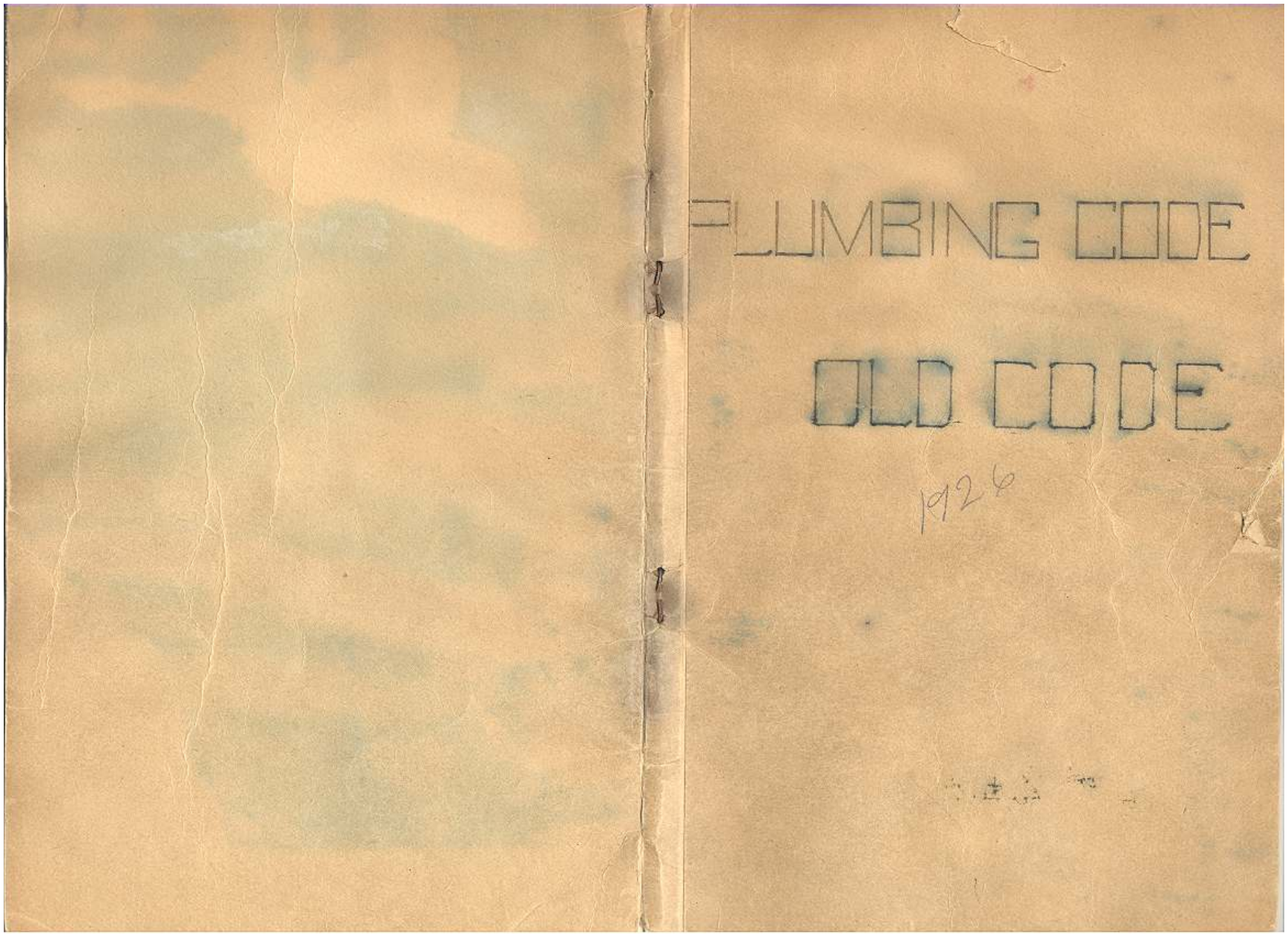
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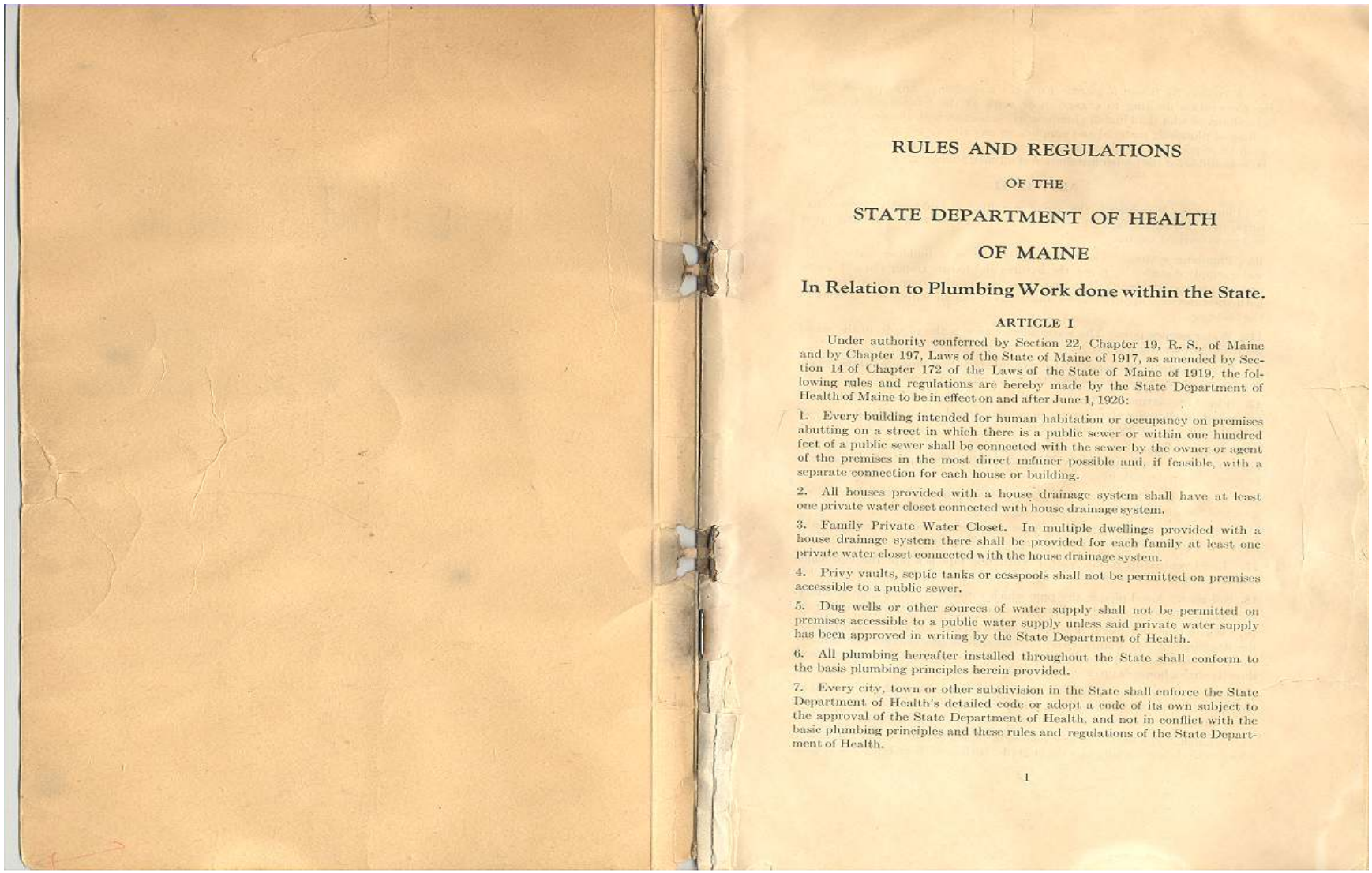


RULES AND REGULATIONS

OF THE

STATE DEPARTMENT OF HEALTH

OF MAINE

In Relation to Plumbing Work done within the State.

ARTICLE I

Under authority conferred by Section 22, Chapter 19, R. S., of Maine and by Chapter 197, Laws of the State of Maine of 1917, as amended by Section 14 of Chapter 172 of the Laws of the State of Maine of 1919, the following rules and regulations are hereby made by the State Department of Health of Maine to be in effect on and after June 1, 1926:

1. Every building intended for human habitation or occupancy on premises abutting on a street in which there is a public sewer or within one hundred feet of a public sewer shall be connected with the sewer by the owner or agent of the premises in the most direct manner possible and, if feasible, with a separate connection for each house or building.

2. All houses provided with a house drainage system shall have at least one private water closet connected with house drainage system.

