

Section 1127B EXTERIOR ROUTES OF TRAVEL

1127B.1 GENERAL. Site development and grading shall be designed to provide access to all entrances and exterior ground floor exits, and access to normal paths of travel, and where necessary to provide access, shall incorporate pedestrian ramps, curb ramps, etc. Access shall be provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones if provided, and public streets or sidewalks. When more than one building or facility is located on a site, accessible routes of travel complying with Section 114B.1.2 shall be provided between buildings and accessible site facilities, accessible elements, and accessible spaces that are on the same site. The accessible route of travel shall be the most practical direct route between accessible building entrance to the site. If access is provided for pedestrians from a pedestrian tunnel or elevated walkway, entrances to the building from each tunnel or walkway must be accessible.

1127B.2 DESIGN AND CONSTRUCTION. When accessibility is required by this section, it shall be designed and constructed in accordance with this code. See Section 114B.1 for a list of applicable sections.

1127B.3 SIGNS. At every primary public entrance and at every major junction where the accessible route of travel diverges from the regular circulation path along or leading to an accessible route of travel, entrance or facility, there shall be a sign depicting the International Symbol of Accessibility. Signs shall indicate the direction to accessible building entrances and facilities and shall comply with the requirements found in Section 1117B.5.1, Item 2, and 1117B.5.8.1.

1127B.4 OUTSIDE STARWAYS. See Section 1133B.4.

1127B.5 CURB RAMPS.

- General. Curb ramps shall be constructed at each corner of street intersections and where a pedestrian way crosses a curb. Built-up curb ramps shall be located so that they do not project into vehicular traffic lanes. The preferred and recommended location for curb ramps is in the center of the crosswalk of each street corner. Where it is necessary to locate a curb ramp in the center of the curb return and the street surfaces are marked to identify pedestrian crosswalks, the lower end of the curb ramp shall terminate within such crosswalk areas. See Figure 11B-20C, Case E and Figure 11B-22.
- WIDTH OF CURB RAMPS. Curb ramps shall be a minimum of 4 feet (1219mm) in width and shall lie, generally, in a single sloped plane, with a minimum of surface warping and cross slope.
- SLOPE OF CURB RAMPS. The slope of curb ramps shall not exceed one unit vertical to 12 units horizontal (8.33 percent slope). The slope shall be measured as shown in Figure 11B-20E. Transitions from ramps to walks, gutters or streets shall be flush and free of abrupt change. Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed one unit vertical to 20 units horizontal (5 percent slope) within 4 feet (1219mm) of the top and bottom of the curb ramps shall not exceed one unit vertical to 10 units horizontal (10 percent slope).
- LEVEL LANDING. A level landing 4 feet (1219mm) deep shall be provided at the upper end of each curb ramp over its full width to permit safe egress from the ramp surface, or the slope of the formed or flared sides of the curb ramp shall not exceed one unit vertical to 12 units horizontal (8.33 percent slope).
- FINISH. The surface of each curb ramp and its flared sides shall comply with Section 1124B, Ground and Floor Surfaces, and shall be of contrasting finish from that of the adjacent sidewalk.
- BORDER. All curb ramps shall have a grooved border 12 inches (305mm) wide at the level surface of the sidewalk along the top and each side approximately 3/4 inch (19mm) on center. All curb ramps constructed between the face of the curb and the street shall have a grooved border at the level surface of the sidewalk. See Figures 11B-19A and 11B-19B.
- DETECTABLE WARNINGS. Curb ramps shall have a detectable warning that extends the full width and depth of the curb ramp, excluding the flared sides, inside the grooved border. Detectable warnings shall consist of raised truncated domes with a diameter of nominal 0.8 inch (22.9mm) at the base tapering to 0.45 inch (11.4mm) at the top, a height of nominal 0.2 inch (5.08mm) and a center-to-center spacing of nominal 2.35 inches (59.7mm) in compliance with Figure 11B-23A. "Nominal" here shall be in accordance with Sections 12-11A and B-102, State Referenced Standards Code. The detectable warning shall contrast visually with adjoining surfaces, either light – on/dark or dark – on/light. The material used to provide contrast shall be an integral part of the walking surface. The domes may be constructed in a variety of methods, including cast in place or stamped, or may be part of a prefabricated surface treatment.

