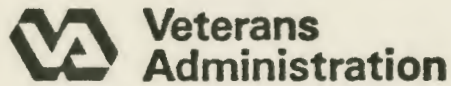


H-08-13



Barrier Free Design Manual



**“Accommodations for the
Physically Handicapped”**

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Public Law 90-480
90th Congress, S. 222
August 12, 1968

An Act

To insure that certain buildings financed with Federal funds are so designed and constructed as to be accessible to the physically handicapped.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, as used in this Act, the term "building" means any building or facility (other than (A) a privately owned residential structure and (B) any building or facility on a military installation designed and constructed primarily for use by able bodied military personnel) the intended use for which either will require that such building or facility be accessible to the public, or may result in the employment or residence therein of physically handicapped persons, which building or facility is—

Public build-
ings.
Accessibility
to physically
handicapped.

82 STAT. 718

82 STAT. 719

(1) to be constructed or altered by or on behalf of the United States;

(2) to be leased in whole or in part by the United States after the date of enactment of this Act after construction or alteration in accordance with plans and specifications of the United States; or

(3) to be financed in whole or in part by a grant or a loan made by the United States after the date of enactment of this Act if such building or facility is subject to standards for design, construction, or alteration issued under authority of the law authorizing such grant or loan.

SEC. 2. The Administrator of General Services, in consultation with the Secretary of Health, Education, and Welfare, is authorized to prescribe such standards for the design, construction, and alteration of buildings (other than residential structures subject to this Act and buildings, structures, and facilities of the Department of Defense subject to this Act) as may be necessary to insure that physically handicapped persons will have ready access to, and use of, such buildings.

Standards.

SEC. 3. The Secretary of Housing and Urban Development, in consultation with the Secretary of Health, Education, and Welfare, is authorized to prescribe such standards for the design, construction, and alteration of buildings which are residential structures subject to this Act as may be necessary to insure that physically handicapped persons will have ready access to, and use of, such buildings.

SEC. 4. The Secretary of Defense, in consultation with the Secretary of Health, Education, and Welfare, is authorized to prescribe such standards for the design, construction, and alteration of buildings, structures, and facilities of the Department of Defense subject to this Act as may be necessary to insure that physically handicapped persons will have ready access to, and use of, such buildings.

SEC. 5. Every building designed, constructed, or altered after the effective date of a standard issued under this Act which is applicable to such building, shall be designed, constructed, or altered in accordance with such standard.

Applicability.

SEC. 6. The Administrator of General Services, with respect to standards issued under section 2 of this Act, and the Secretary of Housing and Urban Development, with respect to standards issued under section 3 of this Act, and the Secretary of Defense with respect to standards issued under section 4 of this Act, is authorized—

(1) to modify or waive any such standard, on a case-by-case basis, upon application made by the head of the department, agency, or instrumentality of the United States concerned, and

Waiver.

Pub. Law 90-480
82 STAT. 719

August 12, 1968

upon a determination by the Administrator or Secretary, as the case may be, that such modification or waiver is clearly necessary, and
Surveys and (2) to conduct such surveys and investigations as he deems
investigations. necessary to insure compliance with such standards.
Approved August 12, 1968.

HOUSE REPORTS: No. 1532 accompanying H. R. 6589 (Comm. on Public Works) and No. 1787 (Comm. of Conference).
SENATE REPORT No. 538 (Comm. on Public Works).
CONGRESSIONAL RECORD:
Vol. 113 (1967): Aug. 25, considered and passed Senate.
Vol. 114 (1968): June 17, considered and passed House, amended, in lieu of H. R. 6589.
July 26, House agreed to conference report.
July 29, Senate agreed to conference report.

Veterans Administration
Washington, D.C. 20420

H-08-3
VA CONSTRUCTION STANDARD CD-28

ACCOMMODATIONS FOR THE PHYSICALLY HANDICAPPED

Provide accommodations for the physically handicapped in compliance with the "VA Barrier Free Design Manual" (H-08-13). These accessibility requirements are to be applied during the design, construction, and alteration of VA buildings and facilities.

RESCISSION: VA Construction Standard CD-28, dated February 5, 1979.

W. A. SALMOND
Assistant Deputy Administrator
for Construction

DISTRIBUTION: RPC: 0830
FD

BARRIER FREE DESIGN MANUAL

"ACCOMMODATIONS FOR THE PHYSICALLY HANDICAPPED"

1. GENERAL

- 1.1 Purpose. This design manual sets forth the requirements for the design, construction, and alteration of buildings and facilities, owned, leased, or funded by the Veterans Administration, so that physically handicapped persons will have ready access to, and use of, such buildings and facilities.
- 1.2 Federal Law and Regulations. All federally-owned, leased, or funded buildings and facilities are required to comply with Public Law 90-480, as amended (see pages i and ii). This Federal Act "insures that certain buildings financed with Federal funds are so designed and constructed as to be accessible to the physically handicapped."

To comply with Public Law 90-480, the Veterans Administration is required to follow the minimum accessibility standards employed by the General Services Administration (GSA). Under the Federal Property Management Regulations, Chapter 101, Subpart 101-19.6, "Accommodations for the Physically Handicapped", GSA currently prescribes "GSA Accessibility Standard" (PBS(PCD):DG6), dated October 14, 1980. However, GSA is required to revise its accessibility standard to meet the Architectural and Transportation Barriers Compliance Board (A&TBCB) Minimum Guidelines and Requirements for Accessible Design as contained in 36 CFR Part 1190. In order to be prepared to comply with GSA's projected revised accessibility standard, VA bases its "Barrier Free Design Manual" on A&TBCB's Minimum Guidelines and Requirements for Accessible Design. Where it is dictated, the VA "Barrier Free Design Manual" incorporates VA's more stringent accessibility requirements.

- 1.3 VA Construction Standard, CD-28, "Accommodations for the Physically Handicapped," dated _____ . This VA Standard requires compliance with the VA "Barrier Free Design Manual" (H-08-13).
(See p. iii)

2. GENERAL TERMINOLOGY AND DEFINITIONS

- 2.1 General Terminology. Comply with. Meets one or more specifications of this design manual.

If, if... then. Denotes a specification that applies only when the conditions described are present.

May. Denotes an option or alternative.

Shall. Denotes a mandatory specification or requirement.

Should. Denotes an advisory specification or recommendation.

2.2 Definitions. The following terms shall, for the purpose of this design manual, have the meaning indicated in this section:

Access aisle. An accessible pedestrian space between elements such as parking spaces, seating and desks, that provides clearances appropriate for use of these elements by the physically handicapped.

Accessible. That attribute of a site, building, facility, or portion thereof that complies with this design manual and that can be approached, entered, and used by physically disabled people.

Accessible path of travel. A continuous unobstructed path connecting all accessible elements and spaces in a building, facility, or site that can be negotiated by a severely disabled person using a wheelchair and that is also safe for and usable by people with other disabilities. Interior accessible routes may include corridors, floors, ramps, elevators, lifts, and clear floor space at fixtures. Exterior accessible routes may include parking access aisles, curb ramps, walks, ramps, and lifts.

Administrative authority. A governmental agency that adopts or enforces regulations and standards for the design, construction, or operation of buildings and facilities.

Alteration. Any change in a building or facility or its permanent fixtures or equipment. It includes, but is not limited to, remodeling, renovation, rehabilitation, reconstruction, changes or rearrangement in structural parts, and extraordinary repairs. It does not include normal maintenance, reproofing, interior decoration, or change to mechanical and electrical systems.

Assembly area. A room or space accommodating fifty or more individuals for religious, recreational, educational, political, social, or amusement purposes, or for the consumption of food and drink, and including all connected rooms or spaces with a common means of egress and ingress. Such areas as conference and meeting rooms accommodating fewer than fifty individuals are not considered assembly areas.

Automatic door. A door equipped with a power-operated mechanism and controls that open and close the door automatically upon receipt of a momentary actuating signal. The switch that begins the automatic cycle may be a photoelectric device, floor mat, or manual switch mounted on or near the door itself. (See power-assisted door)

Clear width. Unobstructed distance between restrictive building or site elements.

Common use. Refers to those interior and exterior rooms, spaces, or elements that are made available for the use of a restricted group of people (for example, residents of an apartment building, the occupants of an office building, or the guests of such residents or occupants).

Construction. Any erection of a new building or of an addition to an existing building or facility.

Cross slope. The slope of a pedestrian way that is perpendicular to the direction of travel. (See running slope)

Curb ramp. A short ramp cutting through a curb or built up to a curb from a lower level.

Egress, means of. A path of exit that meets all applicable code specifications of the regulatory building agency having jurisdiction over the building or facility.

Element. An architectural or mechanical component of a building, facility, space, or site; e.g., telephone, curb ramp, door, drinking fountain, seating, water closet.

Entrance. An access point to a building or space (entrances usually serve as egress points as well).

Exception. A special provision in this design manual which indicates an acceptable alternative, under specified circumstances, to a requirement stated directly above the exception.

Facility. A building, structure, or area, including the site on which such building structure or area is located, wherein specific services are provided or activities performed.

Handicapped person. Means any person who has a disability which substantially limits one or more major life activities, including but not limited to such functions as performing manual tasks, walking, seeing, hearing, speaking, breathing, learning and speaking.

Marked crossing. A crosswalk or otherwise identified path intended for pedestrian use in crossing a vehicular way.

Operable part. A part of equipment or appliances used to insert or withdraw objects, to activate or deactivate equipment, or to adjust the equipment (e.g., coin slot, push button, handle).

Power assisted door. A door with a mechanism that helps to open the door, or relieve the opening resistance of a door, upon the activation of a switch or a continued force applied to the door itself. If the switch or door is released, the door immediately begins to close. (See automatic door)

Primary entrance. An entrance used by occupants and the general public to enter or leave a building or facility. (Does not include service or maintenance entrances)

Public use areas. Interior and exterior rooms or spaces that are made available to both building visitors and occupants.

Ramp. A walking surface in an accessible space that has a slope in the direction of travel greater than 1:33.

Running slope. The slope of a pedestrian way that is parallel to the direction of travel. (See cross slope)

Signage. Verbal, symbolic, and pictorial information.

Tactile warning. A surface texture applied to building elements to warn visually impaired people of hazards in the path of travel.

Site. A parcel of land bounded by a property line or designated portion of a public right-of-way.

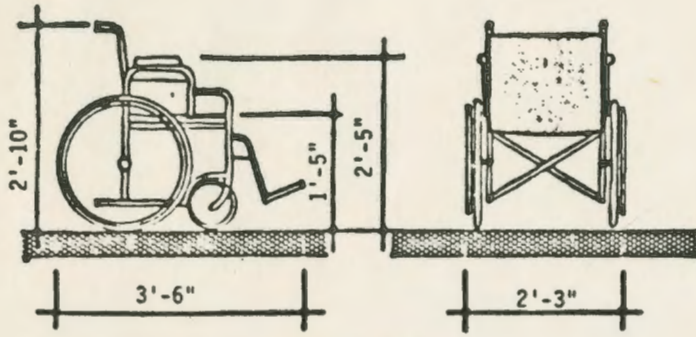
Walk. Exterior pathway with a prepared surface intended for pedestrian use, including general pedestrian areas such as plazas and courts.

Walking aid. A device used to assist a person who has difficulty walking (e.g., a cane, crutch or walker).

3. DIMENSIONS

- 3.1 General. Dimensions that are not marked "minimum" or "maximum" are absolute.
- 3.2 Dimensional Tolerances. All dimensions are subject to conventional building industry tolerances for field conditions.
- 3.3 Dimension Data. The illustrations on pages 5 and 6 relate to anthropometrics and spatial, reach, sensory, and manipulative consideration affecting the physically impaired.

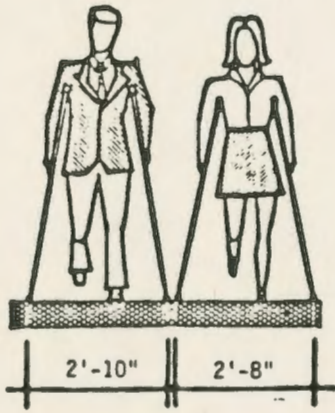
Dimension Data



Side View **Wheelchair** **Rear View**



Man with Walking Aid



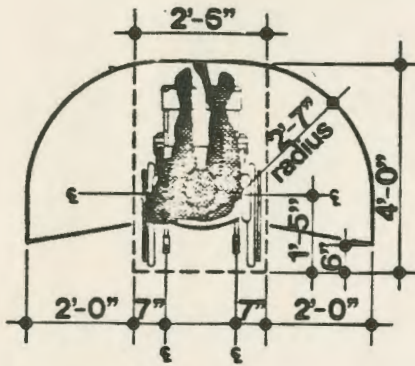
Man and Woman on Crutches



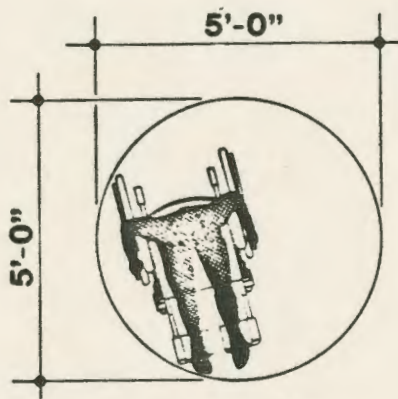
Visually-Impaired Man with Guide Dog



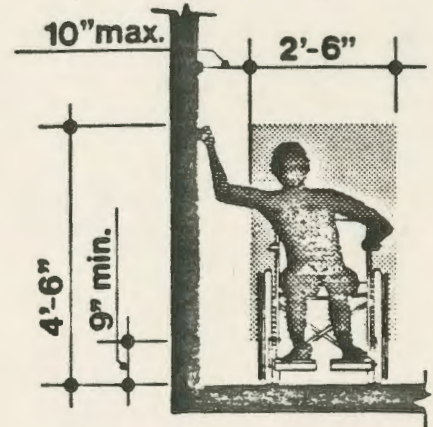
Visually-Impaired Man with Cane



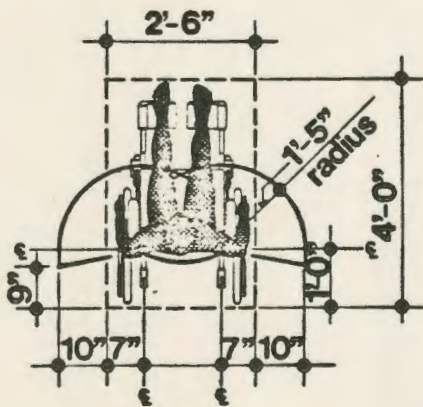
Reach Range - objects
4'-0" high max.



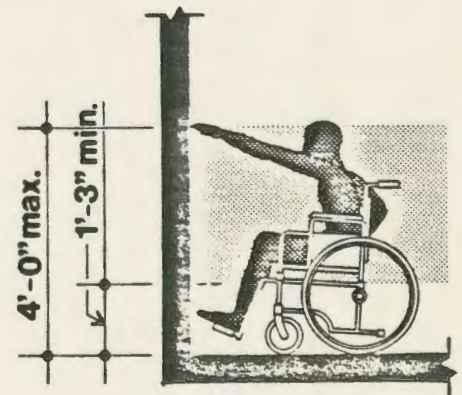
180°/360° Turning Diameter



Side Reach



Reach Range - objects
4'6" high max.



Forward Reach

4. SITE DEVELOPMENT

4.1 PASSENGER ARRIVAL/LOADING AREA

- a. Location/Designation. The passenger arrival/loading area shall be located in a safe place, on or off the street, and as close as possible to an accessible building entrance. It shall be clearly designated as a passenger arrival/loading area and zoned to prohibit parking. If the passenger arrival/loading area is located curbside, it shall be ramped to sidewalk level.

The passenger arrival/loading area shall have an access aisle 5'0" wide and 20'0" long adjacent and parallel to the vehicle pull-up space. (See Fig. 1)

Passenger arrival/loading areas at health care facilities shall be protected from the weather by canopies or roof overhangs.

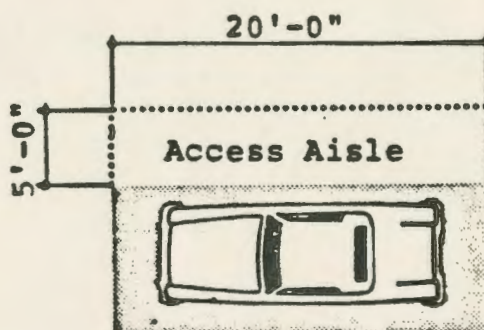


FIG. 1 ARRIVAL/LOADING ZONE

4.2 WALKS

- a. Accessible Walks. At least one accessible walk which is free of steps or abrupt changes of level and which complies with the criteria in Section 4.2 shall be provided from accessible parking spaces, passenger arrival/loading areas, public streets and sidewalks, and public transportation stops, if provided, into each accessible entrance of the building they serve. At least one accessible walk, complying with the criteria in Section 4.2, shall also be provided between buildings on a common site.
1. Width. The minimum clear width of an accessible walk shall be 5'0". (See Fig. 2)
 2. Slope. An accessible walk with a running slope greater than 1:33 is considered a ramp and shall comply with the criteria in Section 5.1, "Ramps." Cross slopes of an accessible walk shall not exceed 1:96.

3. Rest Zones. An accessible walk with a running slope between 1:50 and 1:33 shall have level rest zones spaced at no more than 200 feet apart. Rest zones shall measure a minimum of 5'0" long by 5'0" wide. Where an accessible walk is wider than 5'0", the rest zones shall span the full width of the walk. (See Fig. 3)
4. Changes in Level. Wherever accessible walks cross other walks, driveways or parking lots, the changes in level shall be blended to a common level by use of grading, curb cuts, or ramps. A change in level between 1/4" and 1/2" shall be beveled with a slope no greater than 1:2. A change in level exceeding 1/2" shall be treated as a ramp which shall comply with the criteria in Section 5.1, "RAMPS."
5. Surfaces. Surfaces shall be stable, firm and of sufficient texture or abrasion to resist slippage.
6. Gratings. Where gratings cannot be avoided, their clear openings shall not exceed 1/2" in one direction. If grating openings are elongated, the long dimension shall be perpendicular to the predominant direction of travel. (See Fig. 4)
7. Tactile Warning. REMOVED AND RESERVED.
8. Doors. Doors swinging onto or away from an accessible walk shall comply with the criteria in Section 5.3, "DOORS AND DOORWAYS."

