

CITY OF SOMERVILLE, MASSACHUSETTS  
MAYOR KATJANA BALLANTYNE  
DEPARTMENT of INFRASTRUCTURE & ASSET MANAGEMENT  
ENGINEERING DIVISION



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CITY OF SOMERVILLE, MASSACHUSETTS  
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**Appendix A**  
**Licensing Commission Rules and Regulations**  
**Section 1.18**

<https://www.somervillema.gov/sites/default/files/licensing-commission-rules-and-regulations.pdf>





**Office of the  
LICENSING COMMISSION**

**ADOPTED  
RULES AND REGULATIONS**

**SECTION 1.00. General Rules for Alcoholic Beverages Licensees, Common Victuallers, Innholders and Other Licensees of the Commission**

**1.18 Extension of Premises to Patio and Outdoor Areas**

- a. Alcoholic beverages cannot be served outside a licensed establishment unless and until an application to extend the licensed premises has been approved. The licensee must offer full meal service in the outdoor area.
- b. It is essential that the licensee have control of the area in order to preclude service to underage persons, to intoxicated persons, etc. The premises must be enclosed by a fence, rope or other means to prevent patrons or members of the public from wandering in and out. The enclosure must be described in the approved plans.
- c. In accordance with the ABCC requirements, the outdoor area must be contiguous to the licensed premises and the licensee must have a view of the outside premises from the inside. Egress from the inside to the outside must be clearly established. There must be adequate exits in case of emergency.
- d. Seats, tables, barriers, signs, stands, etc. may only be located as depicted on the plans in the approved license, and shall include at least one accessible table or 10% of total outdoor seating in the license area, whichever is greater. Accessible tables should be distributed by size and location throughout the licensed area.
- e. All building entrances, crosswalks, adjacent sidewalks, and outdoor seating shall be connected by an accessible walkway in good repair. If for any reason an accessible walkway is not available, the licensed use will be suspended, and no outdoor seating may be used until the accessible walkway is restored.
- f. The City assumes no responsibility for any damage to private or public property and licensee expressly releases City from all liability, damage, and cost for any damage to private property within the licensed area. In addition, the licensee agrees to indemnify the City against any claims arising out of or in any way related to its failure to properly clear the public right of way as requested by the City. The licensee agrees to add the City as an additional insured party on its liability insurance.
- g. Upon notice by the Licensing Commission, Fire Department, Commissioner of Public Works, or the City Engineer, the Equipment in the public way must be removed if the public way needs to be accessed for a public purpose, including but not limited to snow removal, street repair, and utility work. The Licensee also agrees in the event of an emergency, the City may require removal of the Equipment without notice.





h. Any violation of these rules and regulations may result in fines, suspension and revocation of the license, and other punitive actions as determined by the Licensing Commission.

i. Licenses are not transferable.

j. For Public Street Seating only:

(1) Licensee shall provide & maintain trash receptacle and/or provide bussing service during all hours of operation.

(2) Licensee shall post a conspicuous sign requiring patrons to not rearrange seating or relocate seating into the sidewalk or other accessible walks, routes, ramps or aisles.

(3) Licensee's operation in the licensed area may not begin earlier than 6:00 AM and may not extend beyond Midnight (12:00AM), inclusive of time to setup, breakdown and clean the area. Operation must not exceed the hours of the master license.

(4) Licensed areas in the public street shall only be authorized from April 1 to November 30. All seats, tables, barriers, signs, stands, etc. shall be removed from the public street by December 1.

(5) Parklet Seating shall include reflective tape or reflective markers to the traffic facing sides of the Parklet structure or railings.

(6) Parklet Seating platforms and other temporary structures shall include removable sections to access all utility manholes and access structures. Licensee shall remove sections when requested by City. At least 24 hours verbal notice will be provided. Emergencies may require shorter or immediate notification.

(7) Parklet Seating platforms and other temporary structures shall maintain a clear drainage path beneath the structure. Licensee shall clean beneath the structures on a monthly basis to clear debris and blockages from the drainage path.

k. For Dog Areas only:

(1) Licensees shall prohibit animals, except service animals, from all outdoor seating areas unless their license explicitly allows dogs in such areas.

(2) Licensees with a license that allows dogs shall ensure that every dog in the outdoor seating area is licensed and leashed, shall prohibit employees from touching or handling dogs, and shall provide bowls of water for the sole use of dogs.

(3) Licensees with a license that allows dogs shall post a conspicuous sign to designate the outdoor dog area, and to prohibit dogs from sitting or standing on any furniture and from eating anything, including scraps, from plates, drinkware, or utensils. Dogs may not be seated on the laps of patrons at any time.



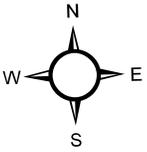
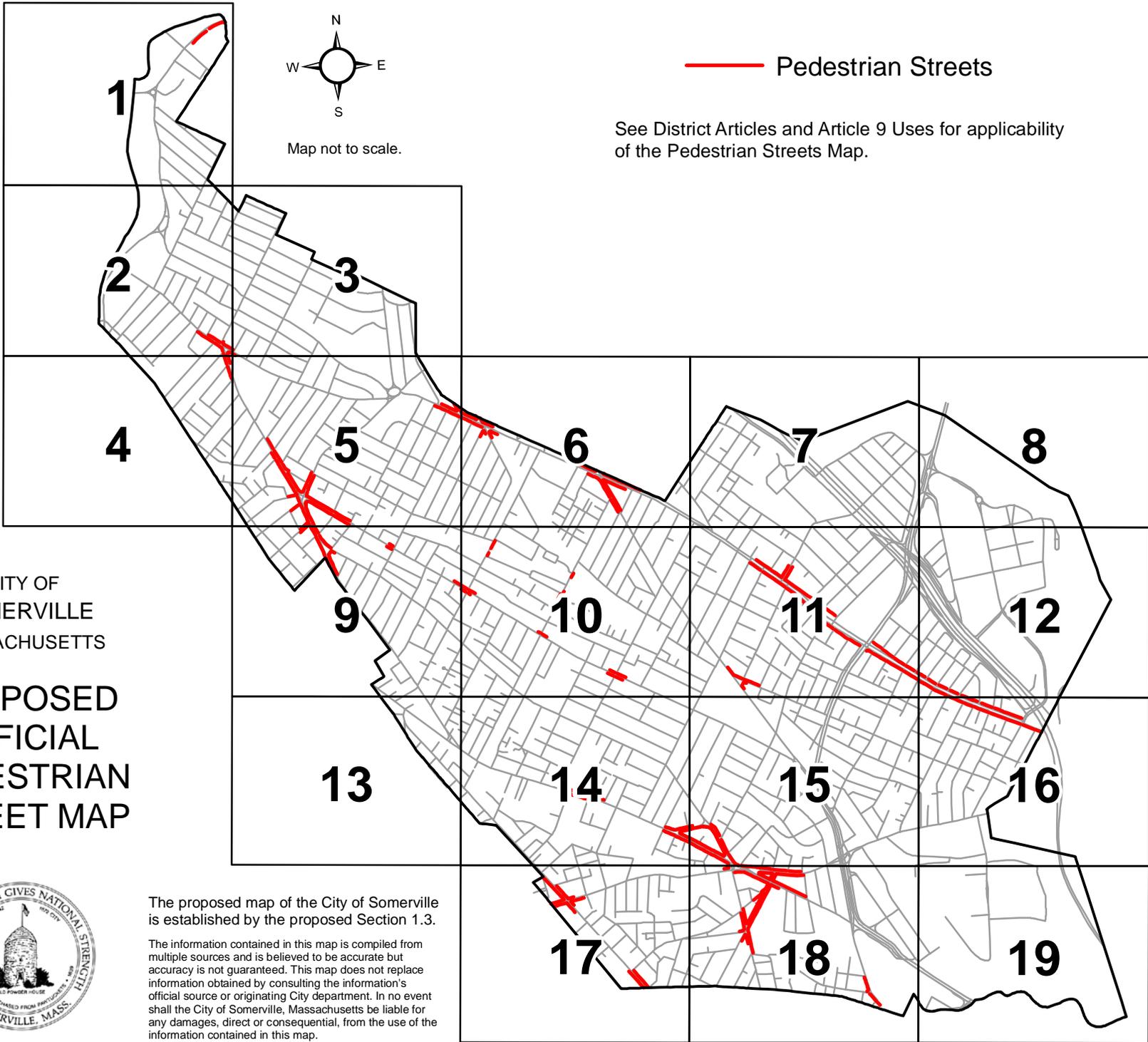
CITY OF SOMERVILLE, MASSACHUSETTS  
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**Appendix B**  
**Somerville Zoning Atlas: Pedestrian Street Map**

<https://www.somervillezoning.com/>





Map not to scale.

— Pedestrian Streets

See District Articles and Article 9 Uses for applicability of the Pedestrian Streets Map.

CITY OF  
SOMERVILLE  
MASSACHUSETTS

**PROPOSED  
OFFICIAL  
PEDESTRIAN  
STREET MAP**



The proposed map of the City of Somerville is established by the proposed Section 1.3.

The information contained in this map is compiled from multiple sources and is believed to be accurate but accuracy is not guaranteed. This map does not replace information obtained by consulting the information's official source or originating City department. In no event shall the City of Somerville, Massachusetts be liable for any damages, direct or consequential, from the use of the information contained in this map.

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## Appendix C

### Somerville Ordinance Section 12-14

[https://library.municode.com/ma/somerville/codes/code\\_of\\_ordinances](https://library.municode.com/ma/somerville/codes/code_of_ordinances)





## Somerville, MA Code of Ordinances

### Sec. 12-14. Signs, awnings, outdoor seating and other items on or over streets and sidewalks.

No person shall, except in accordance with a permit from the city council or as otherwise duly authorized, place, make or maintain any gate, table, stall, booth or other erection, signs, goods, wares, outdoor seating, doorstep, portico, porch, bow window, entrance or passageway to a cellar or basement, opening or area for admitting light or air, or any other article or structure on any street or sidewalk, or maintain such articles or structures in such a manner as to project or swing into or over any street or sidewalk. Any permit granted under this section for the purpose of placing and maintaining adjacent to a licensed establishment outdoor seating on a public sidewalk shall expire on the 31st day of December in the year in which it is granted. No permit shall be granted unless the petitioner files with the city clerk a bond in the sum of \$5,000.00 to indemnify and save the city harmless from all liability and loss arising out of such permit or, in the alternative, designate the city as an additional insured on the petitioner's general liability, property and casualty insurance coverage. However, with the written permission of the mayor, in accordance with the terms of such permission, any person may suspend the flag of the United States of America or the flag of any country allied with the United States of America or any flag indicating military or naval services of the United States of America over any street or sidewalk.

(Code 1963, § 11-7; Ord. No. 2001-8, 6-14-2001; Ord. No. 2006-09, § M, 4-11-2006; Ord. No. 2008-05, 4-24-2008)

Cross reference(s)—Dogs in outdoor seating areas of restaurants, § 6-24; pipes, sewer, conduit, poles or other structures on, above, or under streets, § 11-142; temporary obstructions on streets and sidewalks, § 12-12.

State law reference(s)—Authority to regulate structures projecting into ways, M.G.L.A. c. 85, § 8.



CITY OF SOMERVILLE, MASSACHUSETTS  
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## Appendix D

### 248 CMR 10.10 Toilet Capacity Calculations

<https://www.mass.gov/review-248-cmr-1000-uniform-state-plumbing-code>



248 CMR: BOARD OF STATE EXAMINERS  
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10.09: continued

248 CMR 10.09: *Table 3:*  
CAPACITY OF GREASE TRAPS AND INTERCEPTORS

Total Flow Through Rating (g.p.m)	Grease Trap/Interceptor Retention Capacity (pounds)
4	8
6	12
7	14
9	18
10	20
12	24
14	28
15	30
18	36
20	40
25	50
35	70
50	100

- (3) Grease Interceptors Installed Outside of the Buildings
- (a) General Requirements for Outside Interceptors. When an outside grease interceptor is installed, the entire installation within the property line shall comply with 248 CMR 10.03, and the installation shall be designed by a registered professional mechanical engineer.
- (b) This installation shall require a chamber vent which shall:
1. be piped to the inside of the building in compliance with 248 CMR 10.16(5)(e); and
  2. shall be not less than four inch minimum pipe diameter.
- (4) Special Use Installations.
- (a) Sand Interceptors - Floor Drains.
1. Wherever a floor drain discharges waste to an oil and gasoline separator, the floor drain shall be equipped with an approved sediment and sand control basket, or the floor drain shall discharge through a sand interceptor.
  2. Multiple floor drains may discharge into one sand interceptor.
- (b) Sand Interceptors - Commercial Establishments. Sand and similar interceptors for heavy solids shall:
1. be so designed and located as to be readily accessible for cleaning; and
  2. have a water seal of not less than six inches.
- (c) Laundries. Commercial laundries shall be equipped with an interceptor having a wire basket or similar device, removable for cleaning, that will prevent passage into the drainage system of solids ½ inch or larger in size, string, rags, buttons, or other materials detrimental to the public sewerage system.
- (d) Bottling Establishments. Bottling plants shall discharge their process waste into an interceptor that provides for the separation of broken glass or other solids, before discharging liquid wastes into the drainage system.
- (e) Slaughter Houses. Slaughtering room and dressing room drains shall be equipped with interceptors approved by the Plumbing Drainage Institute which shall prevent the discharge into the drainage system of feathers, entrails, and other materials likely to cause stoppage of the drainage system.

10.10: Plumbing Fixtures

- (1) Fixture Materials and Quality. Plumbing fixtures shall be constructed from Product-accepted materials, have smooth and impervious surfaces, and be free from defects.

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10.10: continued

(2) Overflows.

- (a) Design. When any fixture is provided with an overflow, the waste shall be arranged so that the standing water in the fixture cannot rise in the overflow when the stopper is closed or remain in the overflow when the fixture is empty.
- (b) Connection. The overflow from any fixture shall discharge into the drainage system on the inlet or fixture side of the trap, except that the overflow from a flush tank serving a toilet or urinal shall discharge only into the fixture served.

(3) Installation.

- (a) Cleaning. All fixtures must be installed so as to afford easy access for cleaning both the fixture and the area about it.
- (b) Joints. Where a fixture comes in contact with walls and floors, the joint shall be watertight.
- (c) Securing Fixtures. Floor outlet fixtures and wall hung fixtures shall be rigidly secured to the finished floor or wall by screws or bolts, or other methods in compliance with manufacturers instructions and codified in 248 CMR 10.05(7).
- (d) Wall-hung Bowls. Wall hung toilet bowls shall be rigidly supported by a concealed metal Product-accepted fixture carrier so that no strain is transmitted to the toilet discharge connection, or the wall.
- (e) Setting. Fixtures shall be set plumb, level and in proper alignment with reference to adjacent walls.

(4) Prohibited Fixtures. The following fixtures are prohibited.

- (a) A pan, valve, plunger, offset, washout, frost proof latrine, or other toilet which has an invisible seal, mechanical seal or an unventilated space.
- (b) A toilet that has walls that are not thoroughly washed at each discharge.
- (c) A toilet that may enable siphonage of the contents of the bowl back into the tank.
- (d) Trough urinals and floor stall urinals.
- (e) Wall hung urinals connected to an exposed trap.

(5) Toilets.

- (a) Public Use. A toilet for public use shall be of the elongated type.
- (b) Flushing Device. A toilet tank shall have sufficient capacity to flush properly the toilet bowl with which it is connected.
- (c) Float Valve and Ballcocks. A float valve or ballcock in a toilet flush tank shall be of anti-siphon design and shall provide sufficient water to refill the trap seal in the toilet bowl.
- (d) Flushometer Valves.
  - 1. A flushometer valve shall be so installed that it will be readily accessible for repairing.
  - 2. When the valve is operated, it shall complete the cycle of operation automatically opening and closing positively under the service pressure.
  - 3. At each operation the valve shall deliver water in sufficient volume and at a rate that will thoroughly flush the fixture and refill the fixture trap.
  - 4. Means shall be provided for regulating the flushometer valve flow.
  - 5. Not more than one fixture shall be served by a single flushometer valve.
  - 6. Protection against backflow shall be provided as specified in 248 CMR 10.14(7).
- (e) Seats. A toilet shall be equipped with a seat of smooth non-absorbent material. The seat of a toilet that is provided for public or semi-public use shall be of the open front type.
- (f) Alternative Technology Toilet Systems.
  - 1. Areas subject to 310 CMR 15.00: *The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage* or where sewers are unavailable innovative alternative technology toilets may be installed in place of a liquid sealed toilet. These are considered plumbing fixtures under 248 CMR 10.00 and therefore the permit requirements must be satisfied.
  - 2. The alternative technology toilet system shall be manufactured to NSF-41 standards and shall be installed in compliance with the manufacturer's instructions.

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10.10: continued

(6) Urinals.

(a) Urinal Fixtures.

1. Only pedestal urinals and wall hung urinals with integral traps shall be used.
2. Urinals shall be flushed only by means of an automatic flushing tank or flushometers equipped with a back flow preventer.

(b) Automatic Flushing Tank. A tank that flushes more than one urinal, shall be automatic in operation; and shall be of sufficient capacity to provide the necessary water to flush and cleanse properly all urinals simultaneously.

(c) Materials Surrounding Urinals for Public or Semi-public Use.

1. The floor areas one foot in front of the urinal lip and one foot on each side of the urinal, and the wall areas to four feet above the floor, shall be finished so as to be non-absorbent.
2. Wood and fiber boards are prohibited in the above noted areas.

(d) Every urinal shall be side shielded for privacy.

(7) Shower Baths, Stalls and Compartments.

(a) Shower Head Supply Riser. Every shower head supply riser or extension from the shower valve to the shower head outlet, whether exposed or not, shall be securely attached to the structure.

(b) Shower Waste Outlet.

1. Waste outlets serving shower stalls and compartments that are not part of bathtubs shall be no less than two inches in diameter, shall have removable strainers not less than three inches in diameter, and shall have strainer openings not less than ¼ inch in minimum dimension.
2. In shower rooms or in an area that multiple shower heads are installed and the individual shower space, area, stall or compartment is not provided with an individual waste outlet, the waste outlet shall be so located that the floor is designed and pitched so that waste water from one shower head area does not flow over the floor area serving another shower head area.
3. Waste outlets shall be securely fastened to the waste pipe and make a watertight connection thereto.

(c) Shower Compartments.

1. Shower compartments and stalls shall have at least 900 square inches of floor area and be not less than 30 inches in minimum dimension measured from its finished interior dimension as the side of a rectangle, altitude of a triangle or diameter of a circle or other angular shape.
2. The minimum required area and dimension shall be measured from its finished interior dimension at a height equal to the top of the threshold and at a point tangent to the centerline of the threshold.
3. The wall area above built-in tubs having installed shower heads and in shower compartments or stalls shall be constructed of smooth, non-corrosive, and non-absorbent, waterproof materials to a height not less than six feet above the floor level. Such walls shall form a watertight joint with each other and with the bathing tub, floor receptor, shower floor or base.
4. The waste outlet opening for individual shower compartments shall be two inches in diameter.

(d) Shower Floors or Receptors.

1. Floors or receptors under shower compartments shall be laid on or be supported by a smooth and structurally sound base.
2. Floors under shower compartments, other than those laid directly on the ground surface or where prefabricated shower base receptors have been provided, shall be lined and made watertight by the provision of suitable shower pans of durable Product-accepted materials.
3. Shower pans shall turn up on all sides at least above the finished threshold level.
4. Shower pans shall be securely fastened to the waste outlet at the seepage entrance making a watertight joint between the pan and the outlet.
5. Floor surfaces shall be constructed of smooth, non-corrosive, nonabsorbent, and waterproof materials.

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10.10: continued

(e) Shower Controls.

1. When a flow control valve or shower head is designed to completely shut-off and is installed on the outlet pipe from a shower control unit, check valves shall be provided in the hot and cold water supplies to the unit to prevent by-passing of hot or cold water. An exception to the requirement above is when Product-accepted shower control units are designed to prevent by-passing.
2. All showers, shower stalls, shower compartments, gang showers, and shower baths, either multiple or single, shall be equipped with an approved adjustable self-cleaning and draining shower head.
3. The water supply to a shower head shall be supplied through a Product-accepted individual thermostatic, pressure balancing or combination thermostatic/pressure balancing valve complying with ASSE 1016. The device shall conform to the following requirements:
  - a. the device shall incorporate a design that limits the maximum deliverable temperature of hot water to 112°F; and
  - b. the device shall be designed to prevent bypassing of water.
4. Automatic Temperature Control Mixing Valves.
  - a. A central type automatic temperature control mixing valve may be used in lieu of individual thermostatic, pressure balancing or combination thermostatic/pressure balancing valve complying with ASSE 1070, provided that the temperature control mixing valve limits the maximum temperature of the hot water supplied to individual shower controls to 112°F during all periods when showers are in use.
  - b. A thermometer is required in the outlet piping of the automatic central control mixing valve for inspection and adjustment of temperature.
  - c. Check valves are required on the hot and cold water inlets to the automatic central control mixing valve.
  - d. The automatic temperature control mixing valve is a secondary control for hot water that is supplied to individual shower stations and is in addition to the primary controls used to maintain the water temperature in the domestic hot water system.
  - e. When the temperature in the hot water supply piping to a shower stations is controlled by an automatic temperature control mixing valve, individual shower controls may be Product-accepted two handle or single handle shower valves.
  - f. All automatic temperature control mixing valve devices shall be adjusted by the installing plumber, prior to a Final Inspection in accordance with (248 CMR 10.04(3)(e)). The device shall be set to deliver tempered water at a temperature not to exceed 110°F to 112°F.

(8) Food-waste Grinder Units.

- (a) Residential or Domestic Food-waste Grinder-waste Outlets. Domestic food-waste grinder units shall be connected to a drain of not less than 1½ inches in diameter.
- (b) Commercial Food-waste Grinder Outlets.
  1. Commercial food-waste grinder units shall be connected to a drain of sufficient size to serve the unit, but in no case connected to a drain of less than two inches in diameter.
  2. Commercial food-waste-grinder units shall be connected and trapped separately from other fixtures or compartments.
  3. These grinders shall be separately connected to a waste stack or branch drain.
- (c) Water Supply Required. All food-waste grinder units shall be provided with an adequate supply of cold water from faucets at sufficient flow rate to insure proper functioning of the unit.
- (d) Commercial Food-waste Grinders Required. All establishments summarized in 248 CMR 10.09(2)(a), (restaurants, cafeterias, hotels...) that are served by a municipal sanitary sewer and can seat 20 patrons or more shall incorporate food waste grinders.

(9) Drinking Fountains.

