

ACCESS

# Accessibility Manual

Prepared by:  
City of San Antonio Handicapped Access Office,  
Department of Planning



November, 1983

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Dallas, Texas 75235

Original Logo by New York State University Construction Fund

This manual has been developed by the City of San Antonio as a guide and reference on new and remodeling jobs requiring Handicapped Access.

During the past years the City of San Antonio has been doing substantial work toward making all city facilities accessible to persons with physical handicaps.

Many small jobs, such as electrical outlets, stair work, door changes etc. will continue to be done without design. City work crews will need to be aware of requirements in order to carry out these typical jobs.

It should be remembered that these guidelines are the bare essentials of a Barriers Elimination Program. The City of San Antonio Handicapped Access Office will consult on any questions or details that might arise from these types of jobs.

Design Standards are those related to the Texas laws referring to the elimination of architectural barriers. Primary reference is the Texas State Purchasing and General Services Commission Rule No. 028.13.03.586, Elimination of Architectural Barriers, Article 601b, V.T.C.S., as amended. Also, reference is made to Article 6675a-5e.1, as amended, and the associated State Department of Highways and Public Transportation Administrative Order #33-81, which deals with parking for disabled persons.

The requirements indicated herein will meet (,and in some cases exceed,) State requirements for accessibility as stated in the State Architectural Barriers Law, Article 601b, V.T.C.S., as amended.

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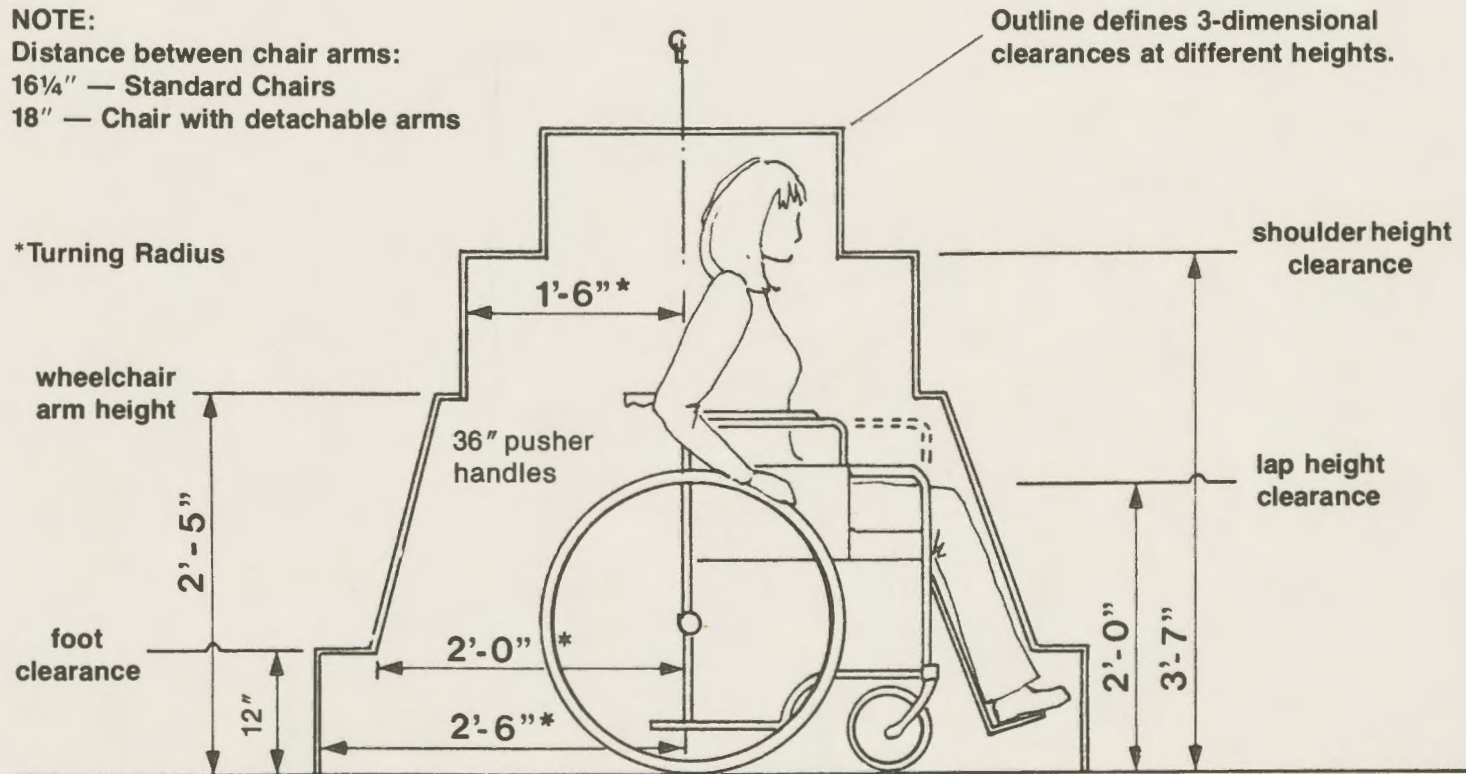
# INTRODUCTION

