



Cassie the puppy

Leading the Charge: Universities, Title II, and Universal Design





THREE QUICK QUESTIONS:

Where did disability rights movements come from?

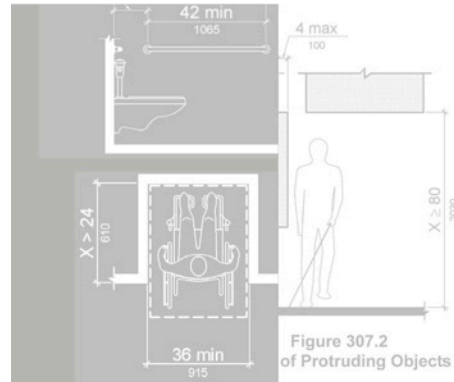
What is the Rehabilitation Act of 1973, and what was its effective date?

Why are research universities “leading the charge”?

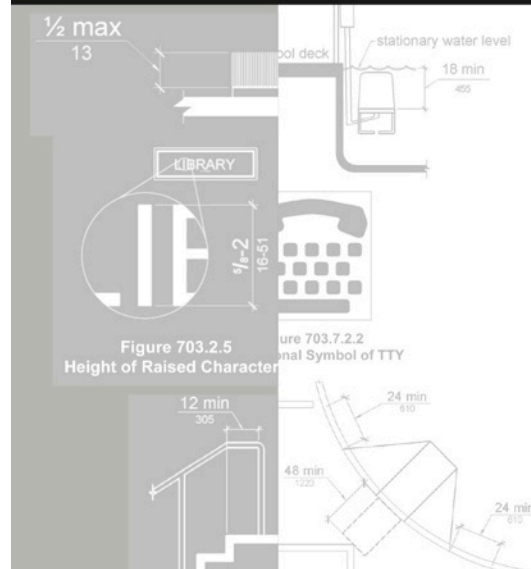
In the beginning, there was no access...

How owners see accessibility: ADA standards & mobility

PERCEPTION
is the core problem



2010 ADA Standards for Accessible Design



Department of Justice
September 15, 2010

How the community sees accessibility



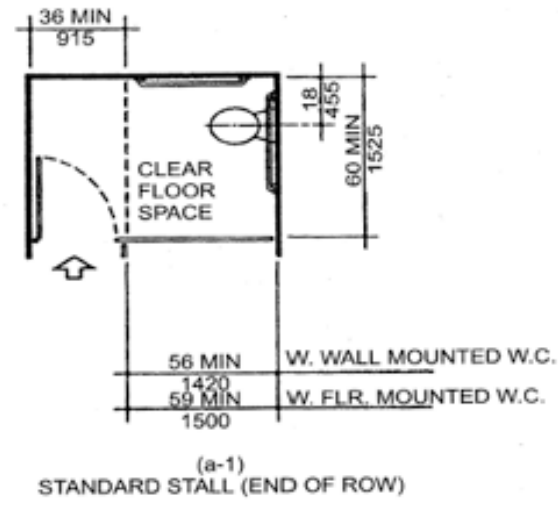
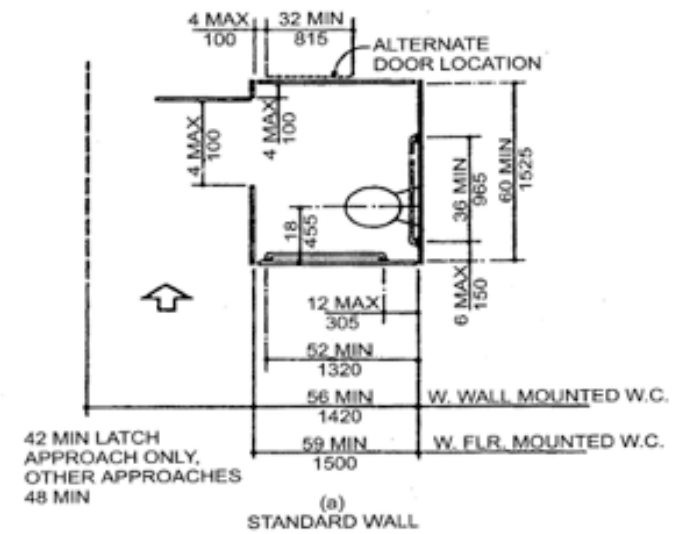
How the community sees accessibility



