

ORDINANCE BILL NO. 24 FOR 1965

ORDINANCE NO. 487

AN ORDINANCE AMENDING THE PLUMBING ORDINANCE NO. 381 TO ADOPT BY REFERENCE CURRENT STATE STATUTE AND ADMINISTRATIVE REGULATIONS: RESTRICTING THE USE OF BUILDING SEWER MATERIALS: REPEALING ORDINANCE NO. 456; AND DECLARING AN EMERGENCY.

The City of Sweet Home Does Ordain:

Section 1. Section 4 of Ordinance No. 381 shall be amended to read:

"Section 4. Adoption of Oregon State Code and Regulations.
Chapter 447 of the Oregon Revised Statutes, known as the State Plumbing Code, and Chapter 333 of Oregon Administrative Rules, as adopted by the State Board of Health December 5, 1962, and filed with the Secretary of State December 18, 1962, three copies of which administrative rules are attached hereto, and by this reference made a part hereof, are by these presents adopted and made a part of this ordinance as fully as if set forth herein in full.

Section 2. Section 4a shall be added to read:

"Section 4a. Building Sewer Materials:
The building sewer shall be of cast iron soil pipe conforming to Federal Specification WW-P-401, Class B, with leaded or rubber gasketed joints; asbestos-cement pipe with rubber ring joints conforming to Federal Specification SS-P-331a; clay pipe conforming to ASTM C-200, C-278 and Clay Pipe Institute West Coast Standards, and with pipe joints factory-made compression type conforming to ASTM C-425; or concrete pipe with one-inch wall, conforming to Federal Specification SS-P-371c with ASTM C-442 rubber ring gasketed joints.

Section 3. Ordinance No. 456 is hereby repealed.

Section 4. It is hereby adjudged and declared that existing conditions are such that this ordinance is necessary for the public peace, health, and safety, and that an emergency is hereby declared to exist and this ordinance shall take effect and be in full force and effect from and after its approval.

PASSED by the Council and approved by the Mayor this 12 day of October, 1965.

ATTEST

Mayor

Robert S. White
City Recorder

Excerpts from

OREGON REVISED STATUTES

Chapter 447 - Plumbing Code

REGULATION OF PLUMBING AND SEWAGE
CESSPOOL WORK GENERALLY

- 447.010 Definitions for ORS 447.010 to 447.140
- 447.020 Plumbing and sewage cesspool work to conform to requirements; enforcement
- 447.030 Registration certificate for plumbing; application; fee; issue; expiration
- 447.040 Registration certificate for sewage cesspool work; application; fee; issue; expiration
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- 447.060 Registration mandatory
- 447.065 Notice and revocation of certificate; denial; notice

- 447.060 Plumbing in certain situations or cesspool cesspool work not affected
- 447.070 Enforcement; application to residential or legal action
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- 447.090 Plumber's Code Account; audits; use

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- 447.110 Pipes, fittings and fixtures generally
- 447.120 Vent pipes and stacks
- 447.130 Water service systems
- 447.140 Waste and sewerage installations
- 447.150 VARIANTS

CROSS REFERENCES

Administrative procedures concerning waste systems, ORS 220 to 222.10
 Compliance with state water resources policy by county, ORS 500 to 502.20
 County sewage disposal facilities; regulations by the board with enforcement, ORS 500 to 502.20
 In the sewer system, utility regulations, ORS 500 to 502.20
 Material installation, plumbing; law generally, ORS 500 to 502.20
 Licensing of journeymen plumbers and apprentices, ORS 500 to 502.20

Accounting of work transactions, ORS 500 to 502.20
 Law requiring fee law or other law, ORS 500 to 502.20
 Plumbing or other law, ORS 500 to 502.20
 Sewer, local jurisdiction, ORS 500 to 502.20
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 Waste, standards for, ORS 500 to 502.20
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 Sewerage, installation, ORS 500 to 502.20

REGULATION OF PLUMBING AND SEWAGE CESSPOOL WORK GENERALLY

447.010 Definitions for ORS 447.010 to 447.140. As used in ORS 447.010 to 447.140 and subsection (1) of ORS 447.990, unless the context requires otherwise:

- (1) "Board" means the State Board of Health.
- (2) "Plumbing" is the art of installing, altering or repairing in or adjacent to or serving buildings:
 - (a) Pipes, fixtures and other apparatus for bringing in the water supply and removing liquid and water-carried waste, including the water supply distributing pipes.
 - (b) Fixtures and fixture traps.
 - (c) Sill, waste and vent pipes.
 - (d) House drain and house sewer to the sewer service lateral at the curb, or in the street, or alley, or other disposal terminal holding human or domestic sewage.
 - (e) Storm-water drainage, with their devices, appurtenances and connections.
- (3) "Sewage cesspool work" means:

(a) The construction of sewage cesspools, septic tanks, disposal fields and dry wells having a connection with the building or structure drain or rain drain.

(b) The pumping out or cleaning of sewage cesspools and septic tanks.

(c) All grading, excavating and earth moving work connected with the operations described in paragraph (a) of this subsection, except streets, highways, dams, airports, other heavy construction projects and that earth moving work performed under the supervision of a builder or contractor in connection with and at the time of the construction of a building or structure.

(d) The construction of drain and sewage lines from five feet outside the building, house or structure to the service lateral at the curb, or in the street, or alley, or other disposal terminal holding human or domestic sewage. [Subsection (3) enacted as 1955 c. 333 §2, 1957 c. 360 §1, 1961 c. 601 §1]

447.020 Plumbing and sewage cesspool work to conform to requirements; enforcement. (1) All installations of plumbing and drainage in buildings and structures in this state and all potable water supply, drainage, waste, and sewage disposal installations, within or serving such buildings or structures, except in temporary construction camps, and except as otherwise provided in ORS 447.010 to 447.140, shall be made in

accordance with the requirements of ORS 447.010 to 447.140.

(2) The board is required to see that ORS 447.010 to 447.140 and subsection (1) of ORS 447.990 are enforced and may make rules and regulations for the purpose of setting standards for plumbing and sewage cesspool work and defining compliance with the provisions of ORS 447.010 to 447.140 particularly pertaining to installation of piping, protection and adequacy of the water supply, workmanship and materials, traps and cleanouts, domestic hot water storage tanks and devices, drinking fountains, approval of devices, equipment and fixtures, hangers and supports, drainage and venting, house drains and house sewers, septic tanks and disposal fields, cesspools and dry wells, stormwater drains, special wastes, light and ventilation of water closets and bathrooms, excavation and grading, sewage pumping equipment and tank trucks, identification of tank trucks and workman, disposal of septic tank and cesspool sludge. [Amended by 1957 c. 300 §2]

447.030 Registration certificate for plumbing; application; fee; issue; expiration. (1) Every person, firm and corporation engaged in the business of furnishing labor and material, or labor only, to alter, renovate or install plumbing in this state shall, on or before July 1 of each year, file with the State Board of Health an application in writing for registration.

(2) The application shall state:

- (a) The name and address of the applicant.
- (b) In case of firms, the names and post-office addresses of the individuals composing the firm.
- (c) In case of corporations, the names of their managing officials.
- (d) The location of the business of the applicant and the name under which the business is to be conducted.
- (3) No registration shall be made or entered until the applicant has paid a registration fee of \$25 to the board which shall issue to such person, firm or corporation a certificate of registration.

(4) All certificates shall bear the date of issue and shall expire on July 1 next following the date of issue.

447.035 Registration certificate for sewage cesspool work; application; fee; issue; expiration. (1) Every person, firm and corporation engaged in the business of furnish-

ing labor and material or labor only for sewage cesspool work shall on or before July 1 of each year file with the State Board of Health an application in writing for registration.

- (2) Such application shall state:
 - (a) The name and address of the applicant.
 - (b) In case of firms, the names and post-office addresses of the individuals composing the firm.
 - (c) In case of corporations, the names of their managing officials.
 - (d) The location of the business of the applicant and the name under which the business is to be conducted.
- (3) No registration shall be made or entered pursuant to this section until the applicant has paid a registration fee of \$25 to the board and filed the bond required by ORS 447.035 with the board which shall issue to such person, firm or corporation a certificate of registration.
- (4) All certificates shall bear the date of issue and shall expire on July 1 next following the date of issue.

[1955 c.548 §§3, 4]

447.035 Bond securing compliance with provisions regulating sewage cesspool work must be executed by applicant. Every applicant under ORS 447.033 shall execute a bond in the penal sum of \$1,000 in favor of the State of Oregon. Said bond shall be executed by the applicant as principal and by a surety company authorized to transact a surety business within the State of Oregon as surety. Such bond shall be filed with the board in accordance with the following conditions: In the construction, installation, alteration or repair of sewage cesspool work the principal shall comply with all the provisions of ORS 447.010 to 447.140 regulating such work, and that any person injured by a failure so to comply may have a right of action on said bond in his own name; provided that such action be commenced within one year after the completion of such work; but the surety on such bond shall not be liable thereunder to any such person in an amount in excess of \$1,000.

[1955 c.548 §5]

447.040 Registration mandatory. No person shall engage in or follow the business or occupation of, or advertise or hold himself out as or act temporarily or otherwise as registered to conduct a plumbing business, or engage in sewage cesspool work, and no

member or employe of a firm, partnership or corporation shall engage in the layout or superintending of plumbing installations, or sewage cesspool work, without having secured the certificate of registration required by ORS 447.010 to 447.140.

[Amended by 1955 c.548 §6]

447.050 Denial and revocation of certificate; hearing; notice. (1) The board may revoke any certificate of registration if it is obtained through error or fraud or if the holder thereof fails to comply with ORS 447.010 to 447.140.

(2) Whenever, in the judgment of the board, the holder of a certificate has failed to comply with ORS 447.010 to 447.140 or the rules and regulations of the board, it shall revoke the certificate.

(3) No application for a certificate shall be denied, nor shall any certificate be revoked, by the board, without first giving the holder thereof full opportunity to be heard regarding the denial or revocation. Notice of the hearing shall be given in writing by receipted registered mail or by personal service, at least 10 days before the date of hearing and shall state the place, date and hour of hearing, and grounds of cancellation or revocation.

447.060 Engaging in certain plumbing or sewage cesspool work not affected. Nothing in ORS 447.010 to 447.140 and subsection (1) of ORS 447.990 prevents a person, firm or corporation from:

- (1) Engaging in plumbing work, or sewage cesspool work, when not so engaged for hire.
- (2) Utilizing the services of regular employes in doing any plumbing work, or sewage cesspool work, for the benefit of property owned, leased or operated by such employer.

[Amended by 1955 c.548 §7]

447.070 Registration prerequisite to maintenance of legal action. No person carrying on, conducting or transacting a plumbing business, or engaging in sewage cesspool work, may maintain any suit or action in any of the courts of this state without alleging and proving that he was duly registered under ORS 447.030 or 447.033 at the time of performing such work.

[Amended by 1955 c.548 §8]

447.080 Municipal plumbing regulations. Nothing in ORS 447.010 to 447.140 prevents

any city or county from enacting and enforcing ordinances or building codes for the regulation of the business of master plumbing, or sewage cesspool work, or which prescribe the manner in which plumbing and drainage work shall be installed in such city or county, except that such ordinances or codes shall not prescribe a lower standard of installation of plumbing and drainage work or sewage cesspool work than that prescribed in ORS 447.010 to 447.140.

[Amended by 1955 c.548 §9; 1963 c.47 §1]

447.090 Plumber's Code Account; source; use. (1) There is established in the General Fund of the State Treasury an account to be known as the Plumber's Code Account.

(2) All fees provided for in ORS 447.030 and 447.033 shall be paid to the State Board of Health which shall deposit the same monthly in the State Treasury. The State Treasurer shall place them to the credit of the Plumber's Code Account.

(3) All payments made by the board in enforcing ORS 447.010 to 447.140, subsection (1) of ORS 447.990 and ORS chapter 693 are appropriated for the purpose of carrying out ORS 447.010 to 447.140, subsection (1) of ORS 447.990 and ORS chapter 693.

(4) All necessary expenses of the board in carrying out ORS 447.010 to 447.140, subsection (1) of ORS 447.990 and ORS chapter 693 shall, after approval by the board, be audited by the Secretary of State and paid from the Plumber's Code Account in the same manner as other claims against the state are paid.

447.100 [Reserved for expansion]

FIXTURE INSTALLATION REGULATIONS

447.110 Pipes, fittings and fixtures generally. (1) All waste water and sewage from plumbing fixtures and appliances connected to the drainage system or water supply, or both, installed in any building or structure shall be:

(a) Conveyed and discharged from the trap of such fixture or appliance through either galvanized steel, galvanized wrought-iron, cast iron, brass or lead pipe or copper tube to a point at least five feet outside the line of such building or structure.

(b) Carried or discharged from such pipe to a sewer, cesspool or ultimate point of discharge through either a continuation of

such pipe, or through other suitable conveyer or which meets requirements as established by ORS 447.020.

(2) Where galvanized steel or galvanized wrought-iron pipe is used for soil or waste pipe, the fittings used in conjunction therewith shall be cast-iron recessed screwed fittings. All fittings in horizontal soil and waste lines shall be long pattern soil or waste fittings.

(3) All soil, waste and vent pipe installed underground within five feet of the building, or in buildings four stories or more in height, shall be cast-iron pipe.

(4) Whenever acids or corrosive industrial wastes are discharged into the drain lines, the wastes and drain lines shall be constructed of a material approved by the board.

(5) The board may approve the use of pipe and fittings constructed of material other than that specified in ORS 447.010 to 447.140 for soil, waste, vent and sewers, if the manufacturer can furnish test reports, samples and whatever other data may be required to establish to the satisfaction of the board the acceptability of such material.

(6) The trap of each fixture shall be connected to a soil or waste pipe and a vent pipe of a size not less than the minimum size as set forth under the provisions of this chapter and ORS 447.020. No soil pipe to which a water closet is connected shall be of less than four-inch pipe except that the size of such pipe in certain dwelling houses may be reduced to three-inch if installed in accordance with the provisions of this chapter and ORS 447.020.

(7) All fixtures shall be connected with soil, waste and vent pipes of such size and slope as to afford adequate capacity for the maximum load that may be potentially possible at any given time.

[Amended by 1963 c.194 §1]

447.120 Vent pipes and fittings. (1) Vent pipes shall be of galvanized steel, galvanized wrought-iron, cast-iron, brass or lead pipe or copper tube.

(2) Vent fittings shall be of galvanized malleable iron, cast iron, lead, brass or copper.

(3) Each fixture shall have a vent not less in size than the size of the trap of such fixture, excepting water closets, which shall have a vent of not less than two inches. However, at any structure in which a drainage system receives and conveys discharge

from one or more water closets, at least one main vent or stack shall extend through the roof and such main vent or stack shall be of a size not less than that which is specified under subsection (5) of this section and ORS 447.020.

(4) Whenever it is impossible to vent a plumbing fixture in accordance with the plumbing code, the fixture shall be installed in some other manner which meets the approval of the board.

(5) Each building drain provided to carry the discharge from one or more water closets and connected to a separate sewer branch, cesspool or septic tank shall have at least one four-inch branch extending as a main vent or stack through and above the roof, except that in a building designed for occupancy only as a dwelling house and from which the building drain and sewer conveys liquid-borne wastes including the discharge from not more than two water closets, the size of the branch extending through and above the roof may be reduced from four-inch pipe to three-inch pipe at a point above ground within the building.

(6) Soil, waste and vent lines shall be sized in accordance with the tables set forth in the regulations of the board.

(7) All vents shall extend to and at least one foot above the roof of the building. Vents shall terminate at least 12 feet away from or two feet above any air intake, door or window and at least 12 feet from another building or property line, lot line on street or alley excepted.

(8) Each fixture shall be separately and efficiently trapped.

(9) All joints of bell and spigot cast-iron soil pipe shall be made with oakum and molten lead properly calked so as to be gas and water tight.

(10) Threaded cast-iron pipe used in the plumbing system shall be in accordance with federal specifications for threaded cast-iron pipe.

[Amended by 1963 c.194 §2]

447.130 Water-service system. (1) The water-service pipe to any building shall be of sufficient size to permit a continuous and ample flow of water on all floors at a given time.

(2) In no case shall the service pipe from the street main or other source of supply to the hot water branch tee in the building be less than three-quarter inch. It shall be so graded in size as to make for equal dis-

tribution of the water to the respective risers and branches in accordance with the need of the fixture or flushing medium employed.

(3) All fixtures shall be supplied with fresh water sufficient to flush the same. Floor drains and sumps shall be supplied with water automatically.

447.140 Waste and sewage; prohibitions.
(1) All waste water and sewage from plumbing fixtures shall be discharged into a sewer system, septic tank disposal system or sewage cesspool.

(2) No septic tank, pit-type privy, disposal field or sewage cesspool shall be constructed within 50 feet of any well, nor shall any person willfully construct a well within 50 feet of any septic tank, pit-type privy, disposal field or sewage cesspool. The city, county and district health officers shall enforce this subsection under the direction and supervision of the board.

(3) No septic tank shall be constructed with a minimum capacity of less than 500 gallons. Septic tanks, sewage cesspools and dry wells, together with drainage trenches, drainage tile, sewage cesspools or leaching sewage cesspools for the disposal of septic tank effluent shall be constructed and installed in accordance with the rules and regulations of the board.

(4) No plumbing fixture, device or equipment shall be installed, maintained or offered for sale which will provide a cross-connection between the distributing system of water for drinking and domestic purposes and any other water supply, or a drainage system, soil or waste pipe so as to permit or make possible the back-flow of contaminated water, sewage or waste into the water supply system.

(5) No flush valve, vacuum breaker or syphon preventer shall be offered for sale or installed that has not been approved by the board.

(6) The use or installation of water-operated sump pumps or sewage ejectors, if connected to the potable water supply, is prohibited.

(7) No pan, plunger, offset washout, washout, long hopper, frost proof or other water closets having invisible seals or unventilated spaces, or walls not thoroughly washed at each flushing, shall be installed or sold for use in any building.

(8) No plumbing fixture, appurtenance or device, the installation of which would be in violation of this code and the regulations

of the board, shall be sold, offered for sale or installed.

[Amended by 1955 c.548 §10; 1961 c.545 §1]

447.150 to 447.600 [Reserved for expansion]

PENALTIES

447.090 Penalties. Violation of any of the provisions of ORS 447.010 to 447.140 or the lawful rules and regulations made by the board pursuant to ORS 447.010 to 447.140 or any lawful order issued by any state, county or municipal health officer, pursuant to ORS 447.010 to 447.140, is punishable, upon conviction, by a fine of not more than \$100, or by imprisonment of not more than 60 days, or by both.

Excerpts from

OREGON REVISED STATUTES

Chapter 693 - Plumbers

693.010	Definitions	693.090	Revocation of certificates, procedure; application for new certificate after revocation
693.020	Application of chapter to persons doing own plumbing work and to municipal regulation of plumbers	693.100	Board power to issue certificates and permits; power to make rules and regulations
693.030	Permit and other requirements for plumbers, journeymen and apprentices	693.110	Examining Board of Plumbers, creation, composition, term, vacancies
693.040	Registration of apprentices	693.120	Duties of examining board
693.050	Application for journeyman plumber's certificate; examination and permit fees	693.130	Specific examination conducted by one board member
693.060	Issue of journeyman's certificate of competency; limitation on issue; certificate fee	693.140	Compensation of examiners
693.070	Certificate issue and expiration dates	693.150	Disposal of sums collected under chapter
693.080	Automatic revocation of permit	693.990	Penalties

CROSS REFERENCES

Administrative procedures and rules of state agencies, Ch 183	693.060	Persons in military or naval service relieved from fee payment, 408.450
Electrical Safety Law, 479.510 to 479.850	693.110	Provisions applicable to state agencies generally, Ch. 182
Plumber's Code Account available for purposes of this chapter, 447.090	693.150	Moneys received by the State Board of Health to be kept separate, 431.220
Plumbing Code, 447.010 to 447.140		

693.010 Definitions. As used in this chapter, unless the context requires otherwise:

(1) "Apprentice plumber" means any person who is indentured by the State Apprenticeship Council, registered with the State Board of Health and employed by the holder of a registration to conduct a plumbing business for the purpose of assisting the journeyman plumber and learning the plumbing trade.

(2) "Board" means the State Board of Health.

(3) "Journeyman plumber" means any person holding a valid journeyman plumber's certificate of competency issued by the State Board of Health and who performs the actual labor of installing, altering or repairing plumbing with his own hands.

(4) The holder of a certificate of "registration to conduct a plumbing business" is one who has made application to the State Board of Health and paid a registration fee to engage in the business of furnishing labor and material, or labor only, to install, alter and repair plumbing. This registration does not entitle the holder to work as a journeyman plumber.

693.020 Application of chapter to persons doing own plumbing work and to municipal regulation of plumbers. (1) This chapter does not prevent:

(a) Any person from doing his own work in his own building, on his own premises if he complies with all the rules and regulations of the board and ORS 447.010 to 447.140.

(b) Any city from enacting ordinances regulating the business of journeymen plumbers and imposing a license fee or revenue thereon if permitted by charter.

(2) In communities having a population of 250 or less, any person may make repairs or installations under laws and regulations applicable thereto.

693.030 Permit and other requirements for plumbers, journeymen and apprentices. (1) No person shall engage in the trade or business of journeyman plumber without a permit or certificate of competency as provided by this chapter.

(2) No person registered to conduct a plumbing business shall:

(a) Employ any person to work as a journeyman plumber who does not hold a valid journeyman plumber's certificate of competency.

(b) Employ as an apprentice plumber a person not indentured by the State Apprenticeship Council.

(c) Employ an apprentice on any plumbing work, representing him to be a journeyman plumber.

(d) Charge for the services of an apprentice a journeyman plumber's wage.

693.040 Registration of apprentices. (1) Every apprentice must register with the board, giving the length of time he has served and with whom he has been employed.