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	Page
Introduction	
Index	
Wheelchair Data	1
Areas of Assembly:	
No. of Seating Spaces for Wheelchairs	1A
People in Wheelchairs & Crutch Data	2
General Items	3
Ramps: Slopes, Rise & Run	3A
Walks/Ramps/Parking	4
Parking Spaces: Number & Signage	4A
Doors & Corridors	5
Restrooms	6,7
Mounting Heights for Children:	
Restrooms/Drinking Fountains/Controls/Handrails	7A
Elevators/Phones/Controls	8
Elevators: Illustrations & Access Design Info	8A
Signage	9
Stairs	10
Stairs: Illustrations	10A
Acknowledgements	11

# INDEX

**NOTE:**  
 Distance between chair arms:  
 16¼" — Standard Chairs  
 18" — Chair with detachable arms



48" x 30" space needed for  
 at rest position or single seating location.

# WHEELCHAIR DATA 1

STATE/81  
Reference  
Rule No.  
028.13.03.586

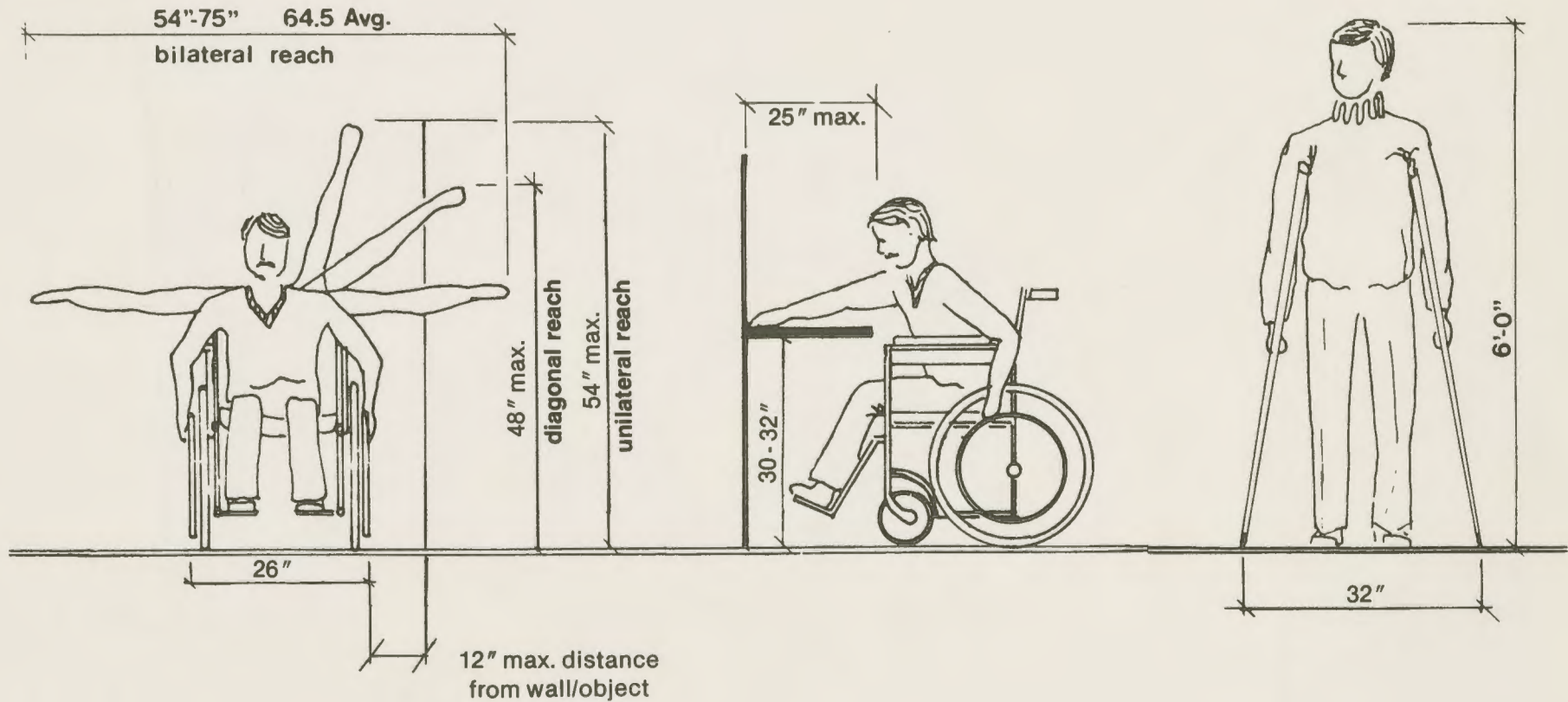
AREAS OF ASSEMBLY: NUMBER OF SEATING SPACES FOR WHEELCHAIRS

1A

(u) (1)A.

<u>Seating Capacity</u>	<u>Min. # of Spaces</u>
50 - 100	2
101 - 300	4
301 - 600	6
Over 600	1.0% of total

Average Dimensions



ITEM	RECOMMENDATION
