ADA QUEST

THE LEVEL-BY-LEVEL RULEBOOK



5 WORLDS · 14 LEVELS · 150+ NUMBERS

BUILT ON THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN · BY DM MOTION

START HERE

HOW TO PLAY

Kit is a college student who gets around campus every day. Each level is a place Kit goes: the parking lot, the door, the bathroom. Every level shows a picture and a set of rule cards. Read the picture, find the number pins, then match them to the cards.

HOW TO READ A CARD

3 **36 IN** Clear width

§403.5.1

The rule, in plain words. Every number is a minimum unless it says max, or a range.

WHY The reason the rule exists.

Amber pin = matches the same number on the picture. **Chip** = the number to remember. **§** = the section in the 2010 ADA Standards. The **box** in the corner is for checking it off on your own plans.

WORDS YOU WILL SEE

Running slope
How steep a surface is in the direction you travel. 1:12 means 1 in up for every 12 in forward.

Cross slope
How steep a surface is side to side. 1:48 is almost flat.

Clear floor space
A 30 x 48 in patch of floor next to a fixture or control where a wheelchair can park.

Operable part
Anything you use: handles, buttons, switches, faucets, dispensers.

Accessible route
The continuous path from the parking space or sidewalk to every public space.

lbf
Pounds of force. 5 lbf is a light push, about what it takes to press a heavy doorbell.

UNITS AND LIMITS

All numbers are inches unless the card says otherwise. These are minimums for **new construction and alterations** under the 2010 ADA Standards. Existing buildings, state codes and local codes can add or change requirements. Check the current standards and your local code before you design or sign off.



THE MAP

5 WORLDS, 14 LEVELS

Follow Kit from the curb to the back of the building, or jump straight to the level you need. Each world builds on the one before.

WORLD 1

ARRIVE

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12 Showers And Tubs p.19

WORLD 5

SPECIAL ROOMS

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14 Bedrooms And Theater Seats p.21



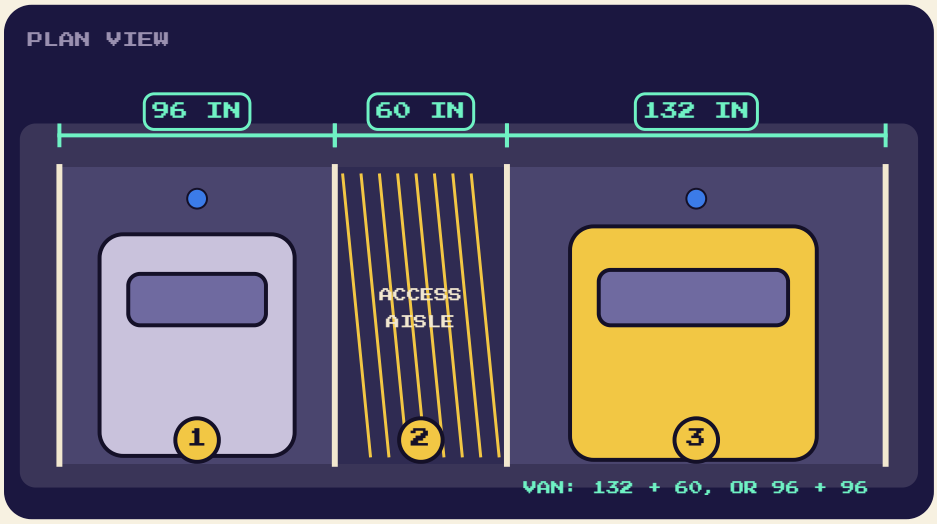
WORLD 1 · ARRIVE

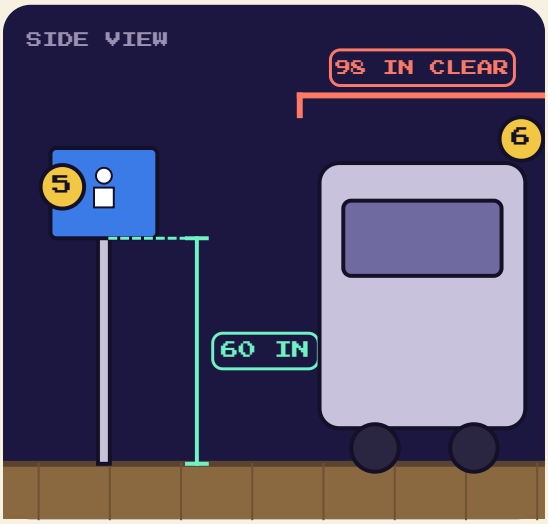
LEVEL 1

THE PARKING LOT



Every visit starts here. Get the space, the aisle and the sign right and the rest of the trip works.





1 **96 IN** Space width — §502.2

Each accessible space is at least 96 in (8 ft) wide, with the width marked.

WHY Room to open a car door and unload.

2 **60 IN** Access aisle — §502.3

Aisle at least 60 in wide and as long as the space it serves.

WHY Space for a ramp or lift to deploy and a chair to turn.

3 **132 IN** Van space — §502.2

A van space is 132 in wide with a 60 in aisle, or 96 in wide with a 96 in aisle.

WHY Side-door ramps need extra landing room.

4 **1:48** Max slope — §502.4

Spaces and aisles slope no more than 1:48 in any direction.

WHY A chair or walker should not roll away.

5 **60 IN** Sign height — §502.6

Bottom edge of the sign is at least 60 in above the ground.

WHY A parked vehicle should not hide it.

6 **98 IN** Van clearance — §502.5

Van spaces, aisles and the route to them have 98 in of headroom.

WHY A tall van has to fit through.

7 **1 IN 6** Van count — §208.2.4

At least 1 van space for every 6 accessible spaces, or fraction of 6.

WHY Not every accessible space fits a van.

8 **CLEAR** Keep ramps clear — §406.5

A curb ramp must not project into a parking space or access aisle.

WHY The aisle stays flat and usable.

9 **4 OR LESS** Tiny lots — §216.5 Ex. 1

A site with 4 or fewer parking spaces does not need the sign.

WHY The one exception to the sign rule.

10 **5 LBF** Pay stations — §309.4

Pay machines and controls take 5 lbf or less, one hand, no tight grasp or twist.

WHY Paying should not need a strong grip.

§208.2 HOW MANY ACCESSIBLE SPACES?

TOTAL SPACES	1-25	26-50	51-75	76-100	101-150	151-200	201-300	301-400	401-500
ACCESSIBLE	1	2	3	4	5	6	7	8	9

Total accessible spaces, including van spaces. Over 500: 2% of the total, rounded up, up to 1,000 spaces. Facility types like outpatient clinics need more (10 to 20 percent).

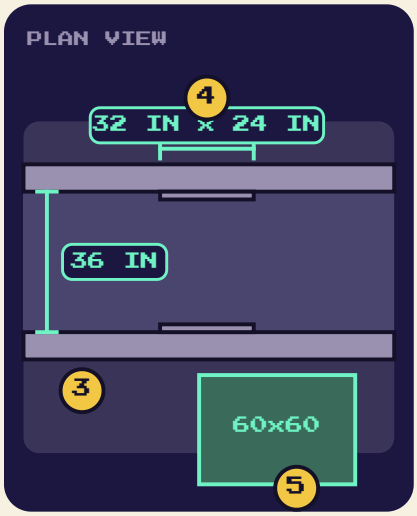
WORLD 1 · ARRIVE

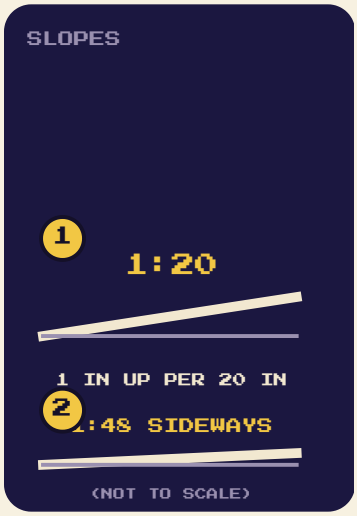
LEVEL 2

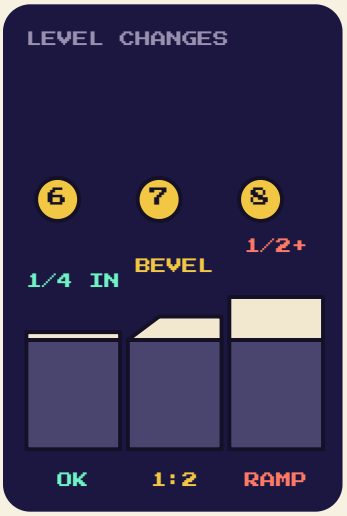
THE ROUTE

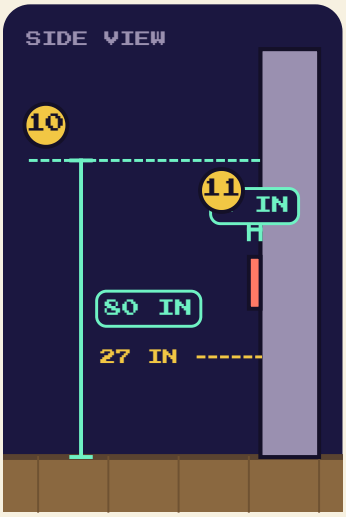


The accessible route is the path from the parking space to every door. It has to work end to end.