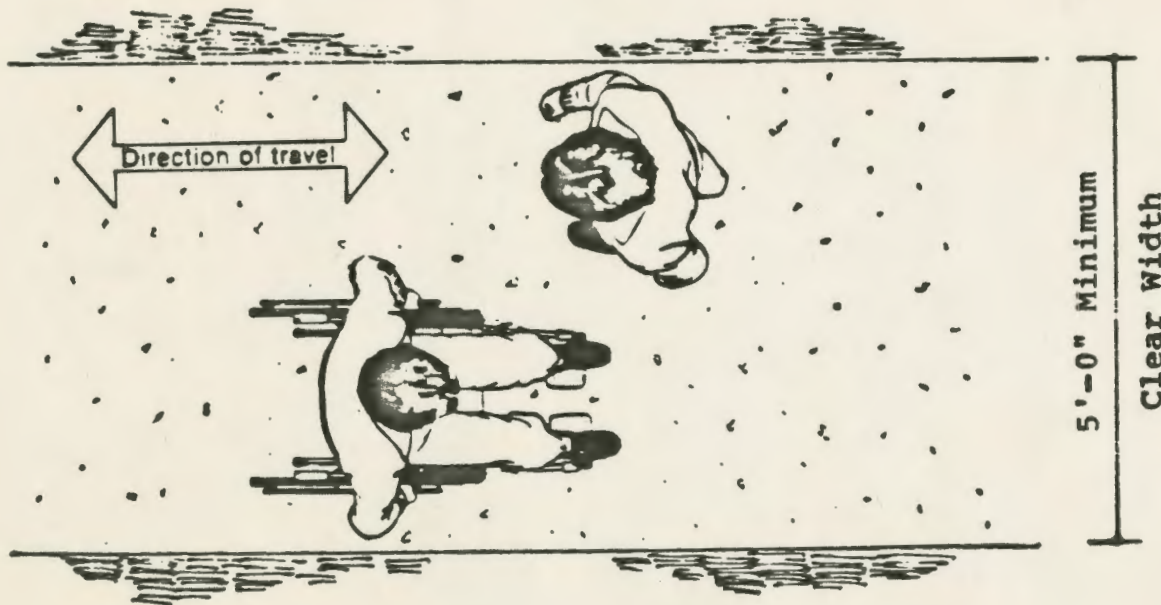


FIG. 2 ACCESSIBLE WALKS

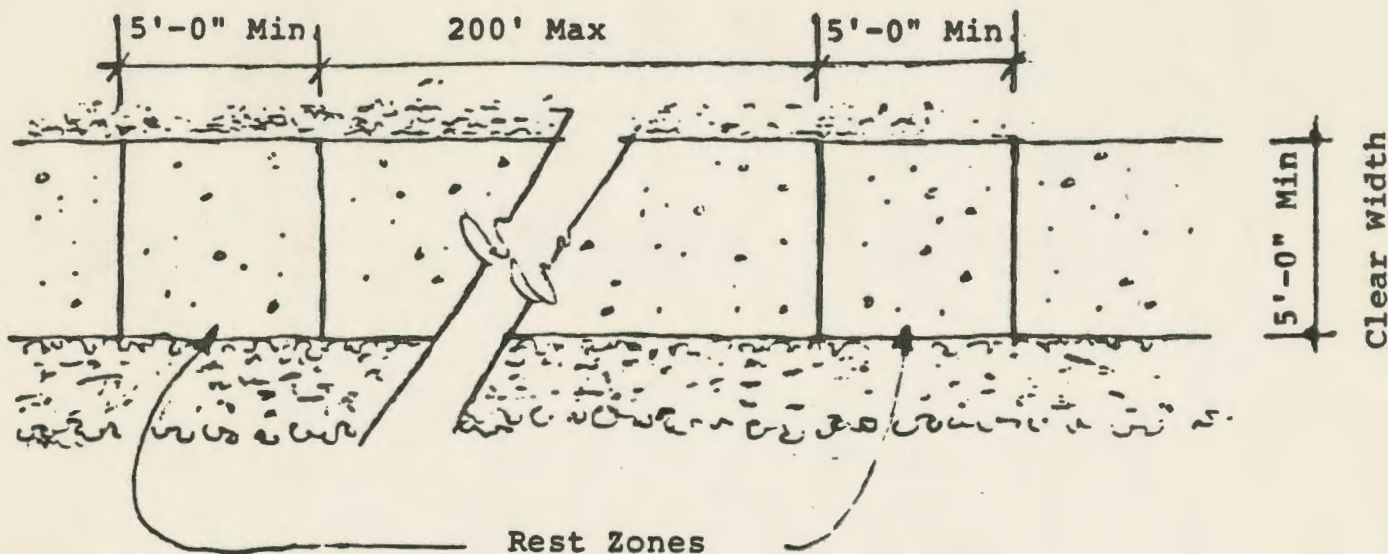
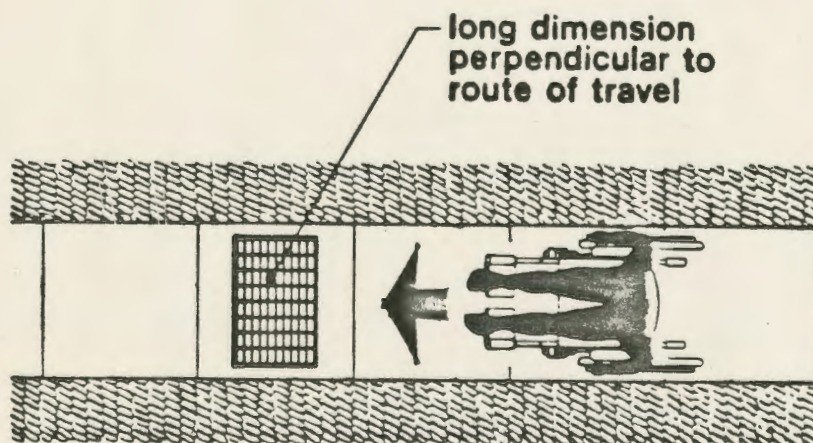


FIG. 3 REST ZONES FOR ACCESSIBLE WALKS WITH GRADIENT BETWEEN 1:50 AND 1:33



Layout of gratings which occur in walks.

FIG. 4 GRATINGS

4.3 PARKING

- a. Minimum Number. If parking is provided, a minimum of one accessible parking space or the minimum specified in the following table, whichever is greater, shall be provided.

<u>Total Parking Spaces</u>	<u>Required Minimum Number of Accessible Spaces</u>
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	*
1001 and over	**

* 2 percent of total

** 20 plus 1 for each 100
over 1000

EXCEPTIONS:

Outpatient facilities: 10% of the total
number of parking spaces provided.

Spinal Cord Injury facilities: 20% of the
total number of parking spaces provided.

- b. Parking Spaces. Accessible parking spaces shall be located as close as possible to accessible entrances and connected to these entrances by an accessible walk. Accessible parking spaces shall be at least 8'0" wide and shall be adjoined on both sides by an accessible aisle which shall have a minimum width of 5'0". (See Fig. 5) Access aisles shall not have a slope greater than 1:50 and shall have smooth transitions with adjacent walkways. (See Fig. 5) Access aisles shall be marked to prevent vehicle parking within their limits. The surface of access aisles shall be stable, firm and of sufficient texture or abrasion to resist slippage.
- c. Clear Width of Adjacent Walkways. The minimum clear width of walkways adjacent to accessible parking spaces shall not be reduced by vehicle overhang. Wheelstops, railings, bollards, or other devices shall be provided, as required, to insure clear width.
- d. Identification. Accessible parking spaces shall be designated as reserved for the handicapped through display of the "International Symbol of Accessibility." For larger lots, routing signage shall be provided at the entrance to the lot and other locations as required to direct handicapped drivers. (Consult Section 5.12(b), "SIGNAGE.")

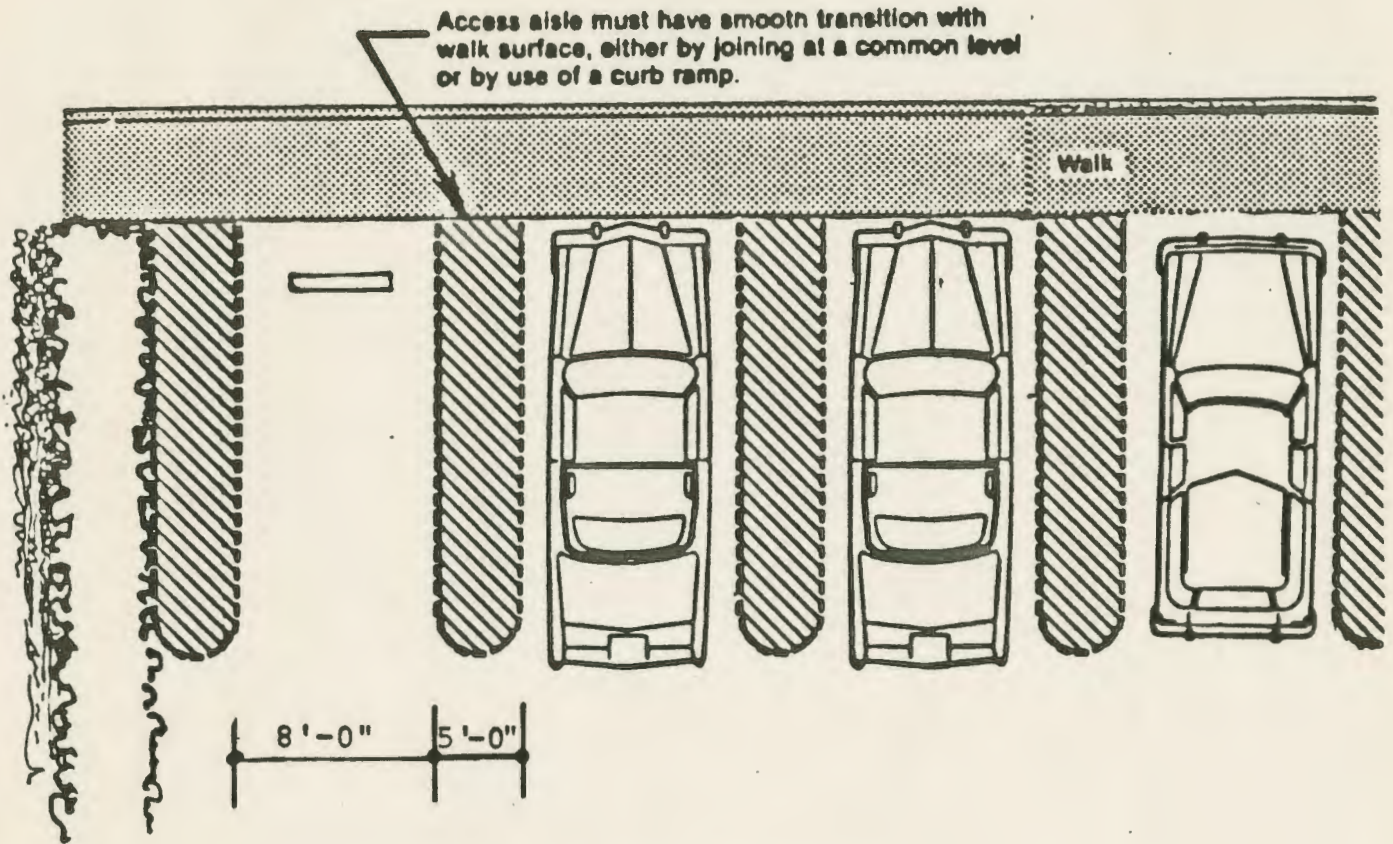


FIG. 5 PARKING SPACES

4.4 CURB RAMPS

a. Curb ramps shall comply with the criteria in Section 4.4.

1. Location. Curb ramps shall be provided wherever a walk crosses a curb. They shall be located or protected to prevent their obstruction by parked vehicles.

At marked street crossings, curb ramps shall be located totally within the markings. (See Fig. 6)

If diagonal curb ramps are provided, there shall be a minimum clear space of 4'0" at the bottom of the ramp.

2. Slope. Curb ramps shall have a maximum slope of 1:12.
3. Transition. Transitions from curb ramps to walks, gutters, or streets shall be flush and free of abrupt change.
4. Width. Curb ramps shall have a minimum width of 3'0", exclusive of flared sides.

5. Sides of Curb Ramps. Where pedestrian traffic is likely to walk across the curb ramps, the curb ramps shall have flared sides with a maximum slope of 1:10. (See Fig. 7(a)) Curb ramps with returned curbs may be used where pedestrians would not normally walk across the ramp. (See Fig. 7(b))
6. Built-up Curb Ramps. Built-up curb ramps shall be provided only when no other alternative is available. Built-up curb ramps shall be so located that they do not project into vehicular lanes and shall have flared sides with a maximum slope of 1:10.
7. Surface. The surface of curb ramps shall be stable, firm and of sufficient texture or abrasion to resist slippage.
8. Tactile Warning. REMOVED AND RESERVED.

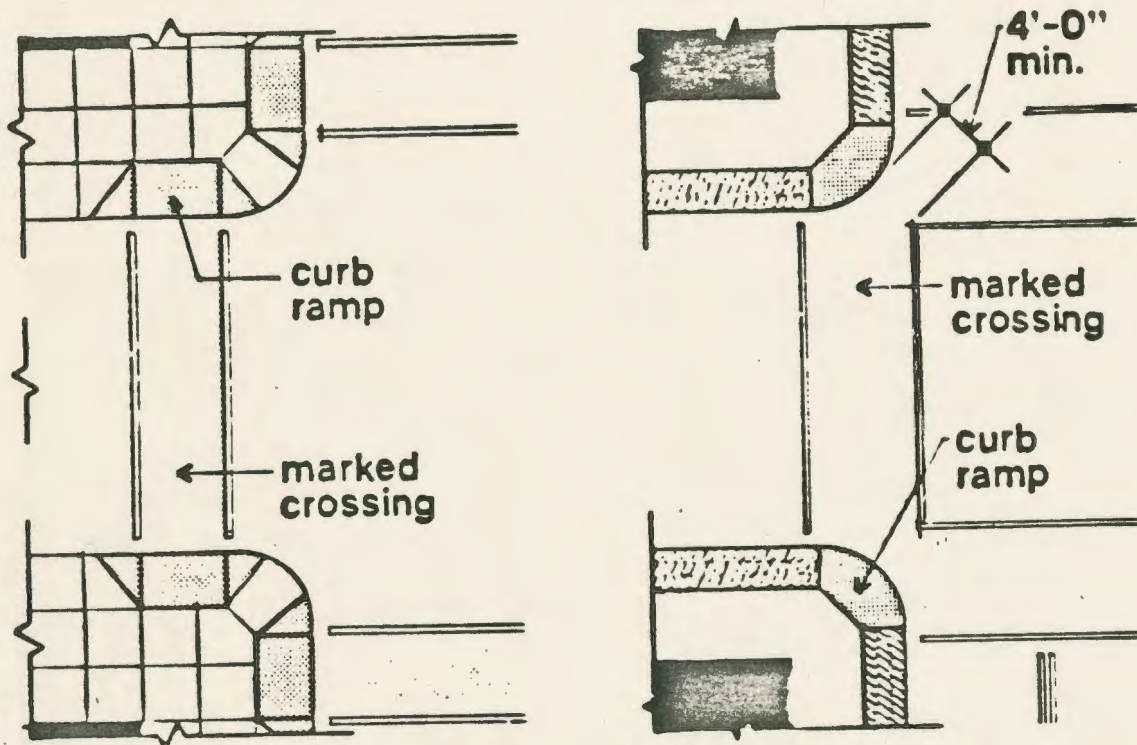


FIG. 6 LOCATION OF CURB RAMPS

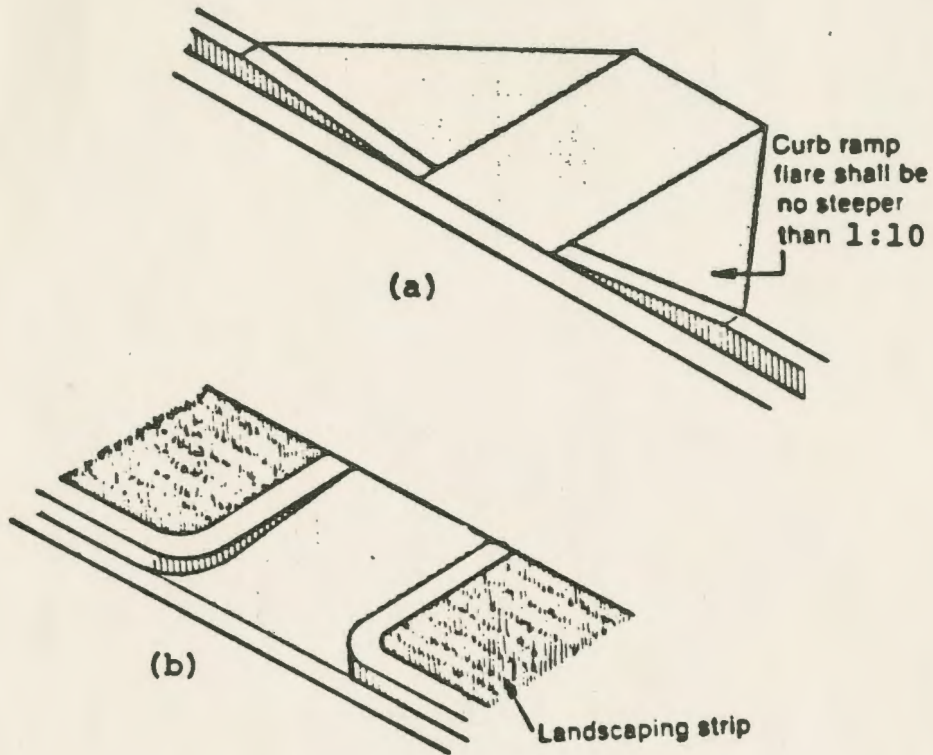


FIG. 7 SIDES OF CURB RAMP

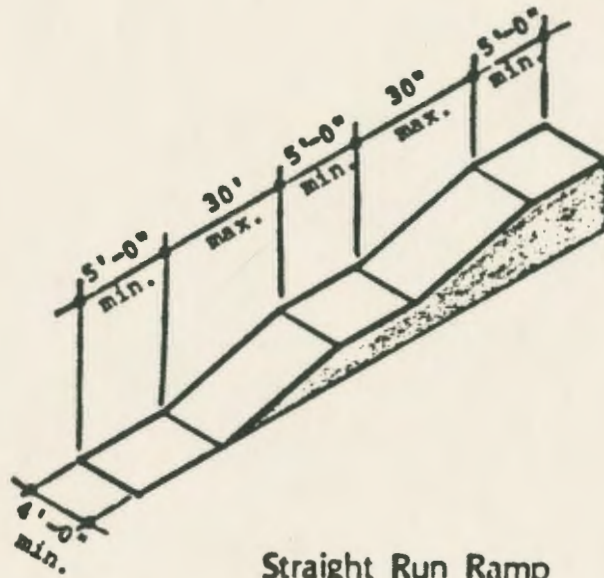
5. BUILDINGS

5.1 RAMPS

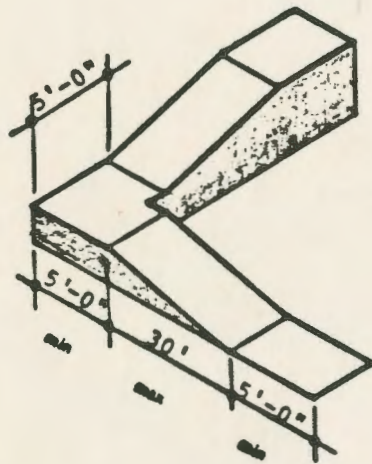
- a. Any part of an accessible route with a slope exceeding 1:33 shall be considered a ramp and shall comply with the criteria in Section 5.1.
 1. Slope. Ramps shall have a maximum slope of 1:12, preferably 1:20. Cross slopes of ramps shall be no greater than 1:96. Ramp segments shall be no greater than 30' in length. (See Fig. 8)
 2. Width. Ramps shall have a minimum width of 4'0".
 3. Landings. Ramps shall have level landings at the top and bottom of each run. Each such landing shall be at least as wide as the ramp run leading to it and shall measure no less than 5'0" in length. (See Fig. 8)

Straight run ramps shall have intermediate level landings at 30' intervals. Each such landing shall measure no less than 5'0" in length. (See Fig. 8)

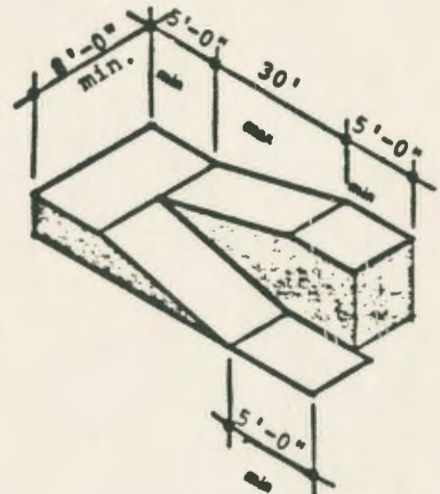
If ramps change direction at landings, the minimum size of the landings shall be 5'0" x 5'0". (See Fig. 8)



Straight Run Ramp



Ramp With 90 Degree Turn



Switch-Back Ramp

FIG. 8 RAMPS w/LANDINGS

4. Doors Opening Onto Landings. Doors swinging onto or away from ramp landings shall comply with the criteria in Section 5.3(a)(3)(i), "DOORS AND DOORWAYS."
5. Handrails. If a ramp run has a rise greater than 6" or a horizontal projection greater than 6'0", it shall have handrails on both sides.

