

2011

Ohio Plumbing

Code Update



<http://www.com.ohio.gov/dico/BBS.aspx>

Ohio : Industrial Compliance : Board Of Building Standards - Windows Internet Explorer

http://www.com.ohio.gov/dico/BBS.aspx

File Edit View Favorites Tools Help

Ohio : Industrial Compliance : Board Of Building Stand...

Divisions | Forms | Press Room | Contacts

Ohio.gov | Department of Commerce

Financial Institutions | Industrial Compliance and Labor | Liquor Control | Real Estate | Securities | State Fire Marshal

Commerce Division of Industrial Compliance and Labor

**BOARD OF BUILDING STANDARDS**

**Alerts**

- Ohio Building Code Amendments Effective March 11, 2012 [PDF]
- Ohio Building Code Amendments Effective March 15, 2012 [PDF]
- Ohio Plumbing Code Amendments Effective March 15, 2012 [PDF]
- Ohio Elevator Rules Amendments Effective March 15, 2012 [PDF]
- BBS Memo on Ohio Building Code Amendments including Accessibility Requirements [PDF]

Internet 100%

start Ohio : Industrial Com... Microsoft PowerPoint ... 4:07 PM

Board Information

**Code Information: Non Residential Building Codes**

Ohio E-Codes

Ohio Building Code [PDF] *Effective November 1, 2011*

Ohio Mechanical Code [PDF] *Effective November 1, 2011*

Ohio Plumbing Code [PDF] *Effective November 1, 2011*

Known Errata in the 2011 Ohio Building Codes [PDF]

Ohio Non-Residential Energy Code Compliance Methods (formerly OBC Appendix E) [PDF]

Ohio Energy Code Compliance Flow Chart [PDF]

Approved Testing and Inspection Agencies (formerly OBC Appendix O) [PDF]

Approved National Evaluation and Accreditation Services (formerly OBC Appendix P) [PDF]

Building Services Piping Enforcement Summary (formerly OMC Appendix B and OPC Appendix A) [PDF]

Building Services Piping Testing Requirements (formerly OMC Appendix C and OPC Appendix B) [PDF]

Where To Purchase Codes [PDF]

Certified Local Board of Building Appeals List [PDF]

Non-Residential Building Department List [PDF]

**Code Information: Non-residential Building Code Proposed Rule Changes - Amendments Group LXXXV Public Hearing December 16, 2011**

# Chapter 3

## General Regulations

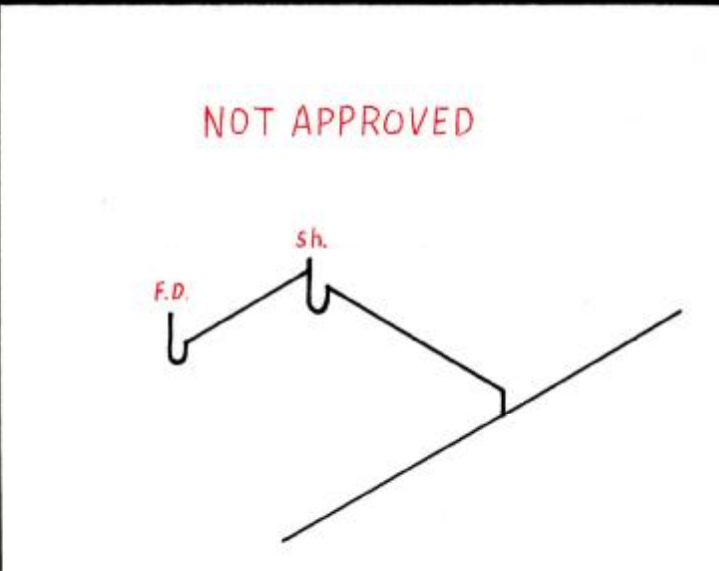
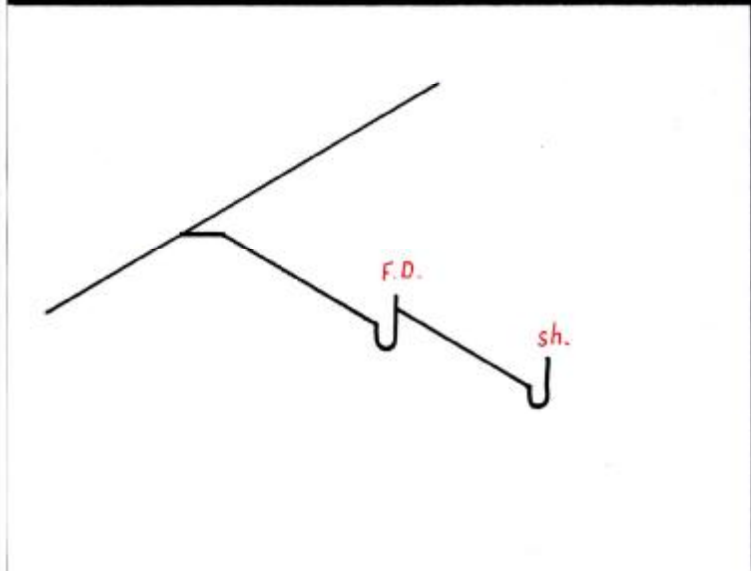
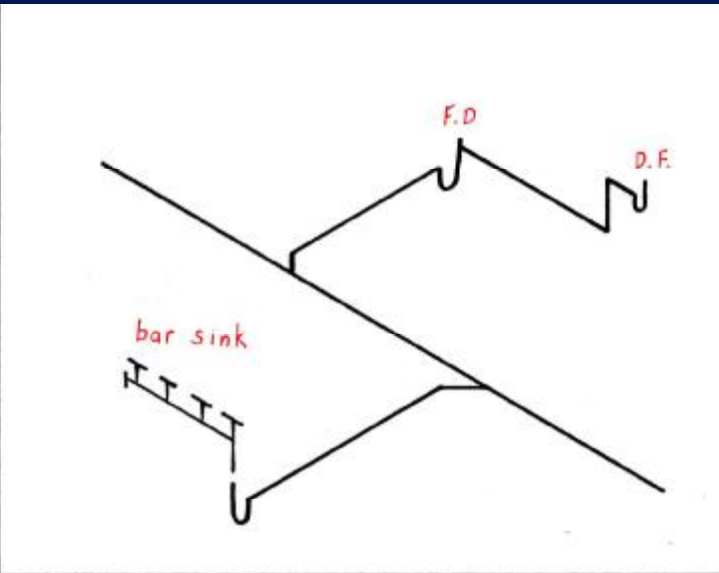
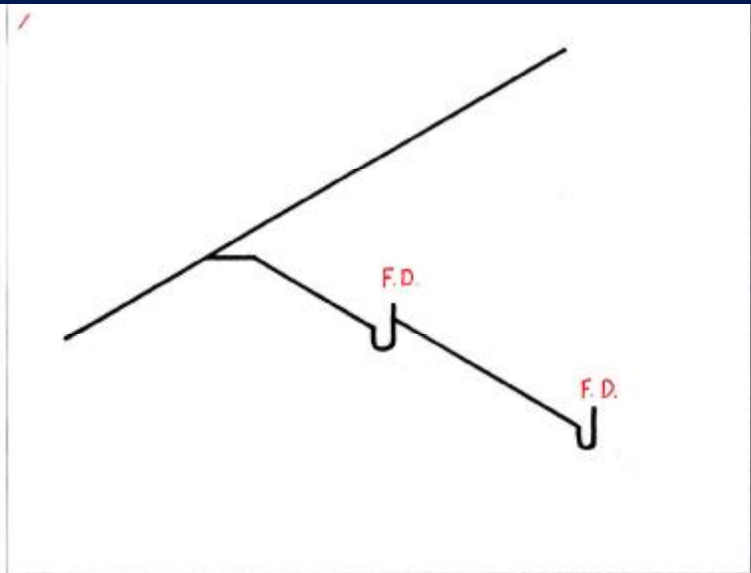




**301.3 Connections to the sanitary drainage system.** All plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code and the requirements of the department of the city engineer, in cities having such departments, the boards of health of health districts, or the sewer purveyor, as appropriate. This section shall not be construed to prevent the indirect waste systems required by Chapter 8.

**Exception:**

1. Bathtubs, showers, lavatories, drinking, clothes washers and laundry sinks shall not be required to discharge to the sanitary drainage where such fixtures discharge to a gray water recycling system approved by the "Ohio EPA"
2. Waste from dental or cuspidor fountains, drinking fountains, bar sink, soda fountains, floor drains or shower drains may be indirectly connected by means of an air break to the sanitary drainage system. Each indirectly connected item listed above shall individually discharge to a directly connected floor drain, waste receptor or standpipe.





Approved

FD

SH

**This Section will be Deleted from code.**

**305.6.1 Sewer depth.** *Building sewers shall be installed below grade with a minimum cover of 24 inches (610 mm) measured from the top of the sewer pipe to the finished grade.*

*Deleted*

Reason: building drain only regulated to 30" outside the building ( see definitions )





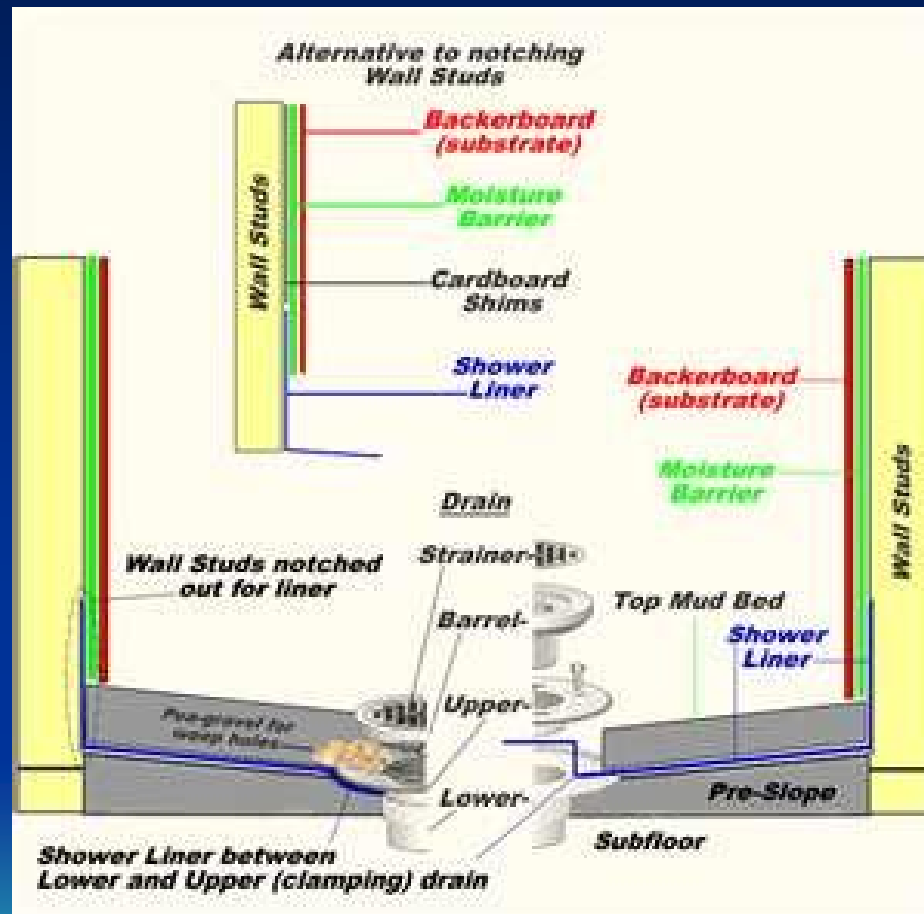
**307.7 Enforcement.** *Enforcement of the provisions of this section is the responsibility of the certified building official defined in Chapter 2 of the certified municipal, county, or township building code department having jurisdiction or the superintendent of the division of industrial compliance.*

*Reason: Health Dept. trying to enforce building dept. issues in structural and fixture counts.*



**312.9 Shower liner test.** Where shower floors and receptors are made water-tight by the application of materials required by Section 417.5.2, the completed liner installation shall be tested. The pipe from the shower drain shall be plugged water tight for the test. The floor and receptor area shall be filled with potable water to a depth of not less than 2 inches (51 mm) measured at the threshold. Where a threshold of at least 2 inches (51 mm) high does not exist, a temporary threshold shall be constructed to retain the test water in the lined floor or receptor area to a level not less than 2 inches (51 mm) deep measured at the threshold. The water shall be retained for a test period of not less than 15 minutes, and there shall not be evidence of leakage.







**Oatey**<sup>®</sup> 40 MIL PVC

**SHOWER PAN LINER**  
MEETS ASTM D4551



COMPLIES WITH:  
INTERNATIONAL PLUMBING CODE  
NATIONAL PLUMBING CODE OF CANADA

**Oatey**<sup>®</sup> 40 MIL PVC

**SHOWER PAN LINER**  
MEETS ASTM D4551



COMPLIES WITH:  
INTERNATIONAL PLUMBING CODE  
NATIONAL PLUMBING CODE OF CANADA

**Oatey**<sup>®</sup> 40 MIL PVC

**SHOWER PAN LINER**  
MEETS ASTM D4551



COMPLIES WITH:  
INTERNATIONAL PLUMBING CODE  
NATIONAL PLUMBING CODE OF CANADA

**Oatey**<sup>®</sup> 40 MIL PVC

**SHOWER PAN LINER**  
MEETS ASTM D4551



COMPLIES WITH:  
INTERNATIONAL PLUMBING CODE  
NATIONAL PLUMBING CODE OF CANADA



COMPLIES WITH:  
INTERNATIONAL PLUMBING CODE  
NATIONAL PLUMBING CODE OF CANADA





Less than 2" of water on test

NOT APPROVED



NOT APPROVED

No liner or temporary threshold



# SECTION 314

## CONDENSATE DISPOSAL

314.1 Fuel-burning appliance

314.2 Evaporators and cooling coils

314.2.1 Condensate disposal

314.2.2 Drain pipe materials and sizes

314.2.3 auxiliary and secondary drain system

314.2.3.1 Water level monitoring devices

314.2.4 Traps

**314.3 Enforcement.** *Enforcement of the provisions of this section is the responsibility of the certified building official defined in Chapter 2 of the certified municipal, county, or township building code department having jurisdiction or the superintendent of the division of industrial compliance.*



**CONDENSATE DISPOSAL**

**NONPOTABLE CLEAR-WATER WASTE**

802.1.5

Air Gap or Air Break



# Chapter 4

## Fixtures



**413.3 Commercial food waste grinder waste outlets.** Commercial food waste grinders shall be connected to a drain not less than 1 ½ inches (38 mm) in diameter. Commercial food waste grinders shall be connected and trapped separately from any other fixtures or sink compartments.

