

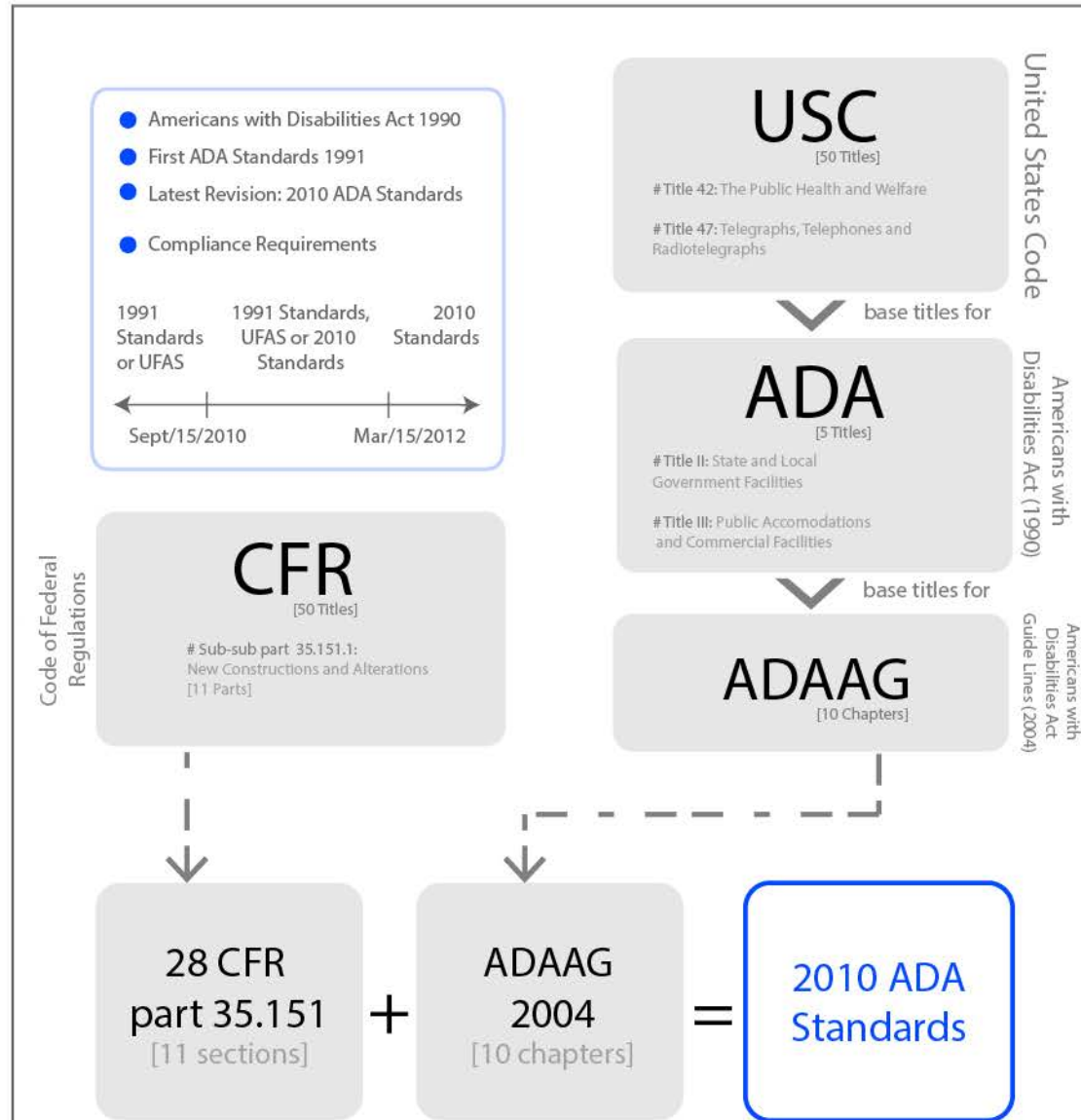
archiCODES [UPR-RP]

# ADA essentials

Professional Development Internship Program  
School of Architecture :: UPR-RP :: Fall 2011

section 2.2

## About 2010 ADA Standards



## Chapters

- 1 **Application and Administration**  
Overview of ADA and Definitions
- 2 **Scoping Requirements**  
Accessible Routes and Means of Egress  
Necessary Spaces: Parking and Wheelchairs
- 3 **Building Blocks**  
Ground Surfaces and Changes in Levels  
Turning Space and Reach Ranges
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- 5 **General Site and Building Elements**  
Specifications: Parking and Stairways
- 6 **Plumbing Elements & Facilities**  
Specifications: Bathrooms & Water-based appliances
- 7 **Communication Elements and Features**  
Signs, Characters and Symbols  
Assistance & Communication Systems
- 8 **Special Rooms, Spaces and Elements**  
Seats, Kitchens and Temporary Lodging facilities Medical & Institutional Spaces
- 9 **Built-in Elements**  
Dining, Work surfaces & Retail
- 10 **Recreation Facilities**  
Passive sports & activity spaces

## What is USC?



## Title 42- The Public Health and Welfare

[Chapter 126]  
EQUAL OPPORTUNITY FOR INDIVIDUALS WITH DISABILITIES

### Sec 1211 Definitions

#### "public entity"

- State or local government
- any department, agency, special purpose district, or other instrumentality of a State
- National Railroad Passenger Corporation, and any commuter authority

#### Qualified individual with a disability

- The term "qualified individual with a disability" **individual with a disability** who, with or without reasonable modifications to rules, policies, or practices, the removal of architectural, communication, or transportation barriers, or the provision of auxiliary aids and services, meets the essential eligibility requirements for the receipt of services or the participation in programs or activities provided by a public entity.  
(Pub. L. 101-336, title II, Sec. 201, July 26, 1990, 104 Stat. 337.)

### Sec 1

**Policy.** This order is issued consistent with the following findings and principles:

#### (a) The U.S. is committed to:

- community-based alternatives : individual with disabilities
- recognize such services advance in the best interest of Americans

## Title 42- The Public Health and Welfare

[Chapter 126]

EQUAL OPPORTUNITY FOR INDIVIDUALS WITH DISABILITIES

Sec 1 [continued]

(b) The U.S. seeks to ensure:

- community-based programs effectively foster independence
- participation in the community for Americans with disabilities

(c) Unjustified isolation or segregation:

- states must avoid disability-based discrimination
- doing so would fundamentally alter the nature of the service, program, or activity provided by the State

(d)the ``Olmstead decision":

- the Supreme Court construed Title II of the ADA
- require States to place qualified individuals with disabilities

(e)The Federal Government must assist:

- States and localities to implement swiftly the Olmstead decision
- ensure that all Americans have the opportunity to live close to their families and friends, to live more independently,
- to engage in productive employment, and to participate in community life.



## Description



The 2010 ADA Standards for Accessible Design is the result of the revision of Titles II and III of the Americans with Disabilities Act of 1990. The new standards set the requirements for newly constructed, designed or altered facilities and existing facilities to be used and accessed by individuals with disabilities. The Title II regulations at [28 CFR \(Code of Federal Regulations\) 35.151](#), together with the [ADAAG at 36 CFR](#) part 1191, appendices B and D constitute the 2010 ADA Standards for Accessible Design. The [Title 28 CFR 35.151 prevails](#) if there is any place where the 2004 ADAAG and the Title 28 CFR 35.151 differ.

## Organization

28 CFR part 35.151  
New Construction and Alterations

- a) Design and construction
- b) Alterations
- c) Accessibility
- d) Coverage
- e) Social service center
- f) Housing at a place of education
- g) Assembly areas
- h) Medical facilities
- i) Ramps
- j) Residential dwelling units
- k) Detention and correctional facilities

28 CFR part 36, subpart D  
New construction and Alterations

- Sec 36.401 New Construction
- Sec 36.402 Alterations
- Sec 36.403 Alterations: Path of travel
- Sec 36.404 Alterations: Elevator exemption
- Sec 36.405 Alterations: Historic preservation
- Sec 36.406 Alterations: New construction and alterations

## Description

**UFAS** is a document that establishes standards for design, construction, and modification of buildings to guarantee the accessibility of it by people with disabilities, according to the Architectural Barriers Act, 42. U.S.C 4151-4157. This document encompasses several standards established by four distinct agencies to reduce the differences previously used by such agencies independently (The General Administration Services, The Department of Defense, The Department of Housing and Urban Development and the United States Postal Service).

The four agencies establish standards for distinct type of buildings as pointed in the following:

1. **Department of Defense:** establishes the standards for its own facilities.
2. **Department of Housing and Urban Development:** dictates the standards for residences and structures covered by the Architectural Barriers Act except those financed or built by the Department of Defense
3. **The United States Postal Service:** establishes the standards for the United States postal service facilities.
4. **The General Services Administration:** portray standards for every building subject to the Architectural Barriers Act and its not covered by none of the previous agencies.

This document provides a legal structure and establishes standards and requirements for federal facilities or those financed by the federal government to attend the necessities of accessibility of those persons with disabilities as stated on Architectural Barriers Act.

### 101 Purpose

General requirements for accessibility guidelines

### Organization

#### Topics:

Effect on removal of barriers in existing facilities

Dimensions for Adults and Children

Equivalent Facilitation

Construction and Manufacturing Tolerances

Calculation of percentages

Referenced Standards

Definitions

### 101-106 ADA Code Guidelines

#### Important Sections:

#### [101.2] Effect on removal of barriers in existing facilities

- Required regulations that improve the use of existing facilities for individuals with disabilities.

#### [102] Dimensions for Adults and Children

- Technical demands based on children's and adult's anthropometrics.

#### [103] Equivalent Facilitation

- Use of alternatives such as technologies in order to reach equivalents in accessibility.

#### [104.1.1] Construction and Manufacturing Tolerances

- Dimensions can vary according to industry tolerances.

#### [104.2] Calculation of percentages

- Ratios and percentages determine the number of elements or facilities needed.

#### [105] Referenced Standards

- These standards came from referenced documents listed below:

-ANSI/BHMA: American National Standards Institute/ Builders Hardware Manufacturers Association

subject of focus: power operated doors

-ASME: American Society of Mechanical Engineers

subject of focus: safety code for elevators and escalators

-ASTM: American Society for Testing and Materials

subject of focus: characteristics of surfacing materials

-IBC: International Building Code

subject of focus: accessible means of egress

-NFPA: National Fire Protection Association

subject of focus: installation and maintenance of protective signaling systems

#### [106] Definitions

- Collection of commonly used terms in the guidelines



### 201 General Applications

- [201.1] Newly designed or constructed buildings and altered portions of existing building including common and public use spaces.
- [201.2] In multi-functional spaces, each portion shall comply with applicable requirements for each use.
- [201.3] Temporary structures or equipment.

### 201 General Exceptions

- [201.3] If directly associated to construction processes.
- [203.4] Limited access spaces (like catwalks, ladders or very narrow passage ways)
- [203.7] For exclusive common use areas for inmates detainees and security personal in detention and correctional facilities that do not serve cells or housing cells (refer to section 232).
- [203.8] Non-public residential common areas
- [203.9] Employee work areas smaller than 300 square feet or that raise above 7 inches from the floor.

### 202 Categories

Existing Buildings 202	Circulation 206- 210	Special Facilities 211-214,223,231-233
<ul style="list-style-type: none"> <li>[202.2] Additions</li> <li>[202.3] Alterations</li> <li>[202.4] Alterations affecting primary function areas</li> <li>[202.5] Alterations to Qualified Historic</li> </ul>	<ul style="list-style-type: none"> <li>[206] Accessible Routes</li> <li>[207] Accessible Means of Egress</li> <li>[208] Parking Spaces</li> <li>[209] Passenger Loading Zones and Bus Stops</li> <li>[210] Stairways</li> </ul>	<ul style="list-style-type: none"> <li>[211.1] Drinking Fountains on an exterior site, on a floor, or within a secured area</li> <li>[212] Kitchens, Kitchenettes, and Sinks</li> <li>[213] Toilet Facilities and Bathing Facilities</li> <li>[213.3] Bathroom Appliances</li> <li>[223.1] Medical Care and Long-Term Care Facilities alterations and additions</li> <li>[231] Judicial Facilities - Courtrooms, Holding Cells, &amp; Visiting Areas</li> <li>[232] Detention Facilities and Correctional Facilities</li> <li>[232.2 - 232.3] General Holding and Housing Cells, and Special Holding and Housing Cells</li> <li>[232.4 - 232.5] Medical Care Facilities and Visiting Areas</li> <li>[233] Residential Facilities - Additions, Alterations, and Dispersions</li> </ul>
<ul style="list-style-type: none"> <li>[202.3.1] Except surrounding circulation paths if existent, unaltered and do not affect primary functions areas</li> <li>[*Reduction in existing access by new construction]</li> <li>[202.4] Except residential dwelling</li> <li>[202.5] Except if</li> </ul>	<ul style="list-style-type: none"> <li>[206.2.1.1] Except alterations to qualified historic buildings, no more than one accessible route and entrance required.</li> <li>[206.2.1.2] Except between site arrival points and building entrances if the only access is a vehicular way not providing pedestrian access.</li> <li>[206.2.3.1] Except in a private multi-story building less than 3000 sq.ft. per story, accessible route not required to connect stories unless a mall, terminal or office, detention and correctional facilities.</li> <li>[206.2.3.2] Except in a two-story containing five or less occupants.</li> <li>[206.4] Except alterations to an entrance in a building that has at least one or more accessible entrances.</li> <li>[208.1] Except parking spaces used exclusively for big vehicles (trucks, etc.) or vehicular impound shall not be required to comply with 208, if it complies with [section 503].</li> <li>[208.3.2] Except for residential 208.2.3.2 compliant parking spaces, which are not required to provide accessibility in terms of distance from an accessible entrance.</li> <li>[210.1.2] Except in alterations, stairs between levels that are connected by an accessible route shall not be required to comply with section 504, except that [section 505] compliant handrails shall be provided.</li> </ul>	<ul style="list-style-type: none"> <li>[211.1] Except In detention or correctional facilities, drinking fountains only serving holding or housing cells not required to comply with 232</li> <li>[212.3] Except Mop or service sinks</li> <li>[213.2.1] except for alterations to qualified historic buildings or facilities are permitted by 202.5</li> <li>[213.2.4] except for multiple single user toilet rooms are clustered at a single location, no more than 50 percent shall be required to comply For each, where they are provided, at least one shall comply</li> <li>[223.1] Except Toilet rooms that are part of critical or intensive care patient sleeping rooms</li> </ul>