1 **1:20** Max walking slope — §403.3

Running slope is 1:20 or flatter. Steeper than that is a ramp.

WHY Slopes wear people out and speed up chairs.

2 **1:48** Max cross slope — §403.3

Side-to-side slope is 1:48 or flatter.

WHY Keeps a chair from drifting downhill.

3 **36 IN** Clear width — §403.5.1

At least 36 in wide, clear of anything sticking in.

WHY A chair needs about this much to travel straight.

4 **32 IN** The neck — §403.5.1

May narrow to 32 in for no more than 24 in of length, with 48 in x 36 in segments between.

WHY Lets a path squeeze past a post or doorway.

5 **60 x 60** Passing space — §403.5.3

Where the path is under 60 in wide, add a 60 x 60 in passing space at least every 200 ft.

WHY Two chairs have to be able to pass.

6 **1/4 IN** Max lip — §303.2

Vertical changes in level stop at 1/4 in.

WHY A small lip can stop a front wheel or trip a foot.

7 **1/4 – 1/2** Bevel it — §303.3

Between 1/4 and 1/2 in, bevel the edge no steeper than 1:2.

WHY Turns a hard edge into a roll-over.

8 **OVER 1/2** Make it a ramp — §303.4

Anything taller than 1/2 in becomes a ramp or curb ramp.

WHY Changes in level are not allowed past this.

9 **1/2 IN** Carpet pile — §302.2-3

Carpet pile is 1/2 in or less. Gratings may not pass a 1/2 in sphere.

WHY Deep pile and wide gaps catch wheels and canes.

10 **80 IN** Headroom — §307.4

At least 80 in clear overhead (door closers and stops may drop to 78 in).

WHY People should not walk into low objects.

11 **4 IN** Max protrusion — §307.2

Wall objects between 27 and 80 in high stick out 4 in at most (handrails 4 1/2 in).

WHY A cane user detects things below 27 in.

12 **42-48-42** Tight turns — §403.5.2

Turning around an object under 48 in wide: 42 in in, 48 in at the turn, 42 in out.

WHY A chair needs room to swing the corner.

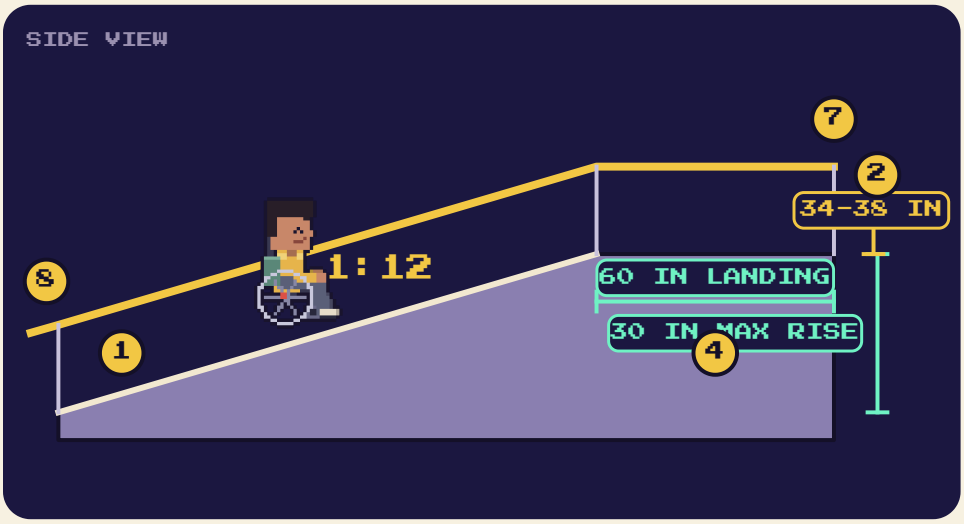
WORLD 1 · ARRIVE

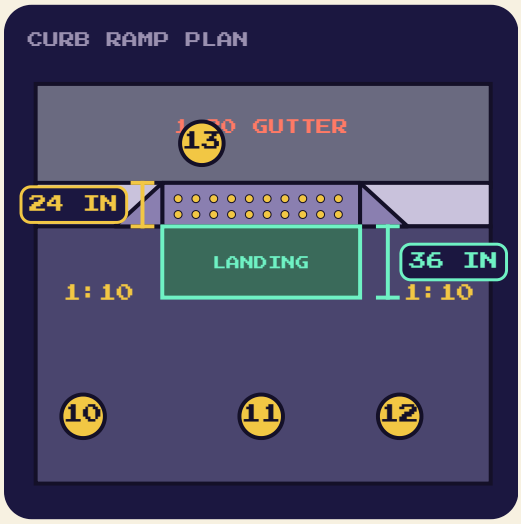
LEVEL 3

RAMPS AND CURB RAMPS

When the ground changes height by more than 1/2 in, a ramp does the work. Short and gentle wins.







1 **1:12** Max slope — §405.2

Running slope is 1:12 or flatter, which is 1 in of rise per 12 in of run.

WHY The steepest slope most people can push or climb.

2 **30 IN** Max rise — §405.6

No more than 30 in of rise in one run. Add a landing and start another.

WHY Rest stops keep long ramps usable.

3 **36 IN** Clear width — §405.5

Clear width is 36 in minimum, measured between handrails.

WHY A chair fits between the rails.

4 **60 IN** Landings — §405.7

Landings at the top and bottom of each run are 60 in long minimum and as wide as the ramp.

WHY Room to stop, turn and open a door.

5 **60 x 60** Turn landings — §405.7.4

Where a ramp changes direction the landing is 60 x 60 in.

WHY A chair can turn a full corner.

6 **OVER 6 IN** Rails required — §405.8

Handrails are required when the rise is greater than 6 in.

WHY Gives a hand hold on the way up and down.

7 **34-38 IN** Rail height — §505.4

Handrail height: 34 to 38 in above the ramp surface.

WHY Reachable from standing or seated.

8 **12 IN** Rail extension — §505.10

Handrails extend 12 in past the top and bottom of the ramp.

WHY A place to hold before the first step.

9 **12 / 4 IN** Edge protection — §405.9

Extend the surface 12 in past the rail, or add a curb that blocks a 4 in sphere.

WHY Keeps wheels and canes from slipping off.

10 **1:10** Curb ramp flares — §406.3

Flared sides of a curb ramp slope no steeper than 1:10.

WHY Walkers do not trip on the sides.

11 **36 IN** Curb ramp landing — §406.4

A curb ramp has a 36 in long landing at the top.

WHY A level spot to turn before descending.

12 **1:20** Gutter counter slope — §406.2

Gutter or road next to a curb ramp slopes 1:20 or less.

WHY Wheels do not bottom out at the foot of the ramp.

LEVEL 3: RAMPS AND CURB RAMPS (CONTINUED)



13 **24 IN** **Detectable warning** §406.8

Warning dots run the full ramp width and at least 24 in deep.

WHY Cane users can feel the street edge.

