

PLANNING A BARRIER-FREE WASHROOM

BEGIN WITH WASHROOM ENTRANCE AND EXIT

SINGLE-DOOR ENTRIES (Figs. 3a, 13), wherein the door swings into the washroom, are the most popular layouts. A level and clear corridor or passageway leading to the door is recommended to be at least 48" (1219mm) wide. The doorway must have a minimum clear opening 32" (813mm) wide when the door is open 90 degrees. The door should swing into a recommended minimum 60" x 60" (1524 x 1524mm) level, clear space that has at least 18" (457mm) (24"; 610mm preferred) of clear floor space adjacent to the latch doorjamb. A minimum access aisle 48" (1219mm) wide is also recommended inside the washroom to allow people in wheelchairs to get around obstructions, such as sight-barriers, and to accommodate simultaneous in and out traffic.

OPPOSING DOORS (Fig. 3b), one for entrance and the other for exit with an alcove between them, is another popular configuration. In this instance, make sure that no hazard is created in the alcove by the simultaneous entry and exit of two wheelchairs. The width of the alcove must be a minimum of 48" (1219mm) plus the width of the door. It is difficult for a person in a wheelchair or using crutches to back up and pull open a door, so it is preferred that opposing doors swing in the same direction. This opposing door layout is unique because it provides doors that always open in the direction of travel, whether the patron is entering or exiting.

ALCOVES, with either single doors or double doors, need not be large if they are properly planned. Just be sure that when the doors are in an open position, they do not diminish the minimum 48" (1219mm) wide access aisle required for a wheelchair to get around a sight-barrier (Fig. 3a & b).

OPEN VESTIBULES (Figs. 3c, 14, 15), free of doors, are by far the most universally usable because they are the least likely to cause problems for or prohibit use by people with disabilities. It is recommended that the entire passageway be at least 48" (1219mm) wide to accommodate simultaneous in and out traffic.

RAISED THRESHOLDS at doorways should be avoided wherever possible. If it is necessary to include them, then they should be no higher than 1/2" (13mm) and should be beveled with a slope no greater than 1:2.

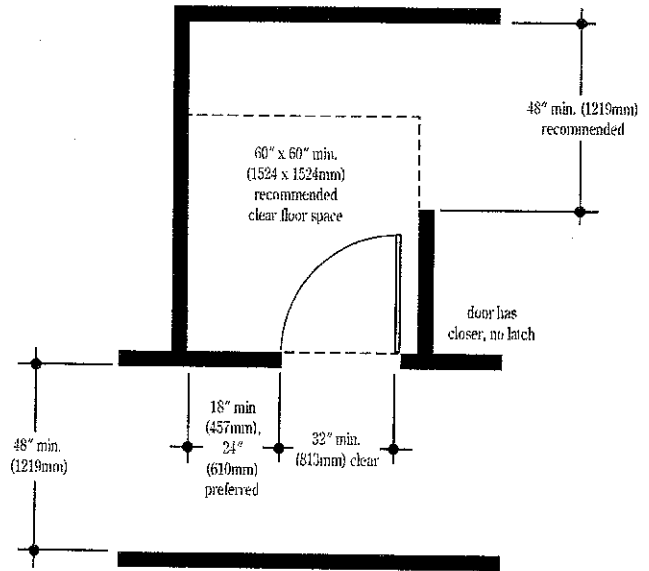
DOORS for interior use must push or pull open with a maximum of 5 pounds of force (lbf) (22.2 N). Door handles, pulls, latches, locks, and other opening devices should have a shape that is easy to operate with one hand, without tight grasping, pinching, or twisting of the wrist; and they should be mounted no higher than 48" (1219mm) above the finish floor. Lever-operated mechanisms, push-type mechanisms, and U-shaped handles are acceptable designs. If a door has a closer, it must be adjusted to provide a sweep period of at least three seconds for the door to move from an open position of 70 degrees to a position 3" (76mm) from the latch.

SPECIAL CONSIDERATIONS FOR LAVATORIES

LAVATORIES are important to public washrooms in providing convenient hygienic facilities for all people. At least one area in each washroom must meet or exceed ADAAG requirements for accessible lavatories. A barrier-free lavatory must not exceed a height of 34" (864mm), must extend at least 17" (432mm) from the rear wall, and have a clearance of at least 29" (737mm) from the bottom of the apron to the finish floor (Fig. 4a). To allow forward approach by people in wheelchairs, provide clear floor space in front of the lavatory that is at least 30" wide x 48" deep (760 x 1219mm), with no more than 19" (483mm) of the 48" (1219mm) extending underneath the lavatory (Fig. 4b). Complete the design by providing the required amount of knee and toe clearance underneath the lavatory. A minimum knee clearance 27" (686mm) above the finish floor must extend at least 8" (203mm) under the front edge of the lavatory. Toe clearance at least 9" (229mm) above the finish floor must be provided for the full depth of the lavatory. If the lavatory is to be installed in a countertop, place it as close as possible to the front edge so it is accessible to even more people. If a washfountain is installed in a facility, it is recommended that at least one barrier-free lavatory also be installed to accommodate those who may have difficulty using the washfountain.

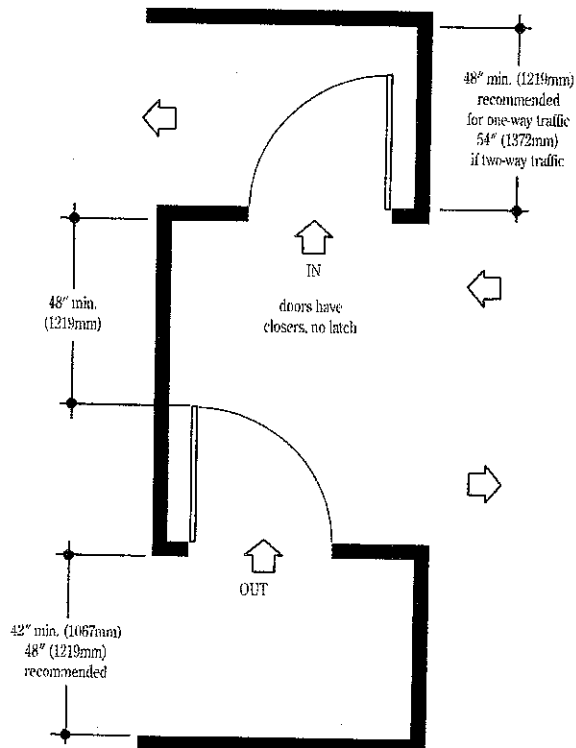
EXPOSED PLUMBING under barrier-free lavatories must be insulated or otherwise configured to eliminate possible contact, and there should be no sharp edges or rough surfaces. This is important in order to prevent burns and other injuries to people who have no sensation in their legs. Since existing installations can be difficult to remove and replace, a good alternative is to install a removable protective panel under the lavatory (Fig. 5).