### 202 Categories

Communications 215-219, 230	Services 218,220,227-228	Temporary Uses 221-222, 224-226	Recreational Uses 234-243
<p>[211.1] Drinking Fountains on an exterior site, on a floor, or within a secured area</p> <p>[212] Kitchens, Kitchenettes, and Sinks</p> <p>[213] Toilet Facilities and Bathing Facilities</p> <p>[230] Two-way Communication Systems</p>	<p>[218] Transportation Facilities</p> <p>[220] ATM &amp; Fare Machines</p> <p>[227] Sales &amp; Service</p> <p>[228] Depositories, Vending Machines, Change Machines, Mailboxes &amp; Fuel Dispensers</p> <p>[231] Judicial Facilities</p> <p>[232] Detention and Correctional Facilities</p>	<p>[221.2] Wheelchair Spaces</p> <p>[221.2.3.1] Horizontal Dispersion</p> <p>[221.2.3.2] Vertical Dispersion</p> <p>[221.4] Designated Aisle Seats</p> <p>[222] Dressing, Fitting and Locker Rooms</p>	<p>[234] Amusement Rides - Load &amp; Unload Areas</p> <p>[235] Boating Facilities - Boat Slips</p> <p>[236] Exercise Machines and Equipment</p> <p>[237] Fishing Piers and Platforms</p> <p>[238] Golf Facilities</p> <p>[239] Miniature Golf &amp; Facilities</p> <p>[240] Play Areas</p> <p>[241] Saunas and Steam Rooms</p> <p>[242] Swimming Pools, Wading Pools, and Spas</p> <p>[243] Shooting Facilities with Firing Positions</p>
<p>[215.1] Except in existing facilities, visible fire alarms are not required except where an existing system is upgraded or replaced, or a new one is installed.</p> <p>[219.2] Except in courtrooms, assistive listening systems are not required when audio amplification is not provided.</p>	<p>[227.2] Except where the selling space is under 5000 sq.ft. no more than one check-out aisle complying with 904.3 shall be required.</p> <p>[228.1] Except in drive-up depositories which are not required to comply with [section 309]</p>	<p>[221.2.1.4] Except in team or player seating areas serving bowling lanes not required</p> <p>[221.2.3.1] Except in assembly areas with 300 or fewer seats</p>	<p>[234.1] Mobile or portable amusement rides are not considered in this section.</p> <p>[239.3] In the configuration; one break in the sequence shall be permitted, if the last hole is the last one in the sequence.</p> <p>[240.1] Play Areas for more than 2-yr shall be separate for each specific group, with exception if located in family child care facilities and existing play areas in which ground surface has not been altered.</p> <p>[241] Except when clustered at a single location no more than 5% of saunas and steam rooms, but no fewer than one, each cluster must comply with 612.</p> <p>[242.2] Except if swimming pool has less than 300 linear feet of wall, no more than one accessible entry is required, or wave action pools, leisure rivers, sand bottom pools, and other pools where user access is limited to one area shall not be required to provide more than one accessible mean of entry.</p> <p>[242.4] Except when clustered at a single location no more than 5% of spas, but no fewer than one, must comply with 242.4.</p>

### 302 Floor or Ground Surfaces

Shall be Stable, Firm and Slip-resistant. Exception: animal containment areas and areas of sport activity.

### 303 Changes in Level

Exception: animal containment areas and areas of sport activity.

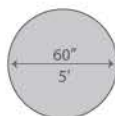
#### 303.2 Vertical



### 304.3 Size

#### 304.3.1 Circular space

The space shall include knee and toe clearance complying with 306.



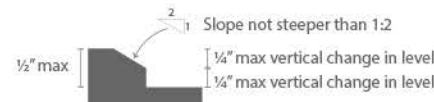
### 302.2 Carpet

Exposed edges of carpet shall: be fastened to floor surfaces, have trim on entire length of exposed edge and



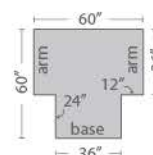
### 303.3 Beveled

Changes in level exceeding 1/2 inch must comply with 405(Ramps) or



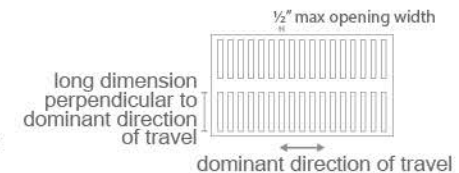
### 304.3.2 T-Shaped Space

The space shall include knee and toe clearance complying with 306 only at the end of either the base or one



### 302.3 Openings

Exceptions: as allowed in 407.4.3, 409.4.3, 410.4, 810.5.3 and 810.10



### 304 Turning Space

#### 304.2 Floor or Ground Surfaces

Change in levels not permitted in clear floor and ground spaces, turning spaces, and in similar spaces where people must park their wheelchairs and other mobility aids in wheelchair spaces, or maneuver to use doors, fixtures and telephones.

### 304.4 Door Swing

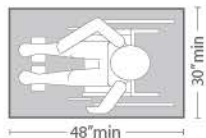
Doors shall be permitted to swing into turning spaces.

### 304.3 Size

#### 304.3.1 Circular space

Shall comply with 302. Change in levels are not permitted. Exceptions: Slopes not steeper than 1:48 shall be permitted.

### 305.3 Size



### 305.4 Knee and Toe Clearance

Unless otherwise specified, clear floor or ground space shall be permitted to include knee and toe clear-

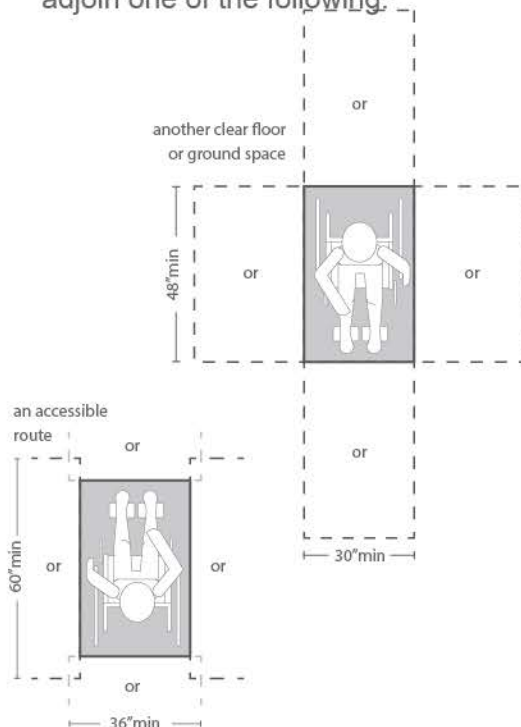
### 306 Knee and Toe Clearance

#### 306.1 General

Clearance space (clear of any obstructions) under an object are measured in relation to usable clear floor space, not to the vertical

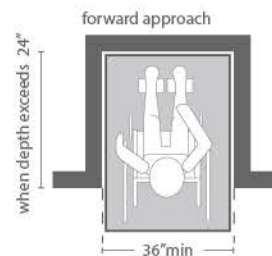
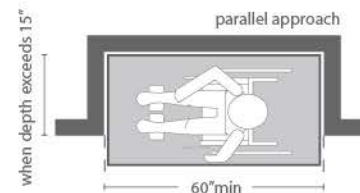
### 305.6 Approach

One full unobstructed side of the clear floor or ground space shall adjoin one of the following:

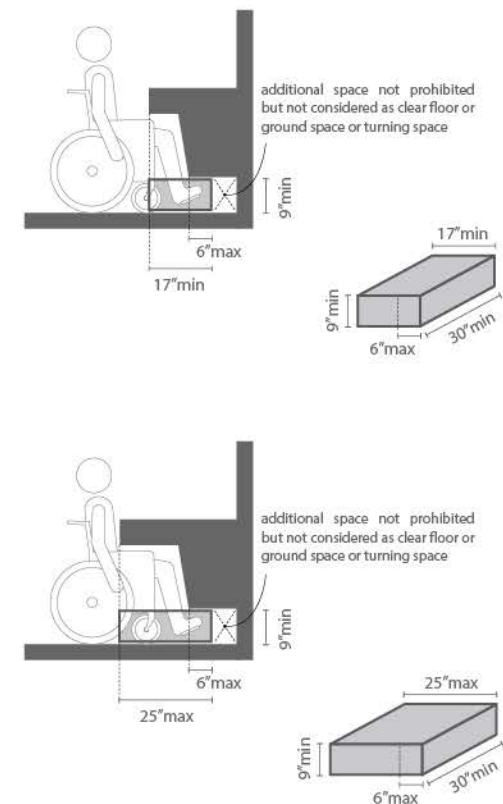


### 305.7 Maneuvering Clearance

Clear floor or ground space located in an alcove or otherwise confined on all or part of 3 sides, maneuvering clearance shall be provided as

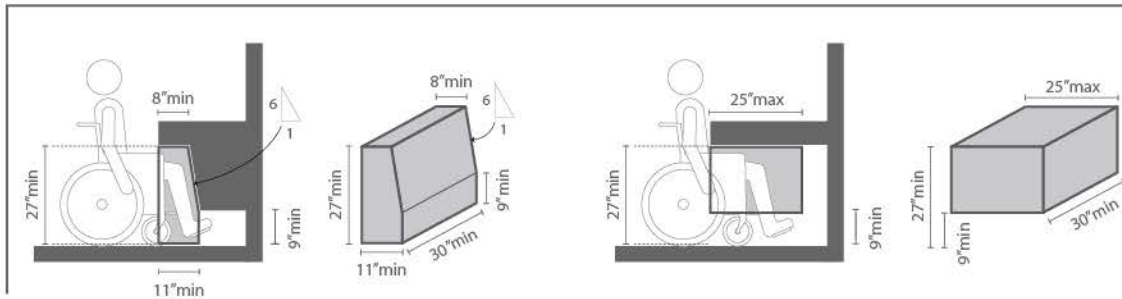


### 306.2 Toe Clearance

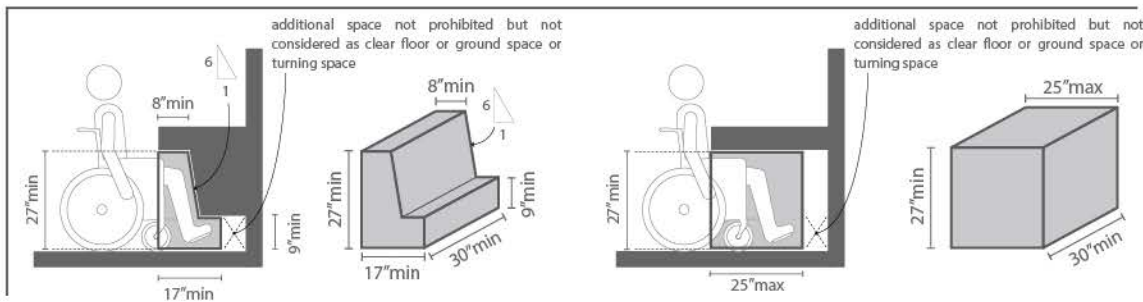




### 306.3 Knee Clearance

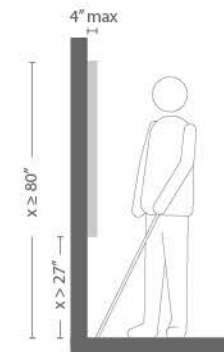


### Summary Toe Clearance + Knee Clearance



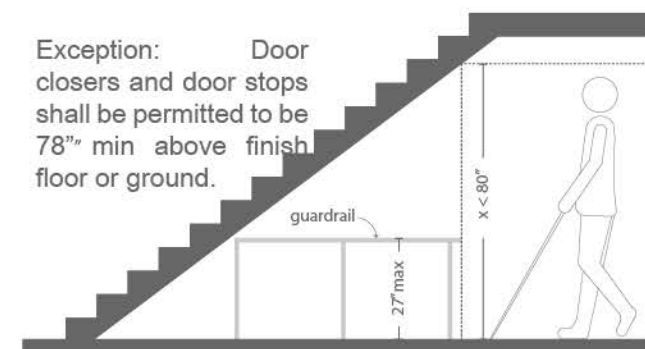
### 307.2 Protusion Limits

Exception: Handrails shall be permitted to protude  $4\frac{1}{2}$ " max.



