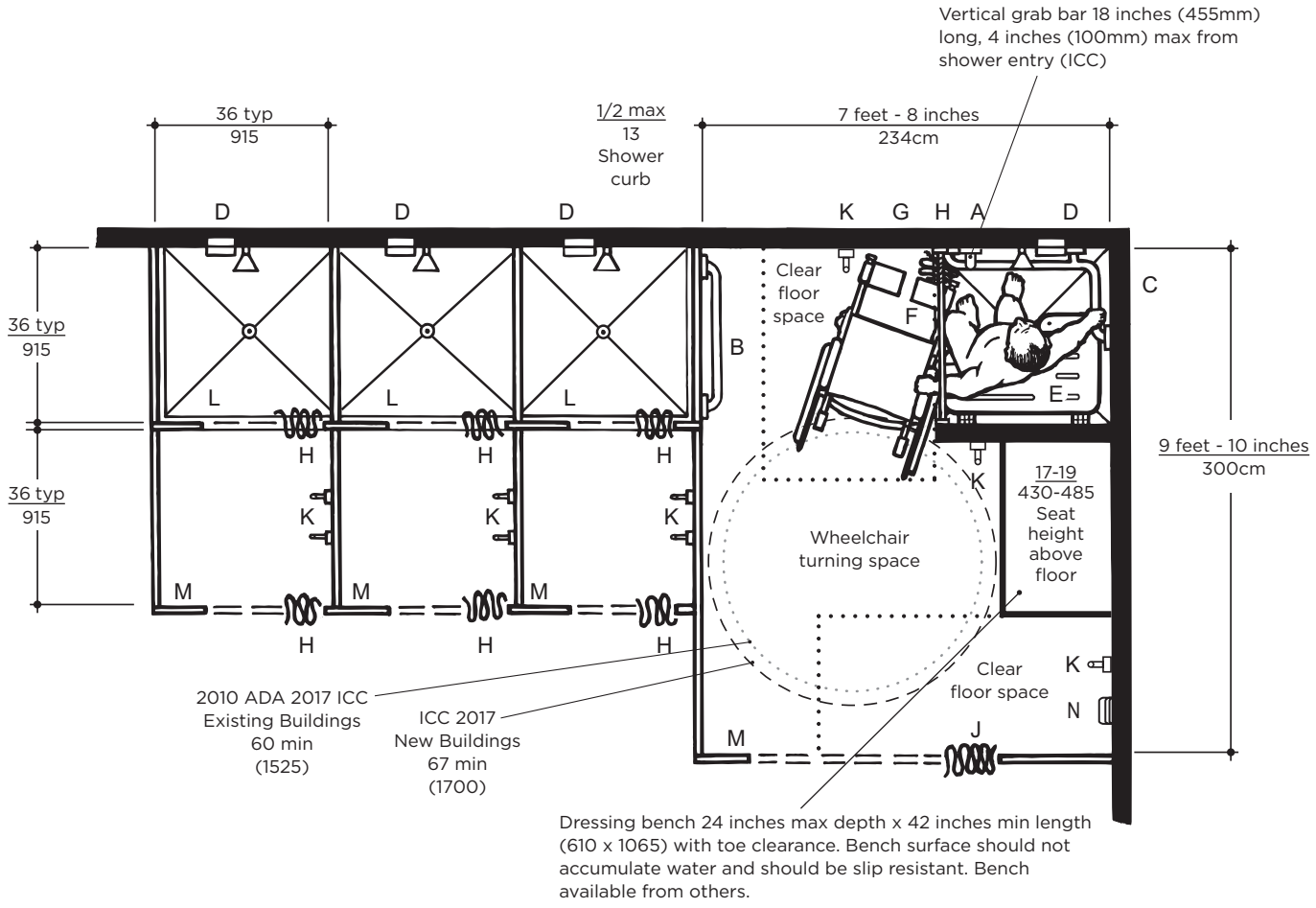


LEGEND

- A B-5806 x 18 Vertical Grab Bar
- G B-5806 x 48 Horizontal Grab Bar
- J B-4380 Recessed Soap Dish
- K B-6107 Shower Curtain Rod
- L 204-1 Shower Curtain Hooks
- M 204-2 Vinyl Shower Curtain, 42″ W x 72″ H (1065 x 1830mm)
- N 204-3 Vinyl Shower Curtain, 70″ W x 72″ H (1780 x 1830mm)
- V B-2116 Single Robe/Clothes Hook with Concealed Mounting
- Y 1082 Series, Compact-Grade Laminate, Shower Dividers with Shower Curtain Track in underside of headrail
- Z 1082 Series, Compact-Grade Laminate, Dressing Compartments with Curtain Track in underside of headrail
- AA B-635 Mobile Device Holder

Figures not to scale

Fig. 42 Multiple Shower Installation with Transfer Shower Compartment and Dressing Compartment.



LEGEND

A B-5806 x 18 Vertical Grab Bar
B B-5806 x 30 Horizontal Grab Bar
C B-6861 Horizontal Shower Grab Bar, 15-7/8″ x 34-2/4″ (405 x 785mm)
D B-4380 Recessed Soap Dish
E B-5181 Reversible Folding Shower Seat, Compact Grade Laminate, 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, Compact-Grade Laminate, Shower Dividers with Shower Curtain Track in underside of headrail
M 1082 Series, Compact-Grade Laminate, Dressing Compartments with Curtain Track in underside of headrail
N B-635 Mobile Device Holder

Figures not to scale