Only approved DSA-AC detectable warning products and directional surfaces shall be installed as provided in the California Code of Regulations (CCR), Part 1, Articles 2, 3 and 4. Refer to CCR Title 24, Part 12, Chapters 12-11A and B, for building and facility access specifications for product approval for detectable warning products and directional surfaces.

Detectable warning products and directional surfaces installed after January 1, 2001, shall be evaluated by an independent entity, selected by the Department of General Services, Division of the State Architect Access Compliance, for all occupancies, including transportation and other outdoor environments, except that when products and surfaces are for use in residential housing, evaluation shall be in consultation with the Department of Housing and Community Development. See Government Code Section 4460.

8. OBSTRUCTIONS. Curb ramps shall be located or protected to prevent their obstruction by parked vehicles.

9. DIAGONAL CURB RAMPS. If diagonal (or corner-) type curb ramps have returned curbs or other well-defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have 48 inches (1219mm) minimum clear space as shown in Figures 11B-22(c) and (d). If diagonal curb ramps are provided at marked crossings, the 48 inch (1219mm) clear space shall be within the markings [see Figures 11B-22(c) and (d)]. If diagonal curb ramps have flared sides, they shall also have at least 24 inch (610mm) long segment of straight curb located on each side of the curb ramp and within the marked crossing [see Figure 11B-22(c)].

NOTES :

- For additional curb details, see Figures 11B-19A and 11B-19B.
- If the distance from the curb to the back of sidewalk is too short to accommodate a ramp and a 4 foot (1219mm) platform as in Figure 11B-20A, Case A, the sidewalk may be depressed longitudinally as in Figure 11B-20A, Case B, or Figure 11B-20B, Case D.
- If the sidewalk is less than 5 feet (1524mm) wide, the full width of the sidewalk shall be depressed as shown in Figure 11B-20B, Case C.
- As an alternate to Figure 11B-20A, Case A, one ramp may be placed in the center of the curb return as in Figure 11B-20C, Case E.
- When a ramp is located in the center of a curb return, the crosswalk configuration must be similar to that shown on the plan to accommodate wheelchairs. See Figure 11B-22.

6. If the planting area side width is equal to or greater than the ramp length, the ramp side slope distance equals 3 feet (914mm). See Figure 11B-20D, Case G.

7. For Figure 11B-20C, Case F, and Figure 11B-20C, Case G, the longitudinal portion of the sidewalk may need to be depressed as shown in Figure 11B-20A, Case B.

8. If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4 feet (1219mm).

9. The ramp shall have a 12 inch wide (305mm) border with 1/4 inch (6mm) gaps approximately 3/4 inch (19mm) on center. See grooving detail, Figure 11B-20D, Case H.

Section 1129B ACCESSIBLE PARKING REQUIRED

1129B.1 GENERAL. Each lot or parking structure where parking is provided for public as clients, guests or employees, shall provide accessible parking as required by this section. Accessible parking spaces serving a particular building shall be located on the shortest accessible route of travel (complying with Section 114B.1.2) from adjacent parking to an accessible entrance. In parking facilities that do not serve a particular building, accessible parking shall be located on the shortest accessible route of travel to an accessible pedestrian entrance of the parking facility. In buildings with multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located closest to the accessible entrances. Table 11B-6 establishes the number of accessible parking spaces required.

1129B.2 MEDICAL CARE OUTPATIENT FACILITIES. At facilities providing medical care and other services for persons with mobility impairments, parking spaces complying with this section shall be provided in accordance with Table 11B-6 except as follows :

- OUTPATIENT UNITS AND FACILITIES. Ten percent of the total number of parking spaces provided shall serve each such outpatient unit or facility.
- UNITS AND FACILITIES THAT SPECIALIZE IN TREATMENT OR SERVICES FOR PERSONS WITH MOBILITY IMPAIRMENTS. Twenty percent of the total number of parking spaces provided shall serve each such unit or facility.