3. Family Private Water Closet. In multiple dwellings provided with a house drainage system there shall be provided for each family at least one private water closet connected with the house drainage system.

4. Privy vaults, septic tanks or cesspools shall not be permitted on premises accessible to a public sewer.

5. Dug wells or other sources of water supply shall not be permitted on premises accessible to a public water supply unless said private water supply has been approved in writing by the State Department of Health.

6. All plumbing hereafter installed throughout the State shall conform to the basis plumbing principles herein provided.

7. Every city, town or other subdivision in the State shall enforce the State Department of Health's detailed code or adopt a code of its own subject to the approval of the State Department of Health, and not in conflict with the basic plumbing principles and these rules and regulations of the State Department of Health.

8. *Permits: By Whom Required—Firm or Corporation:* Any person, firm or corporation desiring to engage in or work at the business of installing plumbing, or who shall install plumbing in connection with the dealing in and selling of plumbing material and supplies, in any city or village of this State, shall be required at all times to have a master plumber in charge, who shall be responsible for the proper installation of all such plumbing.

ARTICLE II

9. Plumbing. Plumbing is the art of installing in buildings the pipes, fixtures, and other apparatus for bringing in the water supply and removing liquid and water-carried wastes.

10. Plumbing system. The plumbing system of a building includes the water supply distributing pipes, the fixtures and fixture traps; the soil, waste and vent pipes; the house drain and house sewer; the storm-water drainage; with their devices, appurtenances and connections all within or adjacent to the building.

11. Water service pipe. The water service pipe is the pipe from the water main to the building served.

12. Water distribution pipes. The water distribution pipes are those which convey water from the service pipe to the plumbing fixtures.

13. Plumbing fixtures. Plumbing fixtures are receptacles intended to receive and discharge water, liquid, or water-carried wastes into a drainage system with which they are connected.

14. Trap. A trap is a fitting or device so constructed as to prevent the passage of air or gas through a pipe without materially affecting the flow of sewage or waste water through it.

15. Trap seal. The trap seal is the vertical distance between the crown weir and the dip of the trap.

16. Vent pipe. A vent pipe is any pipe provided to ventilate sewage drainage system and to prevent trap siphonage and back pressure.

17. Local ventilating pipe. A local ventilating pipe is a pipe through which foul air is removed from a room or fixture.

18. Soil pipe. A soil pipe is any pipe which conveys the discharge of water-closets, with or without the discharges from other fixtures, to the house drain.

19. Waste pipe and special waste. A waste pipe is any pipe which receives the discharge of any fixture, except water-closets and conveys the same to the house drain, soil, or waste stacks. When such pipe does not connect directly with a house drain or soil stack, it is termed a special waste.

20. Main. The main of any system of horizontal, vertical, or continuous piping is that part of such system which receives the wastes, vent or back vents, from fixture outlets or traps, direct or through branch pipes.

21. Branch. The branch of any system of piping is that part of the system which extends horizontally at a slight grade, with or without lateral or vertical

extensions or vertical arms, from the main to receive fixture outlets not directly connected to the main.

22. Stack. Stack is a general term for any vertical line of soil, waste, or vent piping.

23. House drain. The house drain is that part of the lowest horizontal piping of a house drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of any building and conveys the same to the house sewer.

24. House sewer. The house sewer is that part of the horizontal piping of a house drainage system extending from the house drain to its connection with the public sewer or private disposal plant and conveying the drainage of but one building site.

25. Size and length. The given caliber or size of pipe is for a nominal internal diameter except that, other than iron pipe size, brass pipe is measured by its outside diameter. The developed length of a pipe is its length along the center line of pipe and fittings.

26. Dead end. A dead end is a branch leading from a soil, waste, vent, house drain, or house sewer, which is terminated at a developed distance of 2 feet or more by means of a cap, plug, or other fitting not used for admitting water to the pipe.

ARTICLE III

General Regulations

27. Grades of horizontal piping. All horizontal piping shall be run in practical alignment and at a uniform grade of not less than one-eighth of an inch per foot, and shall be supported or anchored at intervals not to exceed ten (10) feet. All stacks shall be supported at their bases, and all pipes shall be rigidly secured. When cast iron soil pipe is used, hangers or supports shall not be over eight inches from each hub.

28. Change in direction. All changes in direction shall be made by the appropriate use of 45° wyes, half wyes, long sweep quarterbends, sixth, eighth, or sixteenth bends, except that single or double sanitary tees may be used on vertical stacks, and short quarter bends may be used in soil and waste lines where the change in direction of flow is from the horizontal to the vertical. Tees and crosses may be used in vent pipes.

29. Prohibited fittings. No double hub or double tee shall be used on soil or waste lines. The drilling and tapping of house drains, soil, waste, or vent pipes, and the use of saddle hubs and bands are prohibited.

30. Dead ends. In the installation of any drainage system dead ends shall be avoided.

31. Offsets in mains. Offsets in the mains of all stacks shall be avoided but when unavoidable they shall be made with deflections not greater than 20°.

32. Stack supports. All free standing stacks shall be thoroughly supported on concrete or masonry piers at their bases and those forty (40) feet or more in height shall also be provided with foot rests at their bases and also with floor rests, or supports at ten foot intervals.

The pipe supports, according to their location, shall be made either with heavy iron posts, hangers, wall brackets or steel fittings, concrete or masonry piers, provided that no brick pier shall be less than eight (8) inches square. The use of pipe hooks shall be prohibited for larger than one and one-half (1½) inch pipes.

33. Protection of material. All pipes passing under or through walls shall be protected from breakage. All pipes passing through or under cinder concrete or other corrosive material shall be protected against external corrosion.

34. Workmanship. Workmanship shall be of such character as fully to secure the results sought to be obtained in all of the sections of this code.

35. Installation of plumbing by owner. All plumbing installed by the owner shall comply with the requirements of this code and in such event the word "owner" shall be substituted for the word "plumber" throughout this code.

ARTICLE IV

Quality and Weights of Materials

36. Materials, quality of. All materials used in any drainage or plumbing system, or part thereof, shall be free from defects.

37. Label, cast or stamped. Each length of pipe, fitting, trap, fixture, and device used in a plumbing or drainage system shall be stamped or indelibly marked with the weight or quality thereof and the maker's mark or name.

38. Vitrified clay pipe. All vitrified clay pipe shall conform to the American society for testing materials "standard specifications for clay sewer pipe."

39. Cast-iron pipe. (a) Quality. All cast-iron pipe and fittings shall conform to the American society for testing materials, "standard specifications for cast-iron soil pipe and fittings."

(b) Coating. All cast-iron pipe and fittings for underground use shall be coated with asphaltum or coal tar pitch.

(c) The use of standard pipe is prohibited and only extra heavy pipe shall be used which shall conform to the following minimum requirements:

Average Weight of Cast Iron Soil Pipe, Pounds Per Length (5') Sizes 2 in. 3 in. 4 in. 5 in. 6 in. 7 in. 8 in. 10 in. 12 in. 15 in. Extra Heavy 27½ 47½ 65 85 100 135 170 225 270 375

40. Wrought-iron pipe. All wrought-iron pipe shall conform to the American society for testing materials, "standard specifications for welded wrought-iron pipe" and shall be galvanized.

41. Mild-steel pipe. All steel pipe shall conform to the American society for testing materials,"standard specifications for welded and seamless steel pipe" and shall be galvanized.

42. Brass and copper pipe. Brass and copper pipe shall conform, respectively, to the standard specifications of the American society for testing materials for "brass pipe, standard sizes," and for "copper pipe, standard sizes."

43. Lead pipe, diameter, weights. All lead pipe shall be of best quality of drawn pipe, of not less weight per linear foot than shown below.

(a) Lead soil, waste, vent, or flush pipes, including bends and traps (extra light):

(b) No lead water supply or lead lined water supply pipes shall be used.

Internal Diameter Inches	Weights per foot Lbs.	Ozs.
1	2	—
1¼	2	8
1½	3	—
2	4	—
3	4	12
4	6	—

44. Sheet lead. Sheet lead shall weigh not less than 6 pounds per square foot.

45. Sheet copper or brass. Sheet copper or brass shall be not lighter than No. 18 Brown and Sharp gauge, except that for local and interior ventilating pipe it shall be not lighter than No. 26 Brown and Sharp gauge.

46. Galvanized sheet iron. Galvanized sheet iron shall not be lighter than the following Brown and Sharp gauge:

No. 26 for 2 to 12 inch pipe.
No. 24 for 13 to 20 inch pipe.
No. 22 for 21 to 26 inch pipe.