How architects see accessibility

- code compliance

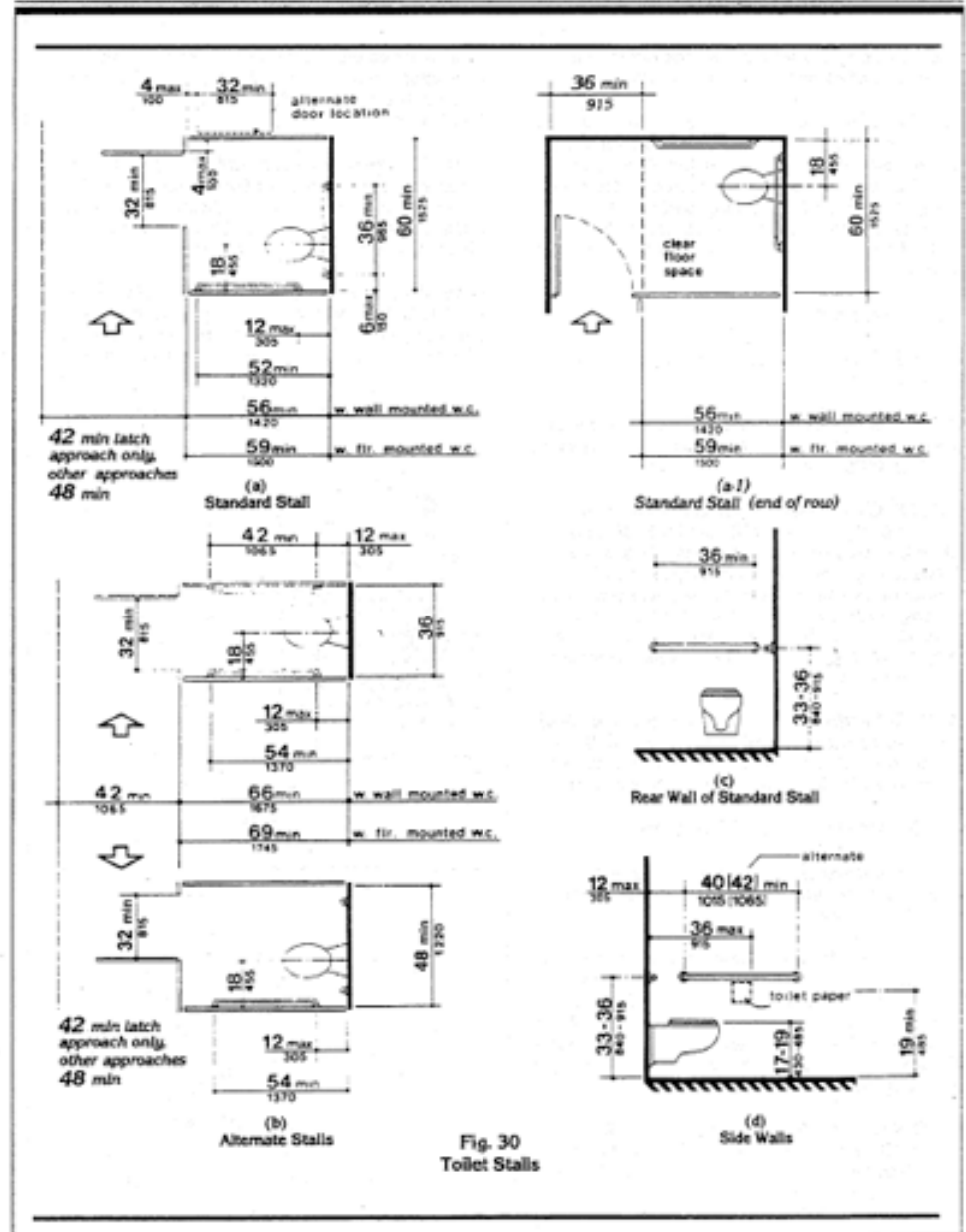
ACCESSIBILITY



ADAAG FIGURE 30
TOILET STALLS

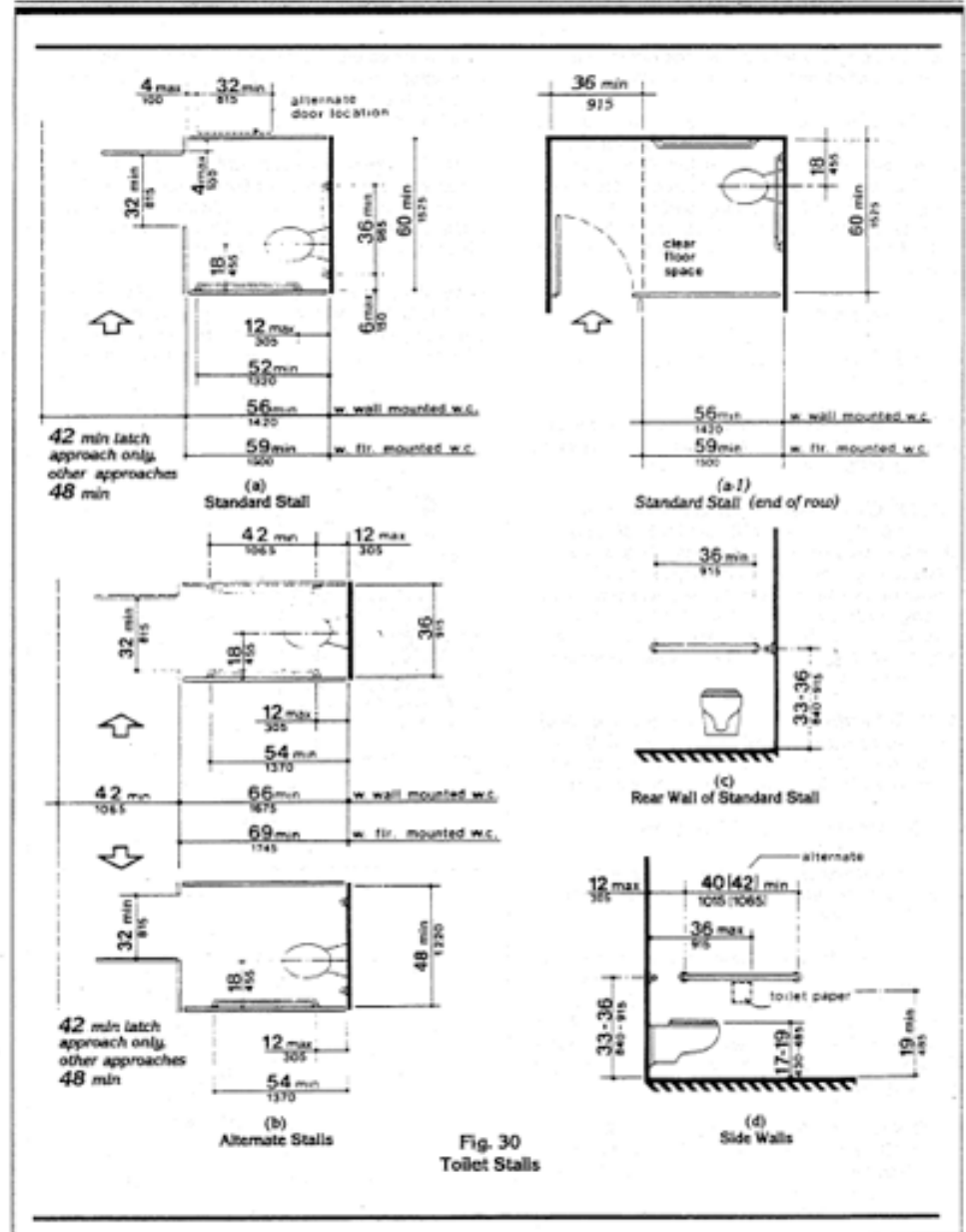
How architects see accessibility

- code compliance
- focussed on wheelchairs



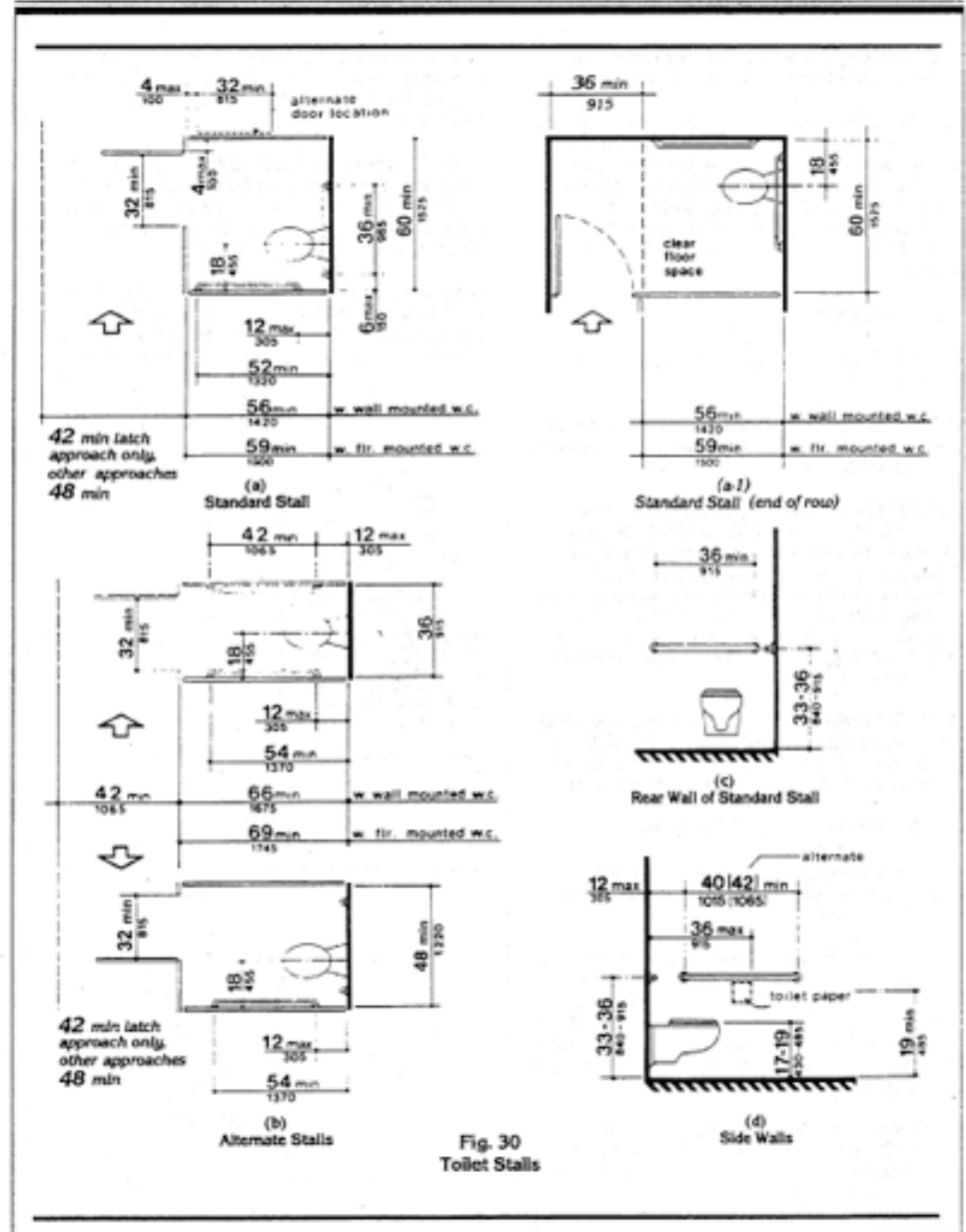
How architects see accessibility

- code compliance
- focussed on wheelchairs
- emphasis on toilet rooms

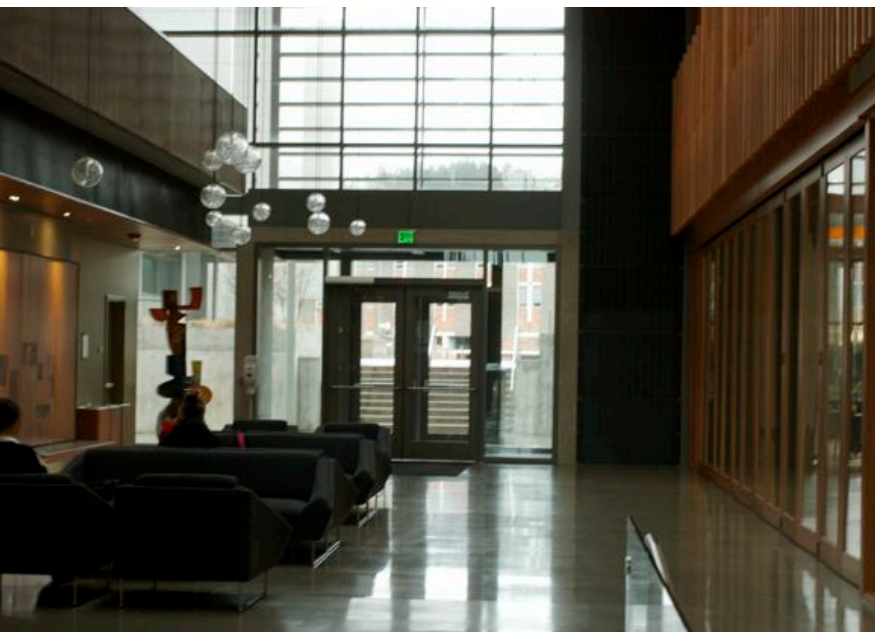


How architects see accessibility

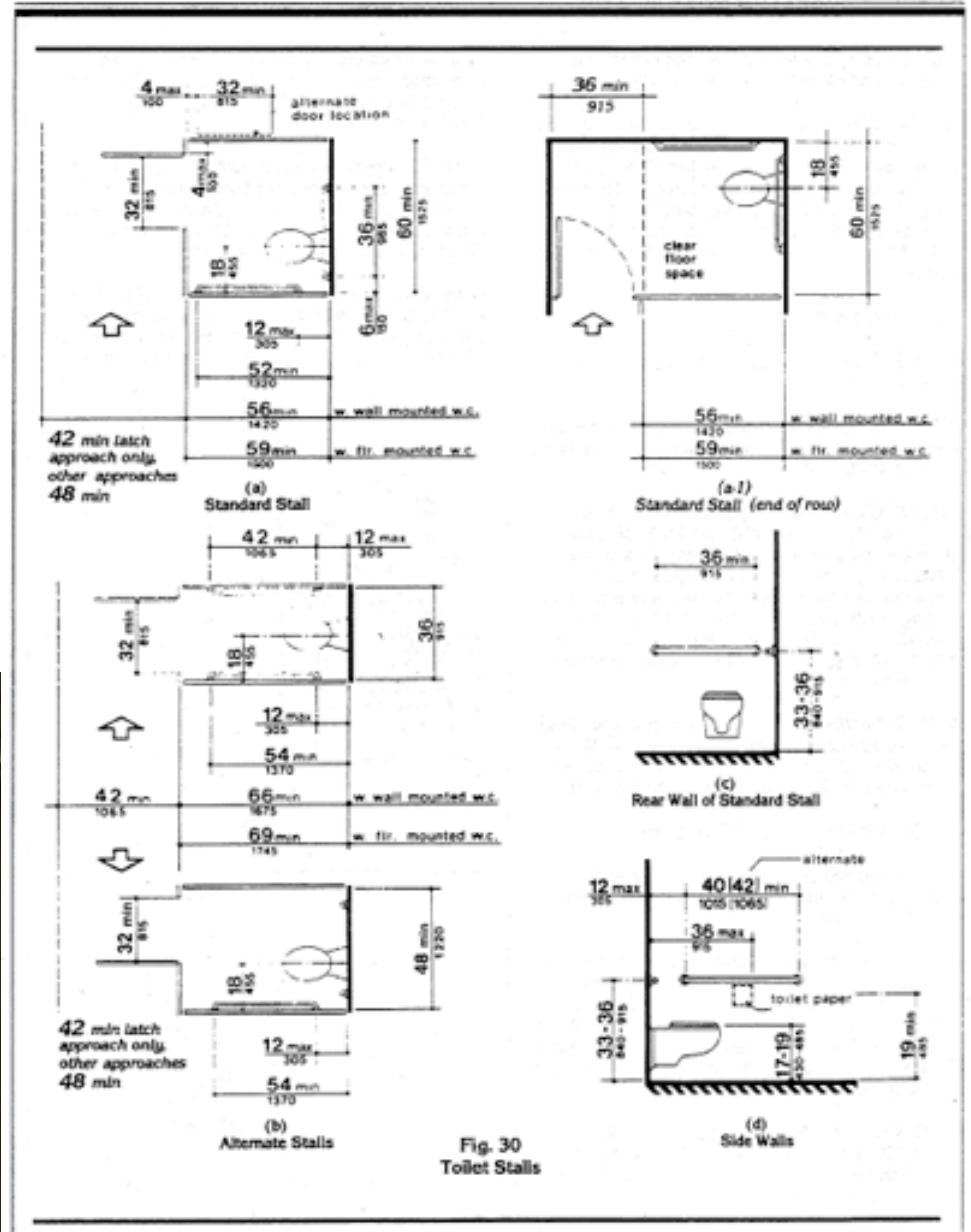
- code compliance
- focussed on wheelchairs
- emphasis on toilet rooms
- minimum = maximum



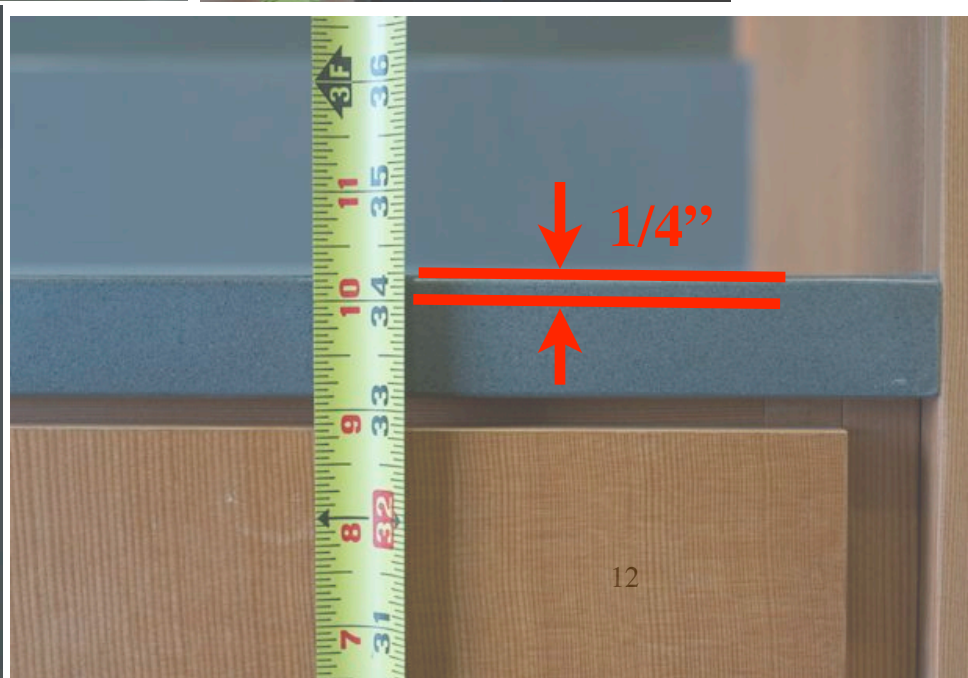
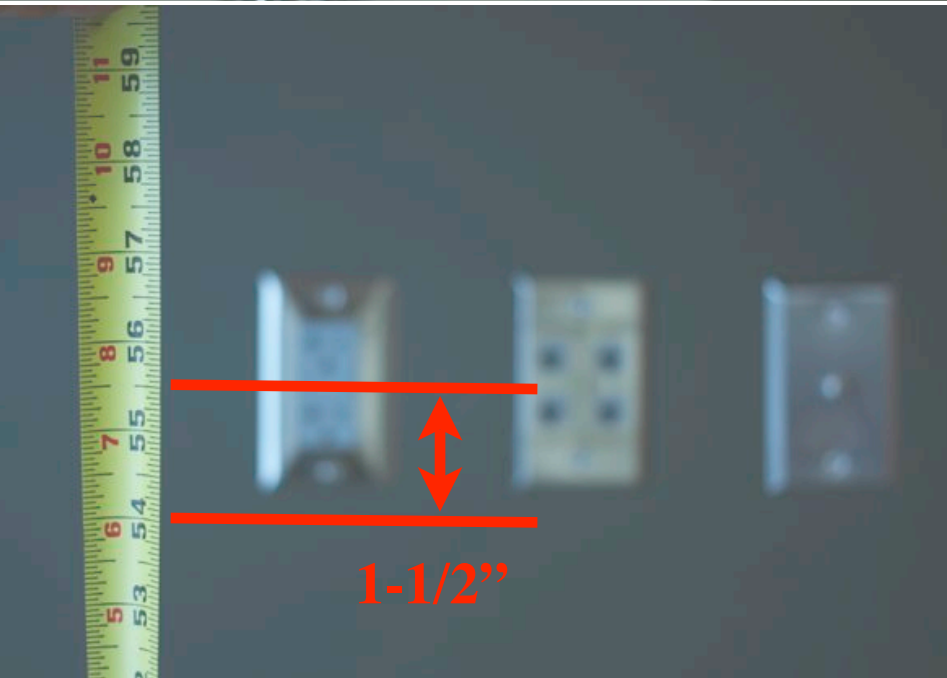
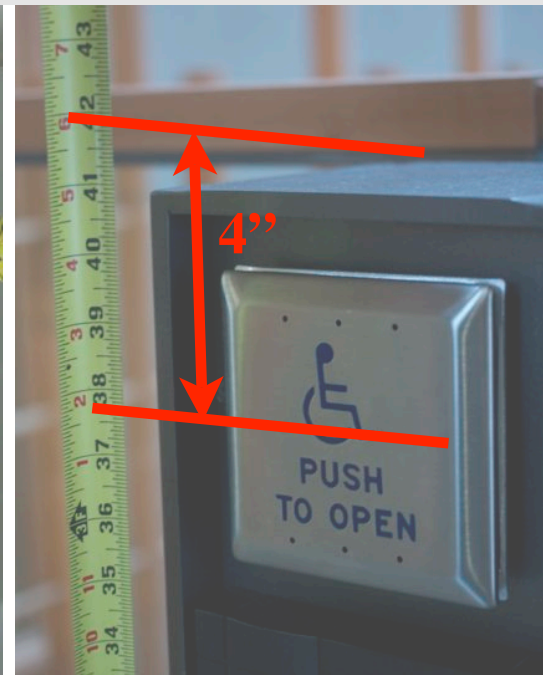
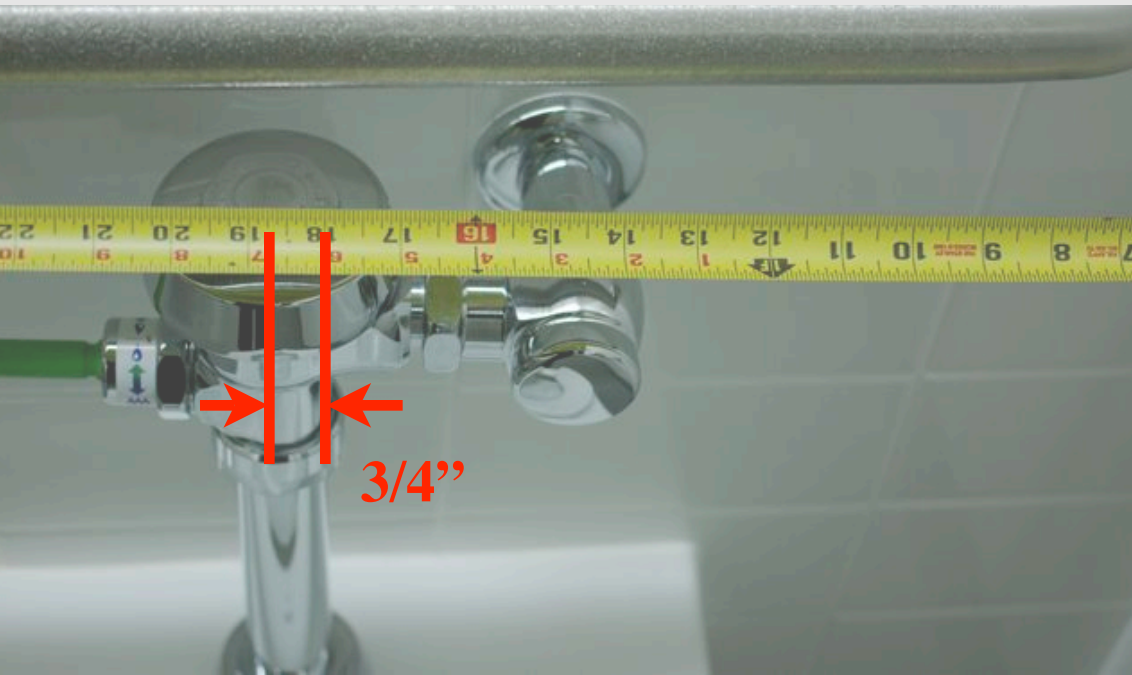
How architects see accessibility: minimum = maximum