- (a) Design and Construction. A drinking fountain shall conform to any required standard per 248 CMR 3.04: *Product, Design, and Testing Standards.*

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10.10: continued

(b) Protection of Water Supply. Stream projectors shall be assembled to provide an orifice elevation as specified by ANSI Air Gaps in Plumbing Systems and ANSI Backflow Preventers.

(10) Floor/Trough Drains.

(a) Floor/Trough Drains.

1. Floor/Trough drains shall have integral or separate traps providing a minimum water seal of three inches. The Floor/Trough drain shall incorporate removable strainers.
2. The Floor/Trough drain shall be constructed so that it can be readily cleaned, and the drain inlet shall be easily accessible at all times.
3. Floor/Trough drains subject to backflow shall be provided with back water valves.
4. Size of Floor/Trough Drains. Floor/Trough drains shall be of a size to serve efficiently the square foot floor area to be served or the purpose for which they are intended. The Floor/Trough drain outlet pipe shall not be less than two inches in nominal diameter.
5. Proper Installation and Protection Against Loss of Trap Seal.
  - a. The design and installation of floor drains and trough drains shall be at a grade to enable complete floor drainage from all directions.
  - b. All floor drains and trough drains shall be installed with a, readily accessible automatic trap-priming device, except that floor drains or trough drains that will receive a continuous or semi-continuous discharge from other indirect waste fixture(s) pursuant to 248 CMR 10.12 may be allowed by the Inspector.
6. Special Hazardous Wastes. Floor drains that may receive special hazardous waste shall comply with 248 CMR 10.13.

(11) Dishwashing Machines.

(a) Waste Discharge.

1. Domestic. The waste discharge shall comply with 248 CMR 10.08(1)(a)2.d.
2. Commercial. Commercial dishwashing machines that discharge by gravity shall be indirectly connected, except when the machine is located above or within five feet of a trapped floor drain, the waste may be connected directly to the inlet side of a properly vented floor drain trap.
3. Commercial. Dishwashing machines that incorporate drainage discharge by pumping shall discharge waste to the sanitary drainage system in accordance with the manufacturer's recommendations.

(b) Portable Dishwashers. Portable dishwashing machines (domestic) may discharge over the rim of a properly trapped and vented fixture.

(12) Automatic Clothes Washing Machine.

(a) Water Supply. The water supplies to clothes washers shall be protected against backflow by the use of an air gap or a back flow preventer.

(b) Waste Discharge.

1. Domestic Machines.
  - a. The waste from a clothes washer shall discharge through an air break into a laundry utility sink or standpipe.
  - b. The standpipe shall extend to a minimum height of 30 inches above the base of the machine and shall not be less than 1½ inches in diameter.
2. Laundromats (Commercial). The minimum size of a trap and standpipe for commercial clothes washing machines shall be not less than two inches in diameter, and shall connect to a drain of sufficient size to receive the simultaneous discharge of 75% of all clothes washing machines connected thereto.

(13) Multiple Type Lavatory (Wash Sink). Provided that hot and cold or tempered water for hand washing is available for each 20 inch interval of a multiple use lavatory sink, every 20 inch unit of usable length or circumference or of a straight-line or circular multiple use lavatory shall be considered equivalent to one lavatory as it affects the drainage and water supply piping sizes and fixture usage requirements.

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10.10: continued

(14) Garbage/Trash Receptacle Washers.

- (a) Garbage/Trash receptacle washers shall be separately trapped and vented.
- (b) The fixture receiving the waste from garbage/trash receptacles shall be provided with a removable basket or strainer to prevent discharge of large particles into the building drainage system.
- (c) Any water supply connection shall be protected against backflow by an air gap or Product-accepted backflow prevention device.

(15) Special Fixtures and Specialties. Baptisteries, ornamental and lily pools, aquaria, ornamental fountain basins, fish tanks and similar constructed decorative water monuments when provided with water supplies, shall be protected from back siphonage.

(16) Sacrarium.

- (a) The liquid discharge from a Sacrarium shall be conducted separately and directly to a drywell in the ground, and shall not be used for any other drainage purpose.
- (b) In no case shall the waste from a Sacrarium be connected to the building storm drainage, or sanitary drainage waste and vent system.
- (c) The waste from a Sacrarium shall not be trapped or vented.

(17) Minimum Facilities for Dwellings. Whenever plumbing fixtures are installed, the minimum number of each type of fixture shall comply with the requirements of 105 CMR 410.00: *Minimum Standards of Fitness for Human Habitation (State Sanitary Code, Chapter II*, and shall conform with 248 CMR 10.02(6)(b).

(18) Minimum Facilities for Building Occupancy Other than Residential.

(a) Application of Standards and Establishing Occupancy.

- 1. Applicability of Changes: the requirements set forth in 248 CMR 10.10(18): *Table 1* shall apply only to plumbing system installation, alteration or extension projects in which the process of designing the plumbing work to be performed begins on or after June 3, 1994.
- 2. When determining the number of plumbing fixtures after the population has been established by the authority having jurisdiction, should a fraction occur, round up to next fixture.

(b) Classification of Places of Assembly.

1. Assembly (General).

- a. All places in which alcoholic or non-alcoholic beverages are sold, or offered for sale, to be consumed on the premises; any room or space used for public or private banquets, feasts, dances, socials, card parties, weddings or for lodge or meeting halls or rooms; skating rinks, gymnastics, public swimming pools, billiard, pool, bowling, and table tennis rooms; halls or rooms used for public or private catering purposes, funeral parlors, recreation rooms; broadcasting studios; private clubs and all other places of similar occupancy shall be classified as general places of assembly.
- b. Toilet facilities for each sex shall be provided in the amount specified in 248 CMR 10.10(18): *Table 1* for assembly.

2. Assembly (Dedicated).

- a. All places of worship, arenas, stadiums, theaters, cinemas, restaurants, pubs, and nightclubs shall be classified as dedicated places of assembly and toilet facilities for each sex male and female shall be provided in the amount specified in 248 CMR 10.10(18): *Table 1* for dedicated assembly.
- b. Where the capacity is more than 2,000 persons, the number of toilets for the first 2,000 persons shall be calculated using the ratios in 248 CMR 10.10(18): *Table 1*. For the number of persons in excess of 2,000, the number of toilets shall be calculated at ratio of one per 100 for women and one per 200 for men.
- c. In restaurants, pubs and nightclubs where the total combined number of employees and patrons that can be accommodated at any one time is 20 individuals and the total gross space is less than 2,000 square feet, one gender neutral, handicapped accessible toilet facility for use by both employees and the patrons shall meet the minimum fixture requirements of 248 CMR.

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10.10: continued

3. Nothing in 248 CMR 10.10(18)(b)2.a. through c. shall apply to single or multiple family dwellings, or to a place of incarceration or detention, a convent, or a monastery.
  4. Plumbing fixtures for employees shall be included in 248 CMR 10.10(18): *Table 1* for this type of occupancy.
  5. When the occupancy ratio of 50% for each sex is not used to define fixture counts, the Inspector shall be notified in writing before construction begins, indicating the occupancy of each sex for the purpose of establishing fixture amounts.
- (c) Assembly (Places of Worship - Church, Synagogue etc.).
1. In no case shall there be less than one toilet and one lavatory provided for each sex to accommodate a congregation worship area.
  2. Refer to 248 CMR 10.10(15) and (16) for baptistery and Sacarium requirements.
  3. For places of worship, which also have a function hall/multi-purpose area, the fixture number requirements for the halls/areas shall be calculated separately.
  4. If sufficient fixtures are installed to accommodate the total occupancy for the worship area and the fixtures are located within 300 feet of toilet facilities in the same building the requirements of 248 CMR 10.10(18)(c)1. and 3. shall not apply.
- (d) Bathing Beach Toilet Facilities (Public). When the occupancy of a beach area can exceed 4,000, toilets for the capacity in excess of 4,000 shall be installed at the rate of one per 1,000 for women, and one per 2,000 for men.
- (e) Day Care Toilet Facilities.
1. Refer to 102 CMR 7.00: *Standards for the Licensure or Approval of Group Day Care and School Age Child Care Programs* (Office for Children), for requirements regarding plumbing fixtures for this type occupancy.
  2. Unisex toilet facilities (one toilet, and one lavatory) may be installed for children six years of age or younger. 248 CMR 10.10(18): *Table 1* shall apply where more fixtures are required.
- (f) Police Station Lockup/Detention Area Facilities.
1. A combination toilet and lavatory with a protective detention shroud shall be provided in each cell in where a person is detained for any part of a 24-hour day.
  2. The lavatory shall be connected to the hot and cold water distribution systems.
  3. Where individual toilet facilities are not required by 248 CMR 10.10(18)(f)1., fixtures shall be installed at the rate listed in 248 CMR 10.10(18): *Table 1* for this type occupancy.
- (g) Dormitory Toilet Facilities.
1. Toilets in dormitory toilet facilities shall be of the elongated style and shall be equipped with solid plastic non-porous seats of the open front type.
  2. In a toilet facility that contains more than one toilet or a toilet and an urinal, each toilet and urinal shall be separated by walls or partitions that will provide privacy.
  3. Toilets, showers and lavatory facilities shall be accessible from within the building and shall be placed so that passing through any part of another dwelling unit or room is not required.
  4. One laundry utility sink shall be installed for each 50 persons.
  5. Toilet facilities, shower rooms and bathing rooms for males and females shall be separate and so designated.
- (h) Educational (School, College and University etc.) Toilet Facilities.
1. Each toilet facility shall have at least one lavatory except as provided by 248 CMR 10.10(18)(h)2.
  2. In kindergarten or primary grades, unisex toilet facilities may be installed for children six years of age or younger. Lavatories may be installed in classroom areas or the toilet rooms. 248 CMR 10.10(18): *Table 1* shall apply where more fixtures are required.
  3. In auditoriums and multipurpose rooms that will be used at any time for community service, toilet facilities shall be provided as follows:
    - i. Women: one toilet for each 200 seats or majority fraction thereof.
    - ii. Men: one toilet for each 600 seats and one urinal for each 200 seats or majority fraction thereof.

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Women and men's toilet facilities shall be located within 300 feet.

4. Separate toilet facilities shall be provided for teachers and other staff employees. These toilet facilities shall be in addition to the requirements of 248 CMR 10.10(18): *Table 1*, See Educational Use Group E (staff) for teacher occupancy toilet facility requirements.

5. In addition to 248 CMR 10.10(18)(h)4., there shall be separate toilet facilities for kitchen (staff) employees, which shall comply with the requirements of 248 CMR 10.10(18)(i)1. through 3. and *Table 1*, Educational Use Group E (staff) for kitchen employee toilet facility requirements.

6. All secondary and post secondary schools that conduct sporting programs or physical activities on the school premises or grounds and include a gymnasium where the activities may be conducted shall provide separate men and women shower facilities to accommodate the students.

7. All schools, which incorporate vocational trade programs where students may happen to become unclean due to work activities, shall comply with 248 CMR 10.10(18)(h)6.

8. Emergency Wash Stations are required and shall be installed in the laboratory classrooms of schools, college's and universities where flammable liquids and open flame devices are used. See 248 CMR 10.13(1)(1)

(i) Employee Toilet Facilities for (Non-industrial) Establishments.

1. In each establishment where people are employed, there shall be separate toilet facilities for male and female employees. The toilet facilities shall be located in the tenant establishment and shall be plainly designated for male or females.

2. Toilet facilities in establishments referred to in 248 CMR 10.10(18)(j)1. within two branch levels shall be acceptable. Toilet facilities shall not be required for mezzanines. See 248 CMR 10.03. In no case may a toilet facility be located more than 300 feet in developed direct distance away from the regular place of daily work activity of any person for whose use it is required. Except where elevators accessible to the employees are provided.

3. Gender-neutral toilet facilities may be allowed if they meet the requirements of 248 CMR 10.10(18)(m) and (r).

4. In business or commercial establishments (except industrial) where the total number of employees that can be accommodated at any one time is 20 individuals and the total gross space is less than 2,000 square feet, or do not have reasonable access (within 300 feet and on the same floor) to core or common toilet facilities, one toilet room located within the establishment provided with the number of fixtures according to the standard set forth in 248 CMR 10.10(18): *Table 1* for employee facilities, shall meet the minimum requirement.

5. In every business or commercial establishment where only one person is employed or works, there shall be one toilet and one lavatory for use by the tenant provided in the establishment or a core toilet facility shall be located within 300 feet of the tenant establishment. Core or common facilities (defined in 248 CMR 10.10(18)(i)4.), located on the same floor as the establishment being serviced and having separate designated male and female toilet facilities may be used to meet this requirement. The number of fixtures in the core or common toilet facilities shall be in accordance with 248 CMR 10.10(18): *Table 1* for employee toilet facilities (non-industrial).

6. Where core toilet facilities are permitted and are in compliance with the occupancy requirements as outlined in 248 CMR 10.10(18): *Table 1* additional designated (male and female) toilet facilities shall be permitted within the establishment. These fixtures shall not be credited towards the fixture count requirements of 248 CMR 10.10(18): *Table 1*.

(j) Employee Toilet Facilities for (Industrial) Buildings.

1. In every industrial establishment, all toilet facilities, where such toilet facilities include the number and type of plumbing fixtures, the floors, walls, windows, ceilings, lighting, ventilation, doors, partitions, design and location of the toilet facilities, shall comply with 454 CMR 2.00: *Toilets in Industrial Establishments*.

2. Separate toilet facilities shall be provided for each sex and shall be plainly so designated male and female. See 248 CMR 10.03.

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3. The number of toilets and lavatories shall be provided within reasonable access (as defined in 248 CMR 10.10(18)(j)4.) and in accordance with 248 CMR 10.10(18): *Table 1* for industrial facilities.
  4. Distance of direct access for industrial establishments requires that; in no case may a toilet facility be located more than 300 feet in developed direct distance away from the regular place of daily work activity of any persons for whose use it was designed. Except where service elevators, accessible to the employees, are provided.
  5. Each 20 linear-inches, or 18-inch circumference-inches of usable sink access will be considered the equivalent of one lavatory.
  6. In industries and manufacturing facilities with departments where there is excessive exposure to substances or liquids or where the work performed may create dust and grit conditions, one lavatory sink may be required for every five persons and in all cases, a potable water supply of hot and cold water shall be provided.
- (k) Medical and Health Care Building Toilet Facilities.
1. In all medical and health care buildings there shall be separate designated toilet facilities on each floor for male and female patients and visitors.
  2. The toilet facilities may be located in a common or core area on each floor so long as the toilet facilities are within 300 feet of all offices.
  3. Accessibility to the toilet facilities shall be direct; it shall not require going from one medical office through another for access to the toilet facilities.
  4. Handicap toilet facilities are required on each floor.
  5. A minimum of one drinking fountain shall be installed for each set of toilet facilities.
- (l) Covered Malls Toilet Facilities.
1. In all covered malls there shall be separate designated public toilet facilities for male and females. These toilet facilities shall be centrally located in the common core area on each floor.
  2. These facilities are in addition to the requirements of 248 CMR 10.10(18)(i) regarding toilet facilities for male and female employees.
  3. When the occupancy exceeds 9,000, toilets shall be installed at the rate of one per 1,500 for women and one per 3,000 for men. Lavatories shall be installed as listed in 248 CMR 10.10(18): *Table 1*.
- (m) Handicap Toilet Facility Requirement. Facility for the physically handicapped person:
1. Plumbing fixtures shall be installed in conformance with 521 CMR 30.0: *Public Toilets* (for fixture dimension requirements only).
  2. When public toilet facilities are to be installed, handicap plumbing fixtures shall comply with the requirements of 248 CMR 10.10(18)(m).
  3. Gender-neutral handicap toilet facilities may be allowed by the Board by the variance process as outlined in 248 CMR 3.04(2): *Variances*:
    - a. A variance is not required if the fixtures in an existing or proposed men's and women's toilet facility and the fixtures in a gender-neutral handicapped toilet facility meet the minimum fixture requirements of 248 CMR 10.10(18): *Table 1*. A gender-neutral toilet may be counted only one time toward the total minimum fixture requirements.
    - b. These toilet facilities shall be kept clear of obstructions at all times in accordance with 105 CMR: *Department of Public Health*.
  4. Wherever drinking fountains are provided, a drinking fountain shall accessible to the physically impaired.
  5. Additional sanitary facilities for the physically impaired; handicap toilet stalls placed within a fully compliant 248 CMR toilet facility may also provide an additional accessible handicap lavatory within the toilet stall area. The lavatory placement shall comply with the requirements of 521 CMR: *Architectural Access Board*.
- (n) Toilet Facilities General.
1. Toilet facilities accessible to the public which have two or more toilets or urinals, or two or more thereof in any combination, shall provide a floor drain equipped with an automatic trap priming device and a valved hose connection equipped with a backflow preventer. The hose connection is for the purpose of floor cleaning in the toilet facility.
  2. Floor drains shall be installed in the vicinity of the urinal(s) and placed at a grade to enable floor drainage to the floor drain from all directions.

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3. Toilets for public use shall be of the elongated style and the seats shall be solid plastic, non-porous and of the open front type. *Refer* to 248 CMR 10.10(5)(a) through (e).
  4. When a urinal(s) is provided in a toilet facility the floor areas one foot in front of the urinal lip and one foot on each side of the urinal and the wall areas to four feet above the finished floor surface, shall be protected by non-absorbent building products and material. Wood and fiber boards are prohibited in these areas. *Refer* to 248 CMR 10.10(7)(c).
  5. In a toilet facility with more than one toilet, or with a toilet and a urinal, each toilet shall be enclosed. Each urinal shall be side shielded for privacy.
  6. When two or more urinals are required, a shield shall be provided between urinals.
- (o) Laundries. Laundry facilities requirements. A washing machine connection that consists of a piping arrangement that includes a cold water supply, hot water supply and a sufficient drain connection shall be provided in conformance with the following:
1. One and Two Family Dwelling. At least one washing machine connection.
  2. Multiple Dwellings.
    - a. Non-elderly Housing. In multiple dwellings that are not restricted to the elderly, one washing machine connection for every ten dwelling units, or fraction thereof.
    - b. Elderly Housing. In housing that is restricted to the elderly, one washing machine connection for every 20 dwelling units or fraction thereof.
    - c. Dormitories. In dormitories, one washing machine connection for every ten dwelling units or fraction thereof. For purposes of post-secondary school residential dormitories, the Board interprets one dwelling unit to be equivalent to four students.
    - d. The washing machine connection shall be located so that each occupant in the dwelling has access to the washing machine that may be affixed to the washing machine connection.
- (p) Urinals.
1. Urinals may be substituted for toilets where indicated in 248 CMR 10.10(19): *Table I* are listed by percentage.
  2. Urinals listed for elementary, secondary, post-secondary and industrial factory/warehouse are in addition to the toilets required.
  3. When urinals are used at least one shall be set for handicapped use.
- (q) Bathroom Group Defined. a bathroom group shall consist of one bath tub or shower stall, one toilet, and one lavatory.
- (r) Use of Gender-neutral Toilet Rooms. For purposes of the minimum fixture requirements of 248 CMR, wherever 248 CMR 10.00 requires two or more toilet fixtures designated by gender, those facilities may be replaced with single use Gender-neutral toilet rooms pursuant to one of the following options:
1. Every gender designated toilet fixture is replaced with an equal number of single use gender-neutral toilet rooms (such that there are no gender designated fixtures); or
  2. Where the code requires four or more toilet fixtures combined for males and females, gender designated fixtures may be replaced by single use Gender-neutral toilet rooms in increments of two such that for every male designated fixture replaced by a Gender-neutral toilet room, a female designated fixture must also be replaced by a Gender-neutral toilet room, and vice-versa (*e.g.* instead of three men's toilets, four female toilets, there may be installed two men's toilets, three female toilets, and two single use Gender-neutral toilet rooms).

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Table 1: Minimum Facilities For Building Occupancy.

Building Clarification	Use Group	Toilets		Urinals Males	Lavatories Each Sex	Drinking Water Station with drain	Bath/ Show.	Other Fixtures	Pertinent Regulations. 248 CMR 10.10(19)
		Females	Males						
Theaters	A-1	1 per 30	1 per 60	50%	1 per 100	1 per 1000		1 service sink per floor	(b), (i)1., (m), (n), (p)
Nightclubs, Pubs	A-2	1 per 30	1 per 50	50%	1 per 75				(b), (m), (n), (p)
Restaurants	A-3	1 per 30	1 per 60	50%	1 per 200				(b), (m), (n), (p)
Hall, Museums, Libraries <i>etc.</i>	A-3	1 per 50	1 per 100	50%	1 per 200				(b), (i)1., (m), (n), (p)
Coliseums, Arenas	A-3	1 per 30	1 per 60	50%	1 per 150				(b), (i)1., (m), (n), (p)
House of Worship	A-4	1 per 50	1 per 100	50%	1 per 200				(b), (c), (m), (n), (p)
Stadiums <i>etc.</i>	A-5	1 per 30	1 per 60	50%	1 per 150				(i)1., (m), (n), (p)
Pool/Fitness Centers	A-5	1 per 40	1 per 40	33%	1 per 60	At least one source	1 for every 40		(i)1., (m), (n), (p). For pools, <i>see</i> 105 CMR for bather load.
Bathing (Public Beaches)		1 per 200	1 per 500	33%	1 per 1000		1 per 1000	1 Service Sink	(d), (m), (n), (p)
Day Care Facility (Child)	E-I-3	1 per 20	1 per 20		1 per 20			1 Service Sink	(e), (m), (n)
(Staff)	N/A	1 per 20	1 per 25	33%	1 per 40				(i), (m), (n), (p)
Detention Facility (Detainee)	I-3	1 per 6	1 per 8	33%	1 per 6		1 per 8		(f), (m), (p)
(Staff)	N/A	1 per 20	1 per 25	33%	1 per 40				(i), (m), (n), (p)
Dwellings (Single)	R	One Bathroom Group and One Kitchen Sink							(o), (q)
(Multiple)	R	One Bathroom Group and One Kitchen Sink per Unit							(o), (q)
(Hotel/Motel)	R	One Bathroom Group per Unit							(m), (q)
(Dormitories)	R-2	1 per 6	1 per 8	33%	1 per 8		1 per 8	1 Service Sink per Floor	(g), (m), (n), (p)
Educational (Kindergarten)	E	1 per 20	1 per 20		1 per 20	1 per 75		1 Service Sink Per Floor	(h), (i), (m), (n), (p)
(Elementary)	E	1 per 30	1 per 60	1 per 60	1 per 60	1 per 75			
(Secondary)	E	1 per 30	1 per 90	1 per 90	1 per 90	1 per 75			
(Post Secondary)	E	1 per 90	1 per 180	1 per 180	1 per 180	1 per 75			
Staff)	E	1 per 20	1 per 25	33%	1 per 40				
Employee (Non-industrial)*		1 per 20	1 per 25	33%	1 per 40			1 Service Sink per Floor	(i), (m), (n), (p)

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Building Clarification	Use Group	Toilets		Urinals Males	Lavatories Each Sex	Drinking Water Station with drain	Bath/ Show.	Other Fixtures	Pertinent Regulations. 248 CMR 10.10(19)
		Females	Males						
Employee (Industrial Factory/ Warehouse and Similar Usage)	F	1 per 15	1 per 20	1 per 40	1 per 30		1 per 15		(j), (m), (n), (p)
Institution Hospital (Private/Semi)	I	1 per Room  Nursing Homes: 1 toilet and 1 lavatory with direct access from each bedroom (shared by 8 beds max), can be unisex.			1 per Room	1 Per each set of rest-rooms	1 per 15 (in ICU)  1 per 12 (inpatient facilities other than ICU)  1 per 6 patients (Psychiatric Hosp.)  1 per 8 (Rehab facility)	1 Service  Sink  Per  Floor	(i), (m), (n)
Nursing Homes (Ward)		1 per 8	1 per 10	33%	1 per 10		1 per 15		(i), (m), (n), (p)
Malls (Covered)	M	1 per 750	1 per 1500	50%	1 per 2000	1 per 2000			(i), (l), (m), (n), (p)
Medical/Health Care Building	B	1 per 45	1 per 55	50%	1 per 200	1 Per each set of rest-rooms (may be a Water Station, without drain)		1 Service  Sink	(i), (k), (m), (n), (p)
Office Buildings	B	1 per 20	1 per 25	33%	1 per 50	1 per Floor (may be a Water Station, without drain)		Per  Floor	(i), (m), (n), (p)
Retail (Mercantile)	M	1 per 20	1 per 20	33%	1 per 40				(i), (m), (n), (p)
Waiting Rooms (Airports, Railroad and Bus Stations)	A	1 per 35	1 per 75	50%	1 per 200	1 per 500			(b), (m), (n), (p)

(19) Funeral Establishment Preparation Rooms. Funeral establishment preparation rooms shall comply with the provisions of 239 CMR 3.07: *Preparation Room.*

(a) The preparation room of a Funeral establishment shall be provided with a floor drain and flooring that is compliant with 239 CMR 3.07(3): *Preparation Room.*

(b) The preparation room shall include a flushing rim sink and the preparation room shall be protected by proper backflow devices.

