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(b) <u>Protection of Water Supply</u>. Stream projectors shall be assembled to provide an orifice elevation as specified by ANSI Air Gaps in Plumbing Systems and ANSI Backflow Preventers. *See* 248 CMR 10.06: *Table 1*.

(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.
- 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. <u>Size of Floor/Trough Drains</u>. 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. <u>Special Hazardous Wastes</u>. 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. <u>Commercial</u>. 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. <u>Commercial</u>. Dishwashing machines that incorporate drainage discharge by pumping shall discharge waste to the sanitary drainage system in accordance with the manufacturer's recommendations.
- (b) <u>Portable Dishwashers</u>. Portable dishwashing machines (domestic) may discharge over the rim of a properly trapped and vented fixture.

(12) Automatic Clothes Washing Machine.

- (a) <u>Water Supply</u>. 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. <u>Laundromats (Commercial)</u>. 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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- (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-approved backflow prevention device.
- (15) <u>Special Fixtures and Specialties</u>. 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) <u>Minimum Facilities for Dwellings</u>. 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: Minimum Facilities for Building Occupancy 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 less than 20 individuals and the total gross space is less than 1,200 square feet, one unisex, 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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- 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 of 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 10.10(16) for baptistery and Sacrarium 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 248 CMR 10.10(18)(c)3. shall not apply.
- (d) <u>Bathing Beach Toilet Facilities (Public)</u>. 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: Mezzanine. 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.
- Unisex toilet facilities may be allowed if they meet the requirements of 248 CMR 10.10(18)(m).
- 4. In business or commercial establishments (except industrial) that contain less than 1,200 gross square feet of floor area 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: Mezzanine.

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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.
- (1) 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. Unisex handicap toilet facilities may be allowed by the Board by the variance process as outlined in 248 CMR 3.04(2):
 - 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 unisex handicapped toilet facility meet the minimum fixture requirements of 248 CMR 10.10(18): *Table 1*. A unisex 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.
 - 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.
- (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) <u>Laundries</u>. 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.
 - Multiple Dwellings:
 - a. <u>Non-elderly Housing</u>: In multiple dwellings that are not restricted to the elderly, one washing machine connection for every ten dwelling units, or fraction thereof.
 - b. <u>Elderly Housing</u>: In housing that is restricted to the elderly, one washing machine connection for every 20 dwelling units or faction thereof.
 - c. 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) <u>Bathroom Group Defined</u>. a bathroom group shall consist of one bath tub or shower stall, one toilet, and one lavatory.

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Table 1: Minimum Facilities For Building Occupancy.

(*Optional by owner)

Building Clarification	Use	Toilets		Urinals	Lavatories	Drinking	Bath/	Other	Pertinent Regulations.
	Group	Females	Males	Males	Each Sex	Fountain	Show.	Fixtures	248 CMR 10.10(19)
Theaters	A-1	1 per 30	1 per 60	50%	1 per 100	1 per 1000		- 1	(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 Etc.	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 Etc.	A-5	1 per 30	1 per 60	50%	1 per 150				(i)1., (m), (n), (p)
Pool	A-5	1 per 40 bathers	1 per 40 bathers	33%	1 per 60 bathers	At least one source	1 for every 40 bathers		(i)1., (m), (n), (p) See 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		l 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				e Kitchen Si	nk		1	(o), (q)
(Multiple)	R	One Bathroom Group and One Kitchen Sink per Unit						(o), (q)	
(Hotel/Motel)	R	One Bath	room Gro	up per Un	it				(m), (q)
(Dormitories)	R-2	1 per 6	1 per 8	33%	l per 8		1 per 8	l Service Sink per Floor	(g), (m), (n), (p)
Educational (Kindergarten)	E	1 per 20	I per 20		1 per 20	1 per 75			(h), (i), (m), (n), (p)
(Elementary)	E	1 per 30	1 per 60	1 per 60	1 per 60	1 per 75]	1 Service Sink Per	1
(Secondary)	E	 	1 per 90			1 per 75		Floor	
(Post Secondary)	E	1			1 per 180	1 per 75]11001	
Staff)	E	1 per 20	·		l per 40			1	
Employee (Non-Industrial)*		1 per 20	1 per 25	33%	1 per 40		1 per 15	1 Servic Sink per Floor	e (i), (m), (n), (p)

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Building Clarification	Use Group	Toilets		Urinals	Lavatories	Drinking	Bath/	Other	Pertinent Regulations.
		Females	Males	Males	Each Sex	Fountain	Show.	Fixtures	248 CMR 10.10(19)
Employee (Industrial Factory/ Warehouse and Similar Usage		1 per 15	1 per 20	1 per 40	1 per 30		1 per 15		(j), (m), (n), (p)
Institution Hospital (Private/Semi)	I .	l per Room Nursing Homes: l toilet and l lavatory with direct			l per Room	l Per each set of rest-		1 Service	(i), (m), (n)
						1001115	1 per 12 (inpatient facilities		
,		access fro bedroom by 8 beds	(shared max),				other 'than	Per	
	od agre-	can be un	isex.	-			per 6	Floor	
							(Psychi- atric Hosp.)	enegation production and the second	
•							1 per 8 (Rehab facility)		
Nursing Homes (Ward)		1 per 8	1 per 10	33%	1 per 10		1 per 15		(i), (m), (n), (p)
Malis (Covered)	M	1 per 750	1 per 1500	50%	l per 2000	1 per 2000		1 Service	(i), (l), (m), (n), (p)
Medical/Health Care Building	B	1 per 45	1 per 55	50%	1 per 200	l Per each set of rest- rooms	1 -	Sink	(i), (k), (m), (n), (p)
Office Buildings	В	1 per 20	1 per 25	33%	1 per 50	1 per Floor		Per	(i), (m), (n), (p)
Retail (Mercantile)	М	1 per 20	1 per 20	33%	1 per 40			Floor	(i), (m), (n), (p)
Waiting Rooms (Airports, Railroad and Bus Stations)	A	l per 35	1 per 75	50%	1 per 200	1 per 500			(b), (m), (n), (p)

- (19) <u>Funeral Establishment Preparation Rooms</u>. Funeral establishment preparation rooms shall comply with the provisions of 239 CMR 3.07.
 - (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).
 - (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.

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