The inside handrail on switchback or dogleg ramps shall always be continuous.

If handrails are not continuous, they shall extend a minimum of 1'0" beyond the beginning and end of the ramp segment and be parallel with the floor or ground surface. (See Fig. 9)

Handrails shall meet the additional criteria in Section 5.6, "HANDRAILS AND GRAB BARS."
6. Edge Protection. Ramps and landings with a drop-off shall have curbs, walls, railings, or projecting surfaces that prevent people from slipping off the ramp. Curbs shall be a minimum of 2" high.
7. Surfaces. Ramp and landing surfaces shall be stable, firm and of sufficient texture or abrasion to resist slippage.

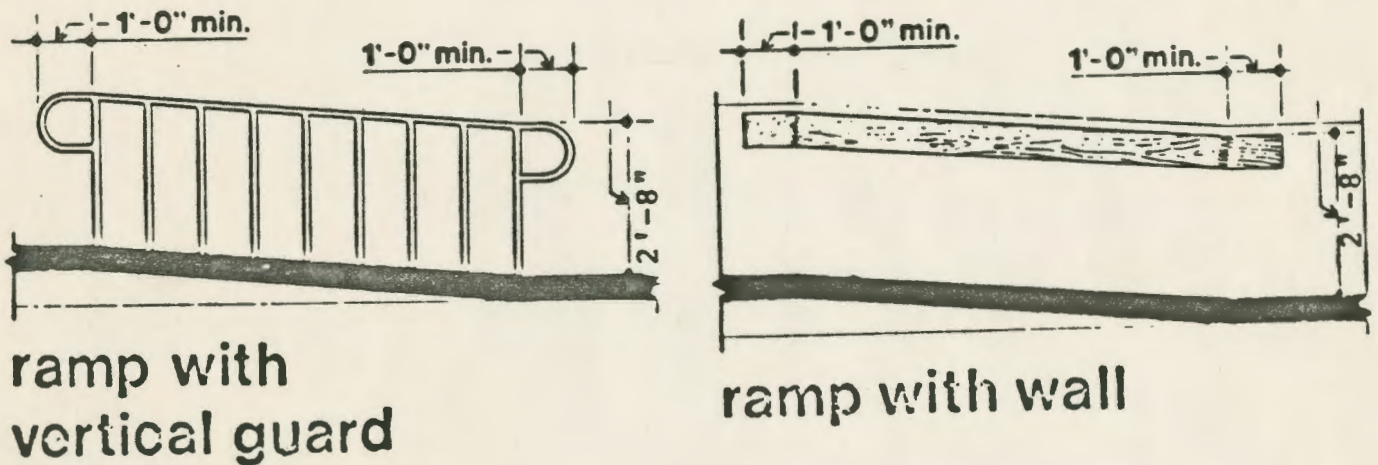


FIG. 9 RAMP HANDRAILS

5.2 ENTRANCES

- a. All main, outpatient and other highly used entrances, shall be accessible. Accessible entrances shall be connected by an accessible walk to accessible parking, passenger arrival/loading zones, public streets and sidewalks and public transportation stops, if available. Accessible entrances shall also be connected to all accessible elements (e.g. elevators, telephones or ramps) and spaces throughout the building by means of accessible paths of travel having a minimum clear width of 3'0".

Accessible entrances shall be identified through the display of the International Symbol of Accessibility and prominently placed routing signs, where necessary.

5.3 DOORS AND DOORWAYS

- a. All doors to accessible entrances, spaces, and elements and along accessible routes shall comply with the criteria in Section 5.3.

Revolving doors or turnstiles shall not be the only means of passage at an accessible entrance or along an accessible route. An accessible door shall be provided adjacent to the turnstile or revolving door.

1. Double-Leaf Doors. If doorways have double leaves, then at least one leaf shall be accessible and active, and comply with the criteria in Section 5.3.
2. Clear Width. Doorways shall have a minimum clear width of 2'10", with the door opened 90 degrees and measured from the face of the door to the face of the door stop. (See Fig. 10)

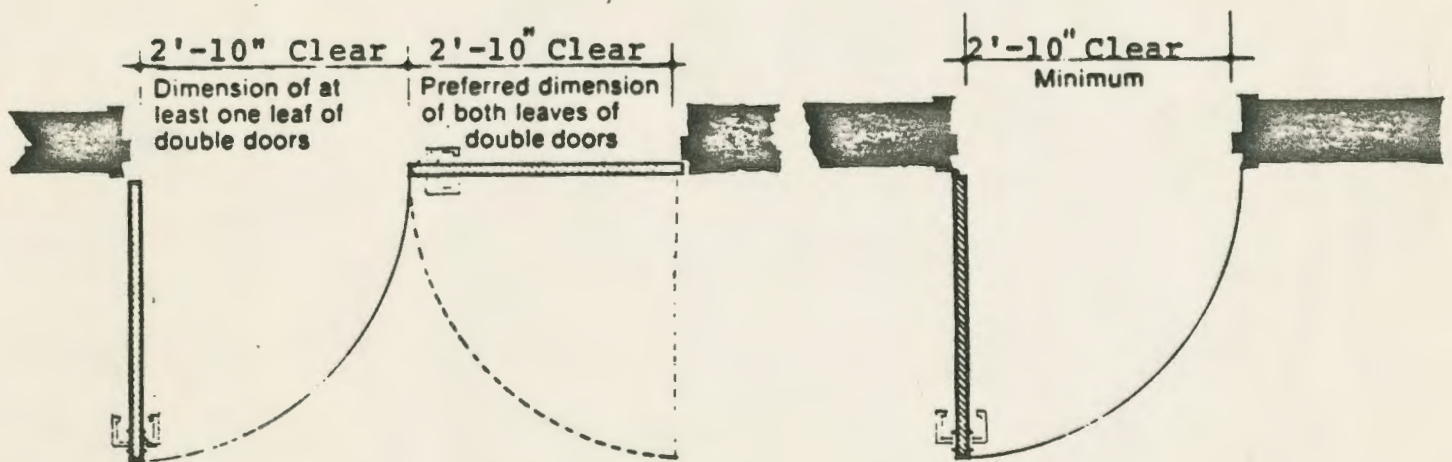


FIG. 10 ACCESSIBLE DOORS AND DOORWAYS

3. Maneuvering Clearances. Minimum maneuvering clearances for doors that are not automatic shall comply with this subsection:

i. Doors opening onto walkways and ramps shall comply as follows:

The exterior platform shall be clear and preferably level, or with a slope no greater than 1:96. It shall measure a minimum of 6'0" x 6'0". (See Fig. 11)

The exterior platform shall extend a minimum of 1'6" past the latch side and a minimum of 6" past the hinge side of single doors, and 6" past both sides of double-leaf doorways. (See Fig. 11)

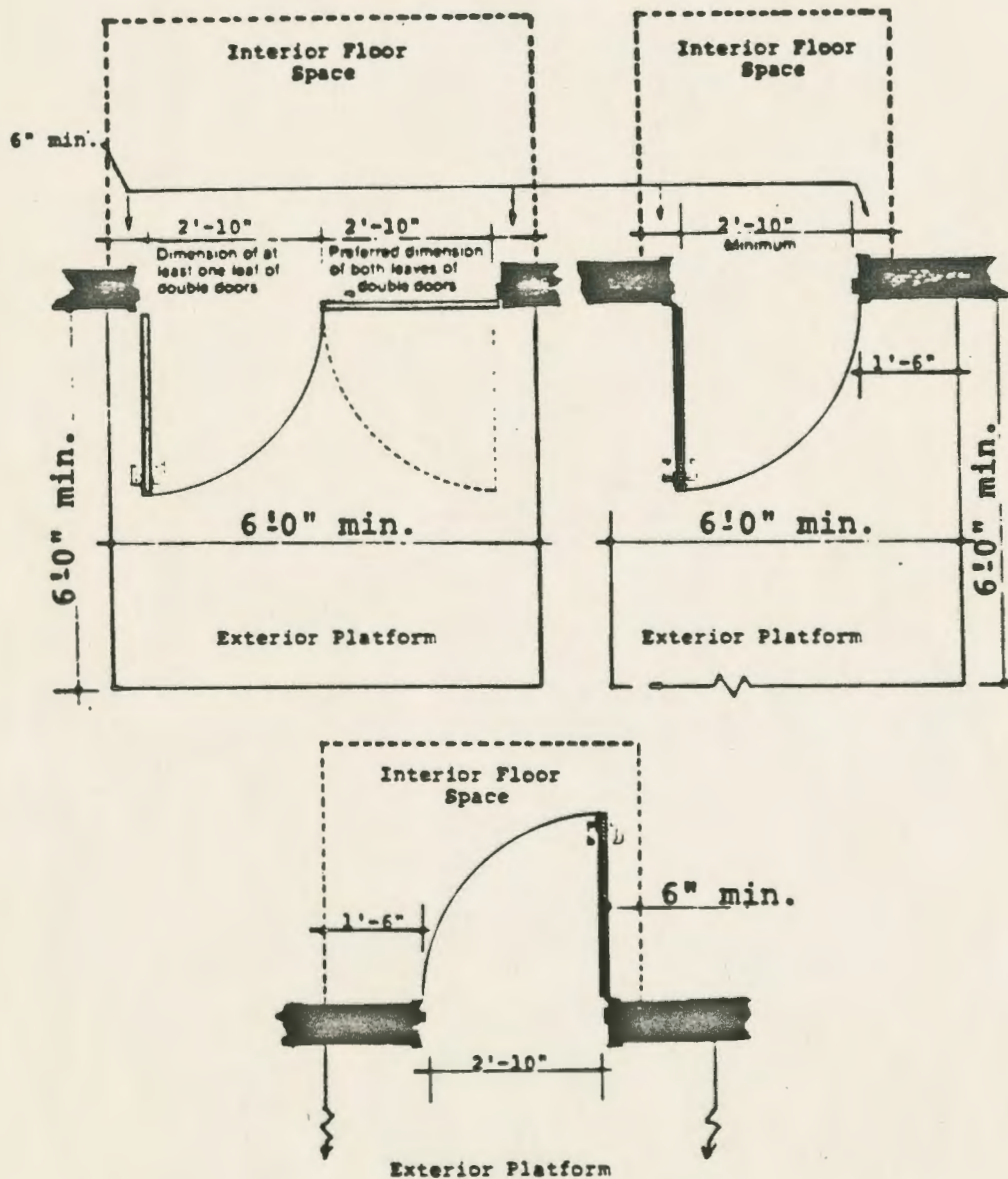


FIG. 11 MANEUVERING CLEARANCE FOR DOORS OPENING ONTO WALKWAYS AND RAMPS

The clear interior floor space shall be level, have a depth of a minimum of 4'0" and extend a minimum of 1'6" past the latch side and a minimum of 6" past the hinge side of the door. (See Fig.11)

- ii. For doors opening onto corridors and other pedestrian paths of travel, the platform or floor areas shall comply as follows:

They shall be clear and level; extend a minimum of 5'0" from the pull side of the door and a minimum of 4'0" from the push side of the door. (See Fig. 12)

They shall extend a minimum of 1'6" past the latch on the pull side of the door; a minimum of 6" past the latch on the push side of the door and a minimum of 6" past the hinge on both sides of the door. (See Fig. 12)

EXCEPTION: VA hospital patient bedroom doors, which are a minimum of 3'8" wide, shall be exempt from the 1'6" latch side requirement.

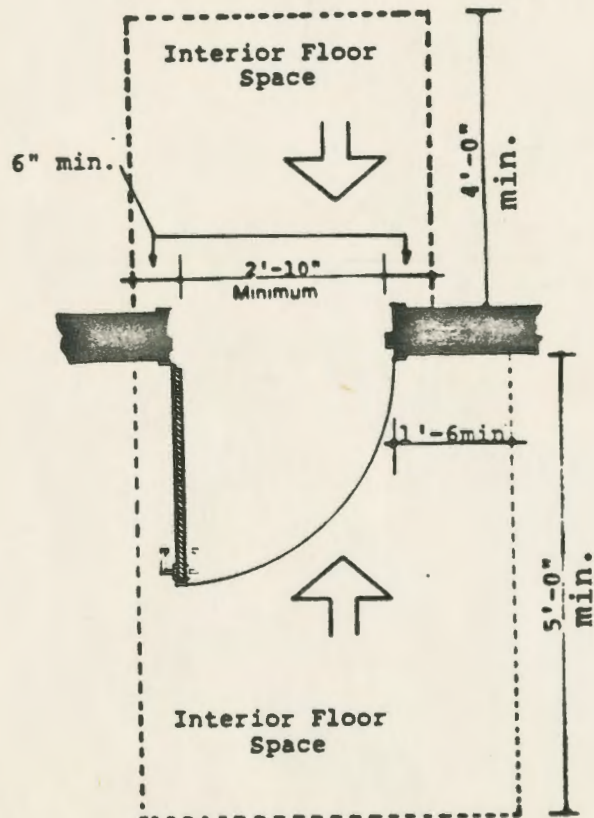


FIG. 12 DOORS OPENING ONTO CORRIDORS AND OTHER PEDESTRIAN PATHS OF TRAVEL

4. Manual Doors in Series. The minimum space between manual doors in a series (vestibule doors) in a straight line shall be 4'0" plus the width of any door swinging into the space. (See Fig. 13)

The minimum space between manual doors in series at right angles to each other shall be as shown in Fig. 13.

Both manual doors in series shall swing in the same direction.

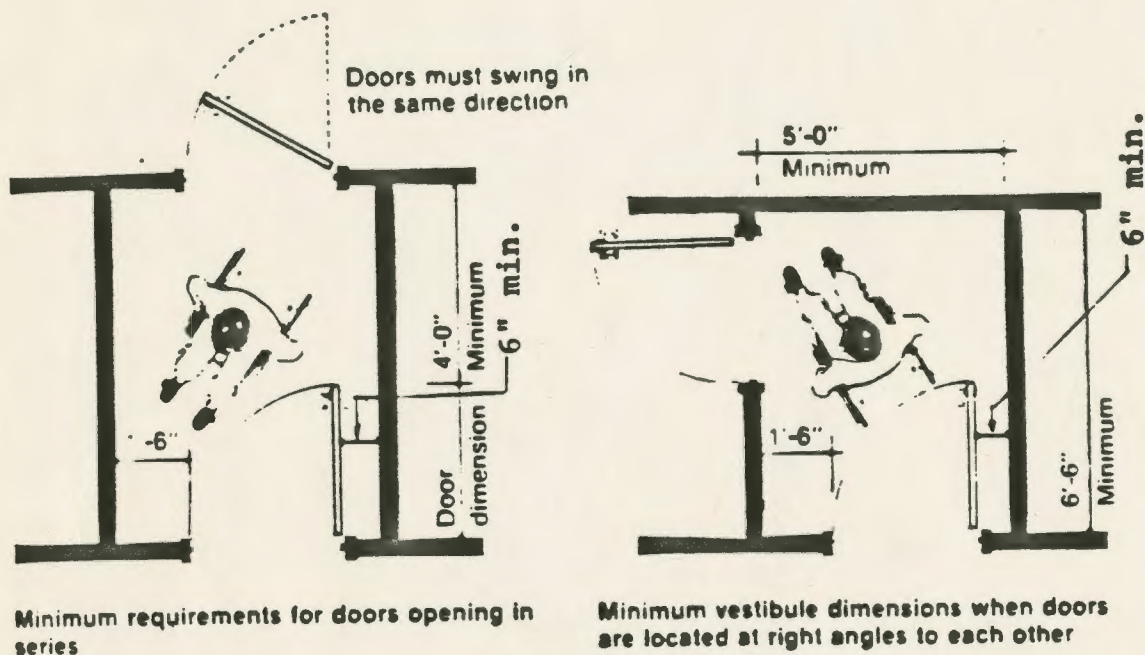


FIG. 13 MANUAL DOORS IN SERIES

5. Door-Opening Force. The maximum force for pushing or pulling open a door shall be as follows:
- i. Fire doors shall have a maximum opening force allowable by the appropriate administrative authority.
 - ii. Other doors:

Exterior hinged doors:	RESERVED
Interior hinged doors:	5 lbf.
Sliding or folding doors:	5 lbf.
6. Thresholds. Thresholds at accessible entrances and throughout the facility shall not project above the finished floor. If a change in level is caused by transition between different types of flooring materials, it shall not exceed 1/2" in height and must be beveled with a slope no greater than 1:2.

7. Door Hardware. Handles, pulls, latches, locks and other operating devices on doors to accessible spaces shall have a lever shape that is easy to grasp and operate with one hand and does not require tight grasping, pinching, or twisting of the wrist to operate.

When sliding doors are fully open, operating hardware shall be exposed and usable from both sides.

Doors to hazardous areas shall have hardware complying with Section 5.13, "TACTILE WARNING."