THE LEVEL IN ONE GLANCE

1:12 Max slope	**30 IN** Max rise	**36 IN** Clear width
60 IN Landings	**60 x 60** Turn landings	**OVER 6 IN** Rails required
34–38 IN Rail height	**12 IN** Rail extension	**12 / 4 IN** Edge protection
1:10 Curb ramp flares	**36 IN** Curb ramp landing	**1:20** Gutter counter slope
24 IN Detectable warning		

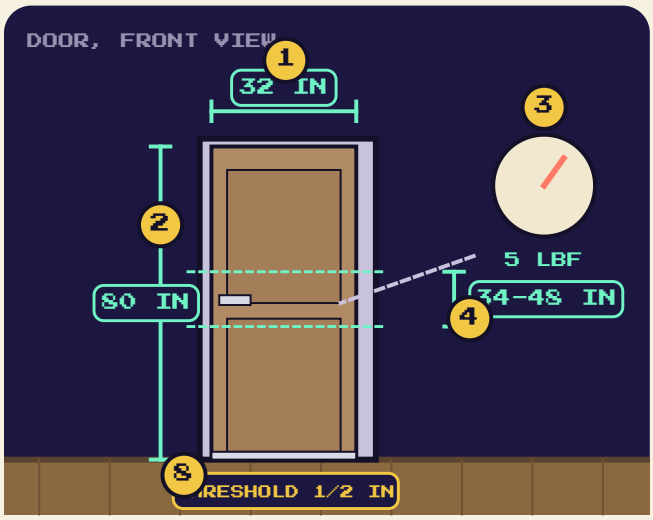
WORLD 2 · ENTER

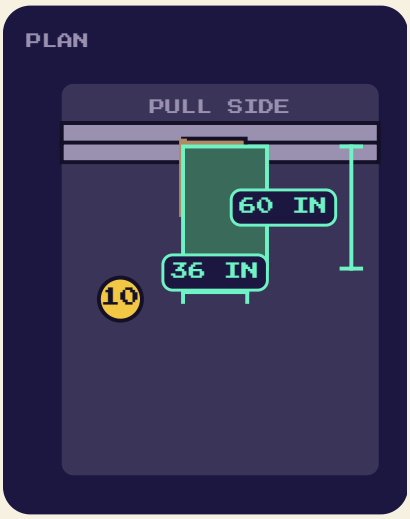
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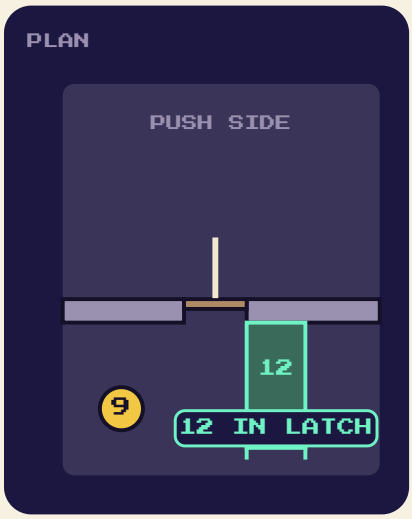
THE DOOR



Doors are where good plans fail. Width, force, hardware and clearance all count.







1 **32 IN** Clear width — §404.2.3

At least 32 in, measured from the stop to the face of the door open 90 degrees. 36 in if the doorway is deeper than 24 in.

WHY A chair has to get through.

2 **80 IN** Clear height — §404.2.3

At least 80 in tall (78 in at closers and stops).

WHY People should not duck.

3 **5 LBF** Opening force — §404.2.9

Interior hinged doors open with 5 lbf or less. Fire doors and exterior hinged doors are excluded.

WHY Anyone should be able to push it open.

4 **34–48 IN** Hardware height — §404.2.7

Handles and latches sit 34 to 48 in above the floor.

WHY Reachable seated and standing.

5 **NO TWIST** Hardware type — §404.2.7

Operable with one hand, no tight grasping, pinching or wrist twisting. Levers and U-pulls pass. Round knobs do not.

WHY A closed fist or an elbow can work a lever.

6 **5 SEC** Closer speed — §404.2.8

A door closer takes at least 5 seconds to go from 90 to 12 degrees.

WHY Time to get through before it closes.

7 **1.5 SEC** Spring hinge — §404.2.8

Spring hinges take at least 1.5 seconds from 70 degrees to closed.

WHY Same idea, shorter swing.

8 **1/2 IN** Threshold — §404.2.5

Thresholds are 1/2 in or less. Bevel anything over 1/4 in at 1:2. Existing: 3/4 in max if beveled.

WHY Wheels cross it smoothly.

9 **12 IN** Push side, latch — §404.2.4

Forward approach to the push side with closer and latch: 12 in clear on the latch side.

WHY Room to reach the door edge.

10 **60 / 36** Pull side — §404.2.4

Pull side, hinge approach: 60 in deep and 36 in clear beside the latch (54 in deep with 42 in).

WHY Room to back up as the door swings.

11 **48 IN** Doors in series — §404.2.6

Two doors in a row: 48 in apart plus the width of any door swinging into the space.

WHY A chair fits between without being trapped.

12 **10 IN** Smooth bottom — §404.2.10

The bottom 10 in of the push side is smooth.

WHY A footrest can push the door.

LEVEL 4: THE DOOR (CONTINUED)



13 **43 IN** Vision panel — §404.2.11

Glass panel bottom edge is 43 in or lower (unless the lowest part is above 66 in).

WHY Seated people can see through.

14 **32 IN** Automatic doors — §404.3

Power doors keep a 32 in clear width. Their controls take 5 lbf or less.

WHY Same width rule, no force.

THE LEVEL IN ONE GLANCE

32 IN Clear width	**80 IN** Clear height	**5 LBF** Opening force
34–48 IN Hardware height	**NO TWIST** Hardware type	**5 SEC** Closer speed
1.5 SEC Spring hinge	**1/2 IN** Threshold	**12 IN** Push side, latch
60 / 36 Pull side	**48 IN** Doors in series	**10 IN** Smooth bottom
43 IN Vision panel	**32 IN** Automatic doors	

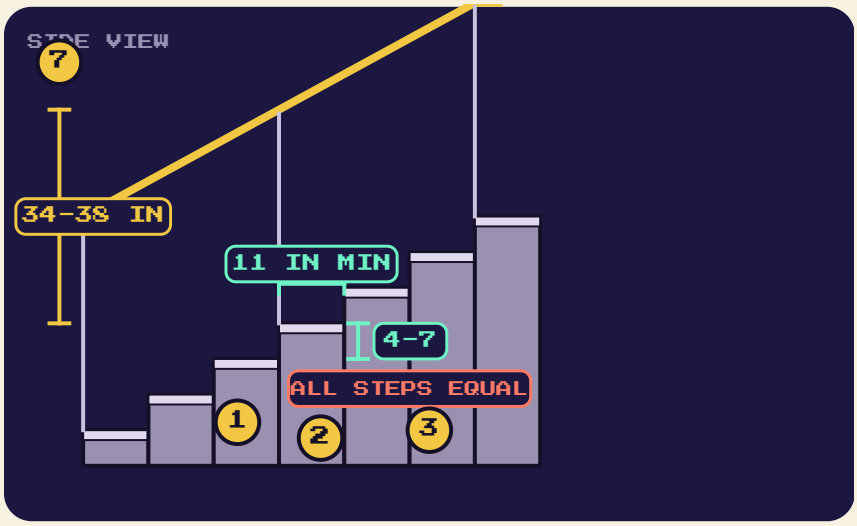
WORLD 2 · ENTER

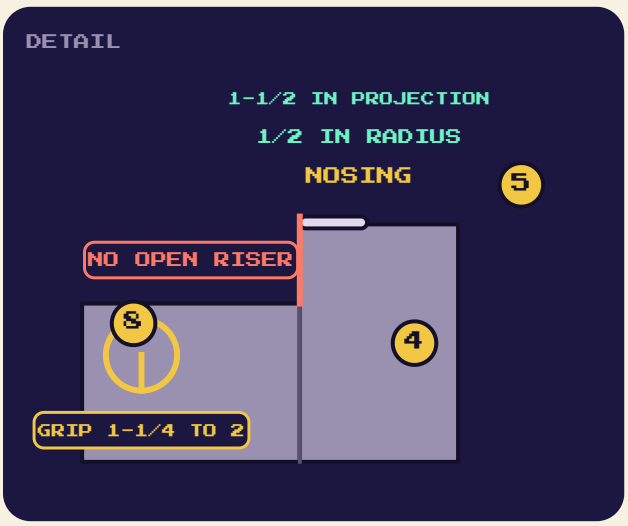
LEVEL 5

STAIRS AND HANDRAILS



Stairs injure over a million people a year in the US. The ADA numbers make them predictable.





1 **4–7 IN** Riser height — §504.2

Each riser is 4 to 7 in high.

WHY Steps your legs can predict.

2 **11 IN** Tread depth — §504.2

Each tread is at least 11 in deep, measured nosing to nosing.

WHY A whole foot fits.

3 **ALL EQUAL** Uniform steps — §504.2

Every riser and tread in a flight matches the others.

WHY One odd step is the one people trip on.

4 **NO OPEN** Closed risers — §504.3

Open risers are not allowed.

WHY Toes do not catch under the next step.

5 **1/2 IN** Nosing radius — §504.5

Nosing curves no more than 1/2 in. It projects 1 1/2 in at most.

WHY A sharp lip catches a shoe.

6 **BOTH SIDES** Handrails — §505.2

Handrails on both sides of the stair, continuous inside the flight.

WHY Left or right, someone needs the grip.

7 **34–38 IN** Rail height — §505.4

Top of the gripping surface is 34 to 38 in above the nosings.

WHY Within reach for most users.

8 **1 1/4–2 IN** Grip size — §505.7.1

Round rails are 1 1/4 to 2 in across. A hand can close around them.

WHY A firm, safe grip.

9 **1 1/2 IN** Wall gap — §505.5

At least 1 1/2 in of clear space between the rail and the wall.