TABLE 11B-6
SPACES REQUIRED

Establishes the number of accessible parking spaces required.

TOTAL NUMBER OF PARKING SPACES IN LOT OR GARAGE	MINIMUM REQUIRED NUMBER OF SPACES
1 – 25	1
26 – 50	2
51 – 75	3
76 – 100	4
101 – 150	5
151 – 200	6
201 – 300	7
301 – 400	8
401 – 500	9
501 – 1,000	*
1,001 and over	**

* Two percent of total.

** Twenty plus one for each 100, or fraction over 100.

1129B.3 PARKING SPACE SIZE. Accessible parking spaces shall be located as near as practical to a primary entrance and shall be sized as follows :

- DIMENSIONS. Where single spaces are provided, they shall be 14 feet (4267mm) wide and lined to provide a 9 foot (2743mm) wide and lined to provide a 9 foot (2743mm) parking area and a 5 foot (1524mm) landing and unloading access aisle on the passenger side of the vehicle. When more than one space is provided in lieu of providing a 14 foot wide (4267mm) space for each parking space, two spaces can be provided within a 23 foot wide (7010mm) area lined to provide a 9 foot (2743mm) parking area on each side of a 5 foot (1524mm) landing and unloading access aisle in the center. See Figure 11B-18A. Parking access aisles shall be part of an accessible route of travel (complying with Section 114B.1.2) to the building or facility entrance. Parked vehicle overhangs shall not reduce the clear width of a accessible route. The minimum length of each parking space, shall be 18 feet (5486mm). The words "NO PARKING" shall be painted on the ground within each 5 foot (1524mm) landing and unloading access aisle. This notice shall be painted in white letters no less than 12 inches (305mm) high and located so that it is visible to traffic enforcement officials. See Figure 11B-18A, 11B-18B and 11B-18C.
- VAN SPACE(S). One in every eight accessible spaces, but not less than one, shall be served by an access aisle 96 inches (2438mm) wide minimum placed on the side opposite the driver's side when the vehicle is going forward into the parking space and shall be designated van accessible as required by Section 1129B.4. All such spaces may be grouped on one level of a parking structure. The words "NO PARKING" shall be painted on the ground within each 8 foot (2438mm) landing and unloading access aisle. This notice shall be painted in white letters no less than 12 inches (305mm) high and located so that it is visible to traffic enforcement officials. See Figures 11B-18A, 11B-18B and 11B-18C.
- ARRANGEMENT OF PARKING SPACE. In each parking area, a bumper or curb shall be provided and located to prevent encroachment of cars over the required width of walkways. Also, the space shall be so located that persons with disabilities are not compelled to wheel or walk behind parked cars other than their own. Pedestrian ways which are accessible to persons with disabilities shall be provided from each such parking space to related facilities, including curb ramps as needed. Ramps shall not encroach into any accessible parking space or the adjacent access aisle. The maximum cross slope in any direction of an accessible parking space and adjacent access aisle shall not exceed 2 percent.
- SLOPE OF PARKING SPACE. Surface slopes of accessible parking spaces shall be the minimum possible and shall not exceed an unit vertical to 50 units horizontal (2 percent slope) in any direction.

1129B.4 IDENTIFICATION OF PARKING SPACES FOR OFF-STREET PARKING FACILITIES. Each parking space reserved for persons with disabilities shall be identified by a reflected surface permanently posted immediately adjacent to and visible from each stall or space, consisting of the International Symbol of Accessibility in white on a dark blue background. The sign shall not be smaller than 70 square inches (4516mm) in area and, when in a path of travel, shall be posted at a minimum height of 80 inches (2032mm) from the bottom of the sign to the parking space finished grade. Signs may also be centered on the wall at the interior end of the parking space. Spaces complying with Section 1129B.3, Item 2 shall have an additional sign stating "Van-Accessible" mounted below the symbol of accessibility. Signs identifying accessible parking spaces shall be located so they cannot be obscured by a vehicle parked in the space.