(2) The board shall issue to such apprentice a permit to work at the trade of plumbing so long as he works under the supervision of a certified journeyman plumber.

693.050 Application for journeyman plumber's certificate; examination and permit fees. (1) All journeymen plumbers working with tools or actually performing work of installing, altering, repairing and renovating plumbing, drainage or plumbing ventilation in this state, shall, on or before July 1 of each year, make application to the board for permission so to do on a form furnished by the board. The form shall state the applicant's name in full, his address and experience.

(2) Application for examination for journeyman plumber's certificate of competency shall be accompanied by an examination fee of \$10 and a permit fee of \$1.

(3) If the applicant passes the examination the \$1 permit fee shall apply on the certificate fee.

693.060 Issue of journeyman's certificate of competency; limitation on issue; certificate fee. (1) The board shall issue a certificate of competency to such persons as have by the examination provided for by this chapter shown themselves fit, competent and qualified to engage in the business, trade or calling of a journeyman plumber.

(2) No certificate of competency under this section shall be issued to any journeyman until the applicant therefor has complied with the rules and requirements of the board and has paid to the board a certificate fee of \$10.

693.070 Certificate issue and expiration dates. All certificates of competency shall bear the date of issue and shall expire on July 1 next following the date of issue.

693.080 Automatic revocation of permit. Permits are automatically revoked:

(1) If the applicant fails to appear when

notified unless he can furnish a reasonable excuse.

(2) When notified of failure to pass examination.

693.090 Revocation of certificates, procedure; application for new certificate after revocation. (1) The board may revoke any journeyman plumber's certificate of competency if:

(a) The certificate was obtained through error or fraud.

(b) The holder thereof is shown to be grossly incompetent.

(c) The holder has a second time willfully violated any of the rules or regulations prescribed by the board.

(2) Before any certificate of competency is revoked, the holder thereof shall have written notice enumerating the charges against him, shall be given a hearing by the board and have an opportunity to produce testimony in his behalf, at a time not less than 10 days after service of, and at a place specified in the notice.

(3) The board may appoint, by an order in writing, its secretary or any competent person to take testimony, who shall have power to administer oaths, issue subpoenas and compel the attendance of witnesses.

(4) The decision of the board shall be based upon its examination of the testimony taken and the records produced.

(5) Any person whose certificate of competency has been revoked may, after the expiration of one year from the date of revocation, but not before, apply for a new certificate of competency.

693.100 Board power to issue certificates and permits; power to make rules and regulations. (1) The board is empowered to grant and issue certificates of competency and permits to persons desiring or intending to engage in the trade or calling of journeyman plumber, in the manner and upon the terms and conditions provided in this chapter.

(2) The board shall prescribe, amend and enforce rules and regulations consistent with this chapter for the examination and certification of journeyman plumbers.

693.110 Examining Board of Plumbers, creation, composition, term, vacancies. (1) There is created a board to be known as the Examining Board of Plumbers, to be composed of three plumbing examiners.

(2) One of the examiners shall be a jour-

neyman plumber, one a person registered to conduct a plumbing business and one a member or employee of the State Board of Health.

(3) Upon the expiration of the term of either of the two members of the examining board who are not employed by the State Board of Health, the State Board of Health shall appoint a new member for a term of four years.

(4) The State Board of Health may fill vacancies on the examining board by appointment and may remove the plumbing examiners.

693.120 Duties of examining board. The Examining Board of Plumbers shall examine for fitness and qualifications all persons applying to the State Board of Health for certificates to engage in the business, trade or calling of a journeyman plumber, and certify the results thereof promptly to the State Board of Health.

693.130 Specific examination conducted by one board member. The State Board of Health may, if it deems it necessary, authorize one member only of the examining board to hold and conduct a certain specific examination and report the result as provided in ORS 693.120.

693.140 Compensation of examiners.

(1) Each member of the examining board, except a paid officer, member or employee of the State Board of Health, shall receive compensation of not less than the prevailing rate for journeymen plumbers and expenses for each day in which such member is actually engaged in attendance upon the meetings of the examining board, to be audited and paid out of the General Fund and charged against the Plumber's Code Account.

(2) Expenditures from the Plumber's Code Account made pursuant to this section shall be made according to ORS 447.090.

693.150 Disposal of sums collected under chapter. All receipts from fees, charges, costs, expenses and fines provided for in this chapter shall be collected by the board, which shall pay the same into the State Treasury monthly. The State Treasurer shall place such receipts to the credit of the Plumber's Code Account in the General Fund.

693.160 to 693.980 [Reserved for expansion]

693.990 Penalties. (1) Except as otherwise provided in this section, violation of this chapter or of the board rules and regulations provided for in this chapter, or re-

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fusal to perform within the prescribed time any duty lawfully enjoined upon him by the board, or failure, neglect or refusal to obey any lawful order of the board, is punishable, upon conviction, by a fine of not less than \$10 nor more than \$50 or by imprisonment in the county jail for not more than 30 days. Each day of such violation constitutes a sep-

arate offense. The justices of the peace shall have jurisdiction in the premises.

(2) Violation of subsection (2) of ORS 693.030 is punishable, upon conviction, by a fine of not more than \$25 or by imprisonment in the county jail for not more than 30 days. Each day of such violation constitutes a separate offense.

OREGON ADMINISTRATIVE RULES

CHAPTER 333

BOARD OF HEALTH

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Subdivision 4

PLUMBING CODE AS APPLIED
TO INSTALLATIONS, MATERIALS
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PLUMBING GENERALLY

[ED. NOTE: Unless otherwise specified, sections 44-002 through 44-612 of this chapter of the Oregon Administrative Rules Compilation were adopted by the Board of Health December 5, 1962, and filed with the Secretary of State December 18, 1962 as Administrative Order HB 165.]

Statutory Authority: ORS 446.002,
446.062, 446.125, 446.135,
447.010, 447.020, 447.110,
447.120, 447.130, 447.140,
693.100, 693.120

44-002-DEFINITIONS. As used in sections 44-004 to 44-490, unless otherwise required by context:

(1) "Air Gap" as pertaining to a water supply system, means the unobstructed vertical distance through the free atmosphere between the lowest opening between any pipe or faucet supplying water to a tank, plumbing fixtures, or other device and the flood level rim of the receptacle.

(2) "Area Drain" means a receptacle designed to collect surface or rain water from an open area.

(3) "Backflow" means the flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any source or sources other than its intended source. (See Back-Siphonage)

(4) "Back Siphonage" means the flowing back of used, contaminated or polluted water from a plumbing fixture or vessel into a water supply pipe due to a negative pressure in such pipe. (See Backflow, also Vacuum Breaker)

(5) "Board" means the State Board of Health.

(6) "Branch" a branch of any system

of drainage piping is that part of the system which extends from the main at a slight grade, with or without vertical arms, for the purpose of receiving fixture outlets not directly connected to the main.

(7) "Branch Interval" means a length of soil or waste stack corresponding in general to a story in height, but in no case less than eight feet within which the horizontal branches from one floor or story of a building are connected to the stack.

(8) "Building" means any structure erected for the support, shelter, and enclosure of persons, animals, chattels or movable property of any kind.

(9) "Building (House) Drain" means that part of the lowest horizontal piping of a building (house) drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of any building (structure) and conveys the same to the house sewer which begins 5 feet outside of the outer face of the building or foundation wall.

(10) "Building (House) Sewer" see "Sewer."

(11) "Building Storm Drain" a building (house) storm drain is a building drain used for conveying rain water, surface water, ground water, subsurface water, condensate, cooling water or other similar discharge to a building storm sewer or combined building sewer, extending to a point not less than 5 feet outside the building wall.

(12) "Building Storm Sewer" see "Sewer."

(13) "Cesspool" means an excavation in the ground which receives the discharge of a drainage system, or part thereof, so designed and constructed as to retain the organic matter and solids discharging therein, but permitting the liquids to seep through the bottom and sides.

(14) "Code" when used alone means the statutory law and these regulations, subsequent amendments thereto, or any emergency rule or regulation which the Board having jurisdiction may lawfully adopt.

(15) "Combined Building Sewer" see "Sewer."

(16) "Cross-Connection" means any

physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other water of unknown or questionable safety, whereby water may flow from one system to the other, the direction of flow depending on the pressure differential between the two systems.

(17) "Developed Length of a Pipe" is its length along the center line of the pipe and fittings.

(18) "Diameter" unless specifically stated, the term "diameter" is the nominal diameter as designated commercially.

(19) "Domestic Sewage" see "Sewage".

(20) "Drainage System, or Drainage Piping" means and includes all the piping within public or private premises which conveys sewage, or other liquid wastes, to a legal point of disposal, but shall not include the mains or laterals of a public sewer system. (See sewer, waste).

(21) "Fixture Unit" means a quantity in terms of which the load-producing effect on the plumbing system of different kinds of plumbing fixtures are expressed on some arbitrary scale.

(22) "Mixture Unit Flow Rate" means the total discharge flow in g.p.m. (gallons per minute) of a single fixture divided by 7.5 which provides the flow rate of that particular fixture as a unit of flow. Fixtures are rated as multiples of this unit of flow.

(23) "Flat Vent" means a vent pipe which inclines at an angle of more than 60° from the vertical, below a point 6" above the flood level of the fixture it serves.

(24) "Flood Level Rim" flood level or spill line means the elevation at the top edge of a receptacle at which point water would overflow provided that the fixture was filled to the brim.

(25) "House Drain" see "Building Drain".

(26) "Insanitary Conditions" include the following:

(a) Any trap which does not maintain a proper trap seal.

(b) Any opening in a drainage system, except where lawful, which is not provided with an approved water-seal trap.

(c) Any plumbing fixture, or other waste discharging receptacle or device, which

is not supplied with water sufficient to flush it and maintain it in a clean condition.

(d) Any defective fixture, trap or pipe.

(e) Any trap, except where in this code exempted, directly connected to a drainage system the seal of which is not protected against siphonage and backpressure by a vent pipe.

(f) Any connection, cross-connection, construction or condition, temporary or permanent, which would permit or make possible, by any means whatsoever for any unapproved foreign matter to enter a water distribution system used for domestic purposes.

(g) The foregoing enumeration of conditions to which the term "insanitary" shall apply, shall not preclude the application of that term to conditions that are in fact insanitary.

(27) "Liquid Waste" see "Waste".

(28) "Main" as it pertains to any system of horizontal, vertical, or continuous drain or vent piping means that part of the system which receives wastes, vents, or back-vents from fixture outlets or traps, direct or through branch pipes.

(29) "Main Sewer" see "Sewer".

(30) "Mobile Home" means a vehicle or structure constructed with wheels for use on the public highways, that has sleeping, cooking and plumbing facilities, is intended for human occupancy and is being used for residential purposes.

(31) "Plumbers Definitions", see ORS 693.010.

(32) "Plumbing", see Definitions, ORS 447.010 (2).

(33) "Plumbing Fixtures" means receptacles and devices, intended to receive water, liquids, or other permissible wastes, and discharge same into soil pipe, waste pipe or special waste pipe with which they are connected. A shower shall be considered a fixture and shall be properly trapped and vented, excepting a shower head installed over a bath tub shall not be considered a fixture.

(34) "Potable Water" means water which is satisfactory for drinking, culinary and domestic purposes and meets the requirements of the health authority having jurisdiction.

(35) "Public" in the classification of

plumbing fixtures, "public" shall apply to fixtures in general, toilet rooms of schools, gymnasiums, hotels, railroad stations, factories, public buildings, bars public comfort stations and other installations (whether pay or free) where a number of fixtures are installed so that their use is similarly unrestricted.

(36) "Public Sewer", see "Sewer"

(37) "Private" in the classification of plumbing fixtures, "private" shall apply to fixtures in residences and apartments and to fixtures in private bathrooms of hotels and similar installations where the fixtures are intended for the use of a family or an individual.

(38) "Sanitary Sewer" see "Sewer."

(39) "Septic Tank" means a watertight receptacle which receives the discharge of a drainage system or part thereof, designed and constructed so as to retain solids, digest organic matter through a period of detention, and allow the liquids to discharge into the soil outside of the tank through a system of open joint piping, or a cesspool meeting the requirements of the regulations of the State Board of Health.

(40) "Sewage"

(a) Domestic Sewage means the waterborne wastes derived from the ordinary living processes and of such character as to permit satisfactory disposal, without special treatment, into the public sewer system, or by means of a private disposal system.

(b) Sewage means:

(A) A combination of the liquid and water-carried waste matter from any dwelling, business building, institution or other structure and may include other types of drainage when present such as wastes from industrial plants, ground water, surface water or storm water.

(B) The water-carried waste matter from any water closet or similar fixture.

(41) "Sewer"

(a) "Building (House) Sewer" means that part of the piping of a drainage system beginning five feet out from the outer face of the structure or building foundation which receives discharge from the building (house) drain and conveys the discharge into a public sewer, septic tank, cesspool or other point of disposal.

(b) "Building (House) Storm Sewer" means the extension from the building storm drain to the public storm sewer, combined sewer, or other point of disposal.

(c) "Combined Building Sewer", receives storm water and sewage.

(d) "Main Sewer" - (Sewer Main) - Means a sewer to which one or more branch sewers are tributary.

(e) "Public Sewer" means the main line sewer, constructed in the street, highway, alley, place or right of way dedicated to public use and may include branch to curb or property line.

(f) "Sanitary Sewer", means a sewer which carries sewage and to which storm, surface, and ground waters are not intentionally admitted.

(42) "Soil Pipe", means any pipe which conveys the discharge of water closets or clinic sinks with or without the discharge from other fixtures, to the house drain or house sewer.

(43) "Special Waste Pipe" or indirect waste pipe means any pipe or fitting which indirectly conveys liquid wastes into a drainage system by discharging into an approved plumbing fixture or receptacle which is directly connected to a soil or waste pipe.

(44) "Stack" means any vertical line of soil, waste, special waste or vent pipe.

(45) "Trailer Park" means any privately owned place where two or more trailers used for human occupancy are parked within 500 feet of one another on a lot, tract or parcel of land under the same ownership.

(46) "Trap", as pertaining to plumbing, means a fitting or device so designed and constructed as to provide a liquid trap seal, which will prevent the passage of air or gas through it without materially affecting the flow of sewage or liquid wastes.

(47) "Trap Seal" means the maximum vertical depth of liquid that a trap will retain, measured between the crown weir and the dip of the trap.

(48) "Vacuum Breaker" is a device designed to prevent back siphonage by providing an opening through which air may be drawn to relieve negative pressure (vacuum) in the water supply pipe.

(49) "Vent Pipe" means a pipe provided to prevent the loss or lowering of a trap seal by siphonage or back pressure, and to allow a circulation of air through the soil or waste pipe to which it is connected.

(50) "Vertical Vent Pipe" means any vent pipe or fitting which is installed in a vertical position or which makes an angle of not more than 60 degrees with the vertical.

(51) "Waste"

(a) "Household Wastes" means liquid wastes discharged from the various plumbing fixtures, laundry facilities and floor drains in a building.

(b) "Industrial Waste" means the liquid wastes from industrial processes as distinct from domestic or sanitary sewage.

(c) "Liquid Waste" means the discharge from fixtures, drains, appliances or appurtenances in connection with a plumbing system but pertains particularly to the discharge from fixtures, drains, appliances or appurtenances other than water closets and clinic sinks.

(See drainage system, sewer and sewage).

(52) "Waste Pipe" means any pipe and any fitting used in conjunction therewith or separately which directly conveys the discharge of any plumbing fixture, receptacle, apparatus, or device except water closets and clinic sinks, to a soil pipe, house drain or other point of disposal.

(53) "Water Distribution System" means any conduit or pipes and fittings that convey water from the water service pipe or other source of supply to plumbing fixtures or other apparatus, appurtenances or devices, in buildings and premises.

(54) "Yoke Vent" means a pipe connecting upward from a soil or waste stack to a vent stack for the purpose of preventing pressure changes in the stacks.

GENERAL INSTALLATION OF PIPING

44-004 INSTALLATION OF PIPING.
Horizontal drainage piping shall be run in true alignment and at a uniform grade

of not less than one fourth inch per foot and shall be supported at intervals not exceeding 10 feet. Stacks shall be supported at their bases, and shall be rigidly secured. Piping shall be installed without undue stresses or strains and provisions made for expansion, contraction and structural settlement. No structural member shall be weakened or impaired beyond a safe limit by cutting, notching, or otherwise, unless provision is made for carrying the structural load.

44-006 PROHIBITED USE OF FITTINGS. (1) Sanitary "T's" or short turn 90 degree "Y's" shall not be used in a horizontal soil or waste line; branches must be taken off with either a 45 degree or 60 degree "Y", and a proper bend, or a combination "Y", and one-eighth bend, or long turn 90 degree "Y". A sanitary "T", however, may be used in a vent line if inverted.

(2) High heel outlet one-fourth bends shall not be used except in a vent line.

(3) No change in direction greater than 90 degrees in a single turn shall be made in drainage pipes.

(4) Every offset shall be on an angle of 45 degrees (one-eighth bend offset) and shall not be longer than to offset 12 inches from center to center when used in a waste line. In every fitting other than a trap the spigot end including the bead, shall be straight without an offset or change in direction for at least four inches. For a trap such straight portion shall be not less than five inches.

(5) No sanitary cross or offset shall be installed in a line other than a vertical line or in a line inclined at an angle greater than 60 degrees with the vertical. Heel outlet bends (low inlet) may be used in a vertical position for either waste or vent. Side inlet bends shall not be used except in a vent stack above the highest fixture. The use of saddle hubs and saddled bends is expressly forbidden. Tees, double hubs and double hub pipe and fittings shall not be used in soil or waste lines and no one-fourth bend shall be used in such a line, except as hereafter permitted. All cast-iron, wrought-iron, steel, lead or brass pipes used in a building drain, soil or waste

line, shall be laid in as direct a line as practicable, but where changes in direction are necessary these shall be made with a "Y" branch, a one-half "Y" branch, or with one-sixteenth, one-eighth, one-fifth or one-fourth bends, provided that when one-fourth bends are used in a horizontal position, the radius of the one-fourth bend (90 degree elbow), measured on the center line, shall be not less than the following:

Table 1

Pipe Diameter	Radius of Bend
2 inches diameter --	5 inches radius
3 inches diameter --	5 1/2 inches radius
4 inches diameter --	6 inches radius

and provided further that this section shall not apply to toilet bends.

(6) All drainage fittings used in soil or waste lines shall be recessed fittings, long turn patterns, except in a vertical line where short pattern sanitary "T's" may be used.

(7) No wrought-iron waste pipe shall be bent. All wrought-iron, steel or brass pipe used with recessed drainage fittings shall have a full thread and be screwed up tight to shoulder of the fittings, and all burrs and cuttings shall be removed from such pipe when used for a building drain, a soil stack, a soil waste or vent pipe, a rain leader, or a rain or storm water drain.

44-008 PROHIBITED CONNECTIONS.

(1) No fixture, device, or construction shall be installed which will provide a backflow connection between a distributing system of water for drinking and domestic purposes and a drainage system, soil, or waste pipe or which will permit or make possible the backflow of sewage or waste into the water supply system.

(2) No interconnection or cross-connection shall be made between a domestic or drinking water supply system and any other water supply system of questionable or unsafe quality.

44-010 PROTECTION OF PIPES. Pipes

passing under or through walls shall be protected from breakage. Pipes passing through or under cinder, concrete or any other corrosive material shall be protected against external corrosion.

44-012 PROTECTION OF ELECTRICAL MACHINERY. No water or drainage piping should be located over electrical machinery or equipment unless adequate protection is provided against drip caused by condensation on the piping.

44-014 PROTECTION OF WATER TANKS AND FOOD SUPPLY. No drainage pipe shall pass over water supply tanks or reservoirs, unless such tanks or reservoirs are covered and are watertight; nor shall drainage piping pass directly over food processing or food storage areas.

44-016 WORKMANSHIP. Workmanship shall be of such character as to fully secure the results sought in all sections of this standard.

MAINTENANCE AND INSPECTION

44-018 DEFECTIVE FIXTURES. All installed fixtures found defective or in an insanitary condition shall be repaired, renovated, replaced, or removed within 30 days upon written notice from the Plumbing Inspector.

44-020 TEMPORARY TOILET FACILITIES. Toilet facilities shall be available for the use of workmen during the construction of any building. Toilet facilities provided on the building site shall be maintained in a sanitary condition.

44-022 INSPECTION AND TESTS. (1) Whenever in the opinion of the inspector, the work does not conform to subsection (9) of ORS 447.120 he may require the entire soil, waste and drainage system to be filled with water to the highest point in the system above the roof, and remain filled until all leaks are repaired and the system approved.

(2) Sewers and sewage disposal shall

conform to the regulations of the Oregon State Sanitary Authority and Board.

(3) Compliance with these standards is required for approval of system.

JOINTS AND CONNECTIONS

44-024 WATER AND AIR - TIGHT JOINTS. All joints and connections mentioned under sections 44-026 to 44-050 shall be made permanently gas and water tight.

44-026 VITRIFIED OR CEMENT PIPE. All joints in vitrified clay or cement pipes or between vitrified clay pipe or cement pipe and metals, shall be made of mortar composed of one part Portland cement and two parts clean, sharp sand and trowled smooth, or approved bituminous joint material. No surplus mortar or other foreign material shall project into the pipe from the joint. Jute, oakum, or other approved packing should be used with either cement mortar or approved bituminous material.

44-028 CALKED JOINTS. All calked joints shall be firmly packed with oakum or hemp, and shall be secured only with pure molten lead not less than one inch deep. Such joints shall be well calked, and no paint, varnish or putty shall be used until after the joint is tested.

44-030 SCREW JOINTS. All screw joints shall be American Standard screw joints and all burrs or cuttings shall be removed.

44-032 CAST IRON JOINTS. Cast iron joints may be either calked or screw joints made in the approved manner.

44-034 WROUGHT IRON, STEEL OR BRASS TO CAST IRON JOINTS. The joints may be either screwed or calked joints made in the approved manner.