WHY Fingers fit behind it.

10 **12 IN** Top extension — §505.10

Handrails extend 12 in level past the top riser.

WHY Something to hold before stepping up or down.

WORLD 2 · ENTER

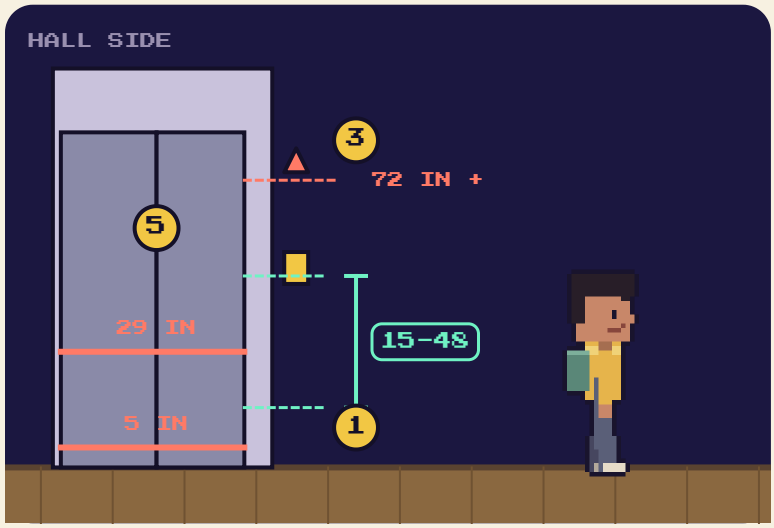
LEVEL 6

ELEVATORS

If it has more than one floor for the public, a person who cannot use stairs needs a way up.







1 **15–48 IN** **Call buttons** §407.2.1

Hall call buttons sit within reach range: 15 to 48 in.

WHY Reachable from a chair.

2 **3/4 IN** **Button size** §407.2.1.2

Call and car buttons are at least 3/4 in across.

WHY Easy to press and find.

3 **72 IN** **Hall signals** §407.2.2.2

Hall signals are centered at least 72 in above the floor.

WHY Visible from down the hall.

4 **3 SEC** **Door open time** §407.3.4–5

Doors stay open at least 3 seconds when called. Timing is distance / 1.5 ft per sec, 5 sec minimum.

WHY Time to cross the threshold.

5 **5 + 29 IN** **Door sensors** §407.3.3.1

Reopening device senses at 5 in and 29 in above the floor, nominal.

WHY Catches feet, canes and chair wheels.

6 **80 x 51** **Standard car** §407.4.1

Centered door: 80 in wide x 51 in deep inside, door 42 in clear.

WHY Fits a chair with room to turn.

7 **68 x 51** **Side-door car** §407.4.1

Off-center door: 68 in wide x 51 in deep, door 36 in clear.

WHY Smaller car, same idea.

8 **1/2 IN** **Level stop** §407.4.4

The car stops within 1/2 in of the floor.

WHY No lip to roll over.

9 **1 1/4 IN** **Gap** §407.4.3

Gap between car and hoistway is 1 1/4 in at most.

WHY Small wheels and canes do not drop in.

10 **5 FC** **Car lighting** §407.4.5

Car lighting is 5 foot-candles minimum.

WHY Buttons and signs are readable.

11 **35 IN** **Emergency controls** §407.4.6.4.1

Emergency control centerline is at least 35 in up.

WHY Keeps controls from being pressed by accident.

12 **2 IN** **Hall numbers** §407.2.3.1

Tactile floor numbers at the hoistway are 2 in tall minimum.

WHY Blind users can find the floor.

LEVEL 6: ELEVATORS (CONTINUED)



13 **42 x 54** **Limited-use** §408.4.1

Limited-use / limited-application car: 42 x 54 in minimum, 32 in door.

WHY A fallback for small buildings.

THE LEVEL IN ONE GLANCE

15–48 IN Call buttons	**3/4 IN** Button size	**72 IN** Hall signals
3 SEC Door open time	**5 + 29 IN** Door sensors	**80 x 51** Standard car
68 x 51 Side-door car	**1/2 IN** Level stop	**1 1/4 IN** Gap
5 FC Car lighting	**35 IN** Emergency controls	**2 IN** Hall numbers
42 x 54 Limited-use		

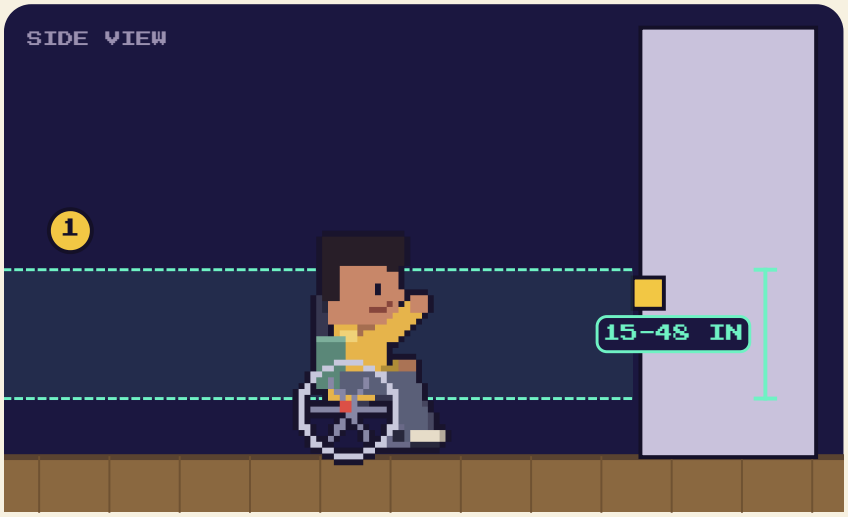
WORLD 3 · INSIDE

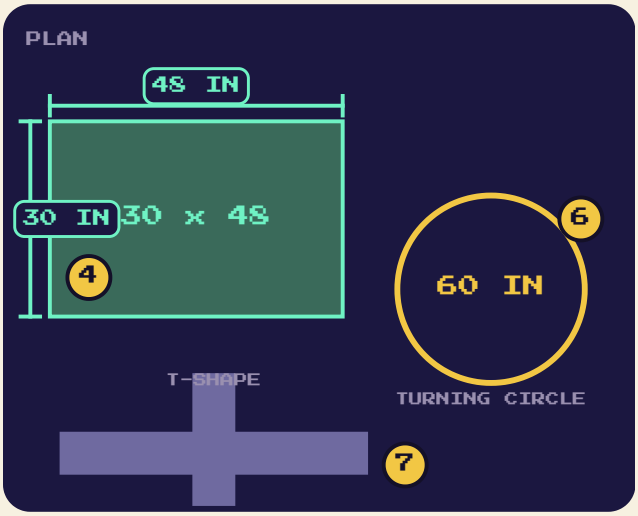
LEVEL 7

REACH AND SPACE

Almost every other rule in the standards points back to this level. Learn these and the rest gets easy.







1 **15–48 IN** **Reach range** §308.2.1

Controls and operable parts sit 15 to 48 in above the floor, forward or side approach, unobstructed.

WHY A seated reach is shorter than a standing one.

2 **20 -> 48** **Over a shelf** §308.2.2

Reaching over an obstruction up to 20 in deep: high reach 48 in. From 20 to 25 in deep: 44 in.

WHY Reaching forward over something costs height.

3 **10 -> 48** **Side reach over** §308.3.2

Obstruction up to 34 in high and 24 in deep: if 10 in deep or less, 48 in. Deeper, 46 in.

WHY Same idea from the side.

4 **30 x 48** **Clear floor space** §305.3

Every operable part needs a 30 x 48 in clear floor space, forward or parallel.

WHY Where a chair actually parks.

5 **36 / 60** **Alcoves** §305.7

Forward approach alcove deeper than 24 in: 36 in wide. Parallel alcove deeper than 15 in: 60 in wide.

WHY Room to enter and leave.

6 **60 IN** **Turning circle** §304.3.1

Turning space is a 60 in circle.

WHY A chair can spin around.

7 **T = 36** **T-shaped turn** §304.3.2

A T-shape is 60 x 60 in with arms and stem 36 in wide.

WHY A 3-point turn in a smaller footprint.

8 **27 IN** **Knee clearance** §306.3

Knee space: 9 to 27 in high, 30 in wide, 11 in deep at 9 in, 8 in at 27 in. Max depth 25 in.

WHY A chair slides under to get close.

9 **9 IN** **Toe clearance** §306.2

Toe space: up to 9 in high, 30 in wide, 25 in deep max, 17 in min.

WHY Footrests slide under.

10 **5 LBF** **Operable parts** §309.4

One hand, no tight grasping, pinching or wrist twisting. 5 lbf or less.