47. Threaded fittings. (a) Plain screwed fittings shall be of cast-iron, malleable iron, or brass of standard weight and dimensions.

(b) Drainage fittings shall be of cast-iron, malleable iron, or brass, with smooth interior waterway, with threads tapped out of solid metal.

(c) All cast-iron fittings used for water-supply distribution shall be galvanized.

(d) All malleable iron fittings shall be galvanized.

48. Calking ferrules. Brass calking ferrules shall be of the best quality cast brass, with weights and dimensions in accordance with the following table:

Pipe Size Inches	Actual Inside Diameter Inches	Length Inches	Weight Lbs.	Ozs.
2	2¼	4½	1	—
3	3½	4½	1	12
4	4¼	4½	2	8

49. Soldering nipples and bushings. (a) Soldering nipples shall be of brass pipe, iron pipe size, or of heavy, cast brass not less than the following weights:

Diameter Inches	Weights Ozs.
1¼	6
1½	8
2	14

72. Pipe cleanouts. The bodies of cleanout ferrules shall be made of standard pipe sizes, conform in thickness to that required for pipe and fittings of the same metal, and extend not less than one-quarter inch above the hub. The cleanout cap or plug shall be of heavy brass not less than one-eighth inch thick and be provided with raised nut or recessed socket for removal.

73. Pipe cleanouts, where required. A cleanout easily accessible shall be provided at the floor of each vertical waste or soil stack. There shall be at least two cleanouts in the house drain—one at or near the base of the stack and the other, with full-size Y branch, inside the wall near the connection between the house drain and house sewer. Except for the latter, cleanouts shall be of the same nominal size as the pipes up to 4 inches and not less than 4 inches for larger pipes. The distance between cleanouts in horizontal soil lines shall not exceed fifty (50) feet.

74. Manholes. All underground traps and cleanouts of a building, except where cleanouts are flush with the floor, and all exterior underground traps shall be made accessible by manholes with proper covers.

75. Cleanouts, equivalents. Any floor or wall connection of fixture traps when bolted or screwed to the floor or wall shall be regarded as a cleanout.

76. Grease traps. When a grease trap is installed, it shall be placed near the fixture from which it receives the discharge.

77. Sand traps. Sand traps when installed should be so designed and placed as to be readily accessible for cleaning.

78. Floor drains. All floor drains shall connect into a trap so constructed that it can be readily cleaned and of a size to serve efficiently the purpose for which it is intended. The drain inlet shall be so located that it is at all times in full view. When subject to back flow or back pressure, such drains shall be equipped with an adequate back-water valve.

79. Back-water valves. Back-water valves shall have all bearing parts or balls of noncorrodible metal and be so constructed as to insure a positive mechanical seal and remain closed except when discharging wastes. Back-water valves may be used when placed on a branch of the house drain that receives only the discharge from basement or cellar fixtures or floor drains. The plumbing inspector may order the installation of back-water valves where same are necessary. Where such a back-water valve is installed, it may be protected by a gate valve placed immediately on the outlet side of the back-water valve.

ARTICLE VII

Water Supply and Distribution

80. Distribution. The water supply shall be distributed through a piping system entirely independent of any piping system conveying another water supply. Quality of water supply shall meet accepted standards of purity adopted by State Department of Health.

81. Water Service. The water service pipe of any building shall be of sufficient size to permit a continuous ample flow of water on all floors at a given time.

82. Water supply 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 pedestal urinal shall be flushed by means of an approved tank or flush valve of at least 4 gallons flushing capacity for water-closets and at least 2 gallons for urinals, and shall be adjusted to prevent the waste of water. The flush pipe for water-closet flush tanks shall be not less than 1¼ inches in diameter, and the water from flush tanks shall be used for no other purpose.

No water-closet or urinal bowl shall be supplied directly from a water supply system through a flushometer or other valve unless such valve is set above the water-closet or urinal in a manner such as to prevent any possibility of polluting the water supply.

83. Size of water supply pipes. The minimum size of water-service pipes from the curb to the dwelling shall be one-half inch, except where I. P. brass is used, one size smaller is permissible, and to fixtures as follows:

	Inch
Sill cock	½
Hot water boilers	½
Laundry trays	½
Sinks	½
Lavatories	⅜
Bathtubs	½
Water-closet tanks	⅜

84. Water supply control. A main shut off on the water supply line shall be provided between the building wall and the curb line. An accessible shut-off shall be provided on the main supply line just inside the foundation wall which shall control the water supply to the entire building. Accessible shut-offs shall also be provided which shall separately control the water supply for each flat or apartment of a building, for each lawn sprinkler, for each hot water tank and for each water closet.

85. Water supply pipes and fittings; material. All water supply pipes for a plumbing system shall be of galvanized wrought-iron, or steel, brass, or cast-iron, with brass or galvanized cast-iron or galvanized malleable iron fittings. No pipe or fittings that have been used for other purposes shall be used for distributing water.

86. Water supply protection. All concealed water pipes, storage tanks, flushing cisterns, and all exposed pipes or tanks subject to freezing temperature shall be efficiently protected against freezing.

87. Relief valves. Every hot water supply system supplied directly from street main shall be equipped with a suitable relief valve.

88. Temperature valves. Every hot water supply system shall be equipped with suitable temperature relief valve which will prevent the temperature of the water in the system exceeding 215 degrees.

89. Pumps and hydrants. All pumps and hydrants shall be protected from surface water and contamination.

ARTICLE VIII

Plumbing Fixtures

90. Materials. All receptacles used as water-closets, urinals, or otherwise for the disposal of human excreta, shall be vitrified earthenware or other approved nonabsorptive water tight material.

91. How installed. All plumbing fixtures shall be installed free and open in a manner to afford access for cleaning. When practical all pipes from fixtures shall be run to the wall.

92. Water-closet bowls. Water-closet bowls and traps shall be made in one piece and of such form as to hold sufficient quantity of water, when filled to the trap overflow, to prevent fouling of surfaces, and shall be provided with integral flushing rims constructed so as to flush the entire interior of the bowl.

93. Frost proof closets; where permitted. Frost proof closets may be installed only in compartments which have no direct connection with a building used for human habitation or occupancy. The soil pipe between the hopper and the trap shall be three (3) inches in diameter and shall be of lead or cast-iron.

No waste pipe from bowl or bathtub shall be connected with a water-closet trap.

94. Flushing tanks, groups of fixtures. A group of urinals, on the same floor, subject to constant use as in schools and factories may be supplied from one (1) tank, if provided with an automatic simultaneous flush, provided that each individual urinal shall receive not less than one (1) gallon of water at each flushing, and the discharge is of such force as to cleanse each individual bowl at each flush.

95. Automatic flushing tanks. All urinals having either intermittent or automatic flushing devices shall be flushed at regular intervals not to exceed ten (10) minutes each during the hours that such fixtures are in use.

96. Urinals. All urinals, troughs or gutters other than those heretofore prescribed, shall be constructed of materials impervious to moisture and that will not corrode under the action of urine. When the floor gutters are used as urinals the gutters shall be made with Portland cement or other impervious material, and the floors and wall within five (5) feet of such gutter shall be made equally water tight and impervious. In districts having no sewer connections copper urinal troughs may be used in outhouses, sheds, barns and in yards and at least twenty (20) feet distant from any dwelling. The lip of all stall urinals must be set below the top of the floor so that all water or urine will drain from the floor to the urinal waste outlet, or a separate floor drain shall be provided for the toilet room.

97. Fixtures prohibited. Fixed, unlined wooden wash trays or sinks shall not be installed in any building designed or used for human habitation. No

new copper lined wooden bathtubs shall be installed and an old fixture of this class taken out shall not be reconnected. Pan and valve plunger, offset washout and other waterclosets having invisible seals or unventilated space, or walls not thoroughly washed at each flush shall not be used. Long hopper closets or similar appliances shall not hereafter be installed. No dry closet or chemical closet shall be installed in a dwelling.

98. Floor drains and shower drains. A floor drain or a shower drain shall be considered a fixture and provided with a strainer.

99. Fixture strainers. All fixtures other than water-closets and pedestal urinals shall be provided with fixed strong metallic strainers with outlet areas not less than that of the interior of the trap and waste pipe.

100. Fixture overflow. The overflow pipe from a fixture shall be connected on the house or inlet side of the trap and be so arranged that it may be readily and effectively cleaned.

ARTICLE IX

Ventilation of Rooms and Fixtures

101. Location of fixtures. No trapped plumbing fixtures shall be located in any room or apartment which does not contain a window placed in an external wall of the building or is not provided with a system of ventilation.

