

**4.6 PARKING AND PASSENGER LOADING ZONES.**

4.6.1 MINIMUM NUMBER. PARKING SPACES REQUIRED TO BE ACCESSIBLE BY 4.1 SHALL COMPLY WITH 4.6.2 THROUGH 4.6.4. PASSENGER LOADING ZONES REQUIRED TO BE ACCESSIBLE BY 4.1 SHALL COMPLY WITH 4.6.5 AND 4.6.6.

4.6.2 LOCATION. ACCESSIBLE PARKING SPACES SERVING A PARTICULAR BUILDING SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE OF TRAVEL FROM ADJACENT PARALLEL TO AN ACCESSIBLE ENTRANCE. THAT DOES NOT SERVE A PARTICULAR BUILDING, ACCESSIBLE ROUTE OF TRAVEL TO AN ACCESSIBLE ENTRANCE OF THE BUILDING, ACCESSIBLE ENTRANCES WITH ADJACENT PARKING. ACCESSIBLE PARKING SPACES SHALL BE DISPOSED AND LOCATED CLOSEST TO THE ACCESSIBLE ENTRANCES.

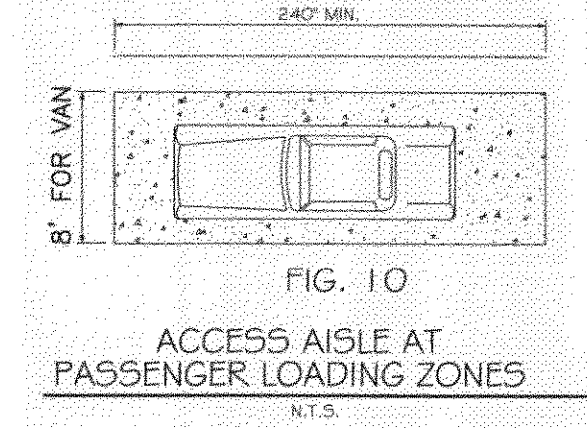


FIG. 10  
ACCESS AISLE AT PASSENGER LOADING ZONES  
N.T.S.

4.6.3 PARKING SPACES. PARKING SPACES FOR DISABLED PEOPLE SHALL BE AT LEAST 9'0" (2743mm) WIDE AND SHALL HAVE AN ADJACENT ACCESS AISLE 6'0" (1829mm) WIDE MINIMUM. PARKING SPACES SHALL BE PART OF AN ACCESSIBLE ROUTE TO THE BUILDING OR FACILITY ENTRANCE AND SHALL COMPLY WITH 4.3. TWO ACCESSIBLE PARKING SPACES MAY SHARE A COMMON ACCESS AISLE. PARKED VEHICLES OR SPACES SHALL NOT REDUCE THE CLEAR WIDTH OF AN ACCESSIBLE CIRCULATION ROUTE. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 IN ALL DIRECTIONS.

EXCEPTION: IF ACCESSIBLE PARKING SPACES FOR VANS DESIGNED FOR HANDICAPPED PERSONS ARE PROVIDED, EACH SHOULD HAVE AN ADJACENT ACCESS AISLE AT LEAST 9'0" (2743mm) WIDE COMPLYING WITH 4.5. GROUND AND FLOOR SURFACES.

4.6.4 SIGNAGE. ACCESSIBLE PARKING SPACES SHALL BE DESIGNATED AS RESERVED FOR THE DISABLED BY A SIGN SHOWING THE SYMBOL OF ACCESSIBILITY (SEE 4.30.5). SUCH SIGNS SHALL NOT BE OBLSCURED BY A VEHICLE PARKED IN THE SPACE.

4.6.5 PASSENGER LOADING ZONES. PASSENGER LOADING ZONES SHALL PROVIDE AN ACCESS AISLE AT LEAST 6'0" (1829mm) WIDE AND 20" (508mm) LONG ADJACENT AND PARALLEL TO THE VEHICLE FULL-UP SPACE (SEE FIG. 10). IF THERE ARE CURBS BETWEEN THE ACCESS AISLE AND THE VEHICLE FULL-UP SPACE, THEN A CURB RAMP COMPLYING WITH 4.7 SHALL BE PROVIDED. VEHICLE STANDING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 IN ALL DIRECTIONS.

4.6.6 VERTICAL CLEARANCE. PASSENGER LOADING ZONES SHALL PROVIDE AN ACCESS AISLE AT LEAST 6'0" (1829mm) WIDE AND 20" (508mm) LONG ADJACENT AND PARALLEL TO THE VEHICLE FULL-UP SPACE (SEE FIG. 10). IF THERE ARE CURBS BETWEEN THE ACCESS AISLE AND THE VEHICLE FULL-UP SPACE, THEN A CURB RAMP COMPLYING WITH 4.7 SHALL BE PROVIDED. VEHICLE STANDING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (8%) IN ALL DIRECTIONS.

**4.7 CURB RAMPS.**

4.7.1 LOCATION. CURB RAMPS COMPLYING WITH 4.7 SHALL BE PROVIDED WHEREVER AN ACCESSIBLE ROUTE CROSSES A CURB.

4.7.2 SLOPE. SLOPES OF CURB RAMPS SHALL COMPLY WITH 4.8.2. THE SLOPE SHALL BE INDICATED AS SHOWN IN FIG. 10. IF THERE ARE CURBS BETWEEN THE ACCESS AISLE AND THE VEHICLE FULL-UP SPACE, THEN A CURB RAMP COMPLYING WITH 4.7 SHALL BE PROVIDED. VEHICLE STANDING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (8%) IN ALL DIRECTIONS.

4.7.3 WIDTH. THE MINIMUM WIDTH OF A CURB RAMP SHALL BE 36" EXCLUSIVE OF FLARED SIDES.

4.7.4 SURFACE. SURFACES OF CURB RAMPS SHALL COMPLY WITH 4.5.

4.7.5 SIDES OF CURB RAMPS. IF A CURB RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, OR WHERE IT IS NOT PROTECTED BY HANDRAILS OR GUARDRAILS, THEN IT SHALL HAVE FLARED SIDES. THE MAXIMUM SLOPE OF THE FLARE SHALL NOT EXCEED FIG. 10. CURB RAMPS WITH RETURNED CURBS MAY BE USED WHERE PEDESTRIANS WALK NORMALLY WALK ACROSS THE RAMP (SEE FIG. 10b).

4.7.6 BUILT-UP CURB RAMPS. BUILT-UP CURB RAMPS SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO VEHICULAR TRAFFIC LANES (SEE FIG. 13).

4.7.7 WARNING TEXTURES. (REMOVED AND RESERVED).

4.7.8 OBSTRUCTIONS. CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED VEHICLES.

4.7.9 LOCATION AT MARKED CROSSINGS. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.

4.7.10 DIAGONAL CURB RAMPS. IF DIAGONAL OR CORNER TYPES CURB RAMPS HAVE RETURNED CURBS OR OTHER WELL-DEFINED EDGES, SUCH EDGES SHALL BE PARALLEL TO THE DIRECTION OF PEDESTRIAN TRAVEL. DIAGONAL CURB RAMPS SHALL BE LOCATED AT AN ACCESSIBLE CROSSING, THE 40" (1016mm) CLEAR SPACE SHALL BE WITHIN THE MARKINGS. IF DIAGONAL CURB RAMPS HAVE FLARED SIDES, THE FLARE SHALL BE WITHIN THE MARKINGS. THE SEGMENT OF STRAIGHT CURB LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING.

4.7.11 ISLANDS. ANY RAISED ISLANDS IN CROSSING SHALL BE CUT THROUGH LEVEL WITH THE STREET OR HAVE CURB RAMPS AT BOTH SIDES AND A LEVEL AREA AT LEAST 4'0" (1219mm) LONG IN THE PART OF THE ISLAND INTERSECTED BY THE CROSSING.