An additional sign shall also be posted in a conspicuous place at each entrance to off-street parking facilities, or immediately adjacent to and visible from each stall or space. The sign shall not be less than 17 inches (432mm) by 22 inches (559mm) in size with lettering not less than 1 inch (25mm) in height which clearly and conspicuously states the following :

"Unauthorized vehicles parked in designated accessible spaces not displaying distinguishing placards or license plates issued for persons with disabilities may be towed away at owner's expense. Towed vehicles may be reclaimed at _____ or by telephoning _____"

Blank spaces are to be filled in with appropriate information as a permanent part of the sign.

in addition to the above requirements, the surface of each accessible parking space or stall shall have a surface identification duplicating either of the following schemes :

- By outlining or painting the stall or space in blue and outlining on the ground in the stall or space in white or suitable contrasting color a profile view depicting a wheelchair with occupant ; or
- By outlining a profile view of a wheelchair with occupant in white on blue background. The profile view shall be located so that it is visible to a traffic enforcement officer when a vehicle is properly parked in the space and shall be 36 inches high (914mm) by 36 inches wide (914mm). See Figures 11B-18A through 11B-18C.

Section 1133B GENERAL ACCESSIBILITY FOR ENTRANCES, EXITS AND PATH OF TRAVEL

1133B.1 BUILDING ACCESSIBILITY. See this chapter.

1133B.1.1 ENTRANCES

1133B.1.1.1 ENTRANCES AND EXTERIOR GROUND FLOOR EXIT DOORS

1133B.1.1.1.1 All entrances and exterior ground-floor exit doors to buildings and facilities shall be made accessible to persons with disabilities. Such entrances shall be connected by an accessible route (complying with Section 114B.1.2) to public transportation stops, to accessible parking and passenger loading zones and to public streets or sidewalks, if available. Entrances shall be connected by an accessible route to all accessible spaces or elements within the building or facility. Doorways shall have a minimum clear opening of 32 inches (813mm) with the door open 90 degrees, measured between the face of the door and the opposite stop (see Figure 11B-5B). Openings more than 24 inches (610mm) in depth shall comply with Section 1118B.1.

1133B.1.1.1.2 TEMPORARY RESTRICTIONS. During periods of partial or restricted use of a building or facility, the entrances used for primary access shall be accessible to and usable by persons with disabilities.

1133B.1.1.1.3 RECESSED DOORWAYS. Recessed doorways shall be adequately anchored to prevent interference with wheelchair traffic.

1133B.1.1.1.4 GATES. All gates, including ticket gates, shall meet all applicable specifications for doors.

1133B.2 DOORS

1133B.2.1 TYPE OF LOCK OR LATCH. See Chapter 10, Section 1008.1.B.

1133B.2.2 WIDTH AND HEIGHT. Every required exit doorway shall be of a size as to permit the installation of a door not less than 3 feet (914mm) in width and not less than 6 feet 8 inches (2032mm) in height.

When installed in exit doorways, exit doors shall be capable of opening at least 90 degrees and shall be so mounted that the clear width of the exitway is not less than 32 inches (813mm) measured between the face of the door and the opposite stop (see Figure 11B-5B). In computing the exit width (the net dimension of the exitway shall be used.

1133B.2.3 HINGED DOORS. For hinged doors, the opening width shall be measured with the door positioned at an angle of 90 degrees from its closed position.

1133B.2.3.1 PAIRS OF DOORS. Where a pair of doors is utilized, at least one of the doors shall provide a clear, unobstructed opening width of 32 inches (813mm) with the left positioned at an angle of 90 degrees from its closed position.

1133B.2.3.2 AUTOMATIC AND POWER-ASSISTED DOORS. If an automatic door is used, then it shall comply with BMA A156.10. Slowly opening, low-powered, automatic doors shall comply with BMA A156.19. Such doors shall not open to back check faster than 3 seconds and shall require no more than 15 pounds to stop door movement. If a power-assisted door is used, its door-opening force shall comply with Section 1133B.2.5 and its closing shall conform to the requirements in BMA A156.19. When an automatic door operator is utilized to operate a pair of doors, at least one of the doors shall provide a clear, unobstructed opening width of 32 inches (813mm) with the door positioned at an angle of 90 degrees from its closed position.