44-036 LEAD PIPE JOINTS. Joints in between lead pipes or between lead pipe and brass or copper pipes, or ferrules, soldering nipples, or traps, shall in all cases on the sewer side of the

trap and in concealed joints on the inlet side of the trap be full-wiped joints, with an exposed surface of not less than three-fourths of an inch of solder to each side of the joint and a minimum thickness of the thickest part of the joint of not less than three-eighths of an inch.

44-038 LEAD PIPE TO CAST IRON, STEEL OR WROUGHT IRON PIPE JOINTS.

Joints shall be made by means of a calking ferrule or a soldering nipple attached to lead pipe by a wiped solder joint.

44-040 SLIP JOINTS AND UNIONS. Slip joints shall be used only in trap seals or on the inlet side of a trap. Unions on the sewer side of the trap shall be ground faced and shall not be concealed or inclosed.

44-042 CONNECTION WITH TOILETS, AND SLOP SINKS. (1) Every water closet, urinal or slop sink with a trap outlet above the floor shall be connected to the soil or waste pipe by a heavy flange of either brass or cast iron, in thickness not less than three-sixteenths of one inch.

(2) The flange shall be securely fastened to the soil or waste pipe by a calked, screwed or soldered joint and the fixture connected to the flange by means of drawn brass bolts, tapped into the flange of a diameter not less than one-quarter inch.

(3) The joint between the fixture and the flange shall be made gas and water tight by means of asbestos graphite gaskets or with putty paste.

(4) The use of rubber washers for any connection is expressly forbidden.

(5) Cast-iron bends or stubs are acceptable, however no combination lead and cast-iron ferrules, traps or bends shall be used. Where lead is used, the joints between cast-iron pipe and fittings on the sewer side of a trap, shall be made with a brass ferrule wiped to the lead pipe and calked into cast-iron hub with lead and picked oakum, or with a brass soldering nipple wiped on the lead pipe and screwed into the cast iron. Where straight stubs are used, there shall be at least eight inches of lead between

the bottom of rough floor and top of wiped joint. Weight of lead pipe or bends shall be not less than (7) pounds fourteen (14) ounces per foot. Wall toilets shall be exempt from the provisions of this section but shall be connected by and with approved wall toilet hangers and connections.

44-044 INCREASESERS AND REDUCERS.

Where different sizes of pipe or pipes and fittings are to be connected, proper size increasers or reducers, pitched at an angle of 45 degrees between the two sizes, shall be used.

44-046 PROHIBITED JOINTS AND CONNECTIONS. The installation or use of any fitting or connection which has an enlargement chamber or a recess with a ledge, shoulder or reduction of the

pipe area in the direction of the flow on the outlet or drain side of any trap is prohibited. This section shall not be construed to prohibit the installation of an insertable joint when necessary.

44-048 EXPANSION BOLTS. Connections of wall hangers, pipe supports or fixture settings with the masonry stone or concrete backing, shall be made with expansion bolts or inserts without the use of wooden plugs.

44-050 NEW MATERIALS. The use of material other than that specified in this code, which the Board approves as being equally efficient, may be permitted.

44-052 to 44-058 Reserved for Expansion

TRAPS, CLEANOUTS, FLOOR AND STABLE DRAINS

44-060 TRAPS, KIND, AND MINIMUM SIZE. Every trap shall be self-cleaning. Traps for bath tubs, lavatories, sinks, and other similar fixtures shall be of lead, brass, cast-iron, or of malleable iron which has been galvanized or which has an interior finish of enamel. Galvanized or porcelain enameled traps shall be of extra heavy material and shall have a full bore smooth interior waterway, with threads tapped out of solid metal.

44-062 TRAPS, WHERE REQUIRED.

(1) Each fixture shall be separately trapped by a water seal trap placed as near to the fixture as possible; except that not to exceed two laundry trays, two sinks set not more than 3 inches apart, or one three-compartment integrally cast or metal partition bar sink may be served with one trap, provided that one fixture or compartment is not more than 6 inches deeper than the other fixture or compartment, and provided that the total length of waste lines between the fixtures and the trap does not exceed 3 feet and such fixtures are in the same room and not separated by a wall or a partition. The waste from each fixture shall connect to the trap above the water seal and the trap shall be centrally located where 3 compartments are installed.

(2) Each unit of a combination garbage disposal and sink, or dishwasher and sink shall be separately trapped and vented. The horizontal portion of the waste shall be 2 inch. Branch waste for each unit may be 1-1/2 inch but shall be connected separately to the horizontal waste line.

(3) A dishwasher having a pump for removing waste water may discharge over the sink, or if the discharge pipe from the pump is extended to a point high enough to preclude danger of waste water flowing back into the dishwasher, it may be connected to a fitting between the sink and the sink trap.

(4) A washing machine may be connected to a laundry tray trap between

the trap and the fixture; or it may be installed as a fixture with a trap, waste and vent; or it may discharge over a floor drain, provided the floor drain and the washing machine are located on the same floor.

44-064 PRIMING OF TRAPS, CATCH BASINS. Every trap serving a floor drain, an area drain, a catch basin or sump situated in or within 12 feet of the established line of a building shall be supplied with fresh water through galvanized iron pipe not less than three-eighths of one inch in diameter or through a brass pipe not less than seven-sixteenths of one inch in diameter, connected to the nearest toilet flush pipe, or to an approved mechanical primer, which shall discharge to the seal side of the trap, catch basin or sump. The discharge or prime pipe shall be connected to the trap, catch basin or sump by means of a solid connection. Primer valves shall not be placed in the main water supply pipe, or in any water supply pipes to laundry trays or in any water supply pipe used for sprinkling. The valve shall be so installed that there will be no splash through vent holes. Not more than two traps or two catch basins shall be supplied with fresh water from any one toilet flush or mechanical primer. (See section 44-118.)

44-066 WATER SEAL. All traps shall have a water seal of at least 2 inches. Drum traps and non-siphon traps shall have a 4-inch water seal and a minimum diameter of 2-1/2 inches for the full depth of the trap, and shall have a full size trap screw protected by the water seal.

44-068 SETTING AND PROTECTING OF TRAPS. Traps shall be set true with respect to their water seals and protected from frost and evaporation and other loss of seal.

44-070 BACKWATER VALVES. Movable and bearing parts of backwater or check valves shall be constructed of corrosion resistant metal and shall also be so constructed as to insure a positive me-

chanical seal and remain closed, except when discharging wastes.

44-072 PROHIBITED TRAPS. "S" traps, traps with partitions, bell, bottle or "D" traps and traps depending for their seal upon the action of movable parts or concealed interior partitions are prohibited. The installation or use of traps having covers, hand holes or cleanouts held in place by lugs or bolts or any other opening except in or protected by trap seal is prohibited.

44-074 PROHIBITED USE OF TRAPS.

No trap shall be installed or placed in a building drain, building sewer, or at the foot of a soil stack, soil line or waste pipe, however, a trap may be used at the foot of a rain leader serving as a conductor of rain or storm water only.

44-076 CLEANOUTS--EQUIVALENTS.

Fixture traps which are bolted or screwed to the floor or wall shall be regarded as cleanouts.

(1) A cleanout through a "Y" branch, shall be placed on the main line just inside the basement wall where the pipe leaves the building.

(2) A cleanout shall be placed on all horizontal sink lines exceeding 4 feet in length, or which are located under the ground or which are suspended from the first floor, and all such cleanouts shall be placed in an accessible position.

44-078 FLOOR DRAINS. Floor drains must be trapped with a "P" trap having a seal of not less than 2 inches. If such trap is located within the distance specified in Section 44-172, the trap need not be vented but shall be supplied with fresh

water through a galvanized iron pipe of diameter not less than three-eighths of one inch through a brass pipe of a diameter not less than seven-sixteenths of one inch, connected to the nearest flush pipe or mechanical primer valve, and discharging on the house side of the trap above the water seal.

44-080 STABLE DRAINS. (1) A stable shall have a catch basin not less than 15 inches in diameter and a depth of not less than 18 inches to the water lines.

(2) Where more than two animals are housed in a building, the waste pipe from the catch basin shall be not less than four inches in diameter and shall have a vent pipe not less than 4 inches in diameter extended full size through the roof and connected to the waste on the sewer side of the catch basin. For a stable where not more than two animals are housed, there may be used a two-inch waste pipe and two-inch vent pipe.

(3) Where stall drains are provided, the diameter of such pipe shall not be less than 3 inches. If the length of any line exceeds 20 feet, the line shall be vented with a pipe through the roof not less than 2 inches in diameter.

(4) A cleanout the size of the waste pipe, up to 4 inches in diameter, shall be provided on the sewer side of and near the catch basin. For a pipe larger than 4 inches in diameter, the cleanout shall be not less than 4 inches in size. A cleanout of not less than 3 inches in size shall be placed at the end of the main line of waste for stall drains on the seal side of the catch basin.

44-082 to 44-088 Reserved for Expansion

WATER SUPPLY AND
DISTRIBUTION

and the water from flush tanks shall be used for no other purposes.

44-090 WATER SUPPLY CONTROL. A main supply valve shall be placed inside of foundation walls of all buildings. Each lawn sprinkler opening or sill cock shall be properly valved. Hot water tanks shall be provided with a valve and drain cock. Lawn sprinkler systems shall be equipped with an approved vacuum breaker on the discharge side of each of the last valves. The vacuum breaker shall be at least 6 inches above the highest head, and at no time less than 6 inches above the surrounding ground. Valves and vacuum breakers shall be protected against freezing.

44-092 QUALITY OF WATER. The quality of the water supply shall meet accepted standards of purity as prescribed by the State Board of Health.

44-094 DISTRIBUTION. The water supply shall be distributed through a piping system entirely independent of any piping system conveying any other water supply.

44-096 WATER SERVICE. The water service pipe to any building shall be of sufficient size to permit a continuous ample flow of water on all floors at a given time. It shall be so graded in size as to make for equal distribution of the water to the respective risers and fixture branches in accordance with the need of the fixture and flushing medium employed. No water service pipe shall be installed in the same trench as a sewer. In no case shall water service pipe have an inside diameter of less than three-fourths of one inch.

44-098 WATERSUPPLY TO FIXTURES. All plumbing fixtures shall be provided with a sufficient supply of water for flushing to keep them in a sanitary condition. Every water closet or urinal shall be flushed by means of an approved tank or flush valve. The flush pipe for water closet flush tanks shall be not less than one and one-fourth inches in diameter

44-100 WATER SUPPLY PIPES AND FITTINGS MATERIAL. All water supply pipes for a plumbing system shall be of lead, galvanized wrought iron or steel, brass, copper or cast iron, with brass or galvanized fittings. No pipe or fittings that have been used for other purposes shall be used for distributing water. All joints in water supply piping shall be made of either screw or wiped joints except cast-iron water pipe joints which may be calked, screwed or machine drawn joints.

44-102 PROTECTION FROM FREEZING. (1) All concealed water pipes, storage tanks, flushing cisterns and all exposed pipes or tanks subject to freezing temperatures should be efficiently protected against freezing.

(2) All water pipes shall be properly supported, and so graded or pitched that the entire system or parts thereof can be drained. The formation of traps or sags shall be avoided. Drain cocks shall be installed at low points in the hot and cold water system in an accessible location.

(3) All water pipes shall be properly secured with suitable straps and hangers.

44-104 TEMPERATURE AND PRESURE RELIEF VALVES. (1) Every water heater, or storage tank, or vessel in which water is heated or stored under pressure or to which a water-heating device or appliance is, or is hereafter, attached, should be equipped with a temperature and pressure relief valve so made and installed as to prevent development of, or the accumulation of water which is in excess of 212° Fahrenheit.

(2) This temperature and pressure relief valve should be of the full automatic reseating type and shall be installed directly in the tapping in the top of the tank or in the side of the tank not more than 6 inches below its top, or on the hot water discharge pipe within 3 inches of the top of the tank, and there shall not be any valve between the temperature and pressure relief valve and the tank.

(3) Relief valve shall be bellows type with tube. Relief valves depending on fusible plugs for temperature relief are not recommended.

(4) For electrically heated storage tank or vessel in which water is heated, an approved temperature limiting thermostat may be used in lieu of the temperature relief valve. Such thermostat shall be of the manual reset type, to operate and disconnect the ungrounded conductors when the maximum temperature of the water exceeds 190° Fahrenheit.

(5) Each tank so equipped shall have a permanent legend or marking on the outside thereof showing that the tank is equipped with an approved temperature limiting thermostat.

(6) Where hot water heaters, storage tanks or vessels, are equipped with a temperature limiting thermostat, a pressure relief valve shall also be installed.

(7) The discharge pipe from the relief valve shall terminate over an open fixture and not more than 10 inches from the cement floor and as close as possible to a drain properly connected to the drainage system or other approved methods.

(8) Where approval is required of this department on installations, the property owner will be advised that in the interest of safety and precaution, he must protect his boiler against overheating.

44-106 PUMPS AND HYDRANTS. All pumps and hydrants shall be protected from surface water and contamination.

44-108 SIZE OF WATER SUPPLY PIPES. The minimum size of water service pipes from the property line of private water system to the building shall be three-fourths of one inch and shall extend full size to the "T" for the first fixture branch provided, however, that three-fourths of one inch pipe shall be extended to the branch "T" to all hot water boilers regardless of other previous fixture branches.

Table 2

Fixture	Minimum Size, Inches
Sill cocks - - - - -	1/2
Hot water boilers-Serv- ice to Branch "T" - -	3/4
Laundry trays - - - - -	1/2
Sinks - - - - -	1/2
Lavatories - - - - -	3/8
Bath tubs - - - - -	1/2
Water closet tanks - - -	3/8
Water closet flush valves	1

44-110 WATER SUPPLY CONNECTIONS TO FIXTURES OR RECEPTACLES. No potable water supply shall be connected directly or indirectly to or with any plumbing fixture or other receptacle for waste or surplus water unless it shall have been protected by methods and devices as hereinafter set forth.

(1) Free Discharge. Water supply outlets shall discharge over and not less than twice the diameter of the water supply outlet above the spill line of each fixture or receptacle. In no case may this distance be less than 1 inch.

(a) No faucet or combination faucet or similar appliance may be installed in such a manner that it constitutes either a direct or indirect cross-connection between a drinking water supply and any unsafe water supply.

(b) The minimum required air gap between orifice of faucet and spill line of fixture shall be as follows:

Table 3

Lavatories - - - - -	1 inch
Kitchen sinks and laundry trays - - - - -	1-1/2 inches
Bath tubs - - - - -	2 inches

(2) All water supply outlets which cannot be protected as outlined in (1) above shall be protected from backflow or back-siphonage by the use of approved vacuum breakers or any other means which are approved by the State Board of Health. No vacuum breaker or siphon preventer shall be installed until it has been approved by the State Board of Health.

44-112 FLUSH VALVES. (1) All flush valves hereafter installed, altered or repaired shall be equipped with a piston, diaphragm or plunger that will close and remain closed during the application of vacuum through the water supply inlet of said flush valve.

(2) All flush valves hereafter installed or replaced shall be equipped with an approved vacuum breaker.

(3) On all installations the bottom of vacuum breakers shall be set at least 4 inches above the rim of closet bowls.

(4) Flushometer valves installed on pedestal or siphon jet wall type urinals shall be equipped with approved vacuum breakers.

(5) All urinals except stall urinals flushed directly from the water supply line through a flushometer or other valve shall be equipped with an approved vacuum breaker placed at height above fixture to preclude danger of contamination through airports.

44-114 INTEGRAL BOWL AND TANK CLOSETS. No closet bowl combination of the integral bowl and tank type having the bottom of the tank below the spill line of the bowl shall be installed unless water is supplied through an approved non-siphon ball cock. Existing installations shall not be maintained unless equipped with an approved non-siphon ball cock.

44-116 SUBMERGED INLET FIXTURES--ASPIRATORS. (1) The water supply to arm, leg continuous flow bath, x-ray developing, service sink and similar fixtures requiring a submerged inlet shall be equipped with vacuum breakers the bottom of which shall be placed not less than six inches above the spill line of the fixture.

(2) Water operated aspirators shall be installed as follows:

(a) Provide vacuum breaker at least 6 inches above aspirator in vertical portion of the water supply piping between the control valve and aspirator proper.

(b) Below the aspirator proper, install an open drain fitting leaving air gap at least equal to twice the diameter of discharge tail piece.

(c) It is advisable not to have a direct connection from the point of suction to the water line; one or two glass jars should be inserted which will collect infectious material.

44-118 CELLAR DRAINERS, SUMP PUMPS AND PRIMER VALVES. (1) Water operated sump pumps or cellar drainers are prohibited.

(2) Primer valves shall

(a) Be set at least 12 inches above highest elevation of floor in which trap is installed.

(b) Be installed in branch cold water supply to fixture but shall not be installed in branches to laundry tray or hosebibbs.

(c) Have pipe on proper grade which shall be tapped into trap above the water seal.

(d) Be installed with a dividing tee above floor when serving two traps, and the tee shall have openings for inspection.

(e) Not be used for more than two traps.

44-120 DRINKING FOUNTAINS. (1) All drinking fountains shall be made of earthenware, vitreous chinaware, enameled iron ware or other impervious material. The bowl shall be so designed and proportioned as to be free from corners that it may be readily cleaned, and so as to prevent unnecessary splashing at the point where the jet falls into the bowl. The nozzle shall be of non-oxidizing impervious material of the side stream design and shall have no fouling space or enclosures making cleaning difficult or inducing insanitary conditions. The end of the nozzle shall be protected by non-oxidizing guards to prevent persons using the fountain from coming into contact with the nozzle. The jet or orifice shall be higher than the rim of the waste water receiving bowl. The angle of the jet shall be such that water can neither fall back nor be forced back into the point of discharge or come in contact with the guard.

(2) The water supply shall be provided with an adjustable valve fitted with a loose key or an automatic self-closing valve permitting regulation of the rate of flow of water. The water issuing from

the orifice shall be of sufficient volume and height so that persons using the fountain need not come in direct contact with the orifice guard. To accomplish this, it is recommended that the fountain supply be equipped with an efficient automatic pressure and volume regulating valve.

(3) Combination faucets and drinking fountain appliances are not approved. Drinking fountains shall not be installed on lavatories. Drinking fountains shall not be installed in toilet rooms.

44-122 HAZARDOUS PLUMBING. Whenever it shall come to the attention of the State Board of Health that an existing installation of plumbing or plumbing fixtures or devices is creating a menace to health by reason of pollution or possible pollution of a potable water supply, the State Board of Health shall specify what changes, modifications or additions

shall be made to the faulty system in order to eliminate the menace to health.

44-124 APPROVAL OF DEVICES, EQUIPMENT AND FIXTURES. Manufacturers of plumbing fixtures, equipment or devices which may be used in any manner that may create a possible water pollution hazard, or which may be used as a means of preventing water pollution from back flow or back siphonage, shall, before offering fixtures, equipment or devices for sale and installation in the State of Oregon, submit same for testing and approval by an accredited testing laboratory approved by the State Board of Health. A copy of the report of the accredited laboratory shall be submitted to and approved by the State Board of Health before such fixtures, equipment or devices may be offered for sale.

44-126 to 44-138 Reserved for Expansion

HANGERS AND SUPPORTS FOR PLUMBING PIPING

44-140 VERTICAL PIPING. Vertical piping shall be securely supported at the base and at maximum intervals of 20 feet.

44-142 HORIZONTAL PIPING. Horizontal piping shall be securely supported at maximum intervals of 10 feet, excepting that the maximum spacing for cast-iron soil pipe for all sizes shall not be greater than five feet.

44-144 HANGERS. Hangers shall be metal of heavy pattern and shall be securely attached to the building construction.

44-146 BASES OF RISERS AND HORIZONTAL RUNS. Bases of risers and horizontal runs in cellars must be supported on substantial masonry piers.

44-148 PIPES UNDERGROUND. Pipes in filled ground shall be supported on concrete or cement laid brick or stone piers every 5 feet.

44-150 LEAD PIPES. Lead pipes shall be supported for their entire length to prevent sagging.

44-152 to 44-158 Reserved for Expansion

DRAINAGE AND VENTING OF PLUMBING SYSTEMS

44-160 FIXTURE UNIT. The following table, based on the rate of discharge from a lavatory (7-1/2 gallons per minute) as the unit, shall be employed to determine fixture equivalents: Table 4

44-162 SOIL AND WASTE STACKS. Every building in which plumbing fixtures are installed shall have a soil or waste stack, or stacks, extending full size through the roof. Soil and waste stacks shall be as direct as possible and

free from sharp bends and turns. The required size of a soil or waste stack shall be determined from the distribution and total of all fixture units connected to the stack in accordance with the table in Section 44-160 except that no water closets shall discharge into a stack less than 4 inches in diameter. All soil or waste branches from main drain, wherever possible, shall be taken off above the center lines of drain pipe.

44-164 SOIL AND WASTE STACKS, FIXTURE CONNECTIONS. All soil and waste stacks and branches shall be provided with correctly faced inlets for fixture connections.

44-166 CHANGING SOIL AND VENT PIPES. In existing buildings where the soil or waste vent pipe is not extended undiminished through or above the roof or where there is a sheet metal soil or waste vent pipe, and the fixture is changed in style or location or is replaced, a soil or waste vent pipe of the size and material prescribed for new work shall be installed.

44-168 PROHIBITED CONNECTIONS. No fixture or vent connection shall be made to a lead bend or branch or a water closet or similar fixture. No soil or waste vent or circuit vent above the highest installed fixture on the branch or main shall thereafter be used as a soil or waste pipe.

44-170 ROOF EXTENSIONS. All roof extensions of soil and waste stacks shall be run full size at least 1 foot above the roof, and when the roof is used for other purposes than weather protection such extension shall not be less than 7 feet above the roof.