4.7.12 UNLANDED INTERSECTIONS. (REMOVED AND RESERVED).

**4.8 RAMPS.**

4.8.1 GENERAL. ANY PART OF AN ACCESSIBLE ROUTE WITH A SLOPE GREATER THAN 1:20 SHALL BE CONSIDERED A RAMP AND SHALL COMPLY WITH 4.8.

4.8.2 SLOPE & RISE. THE LEAST POSITIVE SLOPE SHALL BE USED FOR ANY RAMP. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION SHALL BE 1:12. THE MAXIMUM RISE FOR ANY RUN SHALL BE 30" (762mm) FOR CURB CONSTRUCTION OR EXISTING SITES OR IN EXISTING BUILDINGS OR FACILITIES MAY HAVE SLOPES AND RISE AS SHOWN IN TABLE 2. IF SPACE LIMITATIONS PROHIBIT THE USE OF A 1:12 SLOPE OR LESS (SEE 4.1.6).

4.8.3 CLEAR WIDTHS. THE MINIMUM CLEAR WIDTH OF A RAMP SHALL BE 36" (915mm).

4.8.4 LANDINGS. RAMPS SHALL HAVE LEVEL LANDINGS AT THE BOTTOM AND TOP OF EACH RUN. LANDINGS SHALL HAVE THE FOLLOWING FEATURES:  
(1) THE LANDING SHALL BE AT LEAST AS WIDE AS THE RAMP RUN LEADING TO IT.  
(2) THE LANDING LENGTH SHALL BE A MINIMUM OF 60" (1525mm) CLEAR.  
(3) IF RAMPS CHANGE DIRECTION AT LANDINGS, THE MINIMUM LANDING SIZE SHALL BE 60" (1525mm) BY (1525mm).  
(4) IF A DOORWAY IS LOCATED AT A LANDING, THEN THE AREA IN FRONT OF THE DOORWAY SHALL COMPLY WITH 4.13.6.

4.8.5 HANDRAILS. IF A RAMP RUN HAS A RISE GREATER THAN 6" (254mm) OR A HORIZONTAL PROJECTION GREATER THAN 72" (1829mm) THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. HANDRAILS SHALL COMPLY WITH 4.9.6 AND SHALL HAVE THE FOLLOWING FEATURES:  
(1) HANDRAILS SHALL BE PROVIDED ALONG BOTH SIDES OF RAMP SEGMENTS. THE INSIDE HANDRAIL ON SWITCHBACK OR DOGLEG RAMPS SHALL ALWAYS BE CONTINUOUS.  
(2) IF HANDRAILS ARE NOT CONTINUOUS, THEY SHALL EXTEND AT LEAST 12" (305mm) BEYOND THE TOP AND BOTTOM OF THE RAMP SEGMENT AND SHALL BE PARALLEL WITH THE FLOOR OR GROUND SURFACE.  
(3) THE CLEAR SPACE BETWEEN THE HANDRAIL AND THE WALL SHALL BE 1-1/2" (38mm).  
(4) GRIPPING SURFACES SHALL BE CONTINUOUS.  
(5) TOP OF HANDRAIL GRIPPING SURFACES SHALL BE MOUNTED BETWEEN 30" & 34" (762mm & 863mm) ABOVE RAMP SURFACES.  
(6) ENDS OF HANDRAILS SHALL BE EITHER ROUNDED OR RETURNED SMOOTHLY TO FLOOR, WALL OR POST.  
(7) HANDRAILS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

4.8.6 CROSS SLOPE & SURFACES. THE CROSS SLOPE OF RAMP SURFACES SHALL BE NO GREATER THAN 1:50. RAMP SURFACES SHALL COMPLY WITH 4.5.

4.8.7 EDGE PROTECTION. RAMPS AND LANDINGS WITH DROP-OFFS SHALL HAVE CURBS, WALLS, BANISTER, OR PROTECTING SURFACES THAT PREVENT PEOPLE FROM SLIPPING OFF THE RAMP. CURBS SHALL BE A MINIMUM OF 2" (51mm) HIGH (SEE FIG. 17).

4.8.8 OUTDOOR CONDITIONS. OUTDOOR RAMPS AND THEIR APPROACHES SHALL BE DESIGNED SO THAT WATER WILL NOT ACCUMULATE ON WALKING SURFACES.

**4.9 STAIRS.**

4.9.1 MINIMUM NUMBER. STAIRS REQUIRED TO BE ACCESSIBLE BY 4.1 SHALL COMPLY WITH 4.9.

4.9.2 TREADS & RISERS. ON ANY GIVEN FLIGHT OF STAIRS, ALL STEPS SHALL HAVE UNIFORM RISE HEIGHTS AND UNIFORM TREAD WIDTHS. STAIR TREADS SHALL BE NO LESS THAN 11" (279mm) WIDE, MEASURED FROM RISE TO RISE (SEE FIG. 19a). OPEN RISERS ARE NOT PERMITTED ON ACCESSIBLE ROUTES.

4.9.3 NOSINGS. THE UNDERSIDES OF NOSINGS SHALL NOT BE ABRUPT. THE RADIUS OF CURVATURE AT THE LEADING EDGE OF THE TREAD SHALL BE NO GREATER THAN 1/8" (3.2mm). RISERS SHALL BE SLOPED OR THE UNDERSIDE OF THE NOSING SHALL HAVE AN ANGLE NOT LESS THAN 60 DEGREES FROM THE HORIZONTAL. NOSINGS SHALL PROJECT NO MORE THAN 1-1/2" (38mm) (SEE FIG. 18).

4.9.4 HANDRAILS. STAIRWAYS SHALL HAVE HANDRAILS AT BOTH SIDES OF ALL STAIRS. HANDRAILS SHALL COMPLY WITH 4.9.6 AND SHALL HAVE THE FOLLOWING FEATURES:  
(1) HANDRAILS SHALL BE CONTINUOUS ALONG BOTH SIDES OF STAIRS. THE INSIDE HANDRAIL ON SWITCHBACK OR DOGLEG STAIRS SHALL ALWAYS BE CONTINUOUS (SEE FIG. 19a & b).  
(2) IF HANDRAILS ARE NOT CONTINUOUS, THEY SHALL EXTEND AT LEAST 12" (305mm) PLUS THE WIDTH OF ONE TREAD BEYOND THE BOTTOM RISER. 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 FIG. 19a & b). HANDRAIL EXTENSIONS SHALL COMPLY WITH 4.4.  
(3) THE CLEAR SPACE BETWEEN HANDRAILS AND WALLS SHALL BE 1-1/2" (38mm).  
(4) GRIPPING SURFACES SHALL BE UNINTERRUPTED BY NIVEL POSTS, OTHER CONSTRUCTION ELEMENTS, OR OBSTRUCTIONS.  
(5) TOP OF HANDRAIL GRIPPING SURFACE SHALL BE MOUNTED BETWEEN 30" & 34" (762mm & 863mm) ABOVE STAIR NOSINGS.  
(6) ENDS OF HANDRAILS SHALL BE EITHER ROUNDED OR RETURNED SMOOTHLY TO FLOOR, WALL OR POST.  
(7) HANDRAILS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

4.9.5 TACTILE WARNINGS AT STAIRS. (REMOVED AND RESERVED).

4.9.6 OUTDOOR CONDITIONS. OUTDOOR STAIRS AND THEIR APPROACHES SHALL BE DESIGNED SO THAT WATER WILL NOT ACCUMULATE ON WALKING SURFACES.