(c) An additional reduced pressure zone backflow preventer shall be installed on the water distribution system to the building at the outlet side of the meter or main control valve.

(d) Emergency Wash Stations shall be installed and be compliant with the provisions of 239 CMR: *Board of Registration in Embalming and Funeral Directing.*

CITY OF SOMERVILLE, MASSACHUSETTS  
MAYOR KATJANA BALLANTYNE  
ENGINEERING DIVISION



## Appendix E

### 521 CMR 5.00 Definitions

<https://www.mass.gov/lists/521-cmr-2006-edition>



521 CMR 5.00: **DEFINITIONS**

**5.1 GENERAL**

As used in 521 CMR, the following words shall have the meaning set forth in 521 CMR 5.00 unless the context otherwise requires.

**ACCESS AISLE:** An *accessible* pedestrian space between elements such as parking spaces, seating, or desks that provides clearances complying with 521 CMR.

**ACCESSIBLE:** A *site, building, facility* or portion thereof that complies with 521 CMR and that can be approached, entered, and used *by persons with disabilities*. When the term "*accessible*" is used, it shall mean both physical and communication accessible unless otherwise noted in 521 CMR.

**ACCESSIBLE ELEMENT:** An element complying with 521 CMR that can be used by *persons with disabilities* (for example, telephone, controls, appliances, equipment and the like).

**ACCESSIBLE ROUTE:** A continuous, unobstructed path connecting all *accessible* elements and spaces within or between *buildings* or *facilities*. 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 cuts*, crosswalks at vehicular ways, *walks, ramps*, and lifts.

**ACCESSIBLE SPACE:** Space that complies with 521 CMR and that can be used by *persons with disabilities*.

**ADAPTABILITY:** The ability of certain *building* spaces and elements, such as kitchen counters, sinks, and grab bars, to be added or altered so as to accommodate the needs of persons with or without disabilities or with different types or degrees of disability.

**ADAPTABLE:** Can readily be made *accessible* to, functional for, and safe for use by *persons with disabilities* without *structural change*.

**ADDITION:** An extension or increase in floor area or height of a *building* or structure.

**ADMINISTRATIVE AUTHORITY:** A governmental agency that adopts or enforces regulations for the design, construction, or alteration of *buildings* and *facilities*.

**ALTERATIONS:** A change or modification of a *building* or structure, or portion thereof, that requires a building permit. Alterations shall include but not be limited to: *remodeling*, renovation, rehabilitation, *reconstruction*, historic restoration, changes or rearrangements in the plan configuration of walls and full height partitions, and any *repairs* which require a building permit. Ordinary *repairs* as defined in 780 CMR: The State Building Code are not alterations.

**AREA OF RESCUE ASSISTANCE:** An area, which has direct access to an exit or an area adjacent to an exit discharge, where people who are unable to use stairs or are unable to travel more than 100 feet to a public way may remain temporarily in safety to await further instructions or assistance during emergency evacuation.

5.00: **DEFINITIONS**

**ASSEMBLY AREA:** A room or space accommodating a group of individuals for recreational, educational, political, social, or amusement purposes or for the consumption of food and drink.

**ASSISTIVE LISTENING SYSTEM:** An *assistive listening system* picks up sound at or close to its source, amplifies it, and delivers it to the listener's ear without extraneous sound, reverberation and distortion via a telecoil on the individual's hearing aid and through earphones. An *assistive listening system* may stand alone or augment a conventional public address or audio address system, depending on the requirements of the room. The type of *assistive listening system* appropriate for a particular application depends on the characteristics of the setting, the nature of the program, and the intended audience. Magnetic induction loops, infra-red and radio frequency systems are types of listening systems that are appropriate for various applications.

**AUTOMATIC DOOR:** A door equipped with a power-operated mechanism and controls which open and close the door automatically. The switch that begins the automatic cycle may be a photoelectric device, floor mat, or manual switch (see *power-assisted door*).

**BATHROOM:** A space or a series of interconnected spaces that contain a toilet, sink, and bathtub or shower.

**BOARD:** The Architectural Access Board within the Executive Office of Public Safety, Commonwealth of Massachusetts.

**BRAILLE:** A standardized system for communicating in writing with persons who are blind. Grade II Braille is standard literary Braille. Standard dimensions for literary Braille are as follows: Dot diameter: .059 inches; Inter-dot spacing: .090 inches; Horizontal separation between cells: .241 inches; and Vertical separation between cells: .395 inches.

**BRIDGE PLATE:** An element which makes the final transition between a fixed or floating platform and a vehicle or vessel.

**BUILDING:** A structure enclosed within exterior walls or fire walls (as defined in 780 CMR), built, erected and framed in a combination of any materials, whether portable or fixed having a roof, to form a structure for the shelter of persons, animals or property. For the purposes of this definition, "roof" shall include an awning or similar covering, whether or not permanent in nature. The word "*building*" shall be construed where the context requires, as though followed by the words "or part or parts thereof". For application of 521 CMR, each portion of a *building* which is separated from other portions by fire walls (as defined in 780 CMR) and are not dependent on the existing *building* for *accessible* elements shall be considered as a separate *building*.

**CHANGE OF USE:** Varying the use of a *building* from a private use to one that is open to and used by the public.

**CLEAR:** Unobstructed.

5.00: **DEFINITIONS**

**CLEAR FLOOR SPACE:** The minimum unobstructed floor or ground space required to accommodate a single, stationary wheelchair and occupant. Unless otherwise stated, the dimensions of *clear floor space* shall be 30 inches by 48 inches (30" by 48" = 762mm by 1219mm) and shall be *level*.

**CLOSED CIRCUIT TELEPHONE:** A telephone with dedicated line(s), such as a house phone, courtesy phone, or security gates with intercoms, that require voice communication to obtain clearance to enter a *facility* or *project*.

**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, occupants of homeless shelters, office buildings, residences or the guests of such occupants).

**COMMUTER RAIL:** Short-haul passenger service operating in metropolitan and suburban areas, whether within or across geographical boundaries of a state, usually characterized by reduced fare, multiple ride, and commutation tickets, and by morning and afternoon peak period operations. This term does not include light or rapid rail transportation.

**COMPLEX:** Multiple housing developed on one or more sites by a single entity.

For complexes currently owned or financed by public agencies, including local housing authorities, Massachusetts Housing Finance Agency, or Housing and Urban Development, the *complex* means the whole of one or more residential structures and appurtenant structures, equipment, roads, walks, and parking lots which a single entity owns, within a municipality, and is or will be covered by a single mortgage contract for permanent financing or was originally constructed or acquired under one contract for financial assistance for new construction or acquisition

**CONSTRUCTION:** Work for which a building permit is required, work determined to be *construction* by a state or local building inspector, or work for which a certificate of occupancy is necessary upon completion.

**CROSS SLOPE:** The slope that is perpendicular to the *running slope* and the direction of travel.

**CURB CUT:** A short ramp cutting through a curb.

**DETECTABLE WARNING:** A standardized surface feature built in or applied to walking surfaces or other elements to give warning of hazards on a circulation path.

**DWELLING UNIT:** A unit providing living facilities for one or more persons. (*See 521 CMR 8.00: TRANSIENT LODGING FACILITIES* for more detailed information.)

5.00: **DEFINITIONS**

**EGRESS, MEANS OF:** A continuous and unobstructed path of travel from any point in a *building* or structure to a public way and consisting of three separate and distinct parts: (a) the exit access, (b) the exit, and (c) the exit discharge. A *means of egress* comprises the vertical and horizontal means of travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, horizontal exits, courts and yards.

An *accessible means of egress* is one that complies with 521 CMR and does not include stairs, steps, or escalators. *Areas of rescue assistance* or evacuation elevators may be included as part of *accessible means of egress*.

**ELEMENT:** An architectural or mechanical component of a *building, facility, space* or *site*, e.g., telephone, curb cut, door, drinking fountain, seating, or water closet.

**ENTRANCE:** Any access point to a *building* or portion of a *building* or *facility* used for the purpose of entering. An *entrance* includes the approach *walk*, stairs, lifts, ramp or other vertical access leading to the entrance platform; the entrance platform itself; vestibules, if provided; the entry door(s) or gate(s); and the hardware of the entry door(s) or gate(s).

**FACILITY:** All or any portion of *buildings*, structures, *site* improvements, *complexes*, equipment, roads, *walks*, passageways, parking lots, or other real or personal property located on a *site*.

**FINAL DECISION:** Determination of the *Board*, arrived at after consideration of the facts brought to its attention in accordance with 521 CMR.

**FULL AND FAIR CASH VALUE OF THE BUILDING:** The assessed valuation of a *building* (not including the land) as recorded in the Assessor's Office of the municipality at the time the *building* permit is issued as equalized at 100% valuation. The 100% equalized assessed value shall be based upon Massachusetts Department of Revenue's determination of the particular city's or town's assessment ratio.

**EXAMPLE:** Town X has an assessment ratio of 40%, the particular *building* in question is assessed at \$200,000.00. To determine the equalized assessed value of this *building*, divide \$200,000.00 by 0.4. The equalized assessed value equals \$500,000.00.

**EXCEPTIONS:**

- a. If no assessed value exists, or the assessed value is more than three years old, a request to substitute the appraised value may be submitted to the *Board*. The request to use the appraised value must be submitted by a certified appraiser or for transit facilities, either a certified appraiser or an independent registered professional engineer and must be submitted prior to obtaining a *building* permit for the project.
- b. The value of *multiple dwellings* owned or financed by public sector agencies, local housing authorities, Massachusetts Housing Finance Agency, or the Department of Housing and Urban Development shall be determined by *replacement cost*.
- c. The value of buildings owned, constructed, or renovated by the Commonwealth of Massachusetts shall be determined by the *replacement cost*.

5.00: **DEFINITIONS**

When part of a *building* is subject to 521 CMR, the *full and fair cash value* shall be based on the percentage of the *full and fair cash value* of the whole which equals the ratio of the square footage of the part of the *building* to the square footage of the whole *building*; if the *Board* determines the application of this formula to cause an inequitable result, the *Board* may otherwise calculate the *full and fair cash value* of the part of a *building* at issue.

EXAMPLE: Where the whole *building* is 100,000 square feet, the part in question is 10,000 square feet, and the equalized value of the whole is \$1,000,000.00, the *full and fair cash value* of the part is \$100,000.00

**GROUND FLOOR:** The floor of a *building* closest to the level of the exterior grade and any floor within 36 inches (36" = 914mm) of an exterior grade at some or all of its perimeter. *Buildings* on sloped *sites* may have more than one *ground floor*. For *multiple dwellings* with a garage or commercial space at grade level, the first floor of *dwelling units* above the garage or commercial space shall be considered the *ground floor*.

**GROUP 1:** Applies to *dwelling units* that have features that can be modified without *structural change* to meet the specific functional needs of an occupant with a disability.

**GROUP 2A:** Applies to *dwelling units* that have features similar to Group 1, but have the additional feature of greater floor space to accommodate the needs of occupants who need such space due to their disability.

**GROUP 2B:** Applies to *dwelling units* that contain features that provide, at the time of initial construction, full accessibility without need for further modification.

**HALF BATHROOM:** A space with a toilet and a sink.

**IMPRACTICABLE/IMPRACTICABILITY:**

- (a) Compliance with 521 CMR would be technologically unfeasible; or
- (b) compliance with 521 CMR would result in excessive and unreasonable costs without any substantial benefit to persons with disabilities.

**LEVEL:** Sloped no more than 1:50 or 2%

**LIGHT RAIL:** A *light rail* vehicle is a streetcar type vehicle operated on city streets, semi-exclusive rights of way, or exclusive rights of way.

**LODGING HOUSE:** A building where lodgings are let to four or more persons not within second degree of kindred to the persons operating the facility, including fraternity houses and dormitories of educational institutions.

**LOFT:** An intermediate level between the floor and ceiling of any story, located within a room or rooms of a dwelling.

5.00: **DEFINITIONS**

**MARINE FACILITIES:** *Marine facilities* shall include, but not be limited to, piers, docks, wharves, bulkheads, seawalls, and any other fixed manmade structures at the land/water interface, and floating structures including barges, floating docks, and rafts which provide access from the water's edge to floating vessels including, but not limited to, boats, ships, ferries, or any other form of waterborne transportation.

**MARINE RAMPS:** *Marine ramps* are ramps, gangways, or walkways with a maximum slope of 1:12, or with any slope that is less steep than 1:12, under nominal marine conditions, and which span from land or a fixed pier to a floating vessel or dock, or which are fixed to a floating structure.

**MARKED CROSSING:** A crosswalk or other identified path intended for pedestrian use in crossing a *vehicular way*.

**MEZZANINE OR MEZZANINE FLOOR:** An intermediate level between the floor and ceiling of any story with an aggregate floor area of not more than 33% of the floor area of the story in which the level is located.

**MULTIFAMILY DWELLING:** Any *building* containing more than two dwelling units.

**MULTIPLE DWELLING:** A lodging or residential facility for hire, rent, lease, or sale, containing three or more *dwelling units*.

**NOMINAL MARINE CONDITIONS:** Denotes a condition in the marine environment where physical facilities are unmoved by the effects of wind, waves, wakes, currents, and weather conditions.

**OCCUPIABLE:** A room or enclosed space designed for human occupancy in which individuals congregate for amusement, education or similar purposes, or in which occupants are engaged in labor, and which is equipped with *means of egress*, light, and ventilation.

**OPERABLE PART:** A part of a piece of equipment or appliance used to insert or withdraw objects, or to activate, deactivate, or adjust the equipment or appliance (for example, coin slot, pushbutton, handle).

**ORDINARY REPAIRS:** Any maintenance which does not affect structure, egress, fire protection systems, fire ratings, energy conservation provisions, plumbing, sanitary, gas, electrical or other utilities.

**PERSONS WITH DISABILITIES:** Individuals who experience substantial limitations in one or more major life activities, including but not limited to such functions as performing manual tasks, walking, seeing, hearing, speaking, breathing, learning and working. *Persons with disabilities* shall include but not be limited to those who have the inability to walk, difficulty walking, hearing disabilities, lack of coordination, reaching and manipulation disabilities stamina, difficulty interpreting and reacting to sensory information and extremes in physical size.

5.00: **DEFINITIONS**

**POWER-ASSISTED DOOR:** A door with a mechanism that helps to open the door or that reduces the opening resistance of a door, upon the activation of a switch or a continued force applied to the door itself.

**PRIMARY FUNCTION AREA:** A major activity for which the *facility* is intended. Areas that contain a primary function include, but are not limited to: the customer services lobby of a bank, the dining area of a cafeteria, the meeting rooms in a conference center, as well as offices and all other work areas in which the activities of the public are carried out.

**PROJECT:** *See 521 CMR 5.00: Complex*

**PROPRIETOR:** One with title to the establishment who owns the entire fee or portion of the entire fee and the consequent right to dispose of the establishment or such fee portion as vested in him or her.

**PUBLIC BUILDING:**

- a. A *building* privately or publicly financed that is open to and used by the public, including but not limited to transportation terminals, institutional buildings, educational buildings, commercial buildings, buildings having places of assembly, hotels, motels, dormitories, *multiple dwellings* consisting of three or more units, 5% of the units in lodging or residential facilities for rent, hire or lease containing 20 or more units, public use and common use areas of apartment buildings and condominiums, parking lots of 15 or more automobiles, public sidewalks and ways, funeral homes, and public rest rooms, and public areas of shopping centers and restaurants.
- b. A *building* constructed by the Commonwealth or any political subdivision thereof with public funds and open to public use, including but not limited to those constructed by public housing authorities, the Massachusetts Port Authority, the Massachusetts Parking Authority, the Massachusetts Turnpike Authority, the Massachusetts Bay Transportation Authority, and building authorities of any public educational institution or their successors.

**PUBLIC USE:** Describes interior or exterior rooms or spaces that are made available to the general public. Public use may be provided at a *building* or *facility* that is privately or publicly owned.

**RAMP:** A walking surface that has a running slope greater than 1:20 but no greater than or equal to 1:12.

**RAPID RAIL:** A subway type transit vehicle railway operated on exclusive private rights of way with high level platforms. Rapid rail may be operated on elevated or at grade level track separated from other traffic.

**REASONABLE MODIFICATION:** Physical changes to *multiple dwellings* requested by *persons with disabilities* or their agents to enable full use and enjoyment thereof, as described in M.G.L., c. 151B, § 4(a), or St. 1989, c. 722.

5.00: **DEFINITIONS**

**RECONSTRUCTION:** The tearing down, removal, demolition or replacement of a *public building* or part of a *public building*.

**REMODELING:** Modification beyond an interior decoration or involving any *structural changes*, or the redecorating of a *public building* for which the cost of such refurbishing, updating or redecorating equals or exceeds 5% of the *full and fair cash value of the building*.

**REPAIR:** The *reconstruction* or renewal of any part of an existing *building* for the purpose of its maintenance.

**REPLACEMENT COST:** Current cost of construction and equipment for a newly constructed *building*.

- a. For multiple dwellings, *replacement cost* shall be determined by \$73.32 per square foot.
- b. For courthouses, correctional facilities, educational facilities and other buildings (other than multiple dwellings) owned, constructed, or renovated by the Commonwealth of Massachusetts, the *replacement cost* shall be determined by and reflected in the Commonwealth's Capital Asset Management Information System (CAMIS) survey and data base, for state owned buildings. The Division of Capital Asset Management (DCAM) shall file the CAMIS database, containing the replacement costs, with the *Board*. DCAM shall update the replacement costs annually as of the first day of January each year, based on the inflation rate determined by R.S. Means, including appropriate adjustments for location and other factors. For buildings that are not included in the CAMIS database, but may be renovated by DCAM such as county-owned facilities, the replacement costs shall be calculated by DCAM based on the replacement costs for comparable facilities that are included in the CAMIS database. DCAM shall supplement the CAMIS database on file with the *Board*, for any such building, by preparing and filing documentation identifying the replacement cost for the building and how it was calculated.

**RUNNING SLOPE:** The slope that is parallel to the direction of travel and perpendicular to the *cross slope*.

**SERVICE ENTRANCE:** An entrance intended primarily for delivery of goods or services.

**SIDEWALK:** A prepared *walk* within a street right of way.

**SIGNAGE:** Displayed verbal, symbolic, tactile, and/or pictorial information.

**SITE:** A parcel of land bounded by a property line, or a designated portion of a public right-of-way.

**SITE IMPROVEMENT:** Landscaping, paving for pedestrian and vehicular ways, outdoor lighting, recreational facilities, and the like, added to a *site*.

**SLEEPING ACCOMMODATIONS:** Rooms in which people sleep; for example, dormitory and hotel or motel guest rooms or suites.

5.00: **DEFINITIONS**

**SPACE:** A definable area, *e.g.*, room, toilet room, hall, assembly area, entrance, storage room, alcove, courtyard, or lobby.

**SPRING TIDE RANGE:** The *spring tide range* for coastal communities in Massachusetts shall be that number published in "Table 2 - Tidal Difference and other Constants" of the current: *Tide Tables - High and Low Tide Predictions East Coast of North America and South America including Greenland* as published by the U.S. Department of Commerce, National Oceanographic and Atmospheric Administration, National Ocean Service.

**STORY:** That portion of a *building* included between the upper surface of a floor and upper surface of the floor or roof next above. If such portion of a *building* does not include occupiable space, it is not considered a *story* for the purposes of 521 CMR. There may be more than one floor level within a *story* as in the case of a *mezzanine* or *mezzanines*.

**STRUCTURAL CHANGE:** *Structural change* includes major *reconstruction* of walls or partitions or relocation of bearing walls or partitions. Minor alterations including the opening of sections of walls and/or the relocation of equipment or fixtures is not considered a *structural change*.

**STRUCTURAL FRAME:** The *structural frame* shall be considered to be the columns and the girders, beams, trusses, foundation and spandrels having direct connections to the columns and all other members that are essential to the stability of the *building* as a whole.

**STRUCTURAL STRENGTH:** *Structural strength* of grab bars, shower seats, fasteners and mounting devices shall be as follows:

- a. Bending stress in a grab bar or seat induced by the maximum bending moment from the application of 250 lbs. shall be less than the allowable stress for the material of the grab bar or seat.
- b. Shear stress induced in a grab bar or seat by the application of 250 lbs. shall be less than the allowable shear stress for the material of the grab bar or seat. If the connection between the grab bar or seat and its mounting bracket or other supports is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.
- c. Shear force induced in a fastener or mounting device from the application of 250 lbs. shall be less than the allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.
- d. Tensile force induced in a fastener by direct tension force of 250 lbs. plus the maximum moment from the application of 250 lbs. shall be less than the allowable withdrawal load between the fastener and the supporting structure
- e. Grab bars shall not rotate within their fittings.