OPC 2007 was 2”



# 416.5

## Tempered water for public hand-washing facilities



**SAFETY**

**SIMPLICITY**

**STYLE**

**POWERST<sup>TM</sup>**  
a division of Watts Water Technologies, Inc.

ASSE 1070 Faucet Series with  
Integrated Thermostatic Control

416.5

## Tempered water for public hand-washing facilities

### LavSafe™ Thermostatic Faucets

**WATTS®**

ASSE 1070 Listed  
Retrofit and New Installations  
Commercial, Institutional, Residential



LavSafe.com

**WATTS®**



# 416.5

## Tempered water for public hand-washing facilities

- American Standard will have an ASSE 1070 faucet on market sometime in 2012



**417.2 Water supply riser.** Water supply risers from the shower valve to the shower head outlet, whether exposed or concealed, shall be attached to the structure. The attachment to the structure shall be made by the use of support devices designed for use with the specific piping material or by fittings anchored with screws.







**417.5.2 Shower lining.** Floors under shower compartments, except where prefabricated receptors have been provided, shall be lined and made water tight utilizing material complying with Sections 417.5.2.1 through 417.5.2.5. Such liners shall turn up on all sides at least 2 inches (51 mm) above the finished threshold level. Liners shall be recessed and fastened to an approved backing so as not to occupy the space required for wall covering, and shall not be nailed or perforated at any point less than 1 inch (25 mm) above the finished threshold. Liners shall be pitched one-fourth unit vertical in 12 units horizontal (2-percent slope) and shall be sloped toward the fixture drains and be securely fastened to the waste outlet at the seepage entrance, making a water-tight joint between the liner and the outlet. The completed liner shall be tested in accordance with Section 312.

**Exceptions:**

1. Floor surfaces under shower heads provided for rinsing laid directly on the ground are not required to comply with this section.
2. Where a sheet applied, load-bearing, bonded, waterproof membrane is installed as the shower lining, the membrane shall not be required to be recessed.



# Chapter 5

## Water Heaters



**501.1 Scope.** The provisions of this chapter shall govern the materials, design and installation of water heaters and the related safety devices and appurtenances.

*Exception: Water heaters within the scope of the “Ohio Boiler and Pressure Vessels rules,” Chapters 4101:4-1 to 4101:4-10 of the Administrative Code, when any of the following limitations are exceeded:*

- 1. Heat input of 200,000 or greater BTU per hour*
- 2. Water temperature of 210 degrees Fahrenheit*
- 3. Nominal water-containing capacity of 120 gallons.*



**502.1.1 Elevation and protection.** Elevation of water heater ignition sources and mechanical damage protection requirements for water heaters shall be in accordance with the *Ohio Mechanical Code* and the “*International Fuel Gas Code*”.

**Exception:** Elevation of ignition source is not required for appliances that are listed flammable vapor ignition resistant.





## SHIELD Combustion System™



### Lock-Shield Flame Arrestor Plate

Designed and manufactured with engineering precision, the air louvers are oriented to increase air velocity and trap flammable vapors in the combustion chamber. And the 304L stainless steel construction provides resistance to impact, heat, cracking and corrosion.



### Proven Low NOx Burner

Provides efficient, clean combustion with low NOx emissions that meet the air quality standards of California and Texas. It is the same proven design that has been used for years to allow off-the-shelf replacement.

### Piezo Igniter

Provides simple push button ignition of the pilot flame.

### Standard Thermocouple

Standard thermocouple allows for quick, off-the-shelf replacement.

### Corrosion Resistant Combustion Chamber

Chamber design changes the air flow direction to prevent build-up of lint and dust and reduce maintenance requirements.

### Pedestal Base

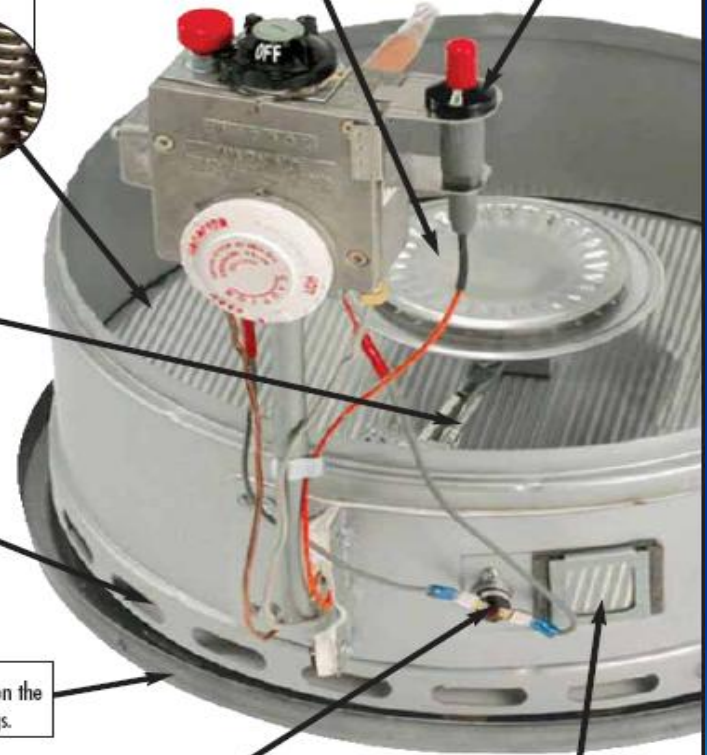
Corrosion resistant base sits flat on the floor eliminating the need for legs.

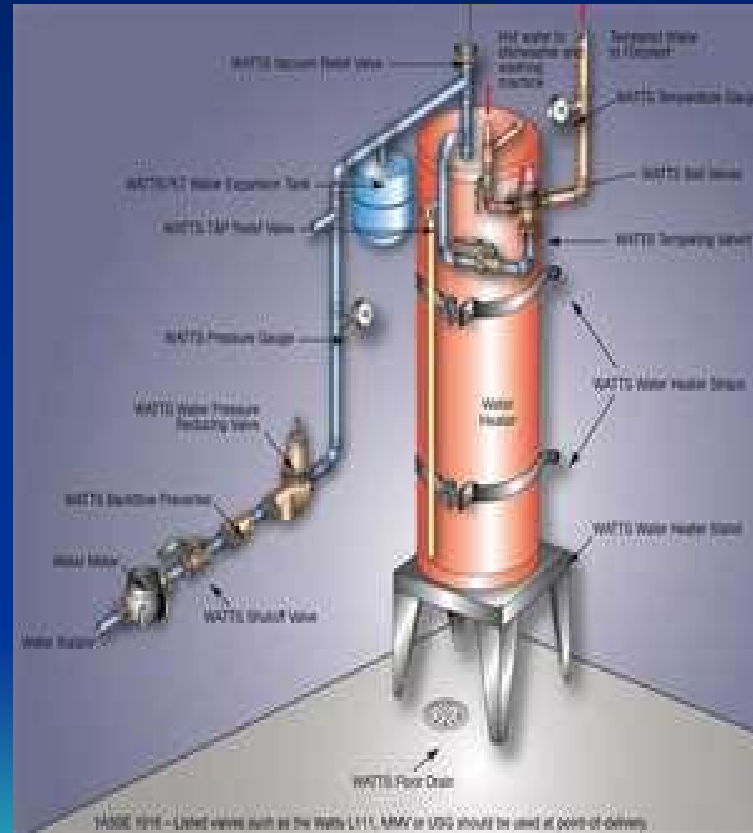
### Resettable Thermal Switch

This reliable bimetallic thermal switch shuts down the burner and pilot operation in the event of flammable vapor ignition in the combustion chamber. It also provides protection against lint, dust and oil buildup by shutting down the unit when it detects significant air restriction.

### Sight Glass

Provides an unobstructed view into the combustion chamber to allow for observation of the burner and pilot flames.







## **502.5 Clearances for maintenance and replacement.**

Appliances shall be provided with access for inspection, service, repair and replacement without disabling the function of a fire-resistance rated assembly or removing permanent construction, other appliances or any other piping or ducts not connected to the appliance being **inspected, serviced, repaired or replaced**. A level working space at least 30 inches deep and 30 inches wide (762 mm by 762 mm) shall be provided in front of the control side to service an appliance.





8) Once  
9) Turn the control knob when the main burner is on to the "TEMPERATURE SET-POINT" position. To increase the water temperature set-point, turn the control knob clockwise to the "TEMPERATURE SET-POINT" position. To decrease the water temperature set-point, turn the control knob counter-clockwise to the "TEMPERATURE SET-POINT" position.  
10) To increase the water temperature set-point, turn the control knob clockwise to the "TEMPERATURE SET-POINT" position. To decrease the water temperature set-point, turn the control knob counter-clockwise to the "TEMPERATURE SET-POINT" position.

**TO TURN GAS OFF TO THE WATER HEATER:**  
STAND-BY:  
1) To maintain a flame at the pilot burner with the main burner off, turn the control knob to the "PILOT" position (Fig. 2).  
TURNING OFF:  
2) Turn the control knob clockwise to the "OFF" position (Fig. 1).

WATER ALL GAS CHECK  
OK TESTED

**CAUTION**  
HIGH WATER TEMPERATURE  
INCREASES  
THE RISK OF SCALDING

**0" DEEP X 30" WIDE  
SHALL BE PROVIDED IN FRONT OF THE CONTROL SIDE**

**504.6 Requirements for discharge piping.** The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

1. Not be directly connected to the drainage system.
2. Discharge through an air gap located in the same room as the water heater.
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.
5. Discharge to the floor, **to the pan serving the water heater** or storage tank, to a waste receptor or to the outdoors.
6. Discharge in a manner that does not cause personal injury or structural damage.
7. Discharge to a termination point that is readily observable by the building occupants.
8. Not be trapped.
9. Be installed so as to flow by gravity.
10. Not terminate more than 6 inches (152 mm) above the floor or waste receptor.
11. Not have a threaded connection at the end of such piping.
12. Not have valves or tee fittings.
13. Be constructed of those materials listed in Section 605.4 or materials tested, rated and approved for such use in accordance with ASME A112.4.1.







# Chapter 6

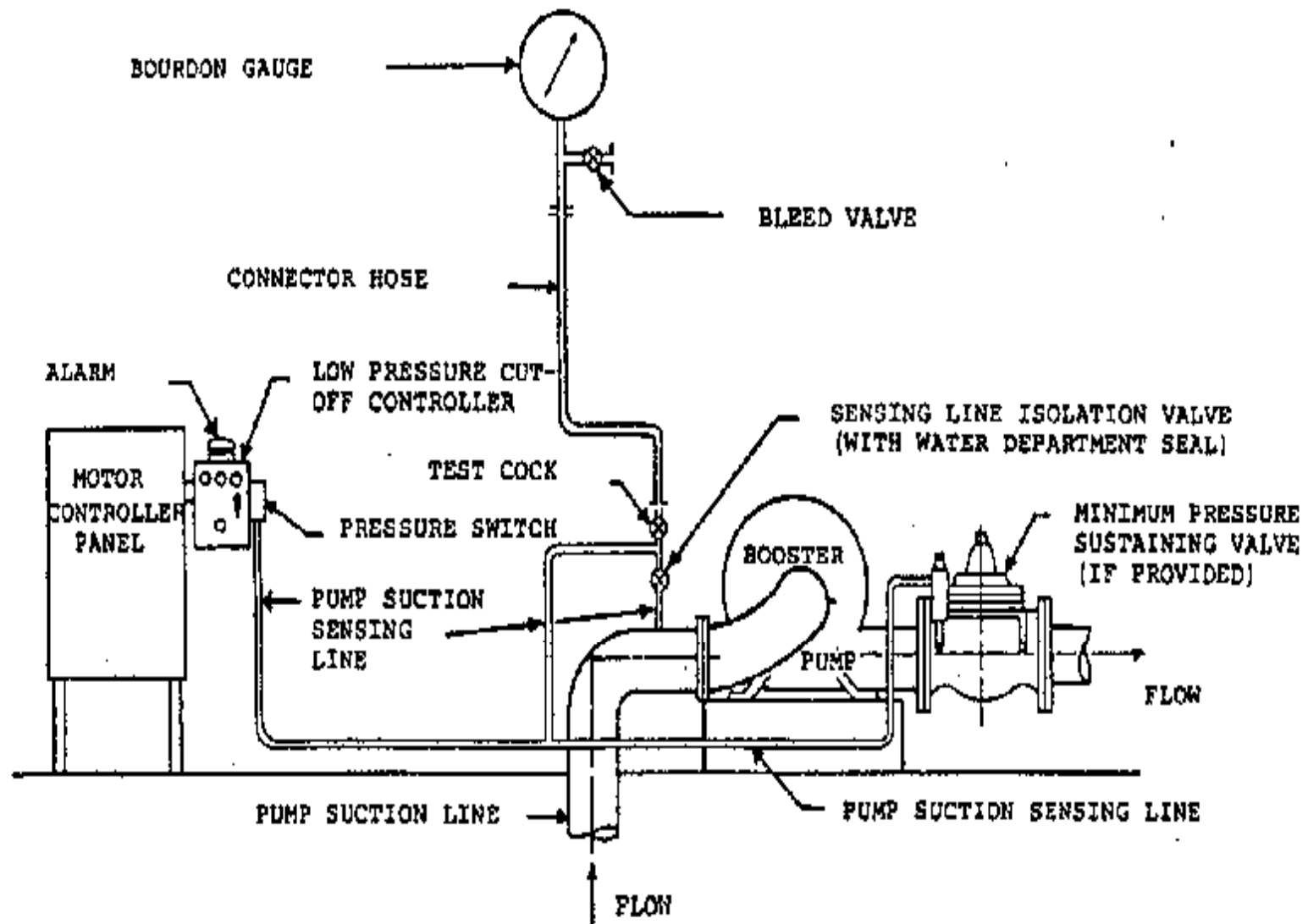
## Water Supply and Distribution



## **606.5.5 Minimum suction pressure to be maintained.**

*When a booster pump is installed, the “Ohio Environmental Protection Agency” requires the installation of a low pressure cut-off or a low suction throttling valve to ensure that a minimum of 10 psi is maintained in the suction line while the pump is operating (see rule 3745-95-07 of the Administrative Code).*





**608.7 Valves and outlets prohibited below grade.** Potable water outlets and combination stop and waste valves shall not be installed underground or below grade. Freeze proof yard hydrants that drain the riser into the ground are considered to be stop and waste valves.