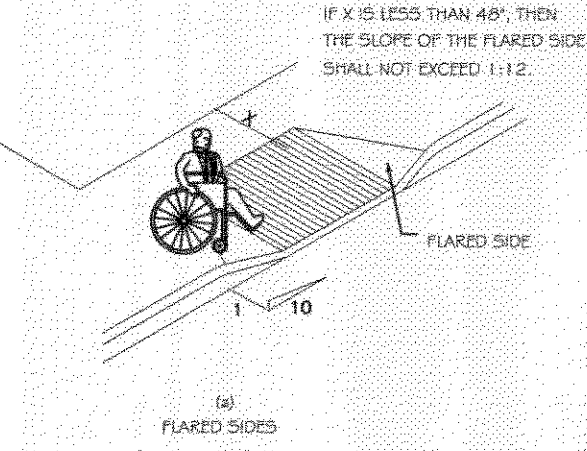


FIG. 11  
MEASUREMENT OF CURB RAMP SLOPES  
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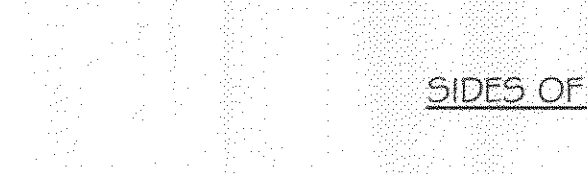


FIG. 12  
SIDES OF CURB RAMPS  
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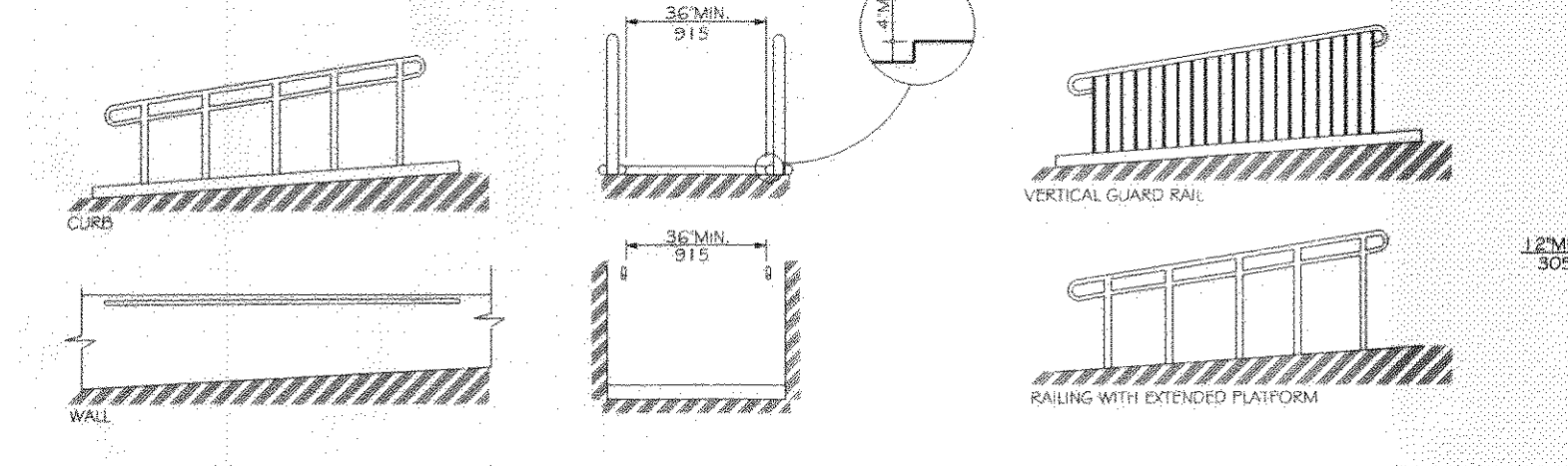


FIG. 13  
BUILT-UP CURB RAMP  
N.T.S.



FIG. 17  
EXAMPLES OF EDGE PROTECTION AND HANDRAIL EXTENSIONS  
N.T.S.

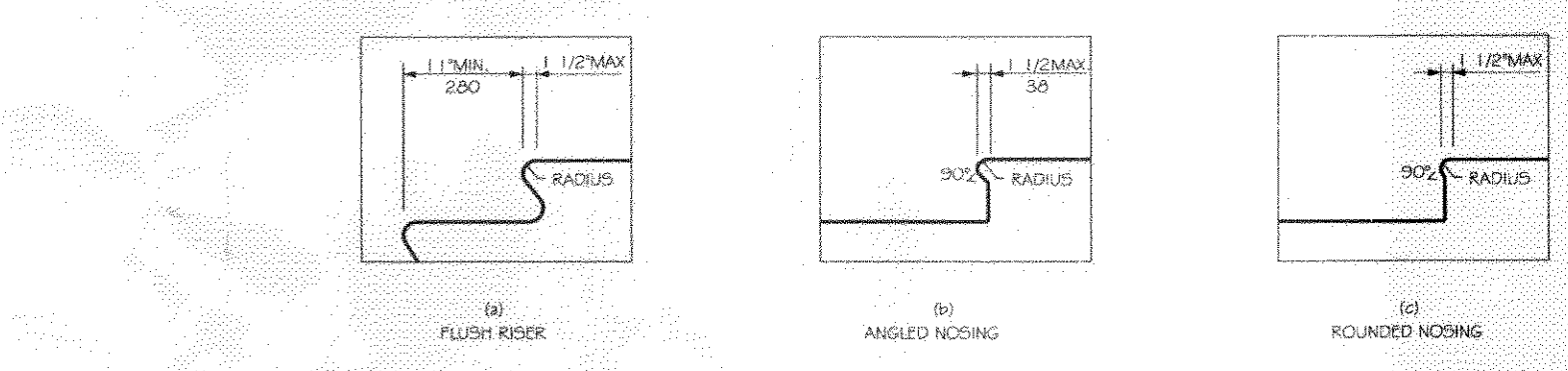


FIG. 18  
USEABLE TREAD WIDTH AND EXAMPLES OF ACCEPTABLE NOSINGS  
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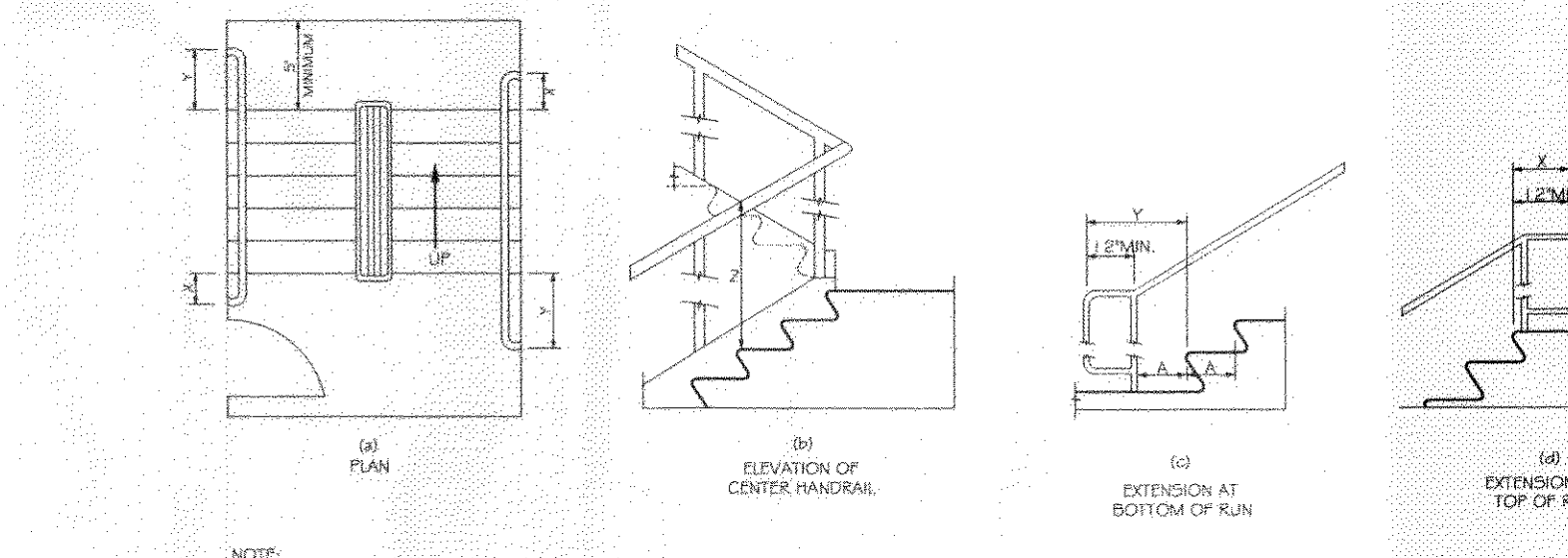