Water Fountains/Coolers	Several clearances must be considered. The City of San Antonio Dept. of Public Works and Handicapped Access Office have lists of usable fixtures, installation details, and suppliers.
Hardware, furniture, fixtures	Consider when installing: a person with a handicap may use anything to stabilize himself, so attachment should be able to withstand the weight of a person.
Railings, cabinet hardware, lever-type hardware	Should turn in at ends to avoid "hooking" person using them.
Shelves, Hooks	When installing a group of them, hang some between 40" and 45" above floor.
<u>Floor obstructions:</u> Door stops	Use bumpers attached to wall instead of floor or base-mounted stops, especially in open areas (i.e. exterior doors).
Door holders	Likewise should be ceiling or wall mounted instead of attached to floor.
Floor mounted electrical boxes, phone receptacles	Must be located as far as possible under desks or away from traffic paths.

## GENERAL ITEMS 3

STATE/81  
Reference  
Rule No.  
028.13.03.586

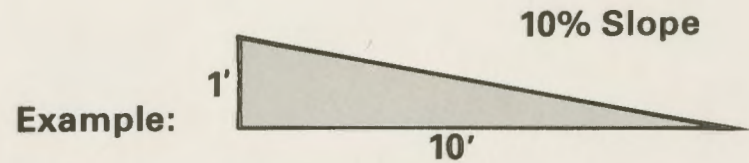
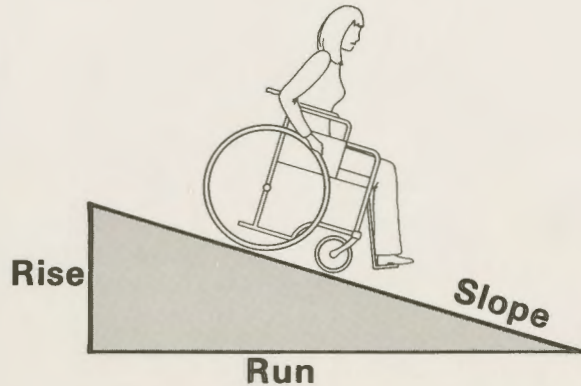
RAMPS: SLOPE, RISE, & RUN

3A

(h) (1) & (2)

MINIMUM UNOBSTRUCTED WIDTH OF ALL RAMPS = generally 48"