**Exception:** Freeze proof yard hydrants that drain the riser into the ground shall be permitted to be installed, provided that the potable water supply to such hydrants is protected upstream of the hydrants in accordance with **Section 608** and the hydrants are permanently identified as **non-potable** outlets by approved signage that reads as follows: **“Caution, Non-potable Water. Do Not Drink.”**

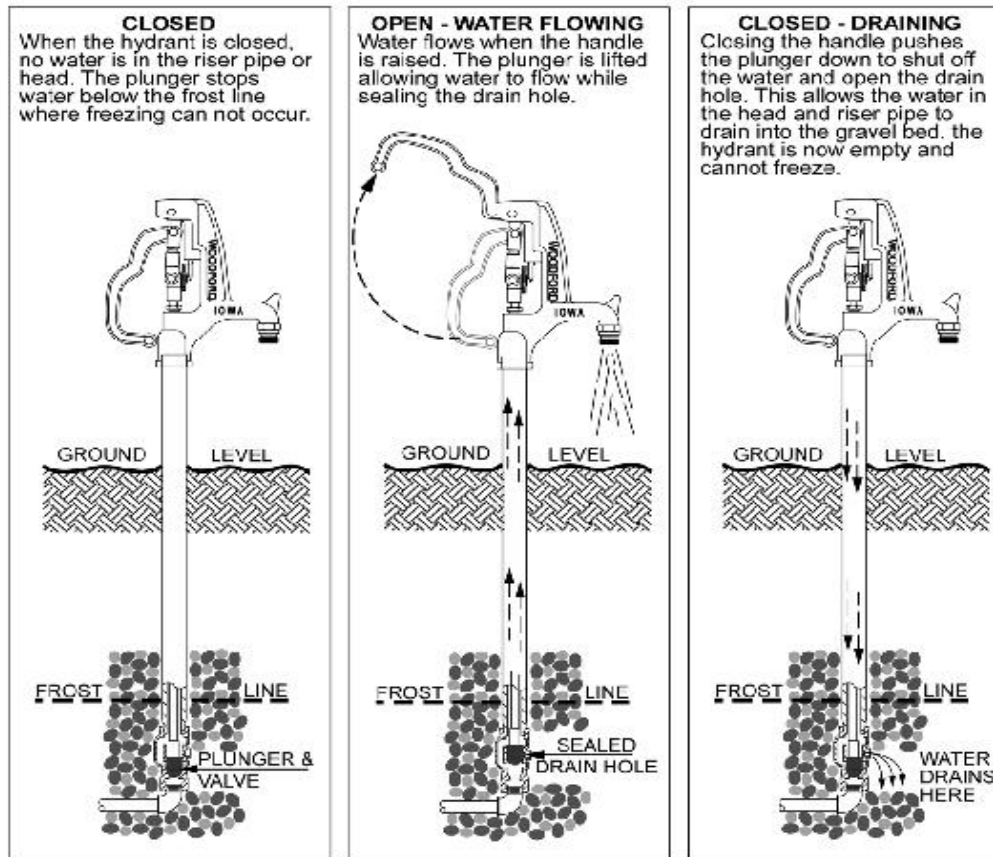
**State Plumbing Section: recommending ASSE 1013 device**







# How a Freeze Proof Hydrant Works



For more information contact...

## WOODFORD MANUFACTURING COMPANY

2121 Waynoka Road, Colorado Springs, Colorado 80915 • Phone: (800) 621-8032 • Fax: (800) 765-4115

To view our complete product line visit: [www.woodfordmfa.com](http://www.woodfordmfa.com) or email: [sales@woodfordmfa.com](mailto:sales@woodfordmfa.com)

A Division of WCM Industries, Inc.

# ASSE 1057

## Approved

### Freeze proof yard hydrants



**608.8 Identification of non-potable water.** In buildings where non-potable water systems are installed, the piping conveying the non-potable water shall be identified either by color marking or metal tags in accordance with Sections 608.8.1 through 608.8.3. All non-potable water outlets such as hose connections, open ended pipes, and faucets shall be identified at the point of use for each outlet with the words, “**Non-potable not safe for drinking.**” The words shall be indelibly printed on a tag or sign constructed of corrosion resistant waterproof material or shall be indelibly printed on the fixture. The letters of the words shall be not less than 0.5 inches in height and color in contrast to the background on which they are applied.





**NON-POTABLE WATER** →

The image shows a cross-section of a pipe with a yellow warning label. The label contains the text 'NON-POTABLE WATER' in bold black letters, followed by a black arrow pointing to the right. The pipe is set against a white background, which is framed by a dark blue border. At the bottom of the frame, there is a brown ground area with a light blue gradient on the right side.



**608.8.2 Color.** The color of the pipe identification shall be discernable and consistent throughout the building. The color **purple** shall be used to identify reclaimed, rain and gray water distribution systems.

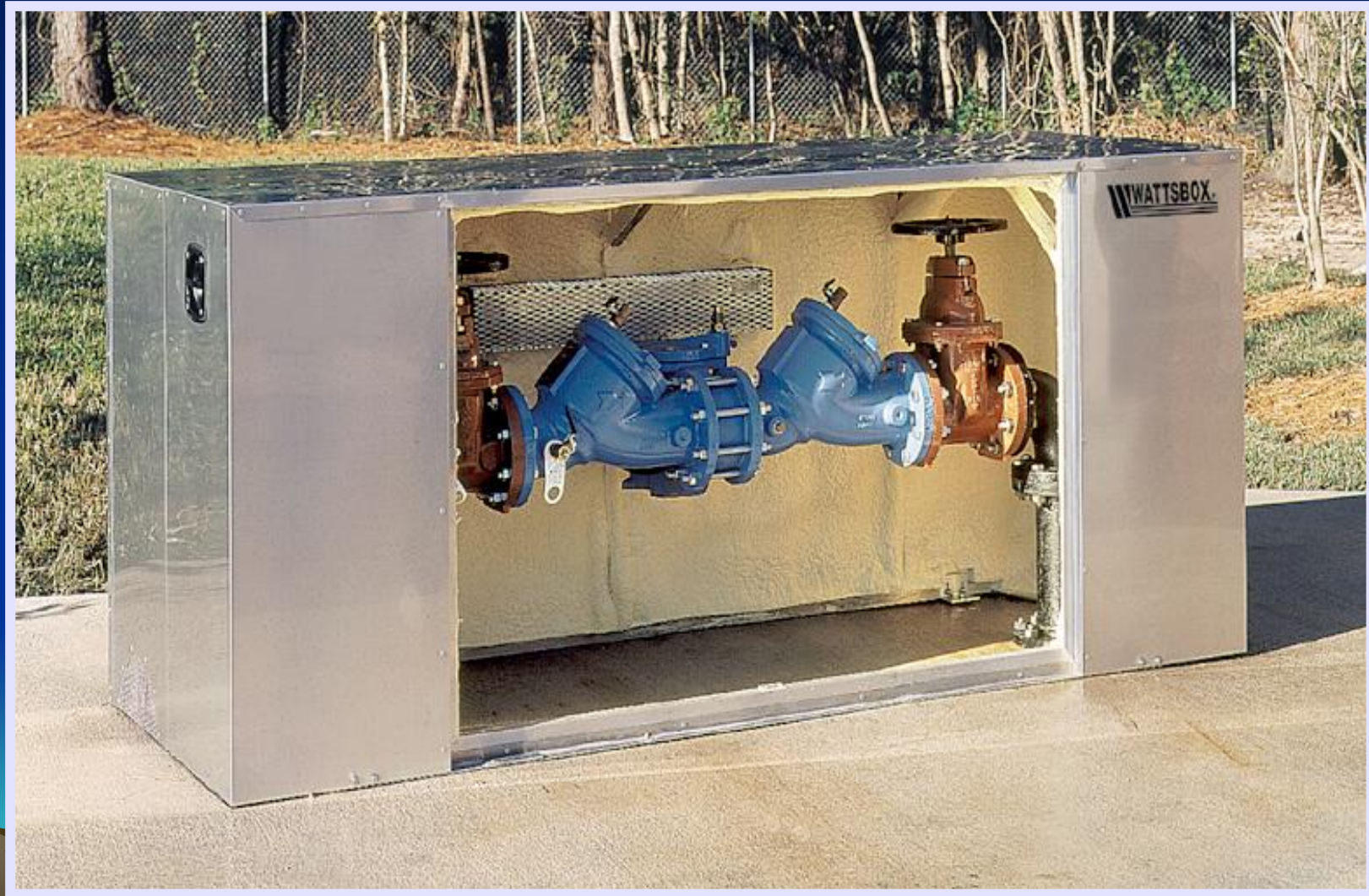


## **608.14.2 Protection of backflow preventers.**

Backflow preventers shall not be located in areas subject to freezing except where they can be removed by means of unions or are protected from freezing by heat, insulation or both.



# Backflow hot box



**608.14.2.1 Relief port piping.** The termination of the piping from the relief port or air gap fitting of a backflow preventer shall **discharge to an approved indirect waste receptor or to the outdoors where it will not cause damage or create a nuisance.**











# 608.16.1 Beverage dispensers

The water supply connection to beverage dispensers shall be protected against backflow by a backflow preventer conforming to ASSE1022 or by an *air gap*. The portion of the backflow preventer device downstream from the second check valve and the piping downstream there from shall not be affected by carbon dioxide gas.

Deleted was using an ASSE 1032



# Chapter 7

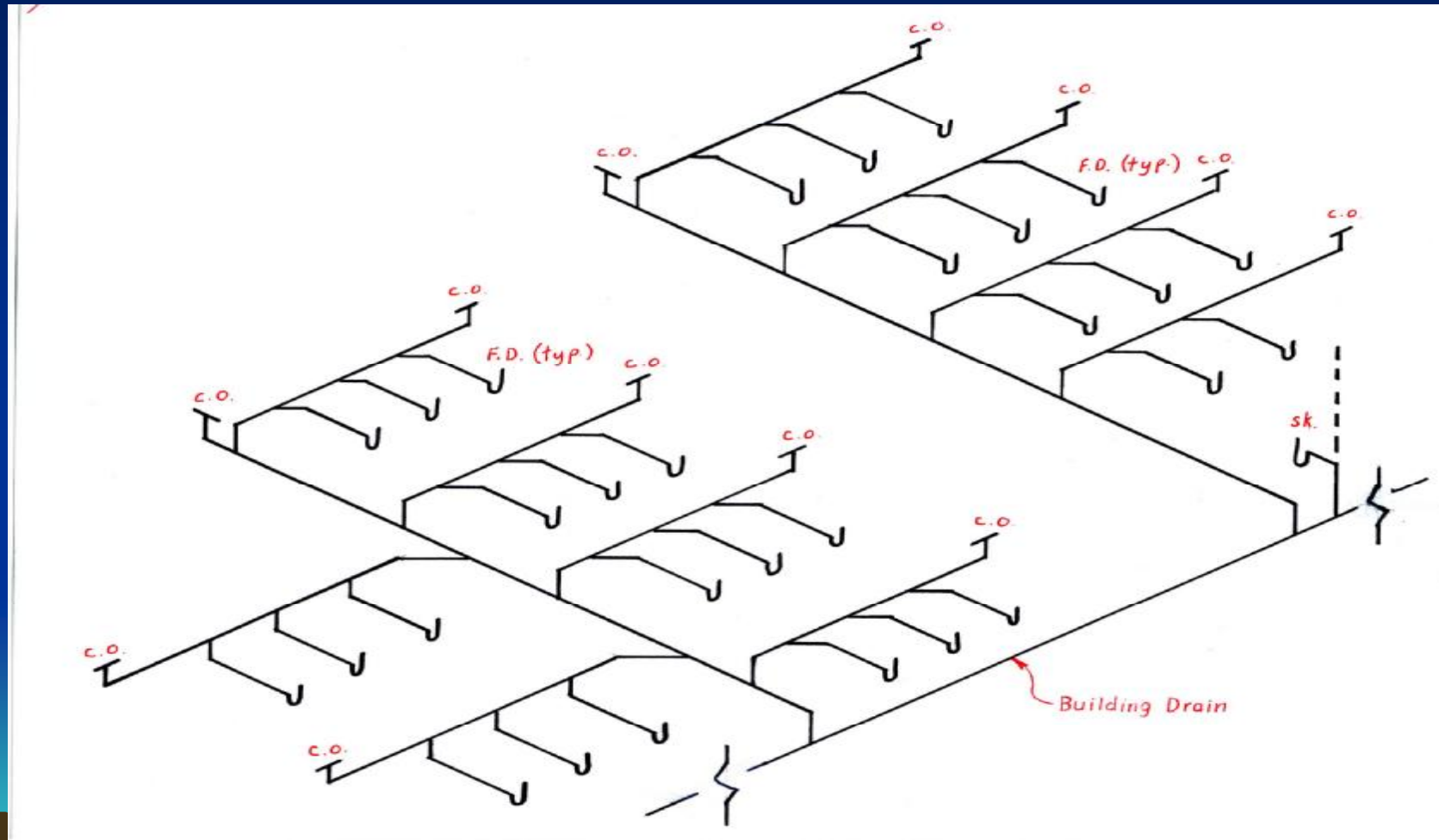
## Sanitary Drainage



**709.4.1 Clear-water waste receptors.** Where waste receptors such as floor drains, floor sinks and hub drains receive only clear-water waste from display cases, refrigerated display cases, ice bins, coolers and freezers, such receptors shall have a  $\frac{1}{2}$  DFU value per indirect.