44-172 DISTANCE OF VENT FROM TRAP SEAL. No trap shall be placed more than 3 feet, horizontal developed length, from its vent. Water closets shall be located not more than 42 inches from the vent, measuring from the top of floor along center line of the developed waste to the vent. Primed floor drain traps, if within 6 feet of the vented line need

not be revented. For certain pipe and trap sizes greater distances can be used as given below, provided the slope of the branch waste does not exceed 1/4 inch per foot and the branch waste pipe from the trap connects to a soil or waste pipe which is vented with a pipe having a diameter not less than that which would be required to vent a floor drain sump or area drain computed on the units allowed in the table in sections 44-160 and 44-200:

Table 5

Size trap	Size Branch Waste	Maximum Distance
2 inch	2 inch	6 feet
3 inch	3 inch	10 feet
4 inch	4 inch	14 feet

(1) The connection between the trap and the strainer shall be made with a calked or screwed joint. No cement joints shall be allowed.

44-174 MAIN VENTS TO CONNECT AT BASE. All main vents or vent stacks shall connect full size at their base to the main soil or waste pipe at or below the lowest fixture branch and shall extend undiminished in size above the roof or shall be reconnected with the main soil or waste vent at least 6 inches above the highest fixture branch.

44-176 SEPARATE VENTS NOT REQUIRED. (1) A dual vent for two fixture traps installed as a vertical continuous waste and vent, or a stack vent in a dual capacity, may be employed under the following conditions and no additional vents for the traps thus vented shall be required:

(a) When connected to a vertical soil or waste and vent, or where the soil or waste and vent is inclined at an angle not greater than 60 degrees from the vertical and are connected to the soil or waste pipe at the same level.

(2) Two fixtures, other than toilets, may have one vent, provided that a sanitary cross be used for the waste connections, that the waste pipe be one size larger in diameter than the traps serving the

fixtures, that the seal of the traps be not more than 36 inches from the vent pipe, that the vent pipe be not smaller in diameter than that permitted for a single fixture, but in no case shall a waste or vent pipe be smaller in diameter than 1-1/2 inches, where fixtures are set back to back.

(3) Two toilets connected to a sanitary cross or double "Y," may have one vent pipe in diameter not less than 2 inches provided that the main vent stack has a diameter not less than 4 inches and the toilets be located not more than 42 inches from the vent, measuring from the floor line to the vent along the developed "Y" line of the waste pipe. A double cross shall be used for the waste connections for wall toilets and urinals with integral traps, or similar fixtures, when set back to back and having a single vent.

44-178 VENT OPENING TO BE PROVIDED. If any opening is left in a waste line for future extension to the plumbing system, an accessible opening shall be left in the vent system and such opening shall be tightly sealed with a metal plug. The above rule will not apply if provision is made for the vent pipe to be run exposed in or outside of the building.

44-180 BRANCH AND INDIVIDUAL VENTS. No vents shall be less than one and one-fourth inches in diameter. For one and one-fourth and one and one-half inch wastes the vent shall be of the same diameter as the waste pipe, and in no case shall a branch or main vent have a diameter less than one-half that of the soil or waste pipe served.

44-182 VENT PIPE GRADES AND CONNECTIONS. All vent and branch vent pipes shall be free from drops or sags and be so graded and connected as to drip back to the soil or waste pipe by gravity. Where vent pipes connect to a horizontal soil or waste pipe, the vent branch shall be taken off above the center line of the pipe, and the vent pipe must rise vertically or at an angle of not more than 60 degrees to the vertical to a point 6 inches above the fixture it is venting before offsetting horizontally or connecting to the branch, main waste, or soil vent.

Table 4

MINIMUM TRAP DIAMETER, MINIMUM DRAIN SIZES, MINIMUM VENT SIZES, FIXTURE UNIT VALUES

Type of Fixture	Fixture Units Waste	Minimum Size of Diameter In Inches		
		Trap	Drain	Individual Vent
Drinking fountain	1	1 1/4	1 1/4	1 1/4
Dental cuspidor	1	1 1/4	1 1/4	1 1/4
Glass filter	1	1 1/4	1 1/4	1 1/4
Coffee urn drip pan	1	1 1/4	1 1/4	1 1/4
Instrument sterilizer	1	1 1/4	1 1/4	1 1/4
Lavatory	1	1 1/4	1 1/4	1 1/4
Pantry sink	1	1 1/4	1 1/4	1 1/4
Steam table	1	1 1/4	1 1/4	1 1/4
Bar sink, PRIVATE	1 1/2	1 1/2	1 1/2	1 1/2
Bath tub, RESIDENCE	1 1/2	1 1/2	1 1/2	1 1/2
Laundry tray	1 1/2	1 1/2	1 1/2	1 1/2
Sink, RESIDENCE	1 1/2	1 1/2	1 1/2	1 1/2
Dishwasher, RESIDENCE	1 1/2	1 1/2	1 1/2	1 1/2
Garbage disposal	1 1/2	1 1/2	1 1/2	1 1/2
Bath shower, RESIDENCE	1 1/2	1 1/2	1 1/2	1 1/2
Sink, PUBLIC	2	2	2	2
Service sink	2	2	2	2
Soda fountain	2	2	2	2
Bath shower, PUBLIC	2	2	2	2
Bath tub, PUBLIC	2	2	2	2
Urinal, STALL	2	2	2	2
Urinal, WALL WASHOUT TYPE	3	3	3	3
Urinal, SIPHON JET	3	3	3	3
Dishwasher, COMMERCIAL	3	3	3	3
Service sink, Flushing rim	5	5	5	5
Clinic Sink, Siphon Jet	6	6	6	6
Clinic Sink, Wall type, Integral trap	6	6	6	6
Catch basin, 15" by 18"	5	5	5	5
Water closet,	6	6	6	6
Bedpan washer	5	5	5	5
Catch basin, 24" by 24"	6	6	6	6
Sewage ejector (Each 7 1/2 G.P.M. discharge)- 20 sq. ft. Drained area	1	1	1	1
2" Floor and Area drain	1	1	1	1
3" Floor and Area drain	3	3	3	3
4" Floor and Area drain	6	6	6	6
Urinal, Blow-out Type	5	5	5	5
Urinal, Pedestal	6	6	6	6

44-184 FLASHINGS FOR PLUMBING PIPES. Every plumbing pipe extending through a roof shall be flashed with sheet lead, annealed sheet copper, or galvanized iron. If counter-flashed, counter flashings shall not be turned over into any pipe smaller in diameter than 3 inch, but shall be soldered to the pipe or to a coupling or sleeve attached thereto.

44-186 LOCAL OR VAPOR VENTS. If vapor vents from sterilizers, bedpan washers and similar appliances are installed, they shall be extended to the

outer air separate from any other venting system in the building.

(1) Vapor vents from bedpan washers shall not be connected to vapor vents from sterilizers.

(2) A drain pipe shall be carried from the bottom of the vertical vapor vent to an open receptacle or floor drain to remove the condensation and prevent same from draining back into the sterilizers, unless the drain is incorporated in the fixture.

44-188 to 44-198 Reserved for Expansion

HOUSE DRAIN AND SEWERS

to serve the combined number of units.
 (2) The following table governs the size of pipe conveying rain or storm water, number of units allowed, and roof area in square feet when the fall is one-eighth, one-fourth, or one-half of one inch to the foot and vertical lines. Roof area of 20 Sq. Ft. shall count one waste unit.
 Table 8.

44-200 SIZE OF SOIL AND WASTE PIPES. The total number of fixture units installed on a soil or on a waste stack or branch of given diameter shall be in accordance with the following table:
 Table 6.

Table 7

SIZE OF VENTS OR VENT STACKS

Size of Pipe - - - - -	1-1/4	1-1/2	2	2-1/2	3	4
Maximum Fixture Units on Vents or Vent Stacks - -	2	8*	24	48	60	265
Maximum Length of Vent in Feet, Including Soil or Waste Branch or Stack -	50	65	85	105	212	300

*No 6-unit fixture vented with smaller than 2" pipe.

(1) The minimum fall for a building drain, or soil and waste branches shall be one-fourth of one inch per foot, except where local conditions prevent when a minimum grade of less than one-fourth of one inch per foot may be approved by the Plumbing Inspector in accordance with the table for horizontal drains.

44-202 SIZE OF PIPE AND FALL PER FOOT FOR RAIN OR STORM WATER DRAINS. All rain or storm water drains shall be governed by and shall conform in number of units to, and be not less in size than those given in the following table covering minimum size pipe, maximum number of units, and roof area in square feet.

(1) To find the diameter of a building drain or building sewer which is to serve jointly for carrying of sewage soils, waste, water, rain, and storm water, add the number of fixture units covering plumbing fixtures, appliances, and devices now served, or to be served, to the number of rain water units covering roof area now served or to be served as given in the table "Horizontal Drain Lines", Section 44-200, which will determine the diameter of pipe necessary

44-204 HOUSE SEWER IN MADE GROUND. The house sewer when laid in made or filled-in ground shall be vitrified clay pipe or cement pipe, laid on bed of approved grillage or concrete, or of cast-iron pipe, A.S.T.M. approved standards.

44-206 DRAINAGE BELOW SEWER LEVEL. In all buildings in which the whole or part of the house drainage and plumbing system thereof lies below the crown level of the main sewer, sewage or house wastes shall be lifted by approved artificial means and discharged into the house sewer.

44-208 SUMPS AND RECEIVING TANKS. All house subsoil drains shall discharge into an airtight sump or receiving tank so located as to receive the sewage by gravity. The sewage shall be lifted from the sump or receiving tank and discharged into the house sewer by pumps, ejectors, or any other equally efficient method. Such sumps shall be equipped with automatically operated devices which will discharge the sewage to the house sewer.

Table 8

MINIMUM		MAXIMUM NUMBER OF UNITS PERMITTED					
Size of Pipe in Inches	Slope of 1/8'' per Foot	Units	Sq. Feet	Units	Sq. Feet	Units	Sq. Feet
2		8	160	14	280	14	280
3		20	400	80	1,600	113	2,260
4		100	2,000	200	4,000	300	6,000
5		180	3,600	375	7,500	600	12,000
6		390	7,800	786	15,720	1,380	27,600
8		1,050	21,000	1,950	38,400	3,000	60,000
10		1,950	39,000	2,600	52,000	3,750	75,000
12		3,300	66,000	4,600	92,000	6,750	135,000

Slope of 1/4'' per Foot Slope of 1/2'' per ft. & Vertical

44-210 EJECTORS, VENTED. The soil or vent pipe leading to an ejector or other appliance for raising sewage or other waste matter to the street sewer where a water closet or closets are installed, shall be provided with a vent pipe not less than 2 inches in diameter, and where fixtures other than water closets are installed, the waste vent pipe shall be the same diameter as the waste pipe. The vent pipe from a receiving tank or sump shall extend to a point not less than one foot above the roof as provided in subsection (7) of ORS 447.120, independent of the sewer vent.

44-212 SUMP PUMPS FOR SUBSOIL DRAINAGE. When subsoil catch basins are installed below the sewer level, an approved sump pump may be used. Such sump pumps or any device for raising subsoil water shall discharge into an open ditch or storm water drain, but in no case shall it discharge into a cesspool receiving sewage or into a septic tank or drainage field from the septic tank. If discharged into the sewer, a horizontal swing check shall be installed in the discharge line.

44-214 ACID WASTES. Wastes containing acids may be connected to the building drain, provided the branch fitting is placed ahead of a fitting used for a toilet which is kept in service. Waste pipes, traps, fixtures and drains, in-

cluding the branch fitting in the drain, which receives such acids shall be of heavy lead or other acid proof material. Vents shall be cast-iron or acid resistant pipe and fittings.

44-216 to 44-228 Reserved for Expansion

STORM-WATER DRAINS

44-230 DRAINAGE OF YARDS, AREAS, AND ROOFS. All roofs and paved areas, yards, courts, and court yards shall be drained into the storm-water sewerage system or, if permitted by the City Engineer, the combined sewerage systems, but not into sewers intended for domestic sewage only. When drains used for this purpose are connected with the combined sewerage systems, they shall be trapped, provided however that traps will not be required on roof leaders and conductors, where the roof or gutter opening is located not less than 12 feet from a door, window scuttle, or air shaft. One trap may serve for all such connections, but traps must be set below the frost line or on the inside of the building. Where there is no sewer accessible, such connections shall be discharged into the public gutter, unless otherwise permitted by the proper authorities, and in such cases need not be trapped. When roof or

Table 6

HORIZONTAL DRAIN LINES			
DRAIN DIAMETER (inches)	SLOPE of	AT ONE LEVEL with	VERTICAL STACK
1 1/4	1/8" per foot	CONNECTION	2
1 1/2	1/8" per foot	CONNECTION	6
2	1/8" per foot	CONNECTION	16
2 1/2	1/8" per foot	CONNECTION	32
3-No w.c.	1/8" per foot	CONNECTION	50
4	1/8" per foot	CONNECTION	265
5	1/8" per foot	CONNECTION	600
6	1/8" per foot	CONNECTION	1,380
8	1/8" per foot	CONNECTION	3,000
10	1/8" per foot	CONNECTION	3,750
12	1/8" per foot	CONNECTION	6,750
1 1/4	1/4" per foot	CONNECTION	2
1 1/2	1/4" per foot	CONNECTION	6
2	1/4" per foot	CONNECTION	16
2 1/2	1/4" per foot	CONNECTION	32
3-No w.c.	1/4" per foot	CONNECTION	50
4	1/4" per foot	CONNECTION	265
5	1/4" per foot	CONNECTION	600
6	1/4" per foot	CONNECTION	1,380
8	1/4" per foot	CONNECTION	3,000
10	1/4" per foot	CONNECTION	3,750
12	1/4" per foot	CONNECTION	6,750

HORIZONTAL BRANCHES

HORIZONTAL BRANCHES			
DRAIN DIAMETER (inches)	SLOPE of	AT ONE LEVEL with	VERTICAL STACK
1 1/4	1/8" per foot	CONNECTION	2
1 1/2	1/8" per foot	CONNECTION	6
2	1/8" per foot	CONNECTION	16
2 1/2	1/8" per foot	CONNECTION	32
3-No w.c.	1/8" per foot	CONNECTION	50
4	1/8" per foot	CONNECTION	265
5	1/8" per foot	CONNECTION	600
6	1/8" per foot	CONNECTION	1,380
8	1/8" per foot	CONNECTION	3,000
10	1/8" per foot	CONNECTION	3,750
12	1/8" per foot	CONNECTION	6,750
1 1/4	1/4" per foot	CONNECTION	2
1 1/2	1/4" per foot	CONNECTION	6
2	1/4" per foot	CONNECTION	16
2 1/2	1/4" per foot	CONNECTION	32
3-No w.c.	1/4" per foot	CONNECTION	50
4	1/4" per foot	CONNECTION	265
5	1/4" per foot	CONNECTION	600
6	1/4" per foot	CONNECTION	1,380
8	1/4" per foot	CONNECTION	3,000
10	1/4" per foot	CONNECTION	3,750
12	1/4" per foot	CONNECTION	6,750

storm-water drains are connected to the sanitary sewer, they shall be connected direct to the street sewer independent of the house or sanitary sewer, and downstream from the sanitary sewer connection, provided that the drain up to and including a three-inch pipe laid at one-half of one inch fall per foot serving not more than 2,280 square feet of roof area may run to curb.

This table governs the size of vertical pipes used for rain or storm-water leaders. Roof area of 20 square feet shall count one waste unit. Table 9.

Table 9

Minimum Size of Pipe-inches	Maximum No. of Fixture Units Permitted	Roof Area Square Feet
2	14	280
3	113	2,260
4	300	6,000
5	563	11,260
6	960	19,000
7	1,350	27,000
8	2,000	40,000
9	2,750	55,000
10	3,750	75,000
11	5,000	100,000
12	6,750	135,000

44-232 INSIDE CONDUCTORS. (1) When placed within the walls of any building or run in an inner or interior court or ventilating pipe shaft, all conductors or roof leaders shall be constructed of cast-iron or galvanized wrought-iron or steel pipe.

(2) Connections at the roof for inside roof leaders shall be made by the use of flange-type cast-iron or brass-deck roof drains, or lead or copper stubs, the cast-iron or brass roof drains to have a sheet-lead or annealed sheet copper projection of not less than 8 inches and an approved expansion joint placed between the leader and the roof deck drain. The lead or copper stubs shall be soldered at the roof to a sheet-lead or annealed sheet copper flashing not less in size than 18 inches square, placed

on the roof, or to a sheet-lead or copper lined box, or to an inside metal gutter constructed in the roof of an all metal building and connected to the roof leader by means of a calked or screwed joint.

(3) The lead or copper stub shall be not less in length than 15 inches, including brass or copper ferrule or solder nipple which shall be joined to the lead or copper stub by a wiped solder joint.

44-234 OUTSIDE CONDUCTORS. Outside conductors or down-spouts of sheet metal shall connect with the cast-iron drain. Cast-iron pipe shall extend above the grade line.

44-236 VENT CONNECTING WITH CONDUCTORS PROHIBITED. Conductor pipes shall not be used as soil, waste, or vent pipes, nor shall any soil, waste or vent pipes be used as conductors.

44-238 OVERFLOWS. Overflow pipes from cisterns, supply tanks, expansion tanks, and drip pans shall not connect directly with any house sewer, house drain, soil, waste or vent pipe.

44-240 SUBSOIL, FOUNDATION, CLEAR WATER, AND ABSORPTION TILE DRAINS. Where subsoil drains are placed under the cellar floor or used to encircle the outer walls of a building, the same shall be made of open jointed drain tile or earthenware pipe, not less than 4 inches in diameter, and shall be properly trapped and protected against back pressure by an automatic back-pressure valve accessibly located ahead of the house sewer or drain. Subsoil drain may discharge through a cellar drain.

44-242 SUBSOIL DRAINS BELOW SEWER LEVEL. Subsoil drains below the main sewer level shall discharge into a sump or receiving tank, the contents of which shall be automatically lifted by means of an approved type ejector and discharged into the drainage system above the cellar. The discharge line from any receiving tank shall have a horizontal swing check in the line.

44-242 to 44-248 Reserved for Expansion

REFRIGERATOR, SAFE, AND SPECIAL WASTES

44-250 FIXTURE PERMITTED TO CONNECT. No waste pipe from a refrigerator or ice box floor drain, or any other receptacle where food is stored shall connect directly with any house drain, soil, or waste pipe. Such waste pipes shall in all cases empty into an open fixture that is properly supplied with water, connected, trapped, and vented, the same as other fixtures, or they may discharge over a cellar floor drain, but their ends must be left open. Such waste connections shall not be located in inaccessible or unventilated cellars.

44-252 REFRIGERATOR WASTES. Refrigerator waste pipes shall be not less than one inch for one opening, one and one-fourth inches for two openings, one and one-half inches for six openings and for six to twelve openings must not be less than 2 inches, and shall have at each opening a trap, and cleanout at angles, so arranged as properly to flush and clean pipe. Such waste pipes shall be continued not less than full size through the roof, except where such fixtures are located in the basement or first floor.

44-254 OVERFLOW PIPES AND DISCHARGE FROM WATER-COOLED MOTORS AND COMPRESSORS. Pipes from a water supply tank or exhaust from a water lift, water-cooled motor or compressor shall not be directly connected with any house drain, soil, or waste pipe. Such pipe shall discharge over an open fixture or discharge as for refrigerator wastes. The orifice or discharge pipe shall terminate at least twice the diameter of orifice above spill line of fixture.

44-256 HOT WATER, STEAM BLOW-OFFS OR EXHAUST. Hot water or steam or exhaust blowoffs shall enter a separately trapped tank or basin, before entering house drain or sewer and such tank or basin must have an air-tight cover and be vented through roof with not less than a two-inch vent pipe.

44-258 TOILET ROOM FLOOR CONSTRUCTION IN ALL BUILDINGS EXCEPT DWELLINGS. Toilet room floors in all buildings except dwellings shall be constructed of non-absorbent materials.

44-260 WATER HEATERS. All water heaters shall be properly connected to the hot and cold water supply. Every water heater using gas or other fuel shall be connected to proper size flue or chimney, extending not less than 2 feet above roof and properly flashed. Such flue should not terminate within 6 feet of a door or window. Installation shall conform to local or state fire protection regulations.

44-262 HYDRAULIC ELEVATORS, MOTORS AND MACHINERY. The discharge from a hydraulic elevator, a hydraulic motor, or other hydraulic machinery shall be connected indirectly to or with the building drain, building sewer, private or public sewer by means of an open receiving tank, which shall be provided with a trap not exceeding 4 inches in diameter. The receiving tank shall have a sufficient capacity to hold a full discharge from a single operation of the elevator, motor or machinery for which the tank is provided. The end of any discharge pipe spilling over a receiving tank shall have a minimum air gap between the end of the discharge pipe and spill line of the receiving tank twice the diameter of the discharge pipe.

44-264 SWIMMING POOLS, WADING POOLS, BAPTISMAL POOLS. Plans and specifications for swimming pools, wading pools and baptismal pools shall be submitted to the State Board of Health for approval.

44-266 to 44-278 Reserved for Expansion

LIGHT AND VENTILATION FOR BATH AND TOILET ROOMS

44-280 GENERAL. Public and private bath and toilet rooms containing water

closets, bath tubs, urinals, lavatories, showers, shower baths or combinations thereof, shall be located in a room lighted and ventilated by means of natural light and ventilation, or artificial light and gravity ventilation, or artificial light and ventilation as herein described.

44-282 NATURAL LIGHT AND VENTILATION. All bath, water closets and toilet rooms ventilated by natural means shall be provided with not less than one window or skylight with an area of not less than one-eighth of the floor area and with not less than 45 per cent of the window area openable. In no case shall the window sash area be less than 3 square feet. Windows or skylights shall open on a street, yard, or court.