Fig. 3 Washroom Entrance and Exit Maneuvering Clearances.



(3a) Single Door.

Scale: 1/4" = 1'-0"



(3b) Opposing Doors.

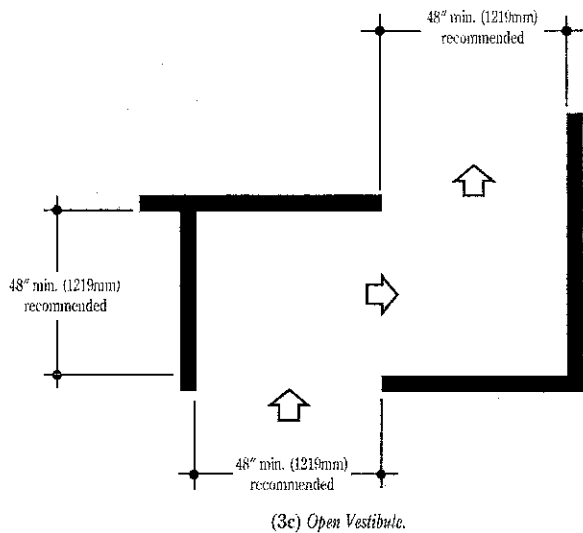
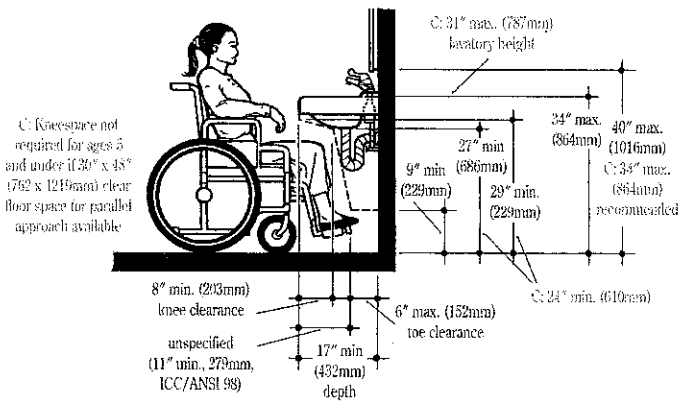
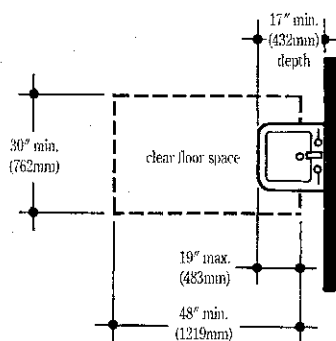


Fig. 4 Lavatory Clearances.

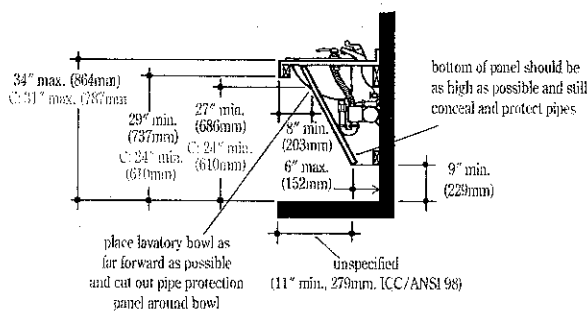


(4a) Knee and Toe Clearance at Lavatory.



(4b) Clear Floor Space at Lavatory.

Fig. 5 Protective Panel Under Lavatory.



CONTROLS AND OPERATING MECHANISMS

Faucets, toilets, and washroom accessories to be used by physically disabled people must meet ADAAG specifications for controls and operating mechanisms (push buttons, valves, knobs, and levers): *operable with one hand, without tight grasping, pinching, or twisting of the wrist, and with a force that does not exceed 5 pounds of force (lbf) (22.2 N)*. Self-closing faucet valves are acceptable if they remain open at least 10 seconds. It is recommended that controls and operating mechanisms project from surrounding material and be a contrasting color so visually impaired people can find them easily. Controls should also be centered over sufficient clear floor space to ensure both left- and right-hand approaches; or two of the same accessory should be provided, one for each type of approach.

ACCESSORIES PROVIDE ADDITIONAL SERVICE AMENITIES TO WASHROOM INSTALLATIONS

Washroom accessories must not project more than 4" (102mm) into a clear access aisle if their leading edge is between 27" and 80" (686-2032mm) above the finish floor; if their leading edge is at or below 27" (686mm), 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 visually impaired people. It is recommended that all floor-standing and surface-mounted units projecting more than 4" (102mm) be located in corners, alcoves, or between other structural elements so as not to be a hazard to visually impaired people or interfere with access aisles or wheelchair turning areas. *Fully recessed accessories are the preferred choice throughout universally designed washrooms.*

MIRRORS must be installed with the bottom edge of the reflecting surface no higher than 40" (1016mm) above the finish floor (Fig. 4a). A single full-length mirror is recommended in each washroom because it can be used by everyone, including children.

SOAP DISPENSERS installed over lavatories must be mounted so their push buttons are no higher than 44" (1118mm) above the finish floor. Lavatory-mounted soap dispensers and lever-handle faucets should be spaced far enough apart to avoid interference with their operations. It is recommended that soap dispensers that meet ADAAG specifications for controls and operating mechanisms be used throughout washrooms to provide universal usability.

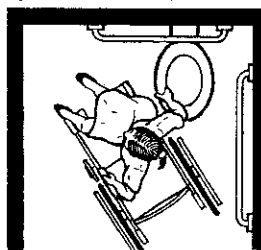
PAPER TOWEL DISPENSERS AND WASTE RECEPTACLES OR WARM-AIR HAND DRYERS should be conveniently located in an area that is accessible to wheelchairs, preferably adjacent to a barrier-free lavatory. It is recommended that one hand dryer be mounted with sufficient clear floor space to allow both left- and right-hand wheelchair approaches; or provide two dryers, one for each type of approach. When a single hand dryer is installed in a washroom, it is recommended that the start button be located 38" to 40" (965-1016mm) above the finish floor; when two or more dryers are installed, mount one dryer so its button is 38" to 40" (965-1016mm) above the finish floor; locate others 41" to 48" (1041-1219mm).