102. Ventilation. (a) Compartments containing not more than four (4) water-closets or their equivalent shall be located in an apartment containing windows, of sufficient area to properly ventilate the compartment, placed in the external walls of the building or shall be provided with a mechanical means of ventilation which will change the air at a normal temperature at least six (6) times per hour.

(b) Compartments containing more than four (4) water-closets or their equivalent shall be located either in an apartment containing windows and provided with a gravity or mechanical system of ventilation which will change the air at normal temperature not less than six (6) times per hour; or, may be placed in a compartment without windows in the external wall of the building, providing a mechanical system of ventilation is installed which will change the air at normal temperature not less than six (6) times per hour. (Alternate for a and b.) Every toilet room and every water-closet or urinal compartment, unless provided with a suitable system of exhaust ventilation, shall be ventilated directly to the outer air by movable windows or by skylights with fixed or pivoted louvres. Every such toilet room or compartment shall have a window or glass skylight not less than one foot wide, and an area of not less than six square feet for one water-closet or urinal, and the area of the window or skylight shall be increased by at least one square foot for every additional water-closet or urinal.

If a mechanical system of ventilation is used, such system shall consist of metal or smooth masonry ducts extending from the individual toilet rooms or compartments to a fan or fans of sufficient capacity to exhaust a volume of not less than thirty (30) cubic feet of air per minute for each watercloset

or urinal, and in no case shall less than six changes of air in the toilet room or compartment be allowed per hour. The exhaust duct shall discharge into the outside air above the room and in such a manner as not to create objectionable odors or a nuisance on the premises or adjacent premises.

Ventilation from toilet rooms shall be separate and distinct and have no connection whatever with the other ventilating ducts in the building.

ARTICLE X

Soil, Waste and Vent Pipes

103. Material. All main or branch soil, waste, and vent pipes within the building shall be of cast-iron, galvanized steel or wrought-iron, lead, brass, or copper, except that no galvanized steel or wrought iron pipe shall be used for underground soil or waste pipes. All waste pipes from fixtures in which chemicals may be emptied or used shall be acid proof to the stack to which they are connected.

104. Fixture unit. The following table based on the rate of discharge from a lavatory as the unit shall be employed to determine fixture equivalents:

	Fixture Unit
One lavatory or wash basin	1
One kitchen sink	1½
One bathtub	2
One laundry tray	3
One combination fixture	3
One urinal	3
One shower bath	3
One floor drain	3
One slop sink	4
One water-closet	6

One hundred eighty (180) square feet of roof or drained area in horizontal projection shall count as one fixture unit.

105. 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 angles and turns. The required size of a soil or waste stack shall be independently determined by the total fixture units of all fixtures connected to the stack in accordance with the following tables:

Waste Stacks

Number Fixture Units	Diameter of stack Inches	Permitted length Feet
1	1¼	45
1½ to 8	1½	60
9 to 18	2	75
19 to 36	2½	105

Soil and waste Stacks

Number Fixture Units	Number of water-closets or equivalent	Diameter of stack Inches	Maximum permitted length Feet
6 to 72	1 to 12	3	150
73 to 300	13 to 50	4	225
301 to 720	51 to 120	5	300
721 to 1,080	121 to 180	6	400
1,081 to 1,920	181 to 320	8	600

Restrictions. No water-closet shall discharge into a stack less than 3 inches in diameter. Not more than three water-closets or their equivalent in fixture units shall discharge into a 3-inch stack from one 3-inch branch, and not more than two such branches may connect to a 3-inch stack at the same point or level.

106. Soil and waste stack fixture connections. All soil and waste stacks and branches shall be provided with correctly faced inlets for fixture connections.

107. 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.

108. Prohibited connections. No fixture connection, except in replacement work, shall be made to a lead bend or branch of a water-closet or similar fixture. No soil or waste vent, circuit or loop vent above the highest installed fixture on the branch or main shall thereafter be used as a soil or waste pipe.

109. Soil and waste pipe protected. No soil or waste stack shall be installed or permitted outside of building unless adequate provision is made to protect it from frost.

110. Roof extensions. All roof extensions of soil and waste stacks shall be run full size at least two (2) feet above the roof, and when the roof is used for other purposes than weather protection such extension shall not be less than five (5) feet above the roof.

When there is danger of frost closure, no roof extension shall be less than four (4) inches in diameter. Changes in diameter shall be made by use of a long increase at least one (1) foot below the roof, and where access to the roof is difficult a test opening shall be provided at this point.

111. Branch soil and waste extension. Any vertical branch rising more than ten (10) feet, or any lateral branch running more than ten (10) feet from the main soil line, shall be continued full size to a point above the roof in the same manner as required for main soil pipes, or may be returned to main vent pipe full size.

112. Traps protected; vents. In all buildings of four floors or more, where plumbing fixtures are connected on the fourth floor, every fixture trap in the building shall be protected against siphonage and back pressure, and air circulation assured by means of continuous waste or soil vent with a loop or circuit vent or individual vents excepting fixtures on top floor which shall be cared for as described in Paragraph 113. No crown vent shall be installed.

If plumbing fixtures are required in basements of three flat buildings for living quarters, the venting of said fixtures shall be as specified for a four story building.

113. Distance of vent from trap seal. No trap shall be placed more than ten (10) feet, horizontal developed length, from its vent. The distance shall be measured along the central line of the waste or soil pipe from the vertical inlet of the trap to the vent opening. The vent opening from the soil or waste pipe, except for water-closets and similar fixtures, shall not be below the dip of the trap on loop, circuit or continuous vent installation.

114. 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 three (3) feet above the highest fixture branch.

115. Vents required sizes. The required size of main vents or vent stacks shall be determined on the basis of the size of the soil or waste stack, the number of fixtures or fixture units connected to the soil or waste stack, and the developed length of the main vent or vent stack in accordance with the following tables:

Waste Stack

Diameter of stack (inches)	Fixture units on stack	Dimensions of Vent: Diameter Inches	Dimensions of Vent: Maximum Length Feet
1¼	1	1¼	45
1½	2- 8	1¼	35
1½	2- 8	1½	50
2	9-18	1¼	30
2	9-18	1½	60
2	9-18	2	75
2½	19-36	1¼	25
2½	19-36	1½	45
2½	19-36	2	60
½	19-36	2½	105

Soil and Waste Stack

Diameter of Stack (inches)	Fixture units on stack	Water-closets only	Dimensions of Vent: Diameter Inches	Dimensions of Vent: Maximum length Feet
3	6- 18	1- 3	1½	20
3	6- 18	1- 3	2	60
3	19- 42	4- 7	2	45
3	19- 42	4- 7	2½	*150
3	43- 72	8- 12	2	30
3	43- 72	8- 12	2½	90
3	43- 72	8- 12	3	150
4	24- 42	4- 7	2	20
4	24- 42	4- 7	2½	45
4	24- 42	4- 7	3	100
4	43- 72	8- 12	2½	30
4	43- 72	8- 12	3	75
4	43- 72	8- 12	3½	150
4	43- 72	8- 12	4	300
4	73- 150	13- 25	3	60
4	73- 150	13- 25	3½	120
4	73- 150	13- 25	4	225
4	151- 300	26- 50	3	20
4	151- 300	26- 50	3½	50
4	151- 300	26- 50	4	100
4	151- 300	26- 50	5	*225
5	301- 480	51- 80	2½	20
5	301- 480	51- 80	3	50
5	301- 480	51- 80	3½	100
5	301- 480	51- 80	4	175
5	301- 480	51- 80	5	*300
5	481- 720	81-120	3½	25
5	481- 720	81-120	4	50
5	481- 720	81-120	5	125
5	481- 720	81-120	6	*300
6	721- 840	121-140	3	20
6	721- 840	121-140	3½	40
6	721- 840	121-140	4	75
6	721- 840	121-140	5	225
6	721- 840	121-140	6	*400
6	841-1,080	141-180	4	50
6	841-1,080	141-180	5	125
6	841-1,080	141-180	6	300
6	841-1,080	141-180	8	*400

8	1,081-1,920	181-320	4	20
8	1,081-1,920	181-320	5	60
8	1,081-1,920	181-320	6	150
8	1,081-1,920	181-320	8	*600

*Limit in height of soil stack but not in length of vent if greater is required.

116. Branch and individual vents. No vents shall be less than 1¼ inches in diameter. For 1¼ and 1½ 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, and in no case shall the length of a branch vent of given diameter exceed the maximum length permitted for the main vent serving the main size soil or vent stack.

117. 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 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 45° 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.