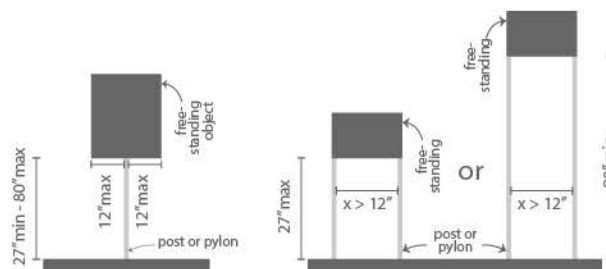
### 307.4 Vertical Clearance

Exception: Door closers and door stops shall be permitted to be 78" min above finish floor or ground.



### 307.3 Post-Mounted Objects

Exception: Sloping portions of handrails serving stairs and ramps shall not be required to comply with





### 307.5 Required Clear Width

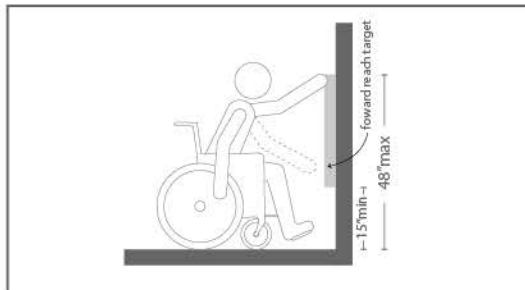
Protruding objects shall not reduce the clear width required for acces-

### 308 Reach Ranges 308.1 General

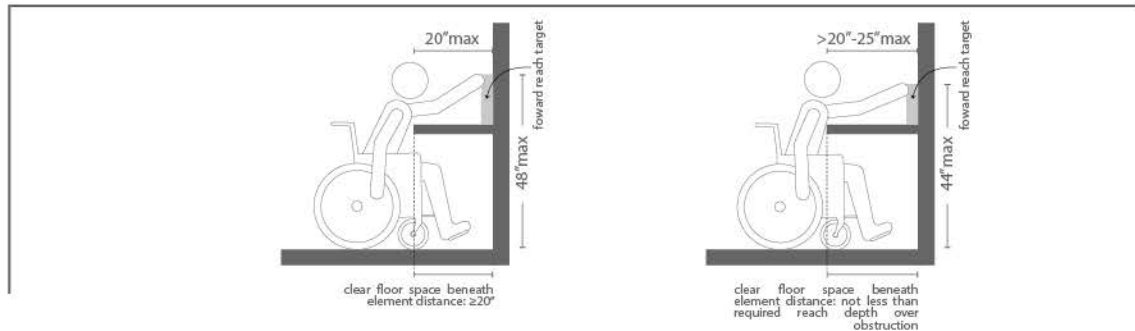
Follow this table for reach ranges for children according to age where buildings elements (coat hooks, lockers or operable parts) are designed for use primarily by children. Reach ranges for adult or age over 12, must comply with adult reach ranges

Foward or Side Reach	Reach Ranges for Childrens		
	Ages 3-4 (inches)	Ages 5-8 (inches)	Ages 9-12 (inches)
Max High	36	40	44
Min Low	20	18	16

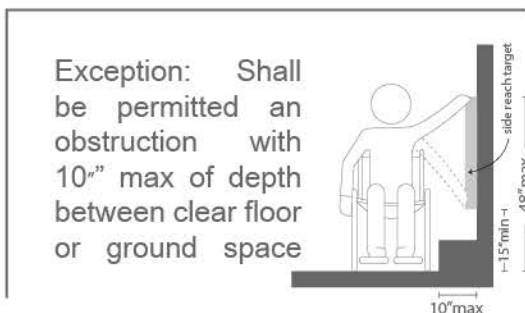
### 308.2 Foward Reach 308.2.1 Unobstructed



### 308.2.2 Obstructed High Reach

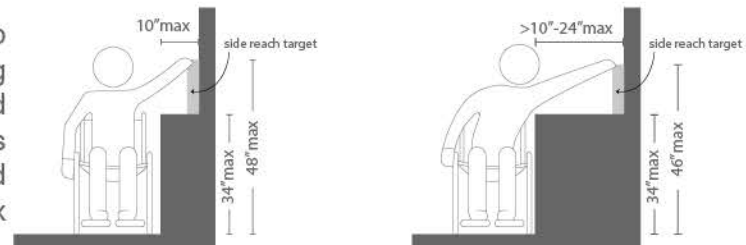


### 308.3 Side Reach 308.3.1 Unobstructed



### 308.3.2 Obstructed High Reach

Exception: The top of washing machines and clothes dryers shall be permitted to be 36 inches max



### 309 Operable Parts

#### 309.2 Clear Floor Space

Provide a clear floor or ground space that complies with 305.

#### 309.3 Height

Operable parts shall be placed within one or more of the reach ranges

#### 309.4 Operation

Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5

### 400 General

Scope: The provisions of Chapter 4 applies as required by Chapter 2 or where referenced by this document.

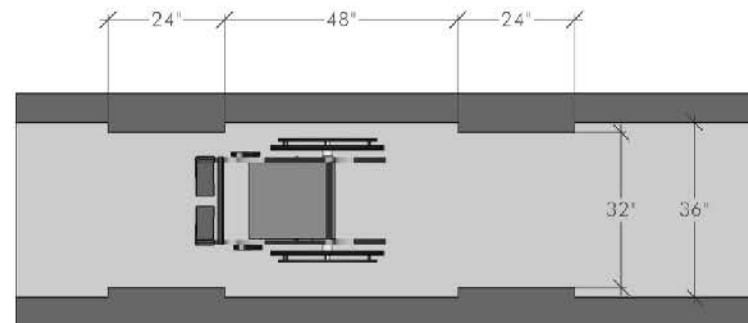
### 402 Accessible Routes

Consist of the next components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts.

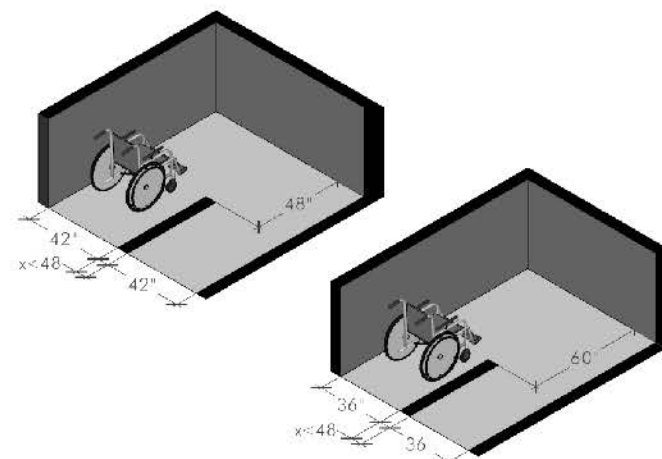
### 403 Walking Surfaces

- Floor must comply with 302.
- Pendence: the surface that runs 1:20 max. The slope that runs perpendicular to the path, 1:48 max.
- Changes in level shall comply with 303
- Clearances: road width 36" minimum.
- Shall be allowed to reduce the width of the via to 32" for a length of no more than 24", followed by a segment of 48" long and 36" wide.
- Clear width a turn: When approaching a U-turn less than 48" of width the hall should have 42" of width when approaching, 48" at the turn and 42" to move away. Where the clear width at the turn is 60" minimum could be 36".

### 403 Clear of an accessible route



### 403 Clear width at turn

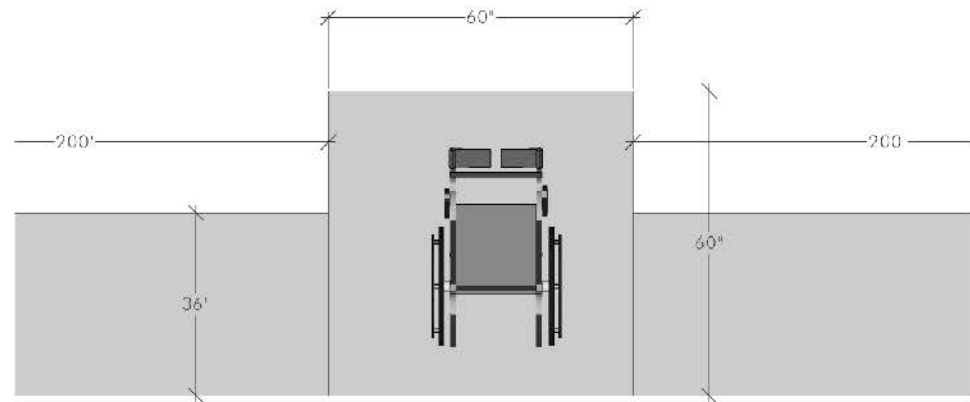


### 403 Walking Surfaces

**Passing spaces:** when a route of less than 60" will be provided a passing space of 60"x60" every 200 feet maximum.

If a **walking surfaces** with a slope no greater than 1:20 have handrails that must comply with 505

### 403 Passing Spaces



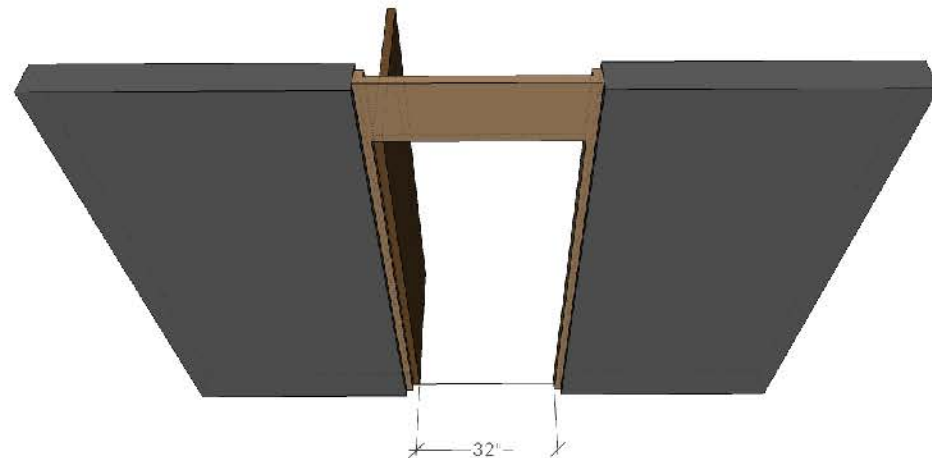
### 404 Doors, Doorways, and Gates

**Revolving doors, revolving gates, and turnstiles** shall not be part of an accessible route.

**Double-Leaf Doors and Gates:** At least one of the active leaves of doorways with two leaves shall comply with clear width and maneuvering clearances.

**Clear width:** Door openings shall provide a clear width of 32" minimum. Clear width shall be measured between the face of the door and the stop, with the door open 90 degrees. If the opening is more than 24" deep, shall be clear 36" minimum.

### 404 Doors, Doorways, and Gates





### 404 Doors, Doorways, and Gates

**Maneuvering Clearances:** Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance

**1. Approach direction:** from front  
Door side: pull  
C Perpendicular to doorway: 60  
C Parallel to doorway: 18

**2. Approach direction:** from front  
Door side: push  
C perpendicular to doorway: 48  
C Parallel to doorway: 0

**3. Approach direction:** from hinge side  
Door side: push  
C Perpendicular to doorway: 60  
C Parallel to doorway: 36

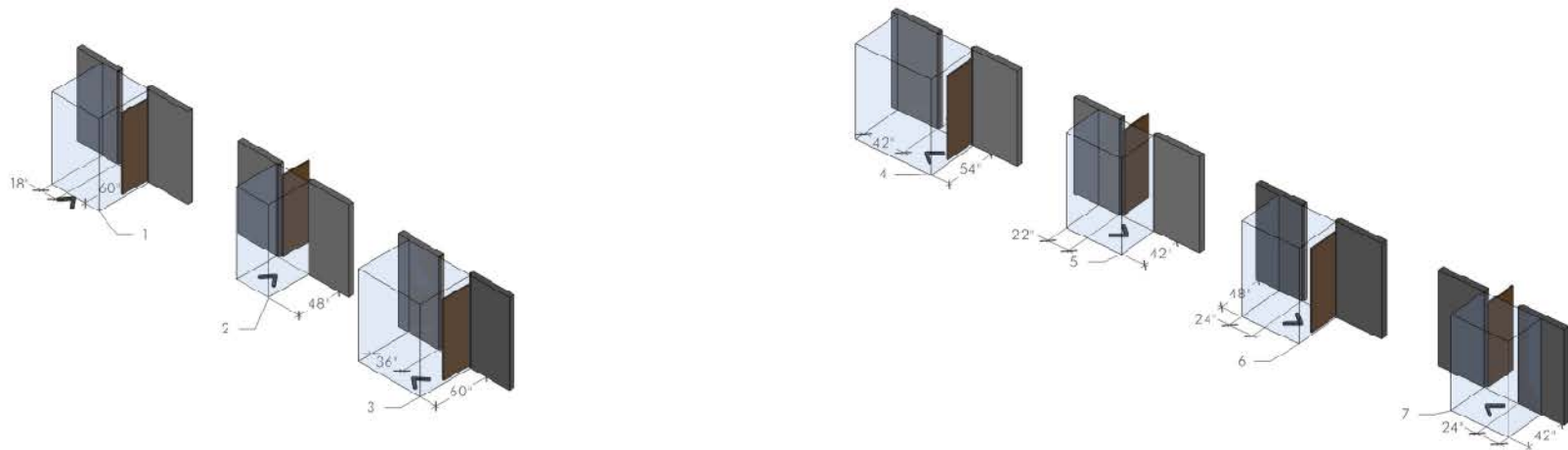
**4. Approach direction:** from hinge side  
Door side: pull  
C Perpendicular to doorway: 54  
C Parallel to doorway: 42

**5. Approach direction:** from hinge side  
Door side: push  
C Perpendicular to doorway: 42  
C Parallel to doorway: 22

**6. Approach direction:** from latch side  
Door side: pull  
C Perpendicular to doorway: 48  
C Parallel to doorway: 24

**7. Approach direction:** from latch side  
Door side: push  
C Perpendicular to doorway: 42  
C Parallel to doorway: 24

### 404 Doors, Doorways, and Gates



### 404 Doors, Doorways, and Gates 404 Maneuvering Clearances at Doorways without Doors, Manual Sliding Door and Manual Folding Doors.