4.17 Toilet Stalls



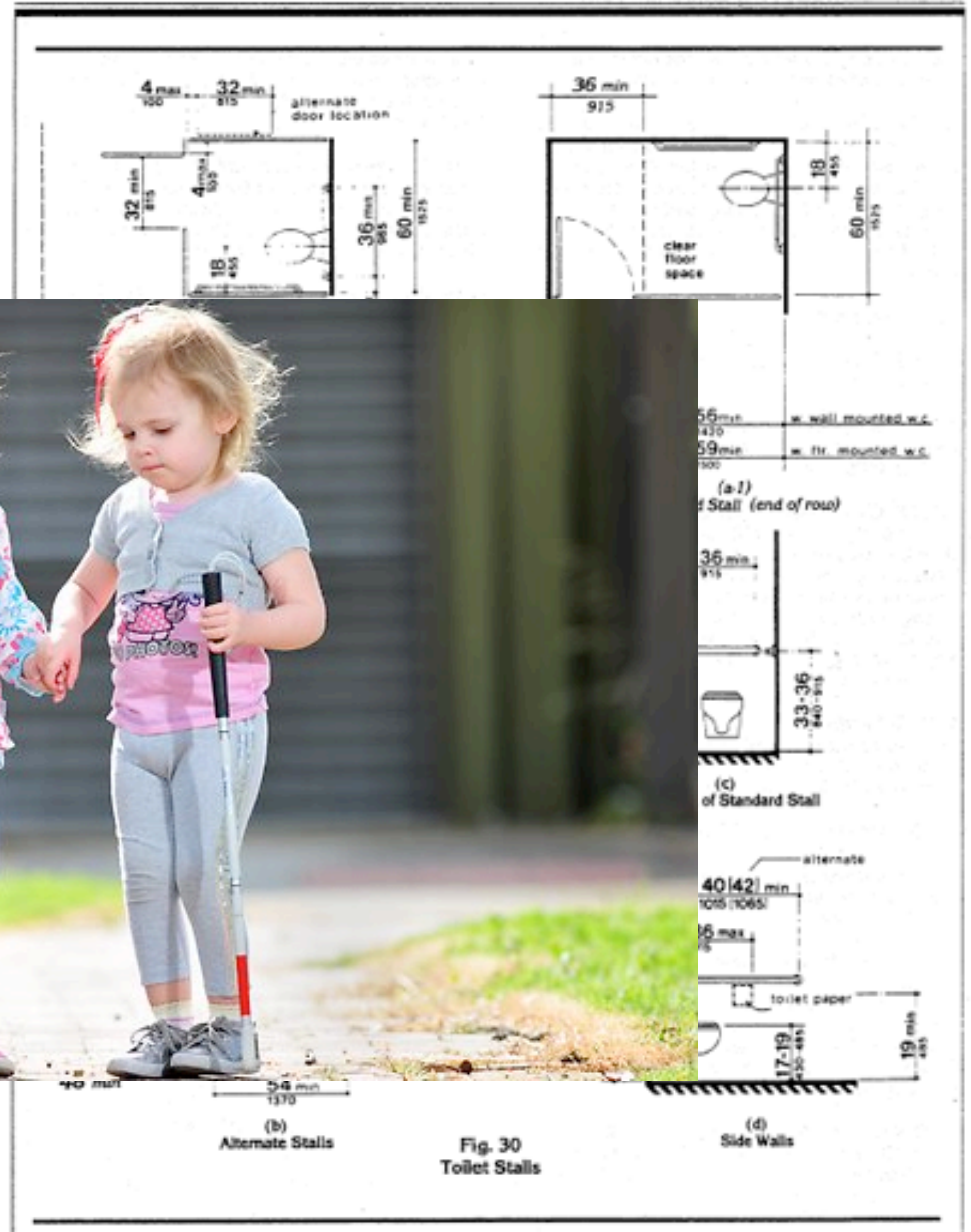
How architects see accessibility: minimum = maximum?



How architects see accessibility

4.17 Toilet Stalls

How does that fit into their world?



Statistics vs. Perceptions

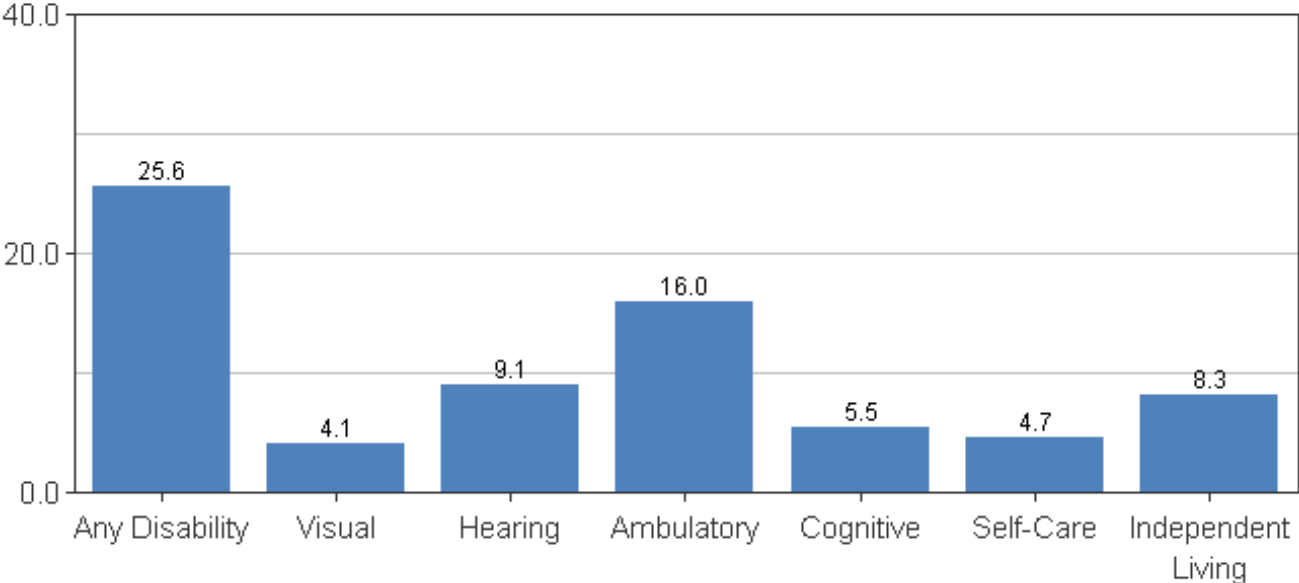
Percentage of ADA standards
that are mobility-related

Where does this come from?

Statistics: percentages of US population with a disability (2011)

Prevalence of disability among non-institutionalized people ages 65 to 74 in the United States in 2011

Prevalence Rates: Age 65 to 74 years (%)



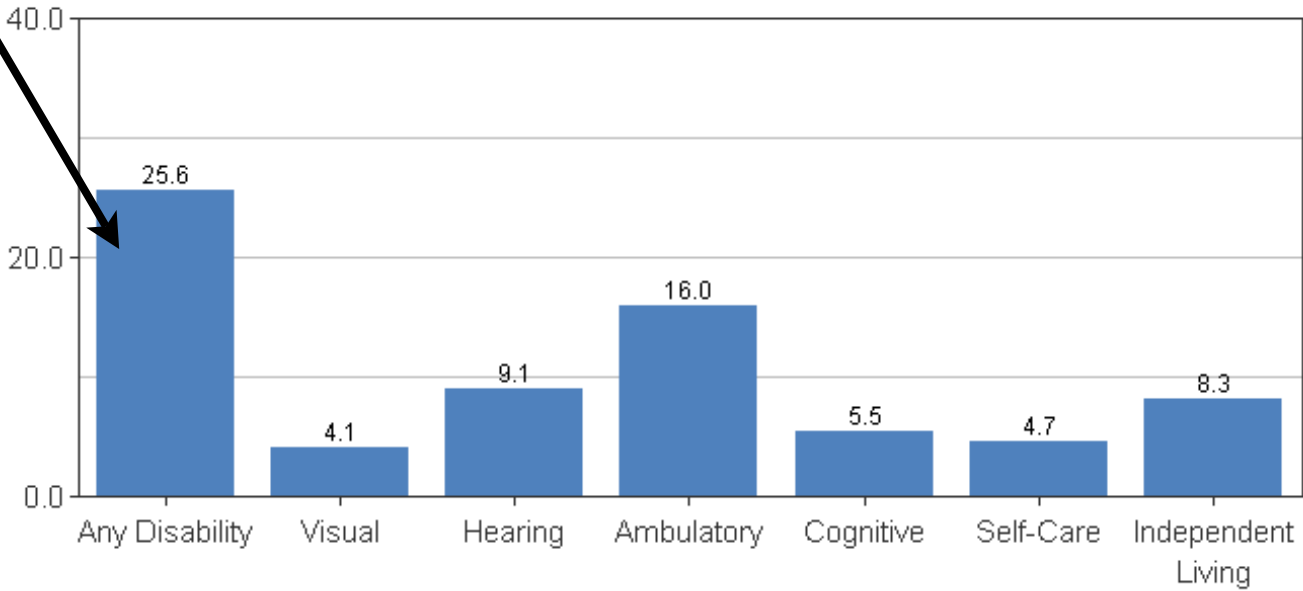
Statistics: percentages of US population with a disability (2011)

25% of population has a disability by age 74

(www.disabilitystatistics.org 2011 report)

Prevalence of disability among non-institutionalized people ages 65 to 74 in the United States in 2011

Prevalence Rates: Age 65 to 74 years (%)



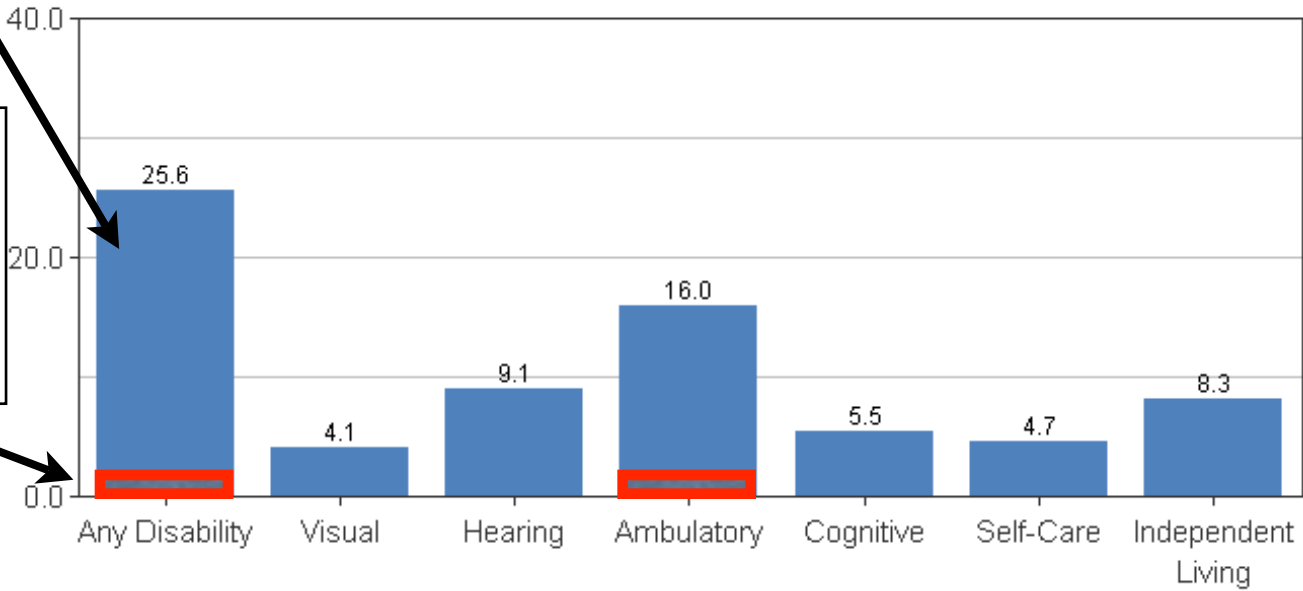
Statistics: percentages of US population with a disability (2011)

25% of population has a disability by age 74

(www.disabilitystatistics.org 2011 report)

Prevalence of disability among non-institutionalized people ages 65 to 74 in the United States in 2011

Prevalence Rates: Age 65 to 74 years (%)



1.5% of population uses a wheelchair

(2005)

(www.census.gov/prod/2008pubs/p70-117.pdf)

Universal Design: Where we are coming from



In the beginning, there was no access...

A brief history of accessible schools



1920s-1950s: no access...front door or rear

A brief history of accessible schools



1960s: some feeble...and dangerous...attempts

A brief history of accessible schools

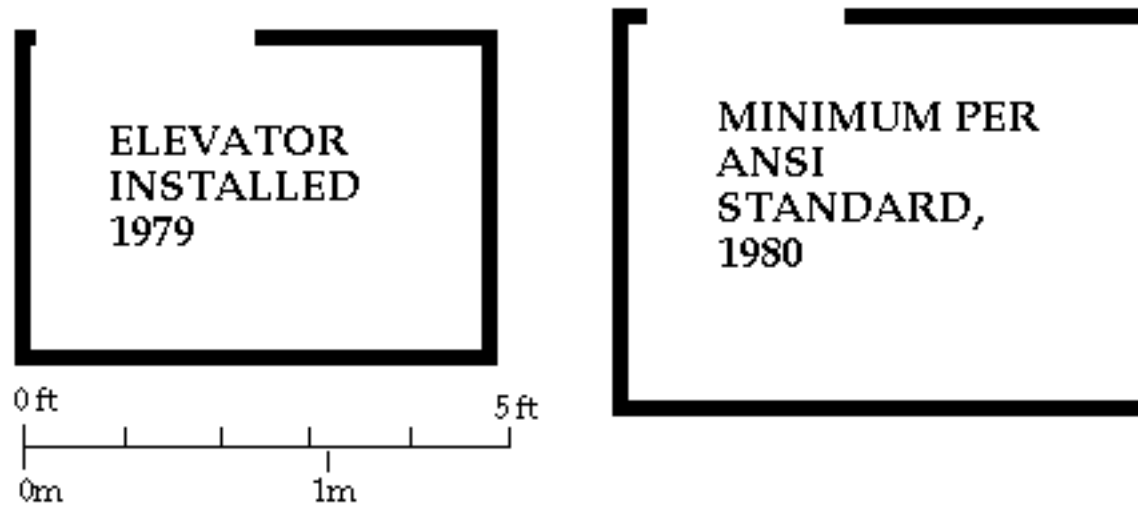
1970s Rehabilitation Act:

response and ineffectiveness

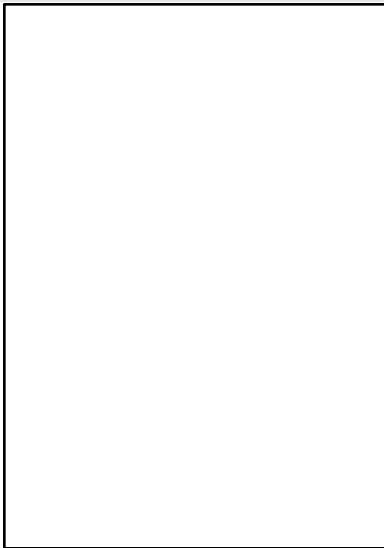


A brief history of accessible schools

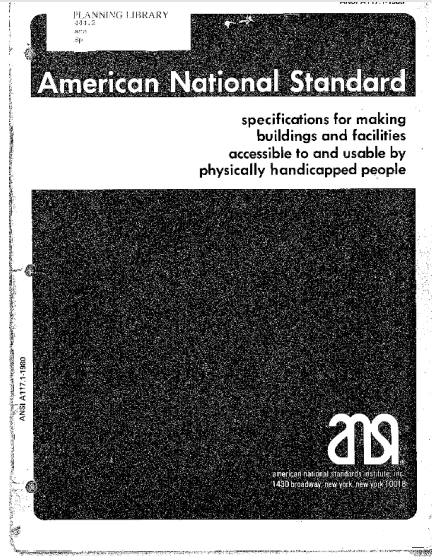
1980s: change happens!