FIG. 19  
STAIR HANDRAILS  
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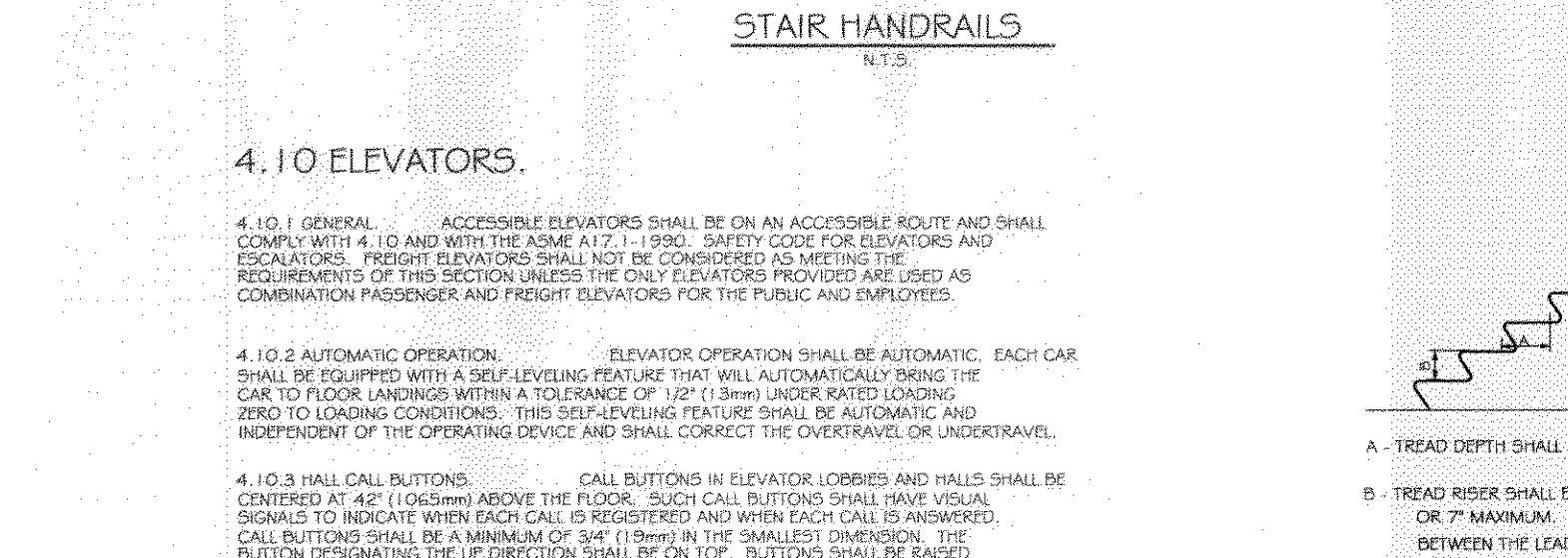


FIG. 20  
STAIR DETAIL  
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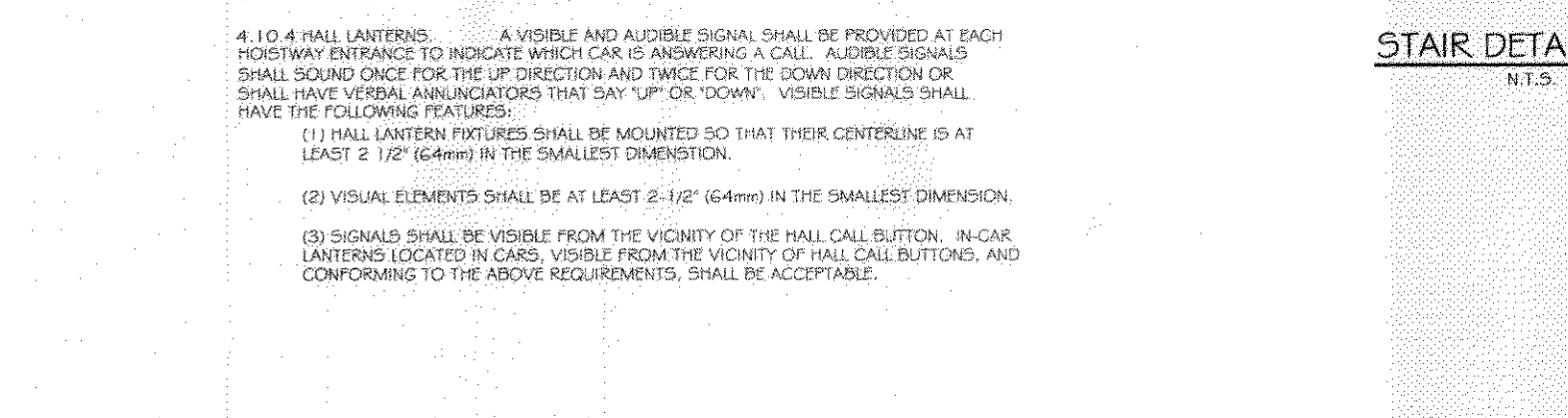


FIG. 23  
CAR CONTROLS  
N.T.S.

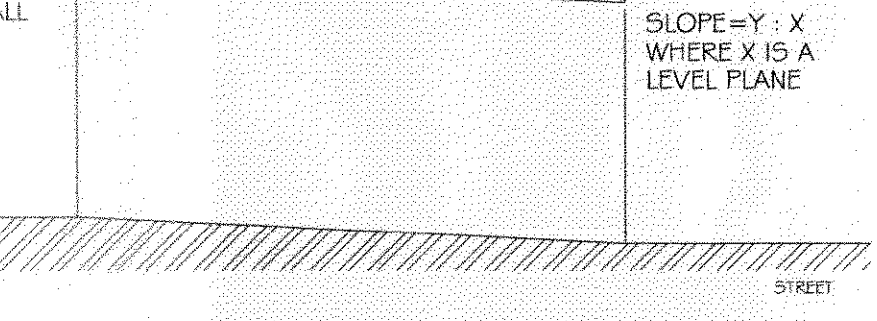


FIG. 11  
MEASUREMENT OF CURB RAMP SLOPES  
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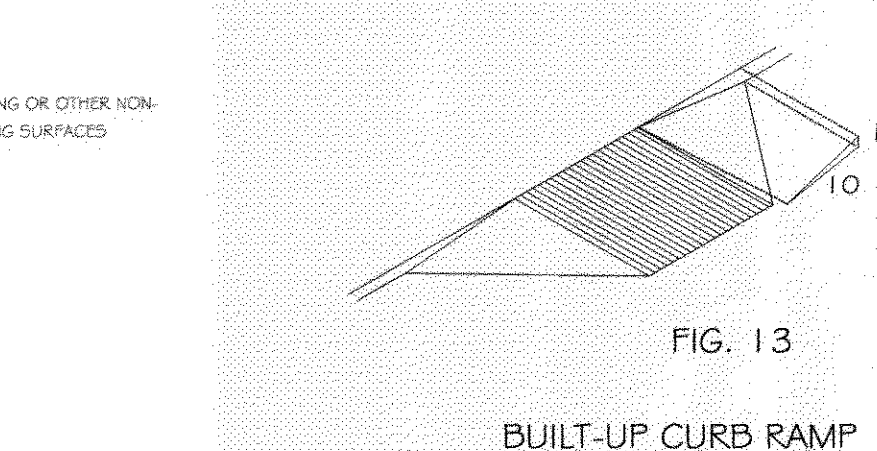