Doorways less than 36" wide without doors, sliding doors, or folding doors shall have maneuvering clearances complying with... (C= clearance, dimensions in inches)

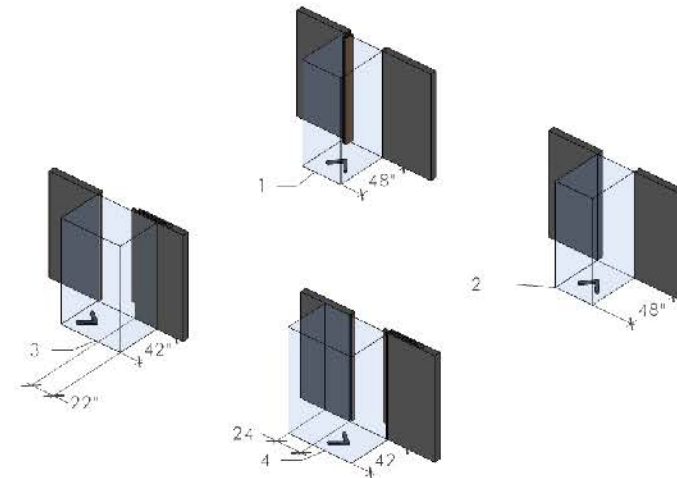
1. Approach direction: from front  
C perpendicular to doorway: 48  
C Parallel to doorway: 0

2. Approach direction: from side  
C Perpendicular to doorway: 42  
C Parallel to doorway: 0

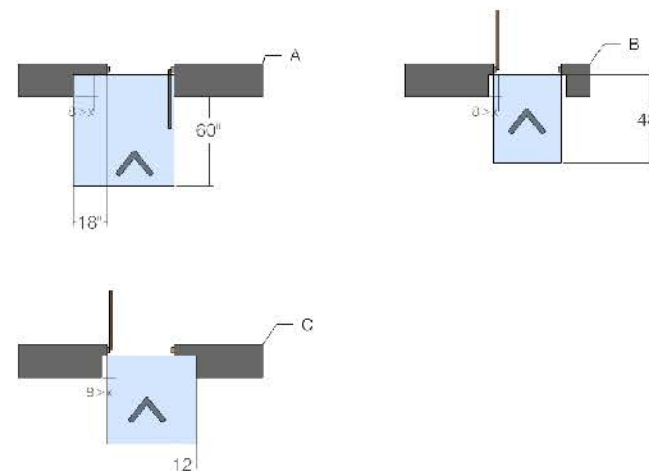
3. Approach direction: from pocket/  
hinge side  
C Perpendicular to doorway: 42  
C Parallel to doorway: 22

4. Approach direction: from stop/  
latch side  
C Perpendicular to doorway: 42  
C Parallel to doorway: 24

**Recessed Doors and Gates:** should provide space for maneuver when when any obstruction within 18" of the latch side of a doorway projects more than 8" measured perpendicular to the face of the door or gate.



### 404 Recessed Doors and Gates

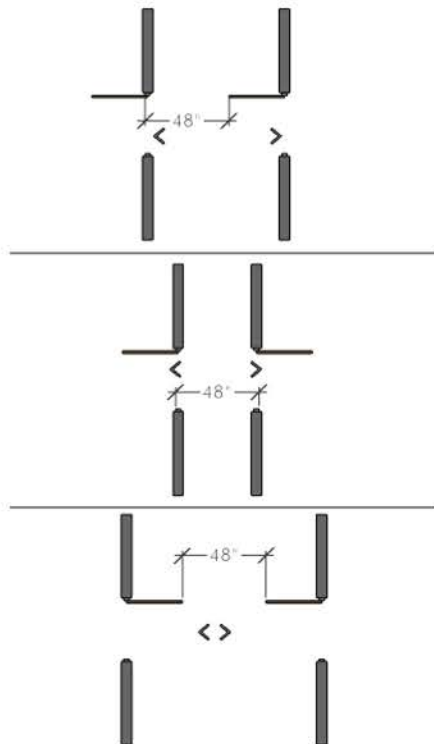


### 404 Doors, Doorways, and Gates

- Floor or ground surface: Floor or ground surface within maneuvering clearances shall comply with 302. Changes in level are permitted.
- Thresholds: Thresholds, if provided at doorways, shall be 1/2 inch high maximum. Raised thresholds and changes in level at doorways shall comply with 302 and 303.

### 404 Doors, Doorways, and Gates

Doors in Series and Gates in Series. The distance between two hinged or pivoted doors in series and gates in series shall be 48 inches minimum plus the width of doors or gates swinging into the space.



### 405 Ramps

Slope- not steeper than 1:12. In existing sites, buildings, and facilities, ramps shall be permitted to have running slopes complying with...

Slope	Maximum Rise
Steeper than 1:10 but not steeper than 1:8	3 inches (75 mm)
Steeper than 1:12 but not steeper than 1:10	6 inches (150 mm)

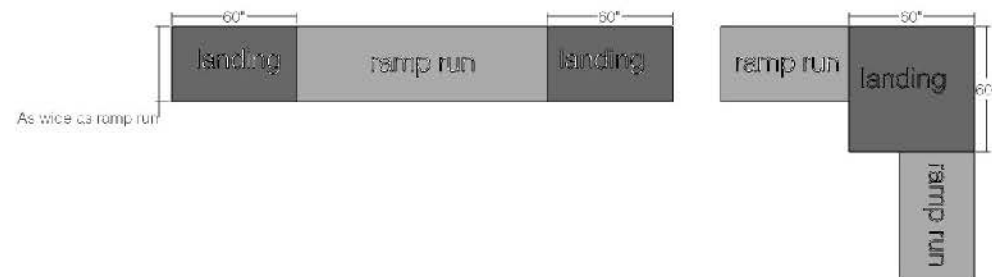
A slope steeper than 1:8 is prohibited. To accommodate the widest range of users provide several options for access besides ramps, like small step

- Cross slope: shall not be steeper than 1:48.
- Clear width: 36 inches including where handrails are provided.
- Rise. The rise for any ramp run shall be 30 inches maximum.

### 405 Ramps

Landings: Ramps shall have landings at the top and the bottom of each ramp run and in any change of direction. Curvilinear, circular or curved ramps can not comply the requirements for accessible routes. Slope: must comply with 302; changes in level are not permitted. Slopes not steeper than 1:48 shall be permitted. Width: as wide as the widest ramp run. Length: 60" long minimum. Change in direction: landings here shall have a clear landing of 60" by 60" minimum. Doorways adjacent to a ramp landing, maneuvering clearances shall comply according to Doors Maneuvering Clearances. Handrails: Ramp runs with a rise greater than 6 inches shall have handrail.

### 405 Ramp

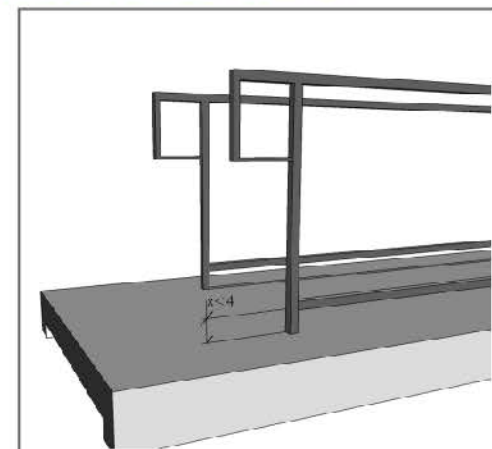
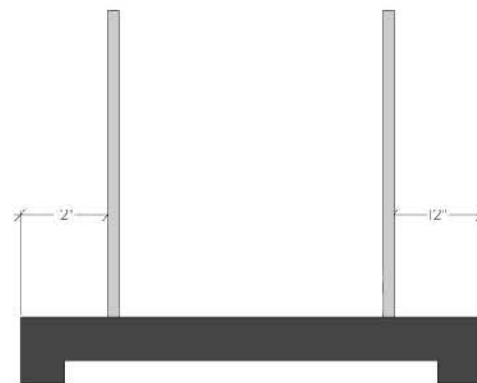


### 405 Extended Floor or Ground Surface

Extended Floor or Ground Surface. The floor or ground surface of the ramp run or landing shall extend 12 inches minimum beyond the inside face of a handrail.

Curb or Barrier. A curb or barrier shall be provided that prevents the passage of a 4 inch diameter sphere.

Wet Conditions. Landings subject to wet conditions shall be designed to prevent the accumulation of water.





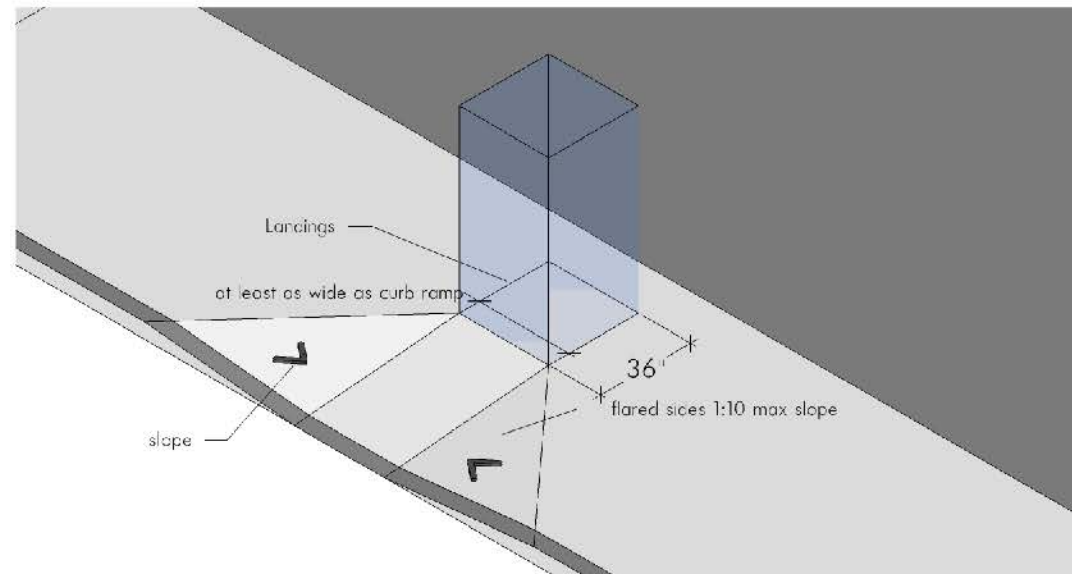
### 406 Curb Ramps

**Counter slopes:** Slopes of adjoining gutters and roads adjacent to the curb ramp shall not be steeper than 1:20. The adjacent surfaces to the curb ramp shall be at the same level.

**Sides of Curb Ramps:** Where provided, curb ramp flares shall not be steeper than 1:10.

**Landings:** Landings shall be provided at the tops of curb ramps, with a free length of 36 inches minimum. The landing free width shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing. In alterations, where there is no landing at the top of curb ramps, curb ramp flares must be provided and shall not be steeper than 1:12.