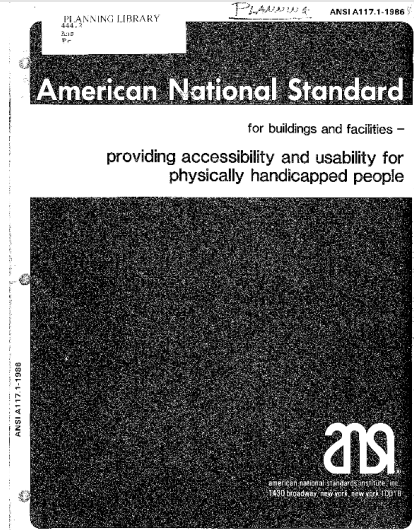
The ever-changing landscape of Federal accessibility standards



1977



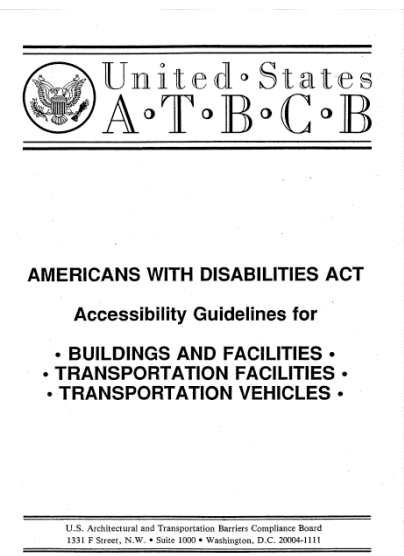
1980



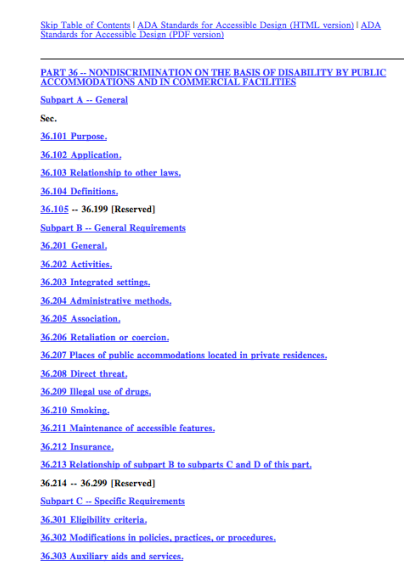
1986



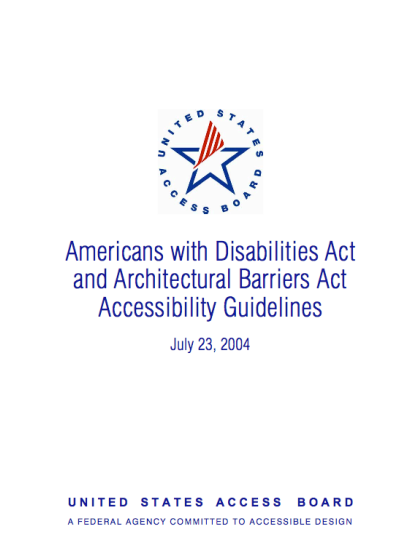
1988



1991



1992



2004*

The ever-changing landscape of Federal accessibility standards

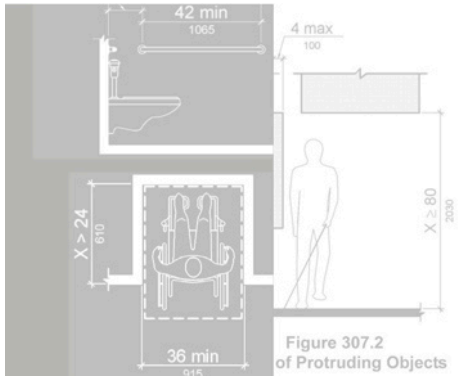


Figure 307.2 of Protruding Objects

2010 ADA Standards for Accessible Design

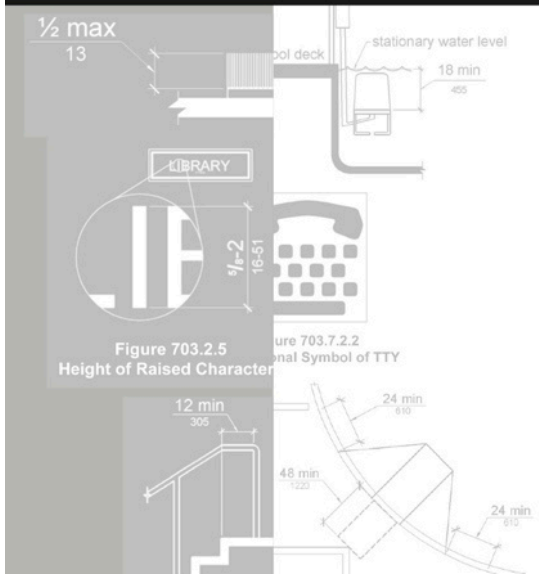
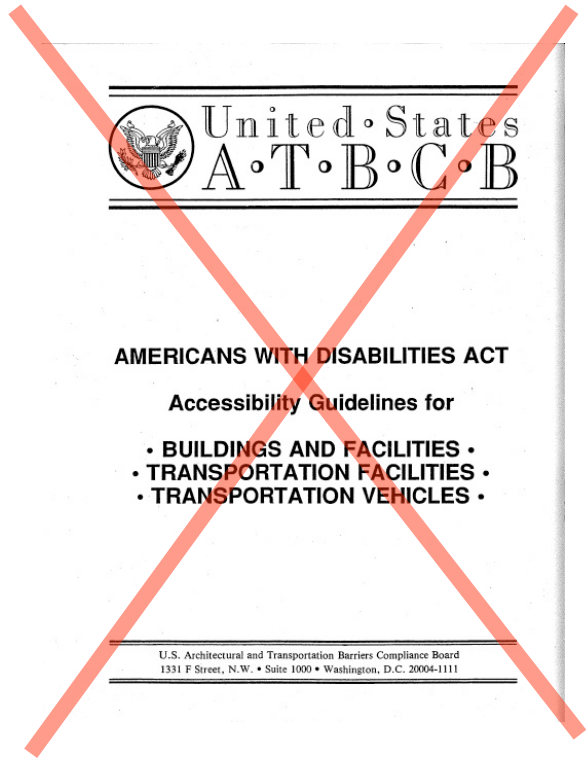


Figure 703.2.5 Height of Raised Character

Figure 703.7.2.2 Symbol of TTY

Department of Justice
September 15, 2010



United States
A.T.B.C.B.

AMERICANS WITH DISABILITIES ACT

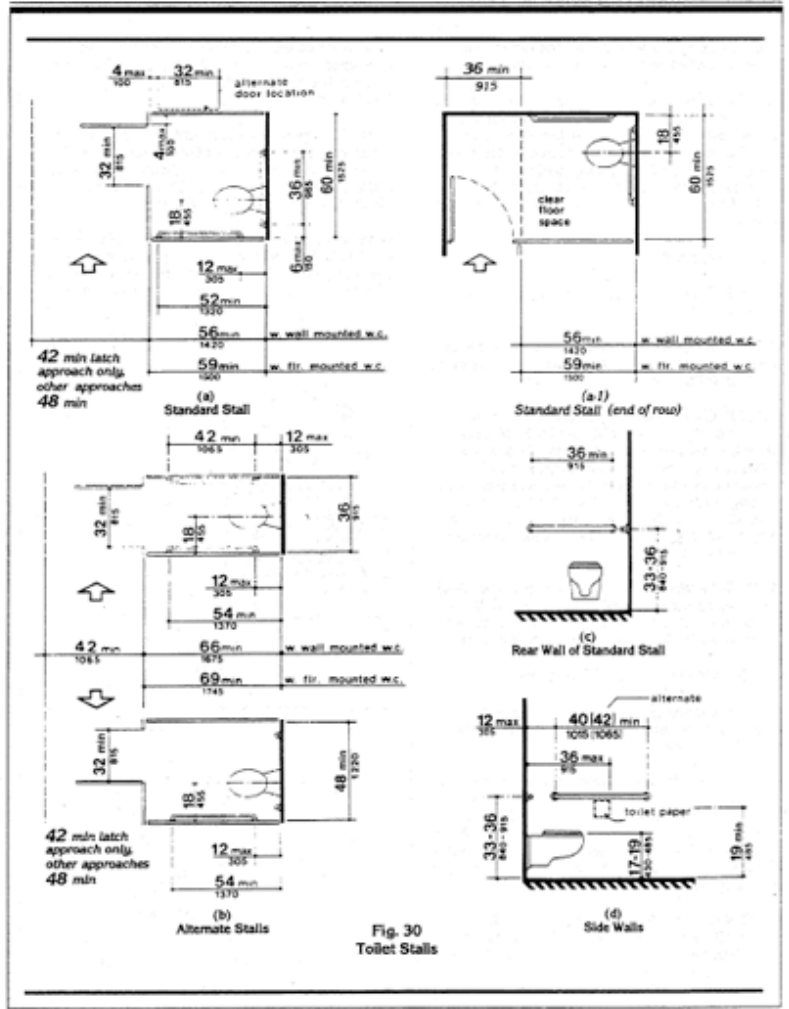
Accessibility Guidelines for

- BUILDINGS AND FACILITIES •
- TRANSPORTATION FACILITIES •
- TRANSPORTATION VEHICLES •

U.S. Architectural and Transportation Barriers Compliance Board
1331 F Street, N.W. • Suite 1000 • Washington, D.C. 20004-1111

The ever-changing landscape of Federal accessibility standards

4.17 Toilet Stalls



43

TECHNICAL

CHAPTER 6: PLUMBING ELEMENTS AND FACILITIES

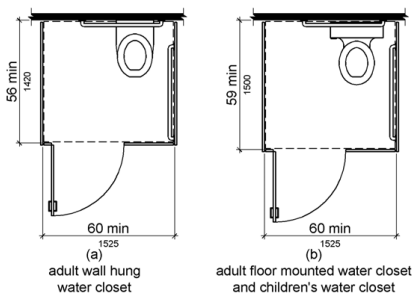


Figure 604.8.1.1 Size of Wheelchair Accessible Toilet Compartment

604.8.1.2 Doors. Toilet compartment doors, including door hardware, shall comply with 404 except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42 inches (1065 mm) minimum. Doors shall be located in the front partition or in the side wall or partition farthest from the water closet. Where located in the front partition, the door opening shall be 4 inches (100 mm) maximum from the side wall or partition farthest from the water closet. Where located in the side wall or partition, the door opening shall be 4 inches (100 mm) maximum from the front partition. The door shall be self-closing. A door pull complying with 404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