118. Circuit and loop vents. A circuit or loop vent will be permitted as follows: A branch or waste pipe to which two and not more than eight water-closets, pedestal urinals, trap standard slop sinks, or shower stalls are connected in the series may be vented by a circuit or loop vent, which shall be taken off in front of the last fixture connection. Where fixtures discharge above such branch, each branch shall be provided with a relief vent one-half the diameter of the soil or waste stack, but in no case less than two inches in diameter, taken off in front of the first fixture connection.

119. Vents not required. No vents will be required on a down spout or rain leader trap, a back-water trap, a subsoil catch basin trap, or on a floor drain, provided the floor drain branches into the house drain on the sewer side at a distance of 5 feet or more from the base of the stack.

Where bathrooms or water-closets or other fixtures are located on opposite sides of a wall or partition or directly adjacent to each other within the prescribed distance, such fixtures may have a common soil or waste pipe and common vent.

ARTICLE XI

House Drains and Sewers

120. Independent system. The drainage and plumbing system of each new building and of new work installed in an existing building shall be separate from and independent of that of any other building, except as provided below, and every building shall have an independent connection with a public or private sewer when available. Exception. Where one building stands in the rear of another building on an interior lot and no private sewer is available or can be constucted to the rear building through adjoining alley, court, yard, or driveway, the house drain from the front building may be extended to the rear building and the whole will be considered as one house drain.

121. Old house sewers and drains. Old house sewers and drains may be used in connection with new buildings or new plumbing only when they are found, on examination and test, to conform in all respects to the requirements governing new sewers or drains, as prescribed in this code. If the old work is found defective, the proper administrative authority shall notify the owner to make the necessary changes to conform with this code.

122. Connections with cesspools. When a sewer is not available, drain pipes from buildings shall be connected with approved private sewage disposal works.

123. Excavation. Each system of piping shall be laid in a separate trench, provided that drainage trenches may be benched not less than eighteen (18) inches for lighter piping, if not in violation of any city regulation prescribed for their installation. Where a double system of drainage is installed, the sanitary and surface house sewers or drains may be laid side by side in one trench.

Tunneling for distances not greater than six (6) feet is permissible in yard, courts, or driveways of any building site. When pipes are driven, the drive pipe shall be at least one size larger than pipe to be laid.

All excavations required to be made for the installation of a house-drainage system, or any part thereof within the walls of a building, shall be open trench work. All such trenches and tunnels shall be kept open until the piping has been inspected, tested, and approved.

124. House drains underground. Whenever possible all house drains shall be brought into the building below the basement or cellar floor.

125. Material. (a) The house sewer beginning eight (8) feet outside the building shall be of cast-iron or of vitrified clay pipe; (b) the house drain when underground shall be of lead, brass, or cast-iron; (c) the house drain when above ground shall be of cast-iron, galvanized wrought iron or steel, lead or brass, approved standards. (See article IV, sections 40 to 47.)

126. Location of drains and sewers. No house sewer or underground house drain shall be laid parallel to or within three (3) feet of any bearing, which might be thereby weakened. The house sewer and drains shall be laid at sufficient depth to protect them from frost.

127. Size of drains and sewers. The required size of sanitary house drains and sanitary house sewers shall be determined on the basis of the total number of fixture units drained by them in accordance with the following table:

Fixture Units (diameter in inches)	Slope ⅛ inch to 1 foot	Slope ¼ inch to 1 foot	Slope ½ inch to 1 foot	Number water-Closets or equivalent
6 to 12	4	4	—	1- 2
13 to 24	4	4	4	3- 4
25 to 72	6	5	4	5- 12
73 to 300	8	6	5	13- 50

301 to 720	8	8	6	51-120
721 to 1,080	10	10	8	121-180
1,081 to 1,920	12	12	10	181-320

The required sizes of storm water house drains and house sewers and other lateral storm drains shall be determined on the basis of the total drained area in horizontal projection in accordance with the following table:

Size of house drain and sewer for storm water only

Number of Square Feet Drained Area (diameter in inches)	Slope ⅛ inch to 1 foot	¼ inch to 1 foot	½ inch to 1 foot
Up to 90	1½	1½	1½
91 to 400	3	2	2
401 to 660	3	3	2
661 to 1,200	4	3	3
1,201 to 1,800	4	4	3
1,801 to 2,500	5	4	4
2,501 to 4,100	5	5	4
4,101 to 4,600	6	5	5
4,601 to 5,300	6	6	5
5,301 to 7,500	8	6	6
7,501 to 11,100	8	8	6
11,101 to 15,700	10	8	8
15,701 to 19,500	10	10	8
19,501 to 24,800	12	10	8
24,801 to 31,000	12	12	10
31,001 to 44,000	14	12	10
44,001 to 60,000	14	14	12

128. Combined storm and sanitary sewer systems. Whenever a combined sewer system is employed, the required size of the house sewer shall be determined by adding to the drained area in square feet one hundred eighty (180) square feet for each "fixture unit" on the sanitary system (see table, section 105—Fixture units) and then applying the total to the preceding table for storm sewers, except that no combined sanitary and storm sewer shall be less than four (4) inches in diameter. The required sizes of the sanitary house drain and the storm house drain up to their point of junction may be independently determined from the table.

129. House sewer in made ground. The house sewer when laid in made or filled-in ground shall be of vitrified clay pipe, laid on bed of approved grillage or concrete, or of cast-iron pipe, American society for testing materials approved standards.

130. 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 artifical means and discharged into the house sewer.

131. Sumps and receiving tanks. All house drains below sewer level shall discharge into a water tight sump or receiving tank so located as to receive the sewage by gravity, from which sump or receiving tank the sewage shall be lifted and discharged into the house sewer by pumps, compressed air, or any equally efficient method. Such sumps shall be either automatically discharged or be of sufficient capacity to receive the house sewage and wastes for not less than twenty-four (24) hours.

132. Ejectors vented. The soil or waste pipe leading to an ejector or other appliance for raising sewage or other waste matter to the street sewer shall be extended full size through the roof independently from the vent pipes of the gravity drainage system.

133. Motors, compressors, etc. All motors, air compressors, and air tanks shall be located where they are open for inspection and repair at all times. The air tanks shall be so proportioned as to be of equal cubical capacity to the ejectors connected therewith, in which there shall be maintained an air pressure of not less than two (2) pounds for each foot of height the sewage is to be raised.

134. Ejectors for subsoil drainage. When subsoil catch basins are installed below the sewer level, an automatic device for raising water or an automatic water ejector provided with a ball float attached to the main water supply shall be used.

135. Exhaust blow-offs and drip pipe connections. The exhaust blow-off, sediment or drip pipe from a steam boiler shall not connect directly with any sewer, drain, soil or waste pipe. Such pipes shall discharge into the top and above the line of discharge of a suitable closed tank or condenser made of wrought or cast-iron, provided with a relief pipe, of at least three (3) inches in diameter, extending to the outer air above the roof.

The waste from said tank or condenser shall be taken from the bottom and be at least one size larger than the inlet, but not less than three (3) inches in diameter, and provided with a trap that has a seal of not less than twenty-four (24) inches, and wherever possible shall connect to the house sewer and not to the house drain.

136. Hot water discharge prohibited. Water heated to over one hundred and forty (140) degrees, Fahrenheit, shall not be allowed to enter any street sewer, drain or lateral. When blow-off tanks discharge water at a higher temperature they shall be provided with a cooling device.

137. Elevator connections. All direct connected hydraulic elevators, lifts or pressure machines shall be provided with an intermediate tank of sufficient capacity as to discharge its waste without pressure into any sewer, drain, soil or waste pipe. Such tanks shall be trapped and where there is danger of back pressure from sewer there shall be placed on its outlet side a sewer or back-water valve.

ARTICLE XII

Storm Water Drains

138. Drainage of yards, areas, and roofs. All roofs and paved areas, yards, courts, and courtyards shall be drained into the storm-water sewerage system or the combined sewerage systems, but not into sewers intended for sewage only. / When drains used for this purpose are connected with the combined sewerage systems, they shall be effectually trapped, except 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 case need not be trapped. In districts where the outlets of a public sewer are free to the open air continuously or at the fall of tide, a house trap and one drain in common may be used.

139. Size of gutters and leaders. No gutter or inside leader shall be of less size than the following:

Area of Roof (in square feet)	Gutter Inches	Leader Inches
Up to 90	3	1½
91 to 270	4	2
271 to 810	4	2½
811 to 1,800	5	3
1,801 to 3,600	6	4
3,601 to 5,500	8	5
5,501 to 9,600	10	6

Outside leaders to the frost line shall be one size larger than required in the above table.