Maximum Allowable Slope %	Maximum Rise	Maximum Horizontal Projection (Run)
16.7% (1:6)	3 inches (8 cm)	18 inches (46 cm)
12.5% (1:8)	7 inches (18 cm)	56 inches (142 cm)
11.0% (1:9)	8 inches (20 cm)	72 inches (183 cm)
10.0% (1:10)	9 inches (23 cm)	96 inches (244 cm)
8.3% (1:12)	30 inches (76 cm)	30 feet (9 m)
7.1% (1:14)	34 inches (86 cm)	40 feet (12 m)
6.0% (1:16)	44 inches (112 cm)	60 feet (19 m)





STATE/81  
Reference  
Rule No.  
028.13.03.586

ITEM

REQUIREMENT

(g) (1)  
(g) (3)

Public Walks, along  
an accessible route

Preferred min., unobstructed width generally 44".  
No abrupt level changes.

(d) (2)  
(g) (3)

Driveways & walks,  
Parking lots, etc.,  
along an accessible  
route.

Where they intersect, blend to common level.

(e) (3)A.  
E.

Parking spaces, if  
provided.

13' wide (8', with 5' access aisle). 14' preferred. Must  
be clearly identified. (See pg. 4A)

(Also See Art.  
6675a-5e.1.(b)  
&(c), V.T.C.S.,  
as amended)

(h) (1)&(2)  
(h) (4)  
(h) (5)  
(h) (3)B.  
(h) (1)&(2)

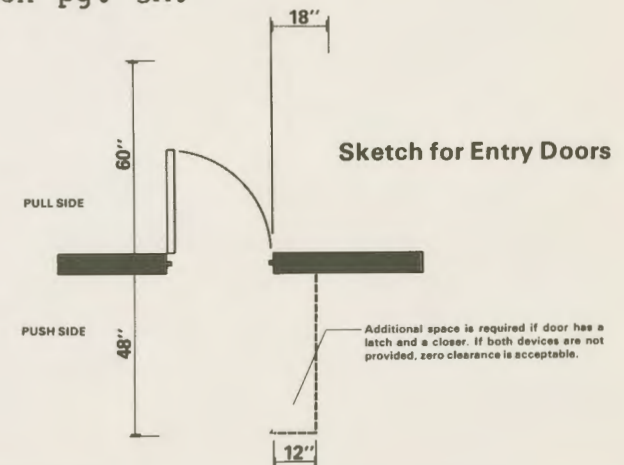
Ramps

For Slope, Rise & Run Info See pg. 3A. Railings: Height-  
30" min., 34" max. (see Stairs" pg. 10) Non-slip surface.  
60" Straight clearance at top & bottom or at intermediate  
areas. Level platforms at intervals specified as maximum  
horizontal projection in Table on pg. 3A.

(i) (2)

Entry doors - where  
walks, ramps, plat-  
forms meet door:

18" of this level area  
must be extending past  
the strikeside or handle-  
side of the door when the  
door swings out onto a  
level area. At least 12" of  
this level area must be  
extending past the strike-  
side/handleside of the  
door when door swings  
away from level area, if  
door has both a latch and  
a closer.



STATE/81  
Reference  
Rule No.  
028.13.03.586

PARKING SPACES: NUMBER & SIGNAGE

4A

(e).(1)

NUMBER REQUIRED	MINIMUM NUMBER OF ACCESSIBLE SPACES
TOTAL PARKING SPACES AVAILABLE	
1 - 50	1
51 - 100	2
101 - 300	3
301 - 500	5
Over 500	1.0% of total

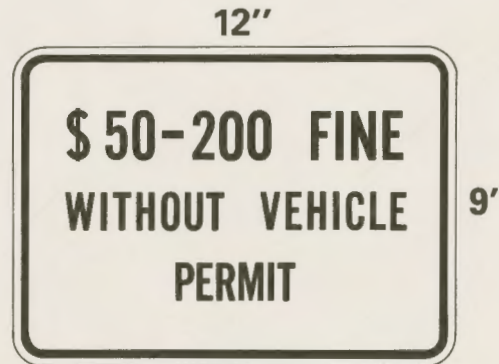
(e).(3).E

Also See Art.  
6675a-5e.1.5.  
(b)&(c), V.T.C.S.  
and State Dept.  
of Hwys. & Public  
Transportation  
Admin. Order #33-81

SIGNAGE REQUIRED - ILLUSTRATIONS



Primary Sign



Penalty Sign  
(If used)



Composite

State P & GS Com.  
policy requires  
5' min. from  
ground to center-  
line of sign.