44-284 GRAVITY AND MECHANICAL VENTILATION. (1) All bath, water closet and toilet rooms not lighted or ventilated by natural means shall be provided with artificial light and shall be ventilated by a gravity or continuously operating forced air system. Artificial light shall be electrical illumination sufficient to provide ten-foot candles of illumination over the entire floor area. A gravity ventilation system shall provide a duct of 25 square inches, cross sectional area for each fixture and in no case less than 50 square inches.

(2) When more than one bath, water closet, or toilet room connected to a duct in the top story served by the duct, then the ducts from each such room shall be individual and separate for not less than the first 8 feet of vertical height above the opening. The duct or ducts shall extend through the roof and ventilate into the open air. Ducts shall be kept open at all times. No duct shall be less in cross sectional area than 75 per cent of the combined areas of the ducts connected to it. Combined ducts shall increase at that rate from the lowest portion of the duct to the top of the duct. Ducts shall be of metal for their entire length; and the length of the horizontal portion, if any, shall not exceed 25 per cent of the length of the vertical portion of that duct. The

ducts shall be properly hooded and provided with a siphon or rotary type ventilator which shall, with an outside wind velocity of 6 miles per hour, exhaust not less than 100 cubic feet of air per hour for each square inch of cross section of the riser or risers connected thereto. Ventilators shall be placed above the roof.

(3) The unobstructed cross sectional area of the duct or ducts and of any grillage at the openings shall be at least equal to 1 square inch for each square foot floor area in the room or compartment which is ventilated by the duct or ducts, except that in no case shall the area be less than 50 square inches.

(4) Where duct ventilation is used, an air intake shall be provided from the outside air, from a corridor, from a hall, or from a room, into the water closet or bathroom which is ventilated by the vent duct or ducts and shall be at least as great in area as the vent duct or ducts from such room or compartment.

(5) When mechanical ventilation is used, arrangement of ducts and grilles shall be the same as given above. The mechanical ventilation equipment shall be of a size that will produce at least six changes of air per hour in every room connected to the system. The system shall be so designed that if the fan is not operating the duct system will ventilate by means of natural ventilation; and the mechanical equipment shall not be installed in any way so that the required areas of ducts or grilles are cut down below the minimum required when the mechanical system is not operating.

(6) The duct and grille sizes may be reduced 50 per cent in an area where mechanical ventilation is provided which will produce at least six changes of air per hour in every room depending upon such ventilation. The top of the duct, when mechanical ventilation is provided, shall not be required to have a rotary or siphon type of ventilation but shall be hooded. The mechanical ventilating device shall be operated at all times after occupancy of building has begun.

44-286 to 44-288 Reserved for Expansion

MATERIAL AND WORKMANSHIP

44-290 COPPER PIPE. (1) Type K or L hard-tempered copper tubing may be used in waste and vent lines up to and including the two-inch size. Pipe shall be I. D.

(2) Copper Fittings. Fittings used in waste lines shall be of wrought, copper or cast brass and be of the drainage type.

(3) Joints in Copper Pipe. Fifty fifty solder and proper flux shall be used in making the joints. No flared joints, short bends nor kinks shall be allowed in any pipe. Copper tubing shall be stamped type K or L at intervals. Joints between copper tube waste and cast-iron soil pipe or fittings shall be made with approved calking sleeve soldered to the tube.

44-292 LEAD PIPE, TRAPS, STUBS, AND BENDS. Lead pipes shall be of 99.99 per cent pure first quality drawn lead, having a wall thickness of not less than one-eighth of one inch and shall be of not less weight than that given in the following table. Sheet lead shall be made of the same quality lead as lead pipe. Table 10.

Table 10

INTERNAL DIAMETER

Inches	Weights per foot	
	Pounds	Ounces
1	2	--
1-1/4	2	8
1-1/2	3	8
2	4	12
3	6	--
4	7	14

44-294 URINALS, CONSTRUCTION AND FLUSH OF. (1) Every urinal shall be constructed of material impervious to moisture and which will not corrode under action of urine. No metal other than copper, brass or non corrosive metal shall be used in any part of such fixture. Each urinal shall be flushed with clear water either from a tank through a pipe

of ample size to provide a clean and sanitary flushing of the fixture (the flush to be automatically or manually operated) or, if connected directly to the water supply system, all siphon jet urinals shall be flushed with an approved type flush valve including siphon breaker on the flush placed at least 4 inches above the urinal, and all urinals shall have a loose key stop on the water supply, which shall be built expressly for use in the flushing of the urinals. When such a method is used, the flush valve shall be connected to a pipe of the water system of ample size to deliver a flush of clear water equal to the flushing specified above. Not less than one inch water supply pipe is to be used for flushometer for siphon jet urinals.

(2) A group or battery of not more than 4 urinals located on the same floor may be flushed with water from a tank by an automatically operated valve to arrange that flushing of the fixtures will take place at intervals of not more than 30 minutes. A group or battery of urinals on the same or on different floors may be flushed in conjunction with toilets from the same tank where such tank is expressly provided for the storage of water for the flushing of such fixtures; but the flushing of each fixture shall be by means of an approved flush valve, including siphon breaker and stop constructed as required in subsection (1), the flush valve to be connected to a pipe or piping leading from the tank ample in size to provide a flushing of clear water, as specified in subsection (2).

44-296 TYPES OF URINALS NOT PERMITTED. Range or trough urinals, wall urinals which do not have integrally cast traps with open water seal, urinals which do not have integrally cast flushing rims, urinals constructed of, or which have parts constructed of a corrosive metal or materials which are not impervious, shall not be installed. Stall urinals without flushing rims will not be allowed.

44-298 VACUUM BREAKER REQUIREMENTS. To prevent back-siphonage, vacuum breakers may be necessary on various plumbing fixtures in which it is

impossible to obtain safe air gaps between inlet and spill line. When used, vacuum breakers must meet the requirements listed below.

- (1) They must be installed on the discharge side of all control valves.
- (2) The lowest part of the breaker should be at least 4 inches above the fixture top.
- (3) They shall not permit water to rise above 1 inch in the fixture connection under any vacuum condition in the water pipes.
- (4) The air ports must be open to the atmosphere at all times, except when the fixture is being used.
- (5) The mechanical parts in the device should be of a minimum number and all such parts should be actuated every time the fixture is used.
- (6) The device should be constructed so that inspection and examination when installed shall be relatively easy.
- (7) The device should not depend for operation on any springs.
- (8) The devices should not be located so that under any circumstances the air inlet ports get submerged in water or are so placed as to be difficult to inspect.
- (9) All parts must be made of non-corrodible material.
- (10) The air inlets of any vacuum breaking arrangement shall not be used to convey water nor shall they be so located that in ordinary fixture operation they will become splashed with polluted water.

44-300 to 44-398 Reserved for Expansion

NOTE: CROSS CONNECTIONS AND BACK-SIPHONAGE FROM PLUMBING FIXTURES. In spite of modernization of housing facilities and improvements in environmental sanitation, pollution of water supplies in schools, buildings, and dwellings may still occur through cross-connections or back-siphonage due to faulty plumbing. The danger of polluting drinking water supplies with organisms that produce typhoid fever, dysentery and other water borne diseases may be averted if interior water distribution systems and plumbing are properly installed and equipped with adequate safeguards.

A cross-connection is defined as an

interconnection between a drinking water supply and an unsafe water supply, or a connection between a water distribution pipe and any fixture installed in such a manner that unsafe water, waste or sewage may be drawn into the drinking water system. Cross-connections may be divided into two classifications as follows:

- (1) Connections in which pure and impure water are separated by gate valves, check valves, or both.
- (2) Connections which permit pollution to enter when the pressure in the drinking water system falls below atmospheric pressure, thus creating a vacuum. This process of water pollution is known as back-siphonage.

Cross-connections of type (1) often are found in public water supplies in which dual sources of water are available, but they may also be found in schools and buildings having two different water supplies. For example, an institution is supplied with safe water from the city distribution system, but, for additional fire protection, emergencies, etc., has an auxiliary supply which may be unsafe for domestic use. Under the conditions mentioned above the impure water from the auxiliary supply can find its way to the safe water supply system and can be the cause of serious illness. This type of cross-connection between a safe and unsafe water supply protected only by gate or check valves, or both, is prohibited in Oregon as well as in many other states.

The second class of cross-connections, refers chiefly to connection between water supply lines and plumbing fixtures where- by household wastes, water from lavatories, closet bowls, bath tubs, etc., may be siphoned from these fixtures to the water supply system. Back-siphonage may occur when the pressure in the interior water distribution system drops below atmospheric pressure. Ninety per cent of all back-siphonage hazards are created by excessive pressure loss due to improper water piping system design and workmanship.

After pollution enters water piping, it may be distributed to all parts of the system in the building if the back-siphonage is due to a drop in pressure caused

by water flow from a lower floor fixture or outlet. It is even possible for this pollution to travel as far as the street water main if large quantities of water are used from the main, or if the main is shut off for repairs and drained. Such a condition may also occur when heavy withdrawals of water from water mains are made by fire fighting equipment.

Since it is possible, through an inter-connection for sewage to be transferred from a plumbing fixture to a drinking water system either by gravity or by back-siphonage, it is quite evident that every effort should be made to eliminate any possibility for the existence of such a condition.

State Board of Health rules and regulations require that on new plumbing installations all cross-connections be eliminated where possible. Plumbing fixtures which will permit back-siphonage because of faulty construction or installation, must be protected by approved vacuum breakers installed on the fixture side of the control valve.

The responsibility of the building owners for the maintenance of a healthful environment for their tenants cannot be ignored. It has been the tendency of the courts in recent years to award substantial damages against persons responsible for the maintenance of water pollution hazards, which were knowingly permitted to exist and which caused illness or death by reason of water pollution.

Faulty workmanship on future plumbing and interior water distribution systems can be prevented if the owners of buildings and dwellings will insist that all sanitary appliances be free from possible cross-connections, or inter-connections, that installations comply with state and local plumbing codes in every respect, and that such installations be made only by licensed artisans qualified to install safe plumbing facilities.

New installations must be free of cross-connections. Existing cross-connections that are serious water supply pollution hazards should be corrected at once. Connections in which pollution of drinking water may be a remote possibility should be corrected as soon as possible.

PLUMBING FIXTURE CROSS-CONNECTIONS

The following is a list of plumbing fixtures and related appliances that come under the classification of what is commonly known as plumbing fixture cross-connections and that may under certain operating conditions pollute a safe drinking water supply. Obviously they are not all equally apt to do so.

1. Toilet bowls equipped with flushometer valves, or tanks with submerged float operated ball cocks.
2. Frost proof toilets, with or without tanks.
3. Hopper closets with hand operated flush valves.
4. Seat acting toilets with flush valve attached to bowl.
5. Bedpan washers.
6. Bidets.
7. Sterilizers with water inlets subject to pollution by gravity or siphonic action.
8. Therapeutic baths with inlets below rim of fixture.
9. Water ejectors.
10. Cellar drainers of the water jet type.
11. Bathtubs with inlets below rim of the fixture or waste overflow.
12. Wash basins with inlet below the fixture rim.
13. Drinking fountains with drinking orifice below the rim of the fixture.
14. Glass washing appliances connected to water supply piping.
15. Industrial vats with water supply connections below the top of the vat.
16. Laundry tubs with faucets below the rim.
17. Sinks with faucets or water inlets below the rim.
18. Dish washers with water inlets below the rim.
19. Cuspidors with water supply connections.
20. Dental cuspidors with water connections.
21. Hospital or clinic sinks or like equipment with water or faucet connections below the fixture rim.
22. Combination faucets with one supply safe and the other unsafe.
23. Industrial machinery or appliances

with water or waste connections.

24. Pump cross-connections, one safe and the other unsafe.

25. Hot water supply from an unsafe cold water source.

26. Automatic sewer siphon flush tanks with inlet below the water line.

27. Hydrants so placed and constructed that polluted ground water may drain into the water supply line.

28. Swimming pools with water supply inlets below overflow line.

29. Bathtub rubber hose shower heads.

30. Rubber hose with hand control or self-closing faucets attached, as used in

connection with industrial vats, tanneries, etc.

31. Pump pits with drains to cesspools or pump pits permitting polluted surface water to leach into the pit, and into the well.

32. Leaky water mains and services near sewers.

33. "Common" cross-connections between pipes carrying safe and unsafe water.

NOTE: This list may not be complete as it relates to special appliances, industrial process piping, etc.

TRAILER PARK PLUMBING

Rules Pertaining to Installation and Maintenance

44-400 SUBMISSION OF PLANS. All plans submitted for and construction of any sewage and waste disposal facilities or changes in existing facilities serving mobile homes after the effective date of these regulations shall conform with the following requirements:

44-402 PARK DRAINAGE FACILITIES FOR TRAILERS. A drainage system shall be provided to receive and convey sewage and other household liquid wastes from mobile homes and outside receptacles to an approved sewage disposal system or to a community sewer system.

44-404 DRAINAGE FACILITIES FOR BUILDINGS. Sewage and other liquid wastes from buildings on the premises shall be conveyed through building (house) sewers constructed separately from those sewers which serve mobile homes except as provided in Section 44-418.

NOTE: Plans for swimming pools must be submitted to the State Board of Health for review and approval before construction is begun. Such plans shall include the source of water supply and the means of disposal of waste water from the pool.

44-406 SEWER AND DRAINAGE PIPE MATERIAL. (1) Sewer mains (main lines) shall be constructed of concrete, vitrified-clay, cast-iron or cement-asbestos pipe unless the context of the following rules requires otherwise. Any individual sewer serving an individual mobile home shall be constructed of material which conforms with the requirements of ORS 447.110 and State Board of Health rules pertaining to an individual house sewer, unless the context of the following rules requires otherwise. Sewer pipe fittings shall be of the same type material as the pipe which they are used in conjunction with.

(2) Extra-heavy cast-iron pipe shall be used for all sewer and drainage lines, with less than three feet of cover located in roads or driveways, or where they are otherwise subject to damage

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by traffic, except that service weight cast-iron pipe may be used where the pipe is protected by concrete pavement.

44-408 LOCATION OF SEWER AND WATER PIPES. Whenever it is necessary for sewer and water lines to cross each other, the crossing shall be approximately at a ninety degree angle and the sewer shall be located at least three feet below the water line, or the sewer shall be constructed of cast-iron soil or water pipe for a distance of at least ten feet out from each side of the water line. Cast-iron pipe joints must be mechanical or calked lead joints. Parallel water and drainage lines serving mobile homes shall be at least ten feet apart horizontally.

44-410 GRADE. The absolute minimum grades for sewer and drainage lines shall be as follows: Table 11.

Table 11

Inside pipe diameter	Slope per 100 feet
4 inch.....	12-1/2 inches
6 inch.....	12-1/2 inches
8 inch.....	5 inches

(1) The minimum grade for any branch serving not more than one mobile home shall not be less than one-fourth inch per foot.

44-412 SIZE OF SEWER AND DRAINAGE PIPE. The minimum size of sewers serving mobile homes shall be determined by the number of spaces served as follows: Table 12.

Table 12		
Max. No. of spaces served	Length Limit	Min. inside diameter of pipe
10 on a line	200 feet	4 inch
50 on a line	none	6 inch
200 on a line	none	8 inch

44-414 JOINTS. All sewers and drainage lines shall be constructed with watertight joints and shall be laid to an even grade and true alignment. Changes in

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alignment or grade shall be made either at manholes or with approved fittings.

44-416 FITTINGS. (1) All bends shall be curve or long-sweep bends with patterns such as one-sixteenth bends (22-1/2 degrees), one-eighth bends (45 degrees), one-sixth bends (60 degrees), and long-sweep quarter bends. Bends constructed with abrupt angles shall not be used.

(2) All connections to four-inch, six-inch and eight-inch lines shall be by means of forty-five degree Wye branch fittings or by junction in manholes.

44-418 MAN HOLES AND CLEANOUTS.

(1) A manhole shall be provided at each junction point wherever a drainage line or sewer which serves only mobile homes is connected into a private common sewer to which both building and mobile home sewers or drainage lines are tributary.

(2) Manholes or cleanouts shall be provided for four-inch and six-inch lines at or within one hundred feet of every change in alignment or grade or at intervals of not more than two hundred feet if the sewer is laid straight. Manholes or cleanouts shall be provided near the upper end of all lines that are more than fifteen feet long. Manholes shall be provided in sewers that are eight inches in diameter or larger at every change in direction, grade or size of sewer, at every junction of two or more sewers, at the upper end of all lines and at intervals of not more than five hundred feet.

(a) Manholes constructed in sewer lines shall have cast-iron covers at least 20 inches in diameter. The inside diameter at the bottom of manholes shall not be less than 42 inches.

(b) All cleanouts shall be four-inch iron body with iron pipe size threads and heavy brass plugs with at least eight threads. They shall be installed above grade and shall be connected to the lines by means of forty-five degree Wye branch fittings.

44-420 ABANDONED DRAIN LINES.

Whenever the use of a sewer or drainage line is to be discontinued the line

must be disconnected and sealed properly at the lowest possible point. Disconnected and out of service lines must be reported in writing to the health officer having jurisdiction.

44-422 PLUMBING VENTS. LOCATION OF AND DISTANCE BETWEEN VENTS.

Each drainage system shall have one or more plumbing vents. Plumbing vents shall be installed in a vertical position and shall be located:

(1) On the main line within fifty feet of the inlet to a septic tank or cesspool.

(2) On the main lines within one hundred feet of the junction with the lowest lateral.

(3) Not more than fifteen feet downstream from the sewer service connection located at the upper end of each drainage line.

(4) At intervals not to exceed 200 feet.

44-424 SIZE OF MAIN AND OTHER VENTS. (1) Each drainage system and each line exceeding 200 feet in length shall have at least one four-inch vent.

(2) The size and number of vents shall be determined by the size and length of drainage lines as follows: Table 13.

Table 13

Size of Sewer	Max. Length of Line to be Vented	Min. Size of Vent Above Ground
4 inch	100 feet	2 inch*
4 inch	200 feet	3 inch*
6 inch	200 feet	3 inch*
8 inch	200 feet	4 inch

*Use reducer above grade

44-426 VENT MATERIALS. All vent pipe installed below ground must be four-inch cast-iron soil pipe. Vents installed above ground shall be cast-iron, galvanized wrought iron or galvanized steel pipe.

44-428 VENT LOCATION RESTRICTIONS. Vents shall terminate at least twelve feet above the ground surface and shall be located at least twelve feet from the property line. Vents within twelve

feet of buildings shall extend to a point at least one foot above the roof of the building and shall terminate at least twelve feet horizontally from or two feet above any ventilator, door, or window of the building.

44-430 VENT SUPPORTS. All vents shall be effectively supported.

44-432 TRAPS REQUIRED AT INDIVIDUAL TRAILER SPACES - MATERIALS. Each drainage line hereafter installed to serve an individual space for a mobile home shall terminate at a four-inch cast-iron soil P trap with a soil pipe riser that extends to a point above grade. The exposed portion of the riser shall be adequately protected.

(1) The inlet above each trap shall be equipped to receive a clamped on water-tight flexible tube and shall be effectively capped when not in use.

(2) Each trap at individual spaces shall be installed apart from and at an elevation above the Wye branch in the sewer line to which it drains (cast-iron sewers included), and the discharge side of the trap shall be extended with cast-iron soil pipe and fittings for a developed distance of not less than five feet, including the length of the trap.

44-434 DEPTH OF TRAP BELOW GRADE. Traps must be set level at a depth below the frost line. (Two feet of earth cover over traps is sufficient in most areas). The invert of the spigot end of a trap shall in no case be less than fifteen inches below grade.

44-436 STORM WATER DRAINS TO BE SEPARATE FROM SANITARY SEWER SYSTEM. No roof, foundation or surface drainage, storm water or water used strictly for air conditioning shall be discharged into the park sanitary sewer system.

44-438 to 44-448 Reserved for Expansion

44-450 WATER DISTRIBUTION SYSTEM - OBJECTIVE. Each trailer park water distribution system shall be so designed as to provide a pressure of not

less than twenty pounds per square inch at each trailer space under normal operating conditions.

44-452 WATER SYSTEM CONSTRUCTION AND MAINTENANCE. Construction and maintenance of water supply systems shall conform with all pertinent rules of the State Board of Health.

44-454 DEPTH OF WATER LINES. Water distribution lines shall be installed below the frost line. The minimum earth cover shall be two feet.

44-456 WATER PIPE MATERIALS. (1) All pipe and fittings installed in water systems shall be new material.

(2) Main lines which convey water for drinking, domestic or irrigating purposes shall be of galvanized wrought iron or steel, brass, copper, cast-iron or approved plastic water pipe. Approved plastic water pipe means that which has been approved by the National Sanitation Foundation Testing Laboratory, Inc. and has the "NSF" Seal of Approval stamped on the pipe.

(3) All plastic water supply pipe installations shall be below ground outside of and at least ten feet away from any building or stationary structure.

(4) Branch lines which convey water to supply outlets at individual mobile home spaces shall be of galvanized wrought iron or steel, brass or copper pipe. (5) Fittings installed in water lines shall be of the same type material as the pipe with which they are used. However when galvanized wrought iron or steel pipe is used, the fittings shall be of galvanized malleable iron. Brass fittings may be used with copper pipe.

44-458 WATER PIPE SIZE. Each service pipe which supplies water to an individual outlet for a mobile home shall be not less than three-quarter (3/4) inch size. The size of valves at individual outlets shall be not less than three-quarter (3/4) inch.

44-460 SAFEGUARDS FOR PROTECTION OF DOMESTIC WATER SUPPLY.

(1) Any mobile home water supply outlet

shall be covered with a water-tight screwed on metal cap whenever it is not in service.

(2) All outlet valves shall be at least ten feet away from drain line connections and shall be located so that aspiration or back flow cannot cause ground or surface water to enter the water supply system.

(3) The use of ordinary stop and waste valves is prohibited wherever aspiration or back flow into the potable water system is potentially possible.

(4) Each new water system and each water line which is extended or altered shall be chlorinated in accordance with the recommendations of the State Board of Health before being placed in service.