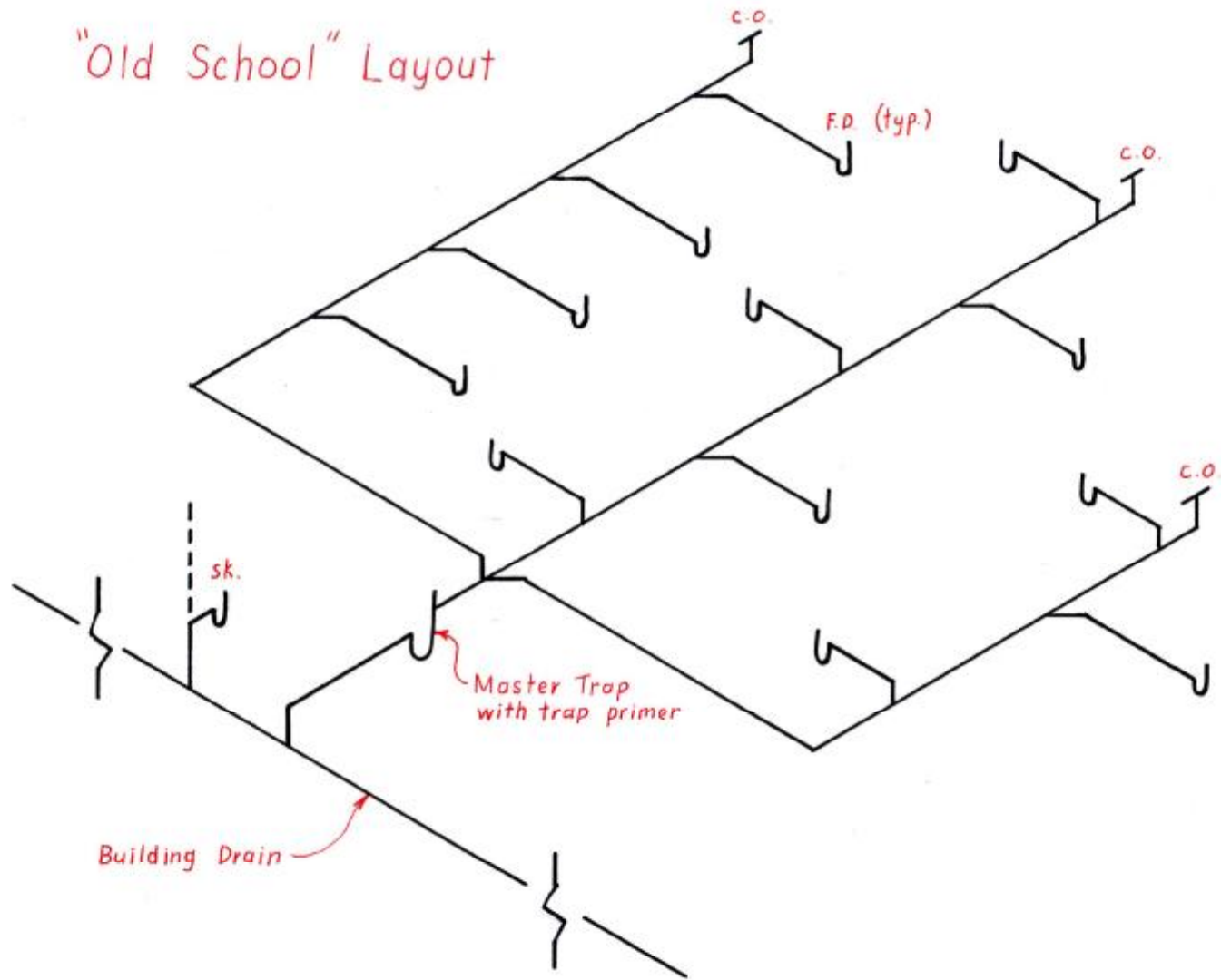


Total DFU's would be **14.5** compared to **145** DFU's





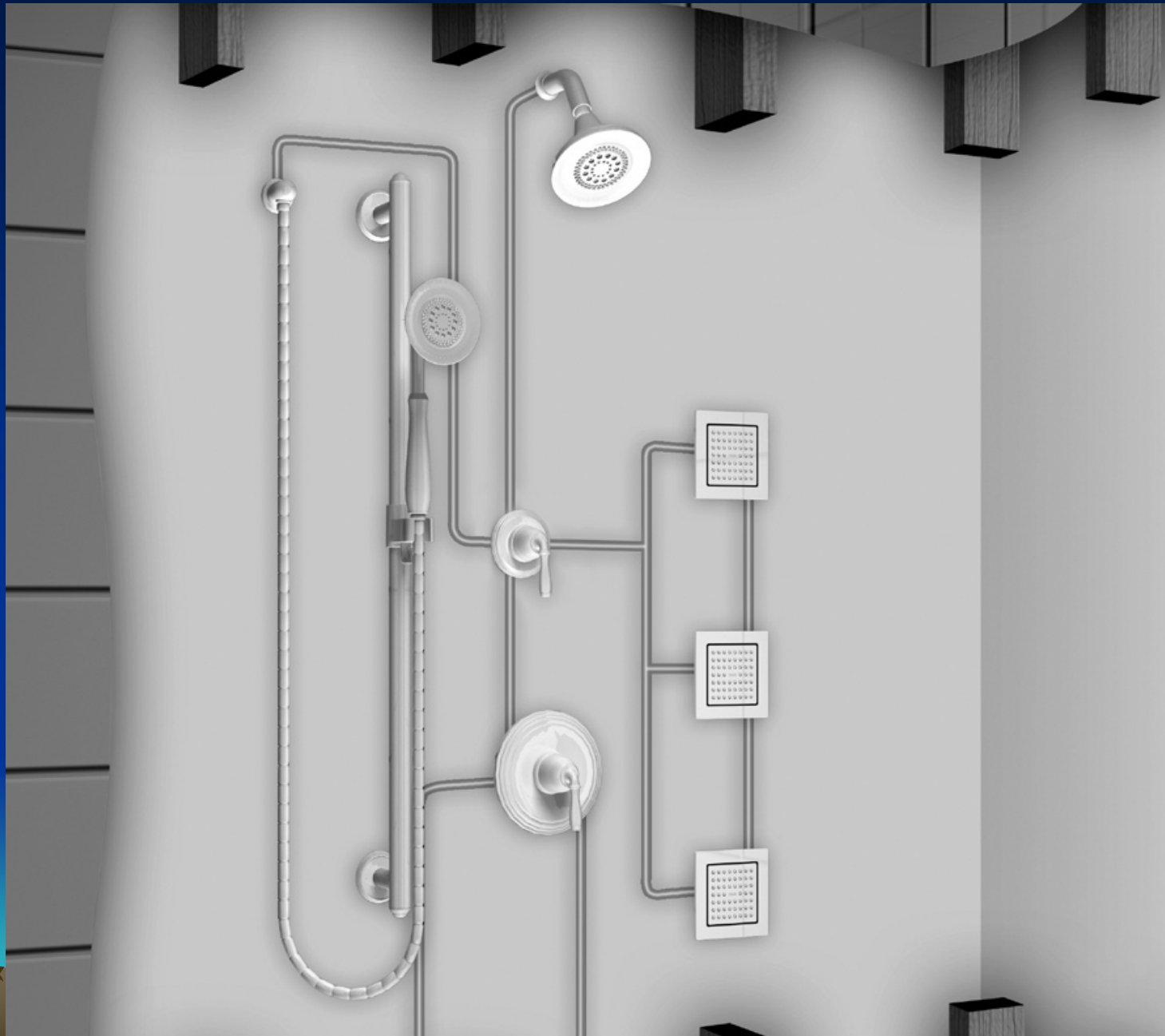
# "Old School" Layout



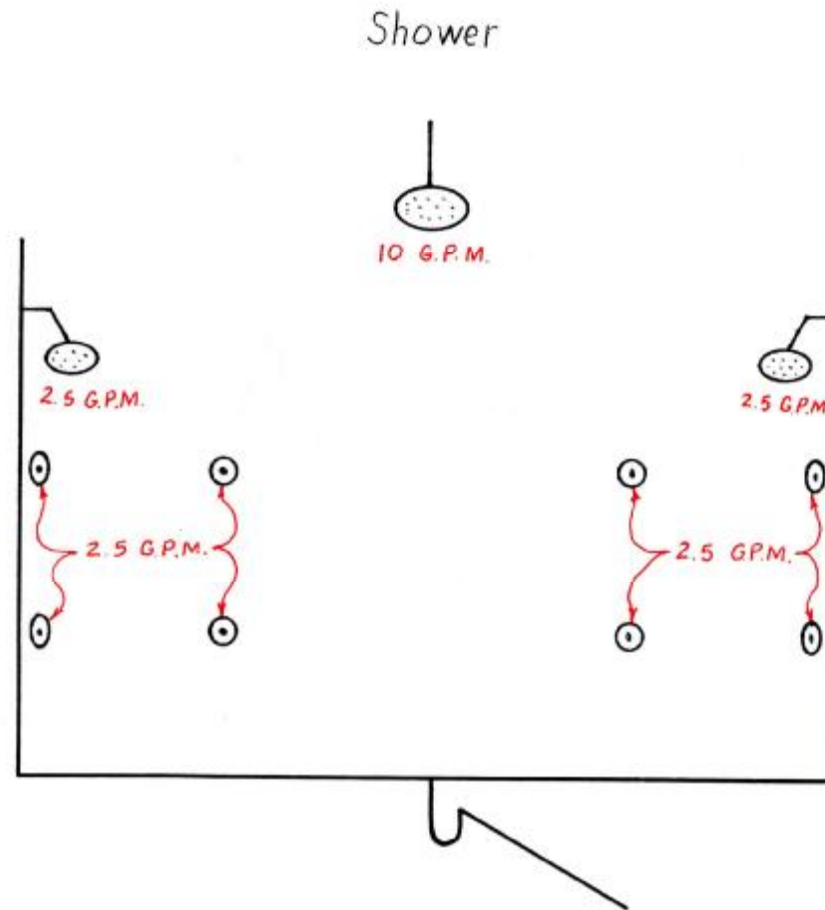
## New changes to table 709.1

**Shower (based on total flow rate thru showerhead and body sprays)**

Flow rate:	DFU	TRAP SIZE
5.7 gpm or less	2	1 ½
5.7 gpm to 12.3 gpm	3	2
12.3 gpm to 25.8 gpm	5	3
25.8 gpm to 55.6 gpm	6	4



# Total of 35 gpm



Total GPM will effect drain size





# Chapter 8

Indirect waste



**802.1.4 Swimming pools.** Where wastewater from swimming pools, and backwash from filters and water from pool deck drains discharge to the building drainage system, the discharge shall be through an indirect waste pipe by means of an **air gap**.

**Code was in conflict with ODH pool rules**



## POOL DECK DRAINS





**DECK DRAINS DISCHARGE  
UNDERGROUND TO SUMP PUMP**



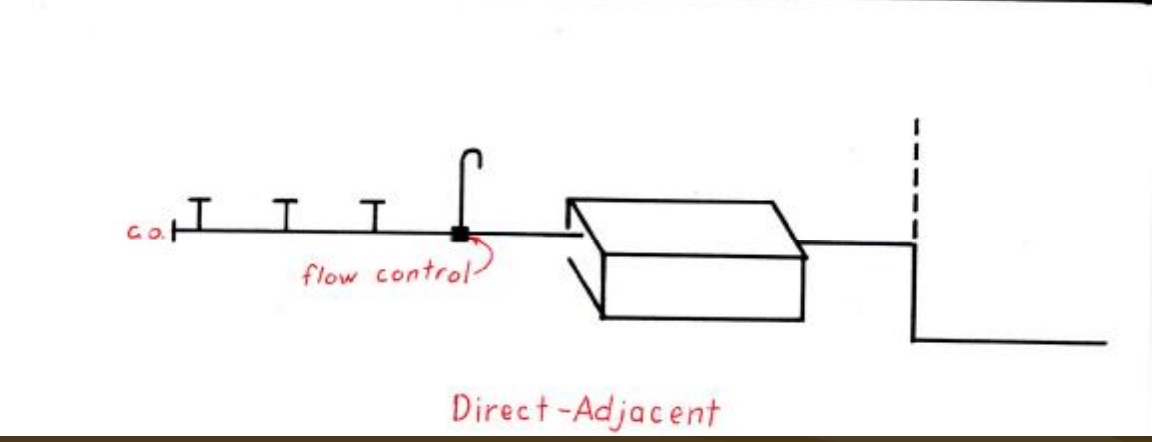
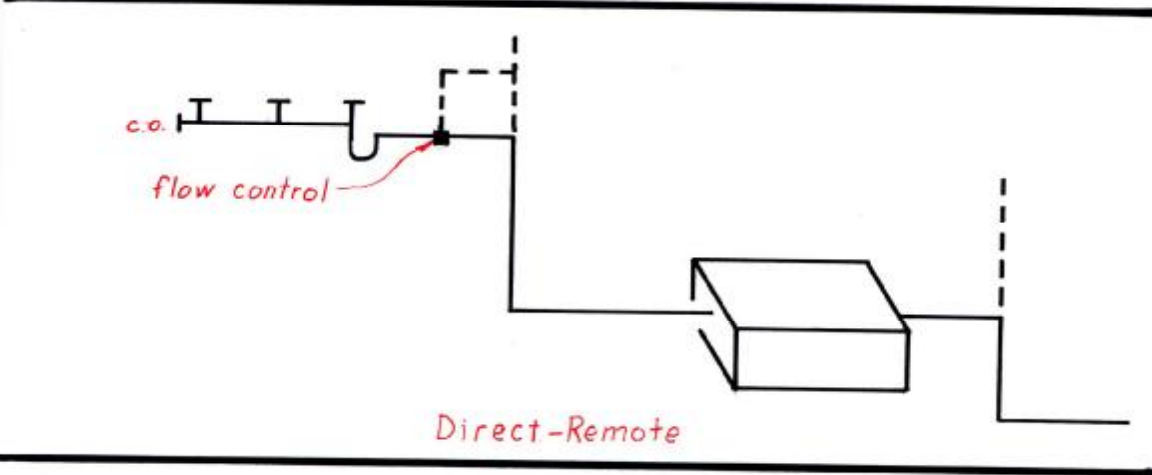
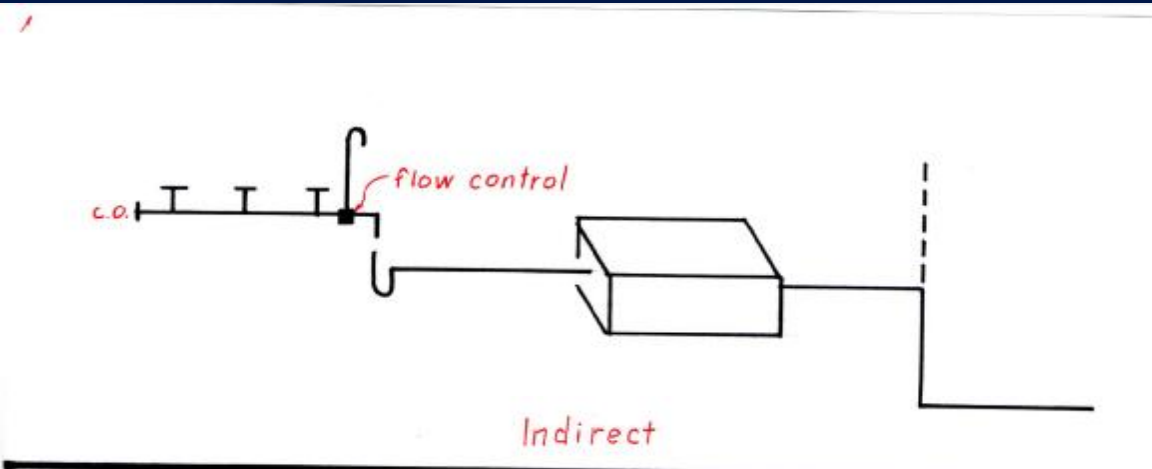
WHERE WASTE WATER FROM THE SWIMMING POOL, BACKWASH FROM FILTERS AND WATER FROM POOL DECK DRAINS DISCHARGE TO THE BUILDING DRAINAGE SYSTEM, THE DISCHARGE SHALL BE THROUGH AN AIR GAP



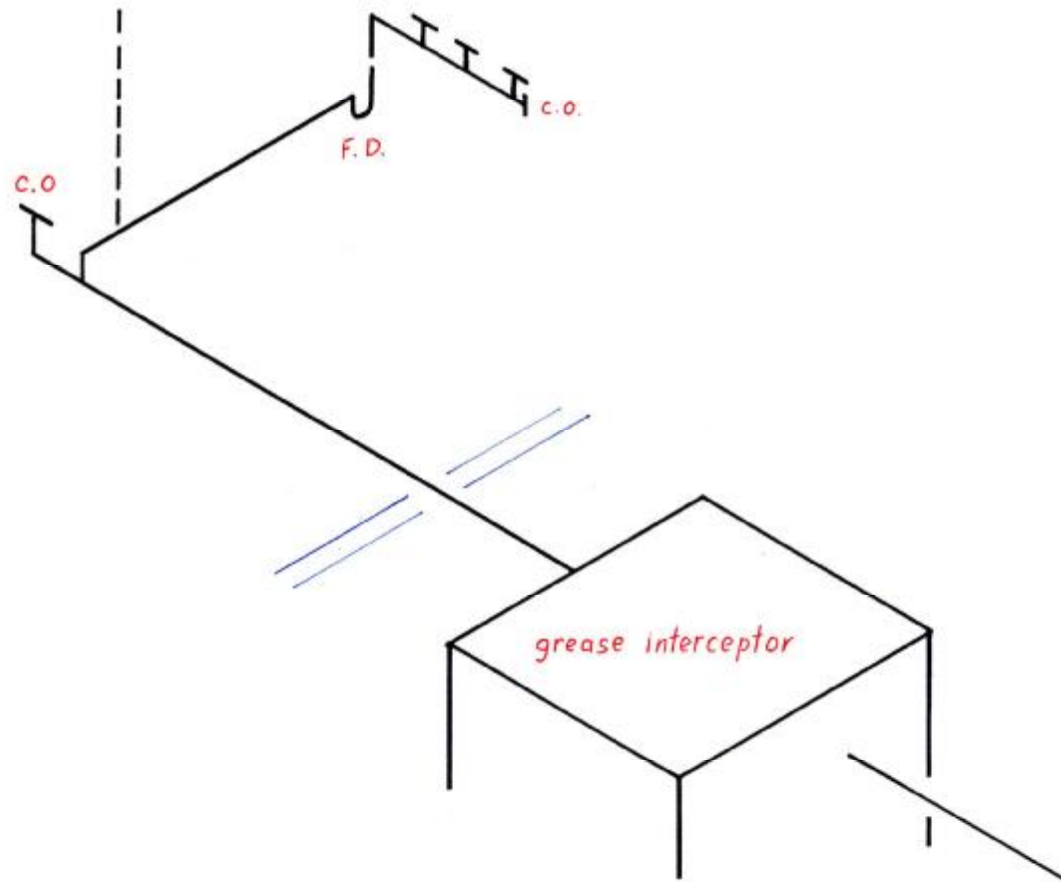


**802.1.8 Food utensils, dishes, pots and pans sinks.** Sinks used for the washing, rinsing or sanitizing of utensils, dishes, pots, pans or service ware used in the preparation, serving or eating of food shall discharge indirectly through an air gap or an air break or directly connect to the drainage system.