STATE/81  
Reference  
Rule No.  
028.13.03.586

ITEM

REQUIREMENT

(j) (2)

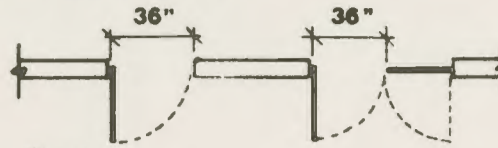
Width

Use 36" Doors = 32" clear opening required. Applies to one door or at least one leaf of double doors also. 32" door acceptable, opened at a 90 angle or more. See Sketch 1.

(k) (1)&(2)

Corridors

Min. clear width generally 44". Floor surfaces - firm, stable & non-slip.



Sketch 1

(j) (9)

Tension

Exterior doors = 8.5 lbs. Interior doors - 5 lbs.

(j) (6)

Thresholds

As flush as possible. 1/2" maximum, generally required. 3/4" max. acceptable under certain conditions.

(j) (8)

Door closers

Decrease tension on existing closers. On new doors, use time-delay type.

(j) (10)

Automatic doors

Very satisfactory.

(j) (7)

Door hardware  
(handles, knobs,  
pulls, etc.)

Shall have a shape easy to grasp with one hand. Though not limited to, preferred designs: lever-operated & push-type mechanisms and force required to activate - 5 lbs. or less. U-shaped handles.

(j) (7)

Hazardous areas  
(boiler rooms,  
loading docks,  
etc.)

Doors to these areas are to be made identifiable to the touch by a textured surface on the door knob, handle, etc. -- made so by knurling, roughening, or by a material applied to the contact surface. This provides protection for blind/vision impaired persons.

Kickplates

16" High to protect doors from wheelchairs, etc. Note: Not required by State Law, but is recommended by ANSI and the City for doors with closers.

## DOORS & CORRIDORS 5

STATE/81  
Reference  
Rule No.  
028.13.03.586

ITEM

REQUIREMENT

(1) (1) A.

Number

At least 20% of total shall be accessible.

(1) (1) B.

Location

In Multi-Story Buildings, located so that disabled persons do not travel in excess of 2 floors to reach an accessible restroom.  
Horizontal Distance to an accessible restroom should not exceed 250', if possible.

(1) (1) C.

Entry Door

32" clear width opening required. 32" door acceptable, opened at 90 angle or more.

(1) (3)

Maneuvering space

60"x60" Basic dimension for 180 & 360 turns.  
(see wheelchair data sheet for specific dimensions).

(1) (4)

Toilet stalls

For one typical stall:

Where 2 stalls can be completed:

3'-0" Width min. 42" max.

Remove interior partition & 1 water closet (w/c)

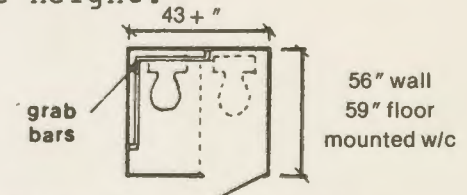
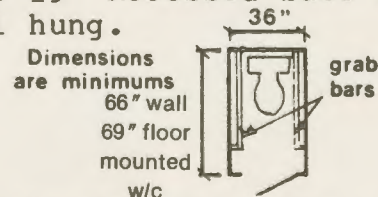
66" min. depth, wall mounted w/c; 69" for floor mounted w/c  
32" min. clear width door opening required; 36" required in some situations.

56" min. depth, wall mounted w/c  
59" for floor mounted w/c.  
32" min. clear width opening required; 36" required in some situations.

Toilet seat height

17 to 19" Recessed base or wall hung.

17-19" seat height.



Grab bars (2)

On both sides of stall. Height: 33"-36". Mounted, including fasteners, to support at least 250 lbs. 1 1/2" Diameter. 1 1/4" min. 1 1/2" Clearance from wall.