1133B.2.3.3 REVOLVING DOORS. Revolving doors shall not be used as a required entrance for persons with disabilities.

1133B.2.3.4 TURNSTILES, RAILS AND PEDESTRIAN CONTROLS. Where turnstiles and crowd control barriers are utilized in a facility for the purpose of providing fully controlled access, such as where an admission price is charged, a door or gate that is accessible to persons with disabilities shall be provided adjacent to each turnstile exit or entrance. This alternate passageway shall be maintained in an unlocked condition during business hours and the door or gate shall not activate a publicly audible alarm system. The door or gate may be latched where all gates are restricted and controlled by an attendant and a sign is posted stating, "All gates are restricted and controlled by an attendant." The accessible door or gate shall provide the same use pattern. Where posts, rails or other pedestrian controls are utilized to create crowd control aisles or lanes, a minimum of one shall be accessible and shall provide a minimum aisle width no less than indicated in Figures 11B-5E(a) and (b) with 32 inches (813mm) of clear opening.

1133B.2.4 FLOOR LEVEL AT DOORS. Regardless of the occupant load, there shall be a floor or landing on each side of a door.

1133B.2.4.1 THRESHOLDS. The floor or landing shall not be more than 1/2 inch (12.7mm) lower than the threshold of the doorway. Change in level between 1/4 inch (6mm) and 1/2 inch (12.7mm) shall be beveled with a slope no greater than one unit vertical to 2 units horizontal (50percent slope). Change in level greater than 1/2 inch (12.7mm) shall be accomplished by means of a ramp. See Section 1133B.5.1.

1133B.2.4.2 MANEUVERING CLEARANCES AT DOORS. Minimum maneuvering clearances at door shall be as shown in Figures 11B-26A and 11B-26B. The floor or ground area within the required clearance shall be level and clear.

1133B.2.4.3 THE DOOR OR LANDING SHALL NOT BE MORE THAN 1/2 inch (12.7mm) lower than the threshold of the doorway. Change in level between 1/4 inch (6mm) and 1/2 inch (12.7mm) shall be beveled with a slope no greater than one unit vertical to 2 units horizontal (50percent slope). Change in level greater than 1/2 inch (12.7mm) shall be accomplished by means of a ramp. See Section 1133B.5.1.

1133B.2.4.4 MANEUVERING CLEARANCES AT DOORS. Minimum maneuvering clearances at door shall be as shown in Figures 11B-26A and 11B-26B. The floor or ground area within the required clearance shall be level and clear.

1133B.2.4.3 THE WIDTH OF THE LEVEL AREA ON THE SIDE TO WHICH THE DOOR SWINGS SHALL EXTEND 24 INCHES (610MM) PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR DOORS AND 18 INCHES (457MM) PAST THE STRIKE EDGE FOR INTERIOR DOORS. Twenty-four inches (610mm) is preferred for strike-side clearance.

1133B.2.4.4 THE SPACE BETWEEN TWO CONSECUTIVE DOOR OPENINGS IN A VESTIBULE, SERVING OTHER THAN A REQUIRED EXIT STAIRWAY SHALL PROVIDE A MINIMUM OF 48 INCHES (1219MM) OF CLEAR SPACE FROM ANY DOOR OPENING INTO SUCH VESTIBULE WHEN THE DOOR IS POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION. Doors in a series shall swing either in the same direction or away from the space between the doors. See Figures 11B-30 and 11B-31.

1133B.2.4.5 WHERE A DOOR REQUIRED TO BE ACCESSIBLE BY SECTION 1133B.1.1.1 IS LOCATED IN A RECESS OR ABOVE WHERE THE DISTANCE FROM THE FACE OF THE WALL TO THE FACE OF THE DOOR IS GREATER THAN 8 INCHES (203MM), STRIKE SIDE CLEARANCES AS DESCRIBED IN SECTION 1133B.2.4.3 SHALL BE PROVIDED. See Figure 11B-33(a).