SANITARY NAPKIN/TAMPON VENDORS are recommended in all public women's washrooms to provide essential hygienic products. It is recommended that all units meet ADAAG specifications for operating mechanisms and accessible mounting heights to provide universal usability.

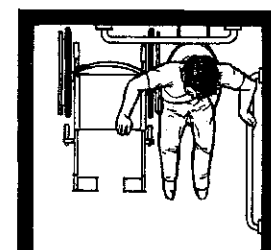
TOILET COMPARTMENTS ARE A MAJOR SERVICE AMENITY IN ALL PUBLIC WASHROOMS

There are five accessible toilet compartments specified in the ADAAG. Four are intended for use by wheelchair users and the fifth is designed for walking mobility-impaired people who need the support of parallel grab bars when sitting and rising. Two of the compartments have a minimum width of 60" (1524mm) and are termed *standard*, including one that has an *alcove* configuration. The two *alternate* compartments are narrower; one is 36" (914mm) wide, the other at least 48" (1219mm)

Fig. 6 Wheelchair Transfers to Toilet.



(6a) Reverse Diagonal Approach.



(6b) Side Approach.

wide. Alternate compartments are acceptable only in alteration work where it can be demonstrated that it is technically infeasible to install standard compartments, or where plumbing codes do not allow the reduction in fixtures that result from combining, for example, two conventional 30" (762mm) wide compartments into one standard 60" (1524mm) wide compartment. The fifth ADAAG (walk-in) compartment is 36" (914mm) wide and is similar to a 36" (914mm) alternate compartment. It has two parallel grab bars and an out-swinging self-closing door, but its length and door width are not specified (because they are not intended for wheelchair users).

Each washroom must have at least one standard compartment, and ADAAG specifies that washrooms with six or more compartments must also have at least one (walk-in) compartment, 36" (914mm) wide of any length with parallel grab bars and an out-swinging door. Some wheelchair users can use 36" (914mm) wide toilet compartments but many cannot and that is why they are not allowed as standard in washrooms. It is recommended that wherever 36" (914mm) wide (walk-in) compartments are required to meet the six-or-more rule, they be made the same lengths and given the same door width as the 36" (914mm) wide alternate compartments. In this way they can be used by both walking mobility-impaired people and those wheelchair users who can or prefer to use them.

The ADAAG, UFAS, and earlier ANSI Standards basically have the same compartment layouts. However, ICC/ANSI 98 represents a departure. The compartment names are different and do not include the alternate compartment layouts. The titles and drawing notes below reflect these changes.

STANDARD COMPARTMENTS (Fig. 7, for all new construction and alterations) (ICC/ANSI 98 Wheelchair Accessible Compartment), with an out-swinging door no more than 4" (102mm) from the corner diagonally from the toilet must be at least 60" (1524mm) wide. The depth must be at least 56" (1422mm) with wall-mounted toilets or 59" (1499mm) with floor-mounted toilets. The toilet must be offset on the back wall with its centerline 18" (457mm) from the nearest side wall or partition. This configuration and size allows a person using a wheelchair the option of a front or side approach to the toilet (Fig. 6) and enough space for an assistant if necessary. Horizontal grab bars must be mounted behind the toilet and on the nearest side wall or partition.

STANDARD ALCOVE (END-OF-ROW) COMPARTMENTS (Fig. 8, for all new construction and alterations) (ICC/ANSI 98 Wheelchair Accessible Compartment), with a side-entry in-swinging door, are also acceptable and often the preferred choice as end-of-row compartments wherever space is available. They require the same 60" (1524mm) minimum width as the standard compartments, and they must have a depth of at least 92" (2337mm) with wall-mounted toilets or 95" (2413mm) with floor-mounted toilets.

ALTERNATE COMPARTMENTS 36" (914mm) WIDE (Fig. 9, acceptable only in alterations where standard compartments are technically infeasible) (no ICC/ANSI 98 equivalent), with a front-entry, out-swinging, self-closing door, must be at least 66" (1676mm) deep with wall-mounted toilets or 69" (1753mm) with floor-mounted toilets. The toilet must be centered on the back wall, and there must be a horizontal grab bar on each side wall or partition. These compartments must not be wider or narrower than 36" (914mm) because they are designed for and best used by walking mobility-impaired people who need the support of the parallel grab bars when sitting and rising. They can be made more universally usable by increasing their depth to at least 72" (1829mm).

ALTERNATE 48" (1219mm) MIN. WIDE COMPARTMENTS (Fig. 10, acceptable only in alterations where standard compartments are technically infeasible) (No ICC/ANSI 98 equivalent), with an out-swinging door near one corner, must be at least 48" (1219mm) wide and 66" (1676mm) deep with wall-mounted toilets or 69" (1753mm) with floor-mounted toilets. The toilet must be offset on the back wall with its centerline 18" (457mm) from the nearest side wall or partition. This alternate compartment is the least usable of the five accessible compartments specified in ADAAG. It has neither the maneuvering space of the standard compartments for wheelchair users nor the parallel grab bars of the alternate compartment 36" (914mm) wide for walking mobility-impaired people.

36" (914mm) WIDE (WALK-IN) COMPARTMENTS (ICC/ANSI 98 Ambulatory Accessible Compartment) (Figs. 9, 11) for washrooms with 6 or more toilets can be the same length as typical toilet compartments but must be 36" (914mm) wide, have parallel grab bars and an out-swinging door. The ICC/ANSI 98 ambulatory accessible stall serves the same purpose as it too is intended for people who walk with mobility impairments. However, it does have a specified length and more extensive door requirements.

Fig. 7 Standard Compartment (ICC/ANSI 98 Wheelchair Accessible Compartment).

Scale: 1/4" = 1'-0"

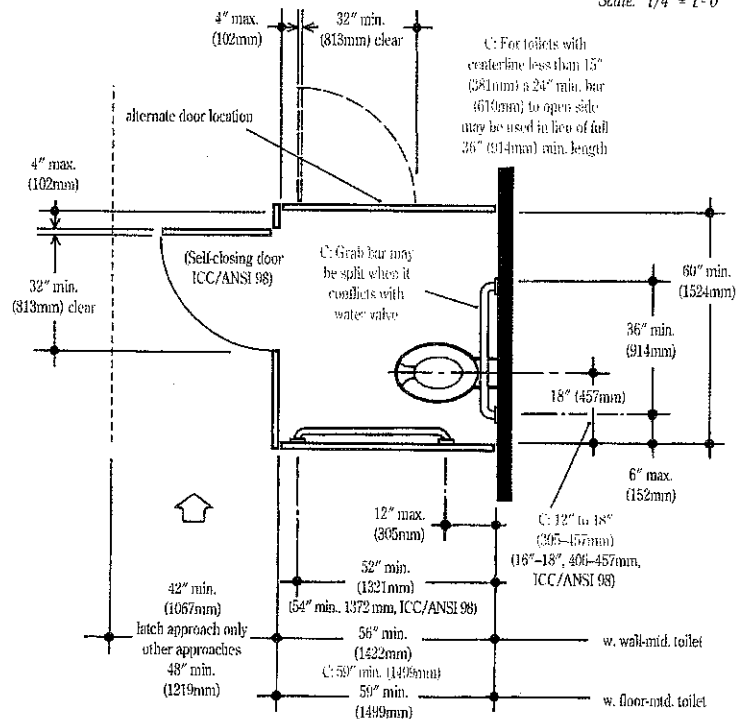


Fig. 8 Standard Alcove (End of Row) Compartment (ICC/ANSI 98 Wheelchair Accessible Compartment).