**TACTILE:** Describes an object that can be perceived using the sense of touch.

5.00: **DEFINITIONS**

**TACTILE WARNING:** A surface texture applied to or built into walking surfaces or other elements to warn visually impaired persons of hazards in the path of travel.

**TEMPORARY:** Temporary buildings and facilities that are used by the public for a period of time not to exceed 90 days within any calendar year. Examples include, but are not limited to: reviewing stands, temporary classrooms, exhibit areas, street festivals, crafts fairs, music events, state and county fairs, sports events, dances, and temporary safe pedestrian passageways around a construction site.

**TEMPORARY ACCESSIBLE PARKING:** Where there are an insufficient number of accessible parking spaces or when permanent accessible parking spaces cannot be provided in time for an event, temporary accessible parking spaces can be created in permanent paved lots, as well as in dirt lots or fields.

**TEMPORARY CURB RAMP:** When temporary modifications are utilized to overcome level changes created by curbs.

**TEMPORARY MODIFICATIONS:** When changes to a site are anticipated to be in place for less than 90 days, temporary modifications compliant with 521 CMR must be made.

**TEXT TELEPHONE (TTY):** Technology which employs interactive graphic (*i.e.* typed) communications through the transmission of coded signals across the standard telephone network. These devices are also known as TDD's.

**TIER I:** *Tier I* marine facilities are docks and/or piers that service scheduled, waterborne passenger vessels with a vessel length of 40 feet (40' = 12m) or greater. These facilities will provide persons with disabilities unassisted access under nominal marine conditions.

**TOWNHOUSE:** A *dwelling unit* with finished living space on more than one *story*.

**TRANSIENT LODGING:** A *building, facility*, or portion thereof, excluding inpatient medical care facilities, that contains one or more *dwelling units* or sleeping accommodations not intended for permanent residence. Transient lodging may include but is not limited to resorts, group homes, hotels, motels, and dormitories.

**TRANSIT FACILITY:** A physical structure whose primary function is to facilitate access to and from a transportation system which has scheduled stops at the structure.

**TRANSIT PLATFORM:** A boarding area for rail transit vehicles.

**TRANSITION PLATE:** A *transition plate* is that element connected to the end of a moving *marine ramp* which provides access from the end of the *marine ramp* to a *level* platform.

5.00: **DEFINITIONS**

**UNASSISTED ACCESS:** *Unassisted access* enables a *person with a disability* to obtain information about and to maneuver a path of travel without the assistance of another person, except at those points and under those conditions under which individuals without disabilities would be in need of assistance from another person. This definition does not restrict the right of a *person with a disability* to request and receive assistance.

**USE:** Purpose for which the *building* is designed, used or intended to be used.

**VEHICULAR WAY:** A route intended for vehicular traffic, such as a street, driveway, or parking lot.

**VESSEL LENGTH:** *Vessel length* means the straight line horizontal measurement of the overall length from the foremost part of the boat to the aftermost part of the boat, measured from end to end over the deck, excluding sheer, and measured parallel to the centerline. Bow sprits, bumpkins, rudders, outboard motor brackets, handles, and other similar fittings, attachments, and extensions are not included in the measurement.

**WALK (WALKWAY):** An interior or exterior pathway with a prepared surface intended for pedestrian use, including but not limited to general pedestrian areas such as plazas, courts and crosswalks.

**VARIANCE:** Modification of or substitution for a Rule or Regulation.

**ZONE OF REACH:** An operable mechanism is within reach if it meets either criteria outlined in **521 CMR 6.5, Forward Reach** or **521 CMR 6.6, Side Reach**.

CITY OF SOMERVILLE, MASSACHUSETTS  
MAYOR KATJANA BALLANTYNE  
ENGINEERING DIVISION



## Appendix F

### 521 CMR 17.00 Restaurants

<https://www.mass.gov/lists/521-cmr-2006-edition>



521 CMR 17.00: RESTAURANTS

17.1 GENERAL

Restaurants shall comply with 521 CMR, except as specified or modified in **521 CMR 17.00**. Restaurants shall include, but not be limited to, cafeterias, lounges, bars, and other places open to the public where food or beverages are served.

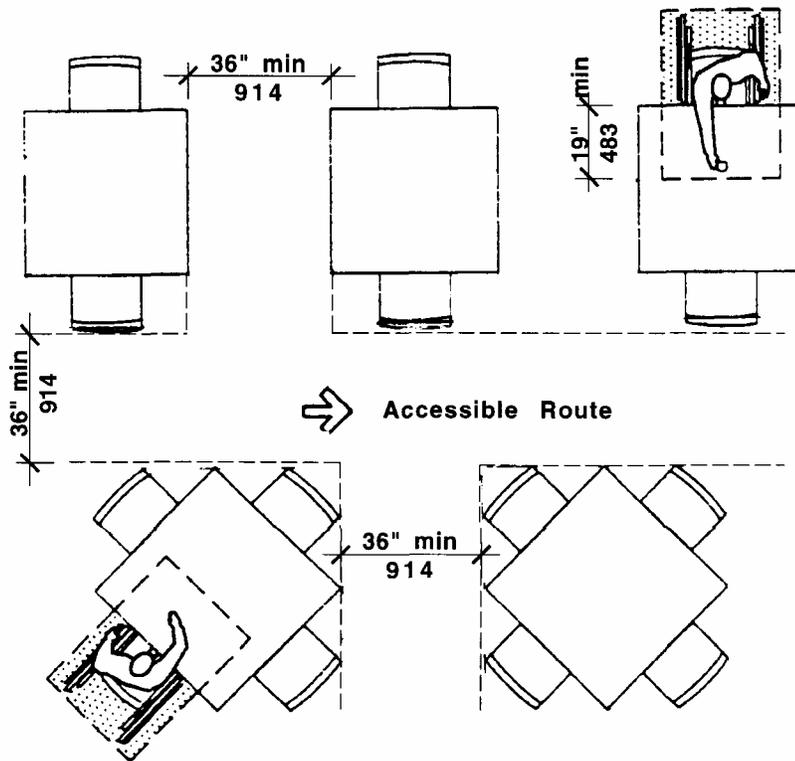
17.2 SEATING

At least 5% but not less than one, of the tables shall be *accessible*, be on an *accessible route*, and in compliance with the following:

17.2.1 Distribution: *Accessible* tables shall be distributed by size and location throughout the *space* or *facility*. In establishments where separate areas are designated for smoking and non-smoking patrons, the required number of *accessible* tables shall be proportionally distributed between the smoking and non-smoking areas.

17.2.2 A 36 inch (36" = 914mm) *access aisle* shall be provided between all *accessible* tables. No seating shall overlap the *access aisle*. See Fig. 17a.

17.2.3 *Clear floor space* as defined in **521 CMR 5.00: DEFINITIONS** shall be provided at each seating space. Such *clear floor space* shall not overlap knee space by more than 19 inches (19" = 483mm). See Fig. 17a.



Clearances for Seatings and Tables  
Figure 17a

## 17.00: RESTAURANTS

17.2.4 Knee Clearances: If seating for people in wheelchairs is provided at tables or counters, knee spaces at least 27 inches (27" = 686mm) high, 30 inches (30" = 762mm) wide, and 19 inches (19" = 483mm) deep shall be provided. See Fig. 17b.

17.2.5 Height of Tables or Counters: The tops of *accessible* tables and counters shall be from 28 inches to 34 inches (28" to 34" = 711mm to 864mm) above the finish floor or ground. See Fig. 17b.

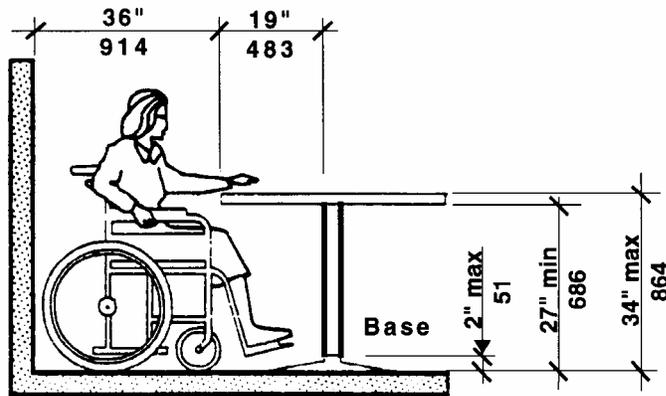


Table Heights and Clearances  
Figure 17b

## 17.3 DINING COUNTERS WITHOUT SERVICE

At counters where food is consumed but there is no service, a 60 inch (60" = 1524mm) portion of the dining counter shall be *accessible*, on an *accessible route*, and in compliance with 521 CMR 17.2.5

## 17.4 COUNTERS AND BARS WITH SERVICE

At counters exceeding 34 inches (34" = 864mm) in height, where food or drink is served for consumption by customers seated on stools or standing at the counter, a portion of the main counter shall be *accessible* or service shall be available at *accessible* tables within the same area. The *accessible* portion shall be a minimum of 60 inches (60" = 1524mm) in length and comply with 521 CMR 17.2.4 and 17.2.5.

## 17.5 DINING AREAS

All dining areas, including raised or sunken dining areas, *mezzanines*, loggias, and outdoor seating areas, shall be *accessible*.

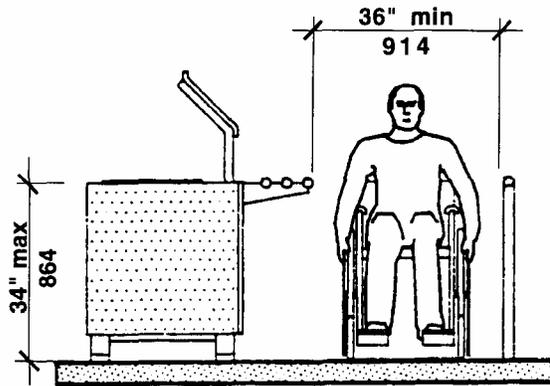
## 17.6 FOOD SERVICE LINES

Food service lines, including but not limited to: cafeterias, buffet tables and salad bars, shall comply with the following:

17.6.1 *Clear Width*: Food selection aisles, including *entrance* and exit, shall have a minimum *clear* width of 36 inches (36" = 914mm), with a preferred *clear* width of 42 inches (42" = 1067mm) to allow passage by other customers around a person using a wheelchair. See Fig. 17c.

17.00: RESTAURANTS

17.6.2 Tray slides shall be mounted no higher than 34 inches (34 " = 864mm) above the floor. See Fig. 17c.

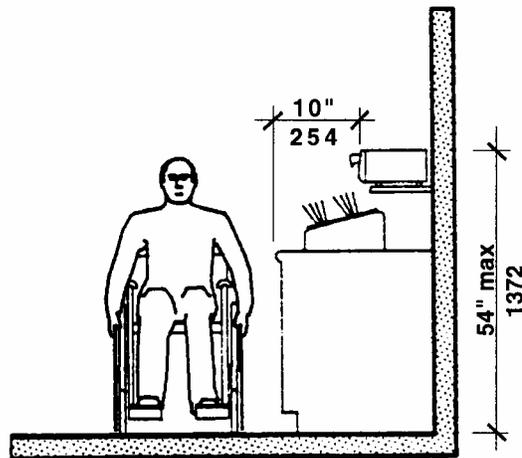


Food Service Line  
Figure 17c

17.6.3 If self-service shelves are provided, at least 50% of each type must be within the *zone of reach* defined in 521 CMR 5.00: DEFINITIONS.

17.7 TABLEWARE AND CONDIMENT AREAS

Self-service shelves and dispensing devices for tableware, dishware, condiments, food and beverages shall be installed to comply with *zone of reach* as defined in 521 CMR 5.00: DEFINITIONS. See Fig. 17d.



Food Service Line - Reach Range  
Figure 17d

17.8 RAISED PLATFORMS

Where a head table or speaker's lectern is located on a raised platform, the platform shall be *accessible* in compliance with 521 CMR 24.00: RAMPS, or 521 CMR 28.00: ELEVATORS. Open edges of a raised platform shall be protected by a curb or by placement of tables.

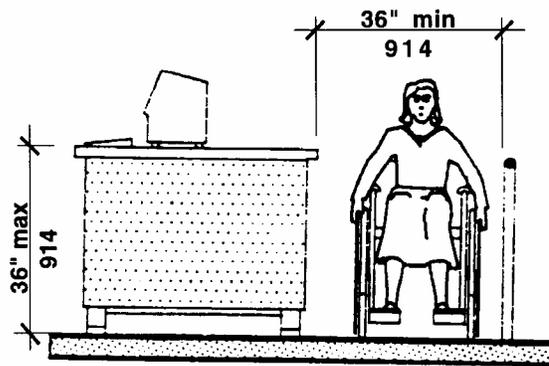
17.00: RESTAURANTS

17.9 VENDING MACHINES AND OTHER EQUIPMENT

Spaces for vending machines and other equipment shall be located on an *accessible route* and shall comply with *zone of reach* as defined in 521 CMR 5.00: DEFINITIONS.

17.10 CASH REGISTER

Where payment is made at a cash register, the counter shall be no higher than 36 inches (36" = 914mm) from the floor to the top of the counter. See Fig. 17e.



Check-Out Lane  
Figure 17e

17.11 TELEVISIONS

Where televisions are provided in restaurants, the television shall be equipped with a closed caption decoder.

521 CMR: ARCHITECTURAL ACCESS BOARD

17.00: **RESTAURANTS**

NON-TEXT PAGE

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## Appendix G

### 521 CMR 20.00 Accessible Route

<https://www.mass.gov/lists/521-cmr-2006-edition>



521 CMR 20.00: **ACCESSIBLE ROUTE**

20.1 **GENERAL**

An *accessible route* shall provide a continuous unobstructed path connecting *accessible spaces* and *elements* inside and outside a *facility*. *Accessible routes* may include but are not limited to *walks*, halls, corridors, aisles, skywalks, and tunnels. *Accessible routes* may not include stairs, steps, or escalators, even if the stairs and steps are required to be *accessible* under 521 CMR.

20.2 **LOCATION**

Within the boundary of the *site*, an *accessible route(s)* shall be provided from *accessible parking*, *accessible passenger loading zones*, and public streets or *sidewalks* to the *accessible building entrance* they serve. The *accessible route(s)* shall coincide with the route for the general public.

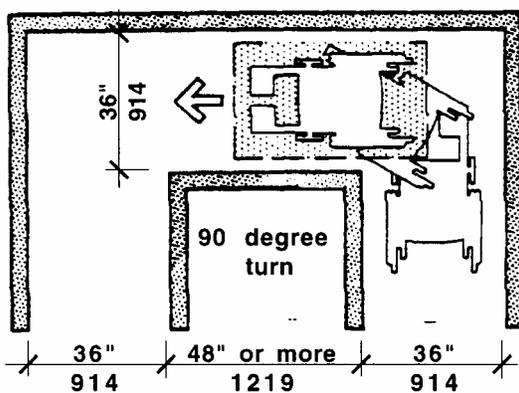
20.2.1 At least one *accessible route* shall connect *accessible buildings, facilities, elements* and *spaces* that are on the same *site*.

20.3 **WIDTH**

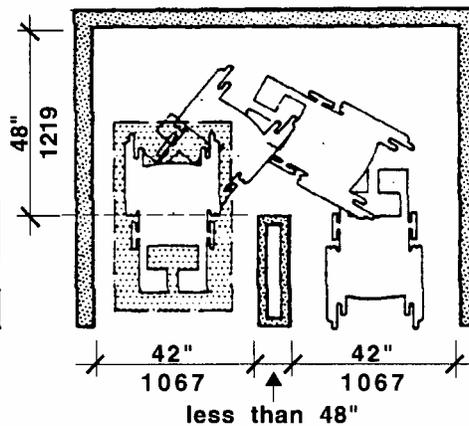
An *accessible route* shall have a minimum *clear* width of 36 inches (36" = 914 mm) except at doors and at openings less than 24 inches (24" = 610mm) deep where it shall comply with **521 CMR 26.00: DOORS AND DOORWAYS**.

20.4 **URNS**

If a person in a wheelchair must make a turn around an obstruction, the minimum *clear* width of the *accessible route* shall comply with **Fig. 20a or 20b**.



Minimum Clearances for Turning  
Figure 20a



Minimum Clearances for Turning  
Figure 20b

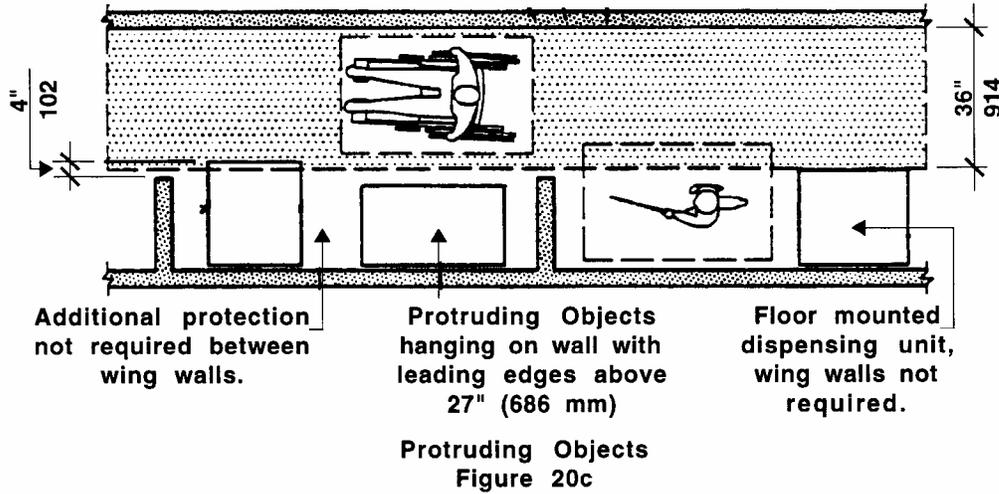
20.5 **PASSING SPACE**

If an *accessible route* has less than 60 inches (60" = 1524mm) *clear* width, then *passing spaces* at least 60 inches by 60 inches (60" x 60" = 1524mm by 1524mm) shall be located at intervals not to exceed 200 feet (200' = 61m). A T-intersection of two corridors or walks is an acceptable passing place.

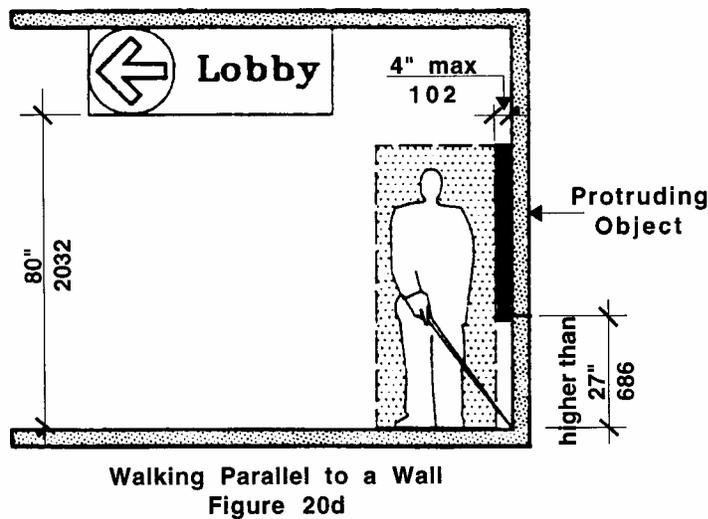
20.00: ACCESSIBLE ROUTE

20.6 PROTRUDING OBJECTS

Objects shall not reduce the *clear* width of an *accessible route* or maneuvering *space* (see Fig. 20c) and must comply with 521 CMR 20.6.1.

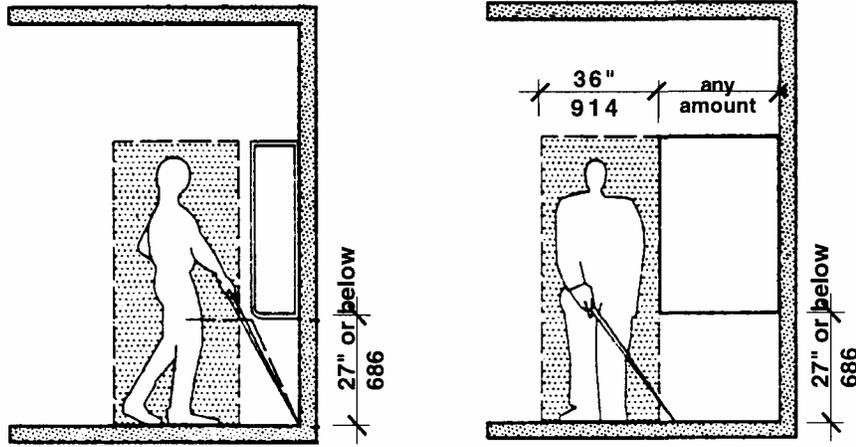


20.6.1 Objects projecting from walls (for example, telephones) with their leading edges between 27 inches and 80 inches (27" and 80" = 686mm and 2032mm) above the finished floor shall protrude no more than four inches (4" = 102mm) into walks, halls, corridors, passageways, or aisles and shall not have sharp or abrupt edges. See Fig. 20d.



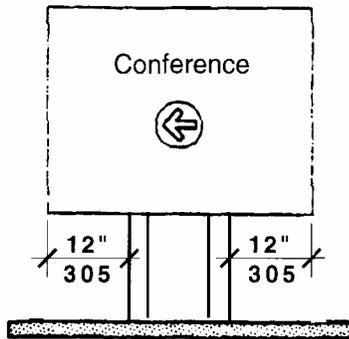
20.6.2 Objects mounted with their leading edges at or below 27 inches (27" = 686mm) above the finished floor may protrude any distance as long as they do not reduce the *accessible route* below 36 inches (36" = 914mm). See Fig. 20e.

20.00: ACCESSIBLE ROUTE



Walking Perpendicular to a Wall      Walking Parallel to a Wall  
 Figure 20e

20.6.3 Free-standing objects mounted on posts or pylons may have a maximum overhang of 12 inches (12" = 305mm) measured between 27 inches and 80 inches (27" and 80" = 686mm and 2032mm) above the ground or finished floor. See *Fig. 20f*.