1133B.2.5 CLOSER-EFFORT TO OPERATE DOORS. Maximum effort to operate doors shall not exceed 5 pounds for exterior and interior doors, such pull or push effort being applied at right angles to hinged doors and at the center plane of sliding or folding doors. Compensating devices or automatic door operators may be utilized to meet the above standards. When fire doors are required, the maximum effort to operate the door may be increased to the minimum allowable by the appropriate administrative authority, not to exceed 15 pounds.

1133B.2.5.1 DOOR CLOSER. If the door has a closer, then the sweep portion of the closer shall be adjusted so that from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75mm) from the latch, measured to the leading edge of the door.

1133B.2.5.2 HAND-ACTIVATED DOOR OPENING HARDWARE, HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERATING DEVICES ON ACCESSIBLE DOORS shall have a shape that is easy to grasp with one hand and does not require light grasping, light pinching or twisting of the wrist to operate. Hardware shall be centered between 30 inches (762mm) and 44 inches (1118mm) above the floor. Latching and locking doors that are hand-activated and which are in a path of travel shall be operable with a single effort by lever-type hardware, panic bars, push-pull activating bars or other hardware designed to provide passage. Locked exit doors shall operate as above in egress direction.

1133B.2.5.3 RECESSED DOORS. Where the plane of the doorway is offset 8 or more inches (205mm) from any obstruction within 18 inches (455mm) measured laterally on the latch side, the door shall be provided with maneuvering clearance for front approach. See Figure 11B-33(b).

1133B.2.6 SMOOTH SURFACE. The bottom 10 inches (254mm) of all doors except automatic and sliding shall have a smooth, uninterrupted surface to allow the door to be opened by a wheelchair footrest without creating a trap or hazardous condition. Where narrow frame doors are used, a 10 inch (254mm) high smooth panel shall be installed on the push side of the door, which will allow the door to be opened by a wheelchair footrest without creating a trap or hazardous condition.

1133B.3 CORRIDORS, HALLWAYS AND EXTERIOR EXIT BALCONIES

1133B.3.1 CORRIDOR AND HALLWAY WIDTHS. Every corridor and hallway serving an occupant load of 10 or more shall not be less than 44 inches (1118mm) in width. Corridors and hallways serving an occupant load of less than 10 shall not be less than 36 inches (914mm) in width.

1133B.3.2 CORRIDORS AND HALLWAYS OVER 200 FEET (60 960MM) Corridors and hallways that are located on an accessible route and exceed 200 feet (60 960mm) in length shall have a minimum clear width of 60 inches (1524mm), then passing spaces at least 60 inches (1524mm) by 60 inches (1524mm) shall be located at reasonable intervals not to exceed 200 feet (60 960mm). A "T" intersection of two corridors or walks is an acceptable passing place.

1133B.4 STAIRWAYS

1133B.4.1 HANDRAILS

1133B.4.1.1 REQUIRED HANDRAILS. Stairways shall have handrails on each side, and every stairway required to be more than 88 inches (2235mm) in width shall be provided with not less than one intermediate handrail for each 88 inches (2235mm) of required width. Intermediate handrails shall be spaced approximately equally across with the width of the stairway. Handrails shall be continuous along both sides of a stairway.

1133B.4.2 HANDRAIL CONFIGURATION

1133B.4.2.1 THE TOP OF HANDRAIL GRIPPING SURFACE SHALL BE MOUNTED BETWEEN 34 INCHES (864MM) TO 38 INCHES (965MM) ABOVE THE NOSING OF THE TREADS.

1133B.4.2.2 HANDRAILS SHALL EXTEND A MINIMUM OF 12 INCHES (305MM) BEYOND THE TOP NOSING AND 12 INCHES (305MM) WITH THE TREAD WIDTH, BEYOND THE BOTTOM NOSING. AT THE TOP, THE EXTENSION SHALL BE PARALLEL WITH THE FLOOR OR GROUND SURFACE. AT THE BOTTOM, THE HANDRAIL SHALL CONTINUE TO SLOPE FOR A DISTANCE OF THE WIDTH OF ONE TREAD FROM THE BOTTOM RISER ; THE REMAINDER OF THE EXTENSION SHALL BE HORIZONTAL. See Figures 11B-35 and 11B-37.