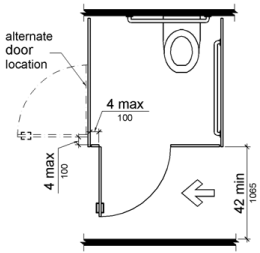


Figure 604.8.1.2 Wheelchair Accessible Toilet Compartment Doors

166 - 2010 Standards: Titles II and III

Department of Justice

1991 ADA Standards/ADAAG

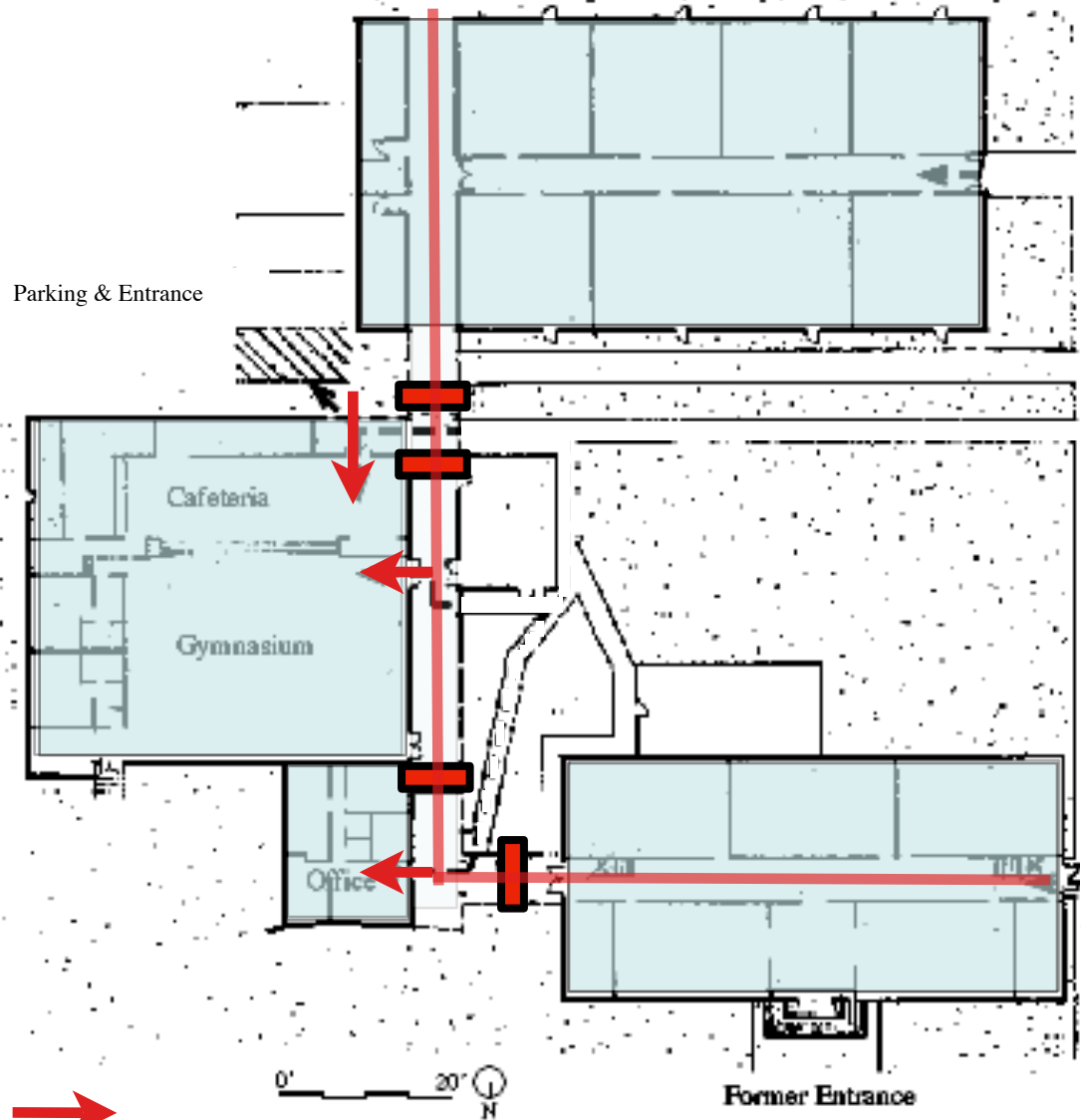
2010 ADA Standards

A brief history of accessible schools



1995 to present: accessible design

School Mobility Case

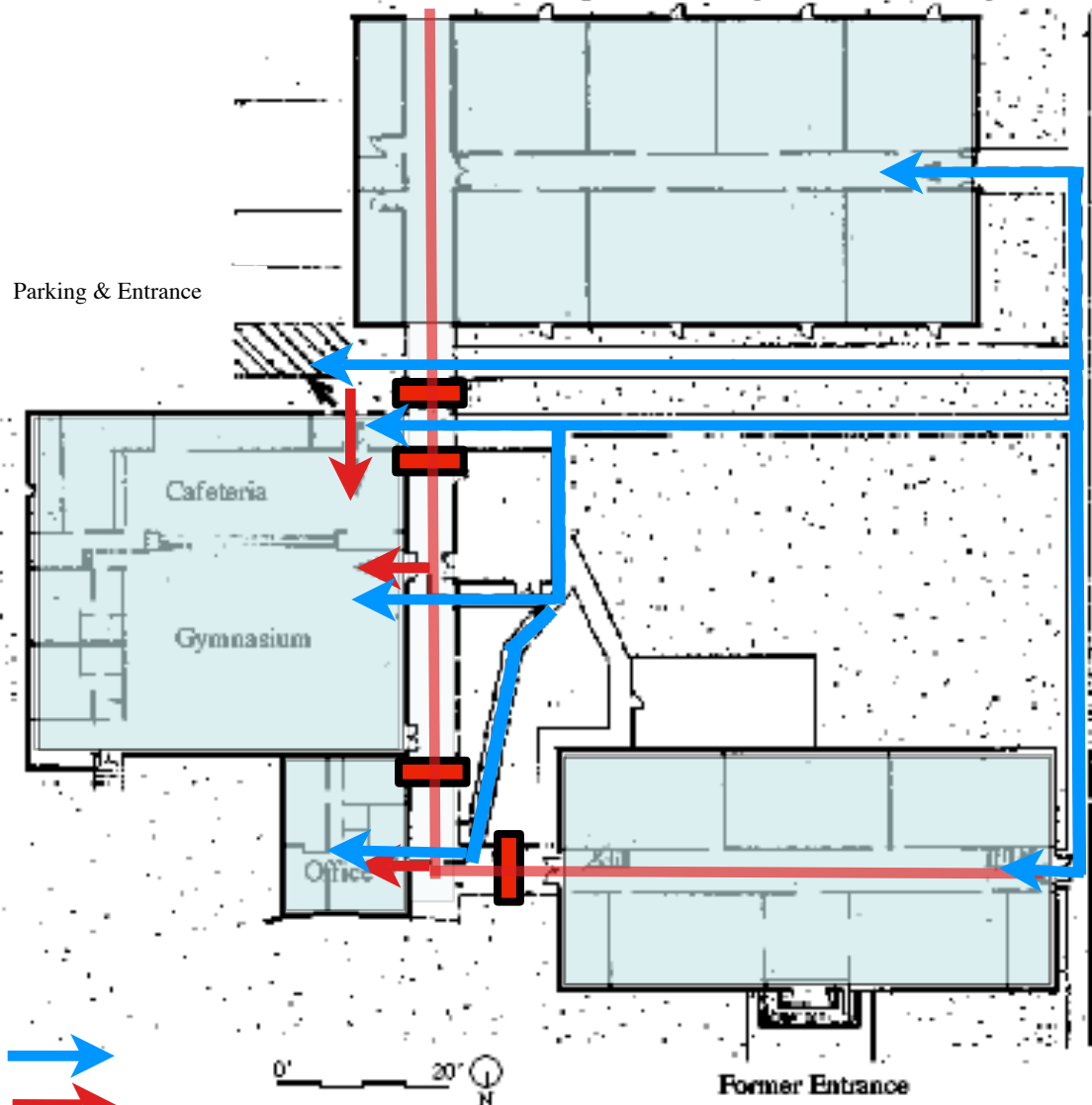





inaccessible routes
barriers



Former Entrance

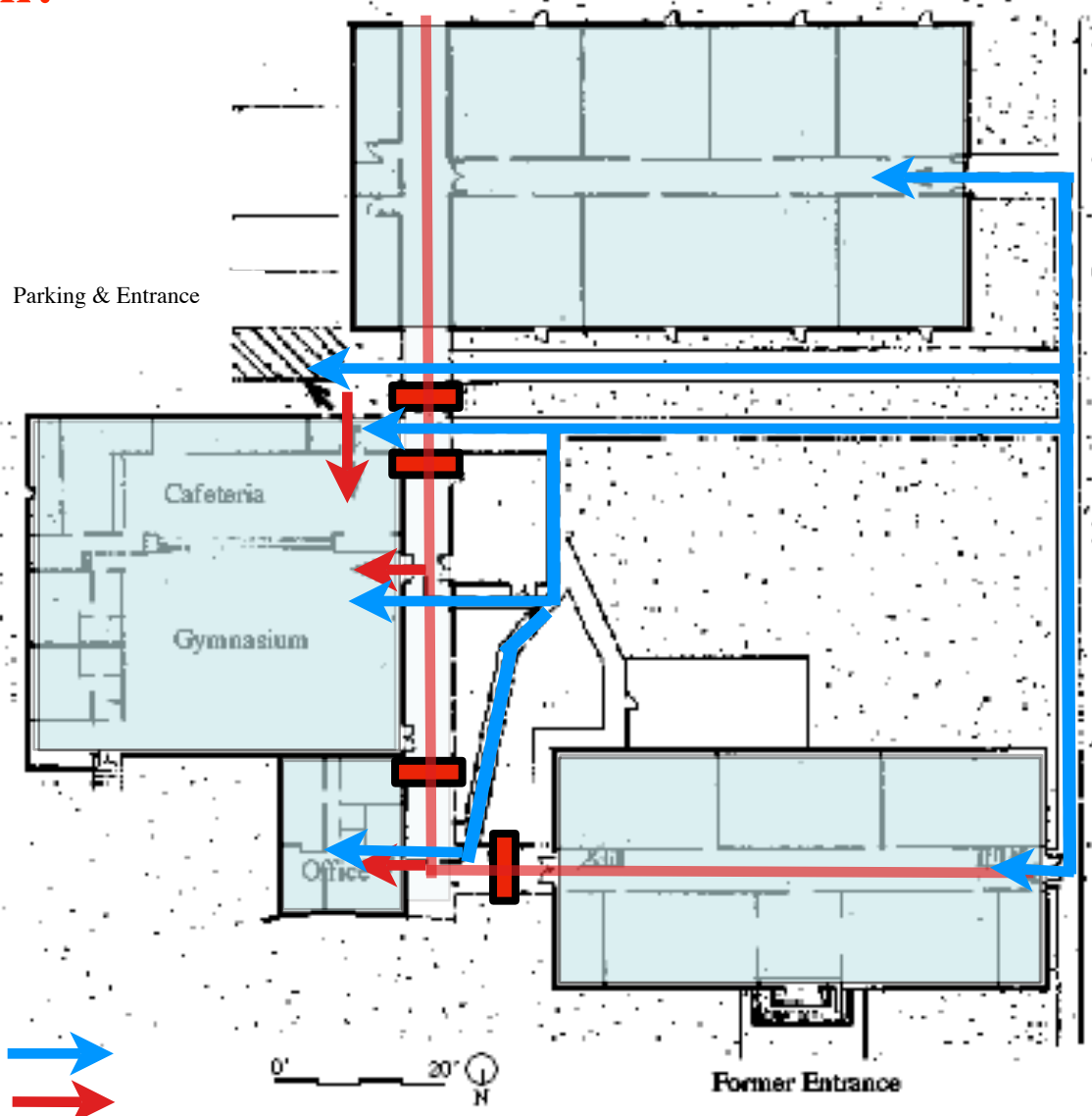
School Mobility Case






accessible routes 
inaccessible routes 
barriers 

School Mobility Case

but does this work?

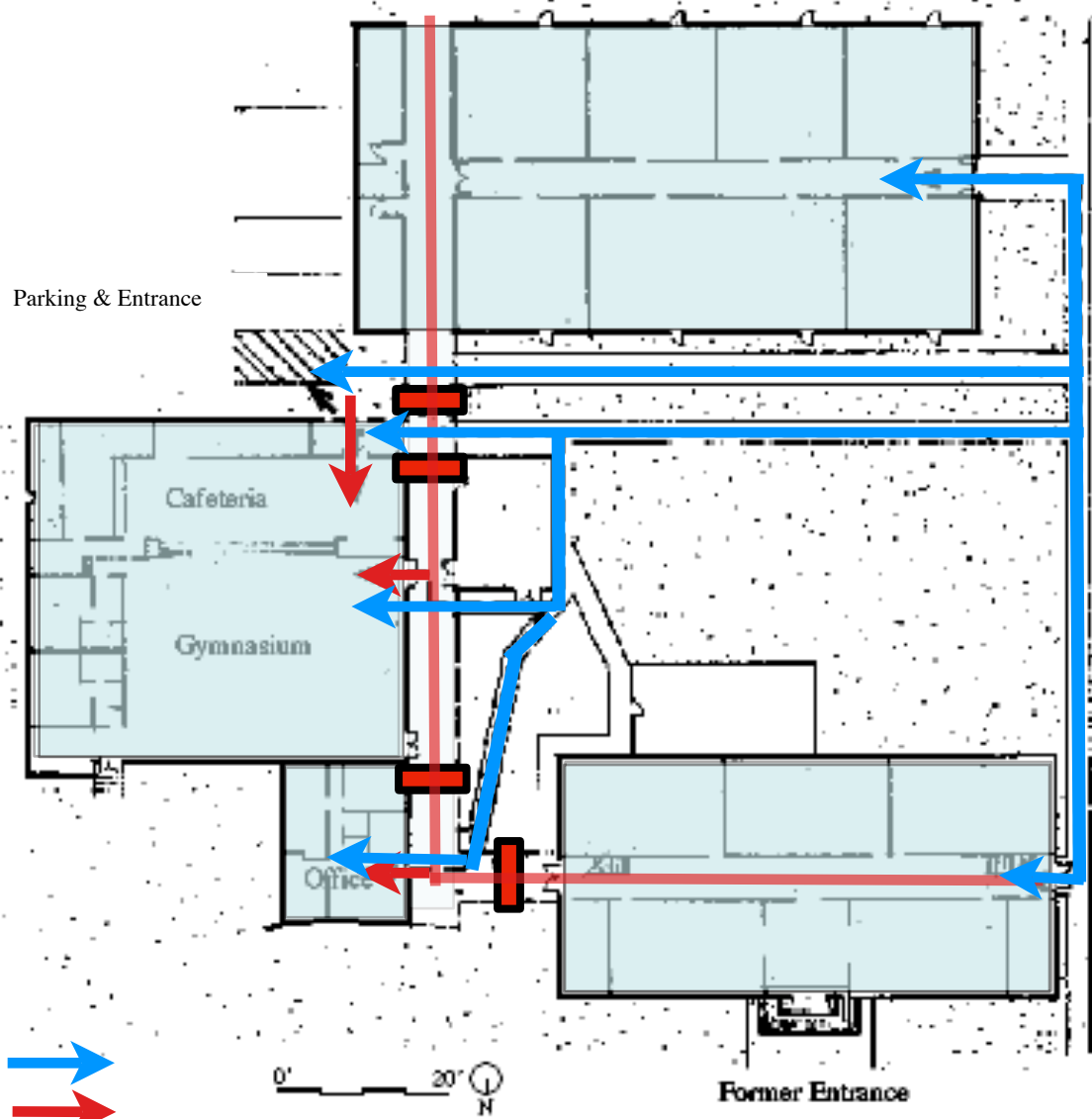





- accessible routes 
- inaccessible routes 
- barriers 

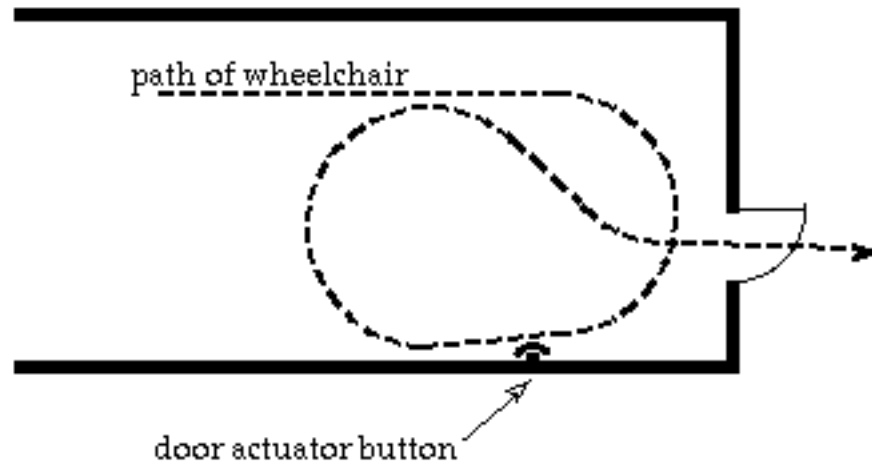
School Mobility Case: Legal yet not effective

Social isolation:
if you had to use
the blue routes?

Practicality?



accessible routes 
inaccessible routes 
barriers 



Where now? Going beyond the standards...

Seven Principles of Universal Design

1. Equitable Use:

The design is useful and marketable to people with diverse abilities.

2. Flexibility in Use:

The design accommodates a wide range of individual preferences and abilities.

3. Simple and Intuitive:

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

4. Perceptible Information:

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

5. Tolerance for Error:

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

6. Low Physical Effort:

The design can be used efficiently and comfortably and with a minimum of fatigue.

7. Size and Space for Approach and Use:

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

(from http://www.design.ncsu.edu/cud/univ_design/princ_overview.htm and other sources)

These don't always apply well in design fields. Perhaps follow them up...

Universal Design: Four Questions to Test a Design

1. Is it universal?

Is it designed for a wide range of abilities and needs?

2. Is it effective?

Does it actually work for the specific needs?

Has it been tested or at least reviewed by representatives of a wide range of users?

Is it supported by research, design standards, or other sources?

3. Is it welcoming?

Does it feel natural and comfortable for all users?

Does it discriminate unnecessarily on the basis of ability?

Does it give the impression of disability-based discrimination?

4. Will the design solution be durable over time?

ADA Title II vs. Title III

or: Is program accessibility dead?
and: What can be inaccessible?



ADA Title II vs. Title III

or: Is program accessibility dead?

no: Rehabilitation Act/Section 504 and ADA still apply



ADA Title II vs. Title III

ADA Title II: What can be inaccessible?



ADA Title II vs. Title III

ADA Title II: What can be inaccessible?

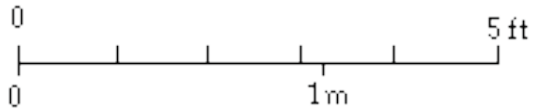
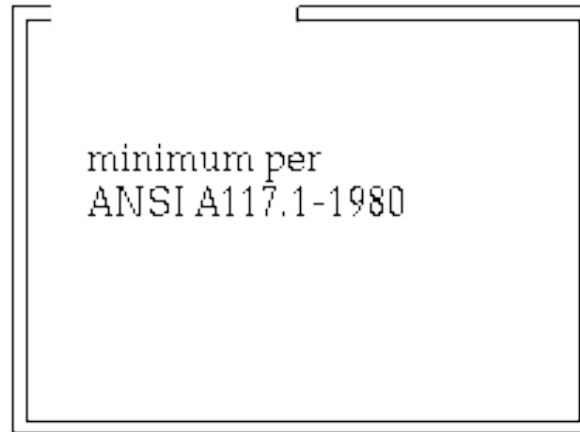
Almost nothing: just mechanical rooms, furniture for individual employees, etc.



Other issues for the Title II owner

Am I grandfathered?

What's prudent?