FIG. 13  
BUILT-UP CURB RAMP  
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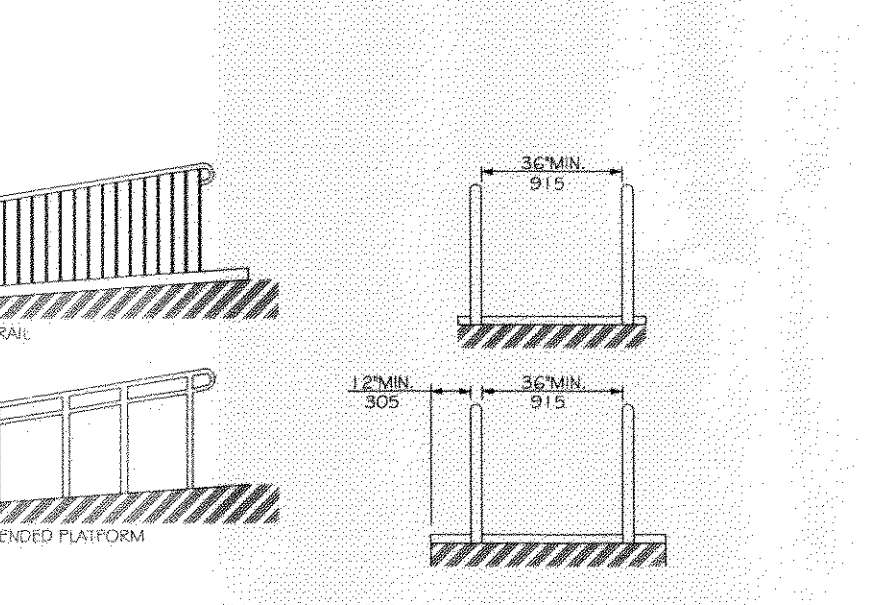


FIG. 17  
EXAMPLES OF EDGE PROTECTION AND HANDRAIL EXTENSIONS  
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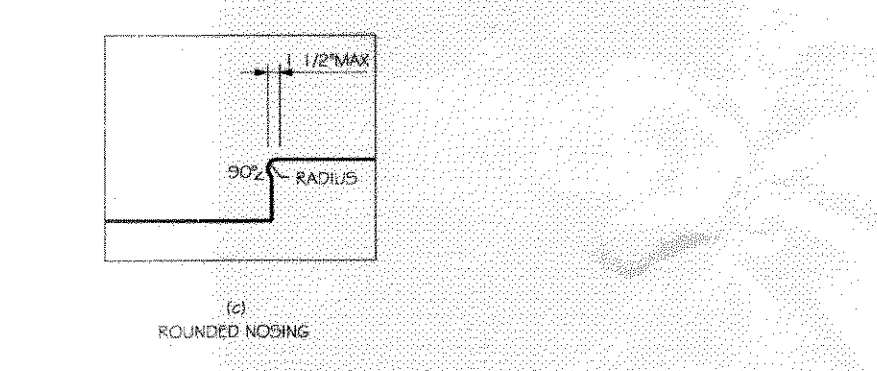


FIG. 18  
USEABLE TREAD WIDTH AND EXAMPLES OF ACCEPTABLE NOSINGS  
N.T.S.

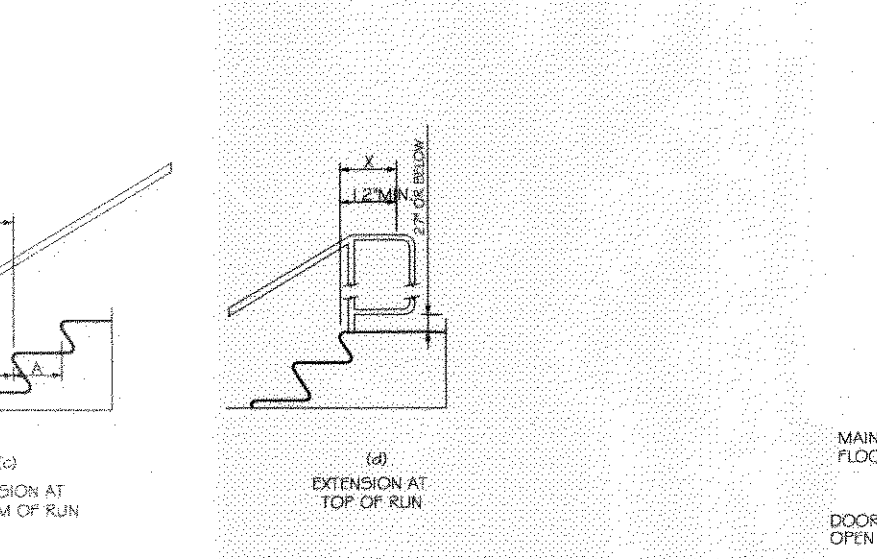


FIG. 19  
STAIR HANDRAILS  
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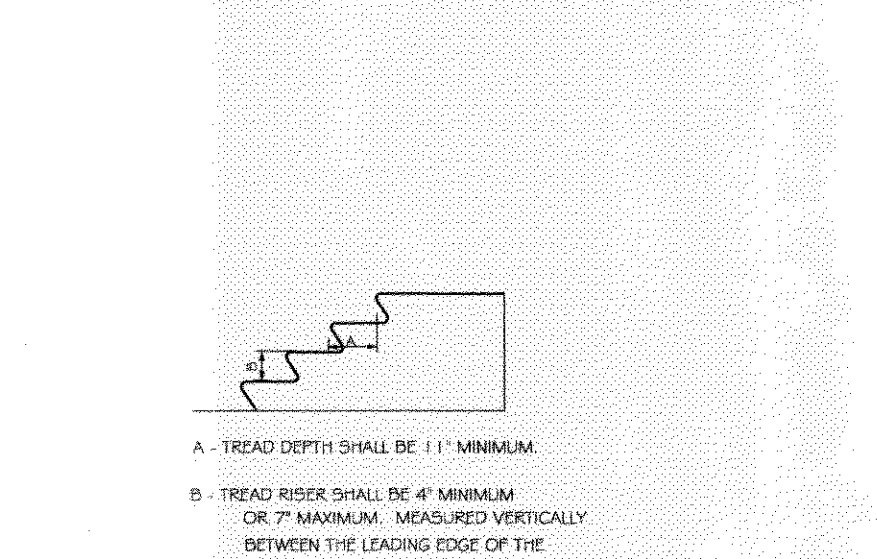


FIG. 20  
STAIR DETAIL  
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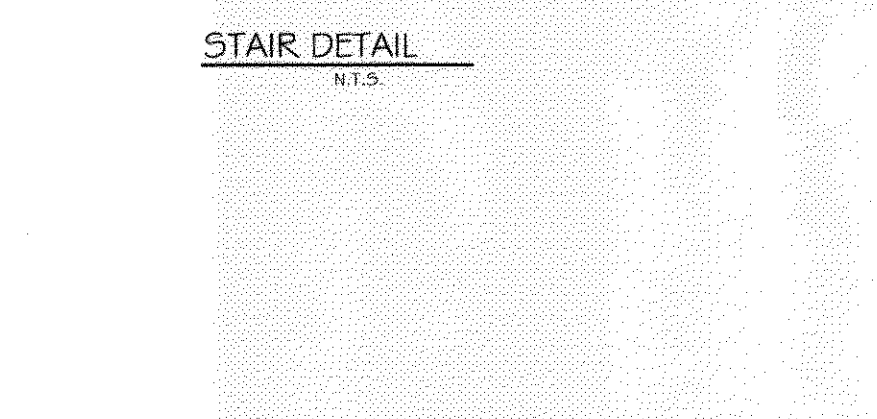


FIG. 23  
CAR CONTROLS  
N.T.S.