### 406 Curb Ramps



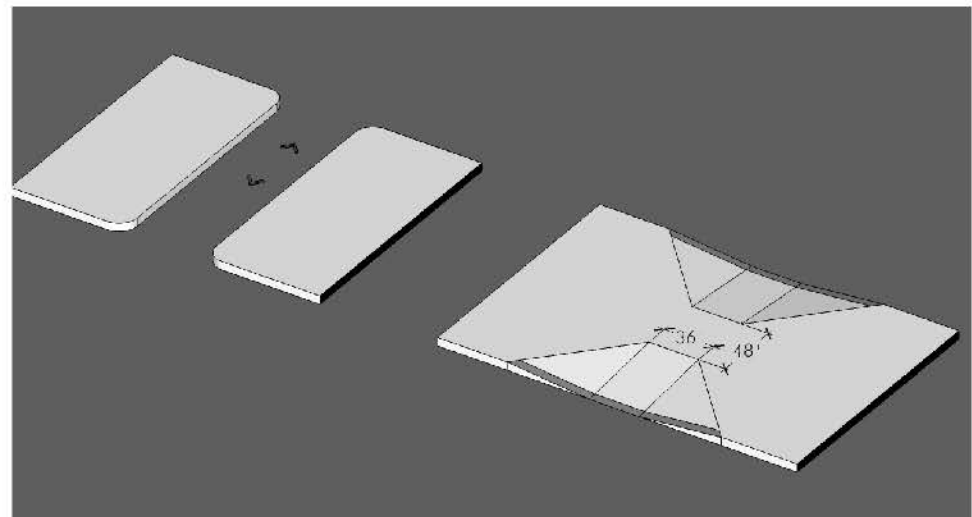
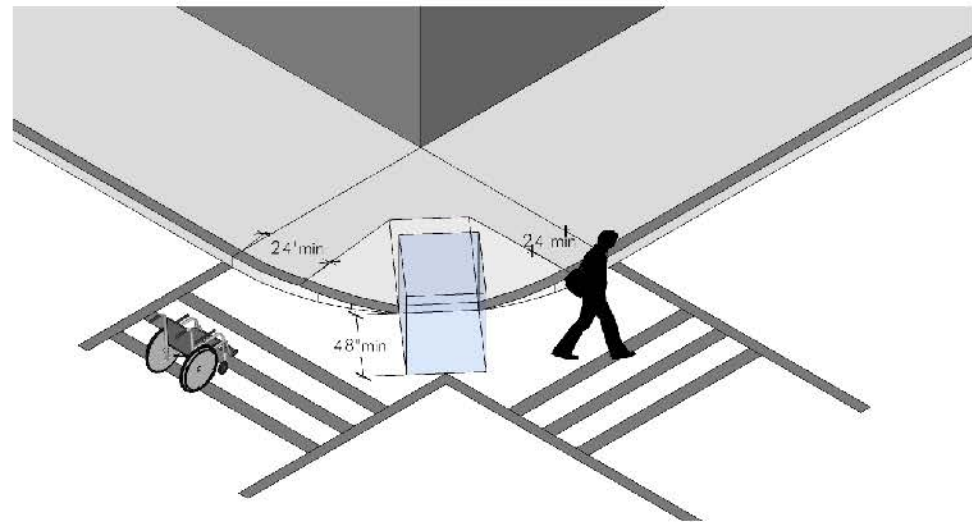
### 406Curb Ramps

**Location.** Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles.

**Diagonal Curb Ramps:** The bottom of the curb ramp shall have a clear space of 48". With flared sides: shall have segments of 24" long minimum located in each side of the curb ramp.

**Islands:** islands in crossings shall be cut through level with the street or have curb ramps at both sides. Curb ramps shall have 48 inches long minimum by 36" wide minimum of clear space at the top of the ramp, with the 48" side running along the ramp slope.

### 406Curb Ramps

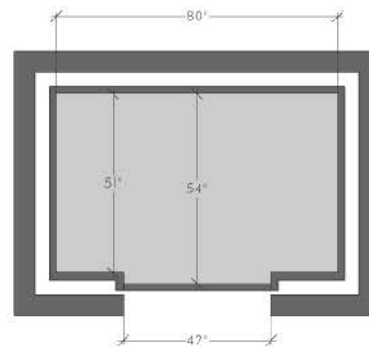


### 407Elevators

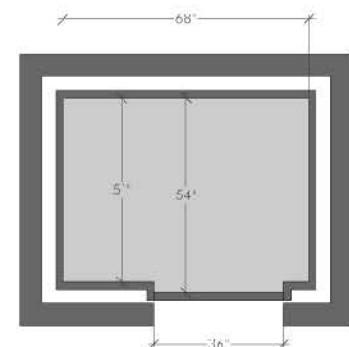
Elevator doors shall be the horizontal sliding type. Car gates shall be prohibited.

Inside dimensions of elevator cars and clear width of elevator doors shall comply with...

### 407Name of the Section



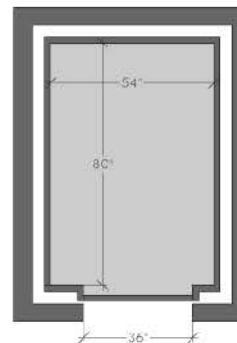
### 407



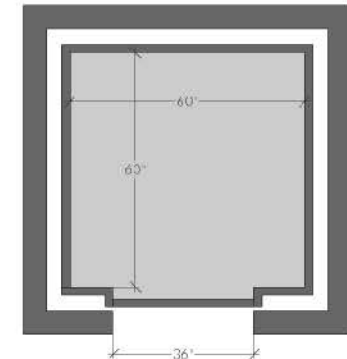
### 408 Limited-use/Limited-application elevators

Must comply with ASME A17.1 Elevator cars must provide a free area of 42" x 51" depth. Car doors must be positioned at the narrow ends of cars and must be 32" wide. Exceptions: 1. cars with 51" width x 51" depth, 36" door width. 2. existing elevators; 36" width x 54", net area 15 square feet.

### 407Name of the Section



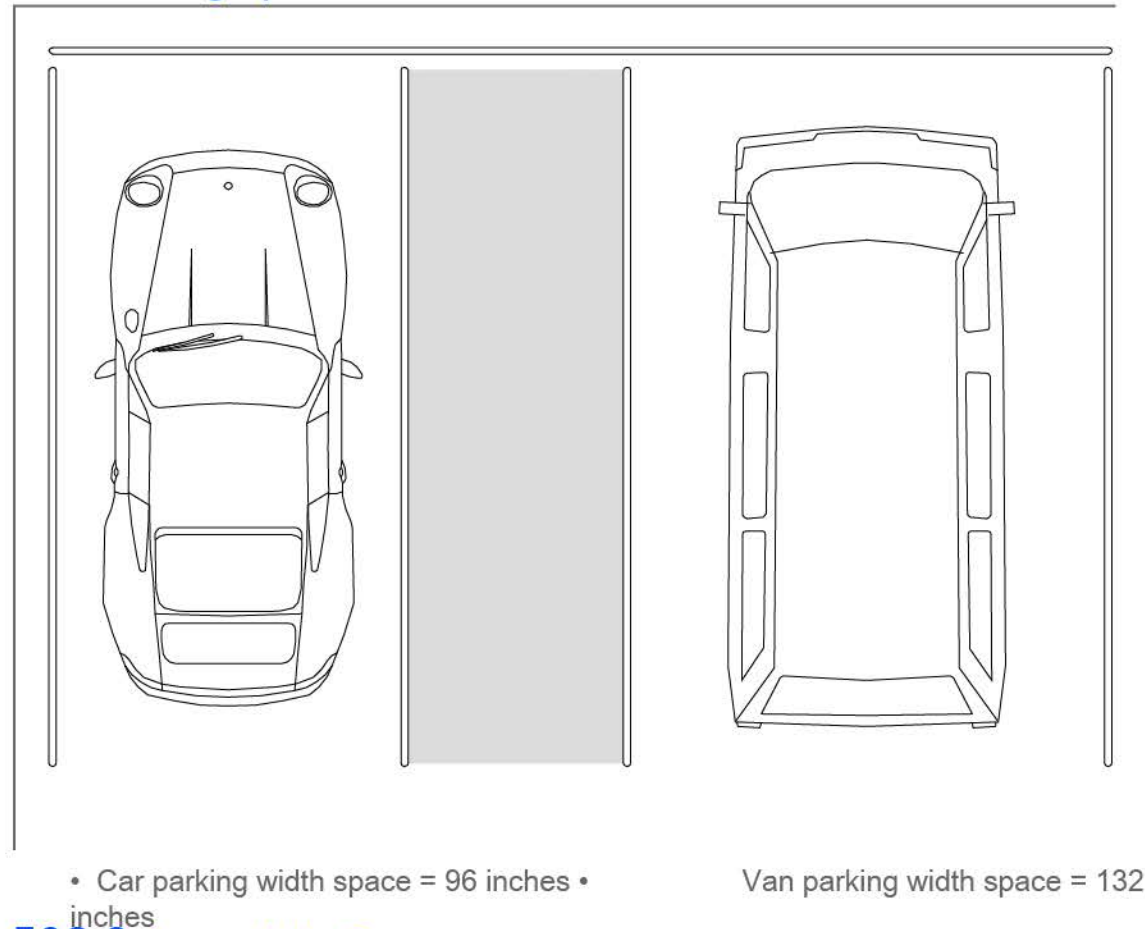
### 407Name of the Section



### 409 Private residence elevators

In private residences with elevators are required to comply with ASME A17.1 standards. Elevator cars shall provide a clear floor space of 36"x48" minimum and shall comply with 305.

### 502 Parking Spaces



### 502.3 Access Aisle Space

- Access Aisle space = 60 inches •
- Shall adjoin an accessible route •
- Two parking spaces shall be permitted to share a common access aisle •
- Must connect parking spaces to accessible entrances •
- Shall extend the full length of the parking space

### 503 Passenger Loading Zones

Vehicular pull-up space: 96 inches wide min (8 ft)  
240 inches long min (20 ft)

- Provide access aisles adjacent to the vehicle pull-up space

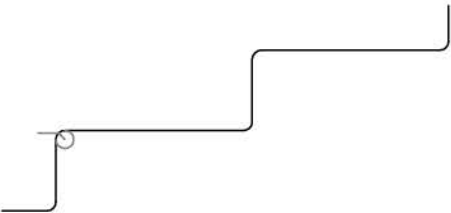
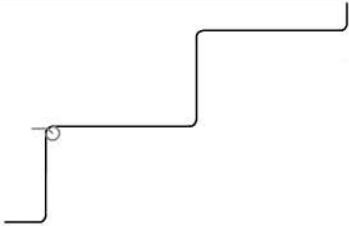
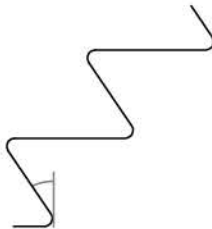
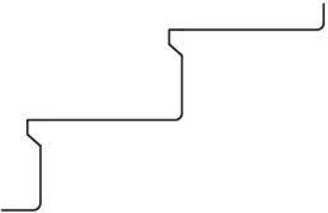
Adjoin an accessible route and not overlap vehicular way

- Access aisles serving vehicle pull-up spaces: 60 in





### 504 Stairways

Graphic	Riser Heights (in)	Tread Depths (in)	Speciality
	4 min	11 min	Radius $\frac{1}{2}$
	7 max	11 min	Radius $\frac{1}{2}$
	7 max	11 min	Angled Riser $30^{\circ}$ max
	7 max	11 min	Beveled Nosing $1 \frac{1}{2}$

### 505 Handrails

- Top of gripping surfaces: 34 in min  
38 in max

Be at a consistent height above:  
stair nosings, ramp surfaces, and walking surfaces

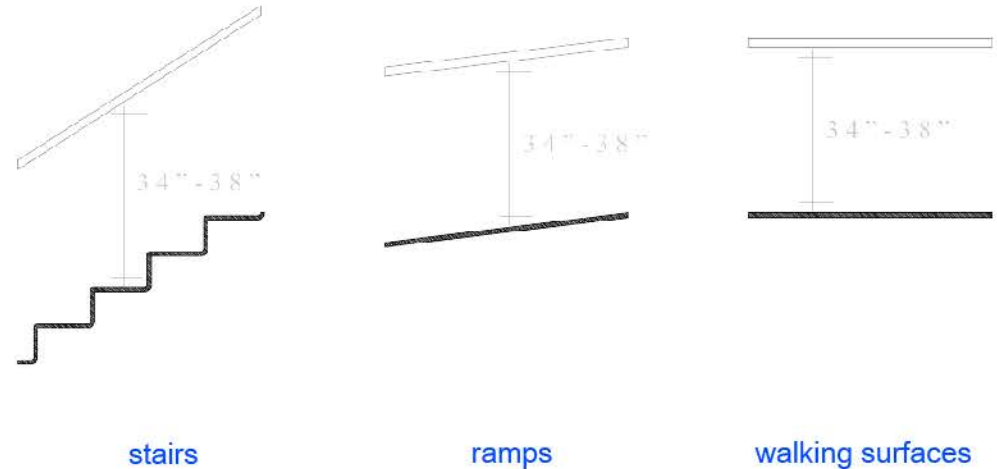
Continuous within the full length of each stair flight or  
ramp run

Be provided on both sides of stairs and ramps

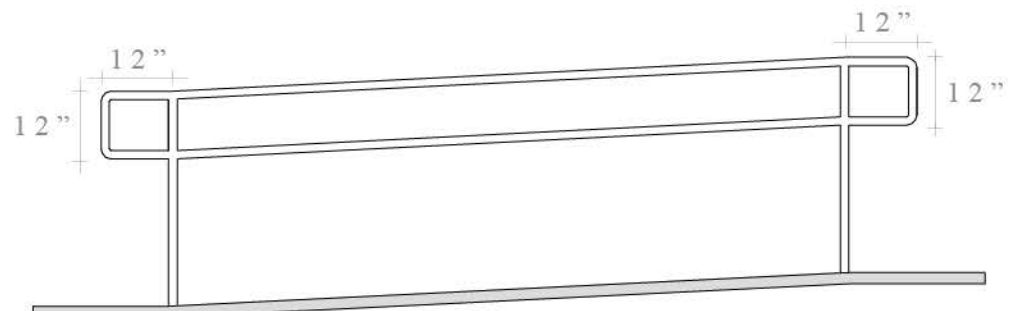
• Handrail gripping surfaces shall be continuous along  
their length and not be obstructed along their tops or  
sides