On walls beside & behind stool. Same

## RESTROOMS 6

STATE 81  
Reference  
Rule No.  
028.13.03.586

ITEM

REQUIREMENT

(1) (7)

Sinks

29" min. Clearance underneath for wheelchair users.  
OR  
27" is okay if side approach can be used.  
37" max. to topside.  
Insulate and/or cover exposed pipes.

(1) (8)

Mirrors, shelves,  
dispensers, etc.

40" Above floor to top of shelf, bottom of mirror,  
or controls.  
48" Max. for dispensers with frontal approach.  
54" Max. for dispensers with side approach.

(1) (6)

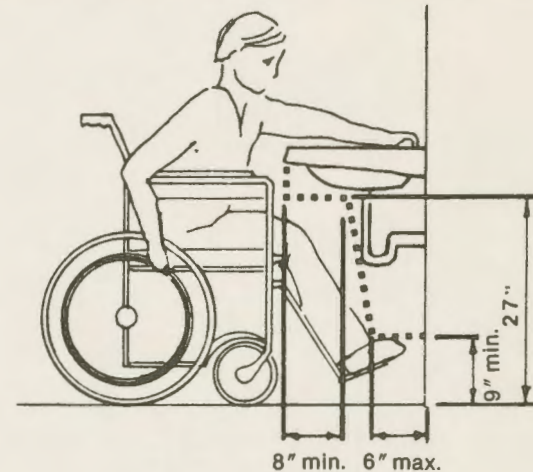
Urinals

17" Max. height above floor or floor mounted.

(d) (8)

(For Mounting  
Heights for  
Children)

See page 7A.



**RESTROOMS cont. 7**

STATE/81  
 Reference  
 Rule No.  
 028.13.03.586

7A

MOUNTING HEIGHTS FOR CHILDREN: RESTROOMS/DRINKING FOUNTAINS/SWITCHES &  
 CONTROLS/STAIR & RAMP HANDRAILS

(d) (8)

	<u>Ages: 5 thru 10 or 11</u> <u>Grades: K thru 5 or 6</u>	<u>Ages: 11 thru 14 or 15</u> <u>Grades: 6 thru 8 or 9</u>
<b>Restrooms:</b>		
Water Closet. To top of seat.	14" - 15" (36 - 38 cm)	15" - 17" (38 - 43 cm)
Urinal. To basin opening.	14" ( 36 cm)	16" ( 41 cm)
Grab Bars. To top.	28" - 30" (71 - 76 cm)	30" - 32" (76 - 81 cm)
Lavatories. To bottom of apron.	26" ( 66 cm)	28" ( 71 cm)
Mirrors. Maximum to bottom.	34" ( 86 cm)	37" ( 94 cm)
Shelves & Dispensers. Maximum to control device.	42" ( 107 cm)	45" ( 114 cm)
Drinking Fountains. Maximum to spout opening.	32" ( 81 cm)	34" ( 86 cm)
<b>Switches and Controls (Telephones Included) Maximum to Center Line</b>		
Front Approach	42" ( 107 cm)	45" ( 114 cm)
Side Approach	48" ( 122 cm)	51" ( 130 cm)
Stair & Ramp Handrails. To top.	28" - 34" (71 - 86 cm)	30" - 34" (76 - 86 cm)

ITEM	REQUIREMENT
(o) (3) Telephones	<p>54" Height max. for side approach. 48" max. for frontal approach Note: Phone company responsible for conforming. Co-ordinate their existing standards (i.e. height, long cords, amplifier in earpiece) with the Handicapped Access Office and ANSI (American National Standards Institute).</p> <p>Though not required by state law, and for use by persons with hearing impairments, it is recommended by ANSI and the City that at least one public phone in a "bank" of phones be equipped with a volume control and a receiver that generates a magnetic field in the area of the receiver cap and that when only a single phone serves the public, it be also equipped. Such telephone accessibility should be indicated by/with appropriate signage.</p>
(m) Elevators	Vertical access shall be provided in a facility having more than one level by elevator(s) or other means of vertical transportation suitable for wheelchair use, exceptions may be allowed in certain instances. (See page 8A)
(r) (2) Controls	48" Height (lights, windows, striking stations, etc.) 54" Max. if accessible by side approach.
(q) (1)&(2) Warning Signals	Any electronically controlled device used for emergency warnings, if provided. Must be visible in addition to audible for hearing disabled. Must be audible in addition to visible for sight disabled.
(n) (3) (4) (1) Water Fountains	36" to spout opening. Controls: 28"-36" high Number: 30% min. & properly distributed. One per floor in multi-story buildings, if water fountains are provided on each floor.
(d) (8) (For Mounting Heights for Children)	See page 7A.