4.10.5 RAISED & BRAILLE CHARACTERS ON HORIZONTAL ENTRANCES. ALL ELEVATOR HORIZONTAL ENTRANCES SHALL HAVE RAISED AND BRAILLE FLOOR DESIGNATIONS PROVIDED ON BOTH SIDES. THE CENTERING OF THE CHARACTERS SHALL BE 60" (1525mm) ABOVE FINISH FLOOR. SUCH CHARACTERS SHALL BE 2" (51mm) HIGH AND SHALL COMPLY WITH 4.30.4. PERMANENTLY APPLIED PLATES ARE ACCEPTABLE IF THEY ARE PERMANENTLY FEADED TO THE JAMB.

4.10.6 DOOR PROTECTIVE REOPENING DEVICE. ELEVATOR DOORS SHALL OPEN AND CLOSE AUTOMATICALLY. THEY SHALL BE PROVIDED WITH A REOPENING DEVICE THAT WILL STOP AND REOPEN A CAR DOOR AND HORIZONTAL DOOR AUTOMATICALLY IF THE DOOR BECOMES OBSTRUCTED BY AN OBJECT OR PERSON. THE DEVICE SHALL BE CAPABLE OF COMPLETING THESE OPERATIONS WITHOUT REQUIRING CONTACT FOR AN OBSTRUCTION PERSISTING THROUGH THE OPENING AT HEIGHTS OF 1' 4" (381mm) TO 4' 7" (1433mm) ABOVE FINISH FLOOR. DOOR REOPENING DEVICES SHALL REMAIN EFFECTIVE FOR AT LEAST 30 SECONDS. AFTER SUCH AN INTERVAL, DOORS MAY CLOSE IN ACCORDANCE WITH THE REQUIREMENTS OF ASME A17.1-1990.

4.10.7 DOOR SIGNAL TINGING FOR HALL CALLS. THE MINIMUM ACCEPTABLE TIME FROM NOTIFICATION THAT A CAR IS ANSWERING A CALL UNTIL THE DOORS OF THAT CAR START TO CLOSE SHALL BE CALCULATED FROM THE FOLLOWING EQUATION:  
 $T = D(1.5/5) \text{ OR } T = D(445\text{mm}/5)$

WHERE T IS TOTAL TIME IN SECONDS AND D IS DISTANCE IN FEET OR MILLIMETERS FROM A POINT IN THE LOBBY OR CORRIDOR 60" (1525mm) DIRECTLY IN FRONT OF THE FARTHEST CALL BUTTON CONTROLLING THAT CAR TO THE CENTERLINE OF ITS HOISTWAY DOOR. FOR CARS WITH BRIDGE LANTERNS, T BEGINS WHEN THE LANTERN IS VISIBLE FROM THE VICINITY OF HALL CALL BUTTONS AND AN ALARME SIGNAL IS SOUNDED. THE MAXIMUM ACCEPTABLE NOTIFICATION TIME SHALL BE 5 SECONDS.

4.10.8 DOOR DELAY FOR CAR CALLS. THE MINIMUM TIME FOR ELEVATOR DOORS TO REMAIN FULLY OPEN IN RESPONSE TO A CAR CALL SHALL BE 3 SECONDS.

4.10.9 FLOOR PLAN OF ELEVATOR CARS. THE FLOOR AREA OF ELEVATOR CARS SHALL PROVIDE SPACE FOR WHEELCHAIR USERS TO ENTER THE CAR, MANUEVER WITHIN REACH OF CONTROLS, AND GET FROM THE CAR. ACCEPTABLE DOOR OPENING AND HOIST DIMENSIONS SHALL BE AS SHOWN IN FIG. 22. THE CLEARANCE BETWEEN THE CAR PLATFORM SILL AND THE EDGE OF ANY HORIZONTAL LANDING SHALL BE NO GREATER THAN 1/4" (6.35mm).

4.10.10 ILLUMINATION LEVELS. THE LEVEL OF ILLUMINATION AT THE CAR CONTROLS, PLATFORM, AND CAR THRESHOLD AND LANDING SILL SHALL BE AT LEAST 5 FOOT-CANDELES (53.5 LUX).

4.10.11 CAR CONTROLS. ELEVATOR CONTROL PANELS SHALL HAVE THE FOLLOWING FEATURES:  
(1) BUTTONS. ALL CONTROL BUTTONS SHALL BE AT LEAST 3/4" (19mm) IN THEIR SMALLEST DIMENSION. THEY SHALL BE RAISED OR FLUSH.  
(2) TACTILE, BRAILLE, AND VISUAL CONTROL INDICATORS. ALL CONTROL BUTTONS SHALL BE DESIGNATED BY BRAILLE AND BY RAISED STANDARD ALPHABET CHARACTERS FOR LETTERS, ARABIC CHARACTERS FOR NUMERALS, OR STANDARD SYMBOLS AS SHOWN IN FIG. 23(a) AND AS REQUIRED BY ASME A17.1-1990. RAISED AND BRAILLE CHARACTERS AND SYMBOLS SHALL COMPLY WITH 4.30. THE CALL BUTTON FOR THE MAIN ENTRY FLOOR SHALL BE DESIGNATED BY A RAISED SYMBOL AT THE LEFT OF THE FLOOR DESIGNATION (SEE FIG. 23(b)). ALL RAISED DESIGNATIONS FOR CONTROL BUTTONS SHALL BE PLACED IMMEDIATELY TO THE LEFT OF THE BUTTON TO WHICH THEY APPLY. APPLIED PLATES, PERMANENTLY ATTACHED, ARE AN ACCEPTABLE MEANS TO PROVIDE RAISED CONTROL DESIGNATIONS. FLOOR BUTTONS SHALL BE PROVIDED WITH VISUAL INDICATORS TO SHOW WHEN EACH CALL IS REGISTERED. THE VISUAL INDICATORS SHALL BE EXTINGUISHED WHEN EACH CALL IS ANSWERED.

(3) HEIGHT. ALL FLOOR BUTTONS SHALL BE NO HIGHER THAN 54" (1370mm) ABOVE THE FINISH FLOOR FOR SIDE APPROACH AND 48" (1219mm) FOR FRONT APPROACH. EMERGENCY CONTROLS, INCLUDING THE EMERGENCY ALARM AND EMERGENCY STOP, SHALL BE LOCATED AT THE BOTTOM OF THE PANEL AND SHALL HAVE THEIR CENTERS NO LESS THAN 30" (762mm) ABOVE THE FINISH FLOOR (SEE FIG. 23(a) & (b)).

(4) LOCATION. CONTROLS SHALL BE LOCATED ON A FRONT WALL IF CAR HAS CENTER OPENING DOOR, AND AT THE SIDE WALL OR AT THE FRONT WALL NEXT TO THE DOOR IF CAR HAS SIDE OPENING DOORS (SEE FIG. 23(a) & (b)).

4.10.12 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. THE CAR POSITION INDICATOR SHALL BE A RED LIGHT SERVED BY THE ELEVATOR. THE CORRESPONDING NUMERALS SHALL ILLUMINATE, AND AN ALARME SIGNAL SHALL SOUND. NUMERALS SHALL BE A MINIMUM OF 3/4" (19mm) HIGH. THE ALARME SIGNAL SHALL BE NO LESS THAN 20 DECIBELS WITH A FREQUENCY NO HIGHER THAN 1500HZ. THE FLOOR ALARME AT WHICH A CAR STOPS OR WHICH A CAR PASSES MAY BE SUBSTITUTED FOR AN AUTOMATIC VERBAL ANNOUNCEMENT THE ALARME SIGNAL.