8. Bottom Rail. In order to prevent the foot rest on wheelchairs from catching on door stiles, the bottom surface of all doors, except automatic doors, shall be flush up to a minimum height of 1'0", measured from the finished floor, or shall be equipped with a kickplate or bottom rail of the same dimension. (See Fig. 14)

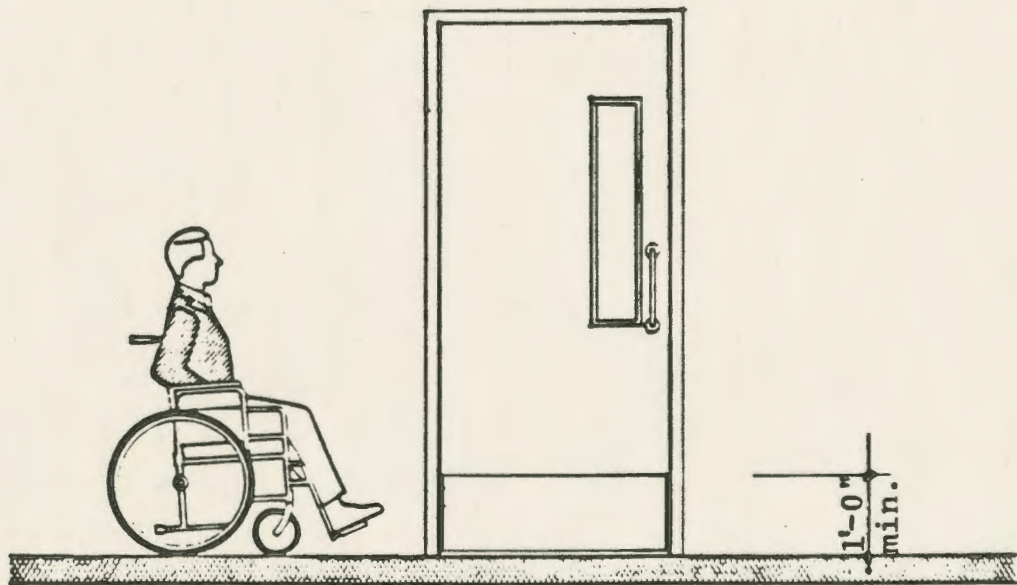


FIG. 14 BOTTOM RAIL/KICKPLATE

9. Automatic and Power Assisted Doors. If automatic pedestrian doors are provided, they shall not open to back check in less than 3 seconds and shall not require more than 15 lbs. to stop door movement. For additional information refer to the "American National Standard for Power-Operated Pedestrian Doors," ANSI A156.10 (latest edition).

If power-assisted doors are provided, they shall comply with Section 5.3(a)(5) for closing force.

5.4 FLOORS

Floor surfaces shall be firm, stable and nonslip.

- a. Changes in Level. Changes in level up to 1/4" may be vertical and without edge treatment. Changes in level between 1/4" and 1/2" shall be beveled with a slope no greater than 1:2. Changes in level greater than 1/2" shall be treated as a ramp that complies with the criteria in Section 5.1, "RAMPS."

EXCEPTION: All floors on which spinal cord injury services are provided shall be free of changes of level exceeding 1/2". Changes of level of 1/2" and less shall comply with Section 5.4(a).

5.5 STAIRS

- a. Interior and exterior stairs connecting all levels shall comply with the criteria in Section 5.5.

1. Width of Stairs. Stairs shall have a minimum width of 3'8".
2. Treads and Risers. All steps on a single flight of stairs shall have uniform tread widths and uniform riser heights.

The minimum width of treads shall be 11" measured from riser to riser. Treads shall have a slip-resistant surface.

The maximum height of risers shall be 7". Open risers are not permitted.

3. Nosings. Stair treads shall not have nosing configurations that are square or abrupt. Acceptable nosing designs are shown in Fig. 15.

The radius curvature at the leading edge of the tread shall be no greater than 1/2".

The maximum nosing projection shall be no greater than 1".

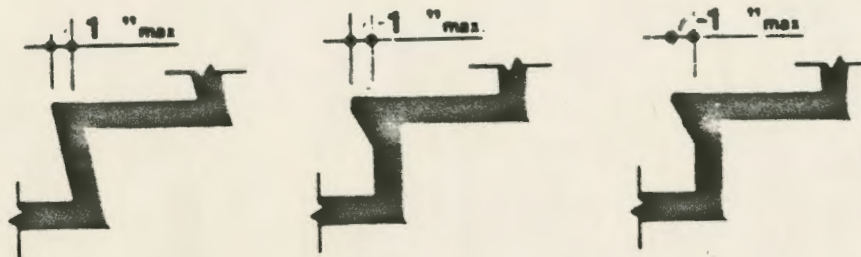


FIG. 15 ACCEPTABLE STAIR NOSINGS

4. Handrails. Handrails shall be provided at both sides of all stairs.

Handrails shall extend a minimum of 1'0" on one side beyond the top riser and 1'0" plus the width of one tread on one side beyond the bottom riser. At the top, the 1'0" extension shall be parallel with the floor. At the bottom, the handrail shall continue to slope for a distance of one tread width from the bottom riser with the 1'0" remainder being horizontal and parallel with the floor. (See Fig. 16)

Handrail extensions shall not intrude into other paths of travel and shall be turned out of the path of travel as required to accommodate the prescribed extension dimensions. (See Fig. 16)

Where the path of stair travel changes directions at landings, the inside handrail shall be continuous. (See Fig. 16)

Other handrail criteria shall comply with Section 5.6, "HANDRAILS AND GRAB BARS."

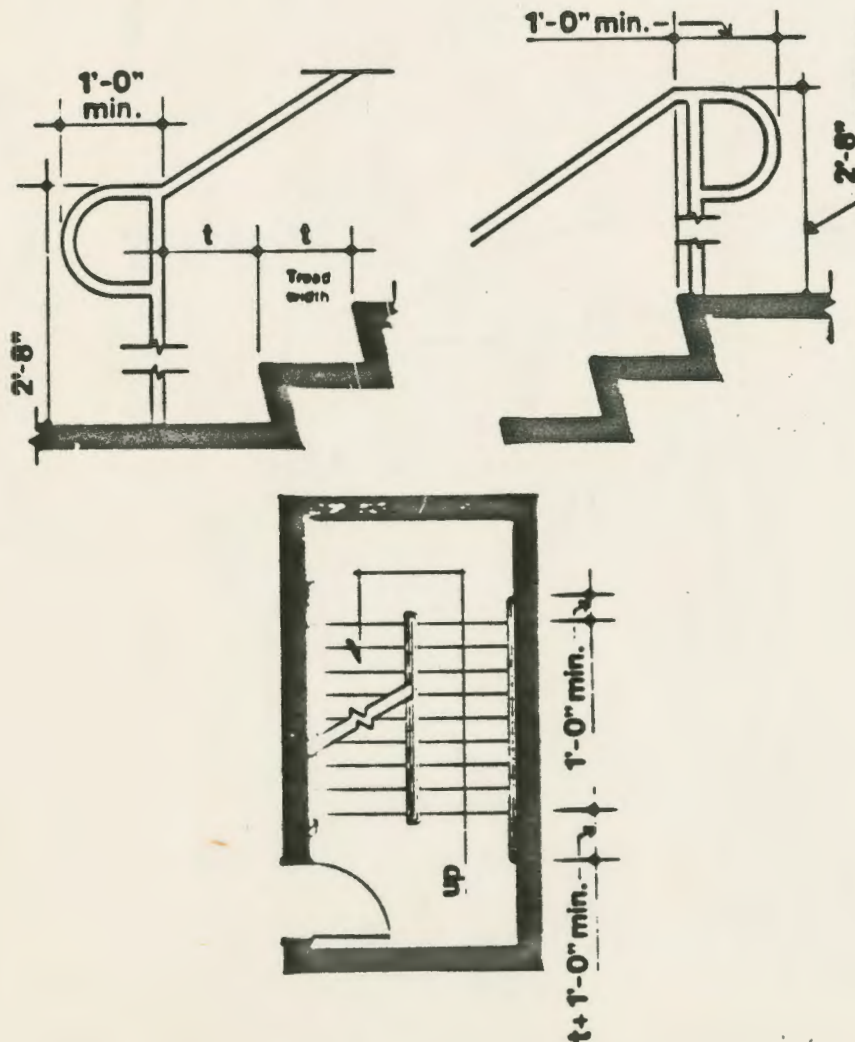


FIG. 16 STAIR HANDRAILS AND EXTENSIONS

5. Overhead Clearance. A protective barrier or warning signal shall be provided wherever an accessible path or space under a stairway has a headroom clearance less than 6'8". (See Fig. 17)
6. Tactile Warning. REMOVED AND RESERVED.

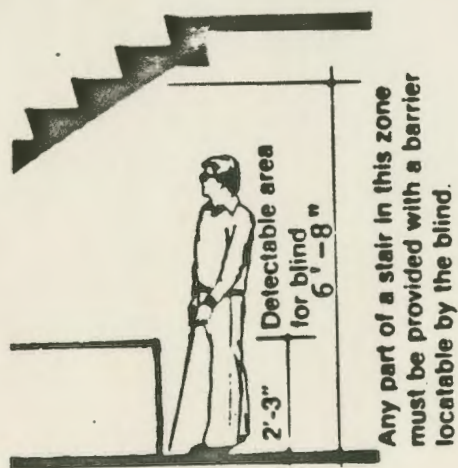


FIG. 17 OVERHEAD CLEARANCE

5.6 HANDRAILS AND GRAB BARS

- a. All handrails for stairs, ramps, and along accessible walks and other paths of travel and grab bars within toilet stalls shall comply with the criteria in Section 5.6.

1. Size and Spacing. The nominal diameter or horizontal cross section of the gripping surface of a handrail shall be 1-1/2". (See Fig. 17)

The diameter or width of the gripping surface of a grab bar shall be 1-1/2".

If the handrail or grab bar is mounted adjacent to a wall the space between the wall and the handrail or grab bar shall be 1-1/2". (See Fig. 18)

2. Structural Strength. The anchoring for components of handrails and grab bars shall be capable of supporting a 250 lb. force applied in any direction at any point along the handrail or grab bar.
3. Height. Stair and ramp handrails shall be mounted at a height of 2'8", measured from the finished floor, ramp surface, or tread nosing to the top of the handrail.

Corridor handrails shall be mounted at a height of 3'0", measured from the finished floor to the top of the handrail.

Grab bars within toilet stalls shall be mounted at a height of 2'9", measured from the finished floor to the centerline of the grab bars.

4. Eliminating Hazards. Handrail and grab bar sections shall have no sharp edges and shall permit the continuous sliding of hands.

Wall surfaces behind handrails and grab bars shall be smooth and free of sharp protrusions.

The edges of noncircular handrail sections shall have a minimum radius of $1/8"$. (See Fig. 18)

Ends of handrails shall be rounded and returned smoothly to wall, floor or post.

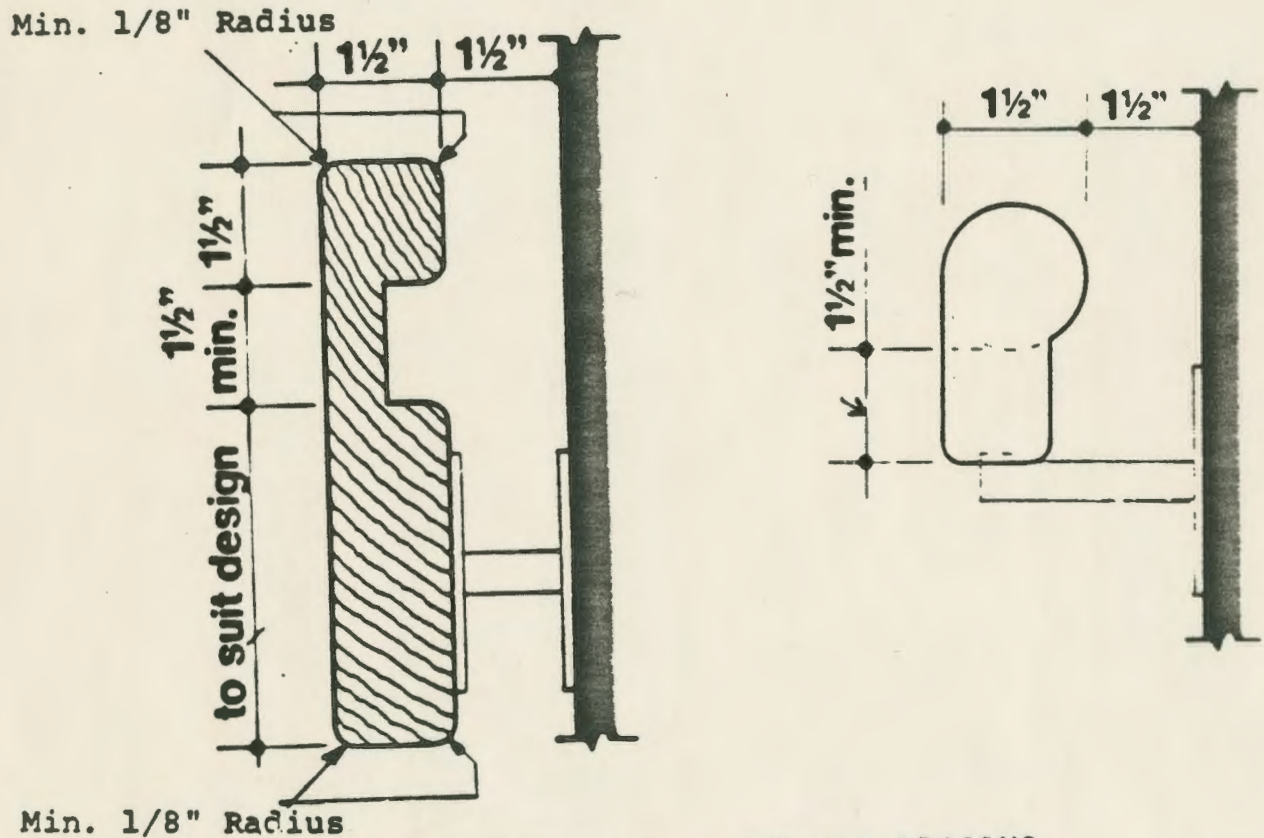


FIG. 18 HANDRAILS - SIZE AND SPACING

5.7 ELEVATORS

- a. All levels of a building or facility used by occupants or the general public shall be made accessible internally by means of an elevator, platform lift, or ramp, meeting the requirements of this design manual and applicable codes and safety regulations.

EXCEPTION: Freight and mortuary elevators are not required to comply with the minimum passenger elevator requirements for the handicapped, referenced in this section.

Elevators shall conform to the most current version of ANSI A.17.1, "Safety Codes for Elevators", and the minimum passenger elevator accessibility requirements specified within this section.

Platform Lifts. Platform lifts, erected to accommodate handicapped users, shall be capable of safely and comfortably transporting an occupied wheelchair, and be fully operable by the occupant or aide.

All operating controls shall be mounted within easy reach and no higher than 3'4".

A clear floor space of 5'0" x 5'0" shall be provided at both the entrance and exit points of the platform lift.

1. Operation and Leveling. The elevator shall be automatic and be provided with a self-leveling feature that will automatically bring the car to the floor landings within a tolerance of 1/2" under normal loading and unloading conditions. This self-leveling shall, within its zone, be entirely automatic and independent of the operating device and shall correct for over travel or under travel. The car shall also be maintained approximately level with the landing irrespective of load.
2. Door Operation. Power-operated horizontally sliding car and hoistway doors opened and closed by automatic means shall be provided.

For detailed requirements, see the most current edition of ANSI A17.1.

3. Door Size. Minimum clear width for elevator doors shall be 4'0".
4. Door Protective and Reopening Device. Doors closed by automatic means shall be provided with a door reopening device which will function to stop and reopen a car door and adjacent hoistway door in case the car door is obstructed while closing. This reopening device shall also be capable of sensing an object or person in the path of a closing door without requiring contact for activation at a nominal 6" and 2'8" above the floor.

Door opening devices shall remain effective for a period of not less than 20 seconds.

5. Door Delay (Passenger Service Time).

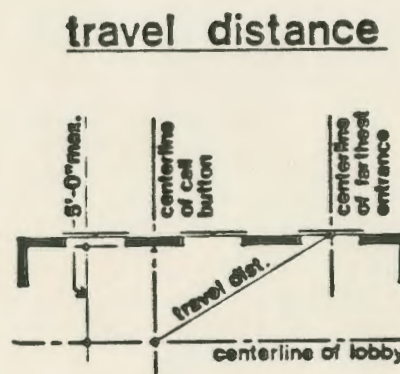
Hall Call. The minimum acceptable time from notification that a car is answering a call (Lantern and Audible Signal) until the doors of that car start to close shall be as indicated in Fig. 19(a).

The distance shall be established from a point in the center of the corridor or lobby (maximum 5'0") directly opposite the farthest hall button to the centerline of the hoistway entrance. (See Fig. 19(b))

Door Timing. The minimum acceptable time for doors to remain fully open shall be 3 seconds.

travel distance	time
ft	sec
0-7.5	5
10	7
15	10
20	13

(a)



(b)

FIG. 19 NOTIFICATION TIME/TRAVEL DISTANCE

- Car Size. The minimum clear distance between walls or between wall and door, excluding return panels, shall be not less than 6'8" x 4'6" (2,500 lb. car). The minimum distance from wall to return panel shall be not less than 4'3".
- Car Controls. Controls shall be readily accessible from a wheelchair upon entering an elevator.

Symbols as indicated in Fig. 20 shall be used to assist in readily identifying essential controls.

An auxiliary control panel, equipped with emergency controls, shall be mounted either in the front return panel, opposite the main car operating panel, or in the car sidewall adjacent to the entrance strike jamb. The auxiliary control panel shall be centered at 3'0" above car floor. (See Fig. 20)

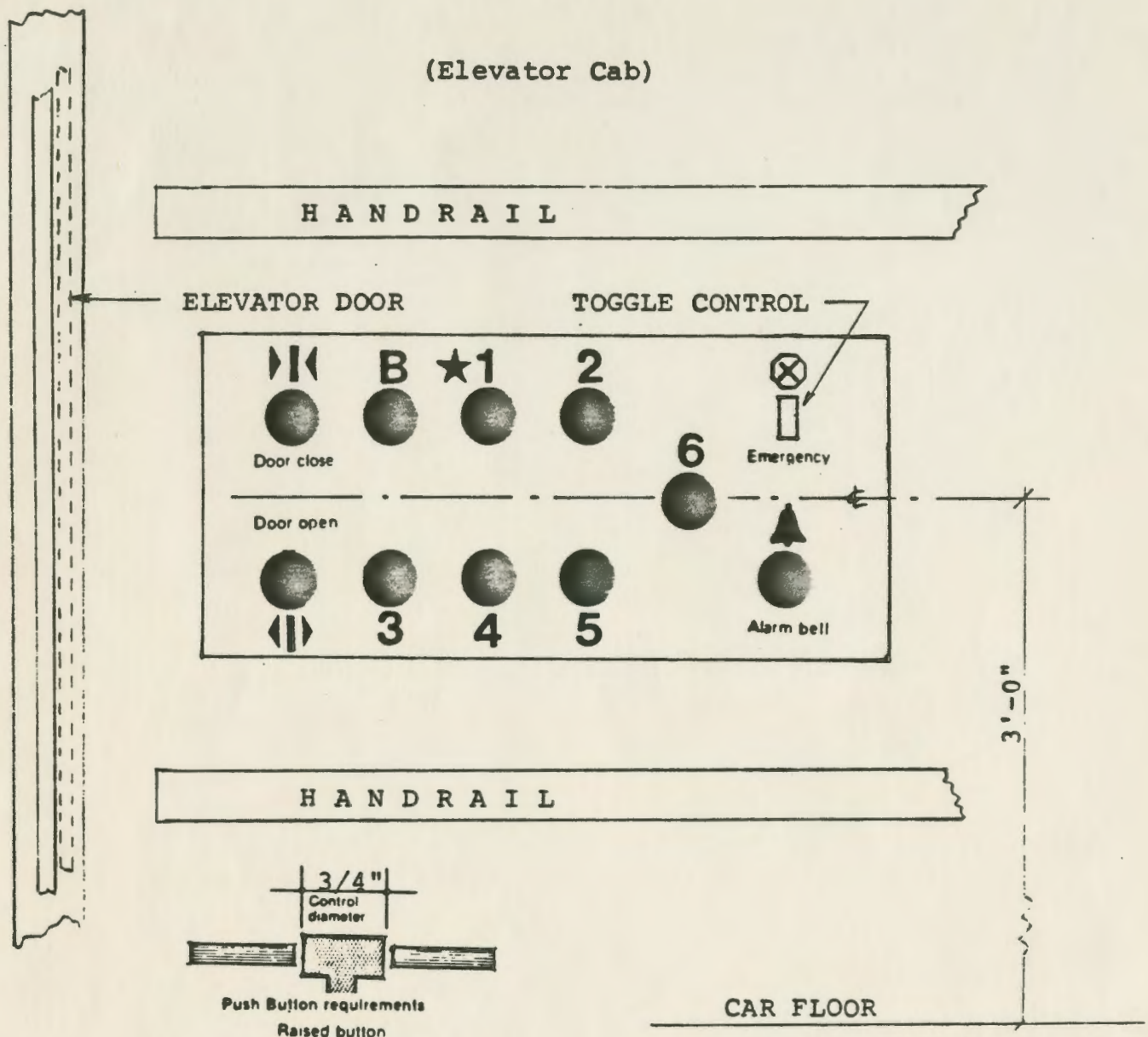


FIG. 20 AUXILIARY ELEVATOR CONTROL PANEL

Floor registration buttons, exclusive of border, shall be a minimum of 3/4" in size and raised.