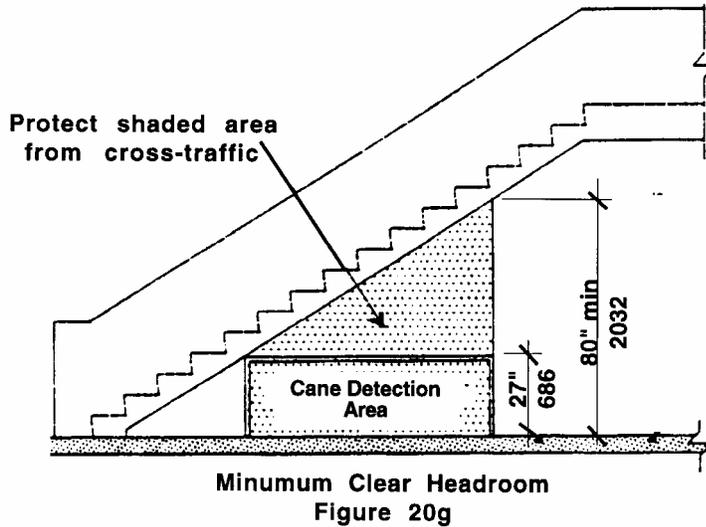


Objects Mounted on Posts or Pylons  
 Figure 20f

20.7 HEADROOM

*Walks, halls, corridors, passageways, aisles, or other circulation spaces* shall have a minimum of 80 inches (80" = 2032mm) *clear* headroom. See **Fig. 20d**. If vertical clearance of an area adjoining an *accessible route* is reduced to less than 80 inches (80" = 2032mm), a barrier shall be provided to warn blind or visually-impaired persons of the reduced headroom. See **Fig. 20g**.

20.00: ACCESSIBLE ROUTE



20.8 SURFACE TEXTURES

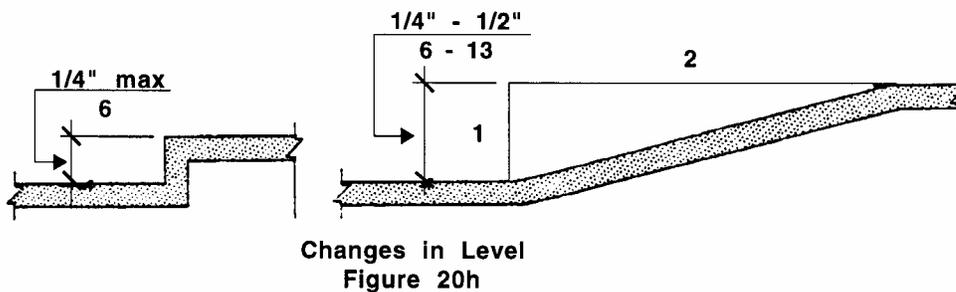
The surface of an *accessible route* shall comply with **521 CMR 29.00: FLOOR SURFACES**.

20.9 SLOPE AND CROSS SLOPE

An *accessible route* with a *running slope* steeper than 1:20 (5%) is a *ramp* and shall comply with **521 CMR 24.00: RAMPS**. Nowhere shall the *cross slope* of an *accessible route* exceed 1:50 (2%). (Refer to 521 CMR 2.4.4d)

20.10 CHANGES IN LEVELS

Changes in levels along an *accessible route* shall comply with **521 CMR 29.2, Level Changes**. See **Fig 20h**.



20.11 EGRESS

*Accessible routes* serving any *accessible space* or *element* shall also serve as a *means of egress* for emergencies or connect to an *accessible area of rescue assistance*.

20.00: **ACCESSIBLE ROUTE**

20.11.1 All *spaces* or *elements* required to be accessible by 521 CMR shall be provided with no less than one accessible *means of egress*.

a. Where more than one *means of egress* is required under 780 CMR (The Massachusetts State Building Code) from any *accessible space* or *element*, each space or element shall be served by not less than two accessible *means of egress*.

Exception: For the purpose of 521 CMR 20.11, fire escapes shall be exempt.

20.11.2 The exit discharge shall provide a continuous path of travel from an *exit* to a public way by means of a *walkway* or a *ramp*.

a. Where public ways are further than 100 feet from an exit, exterior *areas of rescue assistance* complying with 20.12.2 may be constructed along the exit discharge located no closer than 100 feet from the building.

b. in buildings where the grade at the level of exit discharge prohibits construction of either a *walkway* or a *ramp*, a portion of an exterior exit balcony located immediately adjacent to an emergency exit complying with 521 CMR 20.12.2 may be constructed as an *area of rescue assistance*.

20.12 **AREAS OF RESCUE ASSISTANCE**

Shall be provided where an *accessible means of egress* is not provided and shall comply with the following requirements:

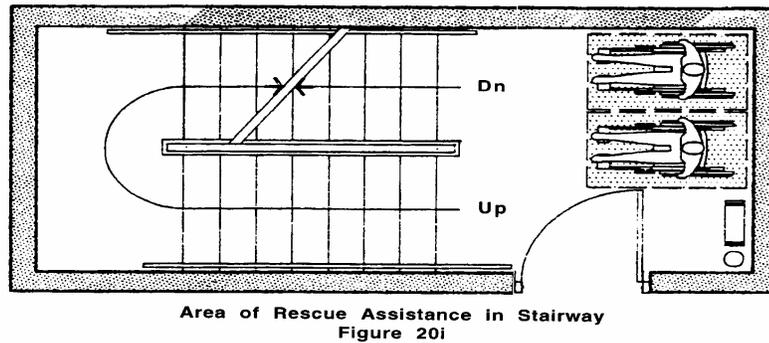
Exception: *Areas of rescue assistance* are not required in:

- a. existing buildings undergoing alterations, remodeling, reconstruction
- b. *buildings* or *facilities* having a supervised automatic sprinkler systems
- c. tunnels;
- d. open air parking garages and open air transit stations

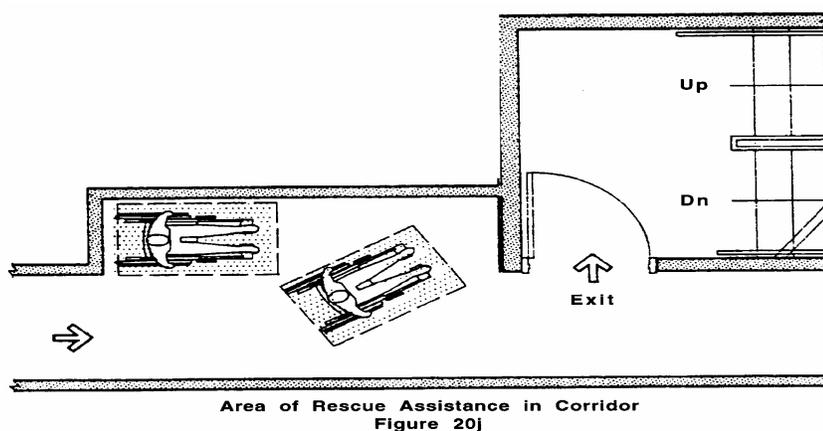
20.12.1 Location and *Construction*: An *area of rescue assistance* shall be one of the following:

a. A portion of a stairway landing within a smokeproof enclosure (complying with applicable requirements of 780 CMR (The Massachusetts State Building Code). See **Fig. 20i**.

## 20.00: ACCESSIBLE ROUTE



- b. A portion of an exterior exit balcony located immediately adjacent to an exit stairway when the balcony complies with applicable requirements of 780 CMR (The Massachusetts State Building Code) for exterior exit balconies. Openings to the interior of the building located within 20 feet (20' = 6m) of the *area of rescue assistance* shall be protected with fire assemblies having a  $\frac{3}{4}$  hour fire protection rating.
- c. A portion of a one hour fire-resistive corridor (complying with applicable requirements of 780 CMR: the State Building Code for fire-resistive construction and for openings) located immediately adjacent to an exit enclosure. (See Fig. 20j)



- d. A vestibule located immediately adjacent to an exit enclosure and constructed to the same fire-resistive standards controlling corridors and openings.
- e. A portion of a stairway landing within an exit enclosure which is vented to the exterior and is separated from the interior of the building with not less than one hour fire-resistive doors.
- f. When approved by the appropriate applicable building official, an area or a room that is separated from other portions of the *building* by a smoke barrier. Smoke barriers shall have a fire-resistive rating of not less than one hour and shall completely enclose the area or room. Doors in the smoke barrier shall be tight-fitting smoke- and draft-control assemblies having a fire-protection rating of not less than 20 minutes and shall be self-closing or automatic closing. The area or room shall be provided with an exit directly to an exit enclosure. Where the room or area exits into an exit enclosure which is required to be of more than one hour fire-resistive *construction*, the room or area shall have the same fire-resistive *construction*, including the same opening protection, as required for the adjacent exit enclosure.

20.00: **ACCESSIBLE ROUTE**

- g. An elevator lobby where elevator shafts and adjacent lobbies are pressurized as required for smokeproof enclosures by 780 CMR: the State Building Code or 524 CMR: the State Board of Elevator Regulations, and when complying with requirements herein for size, communication, and *signage*. Such pressurization system shall be activated by smoke detectors on each floor located in a manner approved by the appropriate local authority. Pressurization equipment and its duct work within the building shall be separated from other portions of the building by a minimum two-hour fire restrictive construction.
- h. A flat level area that is stable, firm and slip resistant adjacent to the exit discharge in locations where the public way is further than 100 feet from the building.

20.12.2 **Size:** Each *area of rescue assistance* shall provide at least two *accessible* spaces, not less than 30 inches by 48 inches (30" x 48" = 762mm by 1219mm) each.

- a. The *area of rescue assistance* shall not encroach on any required exit width.
- b. The total number of such 30 inch by 48 inch (30" x 48" = 762mm by 1219mm) areas per *story* shall be not less than one for every 200 persons of calculated occupant load served by the *area of rescue assistance*.

20.12.3 **Stairway Width:** Each *stairway* adjacent to an *area of rescue assistance* shall have a minimum *clear* width of 48 inches (48" = 1219mm) between handrails.

20.12.4 **Two-way Communication:** A method of two-way communication, with both visible and audible signals, shall be provided between each *area of rescue assistance* and the primary entrance to the *building*. The fire department or appropriate building official may approve a location other than the primary *entrance* to the *building*. Any operable mechanism shall comply with **521 CMR 39.00: CONTROLS**.

20.12.5 **Identification:** Each *area of rescue assistance* shall be identified by a sign that states "*area of rescue assistance*" and displays the international symbol of accessibility. The sign shall be illuminated when exit sign illumination is required. *Signage* shall also be installed at all inaccessible exits and where otherwise necessary to clearly indicate the direction to *areas of rescue assistance*. In each *area of rescue assistance*, instructions on the use of the area under emergency conditions shall be posted adjoining the two-way communication system.

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## Appendix H

### 521 CMR 21.00 Curb Cuts

<https://www.mass.gov/lists/521-cmr-2006-edition>



## 521 CMR: ARCHITECTURAL ACCESS BOARD

### 521 CMR 21.00: CURB CUTS

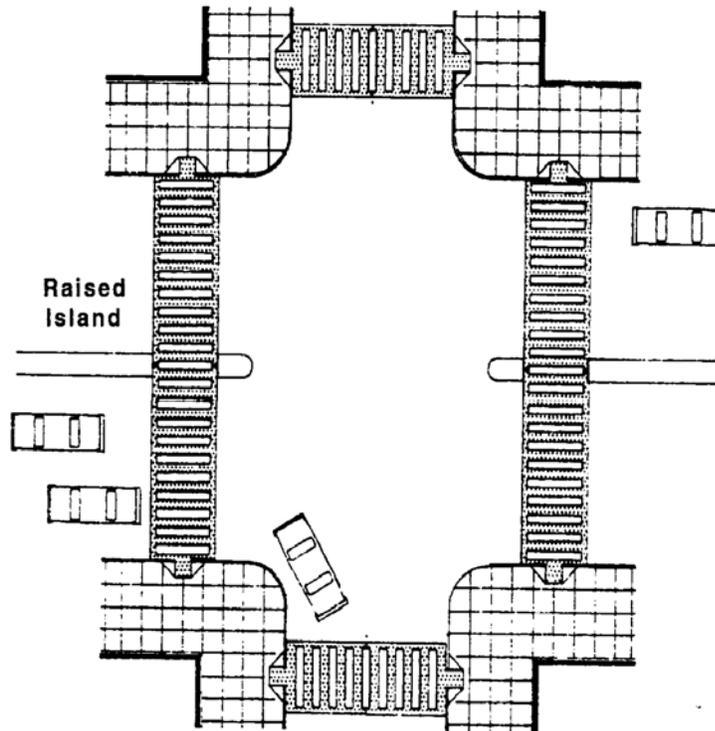
#### 21.1 GENERAL

Whenever *sidewalks, walkways, or curbs* on streets and ways are *constructed, reconstructed, or repaired*, *curb cuts* are required. All *curb cuts* shall comply with the following:

#### 21.2 LOCATION

*Curb cuts* shall occur wherever an *accessible route* crosses a curb and at the following locations:

- 21.2.1 *Curb cuts* are required at each corner of each intersection, located within the crosswalk and/or the pedestrian path of travel. *Curb cuts* shall be perpendicular to the curb at street crossings and each shall have a *level landing* at the top. At marked crossings, the bottom of the *ramp* run, exclusive of flared sides, shall be wholly contained within the marked crossing. See Fig. 21a. The crosswalk/pedestrian path of travel must also be perpendicular to the curb.



Curb Cuts at Intersection  
Figure 21a

Exception: Where pedestrian right-of-way established width will not accommodate a perpendicular *curb cut* and landing, a parallel public *sidewalk curb cut* with a *level landing* at its bottom shall be provided instead of a perpendicular *curb cut*.

- 21.2.1.1 *Apex curb cuts*: Where site constraints prevent the installation of a perpendicular *curb cut* or a parallel *curb cut* with a level landing, an apex curb cut is allowed. Site constraints include the following:

21.00: CURB CUTS

- a. Driver or pedestrian line of sight to or from the front of the level landing on the ramp is impaired, preventing safe observation of crosswalks or approaching traffic at the intersection by a significant immovable or unalterable streetscape feature such as a building, structure or historic element, etc.
- b. Stop line is beyond the allowed limit as stated in the Manual on Uniform Traffic Control Devices.
- c. Vaults containing electrical, telecommunications, etc. that are under or on the existing sidewalk.
- d. Large radius intersections which are 30 feet or greater.

21.2.1.2 When apex *curb cuts* are installed a 48 inch (48" = 1219mm) landing shall also be provided at the bottom of the *curb cut* and located within the marked crosswalk.

21.2.2 Reciprocal *curb cuts*: When *curb cuts* or *sidewalks* are being *constructed* or *reconstructed* on one side of the street, and when such *curb cuts* or *sidewalks* are connected to an opposite side of the street by one or more pedestrian paths of travel, then at least one *curb cut* shall be provided on the opposite side of the street where such side is controlled by the same owner.

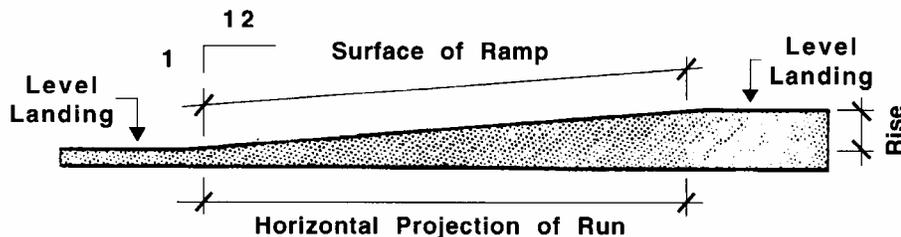
21.2.3 Driveways: *Curb cuts* are required at driveways intersecting *sidewalks* when the driveway has side curbs.

21.2.4 Raised Islands: Any raised islands in crossings shall be cut through *level* with the street or have *curb cuts* at both sides and a *level* area at least 48 inches (48" = 1219mm) long between the *curb cuts* in the part of the island intersected by the crossings.

21.2.5 Obstructions: *Curb cuts* shall be located or protected to prevent their obstruction by parked vehicles.

21.3 SLOPE

The least possible slope should be used for any ramp. The maximum slope shall be one-in-12 (1:12) (8.3%). Where *sidewalks* are too narrow to install a straight-line *curb cut* at a slope of one-in-12 (1:12) (8.3%), the sides of the *curb cut* shall not exceed one-in-12 (1:12) (8.3%). See **Fig. 21b**. The maximum cross-slope for any *curb cut* shall be 1:50 (2%). (There is no tolerance allowed on slope requirements). (Refer to 521 CMR 2.4.4d).



Slope  
Figure 21b

21.00: CURB CUTS

21.4 TRANSITIONS

Transitions from *curb cuts* to *walks*, gutters, or streets shall be flush or free of changes in *level* greater than ½ inch (½" = 13mm). Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb cuts, or accessible route shall not exceed one-in-20 (1:20) (5%).

21.5 DRAINAGE

Grading and drainage shall be designed to minimize pooling of water, accumulation of ice, or flow of water across the base of the *curb cut*.

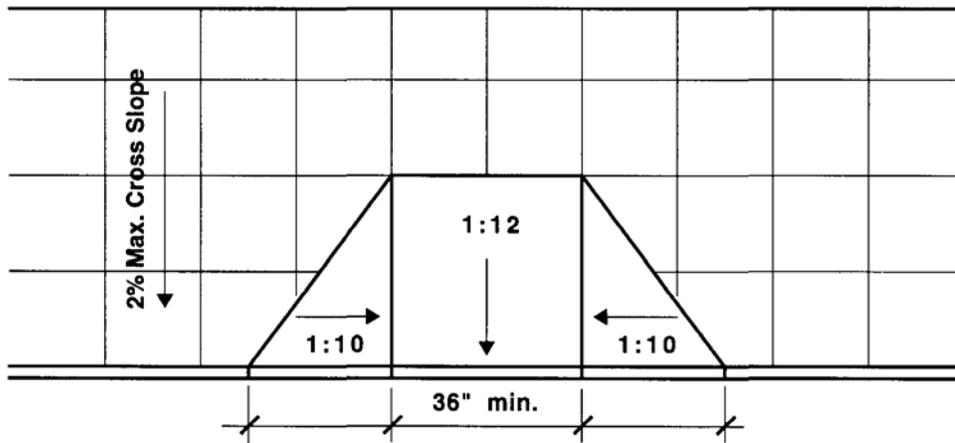
21.6 WIDTH

The minimum width of a *curb cut* shall be 36 inches (36" = 914mm), exclusive of flared sides. See Fig. 21c.

21.6.1 Landing width: Where a perpendicular *curb cut* is provided, a landing the width of the *curb cut* shall be provided at the top of the *curb cut*. The landing shall be 48 inches (48" = 1219mm) in length. The slope of said landing shall not exceed one-in-50 (1:50) (2%) in any direction.

21.7 FLARED SIDES

Sides of *curb cuts* shall extend at least 24 inches (24" = 610mm) at the curb. The maximum slope of the flare is one-in-ten (1:10) (10%). Curbing at the flared sides must blend with the slope of the flared sides. See Fig. 21c.

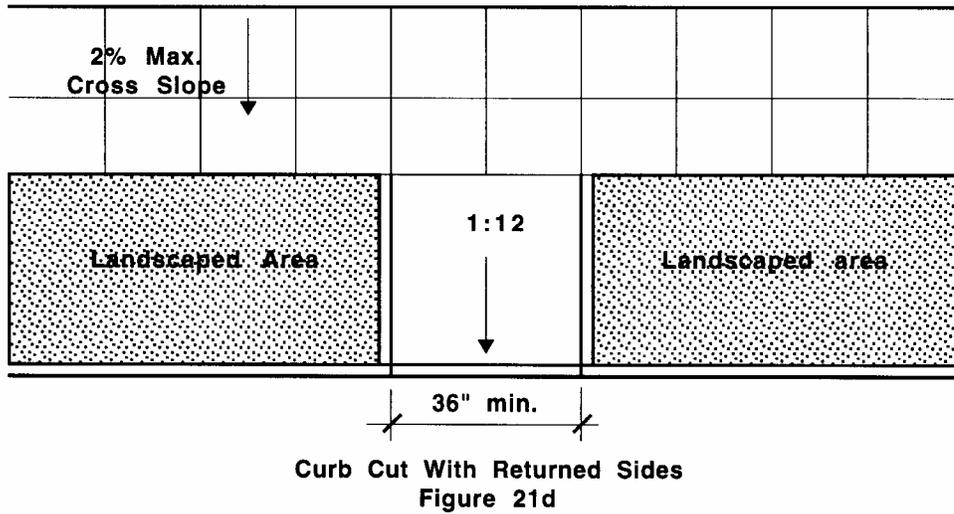


Curb Cut with Flared Sides  
Figure 21c

21.8 RETURNED SIDES

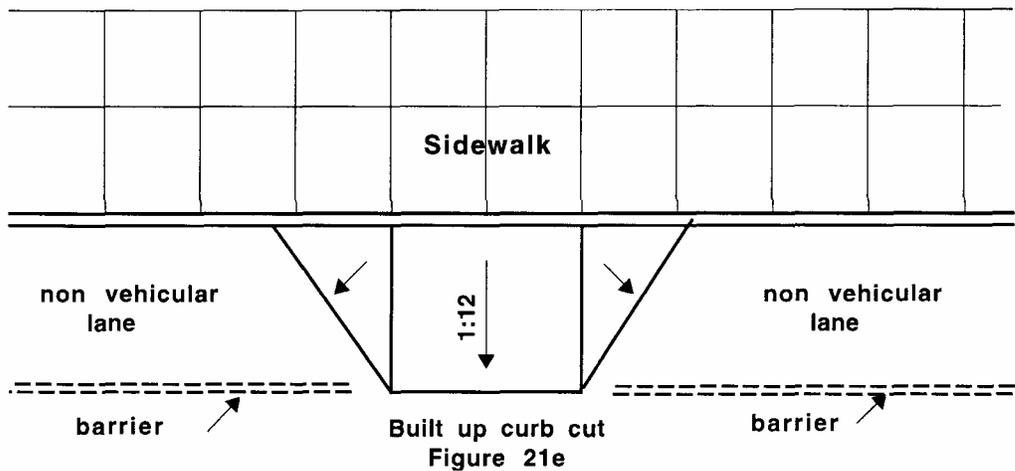
*Curb cuts* with returned sides are only permitted where they are protected by handrails pursuant to 521 CMR 24.5, Handrails or where pedestrian travel across the *ramp* is obstructed by permanently installed street hardware or landscaping. See Fig. 21d.

21.00: CURB CUTS



21.9 **BUILT-UP CURB CUTS**

Built-up *curb cuts* are allowed only where they do not project into vehicular traffic lanes. See **Fig. 21e**.



21.10 **PEDESTRIAN STREET CROSSINGS**

Where provided, pedestrian street crossings at, above, or below grade shall comply with the following:

21.10.1 Crossing controls shall be raised from or flush with their housings and shall be a minimum of two inches (2" = 51 mm) in the smallest dimension. The force required to activate controls shall be no greater than 5 lbs.