WHY Anyone can operate it.

11 **36 IN** **Washer/dryer** §308.3.2 Ex.

Washers and dryers may be 36 in high at the top for a side reach.

WHY The one reach-range exception.

WORLD 3 · INSIDE

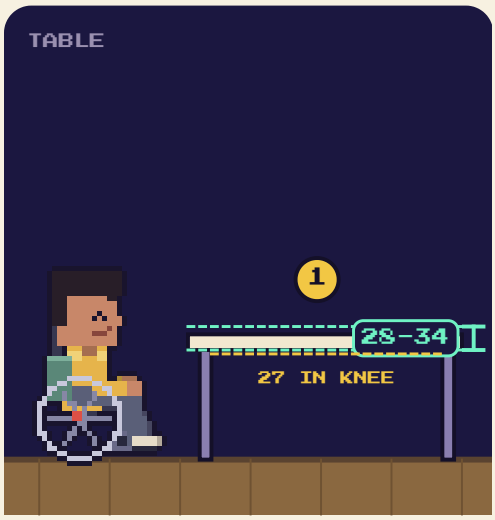
LEVEL 8

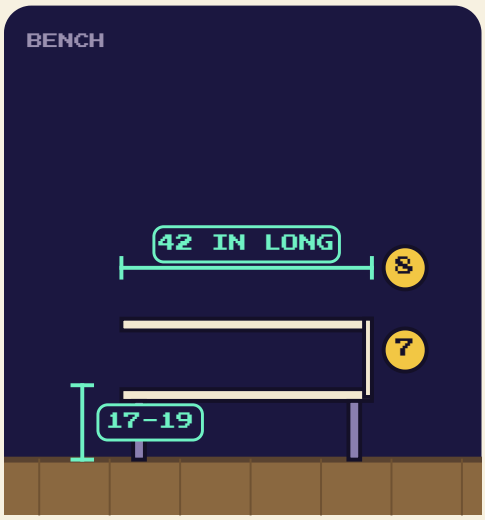
COUNTERS, TABLES AND BENCHES



Where people eat, pay, wait and work. Heights and lengths do the job.







1 **28–34 IN** **Tables and work surfaces** §902.3

Dining and work surfaces are 28 to 34 in high, with knee space under.

WHY A chair slides under.

2 **26–30 IN** **Children's tables** §902.4

For children's use: 26 to 30 in high, 24 in min knee clearance.

WHY Sized for kids.

3 **36 IN** **Service counters** §904.4.1

A section of counter at least 36 in long and no higher than 36 in (parallel approach).

WHY Reachable seated.

4 **30 IN** **Forward approach** §904.4.2

Forward approach counter section is 30 in long minimum, 36 in high max, with knee and toe space.

WHY A chair can face the counter.

5 **38 IN** **Checkout counters** §904.3.2

Checkout counter is 38 in max high, with a 2 in max edge on the aisle side.

WHY Place goods and pay seated.

6 **28–34 IN** **Tray slides** §904.5.2

Tray slides are 28 to 34 in high.

WHY Same as tables.

7 **17–19 IN** **Bench seat height** §903.5

Benches: 17 to 19 in above the floor.

WHY Matches a chair seat for a transfer.

8 **42 IN** **Bench size** §903.3–4

Seat at least 42 in long, 20 to 24 in deep. Back support also 42 in long.

WHY Room to sit and transfer.

9 **2–18 IN** **Back support** §903.4

Bench back starts 2 in max above the seat and reaches at least 18 in above it.

WHY Support for the back.

10 **24 IN** **Alteration counter** §904.4

Existing counters or mailboxes may use a 24 in accessible section where full compliance would reduce them.

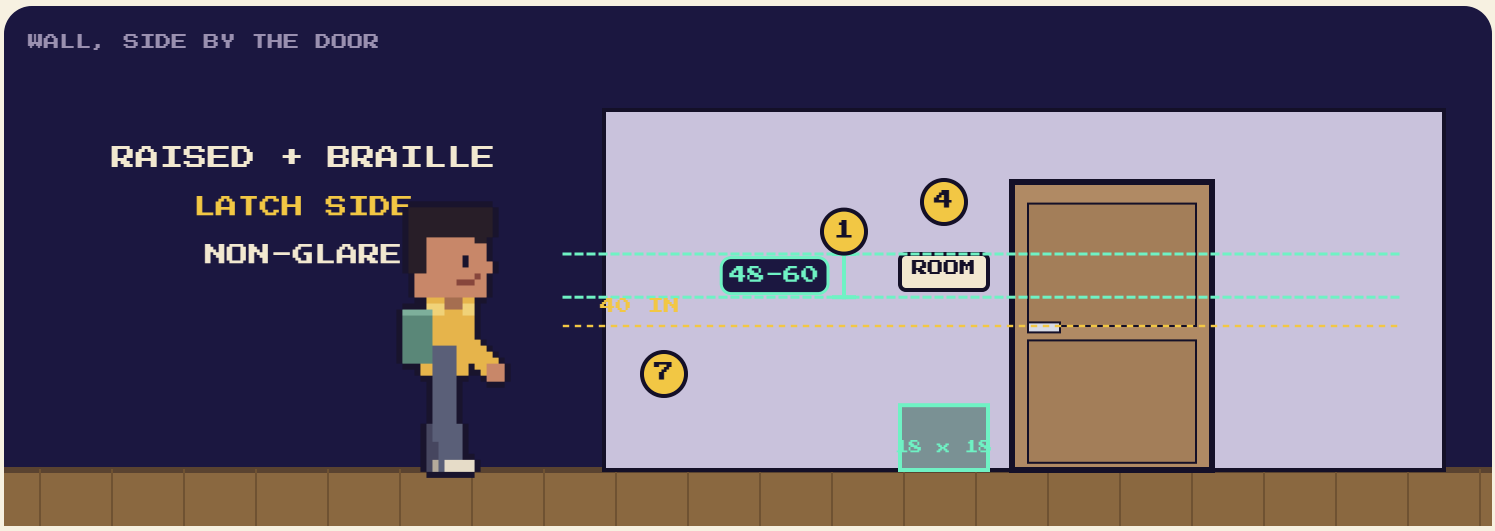
WHY Alterations only.

WORLD 3 · INSIDE

LEVEL 9

SIGNS, ALARMS AND PHONES

Information has to reach people who cannot see, hear or read it the usual way.



1 **48–60 IN** Tactile sign height — §703.4.1

Baseline of the lowest tactile line: 48 in minimum. Highest line: 60 in maximum.

WHY Touchable by standing and seated readers.

2 **5/8–2 IN** Raised characters — §703.2

Raised characters are 5/8 to 2 in tall, uppercase, 1/32 in raised.

WHY Readable by touch.

3 **BRAILLE** Braille position — §703.3

Braille goes below the text, 3/8 in min from other tactile characters.

WHY A fixed place to find it.

4 **LATCH SIDE** Where it goes — §703.4.2

Signs go on the latch side of a single door. Clear floor space 18 x 18 in beyond the swing.

WHY Blind users can touch it without being hit.

5 **NON-GLARE** Finish and contrast — §703.5.1

Non-glare finish. Light on dark or dark on light.

WHY Low vision users can read it.

6 **5/8 IN** Visual characters — §703.5.5

At 40 to 70 in mounting height, read from under 72 in: 5/8 in tall. At 70-120 in, under 180 in: 2 in.

WHY Larger when it is farther away.

7 **40 IN** Visual sign height — §703.5.6

Visual characters sit at least 40 in off the floor.

WHY Visible over a crowd.

8 **6 IN** Pictogram field — §703.6.1

The pictogram field is 6 in tall minimum, with the description under it.

WHY A readable symbol.

9 **AUDIBLE + VISIBLE** Fire alarms — §702.1

Alarms must be audible and visible. Audible alarms top out at 110 dB.

WHY Deaf and hard-of-hearing people need to see it.

10 **29 IN** Phone cords — §704.2.4, 704.3

Handset cord is at least 29 in long. Volume control reaches at least 20 dB gain.

WHY Reach and hear.

11 **34 IN** TTY keypad — §704.4.1

A TTY keypad sits at least 34 in above the floor.

WHY Reachable seated.