## ELEVATORS/PHONES/CONTROLS 8

(m)

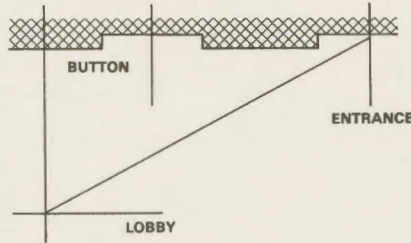


FIGURE (m) 1

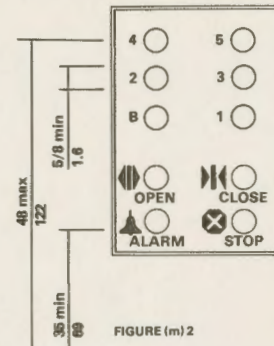
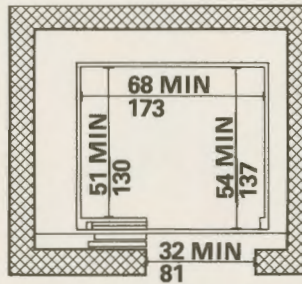
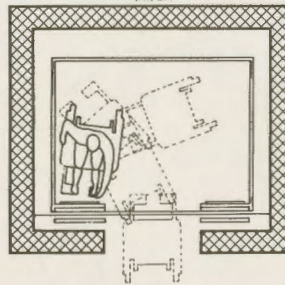


FIGURE (m) 2

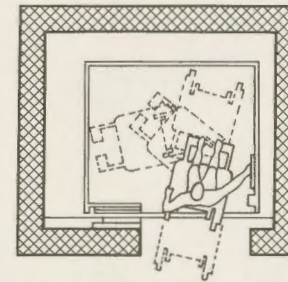


Note: Cabs less than 68 inches (173 cm) but no less than 54 inches (137 cm) are allowed if capacity is less than 2000 lb. A center opening door may necessitate increasing the width.

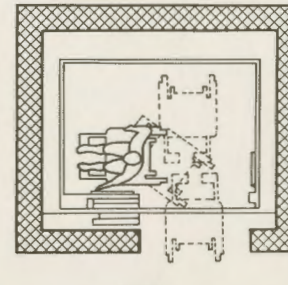
(m) 3.1



(m) 3.3



(m) 3.2



(m) 3.4

FIGURE (m) 3

inches  
centimeters

Note:  
 Elevators companies do have standardized cab size and controls which conform to access standards.



STATE/81 Reference Rule No. 028.13.03.586	ITEM	REQUIREMENT
(s)	Room numbers & names	Raised or incised characters required. Note: Application is generally limited to restrooms and elevators. However, may be extended where blind persons frequent a facility in considerable numbers.
(s) (4)	Height & Location	54"-66", 60" preferred, and shall be mounted on wall at strikeside of door(s).
(d) (6) C.	Low-hanging: Signs Lights Closers	Shall be avoided. 80" minimum above floor.

## SIGNAGE 9

STATE 81  
Reference  
Rule No.  
028.13.03.586

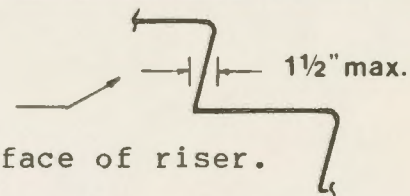
ITEM

REQUIREMENT

(p) (2)

Nosing

No sharp angles.  
No recess greater than 1 1/2".



(p) (3)

Railings

Height: 32"~34" above tread at face of riser.

Size: 1 1/4"~1 1/2" diameter, 1 1/2" min. from wall for stairs & ramps.