Visual indication shall be provided to show each call registered and extinguished when call is answered.

Call and operating buttons shall be raised and illuminated.

Markings shall be adjacent to the controls on a contrasting color background to the left of the controls. Letters or numbers shall be a minimum of 5/8" and raised .030". Applied plates permanently attached shall be acceptable.

8. Car Position Indicators. In elevator cars, a visual car position indicator shall be provided above the car control panel or over the door to show the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevators, the corresponding numeral shall illuminate and an audible signal shall sound. Numerals shall be a minimum of 2" high. The audible signal shall be no less than 20 decibels with a frequency no higher than 1500 Hz. An automatic verbal announcement of the floor number at which a car stops or which a car passes may be substituted for the audible signal.
9. Intercommunicating System. A means to two-way communication shall be provided between the elevator and a point outside the hoistway. This shall consist of an emergency intercom station activated by the alarm button. The operating mechanism shall be mounted 3'6" maximum above finished car floor.
10. Floor Covering. Floor covering should have a nonslip hard surface which permits easy movement of wheelchairs.

If carpeting is used, it shall comply with Section 5.16, "CARPET."
11. Handrails. Double handrails shall be installed on the rear and two sidewalls of the car with the tops of the handrails measuring 2'6" and 3'6", respectively, above the finished car floor. 1-1/2" space shall be provided between handrails and car walls. Handrail surfaces shall be smooth.
12. Minimum Illumination. The minimum illumination shall be in accordance with the latest edition of ANSI A17.1.
13. Hall Buttons. The centerline of the hall call button shall be a nominal 3'4" above the floor. The button designating the "UP" direction shall be on top.

Direction buttons, exclusive of border, shall be a minimum of 3/4" in size and raised.

Visual indication shall be provided to show each call registered and extinguished when the call is answered.

Hall buttons shall not be placed above wall-mounted ash receptacles in elevator lobbies.
14. Hall Lantern. A visual and audible signal shall be provided at each hoistway entrance indicating to the prospective passenger, the car answering the call and its direction of travel.

The visual signal for each direction shall be a minimum of 2-1/2" in size and visible from the proximity of the hall call button.

The audible signal shall sound once (1) for the "UP" direction and twice (2) for the "DOWN" direction.

The centerline of the fixture shall be located at a minimum height of 6'0" above the finished floor.

15. Door Jamb Marking. The floor designation shall be provided at each hoistway entrance on both sides of the jamb visible from within the car and the elevator lobby at a height of 5'0" above the floor. Designations shall be on a contrasting color background, 2" high, and raised .030".

Applied plates permanently attached shall be acceptable.

16. Emergency Use.

Elevators cannot be considered as exits in an emergency.

Consideration should be given to emergency evacuation. A definite plan is required to assist the physically handicapped, particularly those in wheelchairs.

At least one elevator shall be made available for use by authorized persons to assist the handicapped.

5.8 TOILET ROOMS

- a. All public and common use toilet rooms shall be accessible. Number and location of accessible patient and staff toilet rooms shall comply with VA Handbook H-08-9, "Planning Criteria for VA Facilities." Accessible toilet facilities shall be located along an accessible path of travel and have accessible fixtures, accessories, doors and adequate maneuvering clearances which comply with the criteria in Section 5.8.

1. Identification. Public and staff accessible toilet rooms shall be identified as such by posting the "International Symbol of Accessibility" on or adjacent to the entry door. (Consult Section 5.12, "SIGNAGE")

2. Maneuvering Clearances. Where privacy screens or walls are provided, they shall conform to VA Architectural Standard Detail No. 12A. (See Appendix A-3)

Entrance doorways to toilet rooms shall have a minimum clear width of 2'10". Doors shall not swing into the clear floor space required for any fixture.

Where vestibule doors are provided, the minimum clearances shall comply with the criteria specified in Section 5.3, "DOORS AND DOORWAYS."

The interior of the toilet room shall allow a minimum unobstructed floor space of 5'0" in diameter, measured 1'0" above the floor, for turning a wheelchair without conflict with overhanging fixtures or plumbing.

When the approach to the stall is from the latch side of the stall door, clearance between the latch side of the stall door and obstruction shall be a minimum of 3'6". (See Fig. 21)

5. Toilet Stall Type "B". A Type "B" stall shall measure a minimum of 3'6" wide by 6'6" deep, clear internal dimensions. A side door entry may be used if a 6'6" clear stall depth is maintained. Refer to Figure 21 and VA Architectural Standard Detail No. 12 for dimensions and arrangement of elements within a Type "B" toilet stall. (See Appendix A-2)
6. Water Closets. Water closets shall be mounted at a height of 1'4", measured from finished floor to top of rim.

EXCEPTION: Water closets for Spinal Cord Injury patients shall be mounted at a height of 1'3", measured from finished floor to top of rim.

In Type "A" stalls, the water closets shall be positioned with the centerline of the fixture 1'6" from the adjacent wall or partition, and diagonally opposite the stall door.

In Type "B" stalls, the water closets shall be positioned at the centerline of the back wall.

Flush controls shall be hand operated and mounted no higher than 3'4" above the floor.

7. Urinals. When urinals are provided in toilet rooms, then at least one urinal shall comply with the criteria specified within this section.

Accessible wall-mounted urinals shall have an elongated lip, with the basin opening 1'3" above the finished floor.

Flush controls shall be hand operated and mounted no higher than 3'4" above the floor.

An unobstructed floor space 2'6" x 4'0" shall be provided in front of the urinal to allow forward approach. If urinal shields are used, this same unobstructed floor space shall be provided.

8. Lavatories. When lavatories are provided in an accessible toilet room, then at least one lavatory shall comply with VA Architectural Standard Detail No. 15 or 53D. (See Appendices A-4 and A-7)

EXCEPTION: In SCI Patient rooms, lavatories shall comply with VA Architectural Standard Detail 53. (See Appendix A-6)

Hot water and drain pipes exposed under lavatories shall be insulated or otherwise covered. There shall be no sharp or abrasive surfaces under lavatories.

Lavatories shall be mounted with a clearance at least 2'5" from the finished floor to the bottom of the apron. The height from the finished floor to the top of the lavatory rim shall not exceed 2'10".

Faucet handles shall be either single lever or wrist blade type enabling one hand operation without need for tight pinching or grasping.

9. Toilet Room Accessories. Where towel racks, disposal units, dispensers, vending machines, and appliances are provided, at least one of each type shall be mounted with operating mechanisms or controls located no higher than 3'4" above the finished floor.

All controls shall comply with the criteria in Section 5.11, "CONTROLS."

Where mirrors are provided, at least one shall have the bottom edge of its viewing surface mounted no higher than 3'4" above the finished floor.

Where shelves are provided, at least one shelf shall be mounted no higher than 3'4" above the finished floor.

5.9 WATER FOUNTAINS

If water fountains are provided, they shall comply with VA Architectural Standard Detail No. 4C. (See Appendix A-1)

5.10 PUBLIC TELEPHONES

- a. If public telephones are provided, at least one telephone at each location shall be a forward-approach telephone and shall comply with the criteria in Section 5.10.
 1. Controls. Accessible telephones shall have pushbutton controls where service for such equipment is available.
 2. Height. The highest operable part of accessible telephones shall be a maximum of 4'0" above the finished floor. (See Fig. 22)
 3. Clearances. Accessible telephones shall have an unobstructed floor approach of at least 2'6" x 4'0". (See Fig. 22)

Telephones, telephone enclosures, telephone booths and seats shall not reduce the minimum clear width of accessible paths of travel. (See also Section 5.15, "HAZARDS")

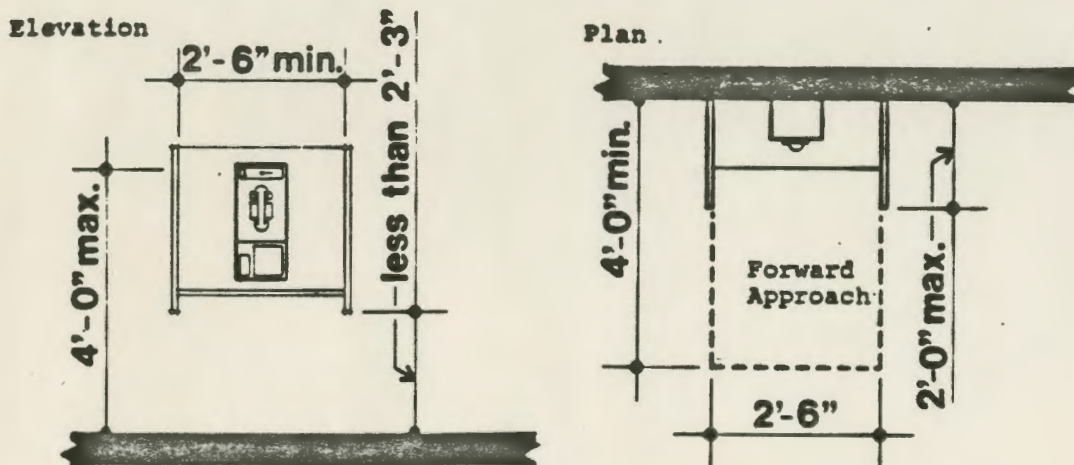


FIG. 22 MOUNTING HEIGHTS AND CLEARANCES
FOR TELEPHONES

4. Equipment for Hearing Impaired People. Accessible telephones shall be equipped with a receiver that generates a magnetic field in the area of the receiver cap. If public telephones are provided, then a reasonable number, but always at least one accessible telephone, in a building or facility shall be equipped with a volume control.

5.11 CONTROLS

- a. All controls intended for public or occupant use, and located within accessible spaces or along accessible paths of travel shall comply with the criteria specified in Section 5.11. The controls themselves shall be placed in unobstructed locations accessible to the handicapped.

As defined here, controls include electrical switches and receptacles, utility outlets, operating devices for plumbing fixtures, lighting, temperature (exclusive of thermostats,), ventilation, windows, draperies, blinds, paper towel dispensers, soap dispensers, and other control devices of frequent or essential use.

1. Operation. Controls shall be operable without the need for tight grasping, pinching, or twisting of the wrist to operate.
2. Height. Controls shall be mounted no higher than 3'4" above the finished floor unless specified otherwise in this standard.

Except where the use of special equipment dictates otherwise, electrical and communications system receptacles on walls shall be mounted no less than 1'3" above the finished floor.

5.12 SIGNAGE

- a. Signage at entrances to accessible rooms and public spaces, specifically permanent room numbers and permanent space titles, shall comply with VA Manual M-00-2, Signage System Standards Manual, as prescribed by VA Construction Standard 15-2. (See Appendix A-9)
- b. Symbol of Accessibility. If accessible facilities are identified, then the International Symbol of Accessibility shall be used. The symbol shall be delineated according to VA Architectural Standard Detail No. 45A (See Appendix A-5). The mounting height of the symbol shall comply with the VA Manual M-00-2, Signage System Standards Manual, as prescribed by VA Construction Standard 15-2. (See Appendix A-10)

5.13 TACTILE WARNING

- a. Tactile Warning on Doors. Doors leading into hazardous areas that might prove dangerous to a blind person shall be made quickly identifiable to the touch by knurling, roughening or applying an abrasive coating to the surface of the door handle, knob, pull or other operating hardware. (See Fig. 23)

Tactile warning indicators shall not be provided for emergency exit doors.

- b. Tactile Warning on Walking Surfaces. REMOVED AND RESERVED.

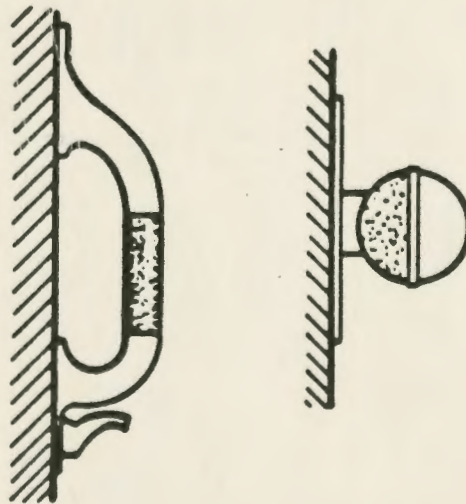


FIG. 23 TACTILE WARNING IDENTIFICATION

5.14 FIRE ALARMS

In facilities where alarm systems are required, both an audible and a visual signal shall be provided. These alarm signals shall comply with the criteria in Section 5.14.

- a. Audible Alarms. Audible alarms shall produce a sound pressure level that exceeds ambient room or space noise by 15 decibels or any maximum noise level of 30-second duration by 5 decibels, whichever is greater. Sound levels for alarm signals shall not exceed 120 decibels.
- b. Visual Alarms. A visual alarm device shall be provided adjacent to each exit door and near each audible alarm and shall flash in conjunction with the audible alarm. The frequency of visual alarms shall be less than 5 Hz. Both alarm signals shall operate from the same power source.
- c. Pull Stations. Pull stations shall be installed no higher than 4'0", measured from the finished floor to the centerline of the device.

5.15 HAZARDS

- a. Overhead Clearance. A minimum vertical clearance of 6'8" shall be provided above all accessible paths of travel. (See Fig. 24)
- b. Clear Width. Side protrusions under no circumstances shall reduce the minimum clear width of accessible paths of travel.

Side protrusions are restricted to 4", unless the protrusion has its leading edge at or below 2'3" above the finished floor/ground or is protected by wing walls or located within an alcove. (See Fig. 24)

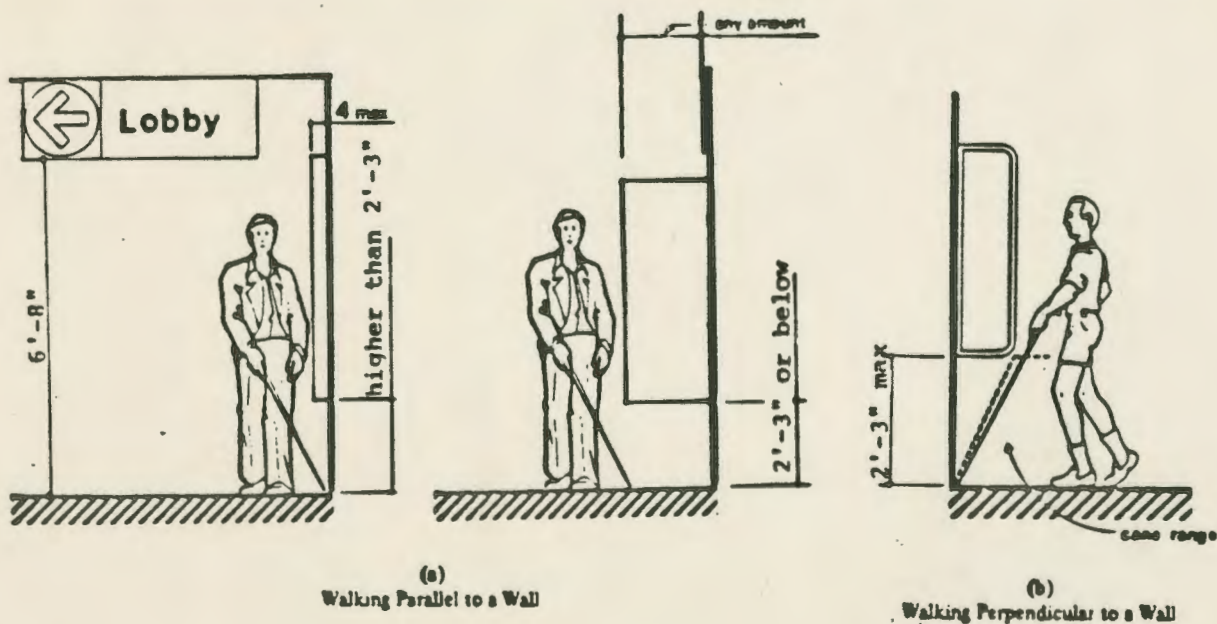


FIG. 24 HAZARDS

5.16 CARPET

If carpet or carpet tile is used on an accessible ground or floor surface, then it shall be securely attached, have a firm cushion, pad, or backing or no cushion or pad; and have a level loop, textured loop, level cut pile or level cut/uncut pile texture. The maximum pile or combined pile and cushion thickness shall not exceed 1/2". Exposed edges of carpet shall be fastened to floor surfaces and have trim along the entire length of the exposed edge. Carpet edge trim shall comply with Section 5.4, "FLOORS."

5.17 CAFETERIA AND RETAIL STORE FACILITIES

- a. Access Aisles. Access aisles between tables, food serving lines, and display aisles shall have a minimum width of 3'0". Tray lines shall be continuous through serving and dispensing areas to cashier's station, as shown on VA "List of Dietetic Equipment Symbols", Detail 502/7. (See Appendix A-8)
- b. Cutlery and Supply Racks. At least one cutlery and supply rack shall be within easy reach of wheelchair users and not exceed 3'4" in height above the finished floor.
- c. Tables. A reasonable number of tables, but no less than 5%, shall be provided to accommodate handicapped persons. Clearance under such tables shall be 2'5" above the finished floor. The clearance shall not be obstructed by bracing, skirts, fascias, or table bases.

5.18 HEALTH CARE FACILITIES

- a. Patient Bedrooms. Bedrooms designated for wheelchair patients in VA health care facilities, other than SCI units, shall comply with the criteria in Section 5.18.
 1. Clear Floor Space. Each bedroom shall have a minimum clear turning space of 5'0" in diameter, located preferably near the entrance.
 2. In each bedroom, there shall be a minimum clear floor space of 3'0" between the side of the bed and the wall; 3'6" between the foot of the bed and the wall; and 4" between the head of the bed and the wall. In addition, in each multi-bed room, there shall be a minimum clear floor space of 4'0" between beds and 4'0" from foot of bed to foot of bed. Where curtains are used, the measurements shall be determined from curtain to curtain or from curtain to wall, whichever is applicable.
- b. Patient Toilet Rooms. Patient toilet rooms which are required to be accessible shall comply with Section 5.8, "Toilet Rooms," and VA Architectural Standard Detail No. 12. (See Appendix A-2)

Accessible water closets equipped with bedpan washers shall be the type identified as VA Equipment Symbol No. P-109. This unit provides for a side-wall mounted flush control and permits the mounting of standard grab bars on the side and rear walls.