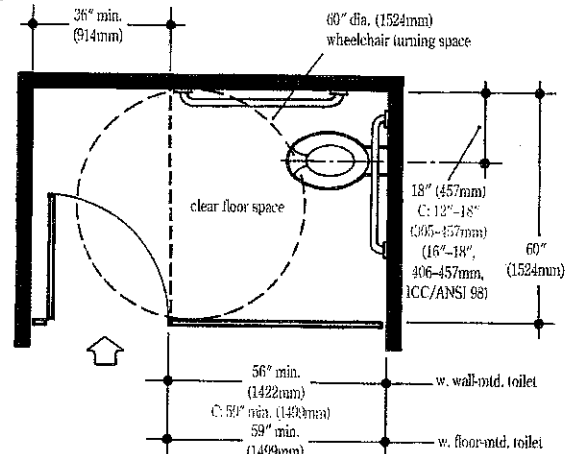
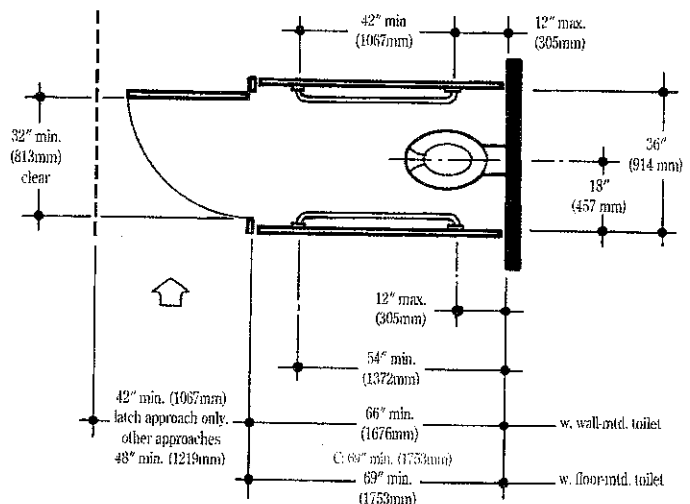


Fig. 9 Alternative Compartment 36" (914mm) Wide (No ICC/ANSI 98 equivalent).



ACCESSORIES COMPLETE THE SPECIFICATION OF TOILET COMPARTMENT INSTALLATIONS

A number of accessories should be included in every toilet compartment. All accessories must be located on a side wall or partition, preferably the one nearest the toilet in accessible compartments, and just in front of the leading edge of the toilet seat to ensure universal usability (Fig. 12). Accessories that project from the wall or partition must be installed so as not to interfere with maneuvering space or access of grab bars. If mounted above grab bars, the accessories should be flush against the wall or partition; if mounted below grab bars, the accessories should be limited to small projections wherever possible. The operating mechanisms and accessible openings of all units should be located 19" to 48" (483–1219mm) above the finish floor.

ROLL TOILET TISSUE DISPENSERS that do not control delivery are required in all accessible toilet compartments. Dispensers for folded toilet tissue are not acceptable because their use requires a finger-pinching action. Toilet tissue rolls should be located so their leading edge is just in front of the toilet seat, no more than 36" (914mm) from the back wall, and their horizontal centerline is at least 19" (483mm) above the finish floor to ensure universal usability.

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.

TOILET-SEAT-COVER DISPENSERS are an optional hygienic amenity that can easily be provided in all toilet compartments. It is recommended that they be mounted below grab bars.

COMBINATION UNITS can organize and unify installations by incorporating several accessories at one convenient location, such as toilet tissue dispensers, toilet-seat-cover dispensers, sanitary napkin disposals, and ashtrays. Only recessed units should be installed in side walls or partitions with grab bars.

CONSIDER URINALS TO COMPLETE MEN'S WASHROOM FACILITIES

If urinals are provided, at least one wall-hung or stall-type urinal must be installed that has an elongated bowl with its rim no more than 17" (432mm) above the finish floor. The bowl should project at least 14" (356mm) from the wall. Flush controls must be no more than 44" (1118mm) above the finish floor and meet ADAAG specifications for controls and operating mechanisms. A minimum clear floor space 30" wide x 48" deep (762 x 1219mm) must be provided to allow forward approach.

DESIGN SOLUTIONS FOR LARGE PUBLIC WASHROOMS

When designing large washrooms with multiple compartments and lavatories, follow this simple check list:

- Entrances and exits are properly laid out for universal access;
- Passageways and access aisles are at least 48" (1067mm) wide;
- 80" (2032mm) minimum clear height throughout all circulation routes, passageways and access aisles;
- Wheelchair turning spaces wherever required;
- Accessories are fully recessed into the walls wherever possible;
- Each type of accessory meets or exceeds ADAAG specifications;

- 30" x 48" (760 x 1219mm) minimum clear floor space is provided for each accessory;
- Lavatories, urinals, and toilet compartments meet or exceed ADAAG specifications;
- If 6 or more toilet compartments, there is a 36" (914mm) compartment similar to the alternate compartment 36" (914mm) wide in addition to the standard accessible compartment.

Figures 13, 14, and 15 illustrate barrier-free washrooms with suggested universal-design features that meet or exceed ADAAG specifications.

Fig. 13 Women's Large Washroom with Single-Door Entry (Legend on page 9).