4.10.14 EMERGENCY COMMUNICATIONS. IF PROVIDED, EMERGENCY TWO-WAY COMMUNICATION SYSTEM BETWEEN THE ELEVATOR AND A POINT OUTSIDE THE HOISTWAY SHALL COMPLY WITH ASME A17.1-1990. THE HIGHEST OPERABLE PART OF A TWO-WAY COMMUNICATION SYSTEM SHALL BE A MINIMUM OF 48" (1219mm) FROM THE FLOOR OF THE CAR. IT SHALL BE IDENTIFIED BY A RAISED SYMBOL AND LETTERING COMPLYING WITH 4.30 AND LOCATED ADJACENT TO THE DEVICE. IF THE SYSTEM USES HANDSET TIEB THE LENGTH OF THE CORD FROM THE PANEL TO THE HANDSET SHALL BE AT LEAST 2' (610mm). IF THE SYSTEM IS LOCATED IN A CLOSED COMPARTMENT, THE COMPARTMENT DOOR HARDWARE SHALL CONFORM TO 4.27. CONTROLS AND OPERATING MECHANISMS. THE EMERGENCY INTERCOMMUNICATION SYSTEM SHALL NOT REQUIRE VOICE COMMUNICATION.

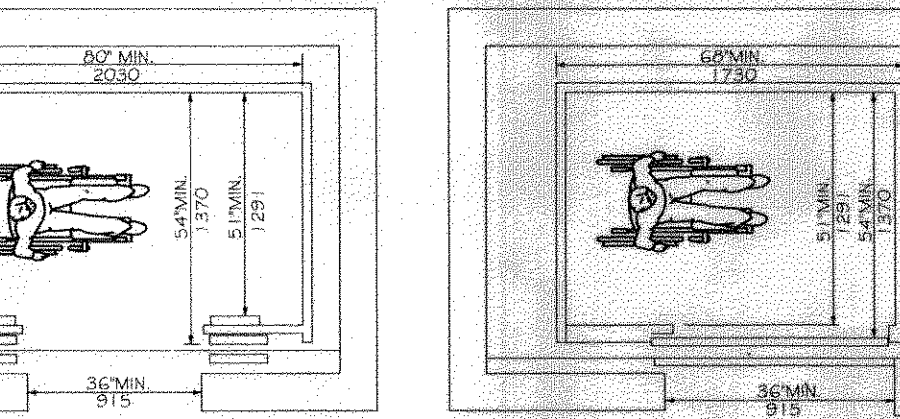


FIG. 22  
MINIMUM DIMENSION OF ELEVATOR CARS  
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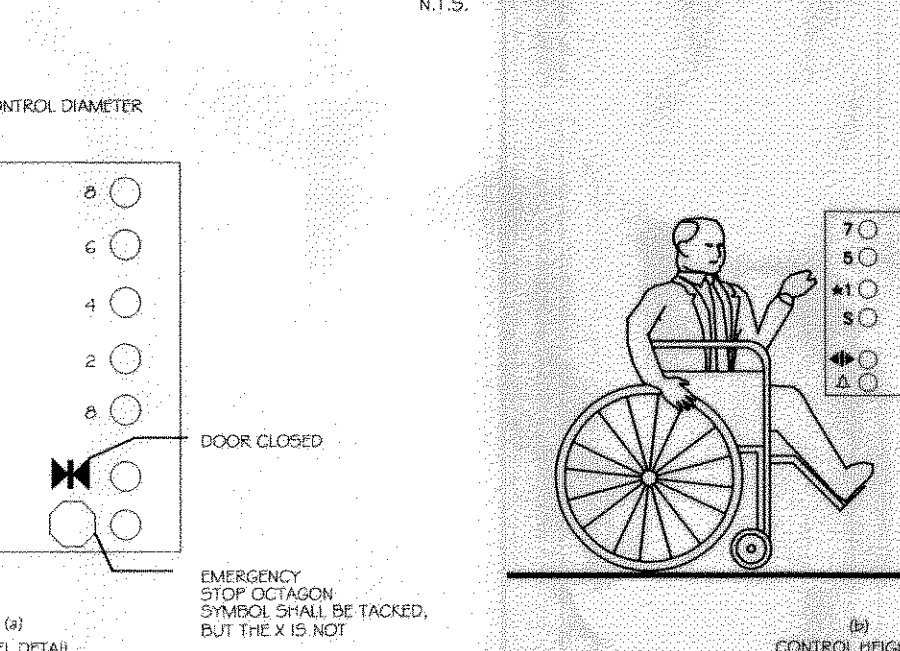


FIG. 23  
CAR CONTROLS  
N.T.S.

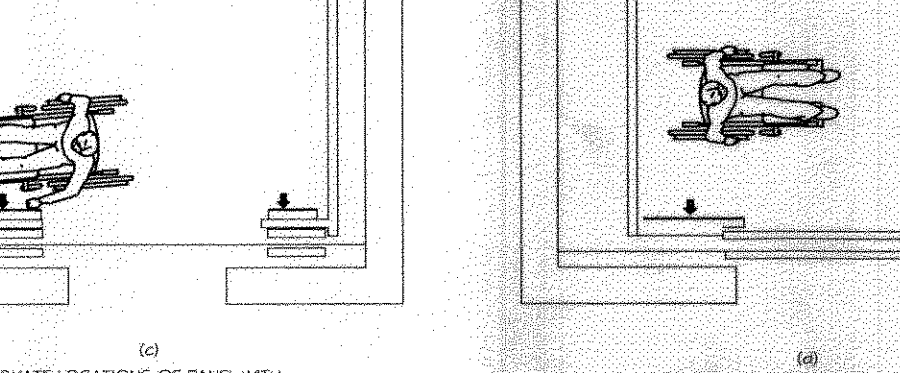


FIG. 23  
CAR CONTROLS  
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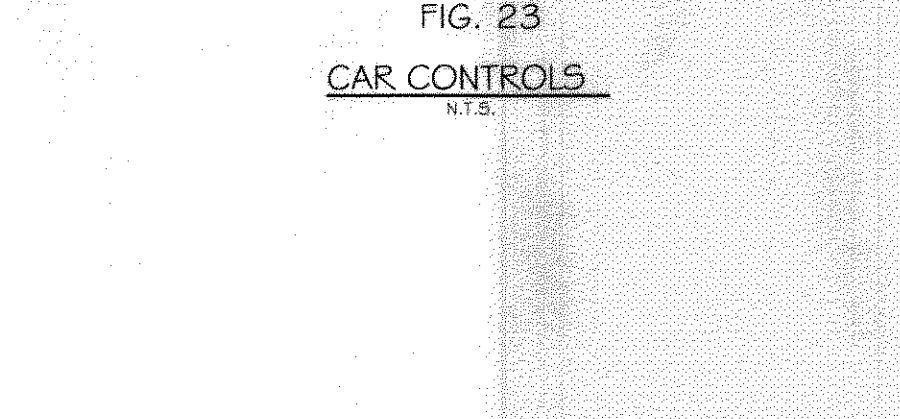


FIG. 23  
CAR CONTROLS  
N.T.S.

**4.11 PLATFORM LIFTS (WHEELCHAIR LIFTS).**

4.11.1 LOCATION. PLATFORM LIFTS (WHEELCHAIR LIFTS) PERMITTED BY 4.1 SHALL COMPLY WITH THE REQUIREMENTS OF 4.1.1.

4.1.1.2 OTHER REQUIREMENTS. IF PLATFORM LIFTS (WHEELCHAIR LIFTS) ARE USED, THEY SHALL COMPLY WITH 4.2.4, 4.5, 4.2.7, 4.3, 4.4, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.17, 4.18, 4.19, 4.20, 4.21, 4.22, 4.23, 4.24, 4.25, 4.26, 4.27, 4.28, 4.29, 4.30, 4.31, 4.32, 4.33, 4.34, 4.35, 4.36, 4.37, 4.38, 4.39, 4.40, 4.41, 4.42, 4.43, 4.44, 4.45, 4.46, 4.47, 4.48, 4.49, 4.50, 4.51, 4.52, 4.53, 4.54, 4.55, 4.56, 4.57, 4.58, 4.59, 4.60, 4.61, 4.62, 4.63, 4.64, 4.65, 4.66, 4.67, 4.68, 4.69, 4.70, 4.71, 4.72, 4.73, 4.74, 4.75, 4.76, 4.77, 4.78, 4.79, 4.80, 4.81, 4.82, 4.83, 4.84, 4.85, 4.86, 4.87, 4.88, 4.89, 4.90, 4.91, 4.92, 4.93, 4.94, 4.95, 4.96, 4.97, 4.98, 4.99, 5.00.