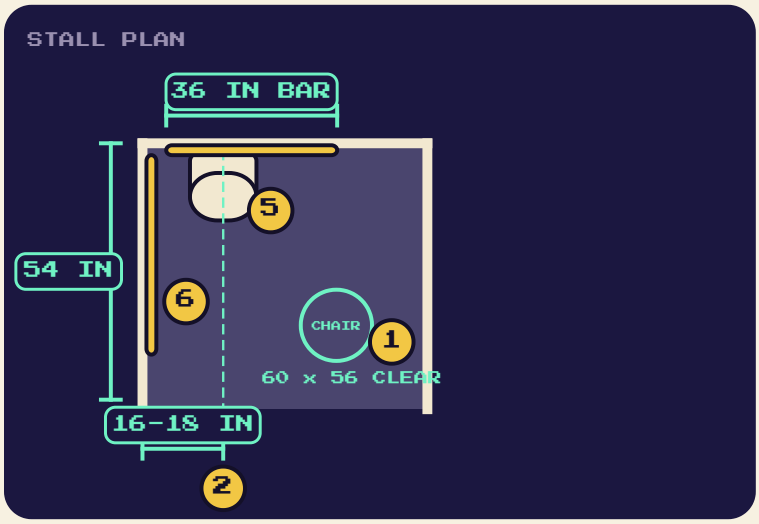
WORLD 4 · BATHROOM

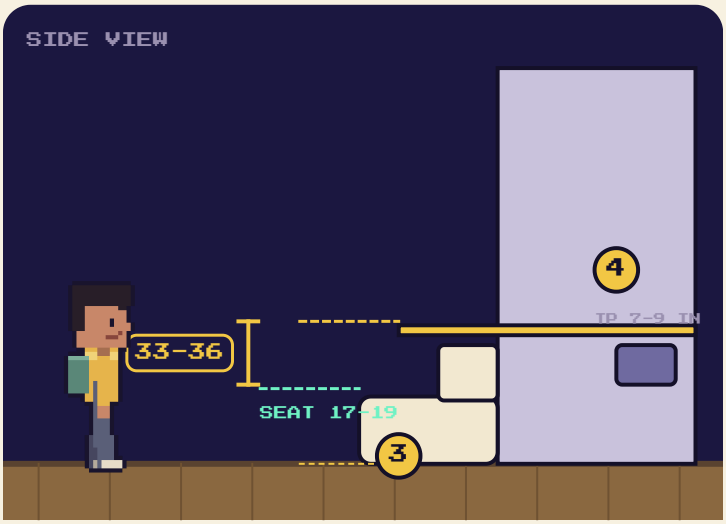
LEVEL 10

THE TOILET ROOM



The most precise room in the standards. Get the grab bar math right and the rest follows.





1 **60 x 56** **Clearance** — §604.3.1

Water closet clearance is 60 in wide and 56 in deep (59 in for floor-mounted).

WHY A chair parks beside the toilet to transfer.

2 **16–18 IN** **Centerline** — §604.2

Water closet centerline is 16 to 18 in from the side wall.

WHY Puts the bar within reach.

3 **17–19 IN** **Seat height** — §604.4

The seat is 17 to 19 in above the floor.

WHY Matches chair height for a transfer.

4 **33–36 IN** **Grab bar height** — §609.4

Top of the gripping surface is 33 to 36 in above the floor.

WHY Reachable while sitting and rising.

5 **36 IN** **Rear bar** — §604.5.2

Rear bar at least 36 in long, 12 in on one side of centerline and 24 in on the other.

WHY Support while sitting.

6 **42 IN** **Side bar** — §604.5.1

Side bar at least 42 in long, within 12 in of the rear wall, reaching at least 54 in from it.

WHY Support for the transfer.

7 **1 1/4–2 IN** **Bar diameter** — §609.2.1

Round bars are 1 1/4 to 2 in across.

WHY A secure grip.

8 **1 1/2 IN** **Wall gap** — §609.3

1 1/2 in between the bar and the wall, and 12 in clear above.

WHY Fingers fit, nothing in the way.

9 **250 LB** **Strength** — §609.8

Bars and their mounting withstand 250 lb of force.

WHY They are a body-weight support.

10 **7–9 IN** **Paper holder** — §604.7

Toilet paper dispenser centerline 7 to 9 in in front of the toilet, outlet 15 to 48 in high.

WHY Reachable while seated.

11 **SELF-CLOSE** **Stall door** — §604.8.1.2

Stall door swings, self-closes, has pulls on both sides, and hinges within 4 in of the far wall.

WHY A chair can get in and out.

12 **6+** **Ambulatory stall** — §213.3.1, 604.8.2

Rooms with 6 or more compartments add an ambulatory stall: 35 to 37 in wide, 60 in deep, bars on both sides.

WHY For people who walk with braces or crutches.

LEVEL 10: THE TOILET ROOM (CONTINUED)



13 **17 IN** Urinal rim

$605

Urinal rim is 17 in max high. Clear floor space 30 x 48 in.

WHY Reachable from a chair.

THE LEVEL IN ONE GLANCE

60 x 56 Clearance	**16–18 IN** Centerline	**17–19 IN** Seat height
33–36 IN Grab bar height	**36 IN** Rear bar	**42 IN** Side bar
1 1/4–2 IN Bar diameter	**1 1/2 IN** Wall gap	**250 LB** Strength
7–9 IN Paper holder	**SELF-CLOSE** Stall door	**6+** Ambulatory stall
17 IN Urinal rim		

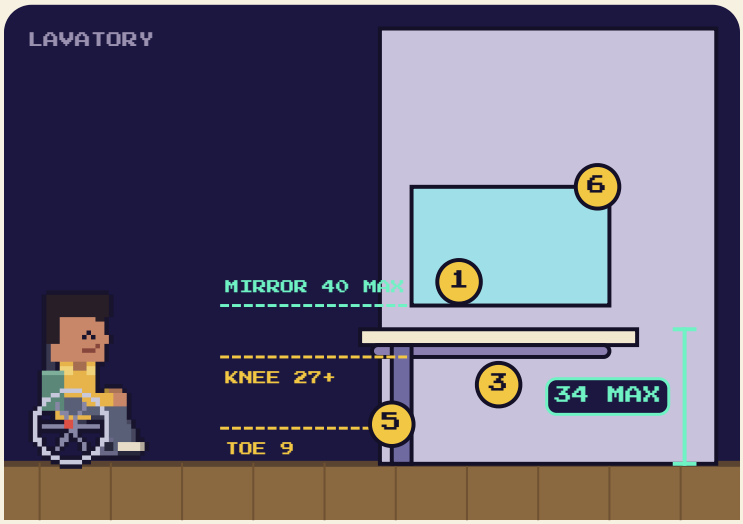
WORLD 4 · BATHROOM

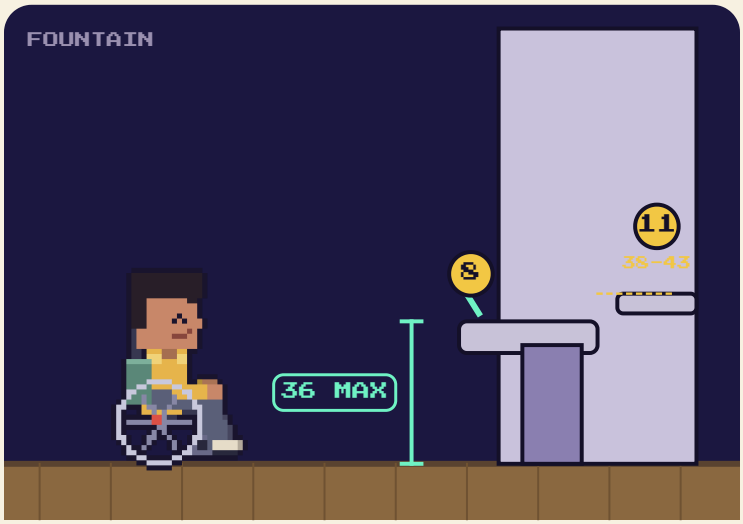
LEVEL 11

SINKS, MIRRORS AND FOUNTAINS



You wash, check yourself and drink. Every one of these needs knee space and a reachable control.





1 **34 IN** Sink height — §606.3

Top of the rim or counter is 34 in max above the floor.

WHY A chair reaches the basin.

2 **30 x 48** Clear floor space — §606.2

Forward approach clear floor space is 30 x 48 in.

WHY Where the chair pulls up.

3 **27 IN** Knee space — §306

Knee space under the sink: 27 in high min, 30 in wide. Toe space 9 in high.

WHY A chair slides under.

4 **5 LBF** Faucets — §606.4

Faucet controls take 5 lbf or less. Metering faucets stay open 10 seconds minimum.

WHY No twisting or squeezing.

5 **INSULATE** Pipes — §606.5

Pipes and hot surfaces under the sink are insulated or protected.

WHY Knees and legs without feeling can be burned.

6 **40 IN** Mirror — §603.3

Mirror above a lavatory: bottom edge 40 in max. Elsewhere 35 in max.

WHY A seated person sees themselves.

7 **40–48 IN** Shelves — §603.4

At least one shelf of each type is 40 to 48 in high.

WHY Within reach.

8 **36 IN** Fountain spout — §602.4

Drinking fountain spout outlet is 36 in max above the floor.