Scale: 3/16" = 1'-0"

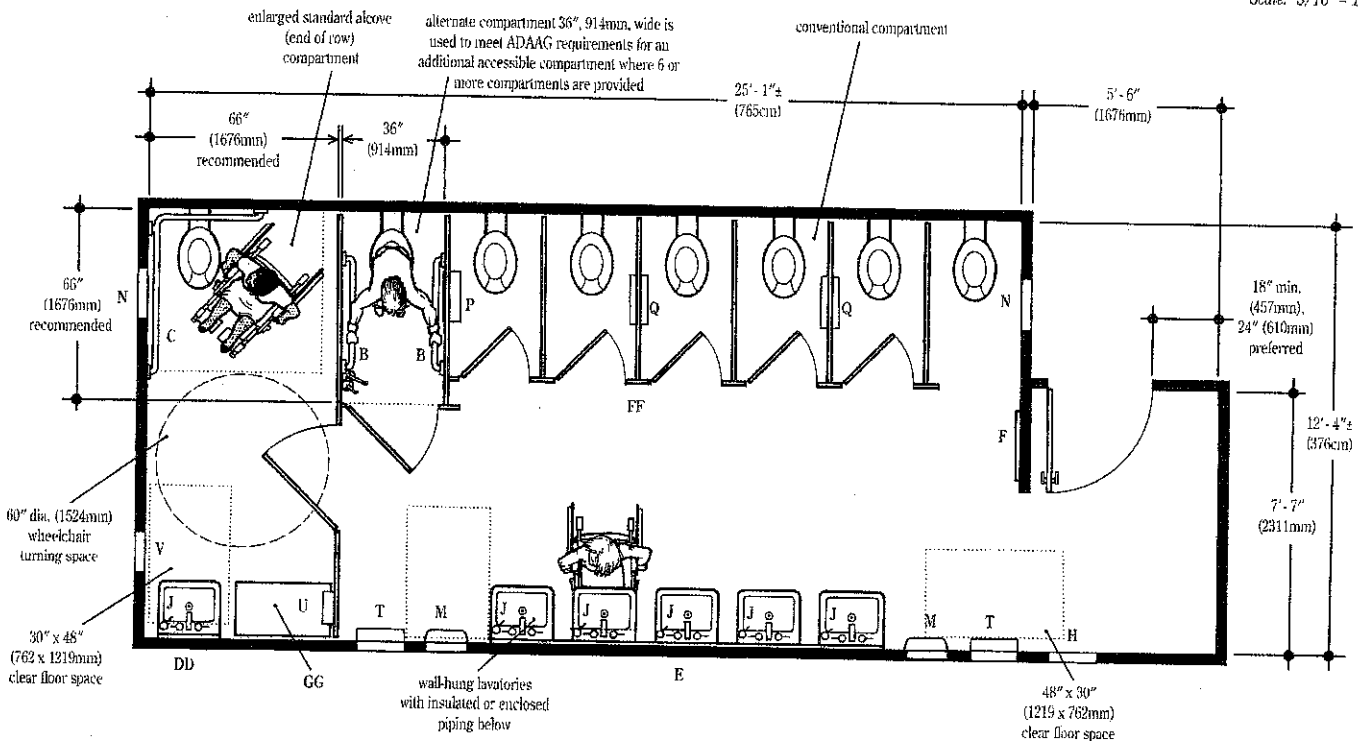


Fig. 14 Women's Large Washroom with Open Vestibule.

Drawings not to scale.

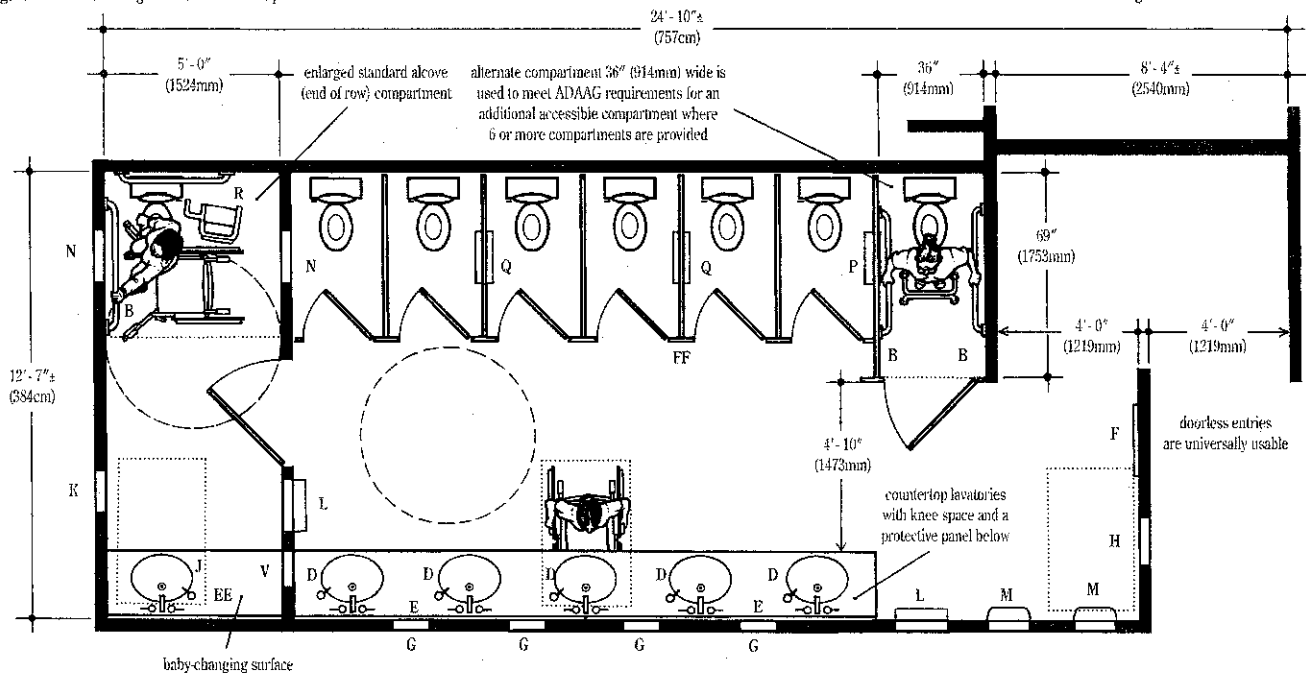
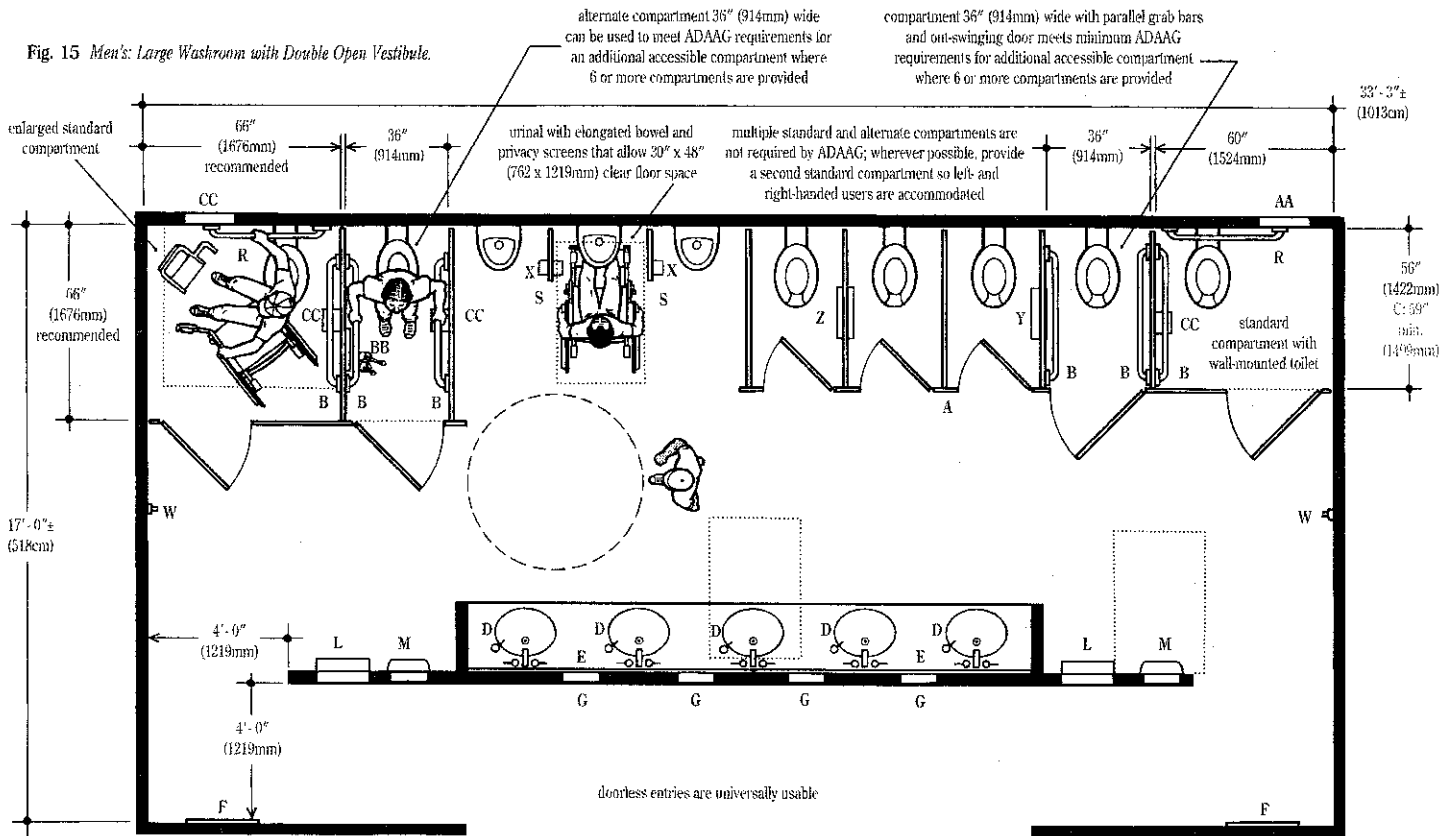