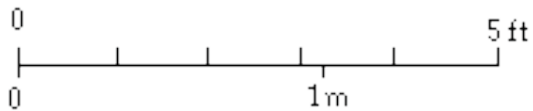
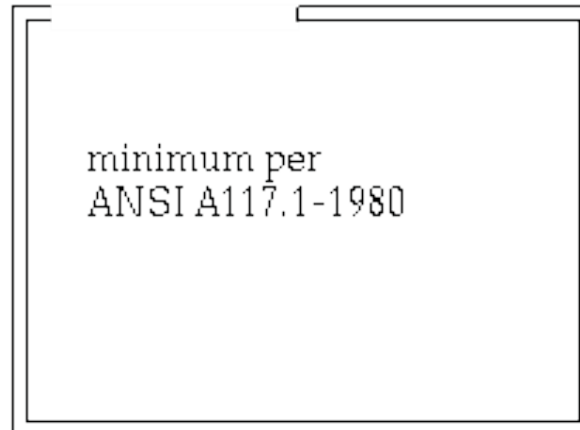


Other issues for the Title II owner

Depends on whether it meets program access needs

Am I grandfathered?

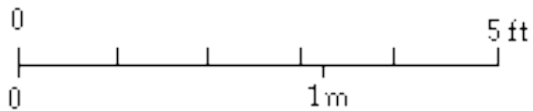
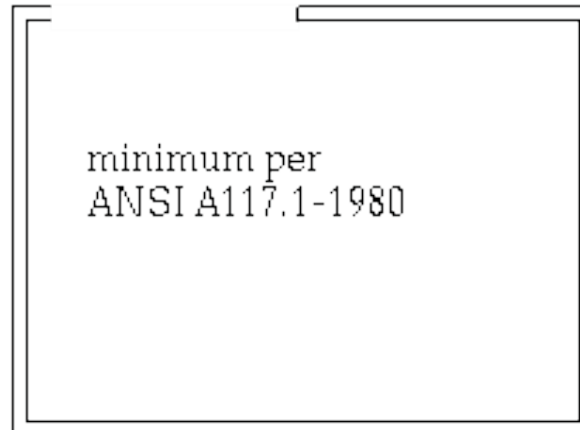
What's prudent?



Other issues for the Title II owner

Am I grandfathered?

What's prudent?

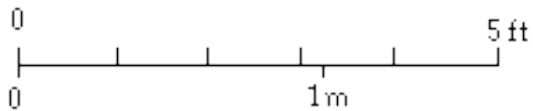
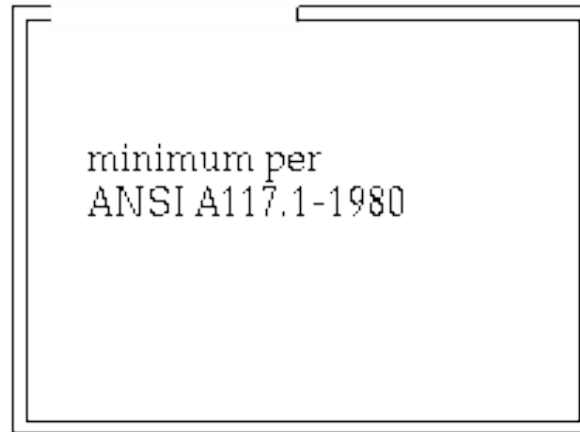


Other issues for the Title II owner

Am I grandfathered?

What's prudent?

Do the right thing: Universal Design



Issues for the owner Title II owner

Am I grandfathered?

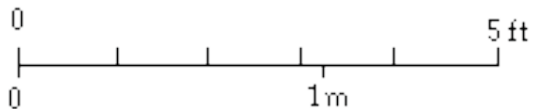
What's prudent?

Is it effective?

Is it safe?

elevator installed 1979

minimum per
ANSI A117.1-1980



Universal Design: The Closed Fist Test for Controls



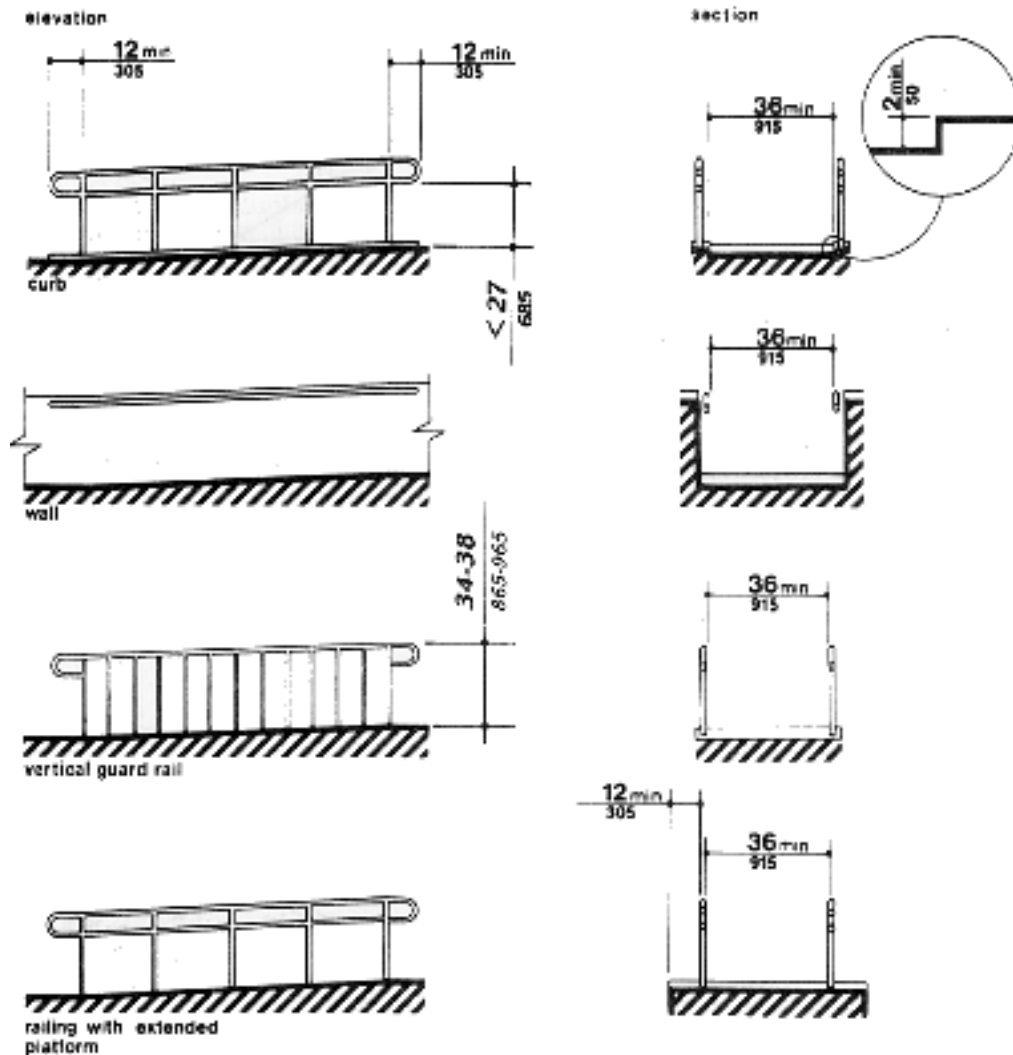
Pattern:

Can the control be operated with a closed fist?

Many standard plumbing, electrical, and hardware controls can be. However, others can't, in particular door knobs, thumb latch locks, faucets that require grip, and so forth.

Compliance: ramps

The standard uninspired solution to grade differences is to pick a ramp from the building code or from the ADA Standards. The results are seldom beautiful and sometimes don't work well for almost anyone.



Universal Design: site mobility

PATTERNS:

Integrated Path

Make sure that accessible routes are a meaningful main route used by all.

Cascade Court, UO

long zig zag ramp

Low Slopes / Short Ramps

Keep slopes at 5 percent or less except for short ramps (up to 12 – 15 feet long)

Shortest Path

Make accessible routes a direct and as short as possible (within the context of Low Slopes / Short Ramps). This suggests integrating grade changes into the direction of desired travel. [add UHCC examples]

Inaccessible ext. stair, Johnson Hall, UO



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding

Universal Design: Vision

PATTERNS:

No Protrusion Hazards

Avoid items that protrude more than 4" above 24" (ADA Standards say 27") so that blind and low vision users are safe

Effective Shorelines

Provide consistent edges to guide cane users and others

- vertical edges such as walls and curbs, or
- textural contrasts such as pavement to planting, or concrete to gravel, or paving type, and
- provide visual contrast along shorelines as appropriate

Safe Crossings

Design vehicular areas with clear separation from pedestrian areas, either

- curbs at 1:12 slope, or
- 3' band of tactile pavement, or
- bollards with 3' maximum gaps

Wayfinding: 90 Degree Corners, No Curves

Provide clear circulation to enhance imageability

Avoid curves and angles, use a rectilinear organization for circulation

Wayfinding: Visual Contrast

Use light/dark contrast to emphasize stair hazards, shorelines, etc.