Shall extend horizontally above the landing:  
12 in min (beyond the top and bottom of ramp runs)

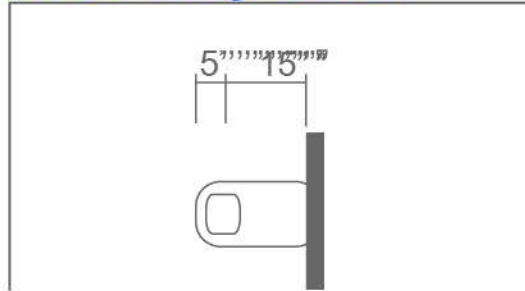
### 505.4 Handrail Height



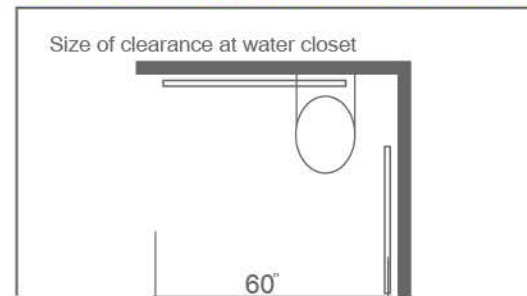
### 505.10 Handrail Extensions



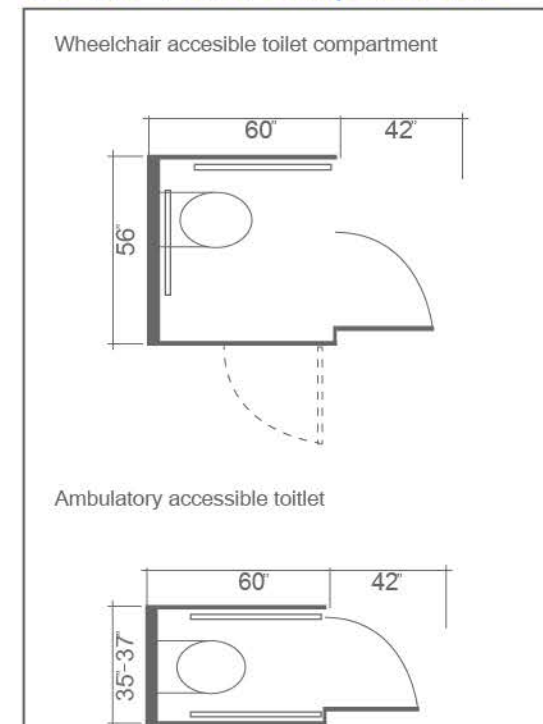
### 602.5 Drinking Fountain



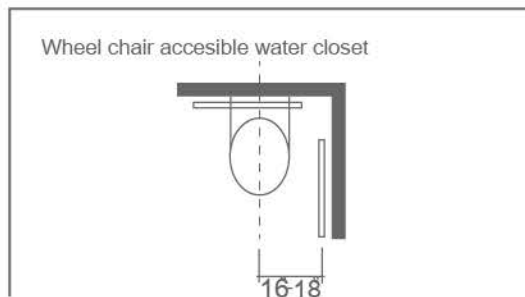
### 604.3 Water Closets Clearance



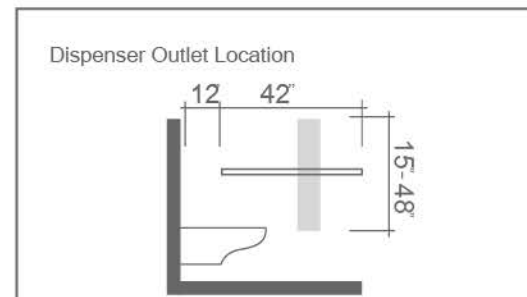
### 604.8 Toilet Compartments



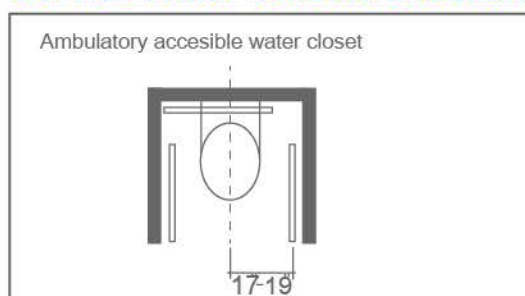
### 604.2 Water Closets



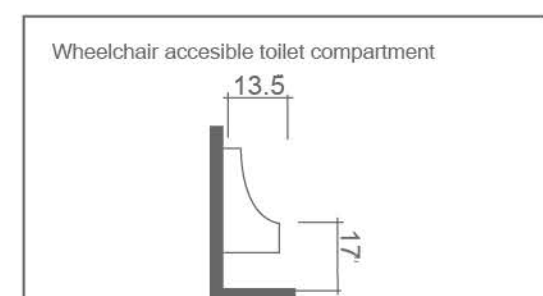
### 604.7 Water Closet Dispensers



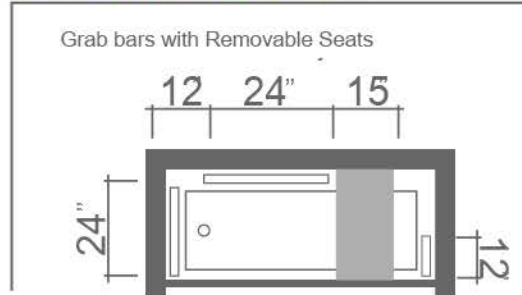
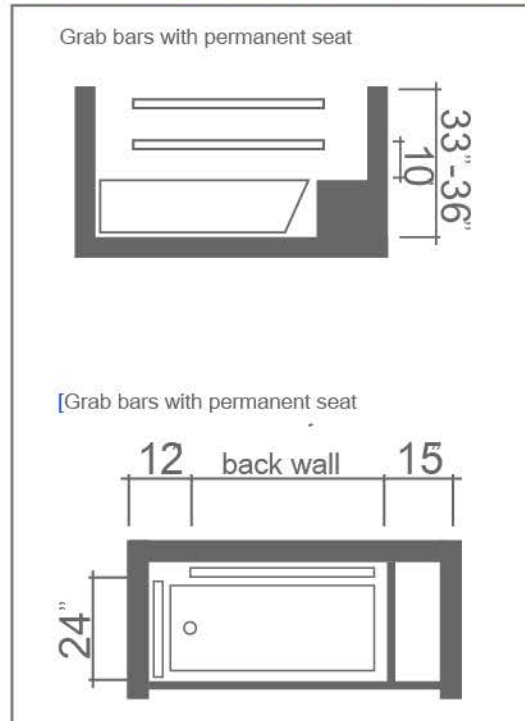
### 604.2 Water Closets Location



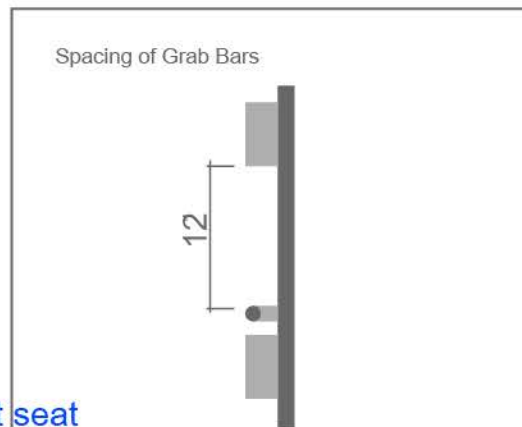
### 605.2 Urinals



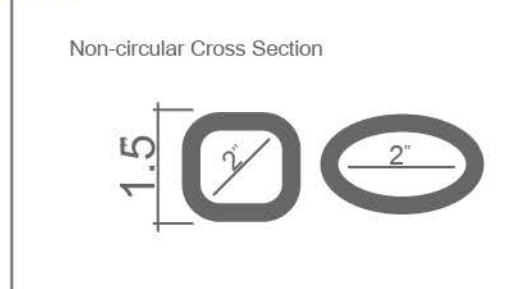
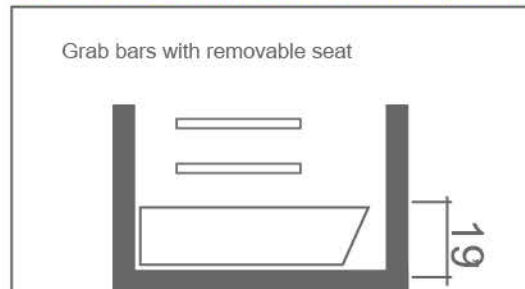
### 607.4.1 Bathtubs with permanent seat 607.4.2 Bathtubs



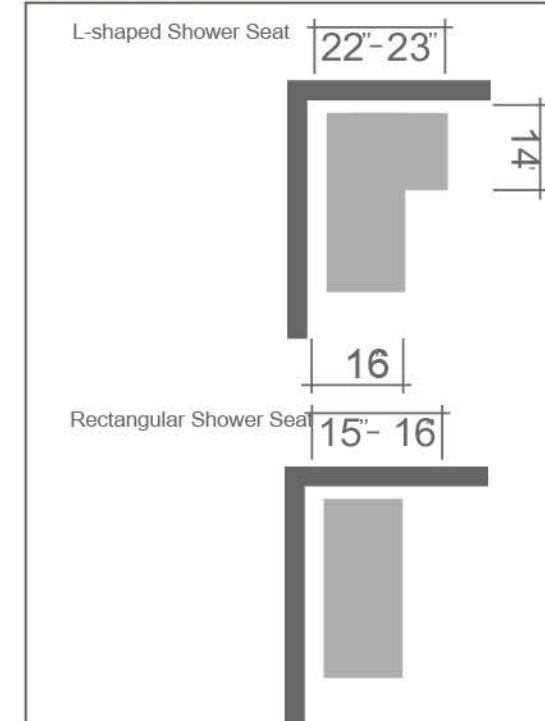
### 609 Grab Bars



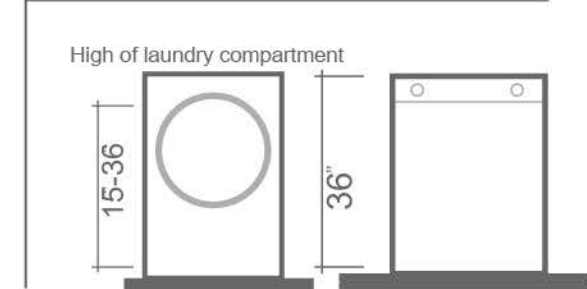
### 607.4.2 Bathtubs without permanent seat



### 610.3 Shower



### 611.4 Laundry

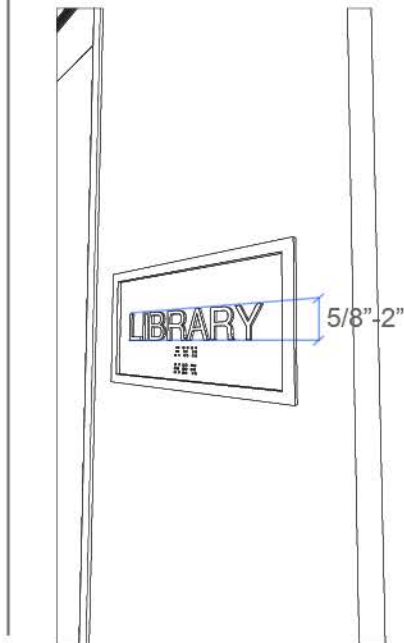




## Chapter 7: Communication Elements and Features

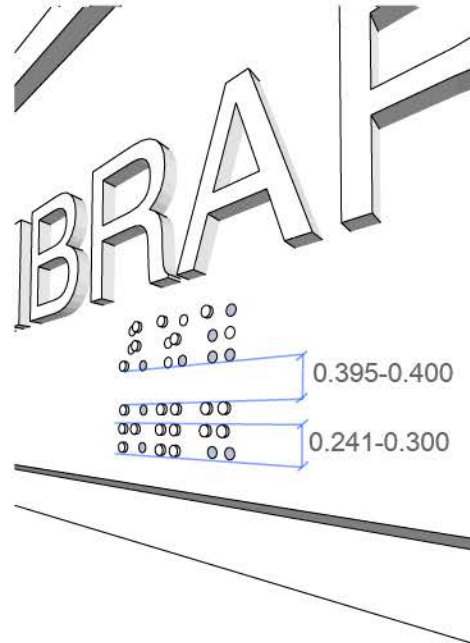
### 703.2 Characters

All characters must be **UPPERCASE**



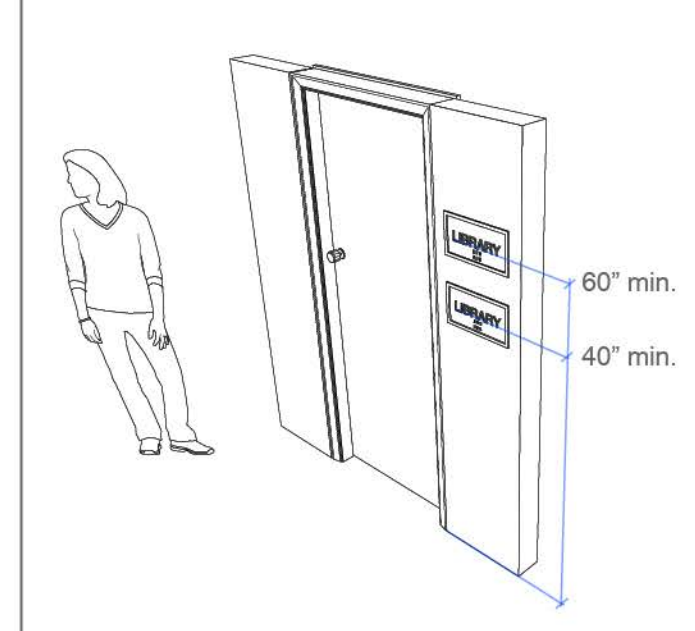
### 703.3 Braille

Braille elements shall meet with these standards:

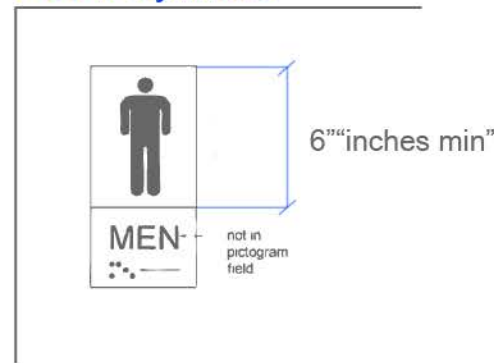


### 703.3 Height

All spaces shall be identified with both **VISUAL** and **TACTILE** elements



### 703.7 Symbols



### 703.7 Symbols



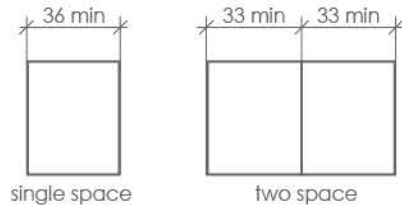
- ① International Symbol of Access for Hearing Loss
- ② International Symbol of Accessibility
- ③ International Symbol of TTY
- ④ Volume Control Telephone

### 703.3.2 Position

Braille shall be positioned below the corresponding text. If text is multi-lined, braille shall be placed below the entire text. Braille shall be separated 3/8 inch minimum from any other tactile characters and 3/8 inch minimum from raised borders and decorative elements.

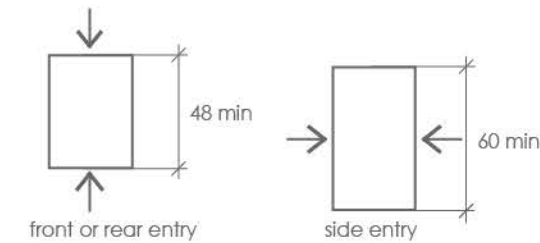
### 802.1.2 Wheelchair Spaces

Width of Wheelchair spaces



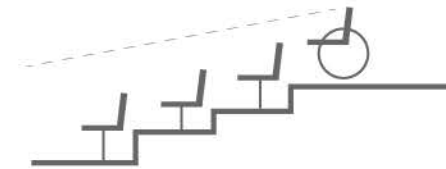
### 802.1.3 Wheelchair Spaces

Depth of Wheelchair spaces



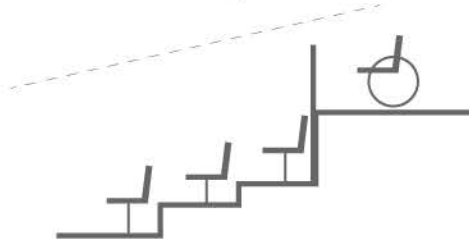
### 802.2.1.1 Lines of Sight

Over Head of Seated



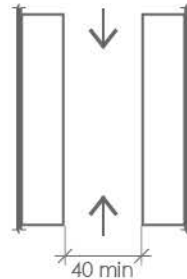
### 802.2.2.1 Lines of Sight

Over Head of Standing



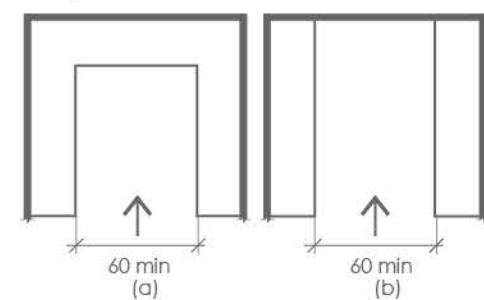
### 804.2.1 Kitchens

Pass through kitchens

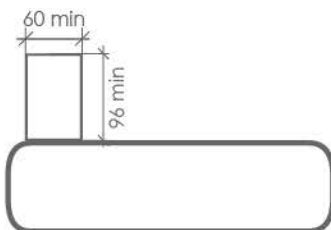


### 804.2.2 Kitchens

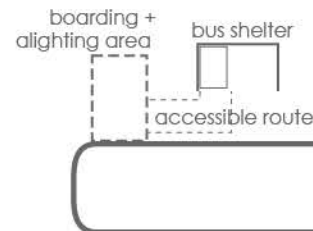
U-Shaped kitchens



### 810.2.2 Bus Boarding



### 810.3 Bus Shelters



### 801.10 Track Crossing

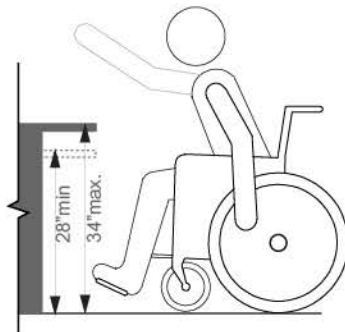


### 902 Dining and Work Surfaces

#### 902.1 General.

Dining surfaces include, but are not limited to, bars, tables, lunch counters, and booths.

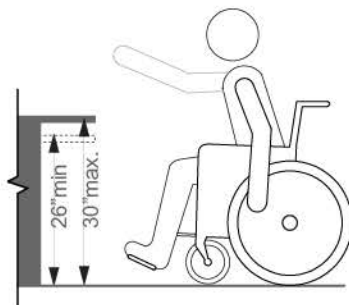
### 902.3 Height



### 902.4 For Children's use

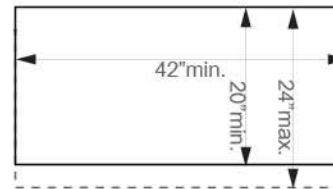
#### 902.4.2 Height.

\*Not applicable in children 5 years or younger



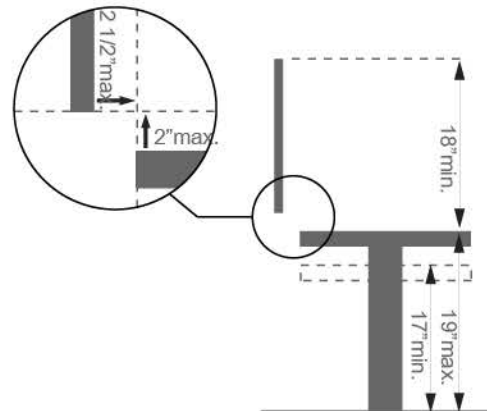
### 903 Benches

#### 903.3 Size

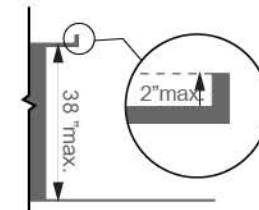


#### 903.4 Back Support

#### 903.5 Height

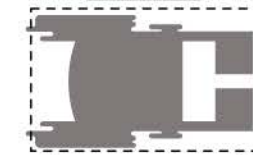


### 904.3.2 Counter



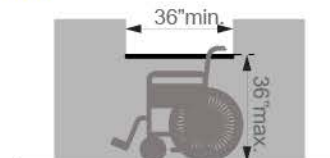
### 904.4 Sales and Service Counters

\*In reduction changes of existing counters

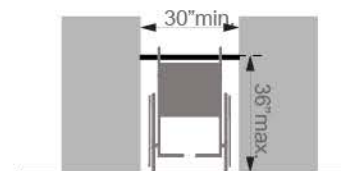


With Parallel Approach

#### 904.4.1 Parallel Approach



#### 904.4.1 Parallel Approach



### 1002 Amusement Rides

#### 1002.2 Accessible Routes

In load or unload areas on amusement rides, ramp slope shall be permitted to be 1:8 maximum.



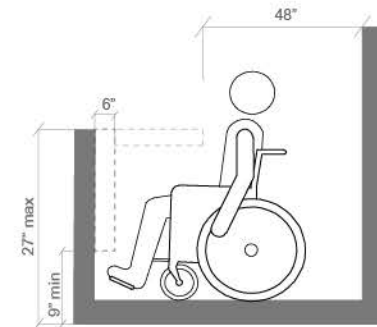
#### 1002.4 Wheelchair Spaces

**1002.4.1** The floor or ground surface of wheelchair spaces shall be stable and firm.

**1002.4.2** Slope shall not be steeper than 1:48 when in the load and unload position.

#### 1002.4.4.3 Permitted Protrusion

Objects are permitted to extend beyond a distance of 6" max in front of the wheelchair space, where located 9" and 27" above the floor, if located more than 27" above the floor it is permitted for objects to extend 25".



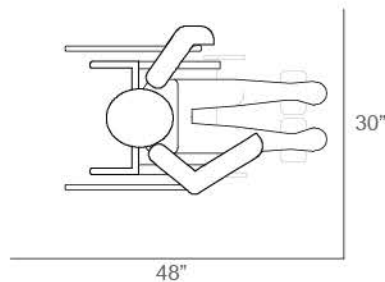
### 1002.2 Accessible Routes

#### 1002.4.3 Gaps

Floors of amusement rides with wheelchair spaces and floors of load and unload areas shall be coordinated so that, when amusement rides are at rest in the load and unload position, the vertical difference within ground surface shall be minimum 5/8" and the horizontal gap shall be 3" maximum under normal passenger load conditions.

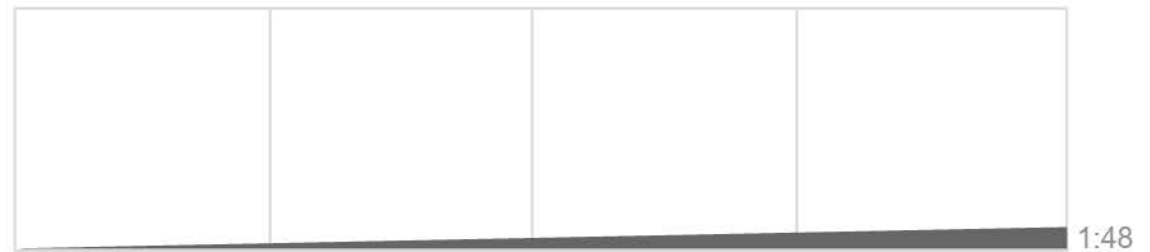
### 1002.4.4 Width and Length

Wheelchair spaces shall provide a clear width of 30 inches minimum and a clear length of 48 inches minimum measured to 9 inches minimum above the floor.



### 1002.4 Slope

The floor or ground surface of wheelchair spaces shall have a slope not steeper than 1:48



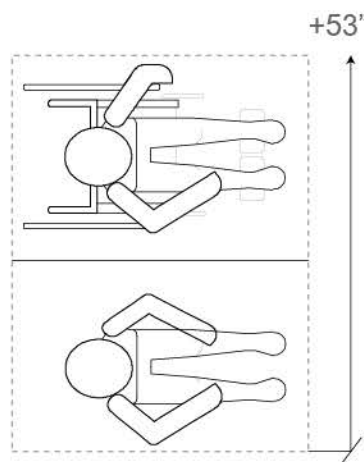
Scale: 1/8"



### 1002.4.4.7 Companion Seats

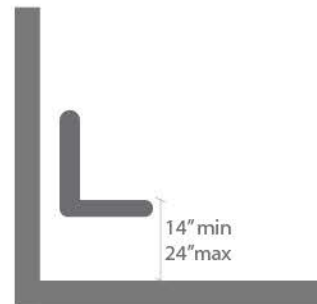
Where the interior width of the amusement ride is greater than 53 inches, a companion seat shall be provided for each wheelchair space.

Where an amusement ride provides shoulder-to-shoulder seating, companion seats shall be shoulder-to-shoulder with the adjacent wheelchair space. Otherwise, if its not operationally or structurally feasible, compliance with this requirement shall be required to the maximum extent practicable



### 1002.5.2 Transfer Height

The height of amusement ride seats designed for transfer shall be 14 inches (355 mm) minimum and 24 inches (610 mm) maximum measured from the surface of the load and unload area.



### 1002.6 Transfer devices

Operators and designers have flexibility in developing designs that will facilitate individuals to transfer onto amusement rides. These devices should be reliable and sturdy.

Where a series of transfers are required to reach the amusement ride seat, each vertical transfer should not exceed 8 inches.

Transfer devices for use with amusement rides should permit individuals to make independent transfers to and from their wheelchairs or mobility devices.

### 1003 Recreational Facilities

#### 1003.2.1 Boat Slips

Where the total length of a gangway or series of gangways serving as part of a required accessible route is 80 ft minimum.