Fig. 15 Men's Large Washroom with Double Open Vestibule.



LEGEND

- A 1541 Series Floor-Anchored Laminated Plastic Toilet Compartments
- B B-5806 x 42 Horizontal Grab Bar
- C B-5837 Horizontal Two-Wall Grab Bar, 36" x 54" (914 x 1372mm)
- D B-830 Series SureFlo[®] Lavatory-Mounted Soap Dispensing System
- E B-165 Series Mirror
- F B-165 Series Full-Length Mirror, 24" W x 60" H (610 x 1524mm)
- G B-318 Recessed Paper Towel Dispenser
- H B-3500X2 Recessed Sanitary Napkin/Tampon Vendor
- J B-822 Lavatory-Mounted Soap Dispenser

- K B-369 Recessed Paper Towel Dispenser and Waste Receptacle
- L B-3644 Recessed Waste Receptacle
- M B-750 Recessed Hand Dryer
- N B-3574 Recessed Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindle
- P B-3571 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindle (serves two compartments)
- Q B-357 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindle (serves two compartments)

- R B-5806 x 36 Horizontal Grab Bar
- S 1545 Series Wall-Hung Urinal Screen
- T B-3944 Convertible Paper Towel Dispenser and Waste Receptacle
- U B-262 Surface-Mounted Paper Towel Dispenser
- V B-369 Recessed Paper Towel Dispenser and Waste Receptacle
- W B-687 Door Bumper
- X B-240 Wall-Mounted Ashtray
- Y B-3471 Partition-Mounted Toilet Seat Cover Dispenser, Toilet Tissue Dispenser with Theft-Resistant Spindle (serves two compartments)
- Z B-347 Partition-Mounted Toilet Seat Cover Dispenser, Toilet Tissue Dispenser with Theft-Resistant Spindle (serves two compartments)

- AA B-301 Recessed Toilet Seat Cover Dispenser (mounts below grab bar)
- BB B-221 Surface-Mounted Toilet Seat Cover Dispenser (mounts below grab bar)
- CC B-2888 Surface-Mounted Multi-Roll Toilet Tissue Dispenser (mounts below grab bar)
- DD B-165 Series Mirror, 24" W x 36" H (610 x 914mm)
- EE B-165 Series Wall-to-Wall Mirror
- FF 1542 Series Overhead-Braced Laminated Plastic Toilet Compartments
- GG KB100-00 Wall-Mounted Baby Changing Station

DESIGN SOLUTIONS FOR SMALL PUBLIC WASHROOMS AND INDIVIDUAL TOILET ROOMS

SMALL PUBLIC WASHROOMS (Figs. 16, 17, 18) require one standard 60" (1524mm) wide toilet compartment because it is the most universally usable. Minimum 60" (1524mm) diameter or T-shaped turning spaces are also required, as well as a barrier-free lavatory, accessories, and access aisles that meet ADAAG specifications. Entry doors should swing into vestibules, not directly into corridors, access aisles, or clear floor spaces required by lavatories and other washroom equipment.