21.10.2 Location: Controls shall be located as close as practicable to the *curb cut* serving the controlled crossing and shall permit operation from a *clear ground space*.

521 CMR: ARCHITECTURAL ACCESS BOARD

21.00: **CURB CUTS**

21.10.3 Mounting Height: Pedestrian-actuated crossing controls shall be a maximum of 42 inches (42" = 1067mm) above the finished *sidewalk*.

21.10.4 *Clear ground space*: A stable and firm area, complying with **521 CMR 6.5, Forward Reach**, or **521 CMR 6.6, Side Reach** shall be provided at the controls. Where a parallel approach is provided, controls shall be within ten inches (10" = 254mm) horizontally of and centered on the *clear ground space*. Where a forward approach is provided, controls shall abut and be centered on the *clear ground space*.

21.11 **DETECTABLE WARNINGS** - Reserved until further notice.

21.12 **ACCESSIBLE PEDESTRIAN SIGNALS** - Reserved.

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## Appendix I

### 521 CMR 22.00 Walkways

<https://www.mass.gov/lists/521-cmr-2006-edition>



521 CMR 22.00: **WALKWAYS**

22.1 **GENERAL**

*Walkways* shall include but not be limited to all *walks*, *sidewalks*, overpasses, bridges, tunnels, underpasses, plazas, courts and other pedestrian pathways, and shall comply with the following requirements:

22.2 **WIDTH**

Width of *walkways* shall be not less than 48 inches (48" = 1219mm), excluding curb stones. An unobstructed path of travel shall be provided which is at least 36 inches (36" = 914mm) *clear*, excluding curb stones.

22.3 **GRADE**

*Walkways* with a running slope greater than one-in-20 (1:20) (5%) are ramps and shall comply with **521 CMR 24.00: RAMPS**.

22.3.1 Nowhere shall the *cross slope* of *walkways* exceed one-in-50 (1:50) (2%). (Refer to 521 CMR 2.4.4d.)

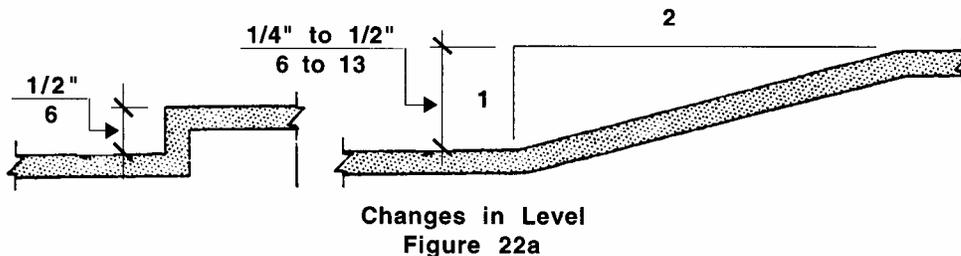
Exception: *Sidewalks* on streets and ways shall be considered *walkways*, with the exception that if the slope of the natural topography exceeds one-in-20 (1:20) (5%) a *ramp* is not required.

22.3.2 Nowhere shall the surface slope of any plaza area exceed one-in-50 (1:50) (2%).

22.4 **LEVEL CHANGES**

*Walkways* shall have continuous common surfaces, not interrupted by steps or changes in *level* greater than ¼ inch (¼" = 6mm).

22.4.1 Changes in *level* between ¼ inch and ½ inch (¼" and ½" = 6mm and 13mm) shall be beveled with a slope no greater than 1:2 (50%). See **Fig. 22a**.



22.4.2 Changes in level greater than ½ inch (½" = 13mm) shall require a *curb cut*, *walkway*, *ramp*, elevator, or platform lift that complies with **521 CMR 21.00: CURB CUTS**, **521 CMR 22.00: WALKWAYS**, **521 CMR 24.00: RAMPS** or **521 CMR 28.00: ELEVATORS**.

22.00: **WALKWAYS**

22.5 **SURFACE**

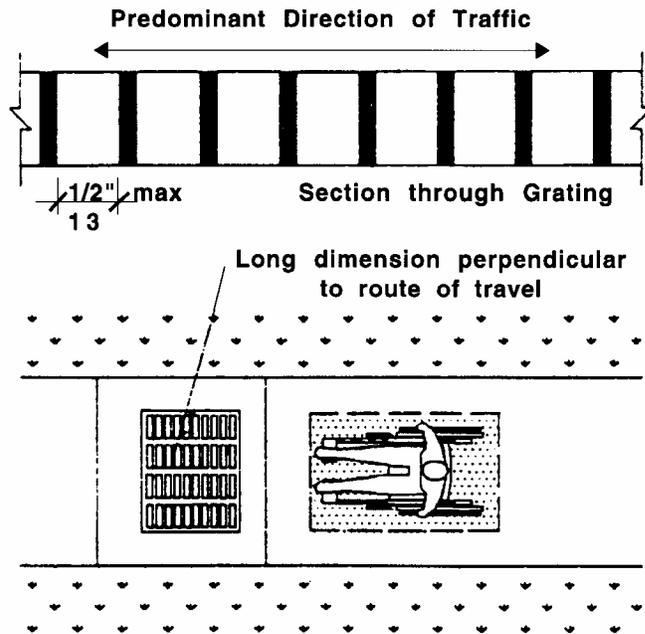
*Walkway* surfaces shall be stable, and firm and shall lie generally in a continuous plane with a minimum of surface warping.

22.6 **DRAINAGE**

Grading and drainage shall be designed to minimize pooling of water or accumulation of ice or flow of water across *walkways*.

22.7 **GRATINGS**

If gratings are located in walking surfaces, they shall have spaces no greater than 1/2 inch (1/2" = 13mm) wide in the direction of the flow of travel. If gratings have elongated openings, then they shall be placed so that the long dimension is perpendicular to the dominant direction of travel. See **Fig. 22b**.



**Gratings**  
**Figure 22b**

22.8 **INTERSECTIONS**

Wherever a *walkway* crosses or joins streets, public ways, driveways or parking lots, it shall comply with the following:

22.8.1 The intersecting surfaces shall blend to a common *level* with a slope no greater than 1:20 (5%), or a *curb cut* shall be installed in compliance with **521 CMR 21.00: CURB CUTS**.

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## Appendix J

### 521 CMR 23.00 Parking and Passenger Loading Zones

<https://www.mass.gov/lists/521-cmr-2006-edition>



521 CMR: ARCHITECTURAL ACCESS BOARD

521 CMR 23.00: **PARKING AND PASSENGER LOADING ZONES**

23.1 **GENERAL**

Any person who has lawful control of improved or enclosed private property used as off-street parking for businesses, auditoriums, sporting or recreational *facilities*, cultural centers, or general *public use* where the public has the right of access as invitees or licensees, shall cause such parking areas, including temporary parking areas to comply with 521 CMR. For parking related to residential and *transient lodging facilities*, See **521 CMR 8.00: TRANSIENT LODGING FACILITIES** and **521 CMR 10.3, Parking Spaces**.

23.2 **NUMBER**

*Accessible* spaces shall be provided as follows:

23.2.1	<u>Total Parking in Lot</u>	<u>Required Minimum Number of Accessible Spaces</u>
	15-25	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	2% of total
	1,001 and over	20 plus 1 for each 100 over 1000

23.2.2 One in every eight *accessible* spaces, but not less than one, shall be van *accessible*, See **521 CMR 23.4.7**.

23.2.3 Spaces required by the table in **521 CMR 23.2.1** need not be provided in a particular lot. They may be provided in a different location if equivalent or greater accessibility, in terms of distance from an *accessible entrance*, cost and convenience, is ensured.

23.2.4 *Specialized Medical Facilities*: At *facilities* providing medical care for persons with mobility impairments, parking spaces shall comply with the following:

- a. Outpatient units and facilities: 10% of the total number of parking spaces provided to serve each such outpatient unit or facility shall be *accessible*.
- b. Units and facilities that specialize in treatment or services for persons with mobility impairments: 20% of the total number of parking spaces provided, serving each such unit or facility, shall be *accessible*.

23.00: **PARKING AND PASSENGER LOADING ZONES**

23.3 **LOCATION**

*Accessible* parking spaces shall be located as follows:

23.3.1 *Accessible* parking spaces serving a particular *building*, facility or temporary event shall be located on the shortest *accessible route* of travel from adjacent parking to an *accessible entrance*.

23.3.2 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*.

23.3.3 In buildings with multiple *accessible entrances* with adjacent parking, *accessible* parking spaces shall be dispersed and located closest to the *accessible entrances*, but in no case, more than three spaces from the accessible entrance.

Exception: Where *accessible spaces* cannot be located within 200 feet (200' = 61m) of an *accessible entrance*, an *accessible* passenger drop-off area shall be provided within 100 feet (100' = 30m) of an *accessible entrance*.

23.3.4 Garages: In multi-level garages where no elevator is provided, such spaces shall all be located near the *accessible entrance*. See special van requirement in **521 CMR 23.4.7**.

23.4 **PARKING SPACES**

Shall comply with the following:

23.4.1 Width: *Accessible* parking spaces shall be at least eight feet (8' = 2438mm) wide, plus the *access aisle*.

23.4.2 Length: The length of *accessible* parking spaces shall be at least the same as for parking spaces generally in accordance with 780 CMR: *The State Building Code* or local zoning requirements. Parked vehicles shall not reduce the *clear* width of an *accessible route* by overhanging or protruding into it.

23.4.3 Slope: Parking spaces shall be *level* with surface slopes not exceeding 1:50 (2%) in all directions.

Exception: When *temporary accessible parking* is located within a field or otherwise unpaved area, when such *site* has not been improved in accordance with 521 CMR, the spaces shall be located on the least sloping area of the parking lot.

23.4.4 Surface: Spaces shall have a uniform, paved or hard packed smooth surface.

Exception: Temporary accessible parking spaces shall have, at minimum, a hard packed, smooth surface with a minimum amount of pooling or draining water.

23.00: **PARKING AND PASSENGER LOADING ZONES**

23.4.5 Delineation: *Accessible spaces* shall be marked by high contrast painted lines or other high contrast delineation.

Exception: Temporary accessible parking spaces shall be easily identifiable, such as lined with field markings, paint or field tape. Traffic cones or barrels may be used to identify parking spaces where field markings, paint, or field tape cannot be used given the surface condition.

23.4.6 *Access aisles*: All *accessible spaces* shall have *access aisles* that comply with the following:

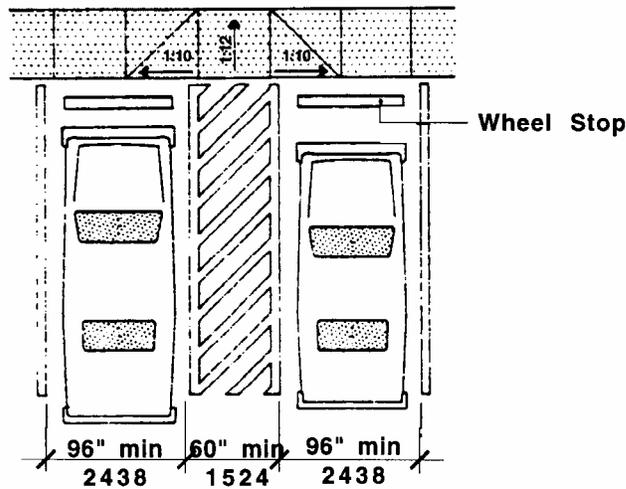
- a. Parking *access aisles* shall be part of an *accessible route* to the *building* or *facility entrance* and shall comply with **521 CMR 20.00: ACCESSIBLE ROUTE**.

Exception: For temporary accessible parking, directional signage along the entire accessible route, using the international symbol of accessibility and an arrow, shall be used to direct people to the closest accessible entrance.

- b. *Access aisles* adjacent to *accessible spaces* shall be five feet (5' = 1524mm) wide minimum, except adjacent to van *accessible spaces* the *access aisle* shall be a minimum of eight feet (8' = 2438mm) wide.

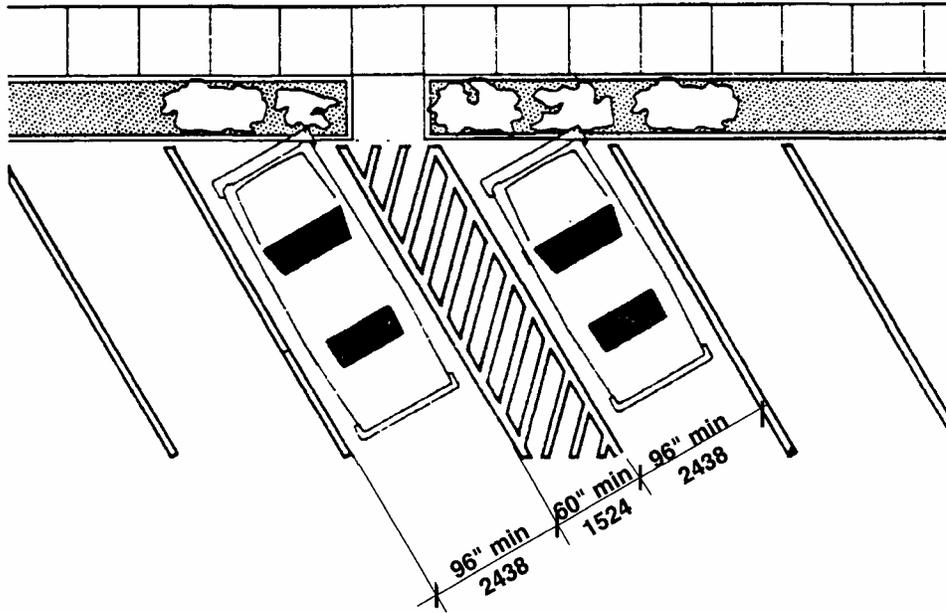
Exception: When temporary accessible parking is located within a field or otherwise unpaved site, when such area has not been improved in accordance with 521 CMR, the spaces shall be located on the least sloping area of the parking lot in conjunction with the temporary accessible parking spaces.

- c. Two *accessible* parking spaces may share a common *access aisle*. See **Fig. 23a** and **23b**.



Alternate Stall  
Figure 23a

23.00: PARKING AND PASSENGER LOADING ZONES



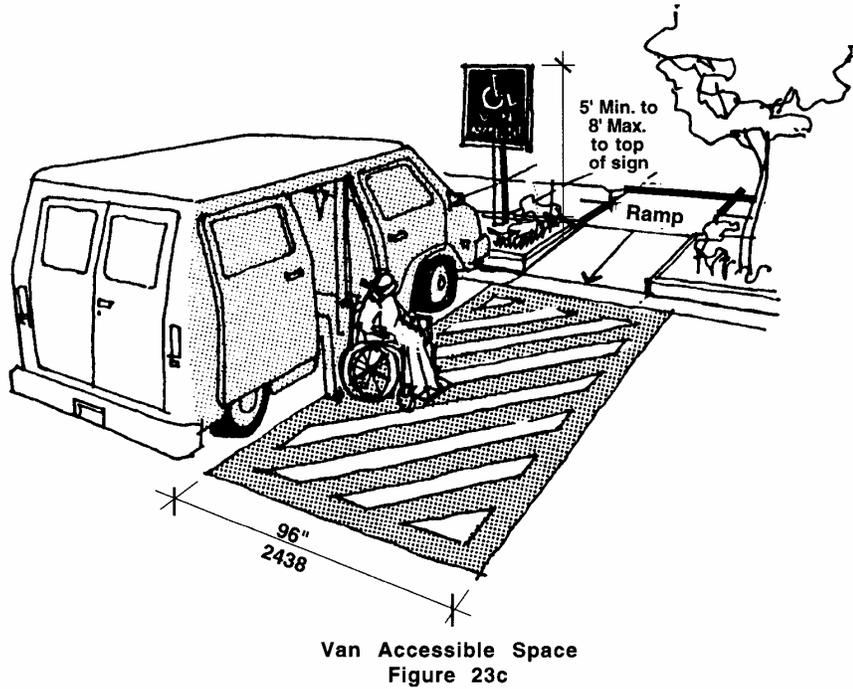
Angled Parking  
Figure 23b

- d. *Access aisles* shall be *level* with surface slopes not exceeding 1:50 (2%) in all directions.
- e. *Access aisles* shall be clearly marked by means of diagonal stripes.

23.4.7 Van Accessible spaces shall comply with the following:

- a. Provide minimum vertical clearance of eight feet, two inches (8'2" = 2489mm) at the parking space and along at least one vehicle *access route* to such spaces from site entrance(s) and exit(s). See **Fig. 23c**.

23.00: **PARKING AND PASSENGER LOADING ZONES**



- b. Each *space* shall have a sign designating it "Van Accessible" as required by **521 CMR 23.6, Signage**.
- c. All such *spaces* may be grouped on one level of a parking structure.
- d. Eight foot minimum (8' = 2438mm) wide *space*.
- e. Provide an *access aisle* of eight feet (8' = 2438mm).

Exception: Van *accessible* spaces do not have to be separately provided if all required *accessible* parking *spaces* are 11 feet wide (11' = 3353mm) with a five foot (5' = 1524mm) *access aisle*.

23.5 **SIDEWALKS**

Where *sidewalks* are provided at *accessible* parking *spaces*, a *curb cut* shall be installed at the *access aisle* of each *accessible* *space* or pair of *spaces*.

Exception: Where walkways and sidewalks are provided at temporary accessible parking spaces, there shall be a firm, stable path of travel, not less than 36 inches wide, from the temporary accessible parking spaces to said walkway or sidewalk. There shall be no abrupt changes in level greater than ½ inch. If there is a change of level greater than ½ inch, then vertical access shall be provided either via temporary curb ramps or via a temporary ramp.

23.6 **SIGNAGE**

*Accessible* parking *spaces* shall be identified by signs indicating that they are reserved.

- 23.6.1 A sign shall be located at the head of each space and no more than ten feet (10' = 3048mm) away, and at *accessible* passenger loading zones and may also include wording identifying its use.

23.00: **PARKING AND PASSENGER LOADING ZONES**

Exception: Signs for temporary accessible parking spaces located within a field or otherwise unpaved area shall be located at the head of each space if there are no attendants directing people to park, or signs indicating a general area designated for accessible vehicles if parking attendants are directing people to park.

23.6.2 The sign shall show the international symbol of *accessibility*.

23.6.3 Van *accessible spaces* shall includes the words: "Van-Accessible".

23.6.4 Such signs shall be permanently located at a height of not less than five feet (5' = 1524mm), nor more than eight feet (8' = 2438) to the top of the sign.

Exception: Signage for *temporary accessible parking* spaces may be permanently attached to a pole within a bucket.

23.7 **PASSENGER LOADING ZONE**

If passenger loading zones are provided, at least one of them shall comply with the following:

23.7.1 Wherever a passenger loading zone or parking area is provided, an *accessible route* to an *accessible entrance* is required.

23.00: **PARKING AND PASSENGER LOADING ZONES**

23.7.2 Passenger loading zones shall provide an *access aisle* at least 60 inches (60" = 1524mm) wide and 20 feet (20' = 6096mm) long, adjacent and parallel to the vehicle pull-up space.

23.7.3 If there are curbs between the *access aisle* and the vehicle pull-up space, then a *curb cut* complying with **521 CMR 21.00: CURB CUTS**, shall be provided.

23.7.4 Vehicle standing spaces and *access aisles* shall be level with surface slopes not exceeding 1:50 (2%) in all directions.

23.7.5 Vertical Clearance: A minimum of nine feet, six inches (9'6" = 2896mm) of vertical clearance shall be provided at *accessible* passenger loading zones and along at least one vehicle access *route* to such areas from *site entrance(s)* and exit(s).

23.8 **VALET PARKING**

Valet parking *facilities* shall provide a passenger loading zone complying with **521 CMR 23.7, Passenger Loading Zone** located on an *accessible route* to the *entrance* of the *facility*. **521 CMR 23.2 Number** and **521 CMR 23.4.7 Van Accessible Spaces**, do not apply to valet parking facilities.

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ENGINEERING DIVISION



## Appendix K

### 521 CMR 24.00 Ramps

<https://www.mass.gov/lists/521-cmr-2006-edition>



521 CMR: ARCHITECTURAL ACCESS BOARD

521 CMR 24.00: **RAMPS**

24.1 **GENERAL**

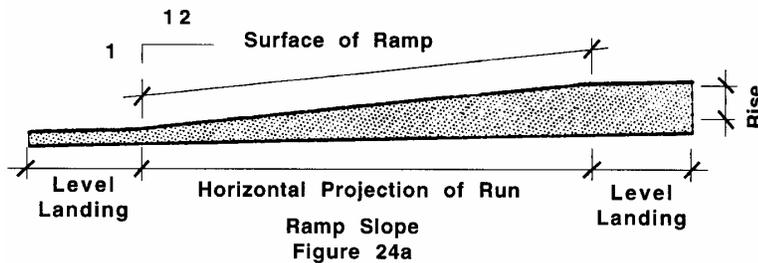
Any part of an *accessible route* with a slope greater than 1:20 (5%) shall be considered a *ramp* and shall comply with the requirements of 521 CMR 24.00

24.2 **SLOPE AND RISE**

*Ramps* shall have the least possible slope.

24.2.1 The least possible slope should be used for any ramp. The maximum slope of a *ramp* shall be 1:12 (8.3%). (There is no tolerance allowed on slope, Refer to **521 CMR 2.4.4d**)

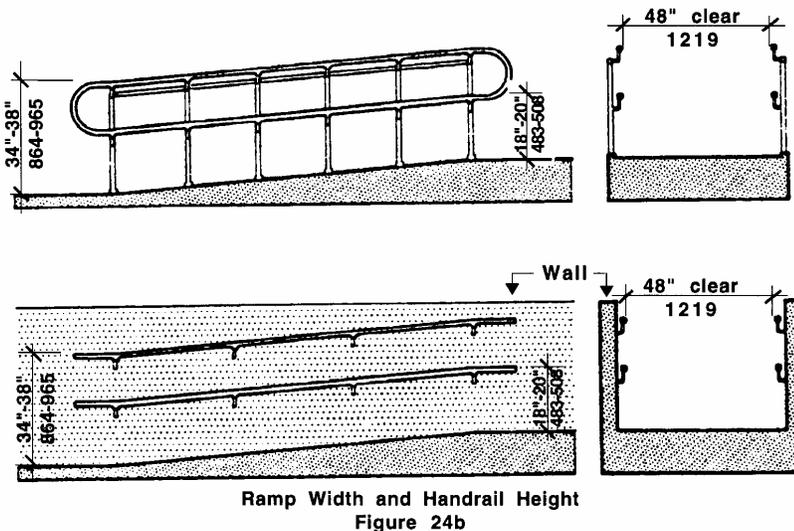
24.2.2 The maximum rise for any run shall be 30 inches (30" = 762mm). See **Fig. 24a**.