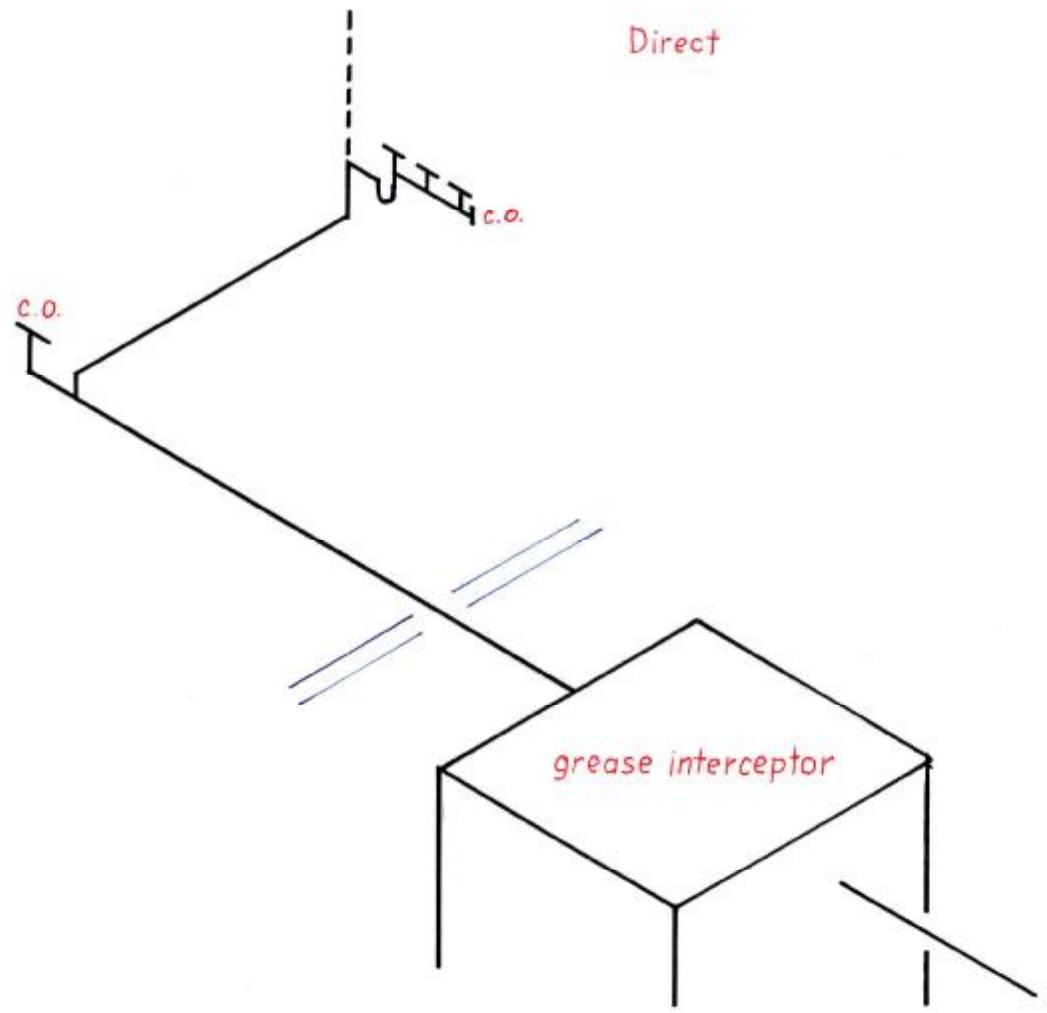




Indirect



1



# Chapter 9


## Vents





**906.1 Distance of trap from vent.** Each fixture trap shall have a protecting vent located so that the slope and the developed length in the fixture drain from the trap weir to the vent fitting are within the requirements set forth in Table 906.1.

**Exception:** The developed length of the fixture drain from the trap weir to the vent fitting for self-siphoning fixtures, such as water closets, shall not be limited *in individual vent, common vent, and wet vent systems.*





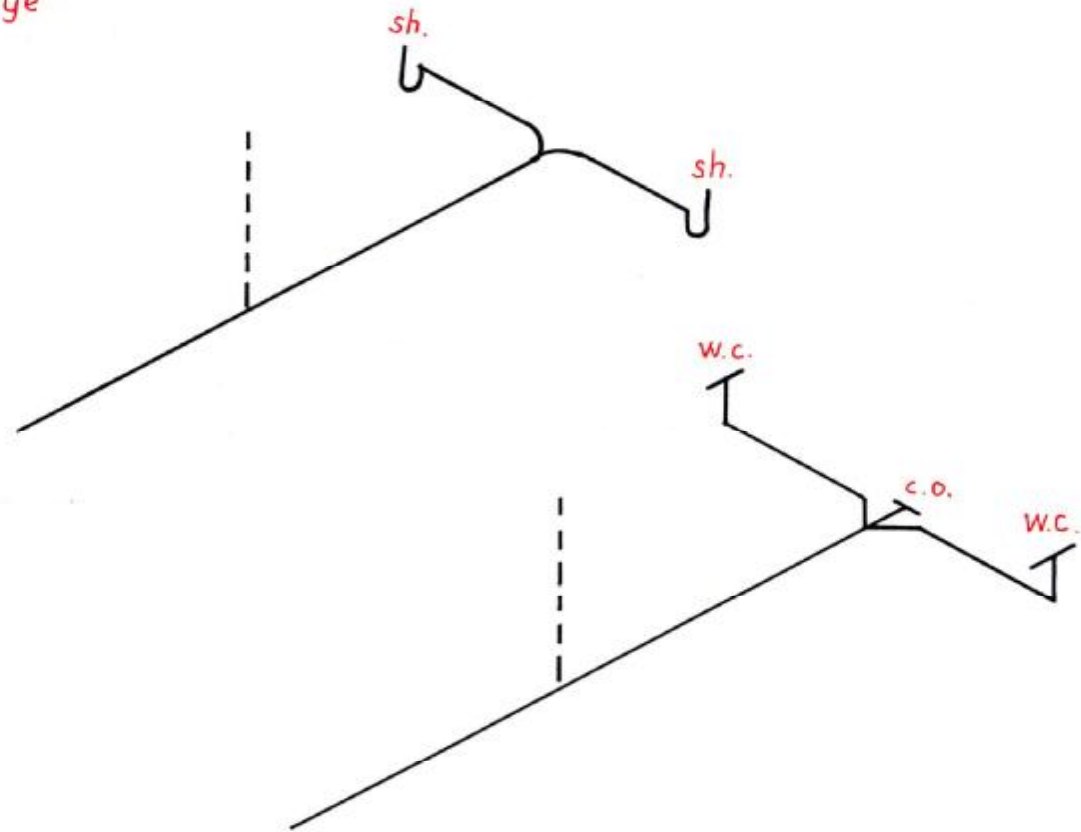


## 908.2 Connection at the same level.

Where the fixture drains being common vented connect at the same level, the vent connection shall be at the interconnection of the fixture drains or downstream of the interconnection. Common vent on the horizontal shall be a double pattern fitting.



- Double Pattern Fitting
- Twin Ell (2" or smaller - Table 706.3)
  - Double Wye
  - Double Tee Wye

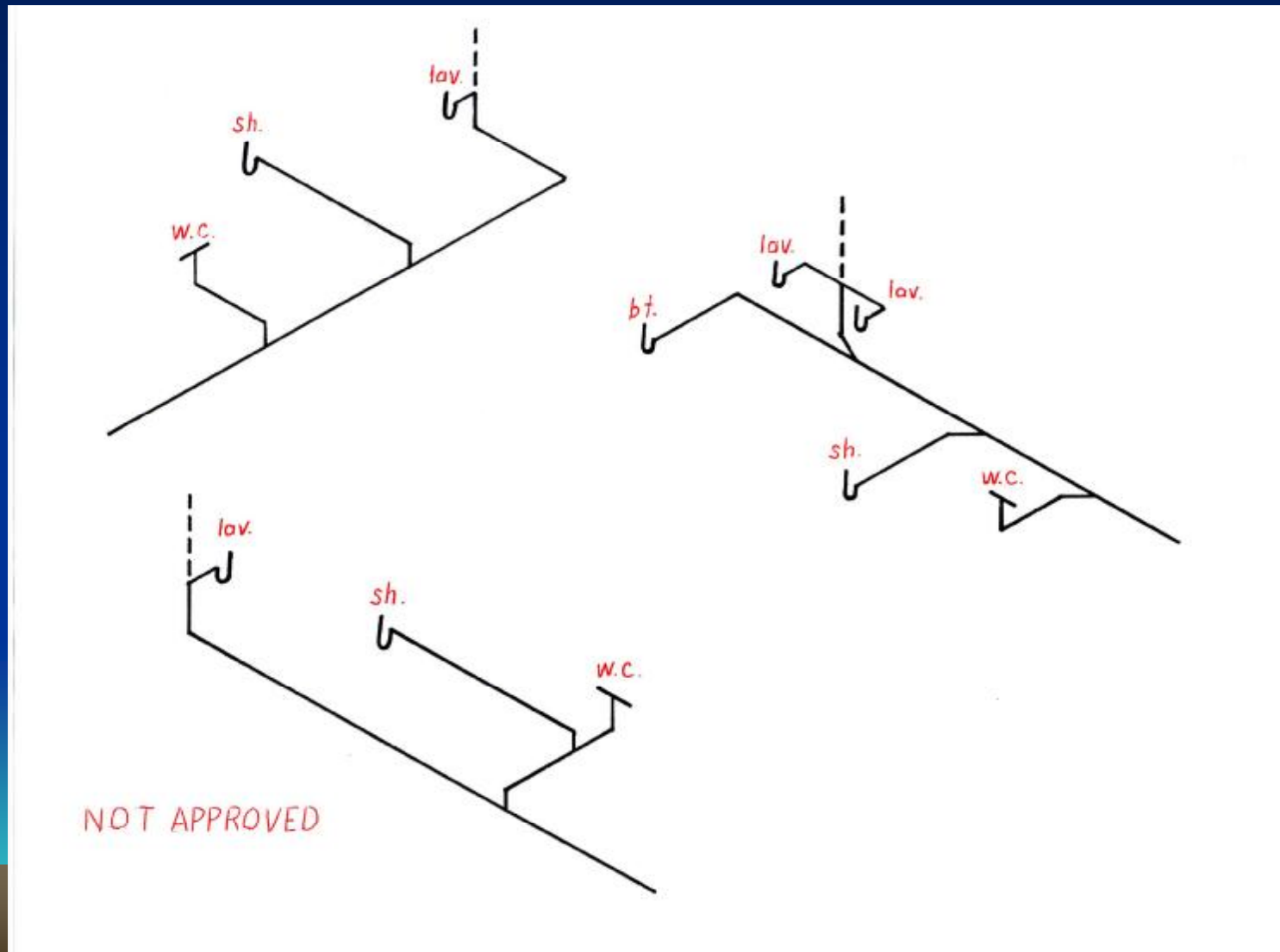






**909.1 Horizontal wet vent permitted.** Any combination of fixtures within two bathroom groups located on the same floor level is permitted to be vented by a horizontal wet vent. The wet vent shall be considered the vent for the fixtures and shall extend from the connection of the dry vent along the direction of the flow in the drain pipe to the most downstream fixture drain connection to the horizontal branch drain. Each wet vented fixture drain shall connect independently to the horizontal wet vent. Only the fixtures within the bathroom groups shall connect to the wet vented horizontal branch drain. Any additional fixtures shall discharge downstream of the horizontal wet vent.

**Each wet vented fixture drain shall connect independently to the horizontal wet vent.**





## 912.2 Installation

The **only vertical pipe** of a combination drain and vent system shall be the connection between the fixture drain of a **sink, lavatory or drinking fountain**, and the horizontal combination drain and vent pipe. The maximum vertical distance shall be 8 feet.