VISION PATTERNS

No Protrusion Hazards

Safe Crossings

Effective Shorelines

90 Degree Corners

Visual Contrast

Universal Design: Vision

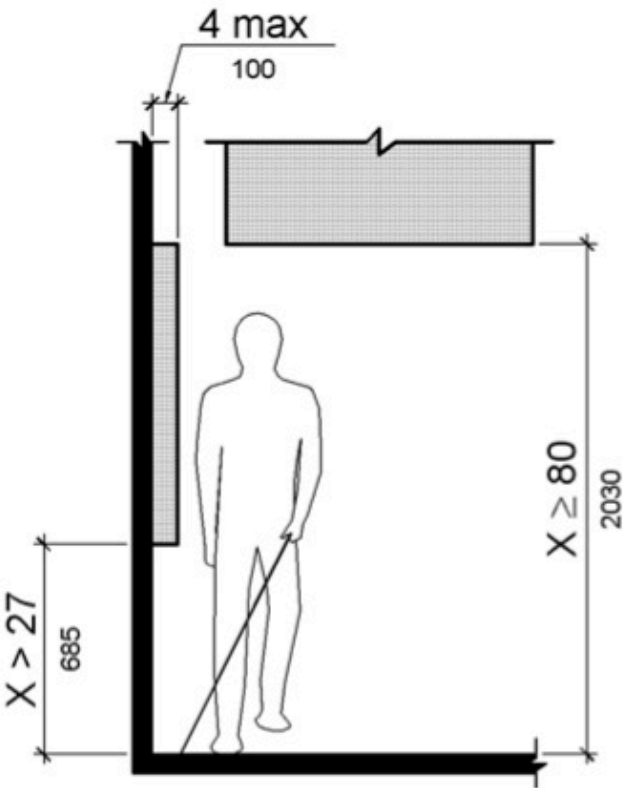


Figure 307.2
Limits of Protruding Objects

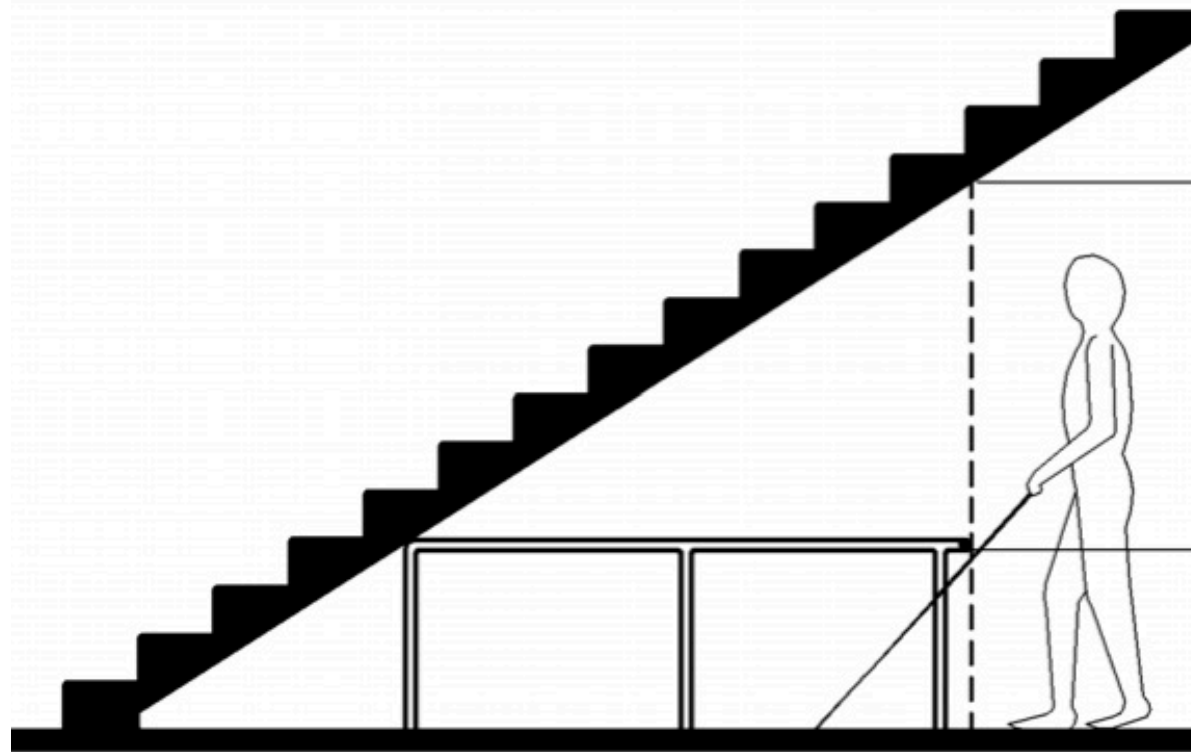


Figure 307.4
Vertical Clearance

Universal Design: Vision

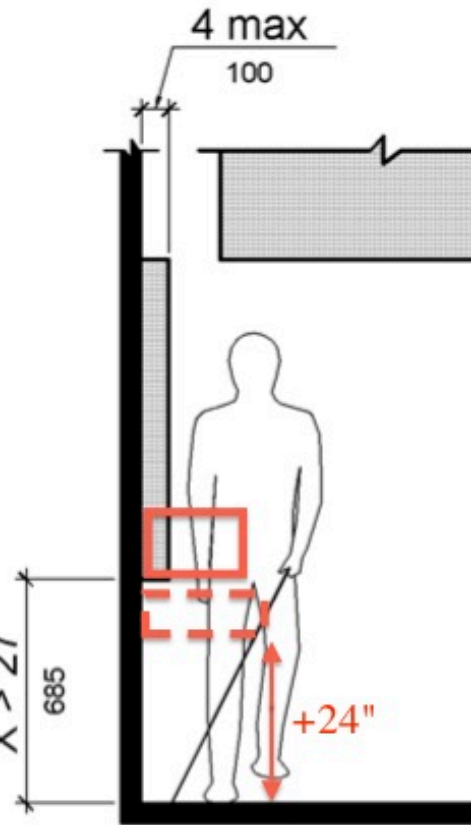


Figure 307.2
Limits of Protruding C

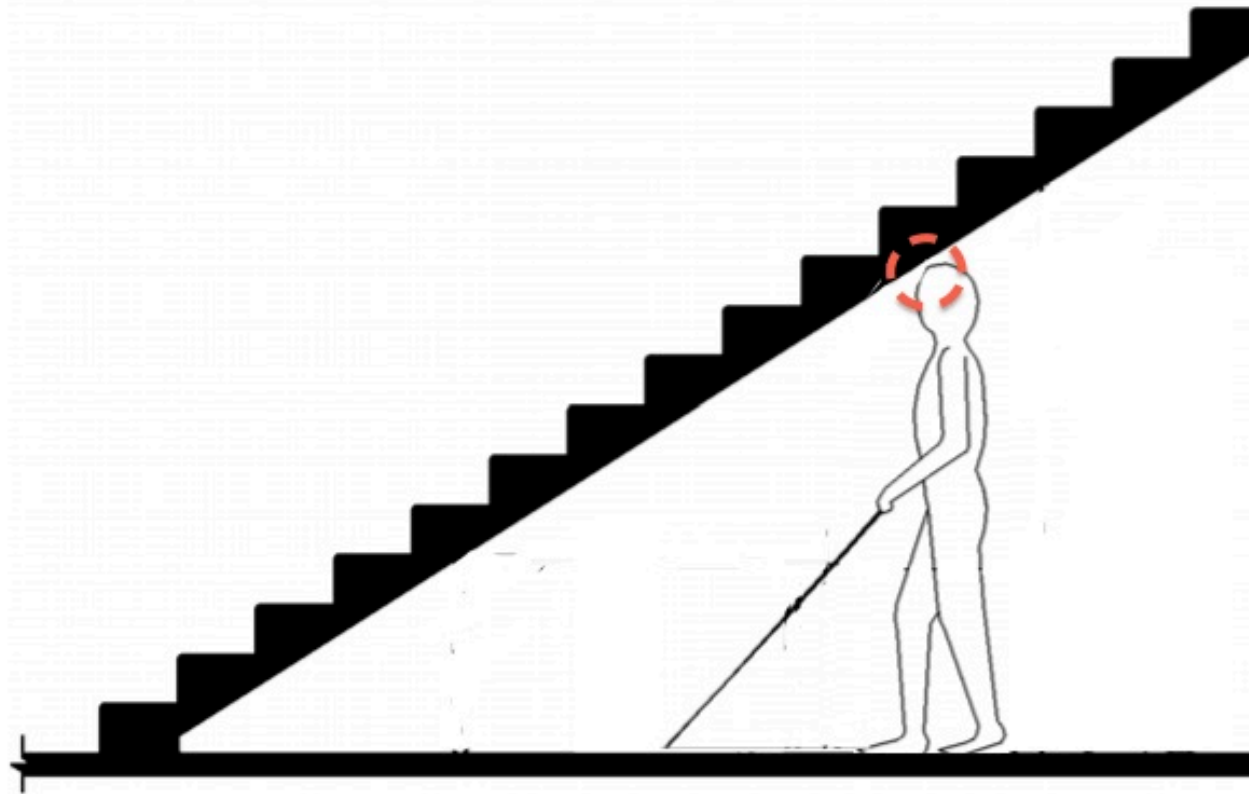


Figure 307.4
Vertical Clearance

Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding



Universal Design: vision

Shoreline

Safe crossing

Wayfinding



Universal Design: vision

Shoreline

Safe crossing

Wayfinding



Universal Design: vision

Shoreline

Safe crossing

Wayfinding



Universal Design: vision

Shoreline

Safe crossing

Wayfinding



Universal Design: vision

Shoreline

Safe crossing

Wayfinding



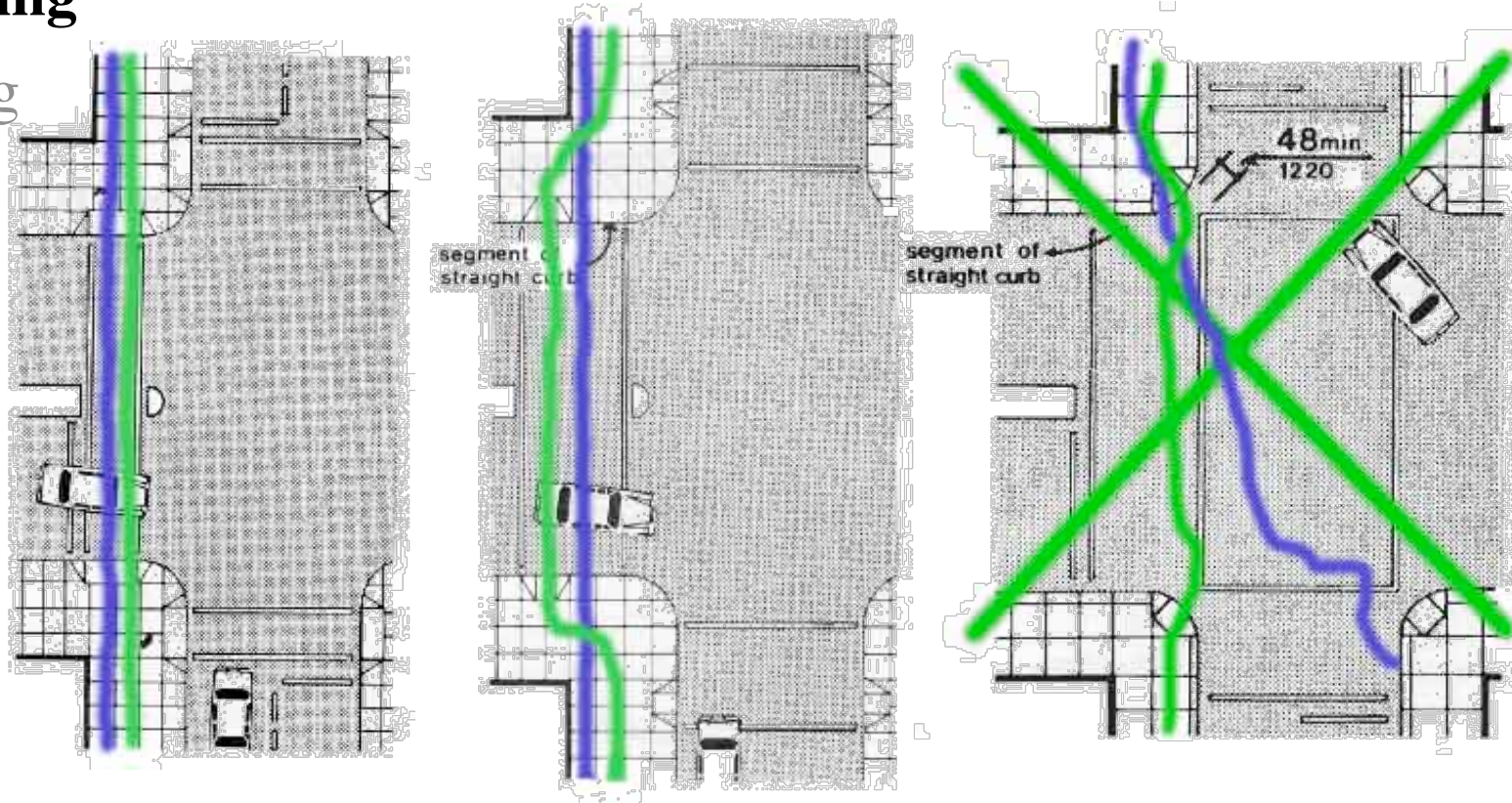
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding



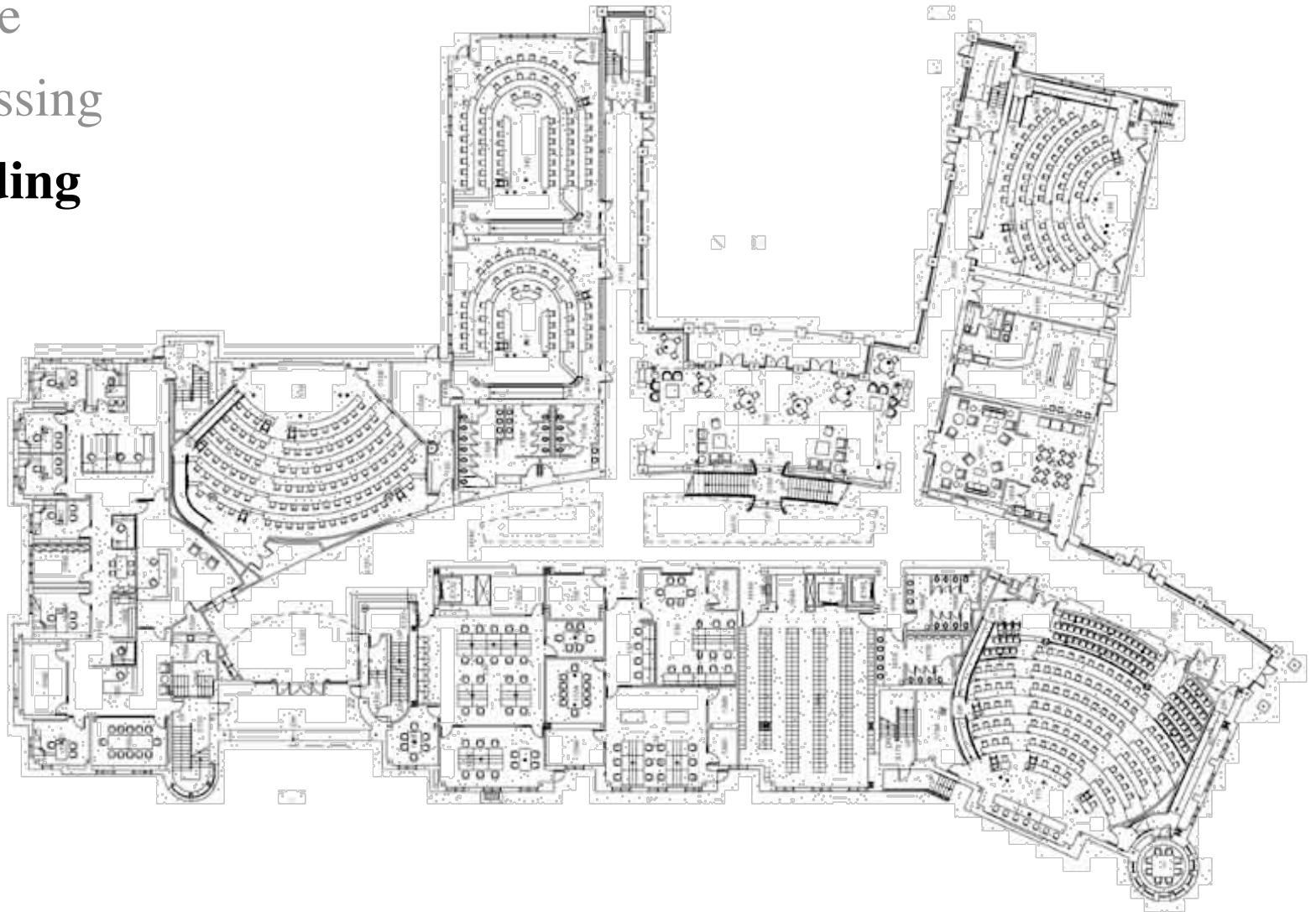
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding



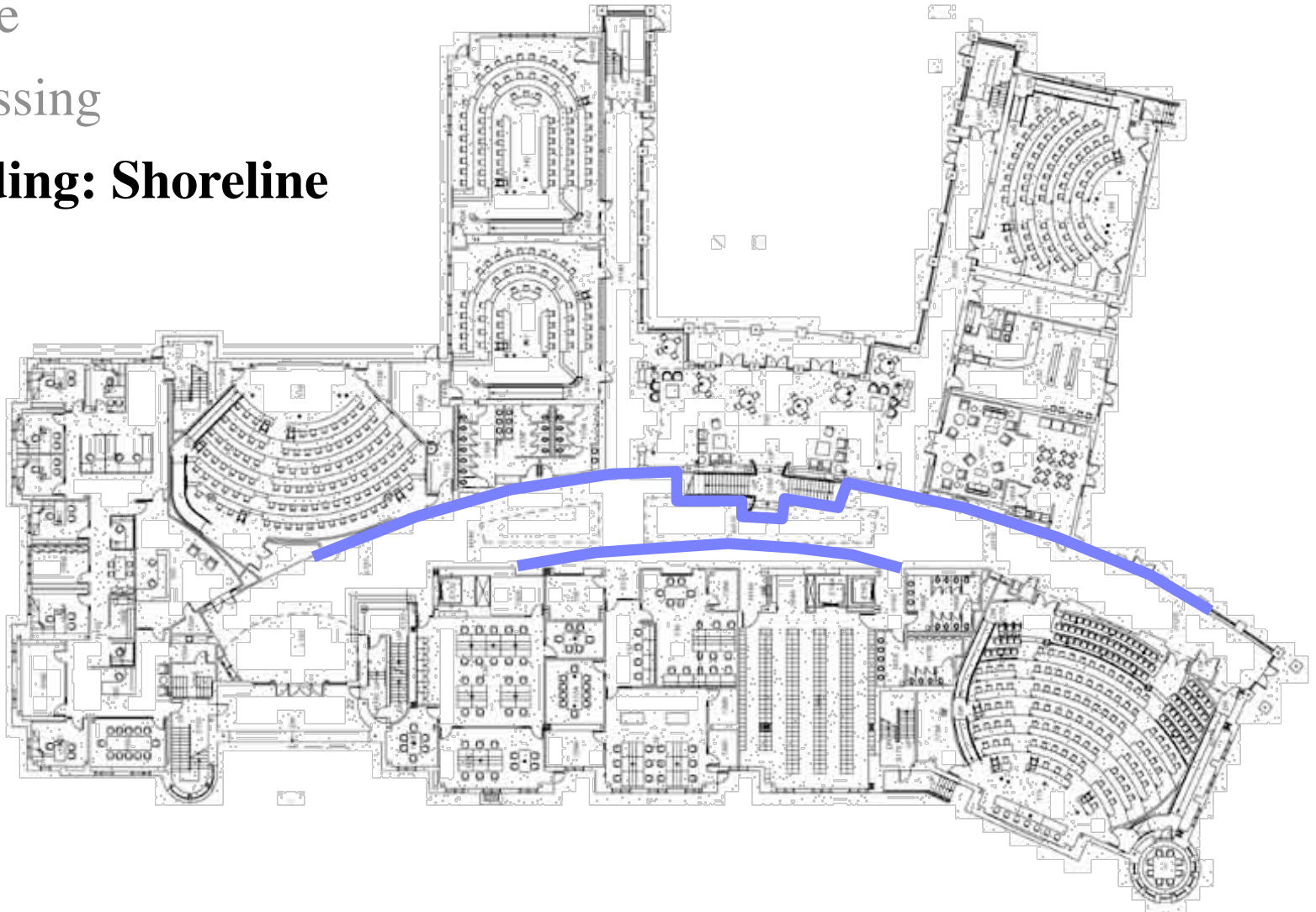
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