Exceptions: A slope between 1:10 (10%) and 1:12 (8.3%) is allowed for a single rise of a maximum three inches (3" = 76mm).

24.3 **CLEAR WIDTH**

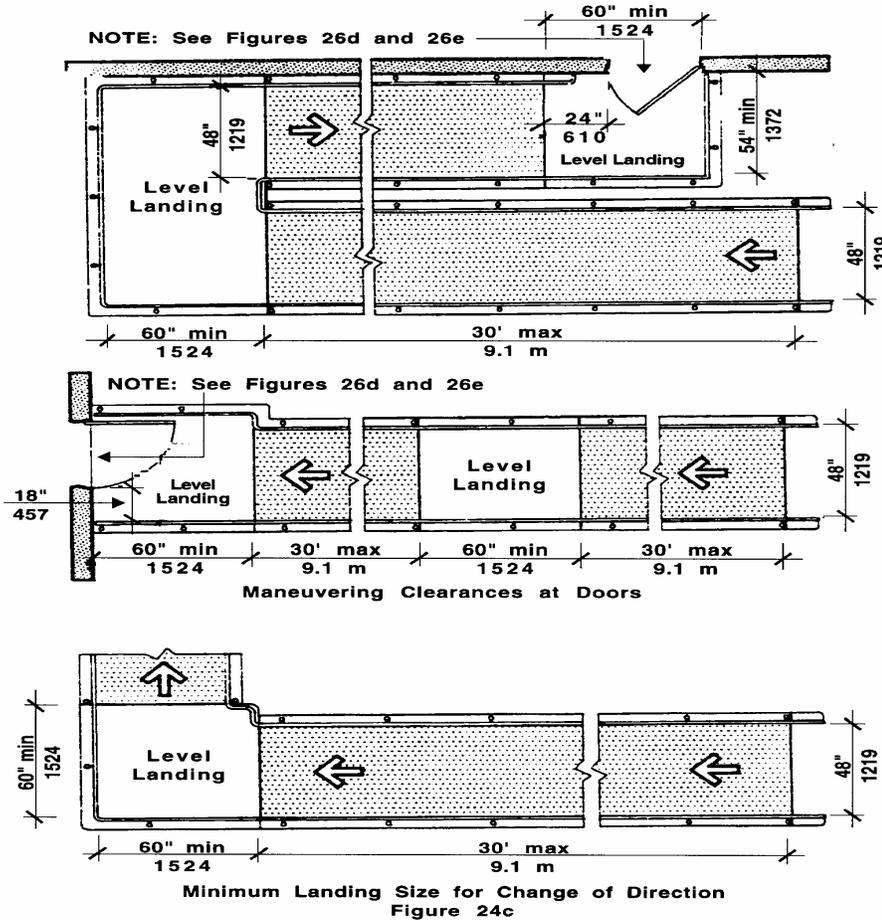
The minimum *clear width* of a *ramp* shall be 48 inches (48" = 1219mm), measured between the railings. See **Fig. 24b**.



24.00: RAMPS

24.4 LANDINGS

Ramps shall have landings for turning and resting. At a minimum, landings shall be located at the bottom and the top of each ramp and each ramp run, and whenever a ramp changes direction. The maximum length of a ramp run between landings shall not exceed 30 feet (30' = 9m). Landings shall have the following features: See Fig. 24c.



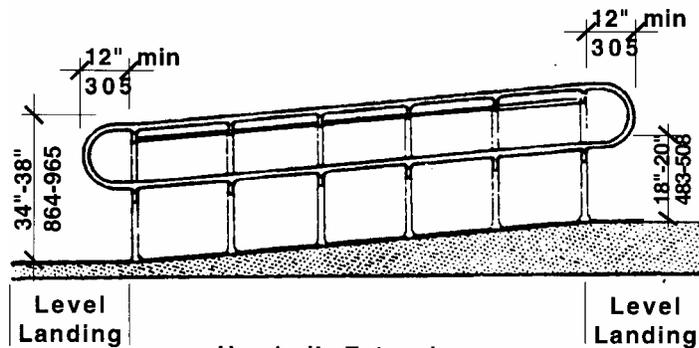
- 24.4.1 General: Landings shall be *level* and unobstructed by projections and door swings, except as permitted by 521 CMR 24.4.6.
- 24.4.2 Width: The landing shall be at least as wide as the *ramp* run leading to it.
- 24.4.3 Length: The landing length shall be a minimum of 60 inches (60" = 1524mm) *clear*.
- 24.4.5 Dimensions for turning: If *ramps* change direction at landings, the minimum landing size shall be 60 inches by 60 inches (60" by 60" = 1524mm by 1524mm). See Fig. 24c.
- 24.4.6 Doorways at Landings: If a doorway is located at a landing, then the *level* area in front of the doorway shall also comply with maneuvering clearances in Fig. 26d and 26e.

24.00: **RAMPS**

24.5 **HANDRAILS**

Handrails shall be provided at all *ramps*. Handrails shall have the following features:

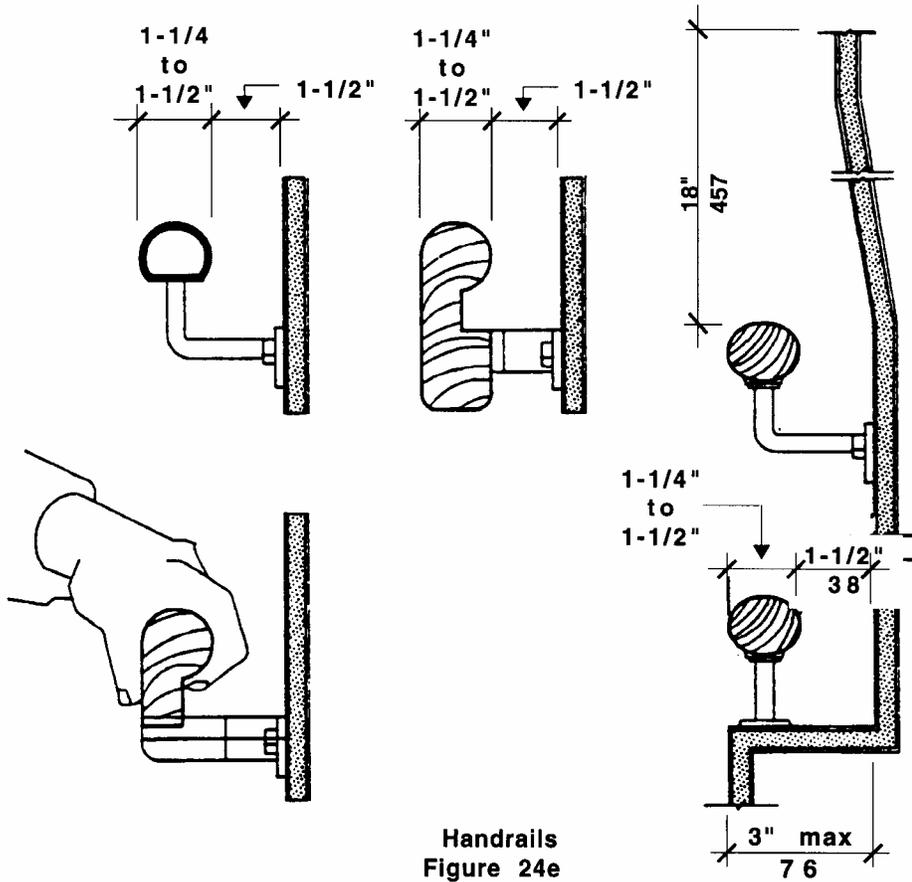
- 24.5.1 Location: Handrails shall be provided along both sides of *ramp* segments.
- 24.5.2 Heights: Handrails shall be provided in pairs, one at a height between 34 inches and 38 inches (34" - 38" = 864mm - 965mm), and a lower one at a height between 18 and 20 inches (18" - 20" = 457mm - 508mm), measured vertically from the surface of the *ramp* to top of handrail.
- 24.5.3 Continuous surface: Handrails shall be continuous without interruption, except by doorways and openings, so that a hand can move from end to end without interruption.
- 24.5.4 Extensions: Handrails shall extend at least 12 inches (12" = 305mm) beyond the top and bottom of the *ramp* and shall be parallel with the floor or ground surface (See **Fig. 24d**), except where the extension would cause a safety hazard.



Handrail Extensions  
Figure 24d

- 24.5.5 Size: Handrails shall have a circular cross section with an outside diameter of 1¼ inches (32mm) minimum and two inches (51mm) maximum.
- 24.5.6 Shape: The handgrip portion of the handrail shall be round or oval in cross-section. See **Fig. 24e**.
- 24.5.7 Surface: The gripping surface shall be free of any sharp or abrasive *elements*.
- 24.5.8 Clearance: When a handrail is mounted adjacent to a wall, the *clear space* between the handrail and the wall shall be 1½ inches (1½" = 38mm). Handrails may be located in a wall recess if the recess is a maximum of three inches (3" = 76mm) deep and extends at least 18 inches (18" = 457mm) above the top of the rail. See **Fig. 24e**.

24.00: **RAMPS**



Handrails  
Figure 24e

24.5.9 End condition: Ends of handrails shall be either rounded or returned smoothly to floor, wall, or post.

24.5.10 Handrails shall not rotate within their fittings.

24.6 **CROSS SLOPE**

The *cross slope* of ramp surfaces shall be no greater than 1:50 (2%)

24.7 **SURFACES**

Ramp surfaces shall be stable, firm, and slip resistant. Ramps may be carpeted only if carpeting is installed in accordance with **521 CMR 29.3, Carpets**.

24.8 **EDGE PROTECTION**

Ramps and landings with drop-offs shall have edge curbs, walls, railings, or projecting surfaces that prevent people from slipping off the ramp. Edge curbs shall be a minimum of two inches (2" = 51mm) high.

24.00: **RAMPS**

24.9 **OUTDOOR CONDITIONS**

Outdoor *ramps* and their approaches shall be designed so that water will not accumulate on walking surfaces. If gratings are used to disperse water, they shall comply with **521 CMR 22.00: WALKWAYS**.

24.10 **CIRCULAR RAMPS**

Circular *ramps* are not permitted, except with the approval of this *Board*.

CITY OF SOMERVILLE, MASSACHUSETTS  
MAYOR KATJANA BALLANTYNE  
ENGINEERING DIVISION



## Appendix L

### 521 CMR 30.00 Public Toilet Rooms

<https://www.mass.gov/lists/521-cmr-2006-edition>



521 CMR 30.00: **PUBLIC TOILET ROOMS**

30.1 **GENERAL**

Each public toilet room provided on a *site* or in a *building* shall comply with 521 CMR.

- a. In each adult public toilet room, at least one water closet and one sink in each location shall be *accessible* to persons in wheelchairs, or a separate *accessible* unisex toilet room shall be provided at each location. Adult water closets shall comply with the provisions of **521 CMR 30.1 through 30.13**.
- b. Where children's toilet rooms are provided, at least one water closet and one sink in each location shall be *accessible* to children in wheelchairs, or a separate *accessible* unisex toilet room shall be provided at each location. Children's toilet rooms shall comply with the provisions of **521 CMR 30.14 through 30.20**. For purposes of 521 CMR, pre-kindergarten school is defined as a school which serves children from infancy up until but not including kindergarten. Elementary school is defined as a school which serves grades kindergarten through six.

30.1.1 The installation of unisex toilet room in *lieu* of fully *accessible* men's and women's room is permitted by 521 CMR. *See also 521 CMR 30.2, Location.*

30.1.2 **Portable Toilets:** For single user portable toilets clustered at a single location, at least 5% but not less than one accessible toilet unit shall be installed at each cluster. *Accessible* units shall be identified by the International Symbol of Accessibility. Portable units at construction sites used exclusively by *construction* personnel are not required to be *accessible*.

30.2 **LOCATION**

*Accessible* toilet rooms shall be on an *accessible route*. Where unisex toilet room(s) are provided, they shall be located in the same area as other toilet rooms.

30.3 **VESTIBULES**

Where vestibules are provided, they shall comply with **521 CMR 25.3, Vestibules**.

30.4 **DOORS TO SINGLE USER TOILET ROOMS**

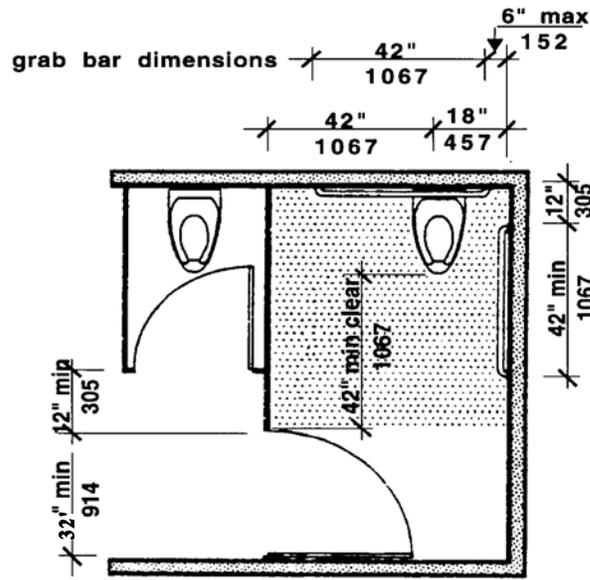
Doors to single user toilet rooms may swing into the room if the door has a self-closing device and maneuvering space is provided in accordance with **521 CMR 26.6**. The door may swing into the room if there is a clear floor space of 30 inches by 48 inches (30" = 762mm by 48" = 1219mm) beyond the swing of the door.

30.5 **CLEAR FLOOR SPACE**

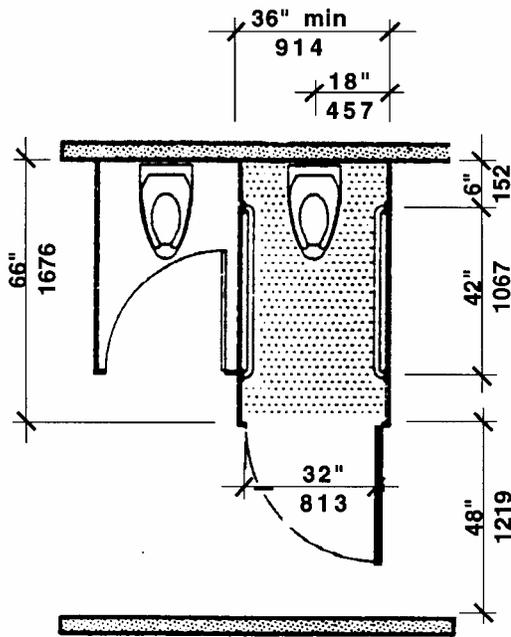
An unobstructed turning *space* complying with **521 CMR 6.3, Wheelchair Turning Space** shall be provided within an *accessible* toilet room. The *clear floor space* at fixtures and controls, the *accessible route*, and the turning *space* may overlap.



30.00: PUBLIC TOILET ROOMS



Accessible Toilet Stall (Right Approach)  
Figure 30b



Alternate Accessible Stall  
(in addition to accessible stall)  
Figure 30c

30.6.2 Alternate Accessible Stall: Alternate accessible toilet stalls shall be 36 inches (36" = 914mm) wide with an outward swinging, self-closing door and parallel grab bars. See Fig. 30c.

- a. The alternate toilet stall shall have a door that swings out or slides and has a 32 inch (32" = 813mm) clear opening.

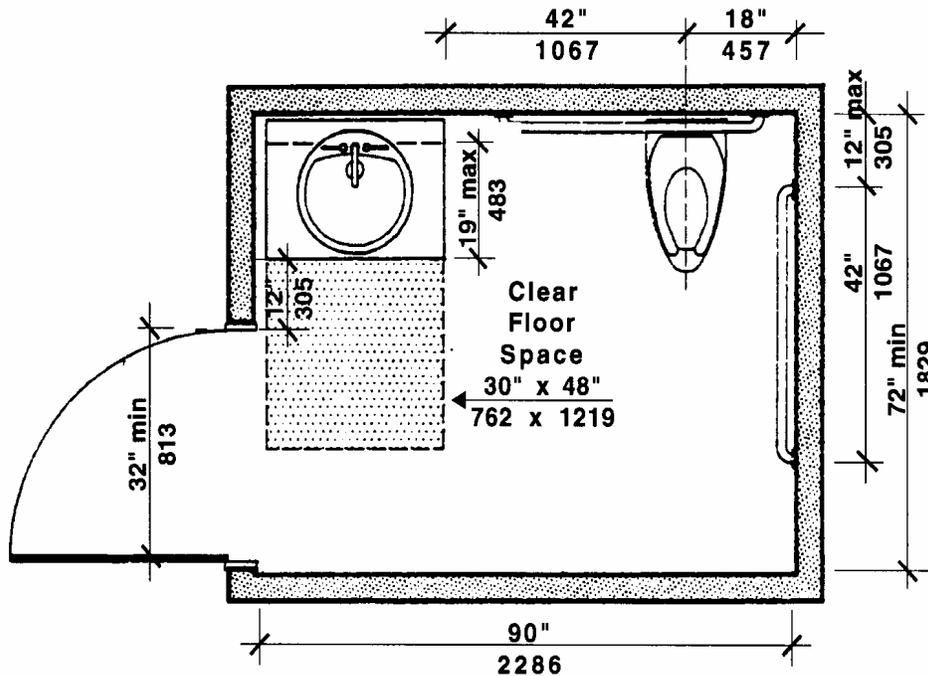
30.00: PUBLIC TOILET ROOMS

- b. The stall door shall have an automatic self-closing hinge device, a pull device on both sides of the door to assist in closing and opening the door, and a lock located approximately 36 inches (36" = 914mm) above the floor that does not require tight grasping, pinching, or twisting of the wrist to operate.
- c. A coat hook shall be provided at a maximum height of 54 inches (54" = 1372mm) above the floor.

30.7 WATER CLOSETS

That are required to be *accessible* shall comply with the following:

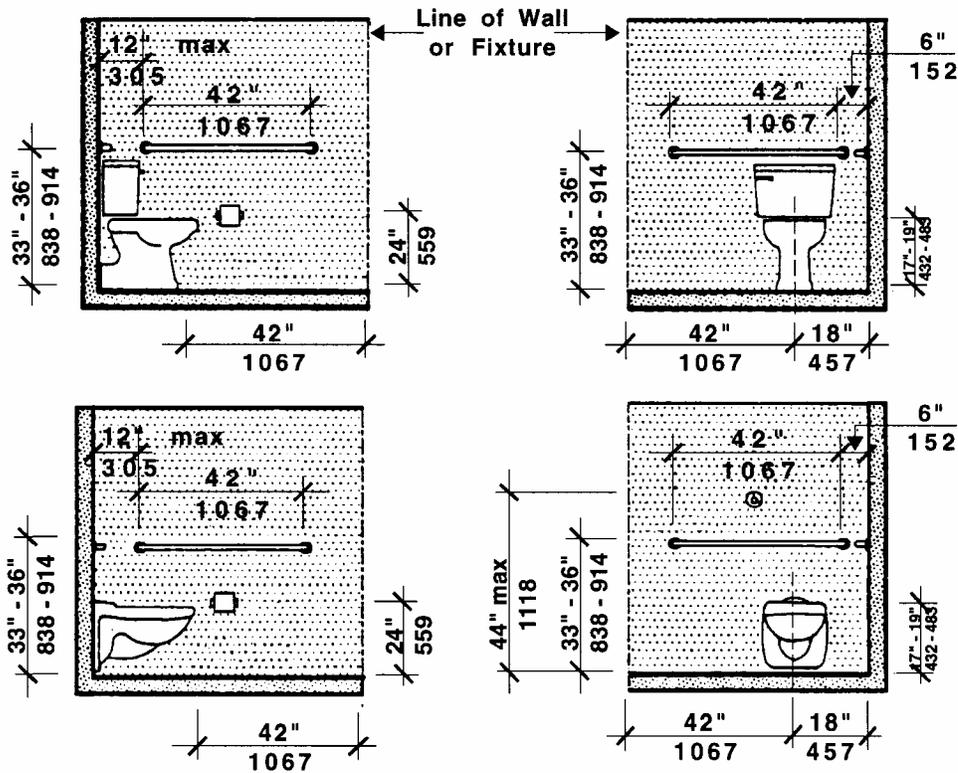
- 30.7.1 *Clear floor space:* Clear floor space for water closets not in stalls shall comply with **Fig. 30d**. Clear floor space may be arranged to allow either a left-handed or right-handed approach to the water closet.



Accessible Unisex Toilet Room  
Figure 30d

- 30.7.2 *Location:* The centerline of the water closet shall be located 18 inches (18" = 457mm) from the nearest side wall and at least 42 inches (42" = 1067mm) from the farthest side wall or the closest edge of an adjacent fixture. There shall be at least 42 inches (42" = 1067mm) clearance between the front edge of the water closet and the nearest wall or fixture.
- 30.7.3 *Height:* Water closets shall be 17 inches to 19 inches (17" to 19" = 432mm to 483mm) high, measured to the top of the water closet seat. See **Fig. 30e**.

30.00: PUBLIC TOILET ROOMS



Accessible Toilet Stall Elevations  
Figure 30e

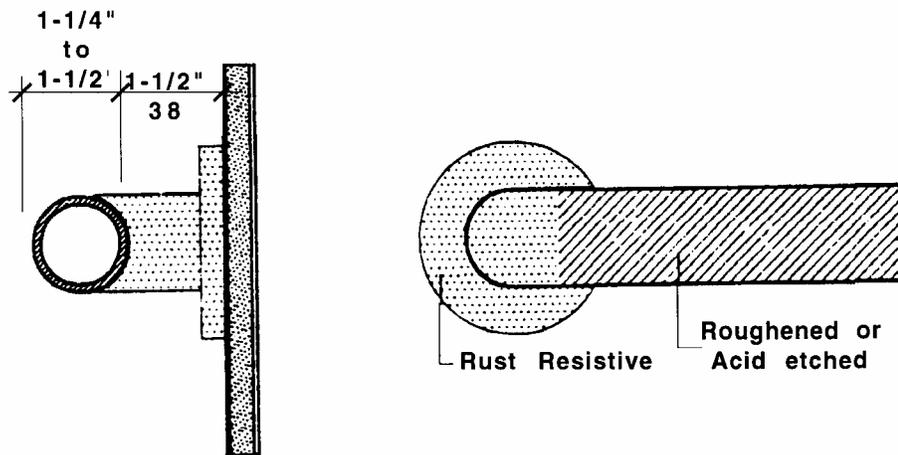
- 30.7.4 Seats: Water closet seats shall not be spring mounted to return to a lifted position.
- 30.7.5 Flush Controls: Flush controls shall be hand operated or automatic and shall comply with **521 CMR 39.5, Operation**. Controls for flush valves shall be mounted on the wide side of water closet no more than 44 inches (44" = 1120mm) above the floor.
- 30.7.6 Toilet Paper Dispensers: Toilet paper dispensers shall be located on the side wall closest to the water closet. The centerline of the roll shall be set at a minimum height of 24 inches (24" = 610mm) above the floor. Dispensers that control delivery or that do not permit continuous paper flow are not allowed.
- 30.8 **GRAB BARS**  
For the standard accessible toilet stall the water closet shall have two grab bars 42 inches (42" = 1067mm) long, one on the wall in back of the water closet and one on the side wall closest to the water closet.
- For the alternate accessible toilet stall the water closet shall have two parallel grab bars, 42 inches long (42" = 1067m) installed on the side walls and located a minimum of six inches (6" = 76mm) from the interior corner.