WHY A seated user can reach the spout.

9 **15 / 5 IN** Spout location — §602.5

Spout is 15 in min from the vertical support and 5 in max from the front edge.

WHY Reach the stream and pull close.

10 **4 IN** Water flow — §602.6

Water flow is at least 4 in high.

WHY A cup fits under it.

11 **38–43 IN** Standing fountain — §602.7

A second, higher fountain: spout 38 to 43 in high.

WHY Comfortable standing use.

12 **31 / 24** Child sinks — §606.2 Ex. 4

Children 6 to 12: rim 31 in max with 24 in knee clearance may be used.

WHY Sized for children.

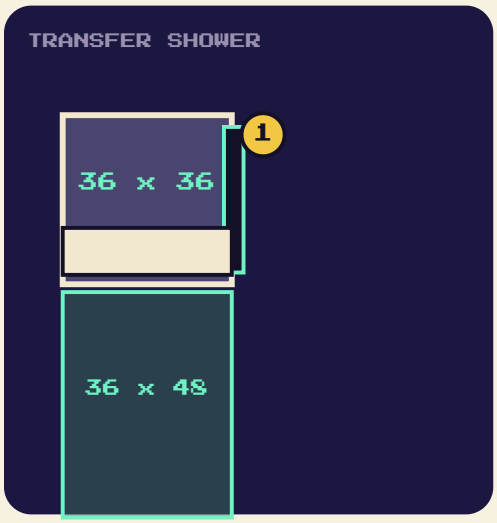
WORLD 4 · BATHROOM

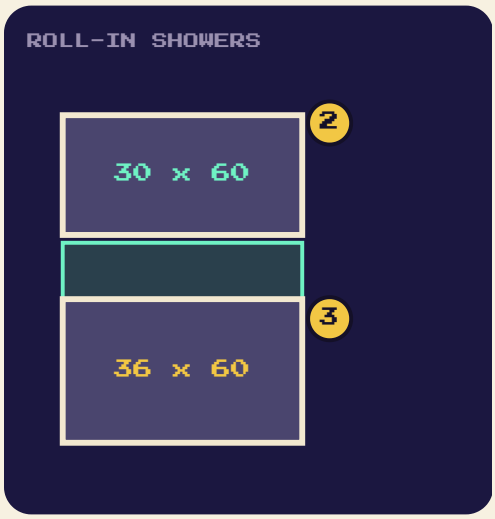
LEVEL 12

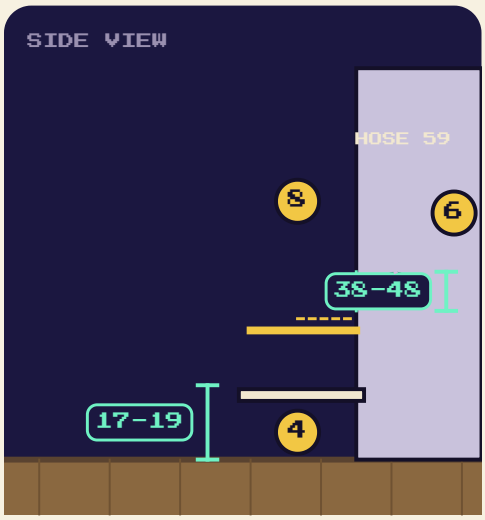
SHOWERS AND TUBS

Water, hard surfaces and no clothes. The standards plan for a safe transfer or a roll-in.









1 **36 x 36** **Transfer shower** §608.2.1

Transfer shower is exactly 36 x 36 in with a 36 in entry. Clear floor space 36 x 48 in outside.

WHY A chair parks at the entry for a transfer to the seat.

2 **30 x 60** **Standard roll-in** §608.2.2

Standard roll-in is 30 x 60 in minimum with a 60 in opening, and 30 x 60 clear floor space.

WHY A chair rolls in.

3 **36 x 60** **Alternate roll-in** §608.2.3

Alternate roll-in is 36 in wide x 60 in deep minimum with a 36 in entry.

WHY A smaller, deeper option.

4 **17-19 IN** **Seat height** §608.4

Shower seat is 17 to 19 in above the floor and reaches within 3 in of the entry.

WHY Matches chair height for a transfer.

5 **33-36 IN** **Grab bars** §608.3

Grab bars sit 33 to 36 in high, within 6 in of adjacent walls in roll-ins.

WHY Support at the right height.

6 **38-48 IN** **Transfer controls** §608.5.1

Transfer-shower controls are 38 to 48 in up, within 15 in of the seat centerline.

WHY Reachable from the seat.

7 **48 IN** **Roll-in controls** §608.5.2

Roll-in controls are above the grab bar and no higher than 48 in, within 27 in of the seat wall.

WHY Same reach range.

8 **59 IN** **Hand-held spray** §608.6

Hand-held spray hose is at least 59 in long. Water is limited to 120 F.

WHY Reach all of you. No scalding.

9 **1/2 IN** **Threshold** §608.7

Roll-in shower thresholds are 1/2 in max. Taller edges are beveled 1:2.

WHY Chairs roll in.

10 **30 IN** **Tub clearance** §607.2

30 in wide clearance along the length of the tub, plus 12 in past the head wall if there is a permanent seat.

WHY Space for the transfer.

11 **24 IN** **Tub grab bars** §607.4

Tub control-end bar is 24 in minimum. With no permanent seat, add 24 in back bars and a 12 in head-end bar.

WHY Support along the tub.

12 **8-10 IN** **Tub bar height** §607.4

Tub back-wall upper bar sits 8 to 10 in above the rim, 33-36 in above the floor.

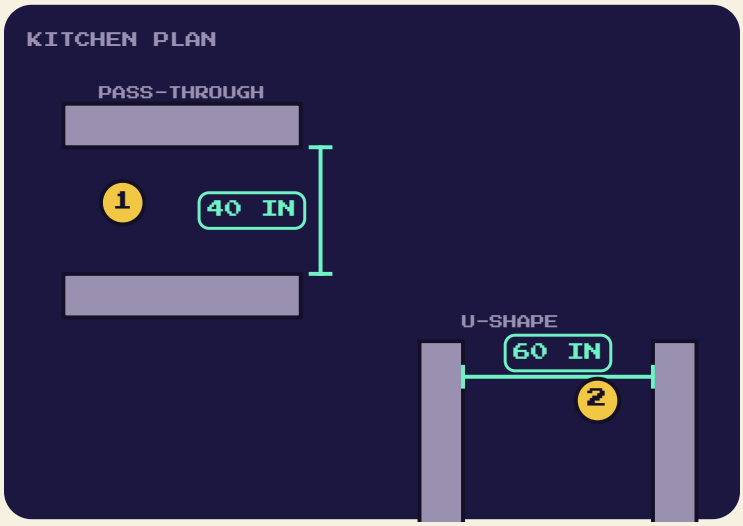
WHY Reach while sitting or climbing out.

WORLD 5 · SPECIAL ROOMS

LEVEL 13

KITCHENS AND LOCKER ROOMS

Where people cook and change. Clearance and reach, again.





1 **40 IN** Pass-through — §804.2.1

Pass-through kitchen clearance between opposing elements is 40 in minimum, with two entries.

WHY A chair passes between counters.

2 **60 IN** U-shaped — §804.2.2

U-shaped kitchen clearance is 60 in minimum.

WHY A chair can turn inside the U.

3 **30 IN** Work surface — §804.3

At least one 30 in wide counter section is 34 in max high, with knee and toe space under.

WHY A seat-height prep area.

4 **29–36 IN** Adjustable — §804.3.2

Adjustable counters from 29 to 36 in satisfy the work surface rule.

WHY One counter, many users.

5 **50%** Storage in reach — §804.5

At least 50 percent of shelf space is within reach range.

WHY Reachable cupboards.

6 **30 x 48** Appliances — §804.6.1

Each appliance has a 30 x 48 in clear floor space. Spaces may overlap.

WHY Space to approach.

7 **NO REACH OVER** Cooktop — §804.6.4

Cooktop controls must not make you reach across burners. Underside is protected.

WHY Prevents burns.

8 **54 IN** Freezer — §804.6.6

At least 50 percent of freezer space is 54 in or lower.

WHY Reachable from a chair.

9 **60 IN** Locker rooms — §803.2–4

Dressing rooms have a 60 in turning space and a bench (17–19 in high).

WHY Room to change.

10 **40–48 IN** Hooks and shelves — §803.5

Hooks in reach range; shelves 40 to 48 in high.

WHY Reachable from a chair.

11 **NO SWING IN** Door swing — §803.3

Dressing room doors may not swing into the room unless a 30 x 48 clear space exists beyond the swing.

WHY A chair does not get trapped.