44-462 DUAL WATER SYSTEMS. (1) Two or more sources of water supply other than public supplies shall not be interconnected physically unless such a connection has been authorized by express written approval of the health officer under whose jurisdiction the trailer park has been licensed to operate.

(2) Any permanent system of pipe which conveys water intended for irrigation purposes in trailer parks shall be supplied only from a source that has been approved by the health officer.

NOTE: The quality of all water used in a trailer park should conform at all times with the rules of the State Board of Health pertaining to drinking water.

(3) Controls and water outlets connected to any system which is independent of the drinking water shall be accessible to authorized personnel only.

44-464 CROSS-CONNECTIONS IN MOBILE HOMES. When it is evident that there exists, or may exist, a cross-connection hazard in the plumbing system of any mobile home, the operator or person in charge of the trailer park shall immediately disconnect the mobile home water supply and sewer connection from the trailer park systems.

44-466 BUILDINGS AND STRUCTURES

WITHIN TRAILER PARKS. (1) All installations of plumbing and drainage in buildings and stationary structures and all water supply, drainage, waste and sewage disposal installations within or serving such buildings or structures shall be made in accordance with the requirements of ORS 447.010 to 447.140 and the rules of the State Board of Health which pertain to plumbing and sewage disposal.

(2) Plumbing facilities shall be maintained in accordance with the provision of ORS 447.140 and applicable rules of the "Board".

44-468 to 44-488 Reserved for Expansion

PLUMBING FACILITIES FOR OCCUPIED TRAILERS NOT IN TRAILER PARKS

44-490 PLUMBING AND DISPOSAL OF DOMESTIC SEWAGE. (1) All plumbing facilities for occupied trailers and mobile homes situated on private land outside of trailer parks shall be designed, constructed, and maintained in accordance with the rules pertaining to plumbing in trailer parks.

(2) All sewage and waste disposal facilities shall be designed, constructed, operated, and maintained in accordance with the rules of the Board governing the disposal of domestic sewage, OAR 333-41-005 to 41-045. (Copies obtained from your county health department or the Oregon State Board of Health upon request.) Reference ORS 446.125.

Note: Plumbing facilities, as used in section 44-490, applies to all such facilities provided for the purpose of serving one or more trailers excluding the plumbing equipment contained within such trailers. Such plumbing facilities include water distribution pipes, drainage pipes, and vent pipes with their devices, appurtenances, and connections provided to convey: (1) a supply of water to such trailer, and (2) the discharge of liquid borne waste from trailer to point of disposal.

For information relating specifically

to plumbing equipment contained in trailers in Oregon, refer to ORS 446.155 to 446.165 and OAR Chapter 333, sections 45-006 to 45-100. 44-492 to 44-498 Reserved for Expansion

SEWAGE CESSPOOL WORK

44-500 DEFINITIONS. As used in sections 44-500 to 44-528 (pertaining to sewage-cesspool work) unless otherwise required by context:

(1) "Board," means the State Board of Health.

(2) "Health Officer" means:

(a) The county health officer or his duly authorized representative in all counties except the counties which are within an established health district.

(b) The district health officer or his duly authorized representative in Health districts comprised of two or more counties.

(c) The city health officer or his duly authorized representative in districts having a full time health officer.

(3) "Operator," means a person, firm or corporation engaged in the business of furnishing labor and material or labor only for sewage-cesspool work.

44-502 REGISTRATION AT LOCAL HEALTH DEPARTMENT REQUIRED.

Each person, firm or corporation before engaging in sewage-cesspool work in Oregon shall register his name, firm name, state registration number, business location and address with the appropriate health officer in whose area of jurisdiction the operator proposes to engage in such work.

44-504 CONSTRUCTION - NOTIFICATION TO LOCAL HEALTH DEPARTMENT REQUIRED. Before starting construction of any cesspool, septic tank, disposal field or dry well, or making any alterations to such existing installations, he shall notify the appropriate health officer for the area in which the work will be performed, and if required, submit for review and approval a detailed plan of the work to be done.

Where inspection is required, the health officer shall have at least three working days notice that work is ready for inspection.

44-506 CONSTRUCTION - REGULATION MANDATORY. Sewage cesspools,

septic tanks and disposal facilities hereafter constructed or installed shall be in accordance with the "Regulations Governing the Disposal of Domestic Sewage and Other Household Wastes" as adopted by the State Board of Health, OAR 333-41-005 to 41-045.

44-508 DISPOSAL OF PRIVY, CESSPOOL, AND SEPTIC TANK CONTENTS.

(1) No part of the contents of any privy, cesspool, or septic tank shall be discharged upon the surface of the ground unless approved by the health officer having jurisdiction in the area. Final disposal shall be by incineration, burial, or other means approved by said health officer.

(2) The contents of privies, cesspools, and septic tanks shall be transported in a manner that will not create a nuisance or health hazard.

44-510 SEWAGE PUMPERS - REGISTRATION AND PERMITS REQUIRED. (1) No person shall engage in the pumping, transportation and disposal of the contents of privies, cesspools, or septic tanks and other sewage without first obtaining a registration certificate from the State Board of Health as required by ORS 447.033 and then obtaining a written permit from the appropriate health officer for the area in which the privies, cesspools, or septic tanks are located and from the appropriate health officer for the area in which final disposal of the material will take place. The permit shall designate where and in what manner the disposition of the material shall be carried out.

(2) Any permit granted by a health officer to operate a truck in the business of pumping or transporting sewage shall be automatically cancelled if such permit were obtained through error, misrepresentation or fraud, or if the holder thereof fails to comply with the provisions of the laws and rules which pertain to such operations.

44-512 EQUIPMENT - DESCRIPTION REQUIRED. Every person, firm and corporation proposing to engage in the business of operating trucks equipped to

pump and transport the contents of privies, cesspools, or septic tanks and other sewage shall file a written description of all such equipment with the Oregon State Board of Health on printed forms provided by the board. The description of all such trucks shall be submitted to the board with the sewage-cesspool worker's bond, application and fee for registration.

44-514 TRUCKS - IDENTIFICATION.

The name under which the business is conducted and business address of the sewage-cesspool worker shall be painted on each side of every tank truck operated by him. The lettering shall be at least three inches high. Labels issued by the board for each current registration period shall be displayed at all times on both sides of each tank truck while it is being operated in Oregon by a registered sewage-cesspool worker. Such labels shall be placed on cab doors below windows on both sides of vehicle and shall be maintained in a legible condition.

44-516 EQUIPMENT - INSPECTION OF. Equipment shall be subject to inspection by a representative of the State Board or other duly authorized person at any reasonable time and upon request shall be available for inspection at a designated location.

44-518 MINIMUM SPECIFICATIONS FOR SEWAGE-CESPOOL PUMPING EQUIPMENT. All sewage cesspool pumping equipment shall comply with the following requirements except as provided in section 44-520.

(1) Tanks and other containers used for the conveyance of the contents of cesspools, septic tanks, or privies shall have a liquid capacity of at least 550 gallons, be of water tight metal construction, fully enclosed, strong enough for all conditions of operation, and shall be provided with suitable covers so that there will be no spillage.

(2) The tank truck shall be equipped with either a vacuum or other type of pump which will not allow any seepage from the diaphragm or other packing glands and which will be self priming.

(3) Sewage hose on trucks shall be thoroughly drained, capped and stored in such a manner that they will not create a health hazard or nuisance.

(4) The discharge nozzle shall be so located that there is no flow or drip on to any portion of the truck.

(5) Discharge nozzle shall be threaded and shall be capped when not in use.

(6) Spreader gates on tank shall be prohibited.

(7) Each truck shall at all times be supplied adequately with disinfectant and implements needed for cleanup purposes.

(8) Sewage-cesspool pumping equipment shall not be used for any other purpose.

44-520 SPECIFICATIONS FOR PUMPING EQUIPMENT - EXCEPTION. The board may grant permission to continue to operate existing equipment which does not conform with the requirements of section 44-518 provided that such equipment was actually being operated by a sewage-cesspool worker registered in Oregon at the time that these rules became effective.

44-522 EQUIPMENT OPERATION AND MAINTENANCE. (1) When in use, sewage-cesspool pumping equipment shall be so operated that it will not create a health hazard or a nuisance.

(2) When not in use and parked, all such equipment shall be covered or protected so as not to cause an odor nuisance or facilitate the breeding of flies.

(3) Equipment shall be maintained in a reasonably clean condition at all times.

44-524 PERSONNEL RESPONSIBILITIES. (1) The person or persons doing the actual cesspool, septic tank or privy cleaning operation shall avoid spilling, pumping or dumping the contents of the said cesspool, septic tank or privy in the immediate vicinity of the operation or the highway when transporting the contents for dumping. Any accidental spillage on the ground around the operation shall be cleaned up by the operator and disinfected in such a manner as to render it harmless to humans and animals.

(2) All personnel shall wear clean outer

clothing at all times while pumping and transporting septic tank contents.

(3) Each individual for his own protection shall:

(a) Refrain from wearing clothing which has become contaminated from sewage or septic tanks effluent.

(b) Wash hands after exposure to contamination from sewage or septic tanks effluent.

44-526 MISUSE OF REGISTRATION.

No person, firm or corporation operating a sewage-cesspool business shall permit anyone to operate under his registration, except an employee who is paid a wage by the registered sewage-cesspool worker and is working under the supervision of said registered and bonded sewage-cesspool worker. No person shall:

(1) Display or cause or permit to be displayed or have in his possession any such registration certificate, knowing it to be fictitious or to have been cancelled, revoked, suspended or fraudulently altered.

(2) Fail or refuse to surrender to the State Board of Health, upon demand, any such registration certificate which has been suspended, cancelled or revoked.

(3) Use a false name or give a false or fictitious address in any application for any such registration certificate, or for any renewal or duplicate thereof, or knowingly give a false age, or make a false statement, or knowingly conceal a material fact or otherwise commit a fraud in any such application.

44-528 REVOCATION OF CERTIFICATE. (1) If it comes to the attention of the State Board of Health that a registered sewage-cesspool worker is permitting anyone to operate under his registration, said registration will be suspended or revoked and the bonding company who issued his bond so notified.

(2) When a "Certificate of Registration for Sewage-Cesspool Work," which had been issued by the board is revoked, cancelled or expired, the operator shall remove from display:

(a) The Registration Certificate.

(b) All identifying labels on trucks which

were furnished by the board.

44-530 to 44-598 Reserved for Expansion

JOURNEYMAN PLUMBER'S CERTIFICATE

44-600 DEFINITIONS. (1) "Board" means the State Board of Health or a duly accredited representative employed by the board.

(2) "Examining Board" means the State Examining Board of Plumbers.

44-602 APPLICATION FOR EXAMINATION. (1) Application for examination for a journeyman plumber's certificate of competency shall be submitted to the board in writing on a form furnished by the board. Refer to sub-sections (1) and (2) of ORS 693.050.

(2) Each application for examination for a journeyman plumber's certificate of competency shall be filed with the board at least fifteen days prior to the day on which the applicant may be scheduled to appear for the examination.

(3) All questions on the application form shall be answered to the satisfaction of the examining board before the applicant may be admitted for examination.

44-604 EXAMINATION FEES. (1) An examination fee of ten dollars shall be paid to the Oregon State Board of Health whenever an application for a journeyman plumber's certificate of competency is filed with the board.

(2) Any person who subsequently takes more than one examination shall pay a separate examination fee of ten dollars to the Oregon State Board of Health for each time he is examined. Such fees shall in each case be paid to the Oregon State Board of Health at least fifteen days prior to the day on which the applicant may again be scheduled to appear for an examination.

44-606 TEMPORARY PERMITS TO WORK AS A JOURNEYMAN PLUMBER.

(1) The board has the authority to issue, revoke, or deny permits in the manner

and upon the terms and conditions provided in ORS Chapter 693 and the administrative rules of the board pertaining thereto.

(2) A one dollar permit fee shall accompany an application whenever a plumber from out of state requests of the board a temporary permit to engage in the occupation of a journeyman plumber during the interim period between time of filing of the application and scheduled time for the examination.

(3) Temporary permits to work as a journeyman plumber in Oregon shall not be issued to:

(a) Any person who has been notified by the board of failure to pass an examination for a journeyman plumber's certificate of competency.

(b) Any person from out of state who has not furnished to the board affidavits from a journeyman plumber and a person registered to conduct a plumbing business, affirming that the applicant is a journeyman plumber and that he has had more than five years of actual experience in the plumbing trade.

(c) Any person who is registered as a plumber apprentice by the State Apprenticeship Council and the State Board of Health in accordance with the laws and administrative rules pertaining to plumbers and apprentices.

(d) Any person whose plumbing apprenticeship contract is cancelled or suspended by the State Apprenticeship Council or any person who claims to have obtained his plumbing experience in this state without having been duly registered as an apprentice plumber.

44-608 DUTIES OF EXAMINING BOARD AND BOARD OF HEALTH.

(1) The examining board is authorized to review applications for examination for journeyman plumber's certificates of competency.

(2) The board shall notify eligible applicants to appear for the examination, stating the time and place.

(3) Whenever it is the majority opinion of all members of the examining board that an applicant is not eligible to take the examination, the board shall notify the applicant of the action taken.

(4) The examining board may reconsider individual cases during any meeting at which all members are present.

(5) The examining board shall be guided by the following requirements which are intended to be minimum to qualify a person to take the examination:

(a) School to and including tenth grade or equivalent education, and

(b) Five years apprenticeship training in Oregon with a recommendation from the State Apprenticeship Council that the applicant be permitted to take the journeyman plumber's examination, or

(c) The applicant furnishes a journeyman plumber's certificate of competency from another state, county or city which has a code basically similar to the Oregon plumbing code, or

(d) The applicant furnishes separate affidavits signed by a journeyman plumber and a person registered to conduct a plumbing business, affirming that the applicant has had at least five years of experience in actual plumbing work in the locality where he claims experience.

(6) The examining board, with the cooperation of the State Board of Health, shall examine each eligible applicant to determine:

(a) Whether that person possesses varied general knowledge of the type of technical information and practical procedures that is readily identified with the trade and calling of a journeyman plumber, and

(b) Whether that person is familiar with the requirements of the State Plumbing Code and the administrative rules of the State Board of Health pertaining to plumbing and plumbers. Refer to ORS Chapter 447 and ORS Chapter 693.

(7) After results of an examination have been certified to the board in accordance with ORS 693.120, the applicant shall be notified that he either passed or failed to pass the examination.

(8) Applicants who fail to pass the first time they take an examination for a journeyman plumber's certificate of competency, may request to be scheduled for the following examination. If the applicant fails to pass the second examination, he will not be permitted to take an examination again for at least six

months following the second examination nor oftener than every six months thereafter. However, registered apprentices must, in all cases, be recommended for examination by the State Apprenticeship Council before they may be scheduled for examination.

44-610 CERTIFICATES OF COMPETENCY. Journeyman plumber's certificates of competency shall be issued by the board only to persons who have qualified

and paid the required certificate fees in accordance with the provisions of ORS Chapter 693 and the administrative rules of the board pertaining to plumbers.

44-612 REVOCATION OF CERTIFICATE. The board may revoke the Oregon journeyman plumber's certificate of competency held by any person who has perjured himself on an affidavit. Refer to sub-section (1) of ORS 693.090.

OREGON ADMINISTRATIVE RULES

CHAPTER 333

BOARD OF HEALTH

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Subdivision 5

TRAILER PLUMBING STANDARDS
and
PROCEDURES FOR OBTAINING
APPROVAL OF PLUMBING
INSTALLED IN TRAILERS

[ED. NOTE: Unless otherwise specified, sections 45-002 through 45-214 of this chapter of the Oregon Administrative Rules Compilation were adopted by the Board of Health December 5, 1962 and filed with the Secretary of State, December 18, 1962 as administrative order HB 165.]

Statutory Authority: ORS 446.155,
446.160

TRAILER PLUMBING
STANDARDS

45-002 SCOPE. These Administrative Rules pertain only to trailers as defined in ORS 446.155 to 446.165, and must not be construed to apply to any stationary structure.

45-004 DEFINITIONS OF TERMS. As used in sections 45-006 to 45-100, unless otherwise required by context:

- (1) "Board" means the State Board of Health or a duly accredited representative employed by the board.
- (2) "Air-gap" as pertaining to a water-supply system is the unobstructed vertical distance through the free atmosphere between the lowest opening between any pipe or faucet supplying water to a tank, plumbing fixtures, or other devices and the flood level rim of the receptacle.
- (3) "Air lock" is a condition where air is trapped in a drain or drain hose and retards or stops the flow of liquid waste or sewage.
- (4) "Approved" means accepted or acceptable under an applicable specification stated or cited in this standard, or accepted as suitable for the proposed use under procedures and power of the Board.
- (5) "Backflow" means the flow of water

or other liquids, mixtures or substances into the distributing pipes of a potable supply of water from any source or sources other than its intended source. (See Siphonage)

(6) "Backflow connection" means any arrangement whereby backflow can occur.

(7) "Backflow preventer" is a device or means to prevent backflow into the potable water system.

(8) "Branch" means any part of the piping system other than a main or riser.

(9) "Branch vent" is a vent connecting one or more individual vents with a vent stack or stack vent.

(10) "Center of a trailer" means the mid-point between the right and left side.

(11) "Combination Compartment" means a shower stall or recess with or without a door which provides for or includes the installation of a water closet and is of such size and proportions that it may not be occupied by more than one person.

(12) "Common" means that part of a piping system which is so designed and installed as to serve more than one appliance, fixture or system.

(13) "Continuous vent" means a vertical vent that is a continuation of the drain to which it connects.

(14) "Continuous waste" means a drain connecting the compartments of a set of fixtures to a trap or connecting other permitted fixtures to a common trap.

(15) "Cross-connection" means any physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other water of unknown or questionable safety, whereby water may flow from one system to the other, the direction of flow depending on the pressure differential between the two systems.

(16) "Developed length of a pipe" means its length along center line of the pipe and fittings.

(17) "Diameter" unless specifically stated, the term "diameter" is the nominal diameter as designated commercially.

(18) "Drain" means any pipe which carries waste, water or waterborne wastes in a drainage system.

(19) "Drain hose" means the approved

type easily detachable, flexible hose used for connecting the drain outlet to a sewer inlet connection.

(20) "Drain outlet" means the termination or lowest end of the main drain to which terminal end the drain hose is connected.

(21) "Drainage piping" means all the piping within or attached to the trailer which conveys sewage or other liquid wastes to the drain outlet, but does not include the drain hose.

(22) "Fixture drain" means the drain from the trap of a fixture to the junction of that drain with any other drain pipe.

(23) "Fixture supply" means a water-supply pipe connecting the fixture with the fixture branch.

(24) "Flood level rim" or spill line means the elevation at the top edge of a receptacle at which point water would overflow provided that the fixture was filled to the brim.

(25) "Grade" means the slope or fall of a line of pipe in reference to a horizontal plane. In drainage it is usually expressed as the fall in a fraction of an inch or percentage slope per foot length of pipe.

(26) "Hangers," see Supports.

(27) "Horizontal drain or vent pipe" a horizontal pipe as pertaining to drainage and vent piping is a pipe or fitting which is installed in a horizontal position or which makes an angle of not more than 45 degrees with the horizontal.

(28) "Individual vent" means a pipe installed to vent a fixture trap and which connects with the vent system above the fixture served or terminates outside of the structure.

(29) "Inlet coupling" means the terminal end of the water system to which the water service connection is made. It may be a swivel fitting or a fitting with pipe or hose thread.

(30) "Length of a trailer" means the distance measured from the tip of the hitch to the part furthest to the rear.

(31) "Main," as it pertains to any system of horizontal, vertical, or continuous drain or vent piping means a principal artery of the system which receives wastes, vents or back-vents from fixture outlets or traps, direct or through branch pipes.

(32) "May" is a permissive term.

(33) "Mobile home" means a vehicle or structure constructed with wheels for use on the public highways, that has sleeping, cooking and plumbing facilities, is intended for human occupancy and is being used for residential purposes.

(34) "Offset" an offset in a line of piping is a combination of elbows or bends which brings one section of the pipe out of line but into a line parallel with the other section.

(35) "Plumbing fixtures" means approved type installed receptacles, devices or appliances which are supplied with water or which receive liquid or liquid-borne wastes and discharge such wastes into the drainage system to which they may be directly or indirectly connected.

(36) "Siphonage" means the flowing back of used, contaminated, or polluted water, mixtures or substances from a plumbing fixture or vessel into a water-supply pipe due to a negative pressure in the pipe. (See Backflow).

(37) "Standard" the word "Standard" or "this standard" when used alone shall mean these requirements, subsequent amendments thereto which the Board may adopt.

(38) "Trailer" means either a mobile home or a vacation trailer. The term "trailer" or "mobile home" does not apply to any prefabricated, sectional or factory-built house to which wheels may be attached for the purpose of moving it to a permanent location where it becomes affixed to the real property.

(39) "Trap" means a fitting or device so designed and constructed as to provide, when properly vented, a liquid seal which will prevent the back passage of air without materially affecting the flow of sewage or waste water through it.

(40) "Trap seal" means the maximum vertical depth of liquid that a trap will retain, measured between the crown weir and the top of the dip of the trap.

(41) "Vacation trailer" means a vehicle or structure equipped with wheels for highway use that is intended for human occupancy, is not being used for residential purposes and is being used for vacation and recreational purposes. (1953 c. 490 S2; 1959 c. 562 S1)

(42) "Vacuum breaker" see backflow

preventer.

(43) "Vent pipe" see Vent system.
 (44) "Vent stack," (main vent) means a vertical vent pipe to which branch vent piping may be connected.

(45) "Vent system" means a pipe or pipes installed to provide a flow of air to or from a drainage system or to provide a circulation of air within such system to protect trap seals from siphonage and back pressure.

(46) "Vertical pipe," means any pipe or fitting which is installed in a vertical position or which makes an angle of not more than 45 degrees with the vertical.

(47) "Waste pipe" means any pipe receiving the discharge of fixtures which it conveys to the main drain outlet.