Number: Width of stair 44" or less - one side, provided open-sided conditions do not exist.

Width of stair 37" to 66" - both sides.

Width greater than 66" - add railings so that there is not more than 37" between them.

(p) (3)c.

Extensions: Extend handrailing beyond top & bottom riser, and parallel with floor, 12" min. extension required. (See page 10A)

(p) (1)

Risers

Must be uniform.

Treads

11" min., measured from riser to riser.

(d) (8)

(For Mounting  
Heights for  
Children)

See page 7A.

## STAIRS 10

STATE/81  
Reference  
Rule No.  
028.13.03.586

STAIRS: ILLUSTRATIONS

10A

(p)

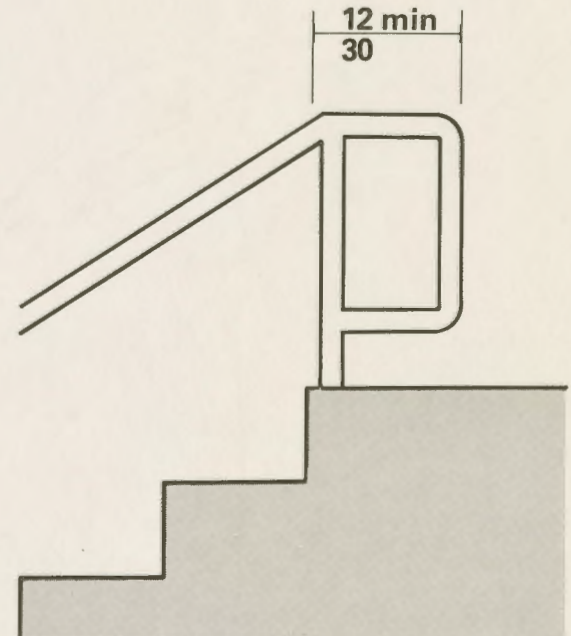
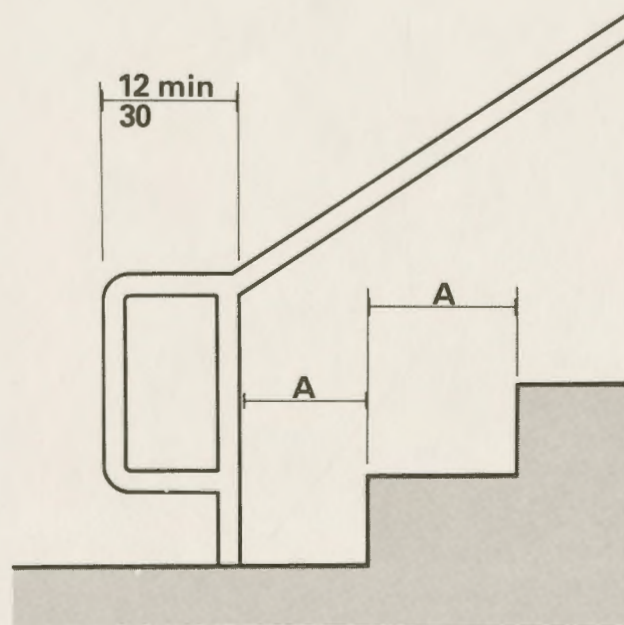


FIGURE (p) 2

inches  
centimeters

Some of the information and illustrations in this manual were adapted from the following publications:

Cotler, Stephen R., R.A., and DeGraff, Alfred H., "Architectural Accessibility for the Disabled of College Campuses," 1976.

Harkness, Sarah P. and Groom, James Jr., "Building Without Barriers for the Disabled," 1976.

Mace, Ronald L., A.I.A., "Accessibility Modifications," 1976.

Mace, Ronald L., A.I.A., and Laslett, Betsy, "An Illustrated Handbook of the Handicapped Section of the North Carolina State Building Code," 1974.

Also special thanks are given to: 1. The George Washington University, Physical Plant Director Mr. R.F. Burch for allowing us to modify the format and content of their original 1979 Manual Handicapped Accessibility Manual to fit our needs. 2. Texas State Purchasing and General Services Commission, Prevention of Architectural Barriers, for technical advice.

Prepared by the City of San Antonio Handicapped Access Office of the Department of Planning.