30.00: **PUBLIC TOILET ROOMS**

30.8.1 Location: The side grab bar shall be located a maximum of 12 inches (12" = 305mm) from the interior corner. The rear grab bar shall be located a maximum of six inches (6" = 152mm) from the interior corner.

30.8.2 Height: Grab bars shall be set at a height of 33 to 36 inches (33" to 36" = 838mm to 914mm) above and parallel to the floor. Where a tank prevents location of the rear grab bar, a bar may be installed three inches (3" = 76mm) above the tank. Where a flushometer prevents the location of a 42 inch (42" = 1067mm) rear grab bar, one grab bar, 36 inches (36" = 914mm) shall be installed to the side of the flushometer, located three inches (3" = 76mm) from the closest edge of the flushometer.

30.8.3 Thickness: Grab bars shall be between 1¼ inches and 1½ inches (1¼" to 1½" = 32mm to 38mm) in outside diameter, have a 1½ inch (1½" = 38mm) clearance between the bar and the wall. See **Fig. 30f**.



**Grab Bars  
Figure 30f**

30.8.4 Material: Grab bars shall also be non-rusting and acid-etched or roughened. Grab bars shall comply with the *structural strength* defined in **521 CMR 5.00, DEFINITIONS**.

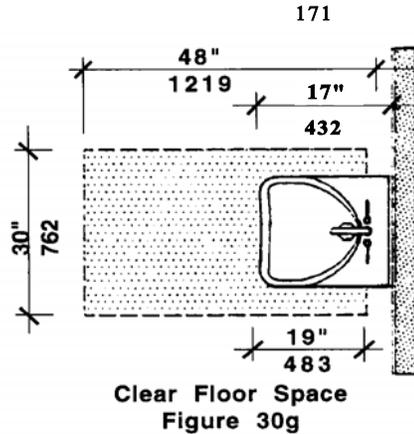
30.8.5 Dispensers or other devices shall not be mounted above the grab bars.

30.9 **SINK**

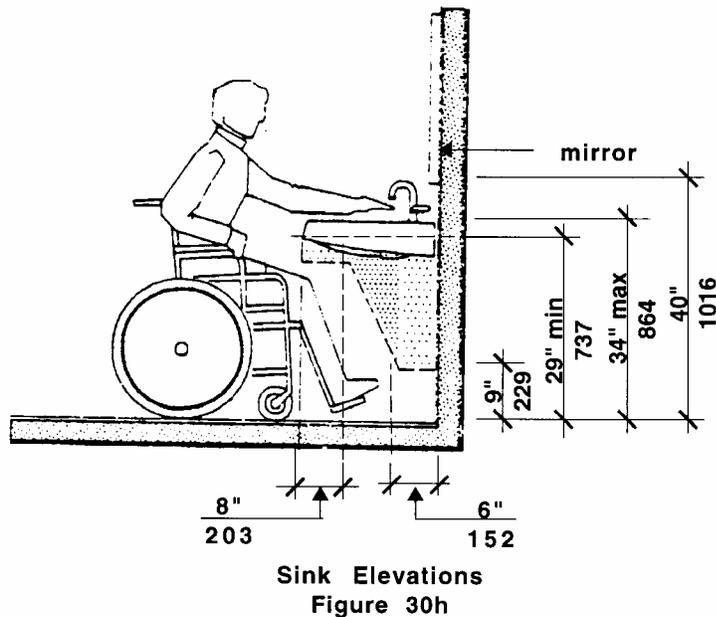
Sinks, including vanities, shall comply with the following:

30.00: PUBLIC TOILET ROOMS

30.9.1 *Clear floor space:* A clear floor space complying with **521 CMR 6.3, Wheelchair Turning Space** shall be provided in front of a sink to allow forward approach. The *clear floor space* shall be on an *accessible route* and shall extend no more than a maximum of 19 inches (19" = 483mm) underneath the sink. See **Fig. 30g**.



30.9.2 *Height:* Sinks shall be mounted with the rim no higher than 34 inches (34" = 864mm) above the finish floor. See **Fig. 30h**. Sinks shall also extend a minimum of 17 inches (17" = 432mm) from the wall to the front of the sink or counter.



30.00: **PUBLIC TOILET ROOMS**

30.9.3 Knee Clearance: Knee clearance shall be provided underneath the sink which is 27 inches (27" = 685mm) minimum from the floor to the underside of the sink and extends eight inches (8" = 205mm) minimum measured from the front edge underneath the sink back towards the wall; if a minimum of nine inches (9" = 230mm) of toe clearance is provided, a maximum of six inches (6" = 150mm) of the 48 inches (48" = 1220mm) of clear floor space required at the fixture may extend into the toe space. See **Fig. 30h**.

30.9.4 Depth: Sink depth shall not exceed six inches 6½ inches (6½" = 165mm).

30.9.5 Piping: Sink traps and drains shall be located as close to rear walls as possible. Hot water and drain pipes exposed under sinks shall be recessed, insulated, or guarded. There shall be no sharp or abrasive surfaces under sinks.

30.9.6 Faucets: Faucets shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. Lever-operated, push-type, touch-type, or electronically controlled mechanisms are acceptable designs. If self-closing valves are used the faucet shall remain open for at least ten seconds.

30.10 **URINALS**

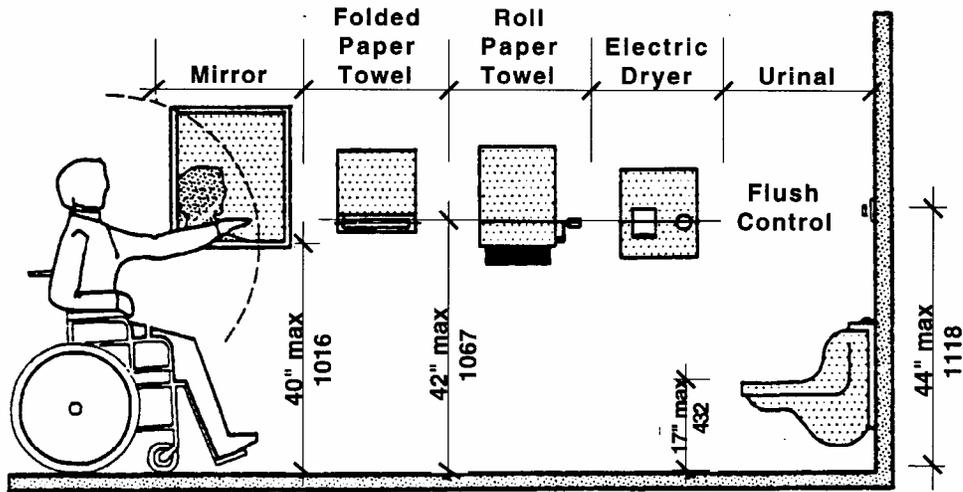
Where one or more urinals is provided, at least one urinal shall be *accessible*. See **Fig. 30i**.

30.10.1 Height: *Accessible* urinals shall be stall-type or wall-hung with an elongated rim at a maximum of 17 inches (17" = 432mm) above the finish floor.

30.10.2 *Clear floor space*: A *clear floor space* shall be provided in front of an *accessible* urinal to allow forward approach. This *clear space* shall adjoin or overlap an *accessible route* and shall comply with **521 CMR 6.3, Wheelchair Turning Space**. Urinal shields that do not extend beyond the front edge of the urinal rim may be provided with 29 inches (29" = 737mm) clearance between them.

30.10.3 Flush Controls: Flush controls shall be hand operated or automatic, and shall comply with **521 CMR 39.5, Operation** and shall be mounted no more than 44 inches (44" = 1118mm) above the finish floor. See **Fig. 30i**.

## 30.00: PUBLIC TOILET ROOMS



Dispenser Elevations  
Figure 30i

## 30.11 MIRROR

The top of any shelf and or bottom of any mirror that is provided above a sink shall be set with the bottom edge of the reflecting surface no higher than 40 inches (40" = 1016mm) above the finish floor. See Fig. 30i.

## 30.12 DISPENSERS

Towel dispensers, drying devices, or other types of devices and dispensers shall have at least one of each device mounted within the *zone of reach*. At least one of each device shall be located within reach of a person using the *accessible sink* and shall comply with **521 CMR 39.5, Operation**. See Fig. 30i.

## 30.13 CONTROLS AND RECEPTACLES

If controls, receptacles, or other equipment is provided, then at least one of each shall be on an *accessible route* and shall comply with **521 CMR 39.00: CONTROLS**.

## 30.14 CHILDREN'S WATER CLOSETS

Where provided, shall comply with the following:

30.14.1 *Clear floor space*: *Clear floor space* for water closets shall comply with **521 CMR 30.5, Clear Floor Space**. *Clear floor space* may be arranged to allow either a left-handed or right-handed approach.

30.14.2 *Location*: The centerline of the water closet shall be located 11 inches (11" = 279mm) from the nearest side wall for pre-kindergarten; 11 to 15 (11" to 15" = 279mm to 381mm) for kindergarten to third grade and 15 to 18 inches (15" to 18" = 381mm to 457mm) for fourth grade to sixth grade. The water closet shall also be located 42 inches (42" = 1067mm) from the centerline of the water closet to the opposite wall or closest edge of next fixture.

**30.00: PUBLIC TOILET ROOMS**

30.14.3 Height: Water closets shall be set at a height measured from the floor to the top of the seat as follows:

Pre-kindergarten:	11½" to 12½" (292mm to 318mm)
Kindergarten to third grade:	12" to 15" (305mm to 381mm)
Fourth grade to sixth grade:	15" to 17" (381mm to 432mm)

30.14.4 Flush Controls: Controls for flush valves on water closets used by children shall be mounted on the wide side of water closet within 20 to 30 inches (20" to 30" = 508mm to 762mm) above the floor.

30.14.5 Toilet paper dispensers: Toilet paper dispensers used by children shall be centered above finished floor, as follows:

Pre-kindergarten:	14" (356mm)
Kindergarten to third grade:	14" to 17" (356mm to 432mm)
Fourth grade to sixth grade:	17" to 19" (432mm to 483mm)

**30.15 CHILDREN'S GRAB BARS**

The water closet shall have two grab bars, 42 inches (42" = 1067mm) long, one mounted on the wall in back of the water closet and one on the side wall closest to the water closet and located no more than six inches (6" = 152mm) from the interior corner. Where a tank prevents location of the rear grab bar, a bar may be installed three inches (3" = 76mm) above the tank. Where a flushometer prevents the location of a 42 inch (42" = 1067mm) rear grab bar, one grab bar, 36 inches (36" = 914mm) shall be installed to the side of the flushometer, located three inches (3" = 76mm) from the closest edge of the flushometer.

30.15.1 Height: Grab bars shall be mounted from the floor to the top of the grab bar as follows:

Pre-kindergarten:	18" to 20" (457mm to 508mm)
Kindergarten to third grade:	20" to 25" (508mm to 635mm)
Fourth grade to sixth grade:	25" to 27" (635mm to 686mm)

30.15.2 Thickness: The outside diameter of grab bars shall be as follows:

Pre-kindergarten:	1" (25mm)
Kindergarten to sixth grade:	1¼" to 1½" (32mm to 38mm)

**30.16 CHILDREN'S SINK**

Sinks including vanities shall comply with the following:

30.16.1 *Clear floor space:* A *clear floor space* complying with **521 CMR 30.5, Clear Floor Space** shall be provided in front of a sink to allow a forward approach. The *clear floor space* shall be on an *accessible route* and shall extend no more than a maximum of 19 inches (19" = 483mm) underneath the sink.

**30.00: PUBLIC TOILET ROOMS**

30.16.2 Height: Sinks shall be mounted with the rim no higher than 30 inches (30" = 762mm) above the finish floor. A clearance of at least 25 inches (25" = 635mm) above the finish floor to the bottom of the apron shall be provided. Knee and toe clearance shall be at least 30 inches (30" = 762mm) wide and 19 (19" = 483mm) deep.

30.16.3 Piping: Sink traps and drains shall be located as close to rear walls as possible. Hot water and drain pipes exposed under sinks shall be recessed, insulated, or guarded. There shall be no sharp or abrasive surfaces under sinks.

30.16.4 Faucets: Faucets shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. Lever-operated push-type, touch-type, or electronically controlled mechanisms are acceptable designs. If self-closing valves are used, the faucet shall remain open for at least ten seconds.

**30.17 CHILDREN'S URINALS**

Where one or more urinal is provided, at least one urinal shall be *accessible*.

30.17.1 Height: The *accessible* urinal shall be stall-type or wall-hung with an elongated rim at a maximum of 15 inches (15" = 381mm) above the finish floor.

30.17.2 Flush Controls: Flush controls shall be hand operated or automatic, and shall be mounted no more than 44 inches (44" = 1120mm) above the finish floor.

**30.18 CHILDREN'S MIRROR**

The top of any shelf and or bottom of any mirror which is provided above a sink shall be set with the bottom edge of the reflecting surface no higher than 31 inches (31" = 787mm) above the finish floor.

**30.19 CHILDREN'S DISPENSERS**

Towel dispensers, drying devices, or other types of devices and dispensers shall have at least one of each device mounted within the *zone of reach*, and at least one of each device shall be located within reach of a person using the *accessible* sink.

**30.20 CHILDREN'S CONTROLS AND RECEPTACLES**

If controls, receptacles, or other equipment are provided, then at least one of each shall be mounted no higher than 36 inches (36" = 914mm) above the floor to the centerline of the operable portion of the control.

CITY OF SOMERVILLE, MASSACHUSETTS  
MAYOR KATJANA BALLANTYNE  
ENGINEERING DIVISION



**Appendix M**  
**2015 IBC Section 1015**

**Accessible via:**

[https://codes.iccsafe.org/content/IBC2015/chapter-10-means-of-egress#IBC2015\\_Ch10\\_Sec1015](https://codes.iccsafe.org/content/IBC2015/chapter-10-means-of-egress#IBC2015_Ch10_Sec1015)



CITY OF SOMERVILLE, MASSACHUSETTS  
MAYOR KATJANA BALLANTYNE  
ENGINEERING DIVISION



## Appendix N

### 780 CMR 10.12 Guards

<https://www.mass.gov/files/documents/2016/09/qj/780010.pdf>



## THE MASSACHUSETTS STATE BUILDING CODE

**1010.9.1 Railings.** A rail shall be mounted below the handrail 17 inches to 19 inches (432 mm to 483 mm) above the ramp or landing surface.

**1010.9.2 Curb or Barrier.** A curb or barrier shall be provided that prevents the passage of a four-inch-diameter (102 mm) sphere, where any portion of the sphere is within four inches (102 mm) of the floor or ground surface.

**1010.10 Guards.** Guards shall be provided where required by 780 CMR 1012 and shall be constructed in accordance with 780 CMR 1012.0 *and 521 CMR when applicable*.

### 780 CMR 1011.0 EXIT SIGNS

**1011.1 Where Required.** Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. Access to exits shall be marked by readily visible exit signs in cases where the exit or the path of egress travel is not immediately visible to the occupants. Exit sign placement shall be such that no point in an exit access corridor is more than 100 feet (30480 mm) or the listed viewing distance for the sign, whichever is less, from the nearest visible exit sign.

#### Exceptions:

1. Exit signs are not required in rooms or areas which require only one exit or exit access.
2. Main exterior exit doors or gates which obviously and clearly are identifiable as exits need not have exit signs where approved by the building official.
3. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3.
4. Exit signs are not required in sleeping areas in occupancies in Group I-3.
5. In occupancies in Groups A-4 and A-5, exit signs are not required on the seating side of vomitories or openings into seating areas where exit signs are provided in the concourse that are readily apparent from the vomitories. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.

**1011.2 Illumination.** Exit signs shall be internally or externally illuminated.

**Exception.** Tactile signs required by 780 CMR 1011.3 need not be provided with illumination.

**1011.3 Tactile Exit Signs.** A tactile sign stating EXIT and complying with *521 CMR* shall be provided adjacent to each door to an egress stairway, an exit passageway and the exit discharge.

**1011.4 Internally Illuminated Exit Signs.** Internally illuminated exit signs shall be listed and labeled and shall be installed in accordance with the manufacturer's instructions and 780 CMR 2702.0. Exit signs shall be illuminated at all times.

**1011.5 Externally Illuminated Exit Signs.** Externally illuminated exit signs shall comply with 780 CMR 1011.5.1 through 1011.5.3.

**1011.5.1 Graphics.** Every exit sign and directional exit sign shall have plainly legible letters not less than six inches (152 mm) high with the principal strokes of the letters not less than 0.75 inch (19.1 mm) wide. The word "EXIT" shall have letters having a width not less than two inches (51 mm) wide except the letter "I," and the minimum spacing between letters shall not be less than 0.375 inch (9.5 mm). Signs larger than the minimum established in 780 CMR 1011.5 shall have letter widths, strokes and spacing in proportion to their height.

The word "EXIT" shall be in high contrast with the background and shall be clearly discernible when the exit sign illumination means is or is not energized. If an arrow is provided as part of the exit sign, the construction shall be such that the arrow direction cannot be readily changed.

**1011.5.2 Exit Sign Illumination.** The face of an exit sign illuminated from an external source shall have an intensity of not less than five foot-candles (54 lux).

**1011.5.3 Power Source.** Exit signs shall be illuminated at all times. To ensure continued illumination for a duration of not less than 90 minutes in case of primary power loss, the sign illumination means shall be connected to an emergency power system provided from storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with 780 CMR 2702.

**Exception.** Approved exit sign illumination means that provide continuous illumination independent of external power sources for a duration of not less than 90 minutes, in case of primary power loss, are not required to be connected to an emergency electrical system.

### 780 CMR 1012.0 GUARDS

**1012.1 Where Required.** Guards shall be located along open-sided walking surfaces, mezzanines, industrial equipment platforms, stairways, ramps and landings which are located more than 30 inches (762 mm) above the floor or grade below. Guards shall be adequate in strength and attachment in accordance with 780 CMR 1607.7. Guards shall also be located along glazed sides of stairways, ramps and landings that are located more than 30 inches (762 mm) above the floor or grade below where the glazing provided does not meet the strength and attachment requirements in 780 CMR 1607.7.

**Exception.** Guards are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of stages and raised platforms, including steps leading up to the stage

and raised platforms.

3. On raised stage and platform floor areas such as runways, ramps and side stages used for entertainment or presentations.
4. At vertical openings in the performance area of stages and platforms.
5. At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating where guards in accordance with 780 CMR 1024.14 are permitted and provided.

**1012.2 Height.** Guards shall form a protective barrier not less than 42 inches (1067 mm) high, measured vertically above the leading edge of the tread, adjacent walking surface or adjacent seatboard.

**Exceptions:**

1. For occupancies in Group R-3, and within individual dwelling units in occupancies in Group R-2, both as applicable in 780 CMR 101.2, guards whose top rail also serves as a handrail shall have a height not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from the leading edge of the stair tread nosing.
2. The height in assembly seating areas shall be in accordance with 780 CMR 1024.14.

**1012.3 Opening Limitations.** Open guards shall have balusters or ornamental patterns such that a 4-inch-diameter (102 mm) sphere cannot pass through any opening up to a height of 34 inches (864 mm). From a height of 34 inches (864 mm) to 42 inches (1067 mm) above the adjacent walking surfaces, a sphere 8 inches (203 mm) in diameter shall not pass.

**Exceptions:**

1. The triangular openings formed by the riser, tread and bottom rail at the open side of a stairway shall be of a maximum size such that a sphere of six inches (152 mm) in diameter cannot pass through the opening.
2. At elevated walking surfaces for access to and use of electrical, mechanical or plumbing systems or equipment, guards shall have balusters or be of solid materials such that a sphere with a diameter of 21 inches (533 mm) cannot pass through any opening.
3. In areas which are not open to the public within occupancies in Group I-3, F, H or S, balusters, horizontal intermediate rails or other construction shall not permit a sphere with a diameter of 21 inches (533 mm) to pass through any opening.
4. In assembly seating areas, guards at the end of aisles where they terminate at a fascia of boxes, balconies and galleries shall have balusters or ornamental patterns such that a 4-inch-diameter

(102 mm) sphere cannot pass through any opening up to a height of 26 inches (660 mm). From a height of 26 inches (660 mm) to 42 inches (1067 mm) above the adjacent walking surfaces, a sphere 8 inches (203 mm) in diameter shall not pass.

**1012.4 Screen Porches.** Porches and decks which are enclosed with insect screening shall be provided with guards where the walking surface is located more than 30 inches (762 mm) above the floor or grade below.

**1012.5 Mechanical Equipment.** Guards shall be provided where appliances, equipment, fans or other components that require service are located within ten feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall be constructed so as to prevent the passage of a 21-inch-diameter (533 mm) sphere.

### 780 CMR 1013.0 EXIT ACCESS

**1013.1 General.** *For A-2 nightclubs (A-2nc) also see 780 CMR 1024, otherwise,* the exit access arrangement shall comply with 780 CMR 1013.0 through 1016.0 and the applicable provisions of 780 CMR 1003.0 through 1012.0.

**1013.2 Egress Through Intervening Spaces.** Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas are accessory to the area served; are not a high-hazard occupancy and provide a discernible path of egress travel to an exit. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes. An exit access shall not pass through a room that can be locked to prevent egress. Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.

**Exceptions:**

1. Means of egress are not prohibited through a kitchen area serving adjoining rooms constituting part of the same dwelling unit or sleeping unit.
2. Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H occupancy when the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.

**1013.2.1 Multiple Tenants.** Where more than one tenant occupies any one floor of a building or structure, each tenant space, dwelling unit and sleeping unit shall be provided with access to the required exits without passing through adjacent tenant spaces, dwelling units and sleeping units.

**1013.2.2 Group I-2.** Habitable rooms or suites in Group I-2 occupancies shall have an exit access door leading directly to an exit access corridor.

CITY OF SOMERVILLE, MASSACHUSETTS  
MAYOR KATJANA BALLANTYNE  
ENGINEERING DIVISION



## Appendix O

### ABCC Rules and Regulations

Accessible via:

<https://www.mass.gov/lists/alcoholic-beverages-control-commission-regulations>