Gutters eight (8) inches or over in width on new buildings shall be hung with wrought iron hangers of approved type.

The above sizes of rain leaders are based on diameter of circular rain leaders, and gutters based on semicircular sheet-metal gutters with the top dimension given and other shapes shall have the same sectional area.

140. Inside conductors. 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.

141. Outside conductors. When outside conductors or down spouts of sheet metal are connected with the house drain, they shall be so connected by means of not less than one length of cast-iron pipe extending vertically at least one (1) foot above the grade line.

Along public driveways without sidewalks they shall be placed in niches in the walls, protected by wheel guards, or enter the building through the wall at a 45° slope at least twelve (12) feet above the grade.

142. Defective conductor pipes. When an existing sheet-metal conductor pipe within the walls of any building becomes defective, such conductor shall be replaced by one which conforms to this code.

143. Overflows. Overflow pipes from cisterns, supply tanks, expansion tanks, and drip pans shall connect only indirectly with any house sewer, house drain, soil, waste, or vent pipe.

144. 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 four (4) inches in diameter, and shall be properly trapped and protected against back pressure by an automatic back-pressure valve accessibly located before entering the house sewer or drain. They may discharge through a cellar drain.

145. 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 and discharged into the drainage system above the sewer level through some properly trapped fixture or drain.

ARTICLE XIII

Refrigerator, Safe and Special Wastes

146. Fixtures 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 sink that is properly supplied with water, connected, trapped and vented, the same as other fixtures, or into a cellar floor drain, but their ends must be left open. Such waste connections shall not be located in inaccessible or unventilated cellars.

147. Refrigerator wastes. Refrigerator-waste pipes shall be not less than one and one-fourth inches for one opening, one and one-half inches for three openings, and for four or more openings must be not less than two inches, and shall have clean-outs of angles, so arranged as to permit of properly flushing and cleaning the pipe. Such waste pipes shall be continued not less than full size through the roof, except where such fixtures are located in the basement of the first floor.

148. Overflow pipes and motor exhausts. Pipes from a water supply tank or exhaust from a water lift shall not be directly connected with any house drain, soil, or waste pipe. Such pipe shall discharge upon the roof or be trapped into an open fixture or discharge as for refrigerator wastes.

149. Kitchen wastes. Kitchen or other greasy wastes from hotels, restaurants, club houses, public institutions or other establishments in which much cooking is done or greasy wastes obtain, shall be intercepted by a catch basin or a grease trap, and then conducted to the house sewer. Such catch basins or grease traps shall have the accumulated grease and fats removed there-

from at regular intervals and shall be so maintained as to insure the exclusion of the same from the sewerage system.

150. Stable (and garage) wastes. All liquid wastes from barns, (garages) stables, manure pits and stable yards shall be intercepted before entering the sewer by a suitable catch basin, properly trapped.

151. Garage drains and catch basins. In municipalities having a sewerage system any garage or other structure for the housing, sale or repair of automobiles which is provided with a water supply of either a temporary or permanent character, or in which automobiles are washed, cleaned or repaired, shall be provided with proper means for draining the floors and repair pits, in such a manner that no drainage therefrom shall flow over any street, alley or paved approach. Such drains shall be so arranged as to intercept all oil, gasoline or other inflammable fluids, as well as sand, silt and other solids for the purpose of excluding same from the sewerage system.

They shall be provided with a sealed inlet opening not less than three (3) inches in diameter and a ventilating pipe of not less than three (3) inches in diameter and carried up above the highest part of the roof and subject to the same conditions as required for roof outlets of soil or waste pipes.

The material for vent pipe must be the same as required for house drains when below ground and for soil and waste vents when above ground.

Such drains shall have the accumulated oils and other inflammable fluids pumped or otherwise removed therefrom at regular intervals, and shall be so maintained as to insure the exclusion of the same from the sewerage system.

They shall also be kept free of sand, silt and other solids and shall be subject to a periodical inspection.

Every building hereafter constructed or converted into a place of business where gasoline, benzine, naphtha, or other inflammable oils or compounds are used, also any existing building where such business is carried on, shall be provided with a special drain the same as that required above for garages. A wash basin in a garage may discharge into the catch basin. Such catch basins may be constructed of cast iron, concrete or brick as required for tight cesspools.

ARTICLE XIV

Maintenance

152. Defective fixtures. All installed fixtures found defective or in an insanitary condition shall be repaired, renovated, replaced, or removed within thirty (30) days upon written notice from the proper administrative authorities.

153. Temporary toilet facilities. Suitable toilet facilities shall be provided for the use of workmen during the construction of any building. These toilet facilities shall be maintained in a sanitary condition.

ARTICLE XV

Inspections and Tests

154. Inspections. All piping, traps, and fixtures of a plumbing system shall be inspected by the proper administrative authority to insure compliance with all the requirements of this code and the installation and construction of the system in accordance with the description of work and the permit.

155. Notification. (a) It shall be the duty of the plumber to notify the proper administrative authority and the owner, or his authorized agent orally, by telephone, or in writing, not less than eight (8) working hours between the hours of 8 a. m. and 4 p. m. before the work is to be inspected or tested.

(b) It shall be the duty of the plumber to make sure that the work will stand the test prescribed before giving the above notification.

(c) If the proper administrative authority finds that the work will not stand the test, the plumber shall be required to renotify as above and to pay the sum of ..... dollars for each renotification.

(d) If the proper administrative authority fails to appear within twenty-four (24) hours of the time set for each inspection or test, the inspection or test shall be deemed to have been made, and the plumber required to file an affidavit with the proper administrative authority that the work was installed in accordance with the code, the approved plans and permit, and that it was free from defects and that the required tests had been made and the system found free from leaks; also whether the owner or his authorized agent was present when such inspection or test was made, or was duly notified.

(e) At the time the permit is taken out a written waiver by the owner of notification may be filed with the .....

.....

(Proper administrative authority)

156. Material and labor for tests. The equipment, material, power, and labor necessary for the inspection and test shall be furnished by the plumber.

157. System tests. All the piping of a plumbing system shall be tested with water or air. The proper administrative authority may require the removal of any cleanouts to ascertain if the pressure has reached all parts of the system.

158. Methods of testing. (a) Water test. The water test may be applied to the drainage system in its entirety or in sections. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening above the roof and the system filled with water to the point of overflow above the roof.

If the system is tested in sections, each opening shall be tightly plugged, except the highest opening of the section under test, and each section shall be filled with water, but no section shall be tested with less than twenty (20) foot of water or a ten-pound pressure of air. In testing successive sections at least the upper ten (10) feet of the next preceding section shall be retested,

so that no joint or pipe in the building shall have been submitted to a test of less than a 20-foot head of water or a 10-pound pressure of air.

Under any test the water or air pressure shall remain constant for not less than fifteen minutes without any further addition of water or air.

(b) Air test. The air test when used shall be made by attaching the air compressor or test apparatus to any suitable opening and closing all other inlets and outlets to the system, then forcing air into the system until there is a uniform pressure sufficient to balance a column of mercury twenty (20) inches in height or ten (10) pounds per square inch on the entire system. This pressure shall be maintained for fifteen (15) minutes.

159. Order of tests. The tests may be made separately as follows:

(a) The house sewer and all its branches from the property line to the house drain.

(b) The house drain and yard drains, including all piping to the height of twenty (20) feet above the highest point on the house drain, except the exposed connections to fixtures.

(c) The soil, waste, vent, inside conductor, and drainage pipes which would be covered up before the building is inclosed or ready for completion. The tests required for (b) and (c) may be combined.

(d) The final test of the whole system.

(e) After each of the above tests has been made and proved acceptable the proper administrative authority shall issue a written approval.

160. Covering of work. No drainage or plumbing system or part thereof shall be covered until it has been inspected, tested, and approved as herein prescribed.

161. Uncovering of work. If any house drainage or plumbing system or part thereof is covered before being regularly inspected, tested, and approved, as herein prescribed, it shall be uncovered upon the direction of the proper administrative authority.

162. Defective work. If inspection or test shows defects, such defective work or material shall be replaced within ten days and inspection and test repeated.

163. House sewer and house drain tests. The house sewer and house drain shall be tested with water or air. The water test shall have not less than a 20-foot head of water and the air test not less than a 10-pound pressure. All alterations, repairs, or extensions, which shall include more than ten (10) feet, shall be inspected and tested.

164. Conductor pipes. Conductor pipes and their roof connections within the walls of buildings, or conductor branches on the outside system where such branches connect with the house drain or are less than three (3) feet from the wall of the building, shall be tested by the water or air test. Conductor branches on the outside system may be tested in connection with the house drain.