**Floor Drains can not jump up without being re-vented**

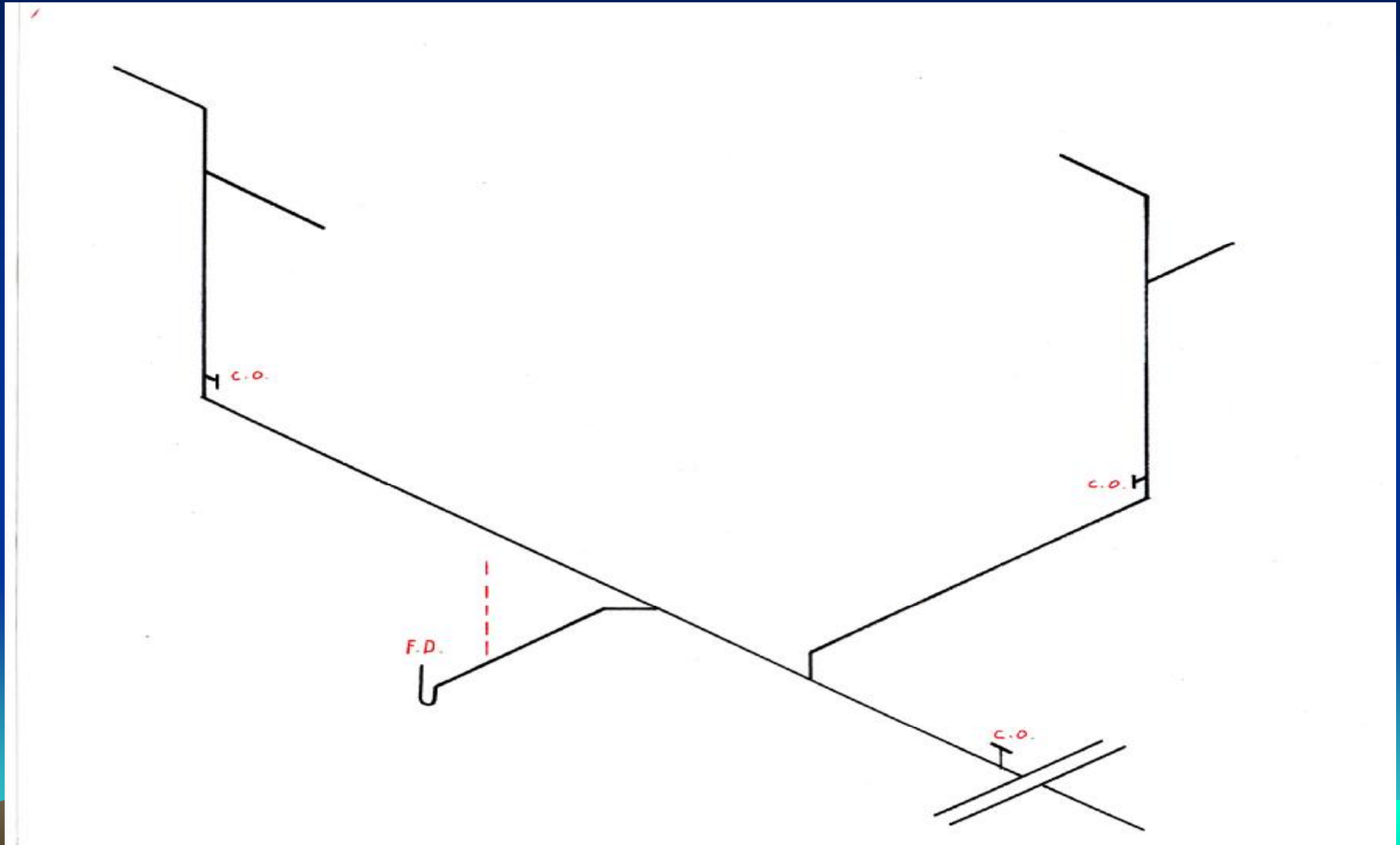


- 912.2.2 Connection
- The combination drain and vent system shall be provided with a dry vent connected at any point within the system or the system shall connect to a horizontal drain that is vented in accordance with one of the venting methods specified in this chapter. Combination drain and vent systems connecting to building drains receiving **only** the discharge from a stack or stacks shall be provided with a dry vent. The vent connection to the combination drain and vent pipe shall extend vertically a minimum of 6" above flood level rim of the highest fixture being vented before offsetting horizontally.

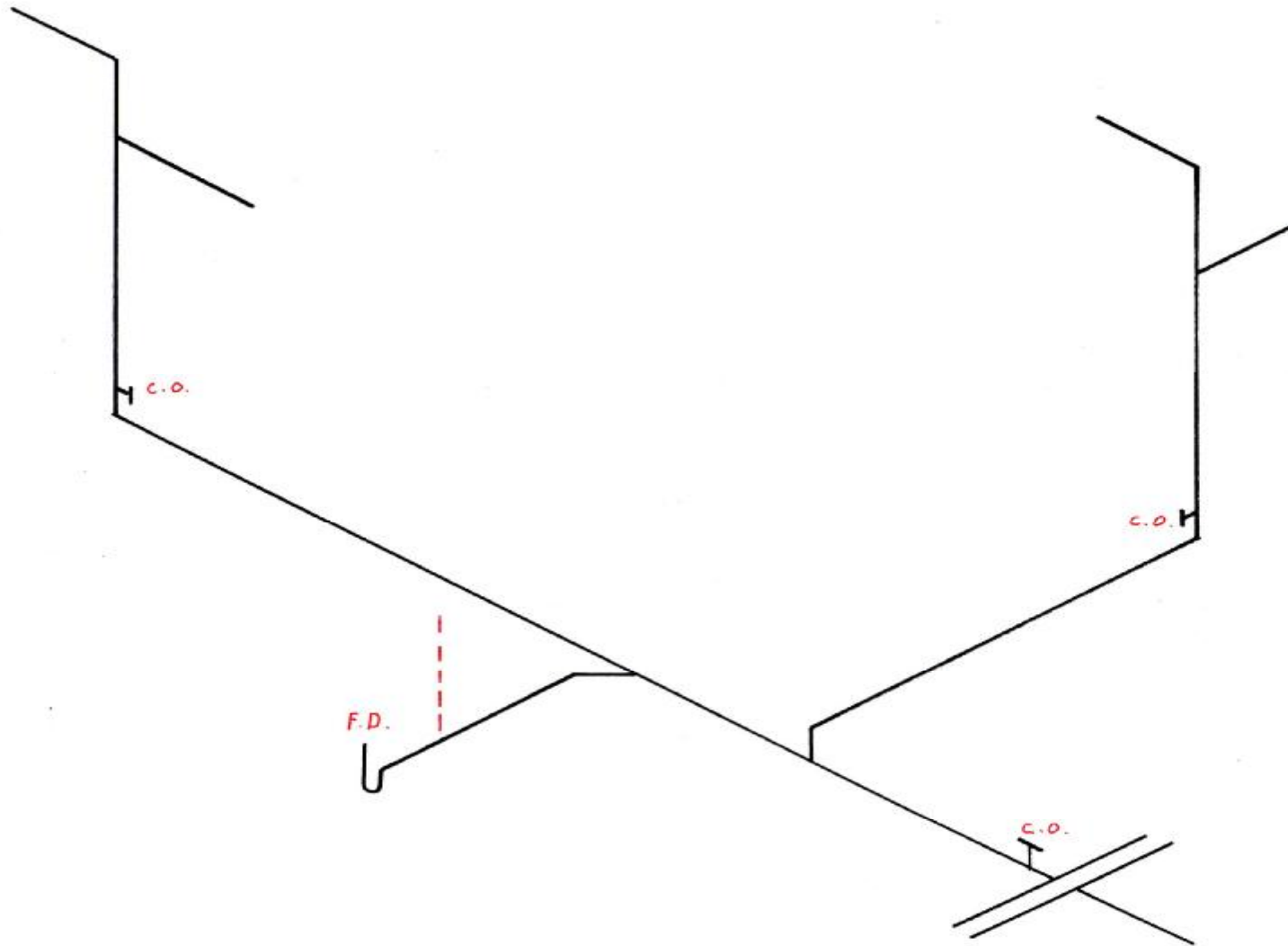




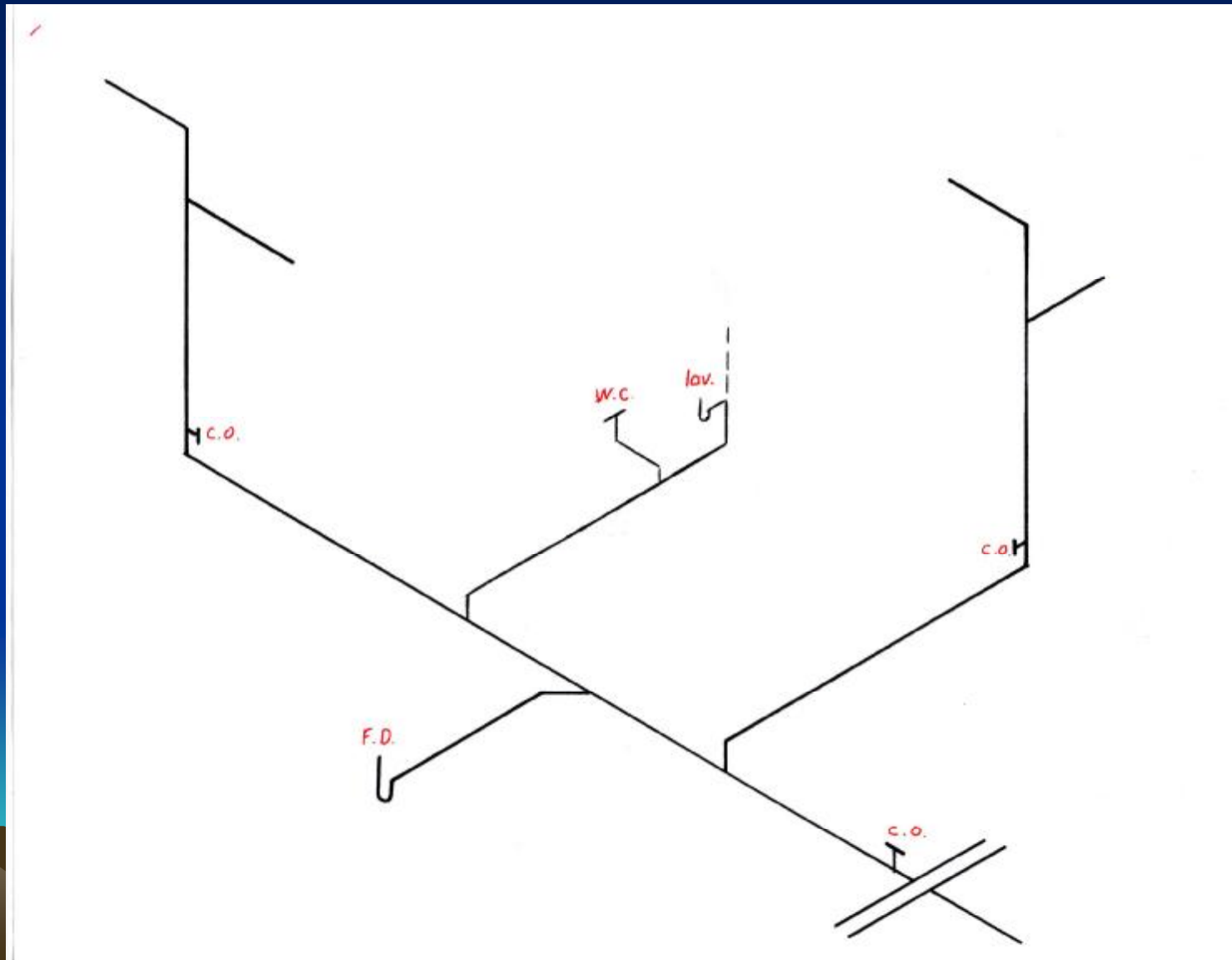
# Current code requires a vent on branch with Combination



New code states,  
if only stacks discharge to building drain  
than combination shall be on vented branch



If vent is located anywhere on building drain than combination drain and vent system is not required to have a vent on branch serving the combination (New Code )



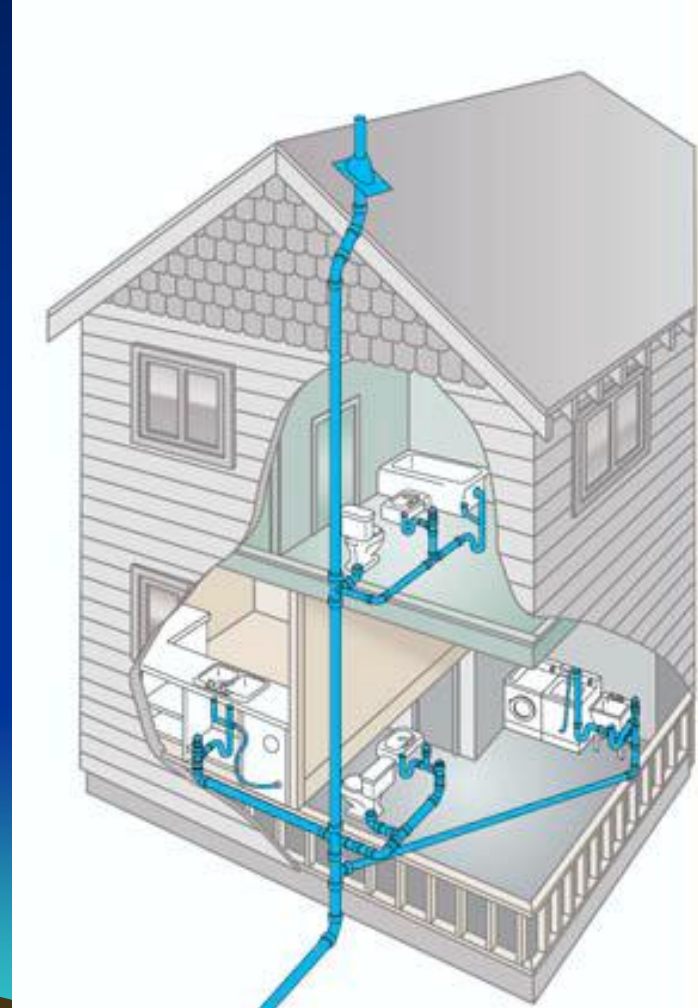
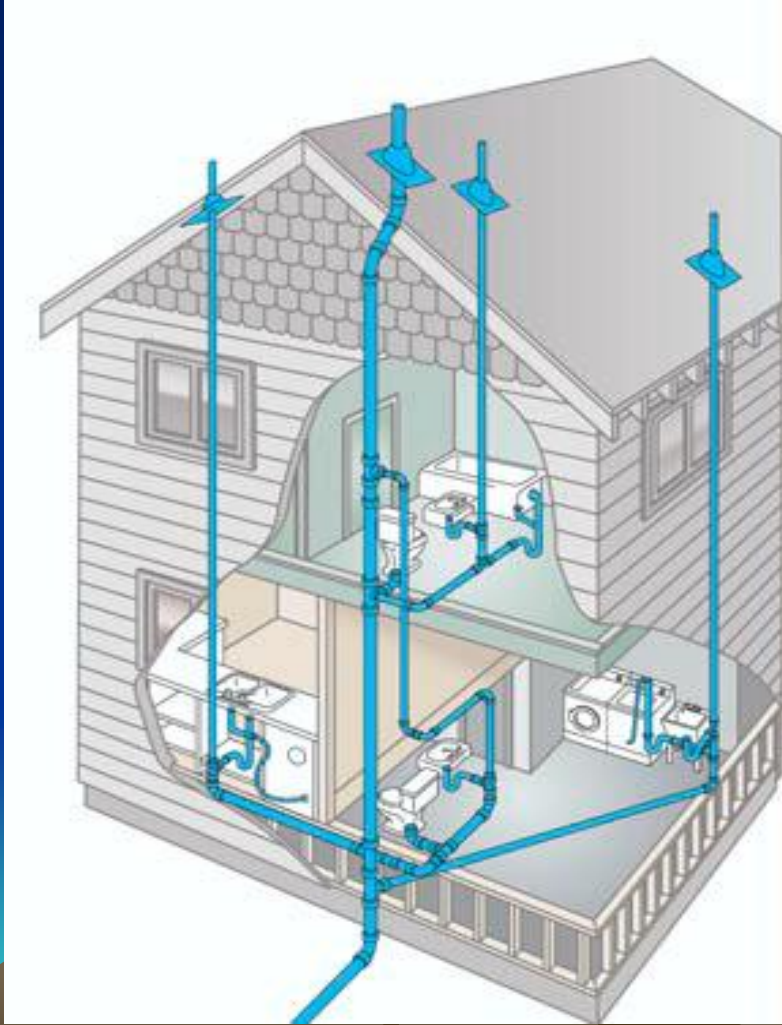
917.1