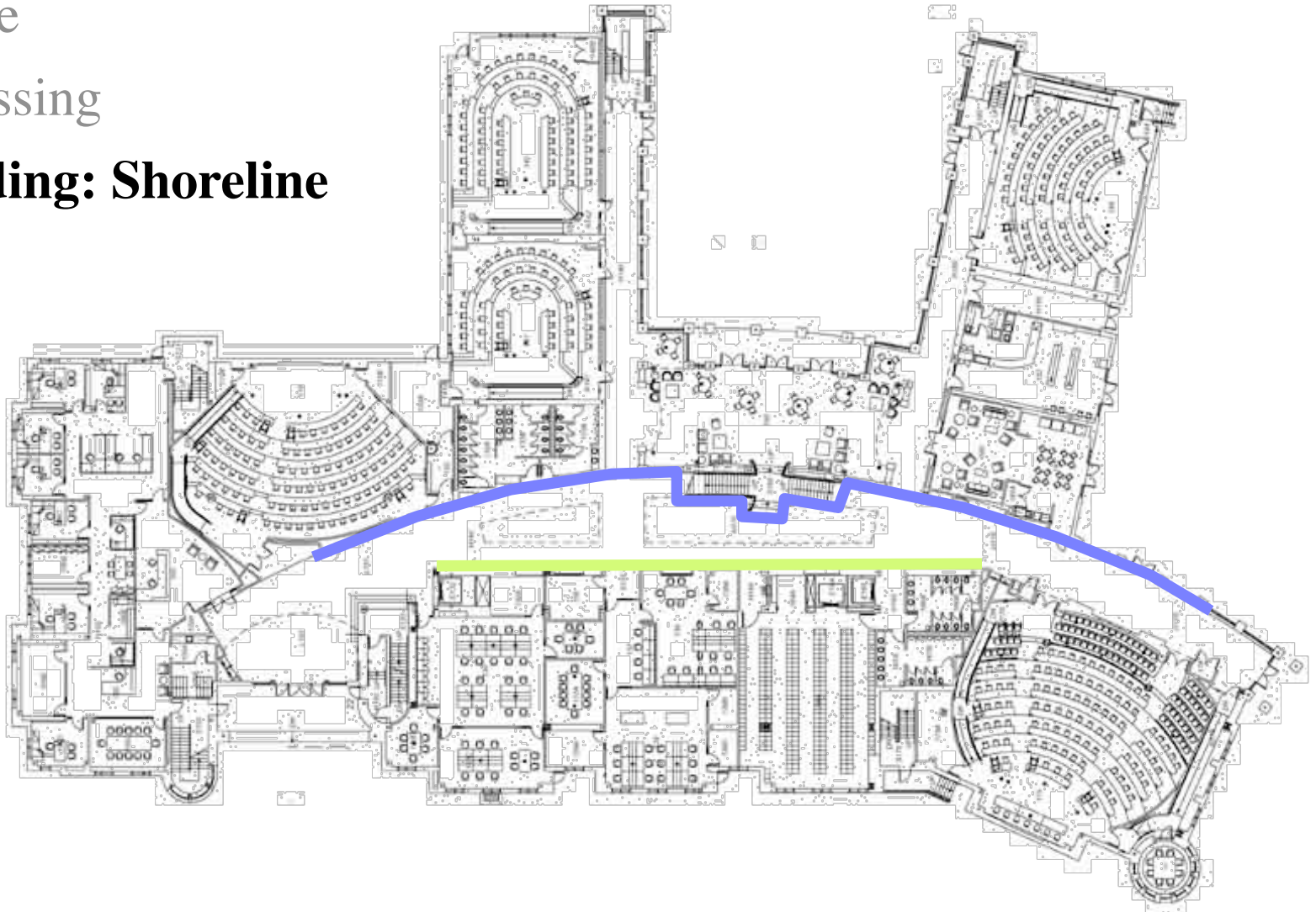
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



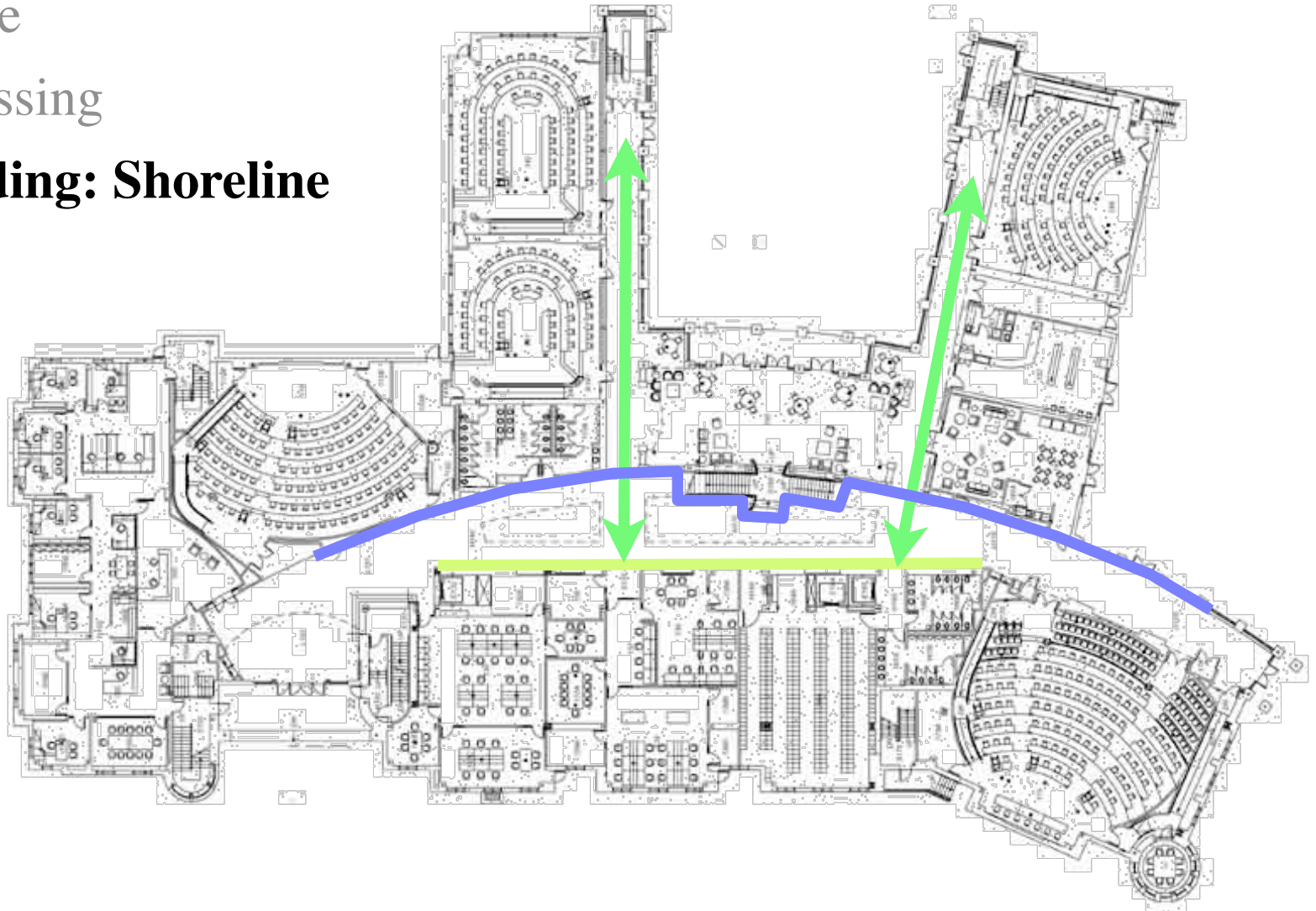
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



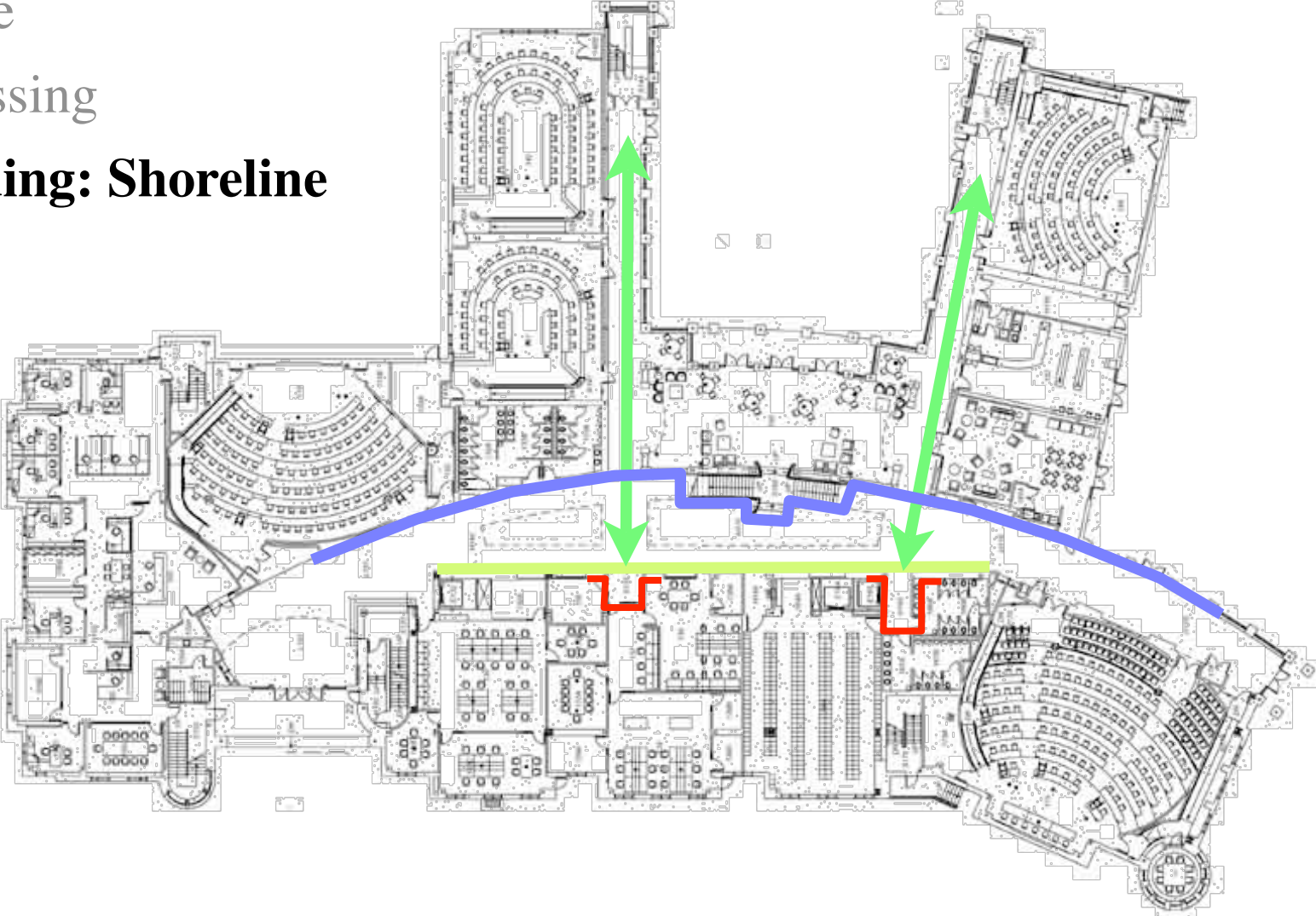
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Light and Contrast



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Light and Contrast



Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding

STANDARDS: generation of new approaches through

- user involvement
- research

... and

- hearing impairments
- autism spectrum disorder
- psychiatric disorders
- etcetera

Universal Design: Hearing

Integrated Design to solve multiple problems simultaneously through an integrated team

Who: Integrated design team

Owner: professional staff

End users

Design team

architect

engineers and other consultants

Ed Roberts campus, Berkeley, CA

Contractor



Do-It-Yourself Architectural Barrier Evaluation Kit

Controls: usable with a closed fist

Side reach: 48" max height, 15" min

Front reach 48" max height, 15" min

Reach range over an obstruction: see ADA

Standards 308.2 and 308.3

Protrusion hazards protrude into an accessible route

more than 4"

above 27" (better to use 24")

below 80"



Do-It-Yourself Architectural Barrier Evaluation Kit

Parking

Oregon stds. vs. ADA stds.

Stall width 9'

Sign on pavement and at stall

Aisle width 8' for van-accessible, 5' otherwise

Accessible route from access aisle to building that:

1. doesn't pass behind parked cars
2. always crosses travel lanes in crosswalks

Sidewalks (and accessible routes in general):

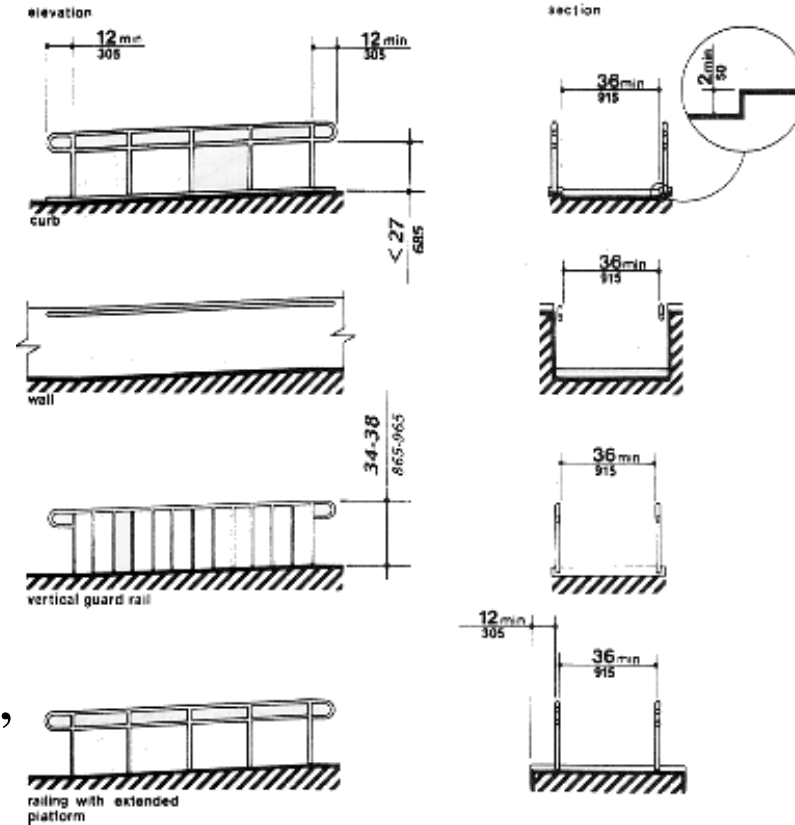
width min = 36", turnouts or wide for long lengths

running slope max = 5%

slope > 5%: see ramps

cross slope max = 2%

Do-It-Yourself Architectural Barrier Evaluation Kit



Ramps

maximum slope 1:12, better 1:12.5

minimum width 36"

maximum length between landings 30'

minimum landing length 5'

minimum landing width 5' if ramp turns

handrails both sides, continuous through landings

level handrail extensions top and bottom, 12" minimum

edge protection through curbs or other devices

Do-It-Yourself Architectural Barrier Evaluation Kit

Entrances and doors:

clear width min = 32" clear not counting door hardware

door pressure and delay requirements: 5 lbs, 5 seconds

50% minimum of entrances accessible

entrances provide adequate fire exits

18" pull-side latch-side clearance

12" push-side latch-side clearance (if both latch and closer)

Toilet rooms

toilet stall 60" wide, 56" (wall hung) or 59" deep (floor mt)

stall door 32" wide, clear, not counting door hardware

toilet 18" from side wall

42" long grab bar at side of toilet

36" long grab bar at rear of toilet

sink with kneespace under

bottom reflecting surface of mirror no higher than 40"

minimum

Fred Tepfer - ftepfer@uoregon.edu

web home: <http://pages.uoregon.edu/ftepfer/>

accessibility page: <http://pages.uoregon.edu/ftepfer/access/>

Oregonized version of ADA Standards:

<http://pages.uoregon.edu/ftepfer/access/ADAAGuplan/adaag.htm>

[new version based on 2010 standards coming soon]