4.1.1.3 ENTRANCE. IF PLATFORM LIFTS ARE USED THEN THEY SHALL FACILITATE UNASSISTED ENTRY, OPERATION, AND EXIT FROM THE LIFT IN CONFORMANCE WITH 4.1.1.2.

**4.12 WINDOWS.**

4.12.1 GENERAL. (RESERVED).

4.12.2 WINDOW HARDWARE. (RESERVED).

**4.13 DOORS.**

4.13.1 GENERAL. DOORS REQUIRED TO BE ACCESSIBLE BY 4.1 SHALL COMPLY WITH THE REQUIREMENTS OF 4.1.3.

4.13.2 REVOLVING DOORS & TURNSTILES. REVOLVING DOORS OR TURNSTILES SHALL NOT BE THE ONLY MEANS OF PASSAGE AT AN ACCESSIBLE ENTRANCE OR ALONG AN ACCESSIBLE ROUTE. AN ACCESSIBLE GATE OR DOOR SHALL BE PROVIDED ADJACENT TO THE TURNSTILE OR REVOLVING DOOR AND SHALL BE SO DESIGNED AS TO FACILITATE THE SAME USE PATTERN.

4.13.3 GATES, INCLUDING TICKET GATES. SHALL MEET ALL APPLICABLE SPECIFICATIONS OF 4.1.3.

4.13.4 DOUBLE LEAF DOORWAYS. IF DOORWAYS HAVE TWO INDEPENDENTLY OPERATED DOOR LEAVES, THEN AT LEAST ONE LEAF SHALL MEET THE SPECIFICATIONS IN 4.13.4.1.3.6. THAT LEAF SHALL BE AN ACTIVE LEAF.

4.13.5 CLEAR WIDTH. DOORWAYS SHALL HAVE A MINIMUM CLEAR OPENING OF 32" (813mm) WITH THE DOOR OPEN 90 DEGREES. MEASURED BETWEEN THE FACE OF THE DOOR AND THE OPPOSITE STOP. OPENINGS MORE THAN 24" (610mm) IN DEPTH SHALL COMPLY WITH 4.2.1.4.3.5. EXCEPTION: DOORS NOT REQUIRING TIGHT FITTING, SUCH AS SHALLOW CLOSETS, MAY HAVE THE CLEAR OPENING REDUCED TO 20" (508mm) MINIMUM.

4.13.6 MANUEVERING CLEARANCES AT DOORS. THE FLOOR OR GROUND AREA WITHIN THE REQUIRED CLEARANCE SHALL BE LEVEL AND CLEAR.

EXCEPTION: ENTRY DOORS TO ACUTE CARE HOSPITAL BEDROOMS FOR INPATIENTS SHALL BE EXEMPTED FROM THE REQUIREMENT FOR SPACE AT THE LATCH SIDE OF THE DOOR IF THE DOOR IS AT LEAST 44" (1118mm) WIDE.

4.13.7 TWO DOORS IN SERIES. THE MINIMUM SPACE BETWEEN TWO HINGED OR PIVOTED DOORS IN SERIES SHALL BE 48" (1219mm) PLUS THE WIDTH OF ANY DOOR SWINGING INTO THE SPACE. DOORS IN SERIES SHALL SWING EITHER IN THE SAME DIRECTION OR AWAY FROM THE SPACE BETWEEN THE DOORS.

4.13.8 THRESHOLDS AT DOORWAYS. THRESHOLDS AT DOORWAYS SHALL NOT EXCEED 3/4" (19mm) IN HEIGHT FOR EXTERIOR SLIDING DOORS OR 1/2" (12.7mm) FOR OTHER TYPES OF DOORS. RAISED THRESHOLDS AND FLOOR LEVEL CHANGES AT ACCESSIBLE DOORWAYS SHALL BE SERVED WITH A SLOPE NO GREATER THAN 1:2 (SEE 4.5.2).

4.13.9 DOOR 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 TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST TO OPERATE. LEVEL, OPERATED MECHANISMS, PUSH-TYPE MECHANISMS, AND J-SHAPED HANDLES ARE ACCEPTABLE DESIGNS. WHEN SLIDING DOORS ARE FULLY OPEN, OPERATING HARDWARE SHALL BE EXTENDED AND LEAVE FROM BOTH SIDES. HARDWARE REQUIRED FOR ACCESSIBLE DOOR PASSAGE SHALL BE MOUNTED NO HIGHER THAN 48" (1219mm) ABOVE FINISH FLOOR.

4.13.10 DOOR CLOSERS. IF A DOOR HAS A CLOSER, THEN THE SWEEP EFFECT OF THE CLOSER SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE DOOR WILL TAKE AT LEAST 3 SECONDS TO MOVE TO A POINT 5" (127mm) FROM THE LATCH, MEASURED TO THE LEADING EDGE OF THE DOOR.

4.13.11 DOOR OPENING FORCE. THE MAXIMUM FORCE FOR PUSHING OR PULLING OPEN A DOOR SHALL BE AS FOLLOWS:  
(1) FIRE DOORS SHALL HAVE THE MINIMUM OPENING FORCE ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY.  
(2) OTHER DOORS:  
(a) EXTERIOR HINGED DOORS: (RESERVED).  
(b) INTERIOR HINGED DOORS: 5 LBF (22.2N).  
(c) SLIDING OR FOLDING DOORS: 5 LBF (22.2N).

THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISengage OTHER OPERATING MECHANISMS THAT HOLD THE DOOR IN A CLOSED POSITION.

4.13.12 AUTOMATIC DOORS AND POWER-ASSISTED DOORS. IF AN AUTOMATIC DOOR IS USED, THEN IT SHALL COMPLY WITH ASME A17.1-1990. IF THE DOOR IS POWER-OPERATED, AUTOMATIC DOORS SHALL COMPLY WITH ASME A17.1-1990. SUCH DOORS SHALL NOT OPEN TO BACK CHECK FASTER THAN 5" (127mm) PER SECOND. AUTOMATIC DOORS SHALL REQUIRE NO TIGHT GRASPING OR MOVEMENT. IF A POWER-ASSISTED DOOR IS USED, ITS DOOR-OPENING FORCE SHALL COMPLY WITH 4.13.11 AND ITS CLOSING SHALL CONFORM TO THE REQUIREMENTS IN ASME A17.1-1990.

**4.14 ENTRANCES.**

4.14.1 MINIMUM NUMBER. ENTRANCES REQUIRED TO BE ACCESSIBLE BY 4.1 SHALL BE PART OF AN ACCESSIBLE ROUTE COMPLYING WITH 4.3. SUCH ENTRANCES SHALL BE CONNECTED BY AN ACCESSIBLE ROUTE TO PUBLIC TRANSPORTATION STOPS, TO ACCESSIBLE PARKING AND PASSENGER LOADING ZONES, AND TO PUBLIC STREETS OR SIDEWAYS IF AVAILABLE (SEE 4.3.2.1). THEY SHALL ALSO BE CONNECTED BY AN ACCESSIBLE ROUTE TO ALL ACCESSIBLE SPACES OR ELEMENTS WITHIN THE BUILDING OR FACILITY.

4.14.2 SERVICE ENTRANCES. A SERVICE ENTRANCE SHALL NOT BE THE SOLE ACCESSIBLE ENTRANCE UNLESS IT IS THE ONLY ENTRANCE TO A BUILDING OR FACILITY (FOR EXAMPLE, IN A FACTORY OR GARAGE).