1133B.4.2.3 ENDS SHALL BE RETURNED SMOOTHLY TO FLOOR, WALL OR POST.

1133B.4.2.4 THE ORIENTATION OF AT LEAST ONE HANDRAIL SHALL BE IN THE DIRECTION OF THE STAIR RUN AND PERPENDICULAR TO THE DIRECTION OF THE STAIR NOSING, AND SHALL NOT REDUCE THE MINIMUM REQUIRED WIDTH OF THE STAIRS.

1133B.4.2.5 HANDRAILS PROJECTING FROM A WALL SHALL HAVE A SPACE OF 1 1/2 INCHES (38mm) BETWEEN THE WALL AND THE HANDRAIL. HANDRAILS MAY BE LOCATED IN A RECESS IF THE RECESS IS A MAXIMUM OF 3 INCHES (76mm) DEEP AND EXTENDS AT LEAST 18 INCHES (457mm) ABOVE THE TOP OF THE RAIL. HANDRAILS SHALL NOT ROTATE IN THEIR FITTINGS.

1133B.4.2.6 HANDGRIPS. The handgrip portion of handrails shall not be less than 1 1/4 inches (32mm) or more than 1 1/2 inches (38mm) in cross-sectional nominal dimension or the shape shall provide an equivalent gripping surface. The handgrip portion of the handrails shall have a smooth surface with no sharp corners. Gripping surfaces (top or sides) shall be uninterrupted by newel posts, other construction elements or obstructions. Any wall or other surface adjacent to the handrail shall be free of sharp or abrasive elements. Edges shall have a minimum radius of 1/8 inch (3.2mm).

1133B.4.3 TACTILE FLOOR DESIGNATION SIGNS IN STAIRWAYS. Tactile floor designation signs that comply with Section 1117B.5, Item 1, shall be located at each floor level landing in all enclosed stairways in buildings two or more stories in height to identify the floor level. At exit discharge level, the sign shall include a raised five-pointed star located to the left of the identifying floor level. The outside diameter of the star shall be the same as the height of the raised characters.

1133B.4.4 STRIPING FOR THE VISUALLY IMPAIRED. The upper approach and the lower tread of each stair shall be marked by a strip of clearly contrasting color at least 2 inches (51mm) wide placed parallel to and not more than 1 inch (25.4mm) from the nose of the stair nosing and to extend the visually impaired. The strip shall be of material that is at least as slip resistant as the other treads of the stair.

Where stairways occur outside a building, the upper approach and all treads shall be marked by a strip of clearly contrasting color at least 2 inches (51mm) wide and placed parallel to and not more than 1 inch (25.4mm) from the nose of the step or landing to extend the visually impaired. The strip shall be of a material that is at least as slip resistant as the other treads of the stair. A pointed strip shall be acceptable.

1133B.4.5 TREADS, NOSING AND RISERS

1133B.4.5.1 TREADS. All tread surfaces shall be slip resistant. Weather exposed stairs and their approaches shall be designed so that water will not accumulate on walking surfaces. Treads shall have smooth, rounded or chamfered exposed edges, and no abrupt edges at the nosing (lower front edge). The radius of curvature at the leading edge of the tread shall be no greater than 1/2 inch (12.7mm).

1133B.4.5.2 NOSING. Nosing shall not project more than 1 1/2 inches (38mm) past the face of the riser below.

1133B.4.5.3 OPEN RISERS are not permitted. On any given flight of stairs, all steps shall have uniform riser height and uniform tread width consistent with Section 1133B.4. Stair treads shall be no less than 11 inches (279mm) deep, measured from riser to riser. See Figure 11B-35. Risers shall be sloped or the underside of the nosing shall have an angle not less than 60 degrees from the horizontal.

1133B.5 RAMPS

1133B.5.1 GENERAL. Ramps used as exits shall conform to the provisions of this section. Any accessible route of travel shall be considered a ramp if its slope is greater than 1 foot (305mm) rise in 20 feet (6096mm) of horizontal run (5 percent gradient).