# Air Admittance Valves



# Oatey

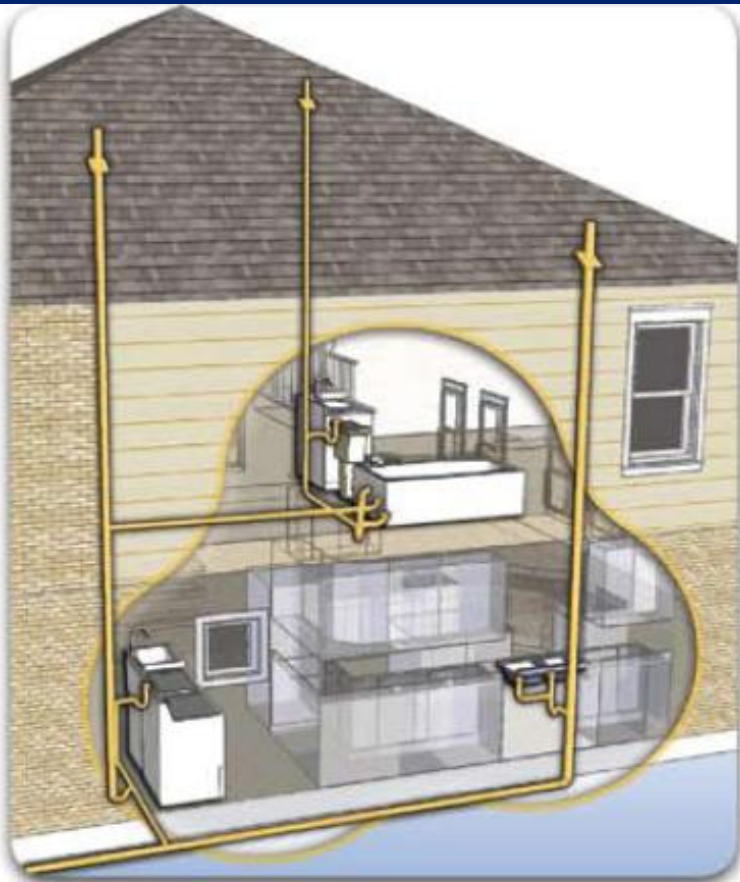
## Traditional Plumbing



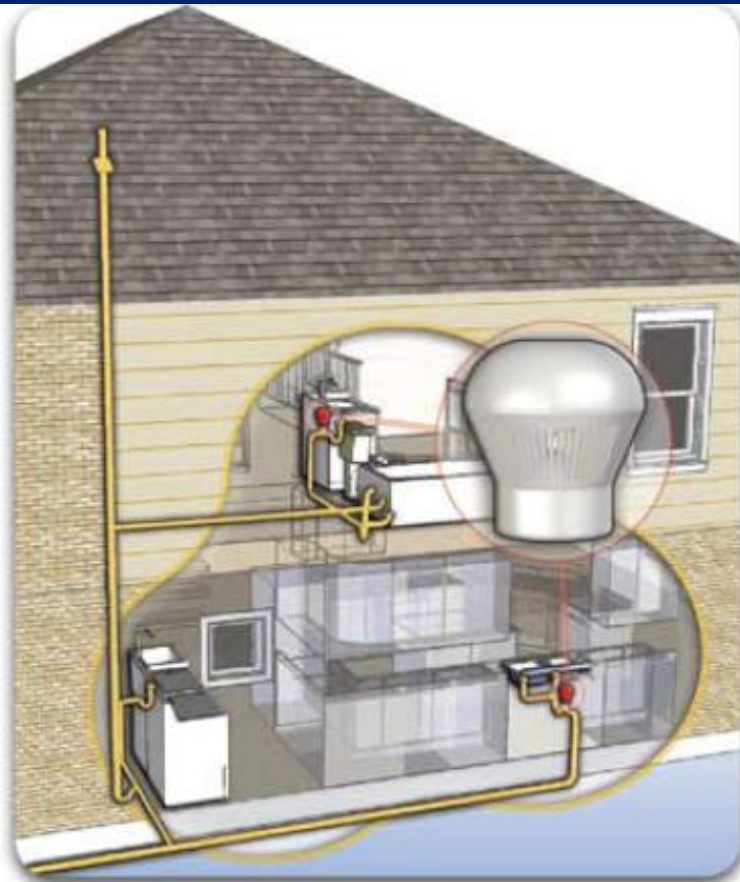




# MAGIC VENT<sup>®</sup> AIR ADMITTANCE VALVES



Traditional Vented DWV System

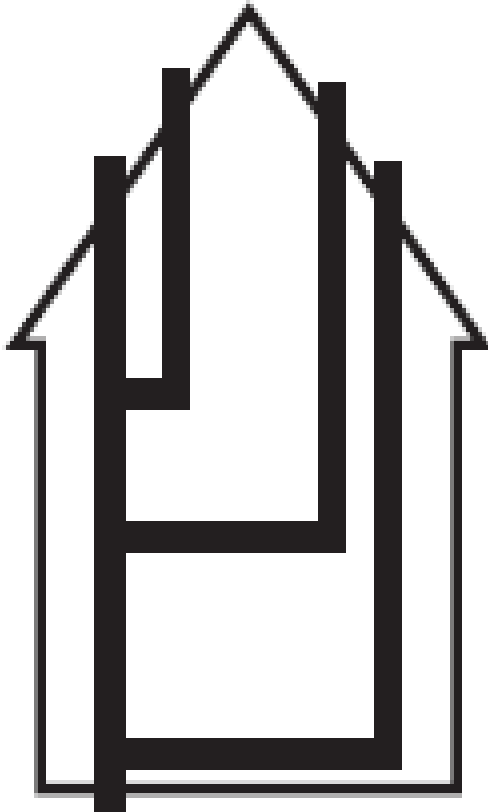


AAV Vented DWV System

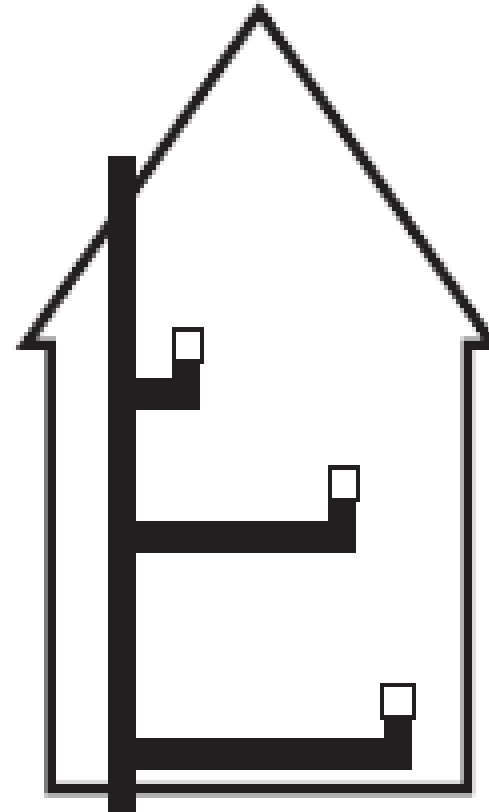


# TurboVent™

Air Admittance Valve

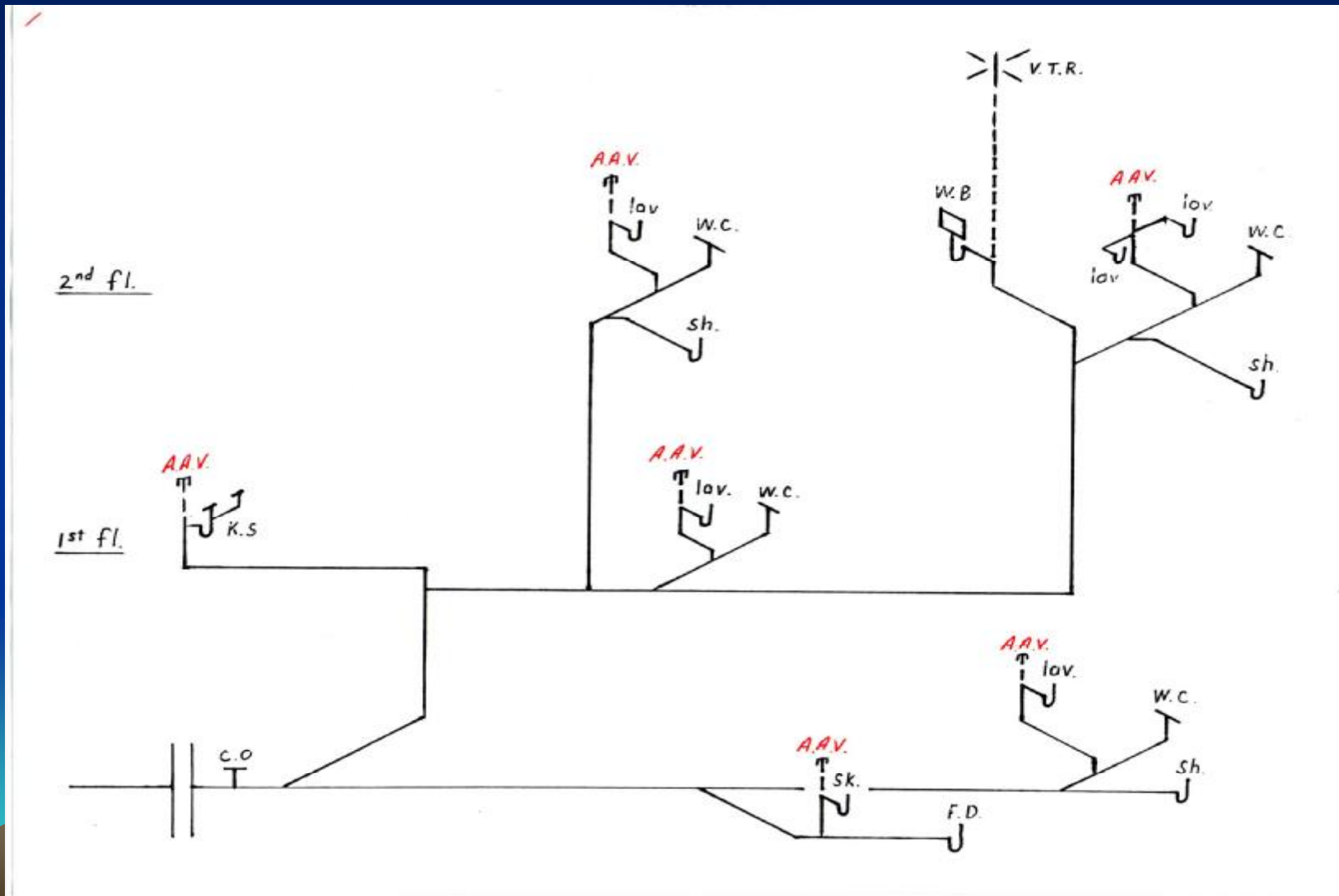


Traditional Venting



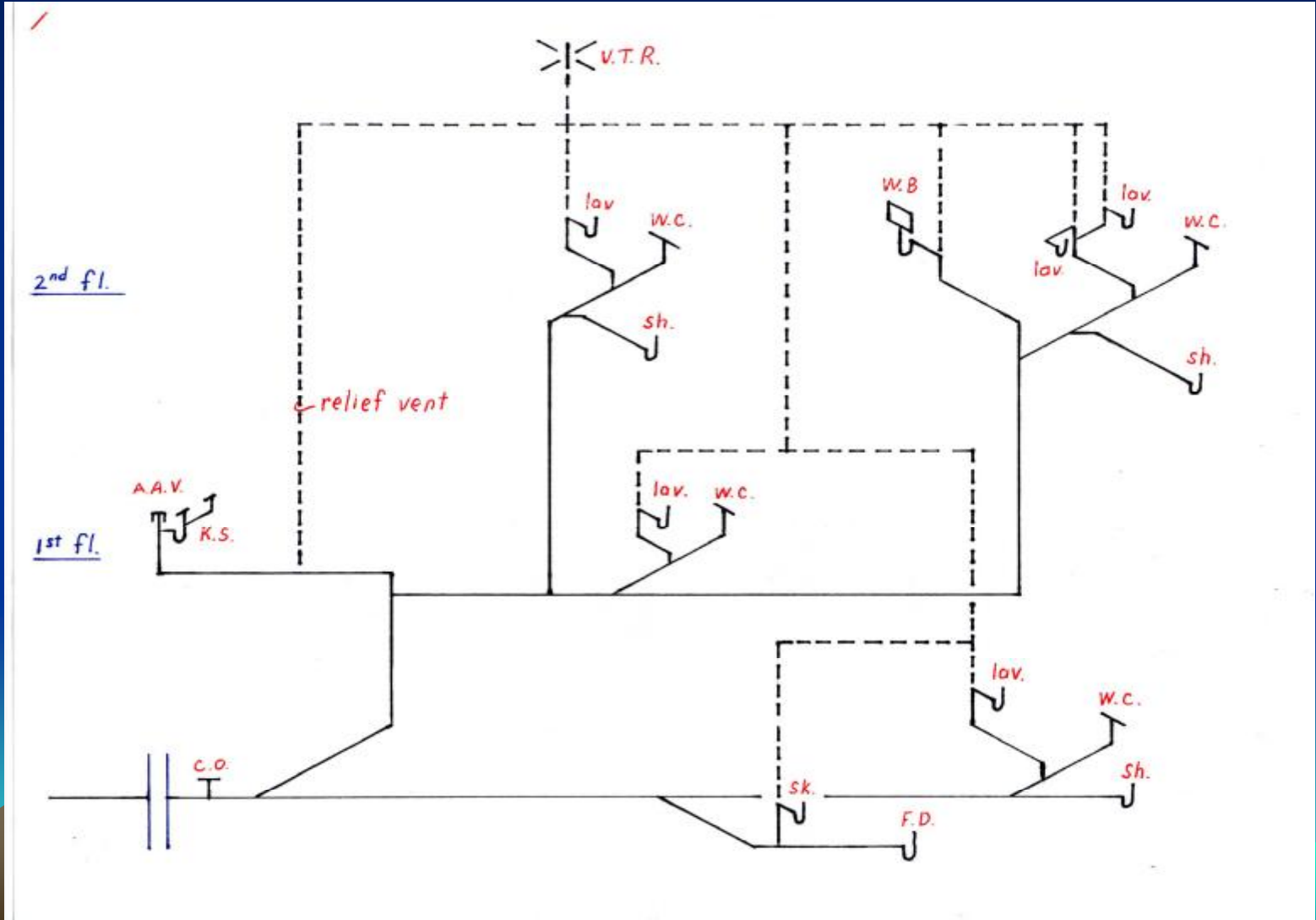
TurboVent Venting

# This is not Traditional Plumbing

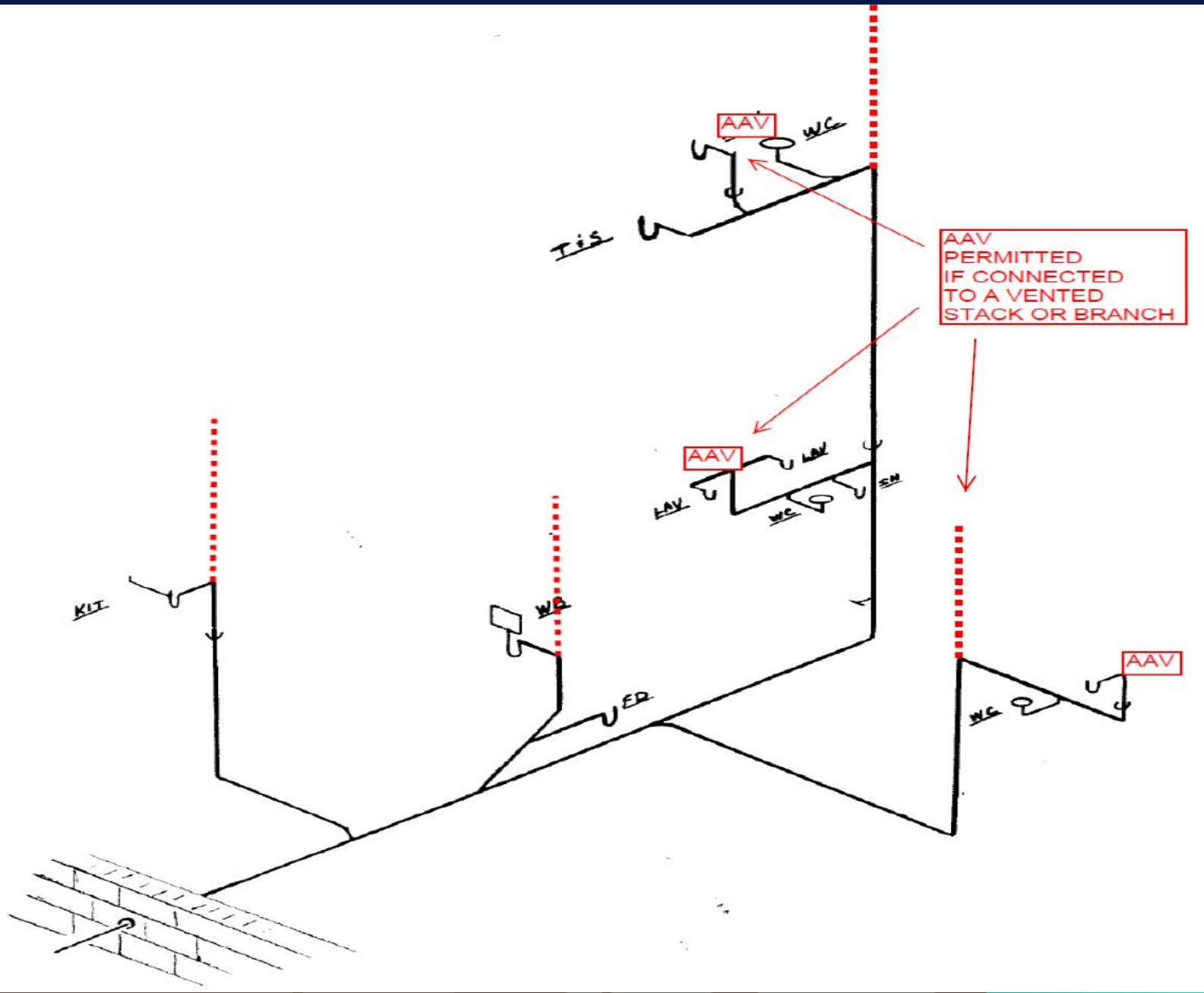