5.19 SPECIAL CONSIDERATION AREAS

Assembly areas, waiting areas, medical and examination rooms, libraries, and lounges shall have accessible entrances (minimum clear width of 2'10"); accessible paths of travel (minimum clear width of 3'0"); and adequate clear floor space for wheelchair maneuverability (5'0" for turning diameter).

Spectator areas shall provide level floor spaces, on accessible routes, for handicapped viewing positions to accommodate at least 3% of the spectator capacity. (See Fig. 25 for minimum clear floor space)

Spectator areas, accommodating 50 or more persons, and equipped with amplification systems, shall provide a listening system to assist a reasonable number of persons, but no fewer than two, with severe hearing loss in the appreciation of audio presentations. Where the listening system provided serves individual seats or viewing areas, then such seats or areas shall be located within a 50-foot viewing distance of the stage or program area. For spectator areas, accommodating 50 or more persons, without amplification systems, a portable listening system shall be provided to assist persons with severe hearing impairments. Audio loops and radio frequency systems are two acceptable types of listening systems.

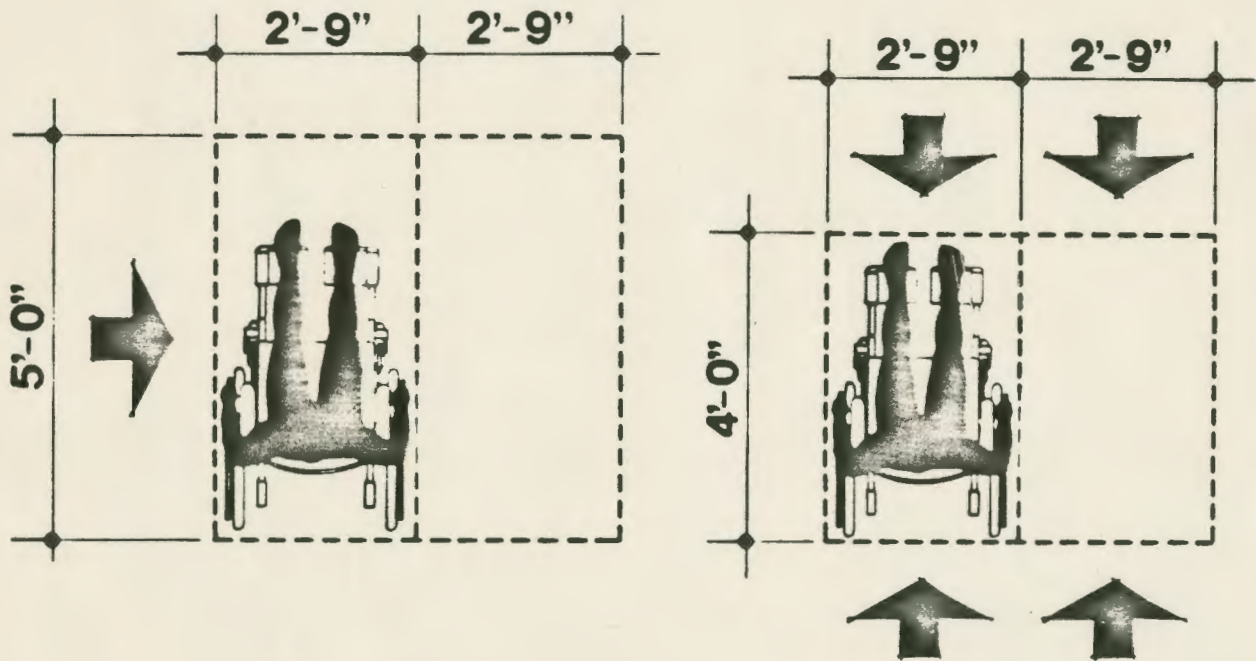


FIG. 25 SIZE OF WHEELCHAIR VIEWING AREAS

CHECKLIST
FOR
BARRIER-FREE DESIGN

VA FACILITY/PROJECT _____

LOCATION _____

This checklist is intended for in-house use for, but not limited to, the following purposes:

- (1) By A/E's, VA project leaders and Construction personnel in the preparation and/or review of project layouts, plans and specifications and construction/architectural details to insure the incorporation of minimum accessibility requirements.
- (2) In reviews of all VA new construction, addition and renovation projects for accessibility compliance.
- (3) In surveys of existing VA facilities for barrier-free deficiencies.

The initial headings and numbering sequence of the checklist sections conform to the format employed in the body of the Design Manual to allow for convenient cross referencing.

A. SITE DEVELOPMENT

	<u>YES</u>	<u>NO</u>
4.1 <u>Passenger Arrival/Loading Area</u>		
a. In a safe area and clearly designated for passenger arrival and departure.	_____	_____
b. Close as possible to accessible entrance.	_____	_____
c. Zoned to prohibit parking.	_____	_____
d. Ramped to sidewalk level.	_____	_____
e. Passenger arrival/loading areas at health care facilities are protected by canopy or roof overhang.	_____	_____
f. Assistance communication system is provided at Spinal Cord Injury (SCI) units.	_____	_____

	<u>YES</u>	<u>NO</u>
4.2 <u>Walks</u>		
a. Free of steps or abrupt changes of level.	_____	_____
b. Minimum width of 5'0".	_____	_____
c. Maximum gradient of 1:33 (otherwise considered a ramp and complies with Section 5.1, "Ramps").	_____	_____
d. Cross slopes no greater than 1:96.	_____	_____
e. Walks with gradients from 1:50 to 1:33 have rest areas every 200'. Rest areas are at least 5'0" long and span the full width of the walk.	_____	_____
f. Changes in level are blended to common level by grading, curb cuts, or ramps.	_____	_____
g. Firm, non-slip surface.	_____	_____
h. Free of grating, manholes, etc.	_____	_____
i. Level platforms (minimum 6'0" x 6'0") at doors.	_____	_____
4.3 <u>Parking</u>		
a. Number of accessible parking spaces are provided as follows: Approximately 3% of employee/visitor spaces.	_____	_____
At outpatient facilities, 10% of total number of parking spaces.	_____	_____
At SCI facilities, 20% of the total number of parking spaces provided.	_____	_____
b. Located conveniently to accessible entrances.	_____	_____
c. Identified by accessibility symbols and routing signage where necessary.	_____	_____

YES

NO

- d. Spaces are at least 8'0" wide and have access aisles on each side. _____
- e. Access aisles are at least 5'0" wide with surface slope not exceeding 1:50. _____
- f. Smooth transition from access aisle to adjacent walkway. _____
- g. Is minimum width of adjacent walkways reduced by vehicle overhang? _____

4.4 Curb Ramps

- a. Provided wherever a walk crosses a curb. _____
- b. Located or protected to prevent obstruction by parked vehicles or street furnishings. _____
- c. Maximum slope, 1:12. _____
- d. Minimum width, 3'0". _____
- e. Smooth transition from curb ramp to street or grade level. _____
- f. Firm, slip-resistant surface. _____

B. BUILDINGS

5.1 Ramps

- a. Maximum slope, 1:12, preferably 1:20. _____
Maximum slope of 1:16, for SCI facilities. _____
- b. Ramp segments no greater than 30' in length. _____
- c. Cross slope no greater than 1:96. _____
- d. Minimum clear width 4'0". _____
- e. Top and bottom landings are at least 5'0" long. _____
- f. Intermediate landings at 30' intervals are at least 5'0" long. _____

- | | <u>YES</u> | <u>NO</u> |
|---|------------|-----------|
| g. Where ramps change directions, landings are at least 5'0" x 5'0". | _____ | _____ |
| h. Where doors swing onto a ramp landing, the landing is level and at least 6'0" x 6'0". | _____ | _____ |
| i. Where required, handrails are installed on both sides. | _____ | _____ |
| Handrails are mounted at a height of 2'8" and extend 1'0" beyond beginning and end of ramp. | _____ | _____ |
| j. Firm, slip-resistant surface. | _____ | _____ |
| k. Ramp curbs, if provided, are at least 4" high by 4" wide. | _____ | _____ |
| l. Well illuminated. | _____ | _____ |

5.2 Entrances

- | | | |
|---|-------|-------|
| a. All main, outpatient, and other highly used entrances are accessible. | _____ | _____ |
| b. They are connected by an accessible walk to accessible parking and public streets. | _____ | _____ |
| c. They are connected to all accessible elements (e.g. elevators and ramps) and spaces throughout a building by paths of travel at least 3'0" wide. | _____ | _____ |
| d. Signage at accessible entrances. | _____ | _____ |

5.3 Doors and Doorways

- | | | |
|---|-------|-------|
| a. Minimum 3'8" door to all patient bedrooms. | _____ | _____ |
| b. Minimum 2'10" clear opening to all other rooms. | _____ | _____ |
| c. Level approaches to doors. | _____ | _____ |
| d. 1'6" clearance at latch side of all doors, except patient bedroom doors. | _____ | _____ |

	<u>YES</u>	<u>NO</u>
e. Minimum clearance between manual doors in series, 4'0" plus the width of the door.	_____	_____
f. Thresholds are flush with finished floor or beveled with a slope no greater than 1:2.	_____	_____
g. Bottom rail (kickplate) is at least 1'0" high.	_____	_____
h. Automatic doors are utilized in high-use areas.	_____	_____
5.4 <u>Floors</u>		
a. Firm and slip-resistant surface.	_____	_____
b. Changes in level between 1/4" and 1/2" are beveled with a slope no greater than 1:2. (Changes in level up to 1/4" require no edge treatment.)	_____	_____
c. Changes in level greater than 1/2" comply with Section 5.1, <u>Ramps</u> .	_____	_____
d. All floors on which SCI services are provided are free from changes of level exceeding 1/2".	_____	_____
5.5 <u>Stairs</u>		
a. Minimum width of stairs, 3'8".	_____	_____
b. Treads and risers are of uniform size on a single flight of stairs.	_____	_____
c. Maximum riser height, 7".	_____	_____
d. Closed risers.	_____	_____
e. Minimum tread width, 11".	_____	_____
f. Slip-resistant tread surface.	_____	_____
g. Acceptable nosings (i.e. they are neither abrupt nor square).	_____	_____
h. Handrails on both sides of stair.	_____	_____

	<u>YES</u>	<u>NO</u>
i. Handrails extend 1'0" on one side beyond the top riser and 1'0" plus the width of the tread on one side beyond the bottom riser.	_____	_____
j. Stairways are well illuminated.	_____	_____
5.6 <u>Handrails and Grab Bars</u>		
a. 1-1/2" diameter.	_____	_____
b. 1-1/2" space between handrail/grab bar and mounting surface.	_____	_____
c. Height of handrails, except in elevators and along corridors, 2'8".	_____	_____
d. Height of corridor handrails, 3'0".	_____	_____
e. Height of grab bars, 2'9".	_____	_____
f. Handrail and grab bar sections are free of sharp edges.	_____	_____
g. Wall surfaces behind handrails and grab bars are smooth.	_____	_____
h. Ends of handrails are rounded.	_____	_____
5.7 <u>Elevators</u>		
a. In multi-story facilities, each floor is served by an elevator.	_____	_____
b. Automatic operation.	_____	_____
c. Self-leveling plus/minus 1/2".	_____	_____
d. Minimum clear width of elevator doors, 4'0".	_____	_____
e. Doors are equipped with safety reopening device.	_____	_____
f. Minimum car size, 6'8" x 4'6".	_____	_____
g. Auxiliary control panel, centered at 3'0" above car floor.	_____	_____

	<u>YES</u>	<u>NO</u>
h. Call and operating buttons, raised and illuminated.	_____	_____ x
i. Audible and visual signals operate when the car is passing through the floors it serves.	_____	_____ c it 3
j. Emergency alarm system.	_____	_____ a
k. Intercom system.	_____	_____ e 1
l. Double set of handrails, 2'6" and 3'6" high.	_____	_____ d 1
m. Floor surface of car is firm and slip resistant.	_____	_____ w r e s i s t

5.8 Toilet Rooms

a. Public and common use toilet rooms are usable by the physically handicapped.	_____	_____ 5 t e r m o f
b. Signage for accessible toilet rooms.	_____	
c. Minimum width of entrance doors to toilet rooms, 3'0".	_____	_____ "
d. Minimum space between vestibule doors, 4'0" plus the width of the door swinging into the space.	_____	_____ "
e. Clear turning space of 5'0".	_____	
f. Minimum clear width of doorways to toilet stalls, 2'8".	_____	
g. Wheelchair "side parallel-transfer stall", minimum 5'6" wide x 6'0" deep.	_____	
h. Wheelchair "front-transfer stall", minimum 3'6" wide by 6'6" deep.	_____	
i. Water closet, top of rim 1'4" above finished floor (1'3" in SCI units).	_____	
j. Grab bars, 2'9" above finished floor.	_____	
k. Urinal basin lip, maximum 1'3" above finished floor.	_____	
l. Lavatory, minimum underneath clearance of 2'5".	_____	

	<u>YES</u>	<u>NO</u>
m. Faucets easily operated (preferably lever type).	_____	_____
n. Mirrors, shelves, dispensers, a maximum height of 3'4" above finished floor.	_____	_____
 5.9 <u>Water Fountains</u>		
a. Installed as shown on VA Architectural Standard Detail No. 4C.	_____	_____
 5.10 <u>Public Telephones</u>		
a. If public telephones are provided, at least one telephone at each location is a forward-approach telephone usable by the physically handicapped.	_____	_____
b. Pushbutton controls (if such equipment service is available).	_____	_____
c. The highest operable part, 4'0" above the finished floor.	_____	_____
d. Unobstructed floor approach, a minimum of 2'6" x 4'0".	_____	_____
e. Equipped with receiver that generates a magnetic field in the area of the receiver cap.	_____	_____
f. At least one public telephone in the facility or building is equipped with a volume control.	_____	_____
 5.11 <u>Controls</u>		
a. Mounting height, <u>no higher than 3'4" and no lower than 1'3"</u> .	_____	_____
b. Operation of controls require the least amount of hand or wrist movement.	_____	_____
 5.12 <u>Signage</u>		
a. Accessible facilities are identified with the International Symbol of Accessibility.	_____	_____

	<u>YES</u>	<u>NO</u>
b. Mounted with top of signage at 5'6" above finished floor or surface.	_____	_____
c. Wherever possible, room identification signage mounted on the wall at the latch side of the door.	_____	_____
 <u>5.13 Tactile Warning</u>		
a. Knurled door operating hardware on doors leading to hazardous areas.	_____	_____
 <u>5.14 Fire Alarm Signals</u>		
a. Warning signals are both visual and audible.	_____	_____
b. Accessible paths of travel are free of hazardous side protrusions.	_____	_____
 <u>5.15 Hazards</u>		
a. A minimum clearance of 6'8" is provided above all accessible paths of travel.	_____	_____
 <u>5.16 Carpet</u>		
a. Carpet, if used, is securely attached and has a low-cut pile and tight weave.	_____	_____
 <u>5.17 Cafeteria Facilities</u>		
a. Access aisles and food serving lines are at least 3'0" wide.	_____	_____
b. At least one cutlery and supply rack is no higher than 3'4".	_____	_____
c. A reasonable number (at least 5%) of tables have a knee clearance of at least 2'5".	_____	_____

YES

NO

5.18 Health Care Facilities

a. Each patient bedroom has:

i. Each patient bedroom has a clear turning space of at least 5'0" in diameter, preferably near the entrance.

ii. Clear floor space of at least 3'0" between side of bed and wall.

iii. Clear floor space of at least 3'6" between foot of bed and wall.

iv. Clear floor space of at least 4'0" between beds and 4'0" from foot of bed to foot of bed.

b. Patient toilet rooms comply with Section 5.7, "Toilet Rooms."

5.19 Special Consideration Areas

a. Waiting area: Accessible entrance (minimum clear width of 2'10"); accessible paths of travel (minimum width of 3'0"); and clear floor space for wheelchair maneuverability (5'0" turning diameter).

b. Medical and exam areas: (Same as 5.19 (a)).

c. Libraries and lounges: (Same as 5.19 (a)).

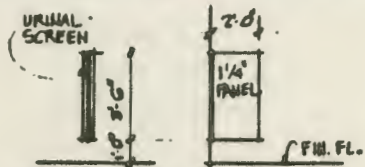
d. Assembly areas:

i. (Same as 5.19(a)).

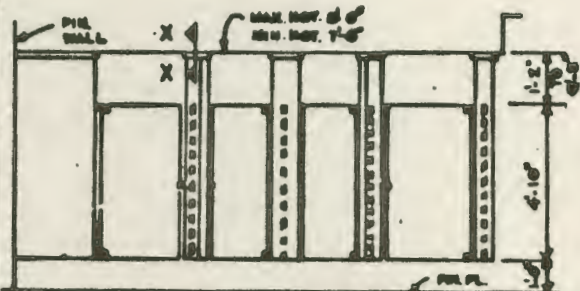
ii. Spectator areas provide a reasonable number of handicapped viewing positions.

iii. Where required, listening systems for the hearing-impaired persons are provided.

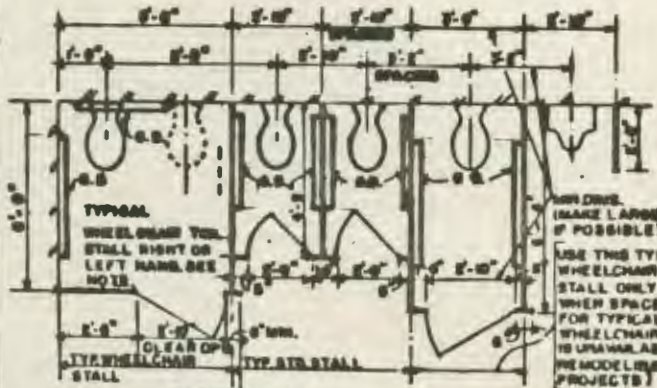
REVISION PENDING



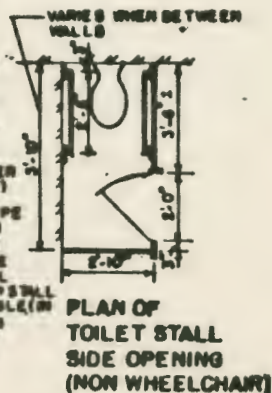
URINAL SCREEN ELEVATION



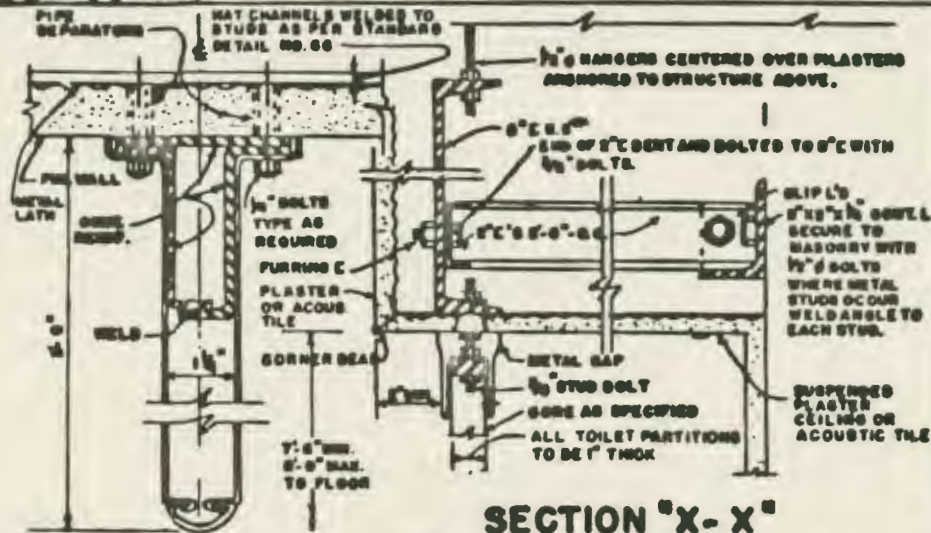
FRONT ELEVATION - CEILING HUNG PARTITIONS



TYPICAL COMPOSITE PLAN - TOILET STALLS



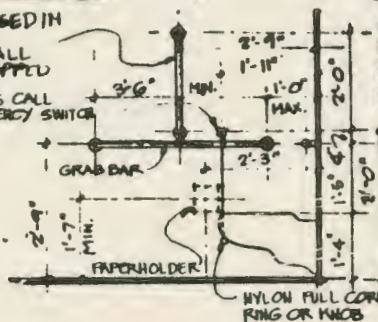
PLAN OF TOILET STALL SIDE OPENING (NON WHEELCHAIR)



SECTION "X-X"

VERTICAL BAR TO BE USED IN COMBINATION WITH HORIZONTAL BAR IN ALL EXCEPT SCI HANDICAPPED TOILET STALLS.