(48) "Water distribution system" means all of the water piping within or attached to the structure including the inlet coupling but shall not include the service connection.

(49) "Water service connection" means the hose, piping or tubing which conveys a potable water under pressure to the inlet coupling.

(50) "Wet vent," means a vent which also serves as a drain.

(51) "Wet vented drainage system" means a specially designed system of waste or drain piping incorporating the horizontal wet venting of one or more plumbing fixtures by means of a common waste and vent pipe which shall be adequately sized to provide for the free movement of air above the flow line of the drain piping.

Quality and Weights of Materials

45-006 MATERIALS FOR PLUMBING.
 Table A. (1) Minimum standards. Unless otherwise provided for in this standard, all materials, fixtures or devices used or entering into the construction of plumbing and drainage systems or parts thereof in any trailer shall conform to approved nationally recognized applicable standards or to other equivalent acceptable standards and shall be free from defects.

(2) Equivalent materials. The pro-

visions of this standard are not intended to prevent the use of any alternate material or method of construction provided any such alternate has been first approved and its use authorized.

(3) Identification of materials. Standard specifications for materials for plumbing installations are listed in Table A of this section. Products conforming to any of the specifications listed for a given material shall be considered acceptable.

(4) Plastic Pipe Schedule 40, ABS-1-LA shall meet WPOA Standard TSC-6-61 and CS-218-59 as determined by an approved independent laboratory testing facility. A photostatic copy or other like or similar reproduction of the original laboratory test report showing that said plastic pipe meets WPOA Standard TSC-6-61 and CS-218-59 shall be filed with the Oregon State Board of Health for approval.

Note:

CS Commercial Standards representing voluntary standards of trade, prepared under the procedure of the National Bureau of Standards and published by the United States Department of Commerce. Obtainable from the Supt. of Documents, U.S. Government Printing Office, Washington 25, D.C.

ASTM standards are issued under fixed designations; the final number indicates the year of the original adoption or, in the case of revision, the year of the last revision; also, the final number indicates the years of issue. For Federal Specifications, the year indicates the year of issue or of the last revision or amendment.

Abbreviations used in Table A refer to standards or specifications issued by the organizations identified as follows: A.S.A. American Standards approved by the American Standards Association, 70 E. Forty-fifth St., New York 17, N.Y. A.S.T.M. Standards and Tentative Standards published by the American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

F.S. Federal Specifications published

TABLE A

Materials	ASTM	FS	Other Standards
Cast iron (screwed) fittings	ASA B16.4-1949	WW-P-501b (1945)	
Cast iron (screwed) drainage fittings	B16.12-1953	WW-P-491a (1945)	
Wrought iron pipe	B36.2-1950	WW-P-441b (1952)	
Steel pipe	B36.20-1951	A-120-47 (1944)	Type 1 & 11
Open hearth iron pipe	A-253-51T	WW-P-406 (1944)	Type III only
Malleable iron (screwed) fittings	B16.3-1951	WW-P-521b (1945)	
Nonferrous pipe and fittings:			
Seamless brass tubing	H27.1-1949	WW-T-791 (1931)	
Brass pipe	B43-47 (1930)	WW-P-351 (1930)	
Copper pipe	H26.1-1949	WW-P-377b (1954)	
Bronze screwed fittings	B16.15-1947	WW-P-460 (1945)	
Seamless copper water tube (K.L.M.)	H23.1-1953	WW-T-799a (1943)	
Copper drainage tube (DMV)	B88-51		
Wrought copper and wrought bronze	B306-57		
Solder joint fittings	B16.22-1951		For copper water tube
Cast brass solder joint fittings	B16.18-1950		
Cast brass solder joint drainage fittings	B16.23-1953		
Brass fittings and flared copper tubes	A40.2-1936		
Lead pipe bends and traps			
Plastic pipe and fittings-Schedule #40	B2.1-1945	WW-P-325 (1944)	CS-96-41
ABS-1 and 1-A			CS-218-59
Pipe threads		GGG-P-3519-1944	
Plumbing fixtures:			
Staple porcelain plumbing fixture			CS4-29
Staple vitreous china plumbing			CS20-56
Enameled cast iron plumbing fixture			CS77-56
Earthenware vitreous glazed plumbing fixture			CS111-43
Formed steel enameled sanitary ware		WW-P-542a-1950	
Formed metal porcelain enameled sanitary ware			CS144-47
Gel Coated Fiber Glass Plumbing fixtures			CS221-59
Miscellaneous:			
Sheet Lead		QQ-L-201a (1953)	
Soft solder		QQ-S-571b (1947)	
Fixture setting compounds	B32-49	HH-C-536a (1954)	
Valves:			
Bronze gate		WW-V-54 (1946)	

by the Federal Specifications Board and obtainable from the Supt. of Documents, U.S. Government Printing Office, Washington 25, D.C.

W.P.O.A. Standards TSC 3-61 obtainable from Western Plumbing Officials Association, 520 Mission St., South Pasadena, California, P. O. Box 247.

General Rules Concerning Installation of Piping

45-008 MINIMUM REQUIREMENTS. (1) Connections to drainage system. All plumbing, fixtures, drains, appurtenances, and appliances designed or used to receive or discharge liquid waste or sewage shall be connected to the trailer drainage system in a manner provided by this standard.

(2) Terms. The use of the terms minimum, not less than, at least and similar expressions with reference to any size, weight or quality of material shall not prevent the manufacturer or installer from using a heavier weight, larger size, or superior quality, providing it does not result in an inferior installation or defeat the purpose and intent of this standard.

(3) Workmanship. All design, construction, and workmanship shall be in conformity with accepted engineering practices and shall be of such character as to secure the results sought to be obtained by this standard.

(4) Prohibited fittings and practices. (a) No drainage or vent piping shall be drilled and tapped for the purpose of making connections thereto.

(b) Except as hereinafter provided, no vent pipe shall be used as a waste or drain pipe.

(c) No fitting, connection, device, or method of installation which obstructs or retards the flow of water, waste, sewage, or air in the drainage or venting systems in an amount greater than the normal frictional resistance to flow shall be used unless it is indicated as acceptable in this standard or is approved as having a desirable and acceptable function and as of ultimate benefit to the

proper and continued functioning of the plumbing system.

(d) Cracks, holes, or other imperfections in materials shall not be concealed by welding, brazing, or soldering or by using therein or thereon any paint, wax, tar or other leak-sealing or repair agent.

(e) Piping, fixtures or equipment shall not be so located as to interfere with the normal use thereof or with the normal operation and use of windows, doors or other required facilities.

(f) Galvanized pipe shall not be bent or welded.

(5) Hangers and Supports. All piping shall be securely attached to the structure by means of metal hanger, clamps, or brackets which provide adequate protection against motion, vibration, road shock and torque in the chassis or other unusual conditions.

45-010 INSTALLATIONS OF PIPING.

(1) Strain. All piping in connection with a plumbing system shall be so installed that piping for connections will not be subject to undue strains or stresses and provisions shall be made for expansion and contraction.

(2) Alignment of fittings. All valves, pipes, and fittings shall be installed in correct relationship to the direction of flow.

45-012 PROTECTIVE REQUIREMENTS.

(1) Cutting Structural Members. Holes required for piping passing through floors and structural members shall be drilled or cut to fit the outside diameter of the piping and shall be located at the main point of stress. No structural member shall be unnecessarily or carelessly weakened by cutting or notching. Substantial reinforcing shall be required for construction materials or structural members unavoidably weakened in order to maintain grade or alignment of piping.

(2) Weather Exposure. All untreated ferrous piping, pipe threads, hangers and supports exposed to the weather, water and mud, shall be adequately painted, coated, wrapped, or otherwise protected from deteriorating.

(3) Road Damage. Adequate means shall be provided to protect exposed parts of

the plumbing and piping systems and drain hoses from alkalis, salt, oils and other corrosive materials found in road splash and from impact and abrasion damage caused by gravel and rocks. No pipe support, drain, outlet or drain hose shall extend or protrude in a manner where it will be unduly subjected to road damage.

(4) Freezing. All piping and fixtures which would be subject to freezing temperatures shall be insulated or protected to prevent the possibility of freezing.

(5) Rat Proofing. All openings around piping shall be sealed to prevent access of vermin.

45-014 JOINTS AND CONNECTIONS.

(1) Joints and connections in the plumbing system shall be gastight and watertight for the pressures required by test.

(2) All joints and connections shall be correctly and effectively assembled. Pipe threads shall be fully engaged with the threads of the fitting when they are tight. Copper tubing shall be inserted to the full depth of the solder cup or weld sockets of each fitting. Pipe threads and slip joints shall not be wrapped with string, paper, putty, or similar fillers.

(3) Threads for screw pipe and fittings shall conform to American National Taper Pipe threads, A.S.A. B2 1-1945 or F.S. GGG-P-35la. All burrs shall be removed. Pipe ends shall be reamed or filed out to size of bore, and all chips shall be removed. Pipe joint cement or thread lubricant shall be approved type applied to male threads only.

(4) Solder joints for tubing shall be made with approved sweat solder type fittings. Surfaces to be soldered shall be cleaned bright. The joints shall be properly fluxed with non-corrosive paste type flux and made with approved 50-50 solder or any approved solder having a higher melting temperature.

(5) ABS Plastic piping and fittings shall be installed in accordance with W.P.O.A. Standards TSC 3-61 for Installation of ABS Plastic Pipe and Fittings for Trailer Coach Waste and Vent Systems.

45-016 TEST AND INSPECTION.
(1) Testing water system. All water

piping in the water distribution system shall be subjected to a pressure test before any portion is covered or concealed. The test shall be made by subjecting the system to air or water at one hundred (100) pounds per square inch for fifteen (15) minutes without leakage or loss of pressure. An adequate and accurate pressure gauge shall be used on all tests.

(2) Testing Drainage and Vent System and Plumbing Fixtures: The waste and vent system shall be tested by one of the following alternate methods for at least fifteen (15) minutes without evidence or indication of leakage.

(a) Water Test: Before plumbing fixtures are connected all of the openings into the piping shall be plugged and the entire piping system subjected to a static water test by filling it with water to the top of the highest vent opening.

(b) Air Test: After all fixtures have been installed, the traps filled with water and the remaining openings securely plugged, the entire system shall be subjected to a two inch (2") (Monometer) water column air pressure test. If system loses pressure, leaks may be located with smoke pumped into the system.

(c) Flood Level Test: The trailer shall be in a level position; all fixtures shall be connected and the entire system shall be filled with water to the rim of the water closet bowl. (Tub and shower drains should be plugged.) After all trapped air has been released, the test shall be held for not less than fifteen (15) minutes. The wastepiping above the level of the water closet shall be tested and show no evidence or indication of leakage by filling the high fixtures with water and emptying them simultaneously to obtain the maximum possible flow in the drain piping.

(d) Fixture Test: The plumbing fixtures and connections shall be subjected to a flow test by filling them with water and checking for leaks and retarded flow while they are being emptied.

(3) Shower stalls. Non-metallic shower stall linings shall be tested for leaks prior to being covered by finish material. Each pan shall be filled with water to the top of the dam for not less than fifteen (15) minutes.

DRAINAGE SYSTEMS

45-018 TRAILER DRAIN OUTLET.

(1) Location of drain. Each trailer shall have only one drain outlet which shall terminate horizontally in the rear third section on the left (road) side, within eighteen inches (18'') of the outside wall, and shall direct its discharge towards the left side or towards the rear within an angle of ninety degrees (90°) formed between the left side and the rear end.

(2) Exceptions: (a) A drain outlet may terminate vertically within the required location when it is equipped with an approved type quick coupler and a companion elbow hose adaptor is furnished by the manufacturer.

(b) The drain outlet for a trailer not over thirty-one feet (31') in length may terminate at the rear of the trailer on the left side of the center within eighteen inches (18'') of the outside wall.

(c) The drain outlet for a trailer not over twenty-four feet (24') in length may terminate in the rear half of the trailer on the left side and at the rear on the left side of the center within eighteen inches (18'') of the outside wall.

(d) The drain outlet for a trailer not over twenty feet (20') in length may terminate at any point on the left side and at the rear on the left side of the center within eighteen inches (18'') of the outside wall.

(3) Clearance from drain outlet. The drainage outlet and couplers shall be provided with a minimum clearance of three inches (3'') in any direction from all parts of the structure or appurtenances and with not less than eighteen inches (18'') unrestricted clearance directly in front of the drainage outlet.

(4) Hose couplers and caps.

(a) Hose couplers for drain outlets shall be a quick disconnect type not requiring any special tools or knowledge to make the connection or remove the drain hose.

(b) Hose couplers and drain hoses shall not be smaller than the piping to which they are connected and shall be equipped with a water tight cap or plug matching the drainage outlet or coupler. The cap or plug shall be permanently attached

to the structure by means of a substantial chain.

(c) Drain outlet or attached drainhoses for drain piping connected to a water closet shall be three inches (3'') minimum inside diameter.

45-020 MATERIALS FOR DRAINAGE SYSTEM. (1) Pipe. Drainage piping shall be standard weight galvanized steel or wrought iron, or brass; D.W.V. hard drawn copper tubing, or approved Schedule 40 ABS-1 plastic pipe.

(2) Fittings. Drainage fittings shall be recessed drainage pattern with smooth interior waterways the same diameter as the piping and shall be of a material conforming to the type of piping used.

(3) Design of fittings.

(a) Drainage fittings shall be designed to provide for a one-fourth inch per foot grade in horizontal piping.

(b) Fittings for screw pipe shall be cast iron, malleable iron or brass with standard taper pipe threads.

(c) Fittings for copper tubing shall be cast brass or drawn copper sweat solder drainage fittings.

(d) Brass adaptor fittings shall be used to join copper tubing to threaded pipe.

(e) Fittings for ABS plastic pipe should be ABS Type 1A and made to recognized and approved standards.

45-022 FIXTURE CONNECTIONS. (1) Fixture tees. Drainage piping shall be provided with approved inlet fittings for fixture connections, correctly located according to the size and type of fixture proposed to be connected.

(2) Water closet connection. The drain connection for each water closet shall be three inch (3'') minimum inside diameter and shall be fitted with an iron or brass floor flange adaptor ring securely screwed, soldered or permanently attached to the drain piping in an approved manner.

45-024 SIZE OF DRAINAGE PIPING.

Drain pipe sizes shall be determined by the type of fixture and the total number connected to each drain:

(1) A one and one-half inch (1-1/2'') minimum diameter piping shall be re-

quired for one and not to exceed three individually vented fixtures.

(2) A two inch (2'') minimum diameter piping shall be required for four or more fixtures individually vented.

(3) A three inch (3'') minimum diameter piping shall be required for water closets.

45-026 WET VENTED DRAINAGE SYSTEM. (1) Wet vents permitted. Plumbing fixture traps may connect into a wet vented drainage system which shall be designed and installed to adequately accommodate the passage of air and waste in the same pipe, (only where it is impossible to install otherwise).

(2) Horizontal piping. All parts of a wet vented drainage system including the connected fixture drains shall be horizontal except for wet vented vertical risers which shall terminate with a one and one-half inch (1-1/2'') minimum diameter continuous vent. Where required by structural design, wet vented drain piping may be offset vertically when other vented fixture drains or relief vents are connected to the drain piping below the vertical offsets.

(3) Size. A wet vented drain pipe shall be two inches (2'') minimum diameter and at least one pipe size larger than the largest connected trap or fixture drain, provided, however, that not more than three (3) fixtures may be connected to any two inch (2'') width vented drain pipe.

(4) Length of fixture drain. Fixture traps shall be located within four feet-six inches (4'-6'') of the vented drain piping and not more than one trap shall connect to a trap branch.

45-028 SIDE VENT DRAINAGE SYSTEM. (1) Side vent system permitted. A trailer which has no plumbing fixtures other than a single compartment sink with a drain opening of not more than two inches (2'') in diameter may be connected to a side vent drainage system.

(2) Exposed tubing permitted. Drain and vent system may be constructed of one and one-half inch (1-1/2'') O.D. minimum diameter, drawn brass tubing not less than No. 20 Brown and Sharp gauge, with brass tubing fittings and an approved

baffle or directional type fixture tee. All tubing joints shall be soldered. Tubing drains shall be vertical and exposed except for the horizontal offset through sidewall. All traps must be of the threaded type on sewer side or be connected with a brass solder bushing. No slip nuts or ferrel type adaptors allowed.

(3) Drain and vent outlets. The center of the vent offset through the side wall shall be located as high as structure will permit but not less than two and one-fourth inches (2-1/4'') above the bottom of sink to the center of the elbow. The vertical drain shall extend downward as far as possible and may then offset through sidewall above the floor.

(4) Trap. The trap shall be one and one-fourth inches (1-1/4'') minimum diameter and at least one tubing size smaller than the drain. Trap shall be installed as close to the sink as possible with the center of the outlet not more than four inches (4'') from bottom of sink.

45-030 INTERMEDIATE SEWAGE TANK. (Refer to subsection (1) of ORS 446.135). (1) A Self-Contained Trailer is equipped with an enclosed tank for temporary retention of water-borne waste. The tank shall conform in every respect to the established and accepted minimums for health and safety.

(2) Design. The tank shall have an oval shaped bottom with rounded corners and shall slope uniformly to a three inch (3'') drain outlet.

(3) Material. Each tank shall be constructed of heavy gauge iron, aluminum or copper with a bituminous or equal protective coating; or may be stainless steel, reinforced fibre glass, or similar approved type of material not subject to corrosion.

(4) Strength. All tanks shall be strong and durable enough to withstand maximum road shock or vibration to which they will be subjected while loaded to capacity. Points of support, flat surfaces, pipe openings and parts exposed to weather or road gravel abrasion shall be reinforced as necessity dictates.

(5) Piping connection.

(a) Water Closet. Connections shall be three inch (3'') minimum pipe size and

shall extend vertically. A coupling or spud may extend downward into the tank sufficiently to maintain a high water level clearance below the top opening. A water closet inlet may be integrated with a closet flange of standard dimensions.

(b) Vent Connectors. Shall be one and one-half (1-1/2'') inches minimum pipe size opening vertically from highest point in top of tank.

(c) Drain Opening. Shall be three inches (3'') minimum pipe size outlet located at lowest point in tank and shall be filled with a full opening brass gate valve.

(6) Drain Valve. Shall be designed for manual operation from outside the trailer and have no extension or activating device.

45-032 OFFSETS AND BRANCH FITTINGS. (1) Changes in direction. Changes in direction of drainage piping shall be made by the appropriate use of approved fittings, and shall be of the angles presented by 11-1/4 degrees, 22-1/2 degrees, 45 degrees, or 60 degrees, or other approved fittings or combination of fittings with equivalent radius or sweep.

(2) Horizontal to Vertical. Horizontal drainage lines, connecting with a vertical pipe shall enter through 45 degree "Y" branches, 60 degree "Y" branches, long turn "TY" branches, sanitary tee branches, or other approved fittings or combination of fittings having equivalent sweep. No fitting having more than one branch at the same level shall be used unless the fitting is constructed so that the discharge from any one branch cannot readily enter any other branch, provided, however, that a double sanitary tee may be used when the drain line is increased not less than two pipe sizes.

(3) Horizontal to Horizontal and Vertical to Horizontal. Horizontal drainage lines connecting with other horizontal drainage lines or vertical drainage lines connected with horizontal drainage lines shall enter through 45 degree "Y" branches, long turn "TY" branches, or other approved fittings or combination of fittings having equivalent sweep.

45-034 SLOPE OF HORIZONTAL DRAINAGE PIPING. Horizontal drainage piping shall be run in practical alignment

and have a uniform slope of not less than one-fourth inch (1/4'') per foot toward the trailer drain outlet. Where it is impractical, due to the structural features or arrangement of any trailer to obtain a slope of one-fourth inch (1/4'') per foot, the pipe or piping may have a slope of not less than one-eighth inch (1/8'') per foot.

VENTS AND VENTING

45-036 VENTS REQUIRED. (1) Plumbing vents. Each plumbing fixture trap shall be protected against siphonage and back pressure, and air circulation shall be assured throughout all parts of the drainage system, by means of vent pipes installed in accordance with the requirements of this chapter and as otherwise required by this standard.

(2) Air relief. Vent piping shall provide for the displacement of air and prevent "air-lock" in the drainage system and drain hose.

45-038 MATERIALS OF VENT PIPING. (1) Pipe. Vent piping shall be standard weight galvanized steel or wrought iron or brass, D.W.V. hard drawn copper tubing or Schedule 40 ABS Type 1 Plastic Pipe.

(2) Fittings. Appropriate fittings shall be used for all changes in direction or size and where vent pipes are joined together. The material and design of vent fittings shall conform to the type of piping used.

(a) Fittings for screw pipe shall be cast iron, galvanized malleable iron or brass with standard taper pipe threads.

(b) Fittings for copper tubing shall be cast brass or drawn copper sweat solder pattern.

(c) Fittings for ABS plastic pipe shall be of ABS Type 1A and made to recognized and approved standards.

45-040 SIZE OF VENT PIPING. (1) Main vent required. The drain piping for each water closet shall be effectively vented by a one and one-half inch (1-1/2'')

minimum diameter water closet vent connected to the main drain by one of the following methods:

- (a) A one and one-half inch (1-1/2") minimum diameter individual vent pipe directly connected to the water closet drain and extended undiminished in size through the roof.
- (b) With a one and one-half inch (1-1/2") minimum diameter continuous vent indirectly connected to the water closet drain piping through a two inch (2") wet vented drain which carries the waste of not more than one fixture or not more than two fixtures when one is a combination compartment shower drain.
- (c) By means of two or more vented drains when one is wet vented and each drain is separately connected to the main drain.

(2) Combination compartment drain. Where the water closet is located in a shower stall which is limited to the use of one occupant by its size, the trap branch from the shower drain may be directly connected to the water closet drain piping without any additional venting.