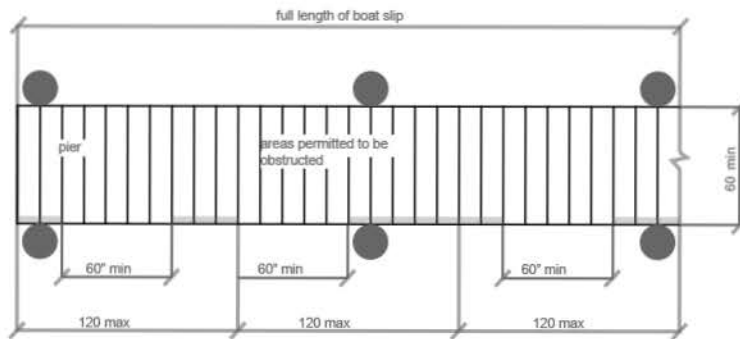
Another design solution would be to have two 40 foot (12 m) plus continuous gangways joined together at a float, where the float (as the water level falls) will stop dropping at an elevation five feet below the landside connection.

Where facilities contain fewer than 25 boat slips and the total length of the gangway or series of gangways serving as part of a required accessible route is 30 feet (9145 mm) minimum.

### 1003.3.1 Boat Slip Clearance

Boat slips shall provide a clear pier space 60 inches wide minimum and at least as long as the boat slips. Each 10 feet maximum of linear pier edge serving boat slips shall contain at least one continuous clear opening 60" wide minimum.

Example Figure 1003.3.1



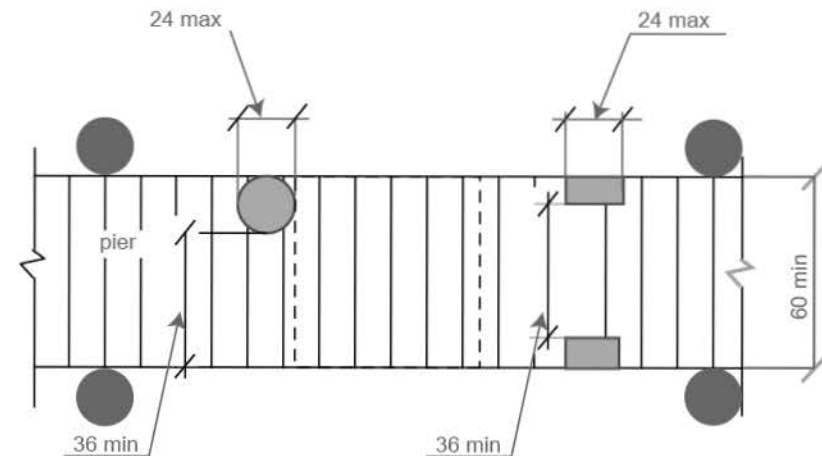
units = inches

### 1003.3.1 Boat Slip Clearance (Exception)

Clear pier spaces shall be permitted to be 36" wide minimum for a length of 24" maximum, provided that multiple 36" wide segments are separated by segments that are 60" wide minimum and 60" long minimum.

Edge protection shall be permitted at the continuous clear openings, provided that it is 4" high maximum and 2" wide maximum.

Figure 1003.3.1 (Exception)



units = inches

### 1003.3.1 Edge Protection

Edge protection shall be permitted at the continuous clear openings provided that it is 4 inches high maximum and 2 inches wide maximum.



units = inches

### 1004.1 Clear Floor or Ground Space

At each location where there are railings, guards, or handrails complying with 1005.2; a clear floor or ground space shall be provided. Where there are no railings, guards or handrails, at least on clear floor or ground space shall be provided on the fishing pier or platform.

### 1005.2 Railings

At least 25 percent of the railings, guards, or handrails shall be 34 inches maximum above the ground or deck surface.

### 1005.3 Extended Ground or Deck Surface

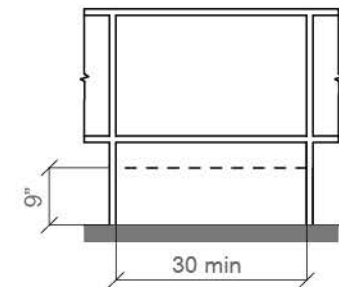
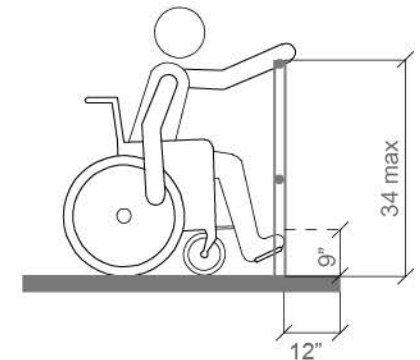
The ground or deck surface shall extend 12 inches minimum beyond the inside face of the railing. Toe clearance shall be provided and shall be 30 inches wide minimum and 9 inches minimum above the ground or deck surface beyond the railing.

### 1005.3 Edge Protection

Edge protection is required only where railings, guards, or handrails are provided on a fishing pier or platform. Extending the deck of the fishing pier or platform 12 inches where the 34 inch high railing is provided is an alternative design.

Figure 1005.3

Extended Ground or Deck Surface at Fishing Piers and Platforms.





### 1006 Golf Facilities

Accessible routes shall be 48 inches wide minimum. Where handrails are provided, accessible routes shall be 60 inches wide minimum. Handrails shall not be required on golf courses.

### 1007.3.2 Golf Club Range Area

All areas within holes where golf balls rest shall be within 36 inches maximum of a clear floor or ground space 36 inches wide minimum and 48 inches long minimum having a running slope not steeper than 1:20.

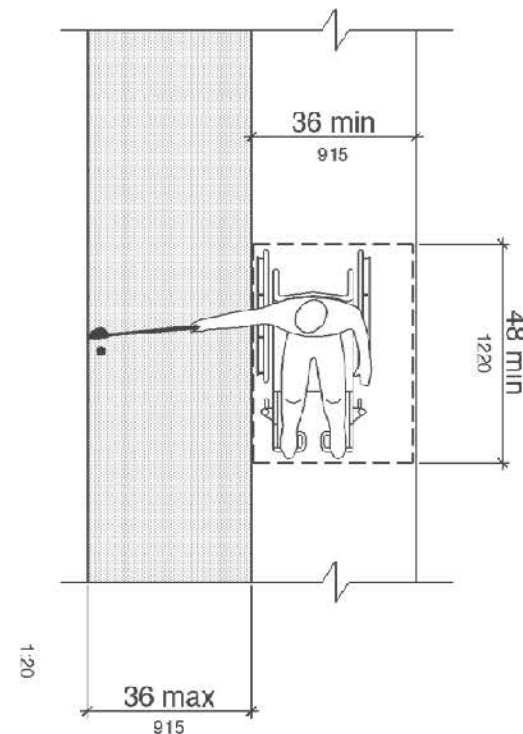
The clear floor or ground space shall be served by an accessible route.

Where accessible routes serve ground level play components, the vertical clearance shall be 80 inches high minimum.

Golf Club Reach Range Area. The golf club reach range applies to all holes required to be accessible.

Figure 1007.3.2

Running slope of clear floor or ground space shall not be steeper than 1:20.





### 1008 Play Areas

In play areas less than 1000 square feet, the clear width of accessible routes shall be permitted to be 44 inches minimum, if at least one turning space complying with 304.3 is provided where the restricted accessible route exceeds 30 feet in length.

The clear width of accessible routes shall be permitted to be 36 inches minimum for a distance of 60 inches maximum provided that multiple reduced width segments are separated by segments that are 60 inches wide minimum and 60 inches long minimum.

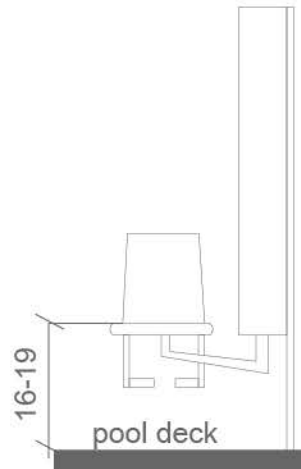
Handrail gripping surfaces with a circular cross section shall have an outside diameter of 0.95 inch minimum and 1.55 inches maximum. Where the shape of the gripping surface is non-circular, the handrail shall provide an equivalent gripping surface.

**Handrail Height.** The top of handrail gripping surfaces shall be 20 inches minimum and 28 inches maximum above the ramp surface.

### 1009.2.1 Pool Lift Location

Pool lifts shall be located where the water level does not exceed 48 inches.

### 1009.2.4. Seat Height



### 1009.2.5 Seat Width

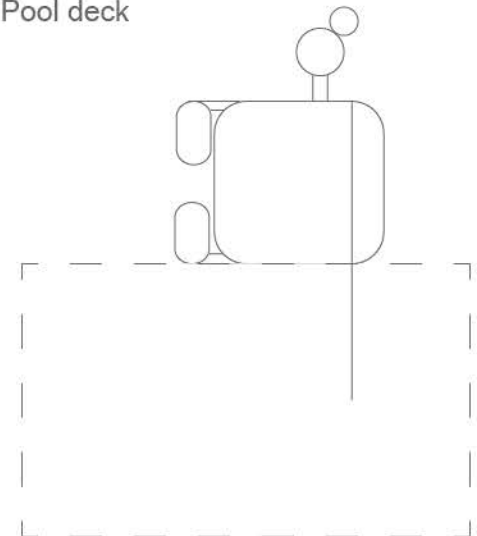
The seat shall be 16 inches wide minimum.

### 1009.2.2 Seat Location.

In the raised position, the centerline of the shall be located over the deck and 16 inches minimum from the edge of the pool. The deck surface between the centerline of the seat and the pool edge shall have a slope not steeper than 1:48

Water

Pool deck



# ADA essentials

[About This Document]

## DOCUMENT DISCLAIMER REFERENCE

This is the result of independent summaries based on investigations regarding the 2010 ADA Standards and regulations used in our field of architecture. Our intention is to benefit the students of the undergraduate and graduate schools from the School of Architecture [UPR] by facilitating the availability of frequently used data. This will eventually aid and foment more responsible future professionals.

This Document is for educational purposes and to provide students with selected information to an essential understanding of the codes, regulations and standards regarding the practice of architecture in Puerto Rico. They are not intended and should not be considered as official summaries of the documents they reference. Consult the original official publications for further purposes.

2010 ADA Standards for Accessible Design, Department of Justice

vigency: September 15, 2010

## LAST REVISED

December 14, 2011

## RELATED REFERENCES COLLABORATORS

McMorrough, Julia. 2006. Materials, structures, and standards: all the details architects need to know but can never find. Gloucester, Mass: Rockport Publishers.

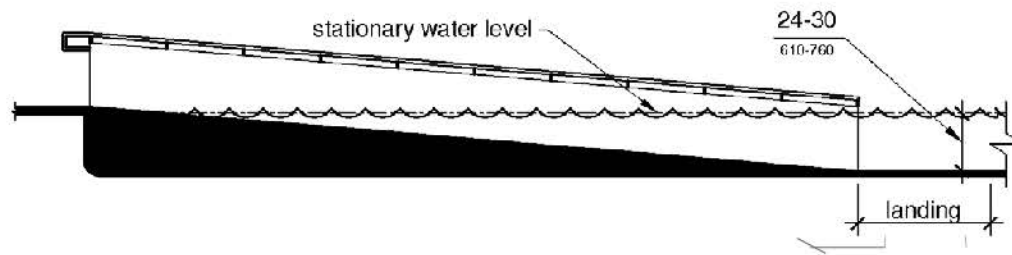
Rhoads, Marcela A. 2010. The ADA Companion Guide: Understanding the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and

Cristina A. Marrero  
Christopher j. Suarez  
Gabriel  
Beatriz  
Mairenis  
Alejandra  
Hector



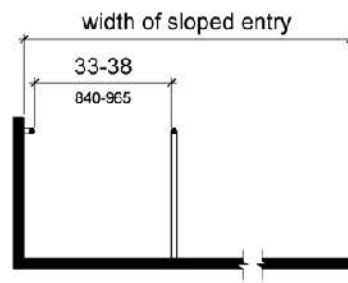
### 1009.3.2 Slope entry submerged depth

Sloped entries shall extend to a depth of 24 inches minimum and 30 inches maximum below the stationary water level. Where landings are required by 405.7, at least one landing shall be located 24 inches minimum and 30 inches maximum below the stationary water level.



### 1009.3.2 Slope entry submerged depth

The clear width between required handrails shall be 33 inches minimum and 38 inches maximum.



### 1009.4 Transfer Wall

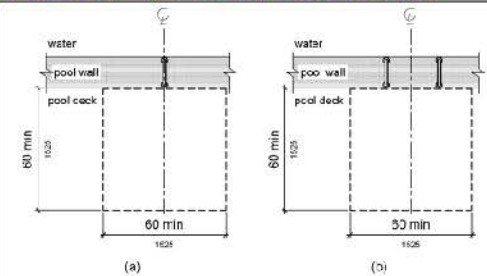
Clear deck Space - 60 inches by 60 inches with a slope not steeper than 1:48.

Height - from deck a minimum of 16 inches and a maximum of 19 inches.

Depth - 12 inches minimum and 16 inches maximum.

Length - 60 inches minimum centered from the centerline of the clear deck space.

### 1009.2.2 Seat Location.



16-19  
405-485