1133B.5.2 WIDTH. Pedestrian ramps shall have a minimum clear width of 48 inches (1219mm), unless required to be wider by some other provision of this code. Pedestrian ramps serving entrances to buildings where the ramp is the only exit discharge path and serves an occupant load of 300 or more shall have a minimum clear width of 60 inches (1524mm). Ramps serving Group R occupancies may be 36 inches (914mm) clear width when the occupant load is 50 or less.

1133B.5.3 SLOPE. The least possible slope shall be used for any ramp. The maximum slope of a ramp that serves any exit way, provides access for persons with physical disabilities or is in the accessible route of travel shall be 1 foot (305mm) rise in 12 feet (3658mm) of horizontal run (8.3 percent gradient). The maximum rise for any run shall be 30 inches (762mm).

SLOPE	MAXIMUM RISE		MAXIMUM HORIZONTAL PROJECTION	
	INCHES	mm	FEET	m
1:12 to < 1:16	30	760	30	9
1:16 to < 1:20	30	760	40	12

1133B.5.3.1 THE CROSS SLOPE OF RAMP SURFACES SHALL BE NO GREATER THAN ONE UNIT VERTICAL IN 50 UNITS HORIZONTAL (2 PERCENT SLOPE).

1133B.5.4 LANDINGS. Level ramp landings shall be installed as follows :

1133B.5.4.1 LOCATION OF LANDING. Level ramp landings shall be provided at the top and bottom of each ramp. Intermediate landings shall be provided at intervals not exceeding 30 inches (762mm) of vertical rise and at each change of direction. Landings are not considered in determining the maximum horizontal distance of each ramp. Landings shall be level as specified in the definition of "Level area" in Section 1102B.

1133B.5.4.2 SIZE OF TOP AND BOTTOM LANDINGS. Top landings shall be not less than 60 inches (1524mm) in the direction of ramp run. Landings at the bottom of ramps shall have a dimension in the direction of ramp run of not less than 72 inches (1829mm).

1133B.5.4.3 ENCRoACHMENT OF DOORS. Doors in any position shall not reduce the minimum dimension of the landing to less than 42 inches (1067mm) and shall not reduce the required width by more than 3 inches (76mm) when fully open. See Figure 11B-39(b).

1133B.5.4.4 STRIKE EDGE EXTENSION. The width of the landing shall extend 24 inches (610mm) past the strike edge of any door or grate for exterior ramps and 18 inches (457mm) past the strike edge for interior ramps.

1133B.5.4.5 LANDING WIDTH. At bottom and intermediate landings, the width shall be at least the same as required for the ramps.

1133B.5.4.6 CHANGE OF DIRECTION. Intermediate and bottom landings at a change of direction in excess of 30 degrees shall have a dimension in the direction of ramp run of not less than 72 inches (1829mm) to accommodate the handrail extension.

1133B.5.4.7 OTHER INTERMEDIATE LANDINGS. Other intermediate landings shall have a dimension in the direction of ramp run of not less than 60 inches (1524mm).

1133B.5.4.8 For existing ramps or ramps not covered by Section 1133B.5.4.1, landings shall be provided as set forth in Section 1133B.5.4.1.

1133B.5.4.9 HAZARDS. Required ramps shall have a curb at least 2 inches (51mm) high, or a wheel guide rail 2 inches (51mm) to 4 inches (102mm) high on each side of the ramp landing that has a vertical drop exceeding 4 inches (102mm) and that is not bounded by a wall or fence.

1133B.5.5 HANDRAILS FOR RAMPS

1133B.5.5.1 HANDRAILS are required on ramps that provide access if the slope exceeds 1 foot (305mm) rise in 20 feet (6096mm) of horizontal run (5 percent gradient), except that at exterior door landings, handrails are not required on ramps less than 6 inches (152mm) rise or 72 inches (1829mm) in length. Handrails shall be placed on each side of each ramp, shall be continuous the full length of the ramp, shall be 34 inches (864mm) to 38 inches (965mm) above the ramp surface to the top of the