INDIVIDUAL TOILET ROOMS Under ADAAG, the minimum size of individual toilet rooms (Fig. 19) is determined by combining the clear floor spaces required for each feature or fixture, the turning space, and maneuvering clearances at doors. In-swinging entry doors must not swing into any clear floor space required for lavatories and other washroom equipment. Out-swinging entry doors may be used only if they swing into another room, such as a patient's room or a private office, vestibule or alcove, but never into a corridor. Locating the lavatory next to the toilet will eliminate the option of a parallel approach to the toilet by people using wheelchairs; therefore, to maximize usability, design individual toilet rooms so there is a minimum clearance of 60" (1524mm) from side wall of toilet to the adjacent lavatory, or locate lavatory on a different wall altogether. This 60" (1524mm)

minimum dimension is a requirement in the ICC/ANSI 98 Standard. Additionally, the clear floor space required for toilets not located in compartments is larger than those in the ADAAG. In ICC/ANSI 98 no fixture can obstruct the 60" x 56" (1524-1422mm) minimum clear floor space for toilets. These differences may result in larger minimum room sizes when following the ICC/ANSI 98 Standard than may result from ADAAG specifications. Figure drawings in this section of the Planning Guide reflect these differences. Because individual toilet rooms provide privacy for a physically disabled person who needs the help of an attendant (or even a child who needs the help of a parent), especially when they are of the opposite sex, it may be useful to provide this type of *unisex* or *family* toilet room (Fig. 19) in addition to multi-compartment washrooms in many large public buildings.

As in all barrier-free facilities, small public washrooms and individual toilet rooms should meet or exceed ADAAG specifications for entrance and exit, lavatories, toilets, grab bars, accessories, controls, and operating mechanisms. Refer to previous sections, *Space for People in Wheelchairs* and *Planning a Barrier-Free Washroom*, for information on specific ADAAG requirements and universal-design features.

Fig. 16 Small Barrier-Free Public Washrooms (Legend on page 11).

Scale: 1/4" = 1' - 0"

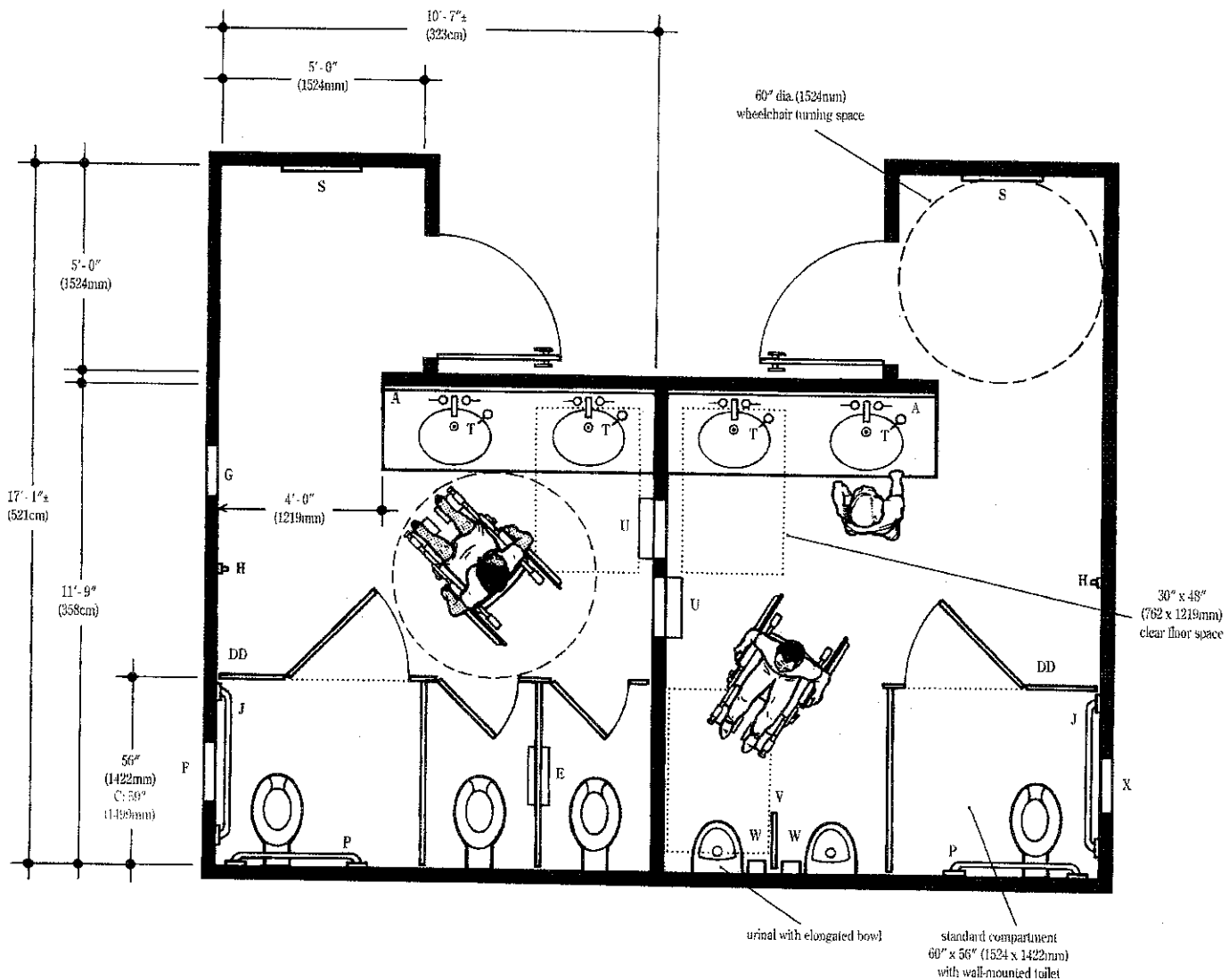
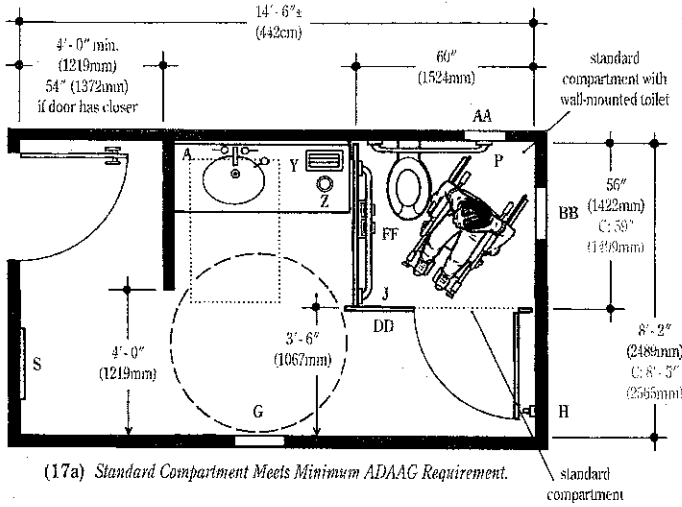