NURSES CALL EMERGENCY SWITCH



PAPERHOLDER, GRAB BAR & NURSES CALL SWITCH LOCATIONS

NOTE TO ARCHITECT: BRACING & SUSPENSION SYSTEM SHOULD BE SIMPLIFIED FOR PLANS WITH LIMITED NUMBER OF STALLS.

NOTES TO ARCHITECT:

- NURSES CALL SWITCH & WIRING SHALL BE INSTALLED CONCEALED ON NEW BUILDING PARTITIONS.
- AT EXISTING BUILDING PARTITIONS AND WHERE REQUIRED ON EXIST. METAL TOILET PARTITIONS, THE WIRE MOLD AND SWITCH SHALL BE INSTALLED EXPOSED.
- EXPOSED WIRE MOLD SHALL BE KEPT TO A MINIMUM AND RUN DIRECTLY TO AND UP REAR WALL.
- DOOR SWINGS SHALL BE AS SHOWN ON PLANS.
- WHEN MORE THAN ONE W/C TOILET STALL IS REQUIRED IN A FACILITY, THERE SHOULD BE APPROXIMATELY THE SAME NUMBER OF LEFT-HAND AND RIGHT HAND STALLS.
- GRAB BARS ARE NOT REQUIRED IN AMBULATORY CARE AREAS, NOR IN PUBLIC AND STAFF TOILETS EXCEPT IN WHEELCHAIR TOILET STALLS.
- NOTE: SEE STANDARD DETAILS 148 & 20 FOR ADDITIONAL GRAB BAR AND WOOD BEAT DETAILS.

NOTES

TOILET STALLS

&

URINAL SCREENS

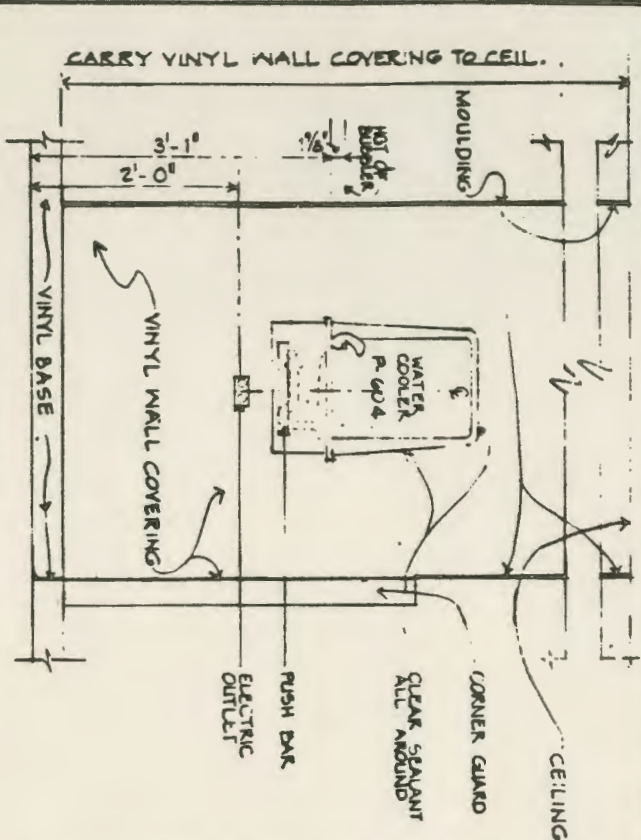
12

Veterans Administration STANDARD

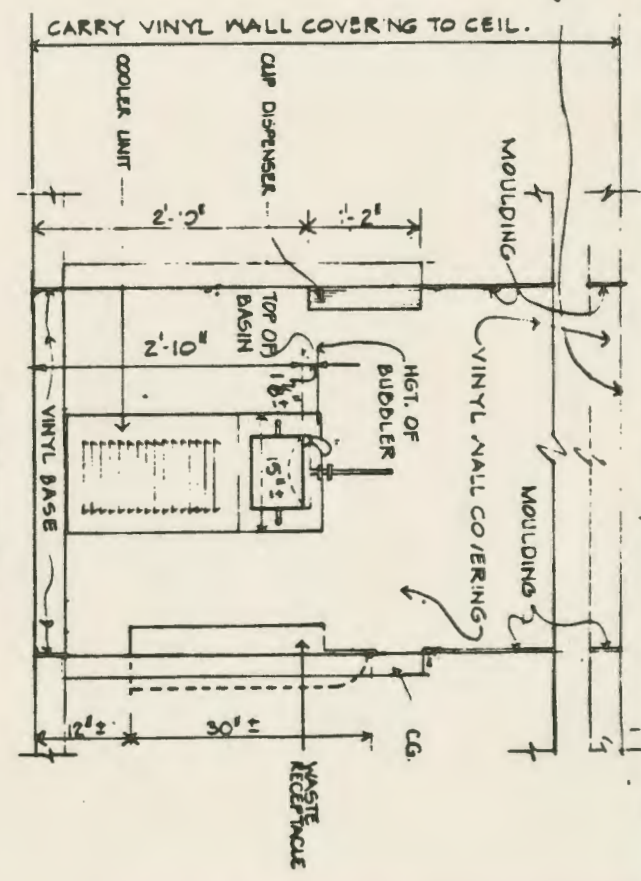
APPENDIX

A-2

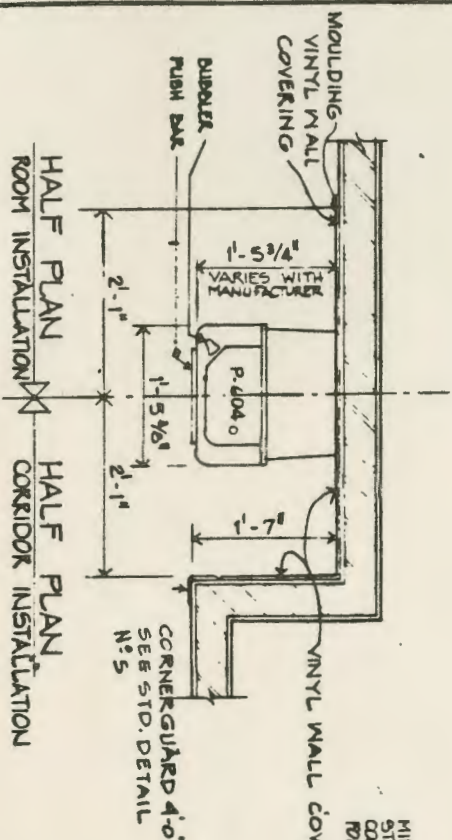
DATE ISSUED 5 Sept. 1979 REVISION MAY '82



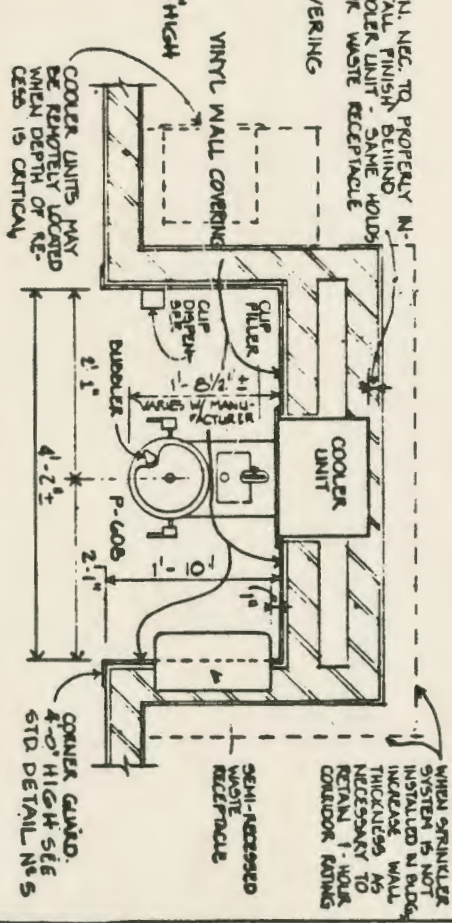
ELEVATION



ELEVATION



PLAN



PLAN

WATER COOLER - ELECTRIC
(FOR USE IN ALL HOSE AREAS EXCEPT O.C.I. UNITS)

WATER COOLER - ELECTRIC
(FOR USE IN SPINAL COND INJURY UNIT)

MIN. NEC. TO PROPERLY N.F. STIAL FINISH BEHIND COOLER UNIT - SAME HOLDS FOR WASTE RECEPTACLE

WHEN SPRINKLER SYSTEM IS NOT INSTALLED IN BUILDING THICKNESS AS NECESSARY TO RETAIN 1-HOUR CONDUIT RATING

COOLER UNITS MAY BE REPORTLY LOCATED WHEN DEPTH OF RECESS IS CRITICAL

CORNER GUARD. 4-0\"/>

SEMI-RECESSED WASTE RECEPTACLE

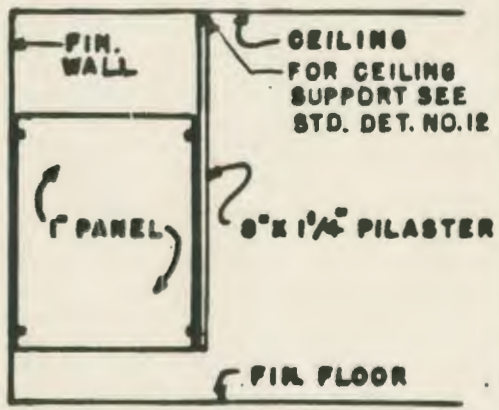
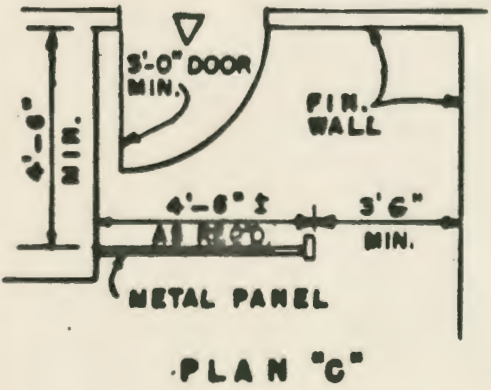
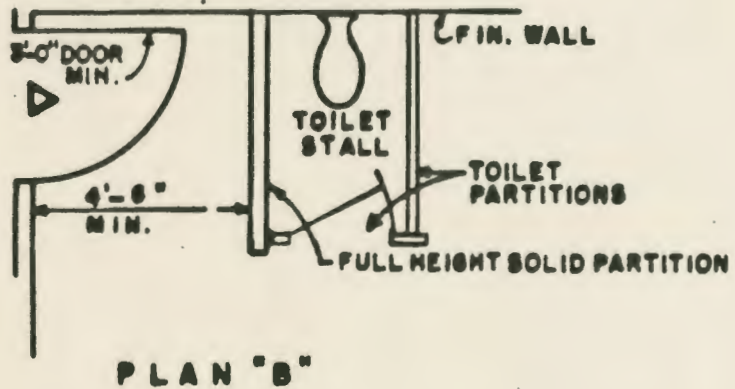
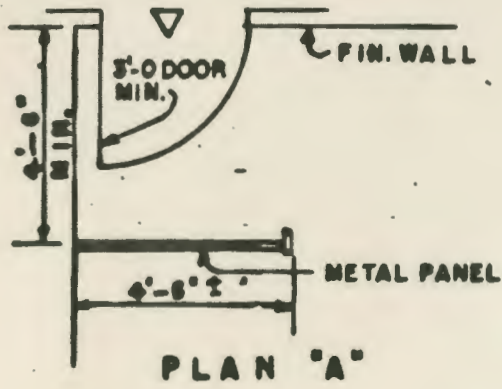
NOTES

APPENDIX

A-1

WATER COOLERS-ELECTRIC





NOTES

1. THE ABOVE ARE TYPICAL GUIDE PLANS SHOWING MINIMUM DIMENSIONS FOR WHEEL CHAIR ENTRY.
2. SMALL TOILETS CONTAINING ONLY TWO FIXTURES (WATER CLOSET & LAVATORY) WILL NOT REQUIRE SCREENING.