(3) Individual vents. A one and one-fourth inch (1-1/4") minimum diameter vent pipe shall be required for all individually vented fixtures with a one and one-half inch (1-1/2") or smaller traps. The main vent, water closet vent, relief vent and the continuous vent of wet vented drainage systems shall be one and one-half inch (1-1/2") minimum diameter.

(4) Common vent. When two fixture traps located within the distance allowed from their vent have their trap arms connected separately at the same level into an approved double fitting, an individual vent pipe may serve as a common vent without any increase in size.

(5) Intersecting vents. Where two or more vent pipes are joined together, no increase in size shall be required; however, the largest vent pipe shall extend full size through the roof.

45-042 GRADE AND CONNECTIONS.

(1) Horizontal vents. Each vent shall extend vertically from its fixture tee or point of connection with the waste piping to a point not less than six inches

(6") above the extreme flood level of the fixture it is venting before offsetting horizontally or being connected with any other vent pipe. Vents for horizontal drains shall connect above the center line of the drain piping ahead (down stream) of the trap.

(2) Grade. Vents shall grade or drain back to the drainage system without sags or drops except that horizontal offset may be set level.

45-044 VENT TERMINATION. (1) Roof Extension. Each vent pipe shall extend through its flashing, except as otherwise permitted in 45-028 (3), and terminate vertically undiminished in size not less than two inches (2") above the roof. Vent openings shall not be less than three feet (3'0") away from any motor driven air intake that opens into habitable areas.

(2) Flashing. The opening around each vent pipe shall be made water tight by an adequate flashing or flashing material.

TRAPS AND CLEANOUTS

45-046 TRAPS REQUIRED. Each plumbing fixture shall be separately trapped by approved-type water seal "P" traps. Water closets shall be approved type and have integral traps, except on self-contained vacation trailers with holding tanks which may have an approved mechanical seal closet. All fixtures shall be effectively vented.

45-048 DUAL FIXTURES. A two-compartment sink or two single sinks or two lavatories set immediately adjacent to each other in the same room with the waste outlets not more than thirty inches (30") apart may be connected to one trap and may be considered as one fixture.

45-050 TRAPS PROHIBITED. No form of trap which depends for its seal upon concealed interior partitions shall be used. "S" traps, bell traps, drum traps, and crown-vented traps are prohibited, and no fixture shall be double trapped.

45-052 MATERIAL AND DESIGN OF TRAPS. Each trap shall be self-cleaning with a smooth and uniform interior water-way. Traps shall be manufactured of cast iron, cast brass or drawn brass tubing of not less than No. 20 Brown and Sharp gauge. Union joints for a trap shall be beaded to provide a shoulder for the union nut. Each trap shall have the manufacturer's name stamped or cast in the metal of the trap and each tubing trap shall also show the gauge of the tubing.

45-054 TRAP SEAL. Each trap shall have a water seal of not less than two inches (2'') and not more than four (4'') inches and shall be set true with respect to its seal.

45-056 SIZE OF TRAPS. (1) Traps shall be not less than one and one-half inches (1-1/2'') in diameter (except one and one-quarter inches (1-1/4'') may be used when connected to a lavatory or single compartment sink with not more than a two inch (2'') drain opening).

(2) No trap shall be larger than the waste pipe to which it is connected.

45-058 TRAP LOCATION. Each trap shall be located as close to its vent and to its fixture outlet as structural conditions will permit.

45-060 DISTANCE FROM TRAP TO VENT. The distance between a trap and its vent or the vented waste line shall not exceed four feet, six inches (4'6'') measured along the developed length of the fixture drain from the inner edge of the vent pipe to the weir of the trap or to the floor flange of the water closet outlet.

45-062 LENGTH OF TAIL PIECE. Vertical distance from a trap to the fixture outlet shall not exceed twenty-four inches (24'').

45-064 TRAP INSTALLATION. (1) Grade of fixture drain. The fixture drain piping between a trap and the fixture tee or the vented waste line shall be graded one-quarter inch (1/4'') per foot towards the vent and in no event shall

have a slope greater than its diameter. Except for water closet drains the vent opening at fixture tees shall not be below the invert of the trap outlet.

(2) Fixture Drain Offset. The fixture drain piping between its trap and its vent may change direction or be offset horizontally a maximum of 180 degrees.

(3) Concealed traps. Traps with slip joint connections shall be readily accessible for repair and inspection.

(4) Traps protection. Traps shall be adequately protected from road damage and freezing.

45-066 CLEANOUT OPENINGS.

(1) Location of cleanout fittings.

(a) Cleanouts shall be installed where the drainage system cannot be cleaned through fixture tees or through roof openings of straight vents (without offsets).

(b) A full size cleanout shall be installed at the upper end of any section of drain piping which does not have the required minimum slope of one-quarter inch (1/4'') per foot grade.

(c) A cleaning tool shall not be required to pass through more than 360 degrees of fittings to reach any part of the drainage system.

(2) Access to cleanouts. Cleanouts shall be accessible with an unobstructed minimum clearance of twelve inches (12'') directly in front of the opening. Each cleanout fitting shall open in a direction opposite to the flow or at right angles to the pipe. Concealed cleanouts which are not provided with access covers shall be extended to a point above the floor or outside of the trailer with piping and fittings installed as required for drainage piping and without sags or pockets.

(3) Material for cleanouts. Plugs and caps shall be brass with screw pipe threads or approved plastic.

PLUMBING FIXTURES

45-068 MATERIALS. (1) Quality of fixtures. Plumbing fixtures shall have smooth impervious finishes, be free from defects and concealed fouling surfaces, be capable of resisting road shock and

vibration and, except as provided elsewhere for water closets, shall conform in quality and design to all applicable nationally recognized approved standards.

(2) Strainers. The waste outlet of all plumbing fixtures, other than water closets, shall be covered with substantial metal strainers which provide an adequate unobstructed waterway.

(3) Fixture connections. Fixture tail pieces and continuous wastes in exposed or accessible locations shall be No. 20 Brown and Sharp gauge seamless drawn brass tubing. Inaccessible fixture connections shall be constructed of the materials and according to the requirements for drainage piping in section 45-020. Each tailpiece, continuous waste and overflow shall be not less than one and one-half inches (1-1/2") O.D. for sinks, dishwashers, clothes washing machines, laundry tubs, bath tubs, and not less than one and one-quarter inches (1-1/4") for lavatories and single-compartment sinks with a two inch (2") maximum drain opening.

(4) Concealed connections. Concealed slip joint connections shall be provided with adequate unobstructed access panels or utility spaces and shall be readily accessible for inspection and repair.

(5) Directional fitting. An approved "Wye," or other directional-type branch fitting shall be installed in every tail piece or continuous waste connecting or receiving the discharge from food waste disposal units, dishwashing or clothes washing machines.

45-070 WATER CLOSET. (1) Each water closet shall be designed and manufactured according to the National Bureau of Standards Commercial Standard CS-20-56 and shall be equipped with a water flushing device capable of adequately flushing and cleaning the bowl at each operation of the flushing mechanism.

(2) Watercloset flushing devices shall be designed to replace the water seal in the bowl after each operation. Flush valves, flushometer valves and ball-cocks shall operate automatically to shut off at the end of each flush or when the tank is filled to operating capacity.

(3) Flush tanks shall be fitted with an overflow pipe large enough to prevent flooding at the maximum flow rate of the ball cock. Overflow pipes shall discharge into the water closet.

(4) Vacation trailers may be equipped with an approved mechanical seal closet, if said trailer is a self-contained unit.

45-072 SHOWER STALLS. (1) Each shower stall shall be provided with an approved-type watertight receptor or pan with sides and back extending one inch (1') above the finished dam or threshold. In no case shall any shower receptor be less than two inches (2'') or more than nine inches (9'') in depth measured from the top of the finished threshold.

(2) The joint around the drain connection and around the water closet outlets in combination compartments shall be made water tight with a flange, clamping ring, or by other adequate means.

(3) Shower walls, including showers over bathtubs, shall be constructed of dense nonabsorbent waterproof materials to a height of not less than six feet (6') above the floor.

(4) Hinged shower doors shall open outward.

(5) Prefabricated shower stalls shall be approved types only and shall comply with all the requirements relating to plumbing fixtures and shower stalls.

45-074 DISHWASHING MACHINES.

(1) No dishwashing machine shall be directly connected to any waste piping, but shall discharge its waste through a fixed air gap installed above the machine. The drain connection from the air gap may connect to an individual trap, to a directional fitting installed in the sink tail piece, or to the opening provided on the inlet side of a food waste disposal unit.

(2) No drain from any dishwashing machine shall be connected to a sink tail piece, continuous waste or trap on the discharge side of a food waste disposal unit.

45-076 CLOTHES WASHING MACHINES. (1) Clothes washing machines

shall be connected to a properly vented trap or to a laundry tub tailpiece with water tight connections or the drain shall discharge into an open standpipe receptor or over the rim of a laundry tub.

(2) Standpipe receptors shall be attached to a vented trap or shall be connected to a laundry tub tailpiece by means of an approved type directional fitting. Standpipes shall be one and one-half inches (1-1/2'') minimum inside diameter, not more than thirty inches (30'') in length or less than eighteen inches (18'') in length, and shall terminate in an accessible location not less than six inches (6'') above the highest water level of the clothes washing machine.

(3) No clothes washing machine drain shall be connected to the tailpiece, continuous wastes, or trap of any sink or dishwashing machine.

45-078 PROHIBITED FIXTURES. Water closets which do not retain an adequate quantity of water or which have fouling surfaces that are not thoroughly washed at each discharge shall be prohibited. Any combination or arrangement of water closet and flush tank which might permit the contents of the bowl to be siphoned or to flow back into the tank or

into the water system shall be prohibited.

45-080 INSTALLATION OF FIXTURES. (1) Access. Each plumbing fixture shall be located and installed in a manner to provide easy access for cleaning and repair.

(2) Alignment. Fixtures shall be set level and in true alignment with adjacent walls. Where practical, piping from fixtures shall extend to nearest wall.

(3) Brackets. Wall hung fixtures shall be rigidly attached to walls by metal brackets or supports without any strain being transmitted to the piping connections. Flush tanks shall be securely fastened to water closets or to the wall with adequate size bolts or screws of brass or other non-corrosive metal.

(4) Floor connection. Water closets shall be rigidly bolted to the closet flange and when screw holes are provided the bowl shall also be solidly fastened to the floor. Bolts and screws shall be adequate in size and shall be made of solid brass or other approved non-corrosive metal. An approved gasket or setting compound shall be used to form a water tight seal between the fixture and the drain connection. The exposed joint between the fixture and the floor shall be made water tight.

WATER DISTRIBUTION SYSTEM

45-082 WATER REQUIRED. (1) Pressure supply. An adequate supply of potable running water shall be piped to each plumbing fixture with sufficient pressure to flush and keep the fixture in a clean and sanitary condition without any danger of backflow or siphonage.

(2) Water service connection. Each trailer with a water distribution system which may connect to an outside source shall be equipped with a three-quarter inch (3/4") swivel female hose inlet coupling or a half-inch (1/2") or larger pipe connection (sized as required in Table B) located on the left (road) side within twenty-five feet (25') of the rear corner. The water storage tank filler cap may be located at the rear. A matching cap or plug shall be provided to seal the water inlet when it is not in use and shall be attached with a substantial chain.

45-084 PROTECTION OF WATERSUPPLY. (1) The installation of water supply piping or fixture or appliance connection shall not be made in any manner that might provide a possibility for used unclean, polluted, or contaminated water, mixtures or substances to enter any part of the water supply system from any tank, receptacle, equipment or plumbing fixture by reason of siphonage, by suction, or any other cause, either during normal use and operation thereof or when any such tank, receptacle, equipment or plumbing fixture is flooded, or subject to pressure in excess of the operating pressure in the hot or cold water piping.

(2) No part of the water supply system including the discharge pipes from relief valves shall be connected to any drainage or vent piping.

45-086 WATER OUTLETS AND SUPPLY CONNECTIONS. (1) Above rim outlets. Faucets, spouts and similar fixture supply pipes shall have their outlet spaced at least one inch (1") measured vertically above flood level of the fixture.

(2) Appliances connected. Water supplies directly connected to clothes washing or dishwashing machines shall be

protected by an approved fixed air gap incorporated within the appliance.

(3) Flushometer valves. An approved vacuum breaker shall be installed and maintained in the water supply on the discharge side of a water closet flushometer valve with a minimum clearance of six inches (6") from the flood level of the bowl to the critical level mark.

(4) Flush tanks. Water closet flush tanks shall be equipped with an approved anti-siphon ball cock which shall be installed and maintained with its outlet or critical level mark not less than one inch (1") above the full opening of the overflow pipe.

(5) Critical level requirement. The critical level C-L or C/L marking on a backflow prevention device or vacuum breaker is a point established by the testing laboratory and (usually stamped on the device by the manufacturer) which determines the minimum elevation above the flood level rim of the fixture or receptacle served on which the device may be installed. When a backflow prevention device does not bear a critical level marking the bottom of the vacuum breaker, combination valve, or the bottom of any such approved device shall constitute the critical level.

(6) Backflow preventer required. Trailers which are equipped with pressure, gravity type water supply tanks or reservoirs (not water heaters or flush tanks) for storing potable water and are connected to the water distribution system shall have an approved spring loaded check valve or other approved type backflow prevention device installed in the water supply piping adjacent to the inlet coupling. An approved pressure relief valve shall be required on the outlet side of the check valve.

45-088 SAFETY DEVICES. (1) Relief valves.

(a) If a check valve (see section 45-086 [6]) or pressure regulating device is installed between the water inlet coupling and a water heater or closed hot water tank, an approved adequately sized pressure relief valve shall be installed.

(b) Each pressure relief valve or combination pressure temperature relief valve

shall be an approved automatic self-closing type with full size drain and shall be set to relieve at not more than 125 P.S.I. or at 210 degrees F.

(c) Pressure relief valves shall be installed in the cold water supply pipe between the pressure regulator or check valve and any heater or tank, and shall be so located as to be readily accessible.

(d) If the relief valve is located inside it shall be equipped with a full size drain which shall be extended outside with the end directed downward in a location where the outlet end will be protected from dirt, mud and freezing. No part of the relief drain shall be trapped.

(e) Temperature relief valves shall be located within three inches (3") of the hottest part of the water heater in the hot water supply.

(2) Pressure tanks. Water storage tanks shall be constructed of sound, durable materials, impervious to corrosion and shall impart no taste or odor to the potable water in the system. Each tank shall be capable of withstanding 150 P.S.I. minimum working pressure. (ASTM non-fired pressure vessels).

45-090 MATERIALS OF WATER SYSTEM. (1) Pipe Pressure. Water pipe shall be standard weight galvanized iron or steel pipe, brass, galvanized wrought iron, galvanized steel or type K or L copper tubing. (Non-pressure cold water systems may be an approved plastic in accordance with WPOA standards TSC 7-61).

(2) Fittings. The material and design of water pipe fittings shall conform to the type of pipe used.

(a) Fittings for screw piping shall be standard weight galvanized iron for galvanized iron and steel pipe, brass for brass piping, and shall be installed where required for change in direction, reduction of size or where pipes are joined together.

(b) Fittings for copper tubing shall be cast brass or drawn copper sweat solder pattern or flare type.

(c) Fittings for plastic tubing in non-pressure cold water systems shall be standard brass barb type or approved plastic.

(3) Prohibited material. Used piping

materials shall not be permitted. Pipe dope, solder flux, oils, solvents, chemicals or other substances which are toxic, corrosive or otherwise detrimental to the water system shall not be used or allowed to enter the piping.

45-095 INSTALLATION OF PIPING.

(1) Minimum requirement. All piping equipment, appurtenances, and devices shall be installed in workmanlike manner and shall conform with the provisions and intent of this standard.

(2) Screw pipe. Iron pipe size brass or galvanized iron steel pipe and fittings shall be joined with American Standard taper pipe threads fully engaged in the fittings. Pipe ends shall be reamed to the full bore of the pipe. Pipe-joint compound shall be insoluble in water and shall be non-toxic.

(3) Solder fittings. Copper tubing shall be joined to sweat solder fittings by means of hot solder and a non-corrosive flux. The surfaces to be soldered shall be thoroughly cleaned. The use of self-cleaning fluxes or paste-type solder shall not be permitted.

(4) Flared fittings. A flaring tool shall be used to shape the ends of tubing.

(5) Pipe hangers. All piping and supply connections shall be securely anchored or clamped to the structure. Provisions shall be made to allow for expansion and contraction of the piping.

45-100 SIZE OF WATER SUPPLY PIPING. (1) Minimum size permitted. The size of water supply piping and branch lines shall not be less than sizes shown in Table B.

Table B
Minimum Size Tubing and Pipe
for Water Distribution System

Number of Fixtures	Tubing		Pipe I.P.S. (inches)
	I.D. (inches)	O.D. (inches)	
1	1/4*	3/8	1/2
2	3/8	1/2	1/2
3	1/2	5/8	1/2
4	1/2	5/8	1/2
5 or more	3/4	7/8	3/4

*Six (6) feet maximum length for 1/4" I.D. or 3/8" O.D. tubing. 3/8" I.D. or 1/2" O.D. minimum size for clothes washing or dishwashing machines. 3/8" I.D. or 1/2" O.D. minimum size for flushometer or meter-type valve when maximum length does not exceed six feet (6').

(2) Sizing procedure. Both hot and cold water piping system shall be computed by the following method:

(a) Start at the most remote outlet on any branch of the hot or cold water piping and progressively count towards the water service connection computing the total number of fixtures supplied

along each section of piping. Where branches are joined together, the number of fixtures on each branch shall be totaled so that no fixture is counted twice. Following down the left hand column of Table B a corresponding number of fixtures will be found. The required pipe or tubing size is indicated in the right-hand column on the same line.

(b) A water heater shall not be counted as a water using fixture when computing pipe sizes.

45-102 to 45-198 Reserved for Expansion

application forms, when submitted to the State Board of Health, State Fire Marshal and Bureau of Labor, shall be submitted through the Bureau of Labor, 115 Labor and Industries Building, Salem, Oregon. Each such application shall state the name and address of the applicant, the location of the trailer or trailers where inspection may be made, the name and address of the manufacturer, model numbers, number and amount of fees, and name of the department for which the fees are intended.

(2) With reference to each trailer for which separate applications for inspections of plumbing, heating and electrical equipment are submitted to the Bureau of Labor, each such application shall be accompanied by a fee in the amount of \$2.00 for each department (Board of Health - \$2.00, Fire Marshal - \$2.00, and Bureau of Labor - \$2.00). All such fees shall accompany the application submitted to the Bureau of Labor. (Ref. ORS 446.160)

45-210 PLUMBING PLANS AND SPECIFICATIONS. Plans showing plumbing equipment for a trailer, when submitted for use of the State Board of Health, may be drawn either to scale or schematic, but shall be clear and sufficiently detailed. Such plans and accompanying specifications shall show and include information as follows:

(1) Plumbing - Drain and Vent System, Water System, Appliances and Fixtures.

(a) Basic specifications on all fixtures, traps, fittings, pipe, tubing, shower stalls and walls, etc.

(b) Size, length, and type of pipe and tubing.

(c) Size and type of fittings.

(d) Location of all fixtures, receptacles, appliances, traps, openings for future fixtures, water heaters, water pipe, drainage piping, cleanout plugs, and vent pipes.

(e) Location of main drain outlet and type of drain hose adaptor coupling and cap.

(f) Grade of drainage piping.

(g) Location of vent pipe terminals and ventilators.

h) Location and type of water service g. (hose adaptor coupling and

(i) Method of securing all piping and fixtures.

(j) Location and type of all valves and all back flow preventers and safety devices.

(2) Plan Identification

(a) Name and address of the manufacturer or builder who proposes to equip one or more trailers with plumbing as shown in said plans and specifications.

(b) Model number corresponding to the number assigned by the manufacturer to each trailer offered for sale in this state and wherein plumbing is installed according to said plans and specifications.

(c) Date on which said plans and specifications were prepared or revised.

45-212 INSTALLATION TO CONFORM TO PLANS AND SPECIFICATIONS.

Plumbing equipment contained in any trailer, for which detailed plans and specifications are submitted and approved by the board, shall be according to said plans and specifications and shall not be changed, modified or altered without prior written approval of the board.

45-214 INSPECTION OF PLUMBING.

(1) The board may make such inspection as it deems to be reasonably necessary to enforce rules relating to plumbing contained in trailers and to carry out the duties of the Board. When an inspection of plumbing equipment contained in a trailer manufactured after January 1, 1962, reveals that said trailer is not in compliance with all rules and regulations of the State Board of Health relating to plumbing in trailers, said trailer shall not be sold or offered for sale prior to being reinspected by an authorized representative of the board and receiving therefrom an insigne of approval for said trailer.

(2) Approval of plumbing installed in a trailer shall become void automatically whenever such plumbing is altered, re-modeled or extended without prior approval of the board. The procedure for obtaining subsequent board approval of plumbing equipment shall be the same as for original approval. Refer to PROCEDURE FOR OBTAINING APPROVAL OF PLUMBING IN TRAILERS, sec-

tion 45-204.

(3) Approval of house trailer plumbing plans and specifications, if granted by the State Board of Health, shall not prevent the board from thereafter requiring the correction of any plumbing installation, equipment or appurtenance in any such trailer when said plumbing is found by inspection to be in violation of the requirements of the applicable rules of the board.

NOTE: Terms such as "plumbing installed (contained) in a trailer or camping vehicle" or "plumbing serving an oc-

cupied trailer or camping vehicle" apply only to trailers and camping vehicles on which wheels are maintained in proper condition for use on public highways.

Whenever a trailer or camping vehicle intended for human occupancy is placed on a foundation and wheels are removed, or the structure is otherwise affixed to a property in such a manner that it is not movable, the plumbing installation in or serving such trailer or camping vehicle is then governed by the Oregon State Plumbing Code and may be further governed by a local plumbing code applicable to the area in which the structure is located.