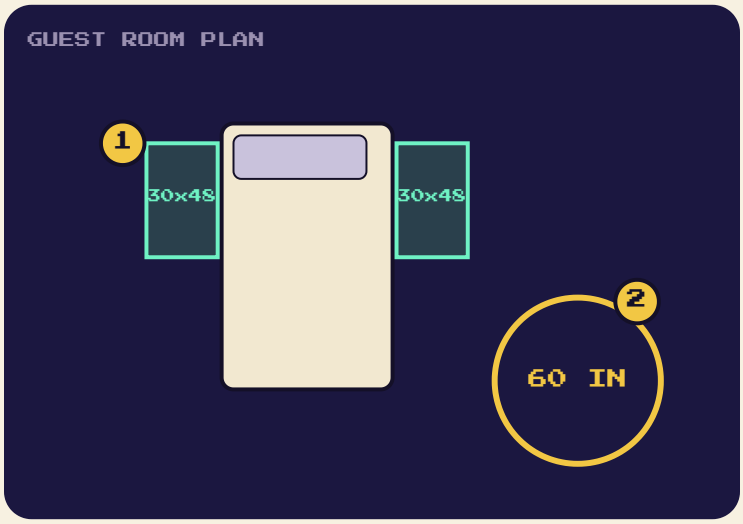
WORLD 5 · SPECIAL ROOMS

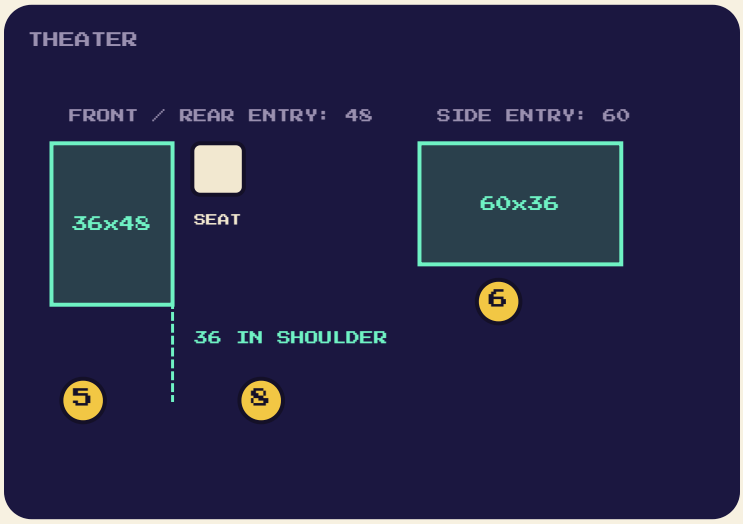
LEVEL 14

BEDROOMS AND THEATER SEATS

Where people stay overnight or sit with a crowd.







1 BOTH SIDES Bed clearance — §806.2.3, §05.3

30 x 48 in clear floor space on each side of the bed. Two beds can share one.

WHY Transfer from either side.

2 60 IN Turning space — §806.2.6, §05.2

Hotel and hospital rooms provide a 60 in turning space.

WHY A chair spins in the room.

3 1 PER ROOM Bathroom — §806.2.4

The room has an accessible bathroom with toilet, lavatory and tub or shower.

WHY A full accessible set.

4 VISIBLE Alerts — §806.3.2

Phone calls and door knocks must be visible. Phone outlet within 48 in of the phone.

WHY Deaf guests are alerted.

5 36 IN Wheelchair space width — §802.1.2

One space is 36 in wide. Two side by side are 33 in each.

WHY Fits a chair.

6 48 / 60 Space depth — §802.1.3

48 in deep if entered from front or rear. 60 in if entered from the side.

WHY Room to turn.

7 SAME SIGHT Sightlines — §802.2

Sightlines over and between heads match what other spectators get.

WHY A real view of the show.

8 36 IN Companion seat — §802.3.1

Companion seat shoulders align 36 in from the front of the wheelchair space.

WHY Sit together.

9 AISLE Aisle seats — §802.4

Designated aisle seats have folding armrests on the aisle side and a sign.

WHY Transfer from the aisle.

10 1:48 Floor — §802.1.1

Wheelchair space surface has no level changes, slopes 1:48 max.

WHY A level, stable spot.

BOSS ROUND

THE MASTER NUMBERS

If you only remember 20 numbers, remember these. They cover most of the plan reviews you will ever do.

1:12
Ramp slope
LEVEL 3

1:48
Max cross slope
LEVEL 1, 2

36 IN
Clear width, ramps and routes
LEVEL 2, 3

32 IN
Door clear width
LEVEL 4

34–48 IN
Door hardware height
LEVEL 4

5 LBF
Door force, controls
LEVEL 4, 7

15–48 IN
Reach range
LEVEL 7

30 x 48
Clear floor space
LEVEL 7

60 IN
Turning circle
LEVEL 7

4–7 IN
Stair riser
LEVEL 5

11 IN
Stair tread
LEVEL 5

34–38 IN
Handrail height
LEVEL 3, 5

96 IN
Parking space
LEVEL 1

60 IN
Access aisle
LEVEL 1

17–19 IN
Seat height
LEVEL 10, 12

33–36 IN
Grab bar height
LEVEL 10, 12

60 x 56
Toilet clearance
LEVEL 10

34 IN
Sink and counter max
LEVEL 11, 13

36 IN
Service counter max
LEVEL 8

48–60 IN
Tactile sign baseline
LEVEL 9



Level cleared. Next time a number is off, you will see it before a plan reviewer does.

BONUS

PLAN REVIEW CHECKLIST

Print this page. Check each item against your drawings, then go back to the level that covers it.

- [ ] Accessible parking: count, 96 in space, 60 in aisle, van space, sign at 60 in
- [ ] Changes in level 1/4 in max, beveled to 1/2 in, ramps beyond that
- [ ] Handrails 34-38 in high on ramps and stairs, 12 in extensions
- [ ] Doors: 32 in clear, 80 in high, 5 lbf, hardware 34-48 in, no knobs
- [ ] Thresholds 1/2 in max, closers 5 sec minimum
- [ ] Elevators: 80 x 51 in car, 42 in door, buttons within reach
- [ ] 30 x 48 in clear floor space at every fixture and control
- [ ] No protrusions over 4 in between 27 and 80 in; 80 in headroom
- [ ] Tactile signs at 48-60 in, latch side, with Braille
- [ ] Toilet: 60 x 56 in clearance, 16-18 in centerline, 17-19 in seat
- [ ] Lavatory 34 in max, knee 27 in, pipes protected, mirror 40 in
- [ ] Kitchen: 40/60 in clearance, 34 in counter, 30 in work surface
- [ ] Route slope 1:20 max, cross slope 1:48 max, 36 in clear width
- [ ] Ramps 1:12 max, 30 in rise per run, 60 in landings, 36 in width
- [ ] Curb ramps: 1:10 flares, 36 in landing, detectable warnings
- [ ] Maneuvering clearances at each door side, both directions
- [ ] Stairs: 4-7 in risers, 11 in treads, all equal, rails both sides
- [ ] Controls and outlets within 15-48 in reach range
- [ ] 60 in turning space in rooms and at corridor dead ends
- [ ] Counters 36 in max with a 36 in length; tables 28-34 in with knee space
- [ ] Visible and audible alarms
- [ ] Grab bars: 36 in rear, 42 in side, 33-36 in high, 1-1/2 in gap, 250 lb
- [ ] Showers: 36 x 36 transfer or 30 x 60 roll-in; seat 17-19 in, controls 48 in
- [ ] Bedroom and theater: 30 x 48 on both sides of bed; 36 x 48 wheelchair spaces

Run a plan review on your own project? DM Motion makes accessibility-focused drawings and walkthrough animations for architects and designers. dmba1-byte.github.io/dmmotion

FINE PRINT

SOURCES AND NOTES

- **2010 ADA Standards for Accessible Design (U.S. Department of Justice)**
  Sections 202-1000 are the source for all numbers in this guide. Section numbers appear on every card.
- **U.S. Access Board: Guide to the ADA Standards**
  access-board.gov/ada/guides. Chapters 3, 4, 6 and the parking guide were used.
- **U.S. Access Board: ADA Standards text, chapters 3-9**
  access-board.gov/ada/chapter/ch03 through ch09.

KEEP IN MIND

- These are the 2010 ADA Standards for new construction and alterations. Existing facilities and different building types can have different thresholds.
- State and local building codes can add to or differ from the ADA. Always check the code that applies where you are building.
- Dimensions are the numbers printed in the Standards, in inches. Some have construction tolerances (for example, 17 in toilet centerlines allow 1 in).
- This guide is a learning aid and a quick reference. It is not legal advice and not a substitute for the Standards, a licensed design professional, or a certified accessibility specialist.
- Illustrations are schematic and not to scale.