165. Stable and stable-yard drain test. If a stable or any part of a stable be used for human habitation, the same inspections and tests of plumbing and drainage systems thereof shall be made as in the case of an ordinary dwelling. Otherwise, all stable and stable-yard drains shall be inspected, but need not be tested.

166. Garage and drainage system. For a garage or any part of a garage the same tests and inspection of the plumbing and drainage system thereof shall be made as in the case of an ordinary dwelling.

167. Test of water distribution system. Upon the completion of the entire water distribution system it shall be tested and proved tight under a water pressure not less than the maximum working pressure under which it is to be used.

168. Certificate of approval. Upon the satisfactory completion and final test of the plumbing system a certificate of approval shall be issued by the proper administrative authority to the plumber to be delivered to the owner.

169. Smoke test of defective plumbing. The smoke test shall be used in testing the sanitary condition of the drainage or plumbing system of all buildings where there is reason to believe that it has become defective. In buildings condemned by the proper administrative authority because of insanitary conditions of the plumbing system the alterations in such system shall not be considered as repairs, but as new plumbing.

Directions for smoke test. The smoke test shall be made by introducing smoke having a pungent odor into the plumbing system by means of a smoke machine attached either to the house drain near the building wall or else to an outlet upon the roof until the inspector is assured by the removal of clean-out caps or plugs at various points in the system that smoke has reached into all parts of the plumbing system. Smoke shall continue to be introduced into the system after the same is ready for inspection and until the inspection is completed.

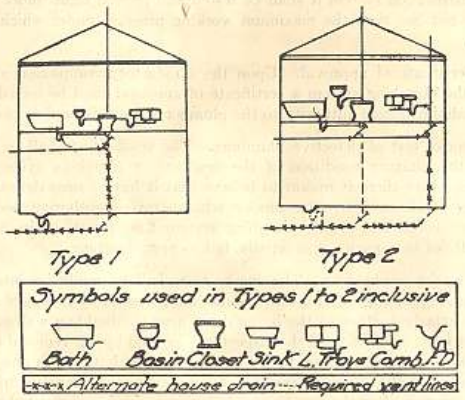
170. Inspections and tests not required. No tests or inspections shall be required where a plumbing system or part thereof is set up for exhibition purposes and is not used for toilet purposes and not directly connected to a sewerage system; nor after the repairing or replacing of an old fixture, faucet, or valve by a new one (to be used for the same purpose); nor after forcing out stoppages and repairing leaks.

171. All local plumbing inspectors shall be approved by the State Commissioner of Health.

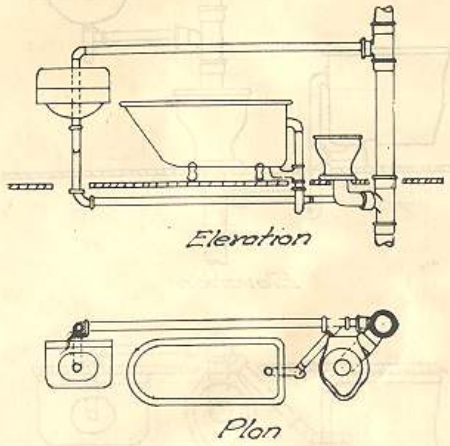
Approved by the Public Health Council December 29, 1925.

Amendments approved May 13, 1926.

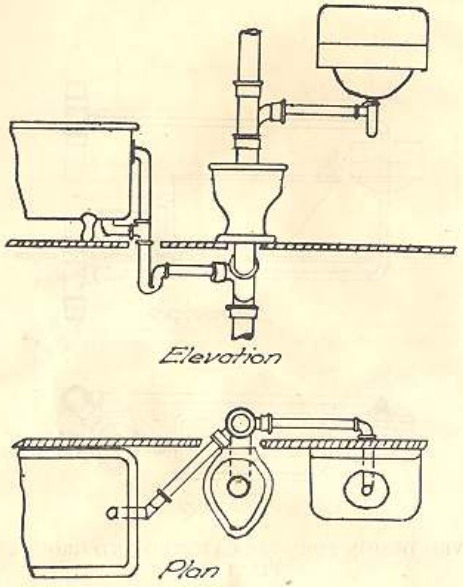
Amendments of Article 3, Paragraph 27, 28 and 31; Article 6, Paragraph 66; Article 7, Paragraph 83; Article 8, Paragraph 91 and 97; Article 10, Paragraph 112 and 113; Article 11, Paragraph 125; Article 12, Paragraph 145; Article 13, Paragraphs 150 and 151 approved October 30, 1928.



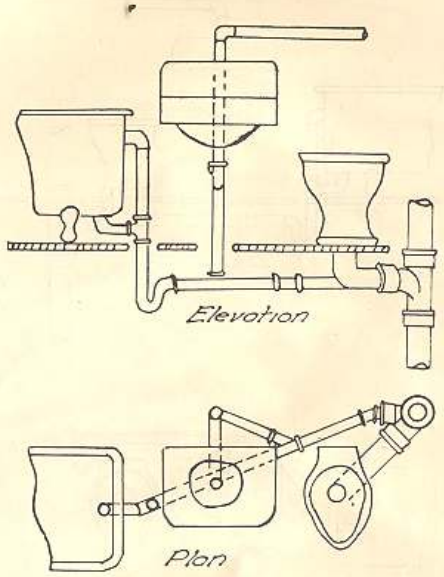
TYPES OF ONE-STORY ONE-FAMILY HOUSES SHOWING REQUIRED VENTING.



APPROVED DESIGN FOR STACK VENTED AND GROUP-VENTED FIXTURES



APPROVED DESIGN FOR A STACK VENTED BATHROOM GROUP OF FIXTURES (THE HIGHEST GROUP OF FIXTURES ON THE STACK).



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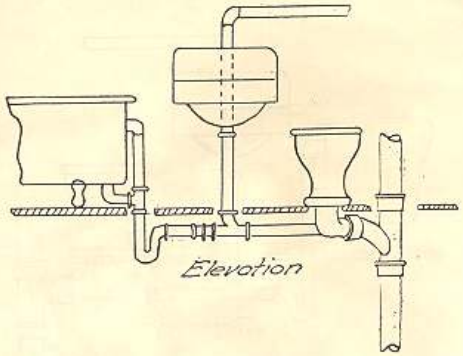
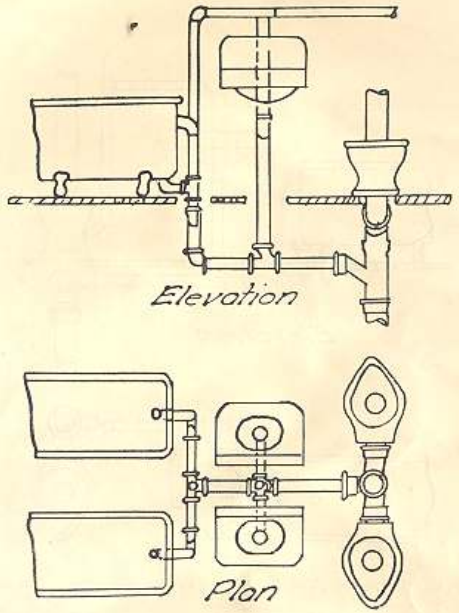
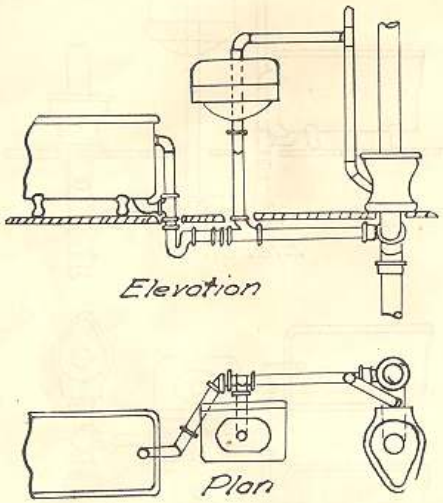


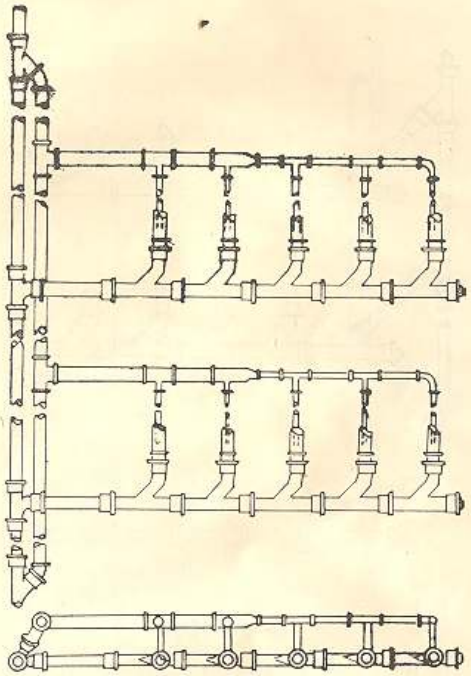
APPROVED DESIGN SHOWING ONE ALTERNATIVE ARRANGEMENT OF WASTE PIPES.