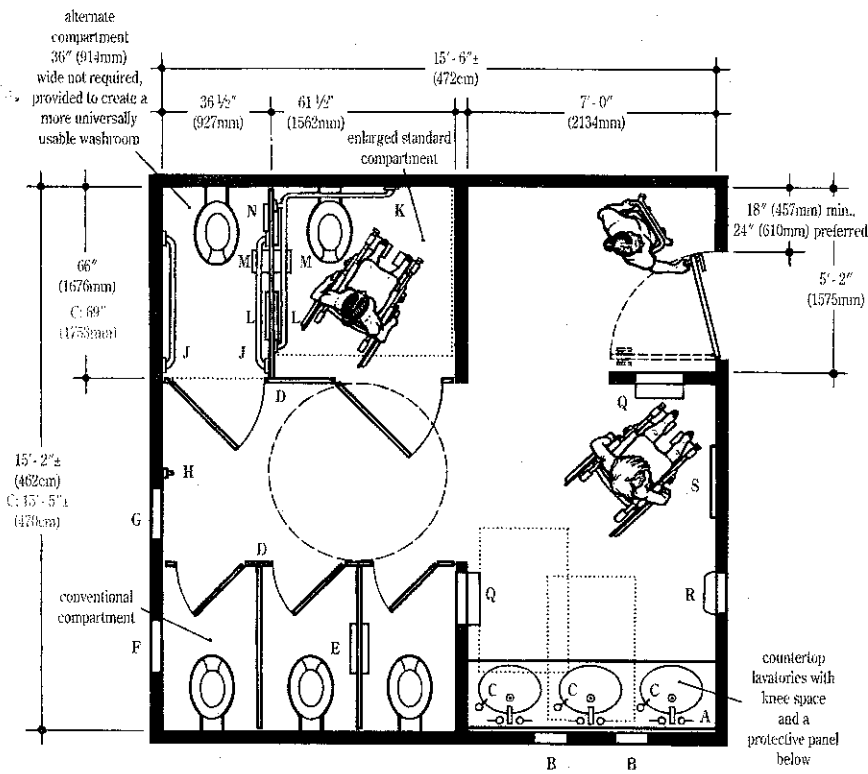
Fig. 17 Small Public Washroom with Single Compartment.



(17a) Standard Compartment Meets Minimum ADAAG Requirement.

Scale: 3/16" = 1'-0"

Fig. 18 Small Public Washroom Provides Standard Compartment and Alternate Compartment 36" (914mm) Wide.

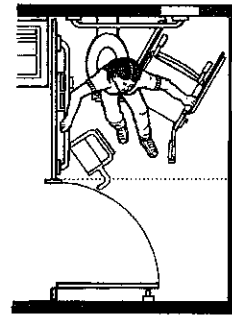


LEGEND

- A B-165 Series Wall-to-Wall Mirror
- B B-318 Recessed Paper Towel Dispenser
- C B-830 Series SureFlo® Lavatory-Mounted Soap Dispensing System
- D 1542 Series Overhead-Braced Laminated Plastic Toilet Compartments
- E B-357 Partition-Mounted Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindle (serves two compartments)
- F B-357A Recessed Toilet Seat Cover Dispenser, Sanitary Napkin Disposal, Toilet Tissue Dispenser with Theft-Resistant Spindle

- G B-3500X2 Recessed Sanitary Napkin/Tampon Vendor
- H B-687 Door Bumper
- J B-5806 x 42 Horizontal Grab Bar
- K B-5837 Horizontal Two-Wall Grab Bar, 36" x 54" (914 x 1372mm)
- L B-221 Surface-Mounted Toilet Seat Cover Dispenser (mounts below grab bar)
- M B-2888 Surface-Mounted Multi-Roll Toilet Tissue Dispenser (mounts below grab bar)
- N B-354 Partition-Mounted Sanitary Napkin Disposal (mounts below grab bar, serves two compartments)
- P B-5806 x 36 Horizontal Grab Bar

- Q B-3644 Recessed Waste Receptacle
- R B-750 Recessed Hand Dryer
- S B-165 Series Full-Length Mirror, 24" W x 60" H (610 x 1524mm)
- T B-322 Lavatory-Mounted Soap Dispenser and Waste Receptacle
- V 1545 Series Wall-Hung Urinal Screen
- W B-240 Wall-Mounted Ashtray
- X B-3474 Recessed Toilet Seat Cover Dispenser, Toilet Tissue Dispenser with Theft-Resistant Spindle
- Y B-526 Paper Towel Dispenser
- Z B-529 Circular Waste Chute



(17b) Standard Alcove Compartment Provides Greater Accessibility.

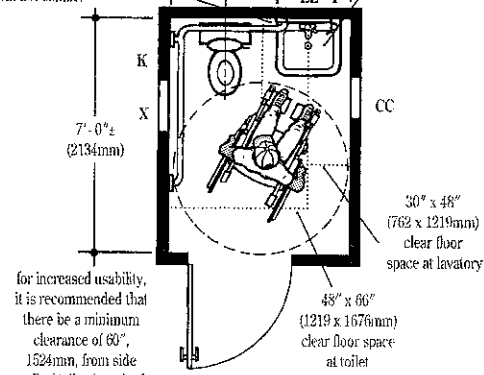
Fig. 19 Individual Toilet Rooms.

18" min. (457mm)
C: 12"-18" (305-457mm) varies by age (16"-18", 406-457mm, ICC/ANSI 98)

place grab bar, lavatory without backsplash, and mirror so they will not conflict

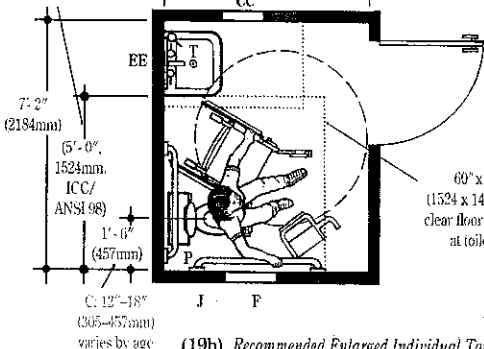
5'-2" ± (1573mm)
36" min.

wall-hung lavatory with insulated or enclosed piping below



(19a) Minimum ADAAG Individual Toilet Room.

for increased usability, it is recommended that there be a minimum clearance of 60", 1524mm, from side wall of toilet, (required for ICC/ANSI 98)



(19b) Recommended Enlarged Individual Toilet Room, (Minimum ICC/ANSI 98 Individual Toilet Room).