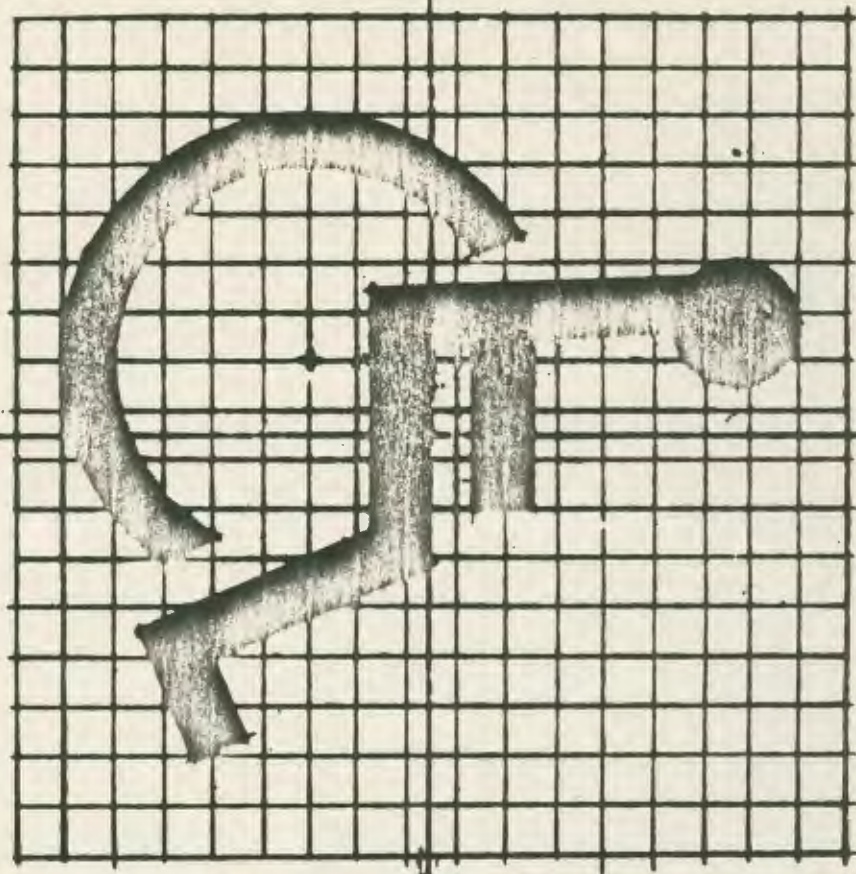
**TOILET ENTRY
SCREENING-
WHEEL CHAIR**

TITLE

INTERIM COPY
REVISION 5 12/80

DATE ISSUED JUNE '78

12
A
Veterans
Administration
STANDARD
DETAIL



SYMBOL OF ACCESSIBILITY TO THE HANDICAPPED

TITLE

DATE ISSUED JAN. '76

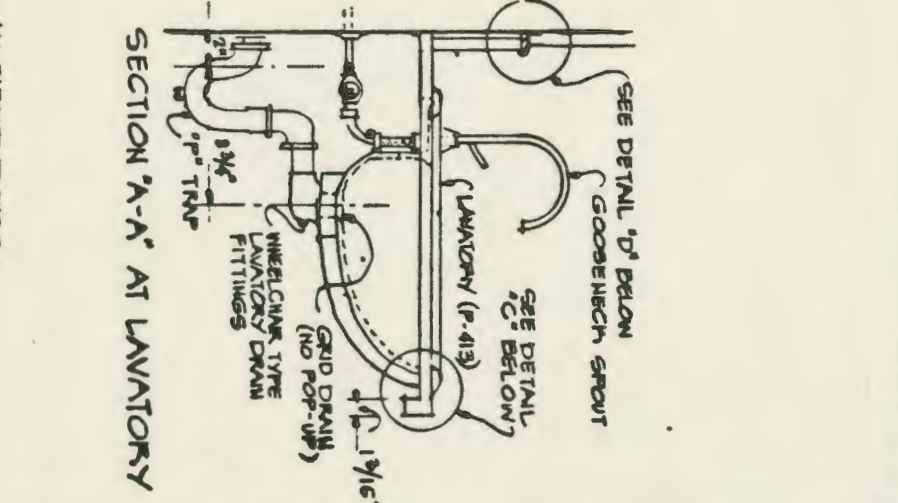
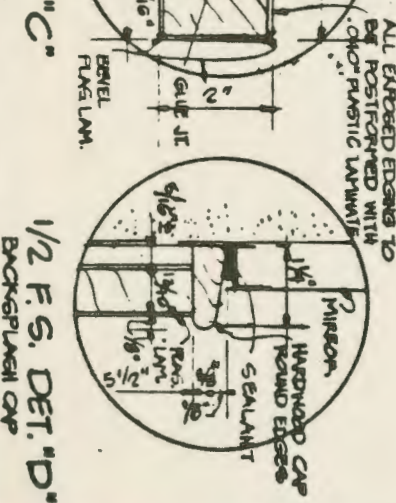
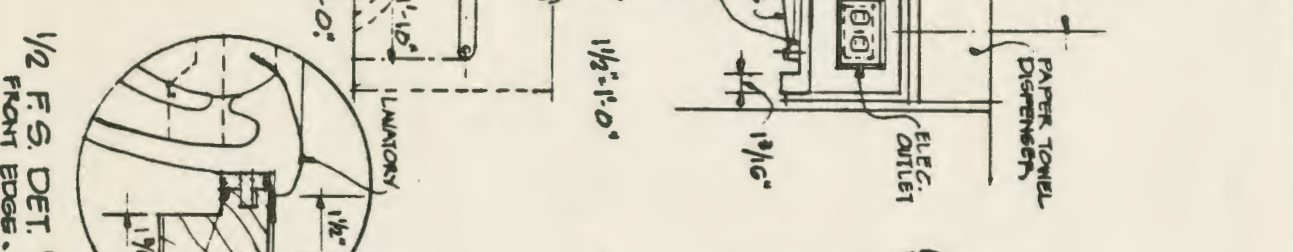
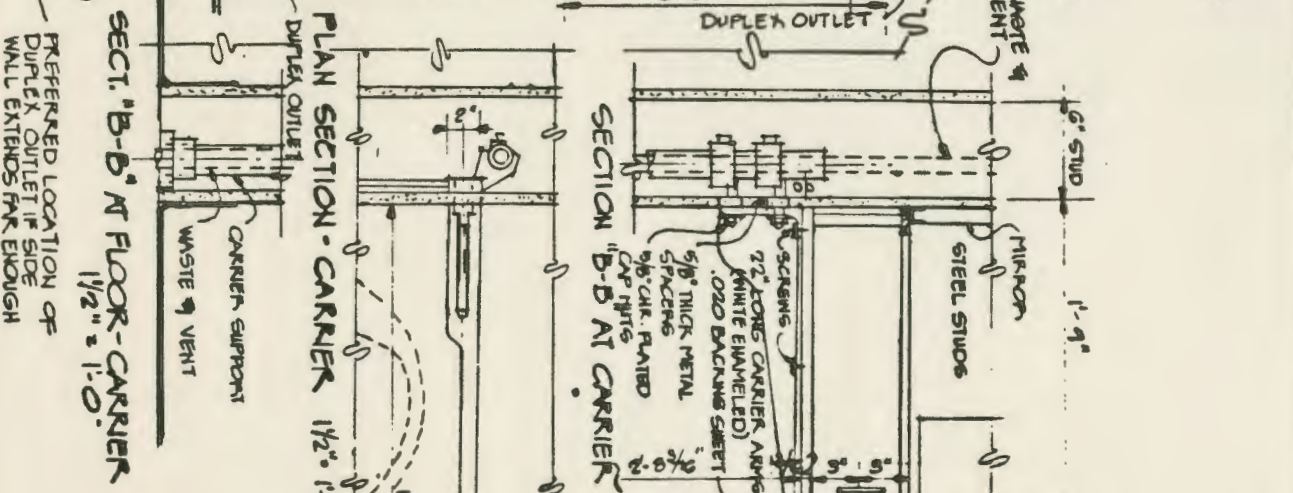
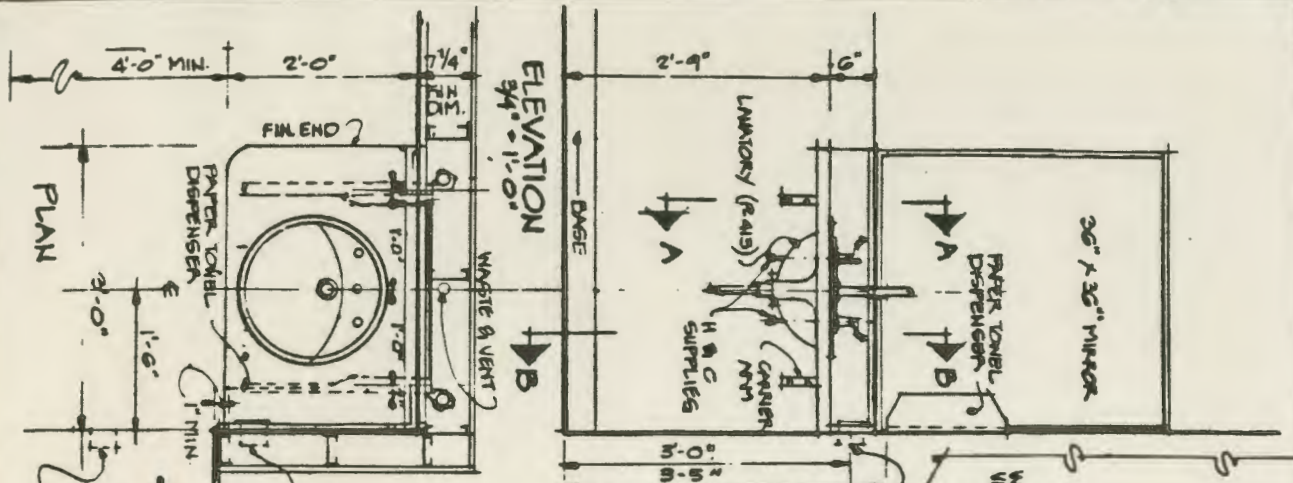
REVISION

NOTES

THE ACCESSIBILITY SYMBOL SIGN IS TO HAVE WHITE (REFLECTORIZED) LEGEND ON A BLUE BACKGROUND. THE SYMBOL SIGN SHALL BE USED TO IDENTIFY FACILITIES AND AREAS THAT ARE FULLY ACCESSIBLE TO AND USEABLE BY ALL HANDICAPPED INDIVIDUALS. SEE VA CONSTRUCTION STANDARD (CD-28, PARAGRAPH 5J).

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Veterans
Administration
STANDARD
DETAIL

APPENDIX
A-5



**VANITY, SINGLE
TYPE S5**

NOTES

1. FOR USE IN ALL PATIENT BEDROOM AND TOILET/BATHROOMS EXCEPT SCI, NURSING HOME CARE UNITS, OR WHERE NURSERYERS ARE PROVIDED.

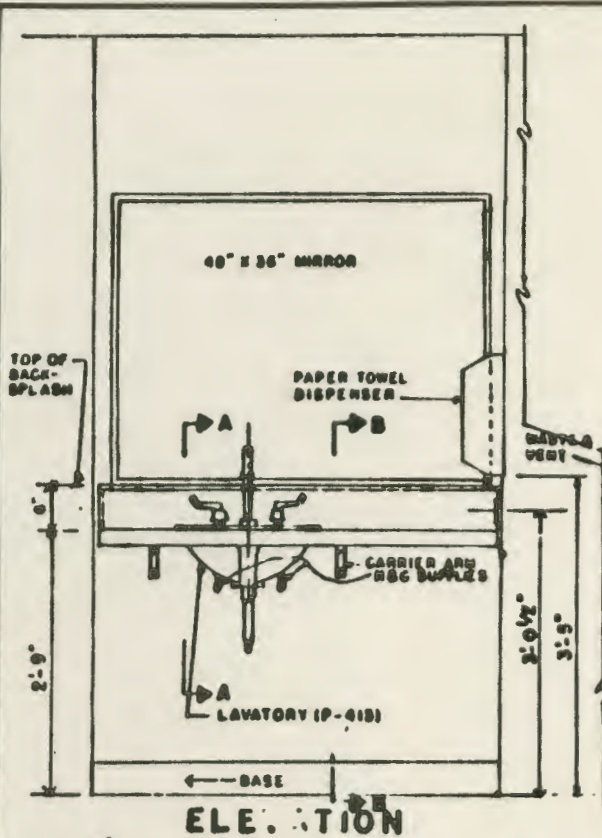
APPENDIX

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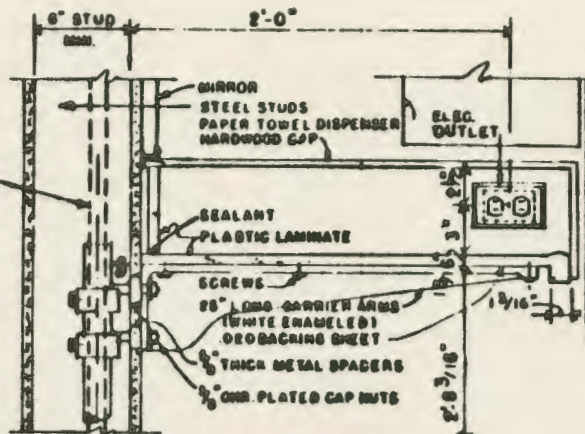


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DATE ISSUED

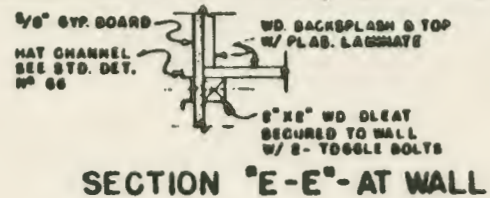
REVISION G/7/82



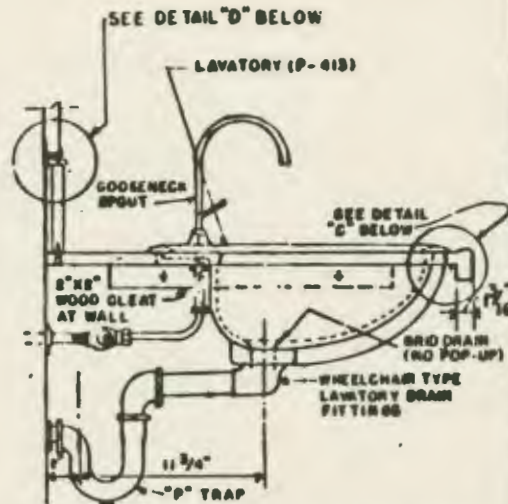
ELEVATION



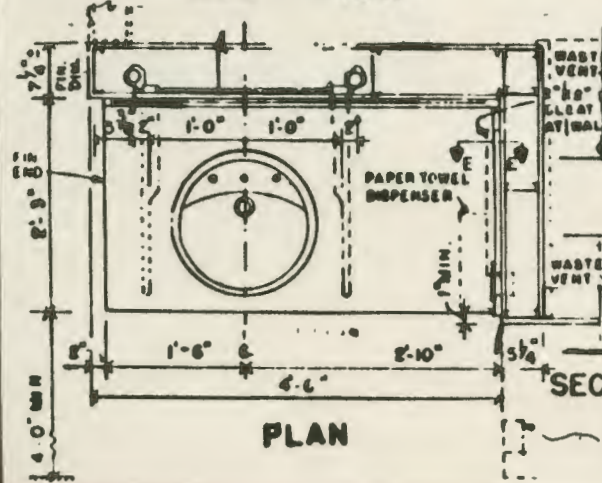
SECTION "B-B" AT CARRIER



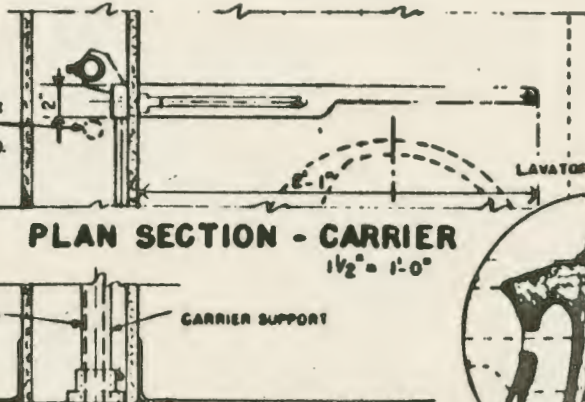
SECTION "E-E" AT WALL



SECTION "A-A" AT LAVATORY



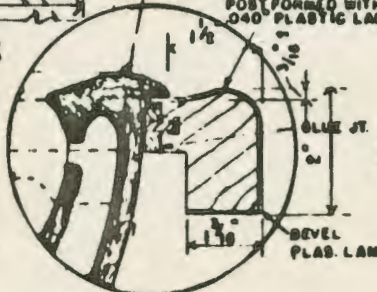
PLAN



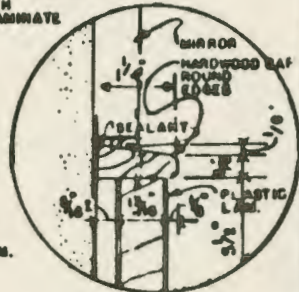
PLAN SECTION - CARRIER

SECT. "B-B" AT FLOOR - CARRIER

PREFERRED LOCATION OF DUPLEX OUTLET IF SIDE WALL EXTENDS FAR ENOUGH



1/2 F.S. DET. "C"
FRONT EDGE



1/2 F.S. DET. "D"
BACKPLASH EXP

NOTES

VANITY, SINGLE
W/C-TYPE S4

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Veterans
Administration
STANDARD
DETAIL

APPENDIX
A-8

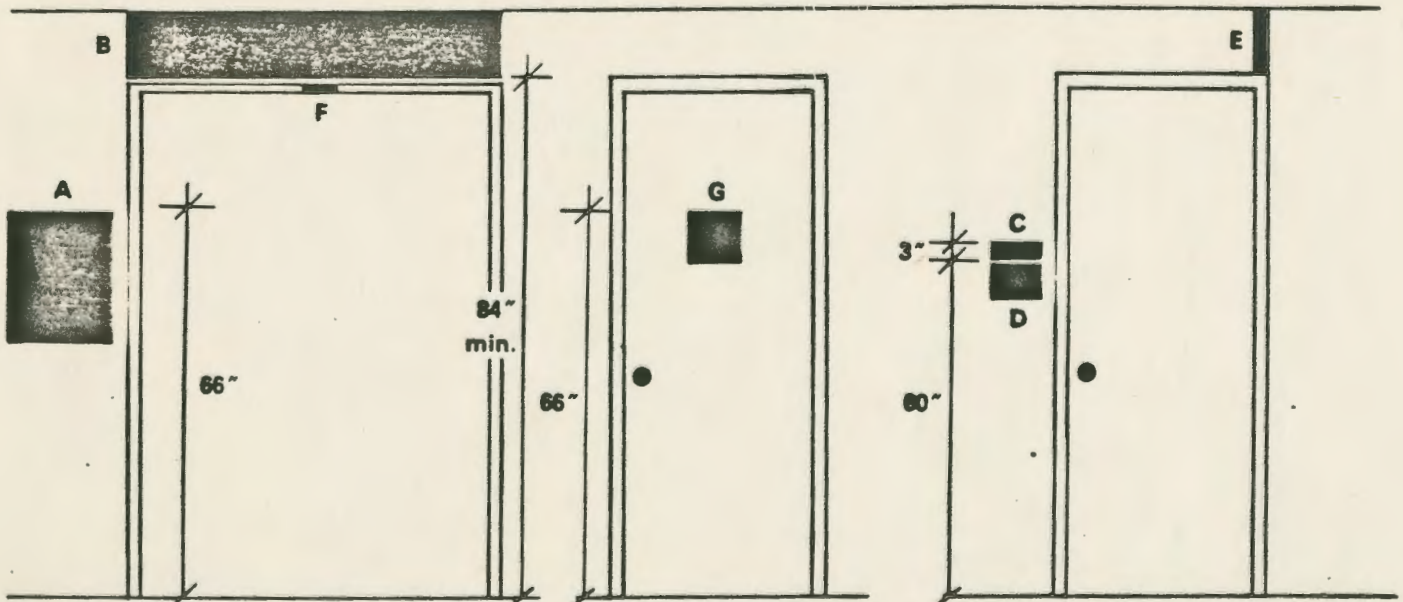
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Interior Installation Placement

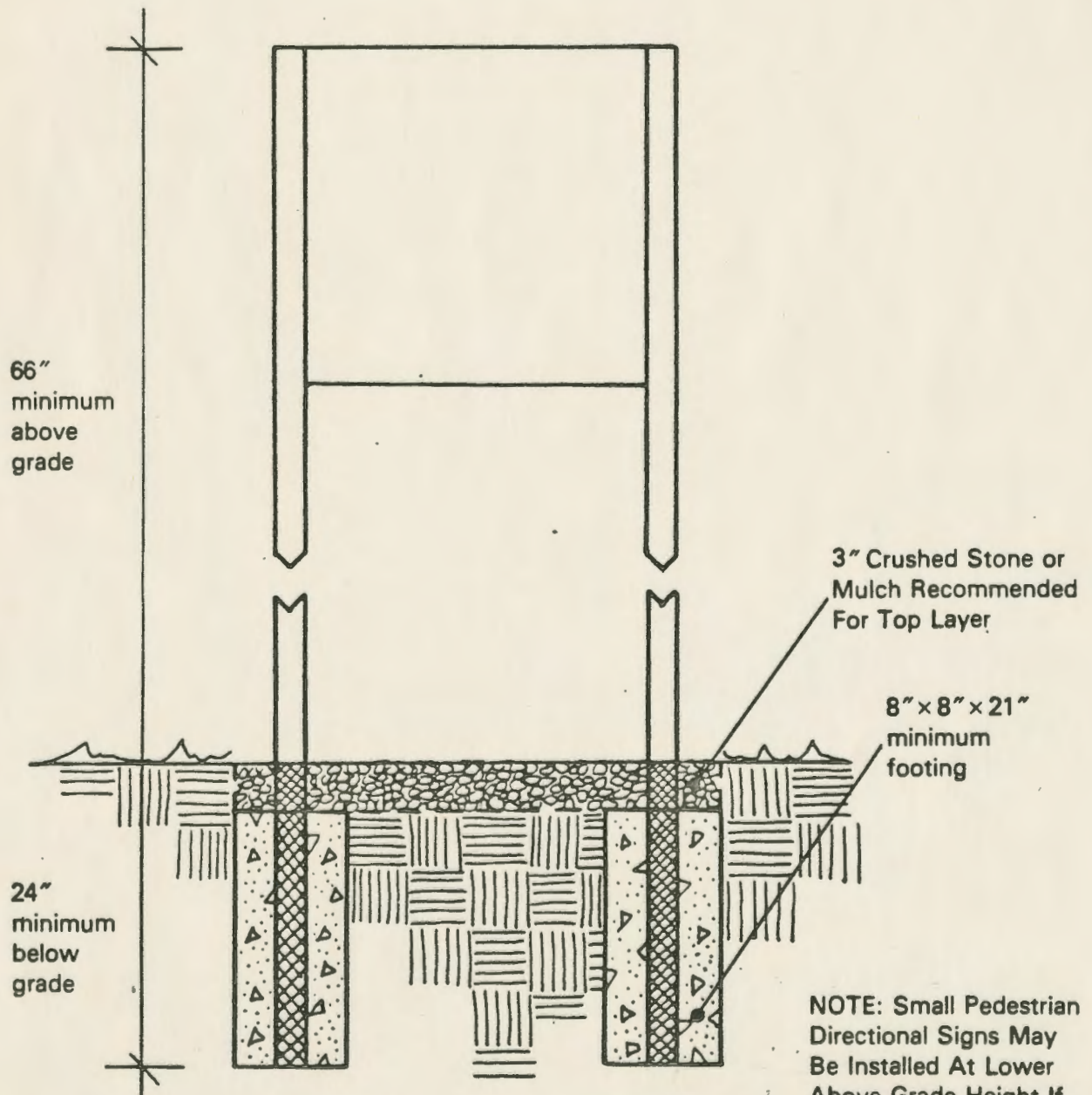
Standard placement guidelines for the various interior components are given below. These are general standards which may require modification throughout the Veterans Administration facilities. However, consistency in sign placement must be maintained so that the signage modules relate to one another and the architecture while adhering to handicapped accessibility sign placement requirements. Refer to ANSI A117.1 -1961 specifications for making buildings and facilities accessible to and usable by the physically handicapped.

Component	Installation Detail
A1-A4	Per Architecture
B1, B2	A
C, C1, C2	A
C3, C4	B
D	F
D1	C
E, E1	D
F-F5	D

Component (cont'd)	Installation Detail (cont'd)
G	E
H-H5	D
I, I1	D
J	D
K	D
L, L1, M	Next to bed on wall
N, O	D
P, P2	A
P3, P4	Per interior design
P5, P6	Counter top
Q	A, G
R	A, G
S	A, G, E (When right-angle)
S1	below S
T	Per interior design
U	Next to elevator cab floor buttons
V	A
V1, V2	A
V3	Next to elevator call buttons
V4, V5	G
V6	A, E
V7	G



Exterior Installation Detail



APPENDIX

A-10