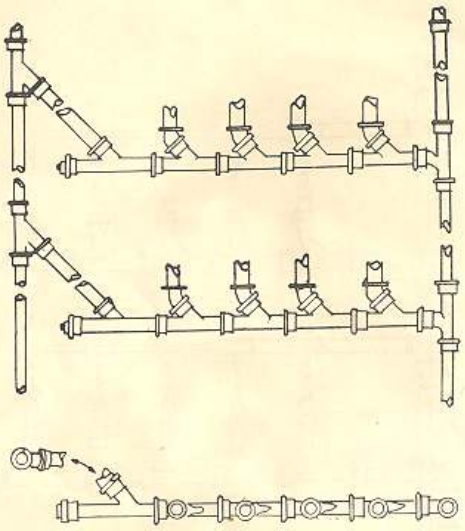
APROVED DESIGN FOR DUPLEX BATHROOM GROUP.



APPROVED DESIGN FOR LOWER-FLOOR BATHROOM GROUP.

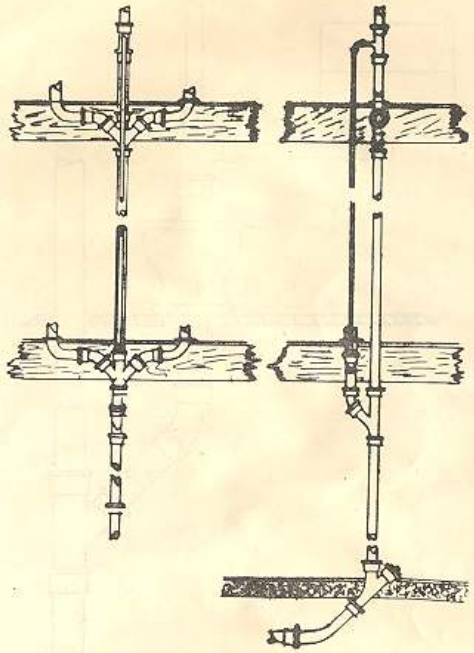


Continuous Individual Venting

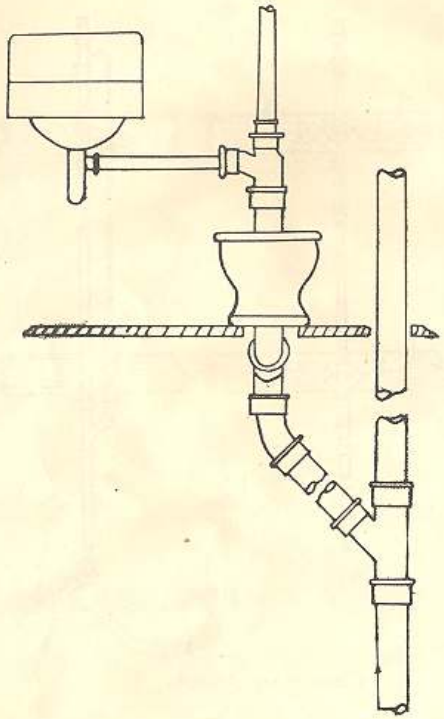


Circuit Venting

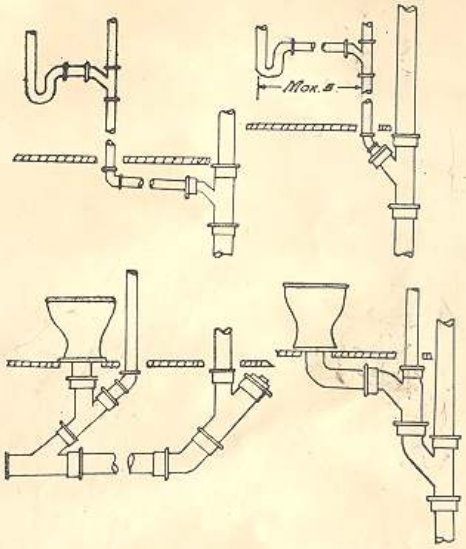
APPROVED FORMS OF VENTING SINGLE FIXTURES.

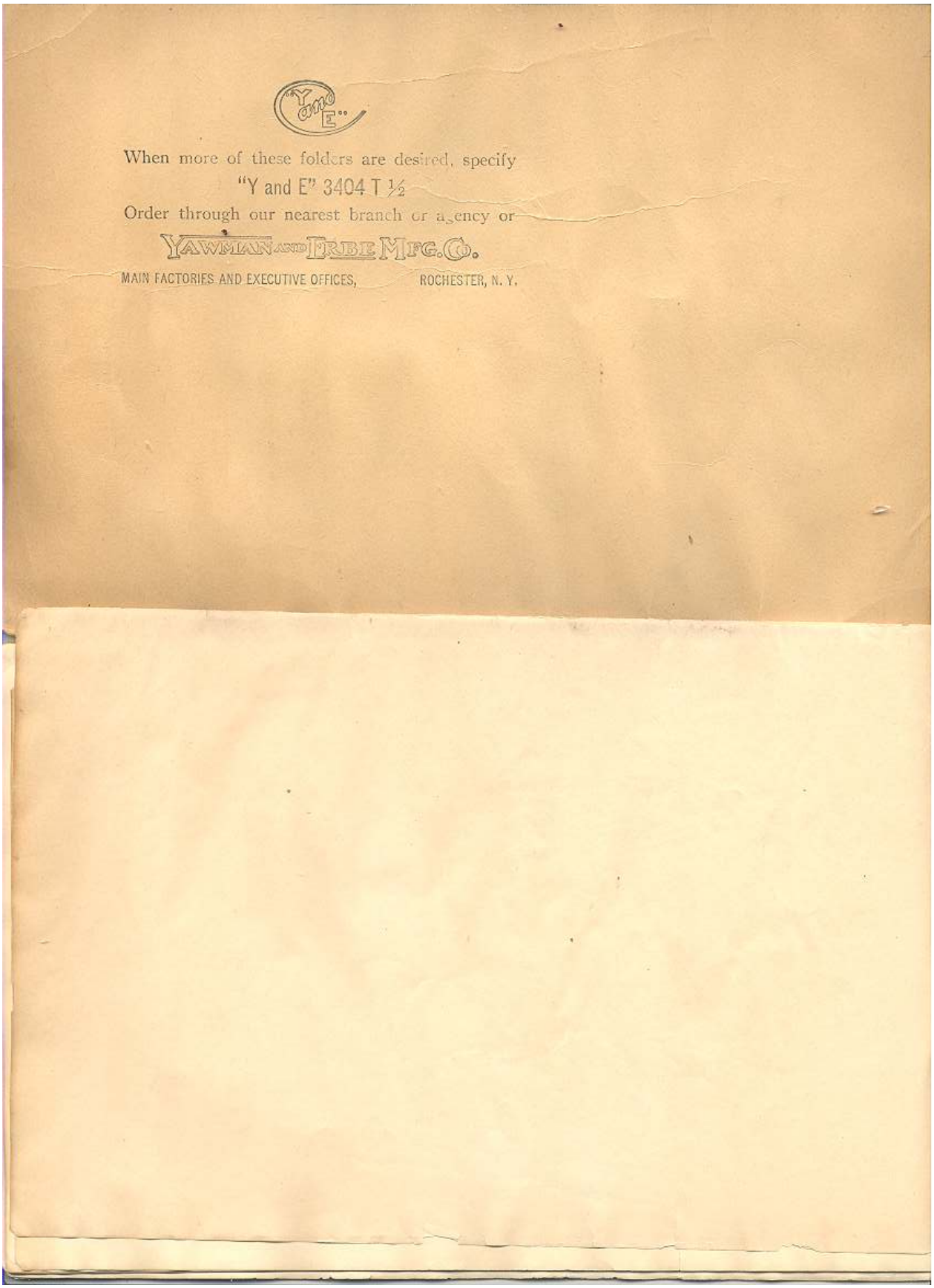


Common Vents



APPROVED VENTING FOR LAVATORY AND WATER-CLOSET.

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