- 917.3 Where permitted
- An individual or branch-type air admittance valve shall connect to a vented stack or vented branch to the open air.







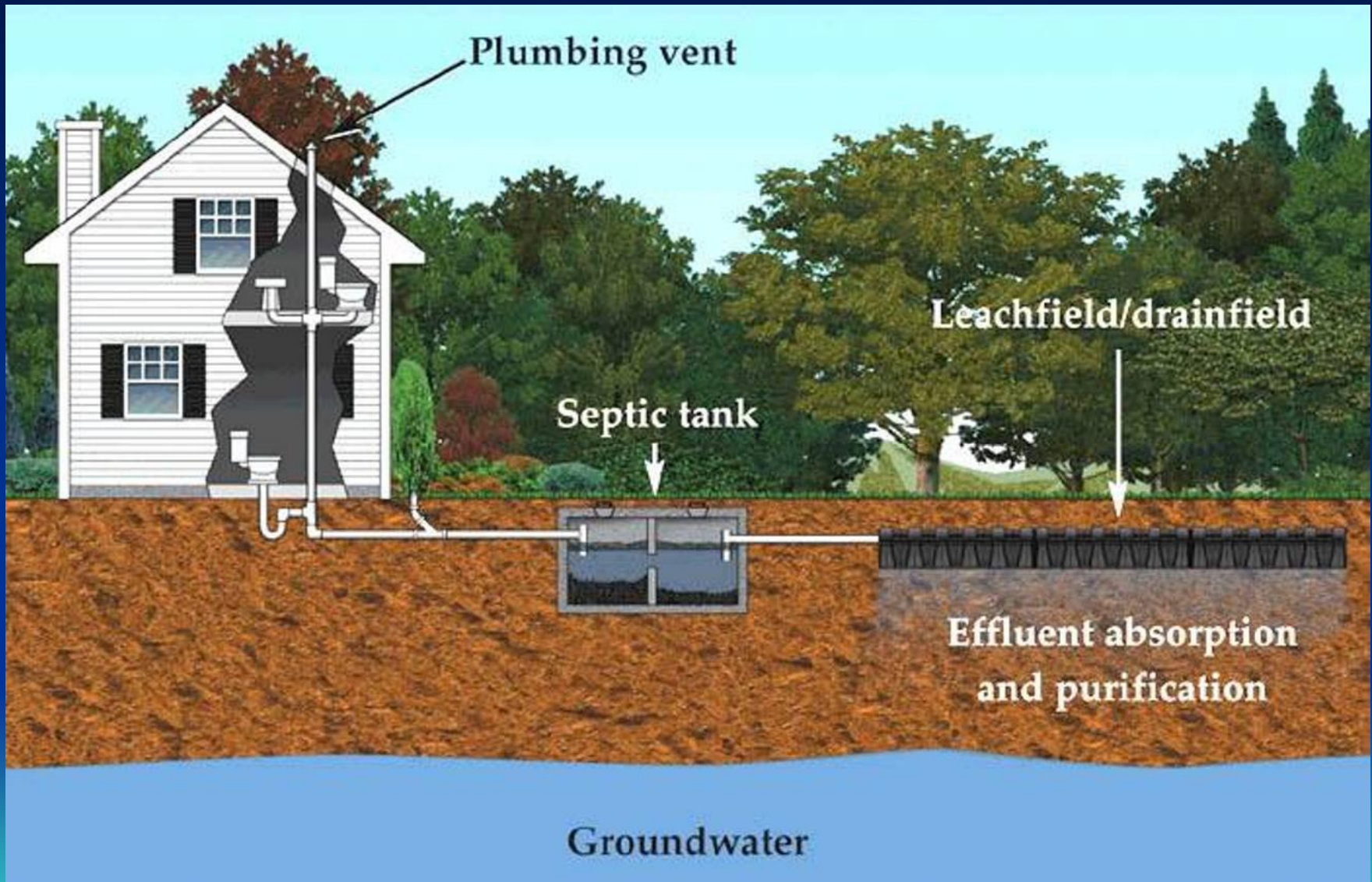


- **Air Admittance Valves**, when used on septic systems:

## Septic systems

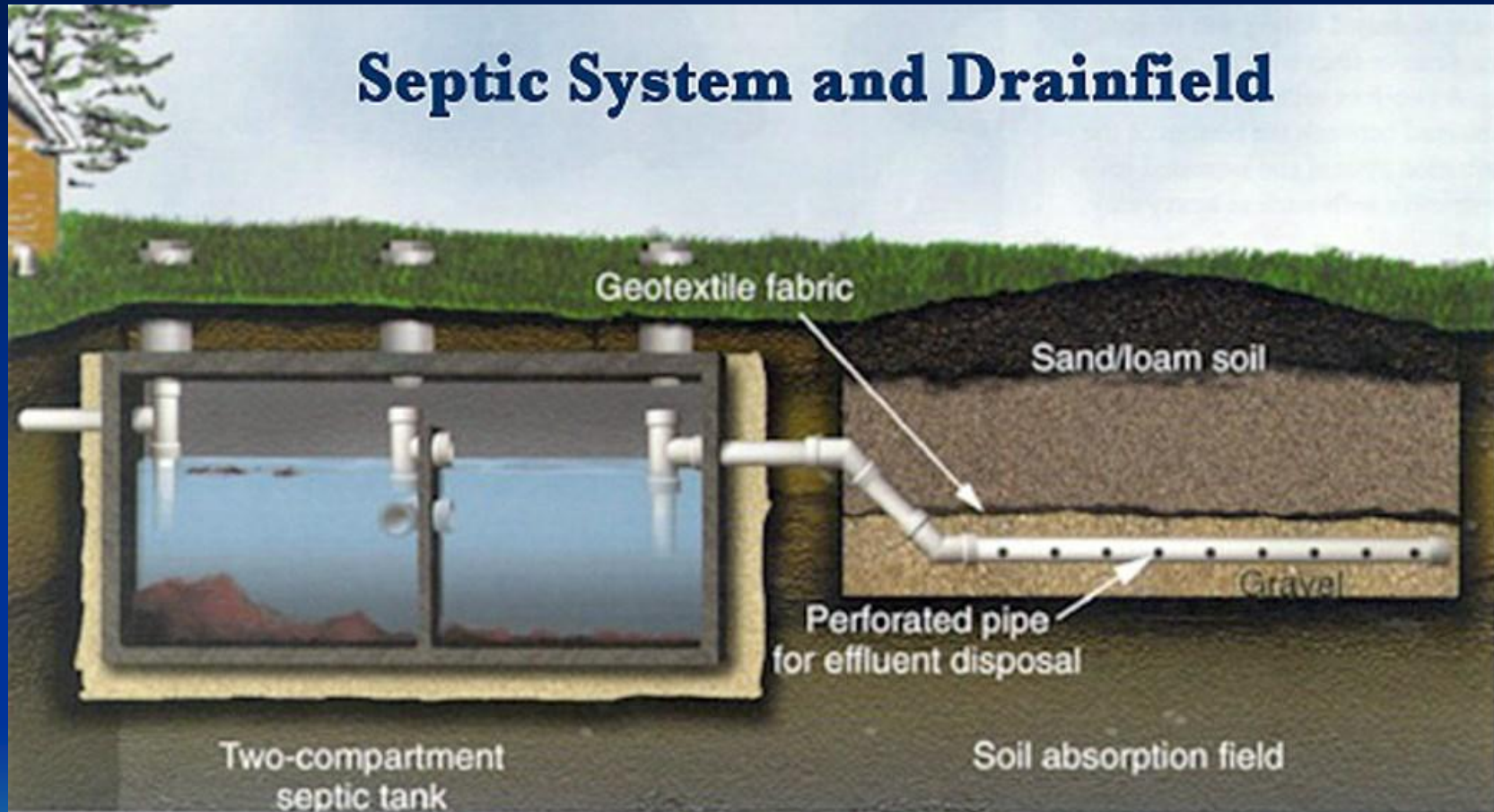
- If the first chamber of septic tank has not been vented.
- A vent should be at the first connection of building DWV system to prevent positive pressure from the tank.

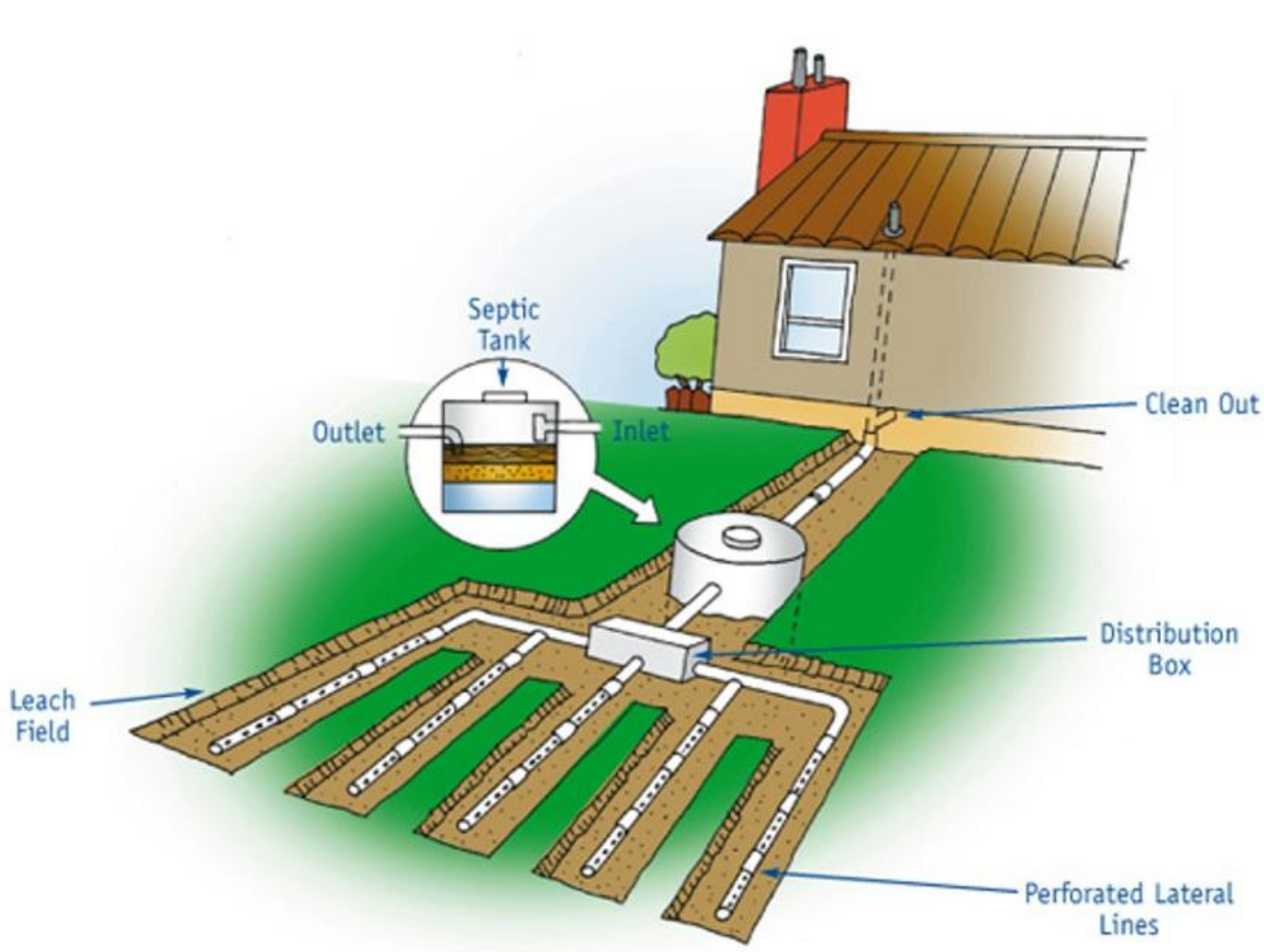






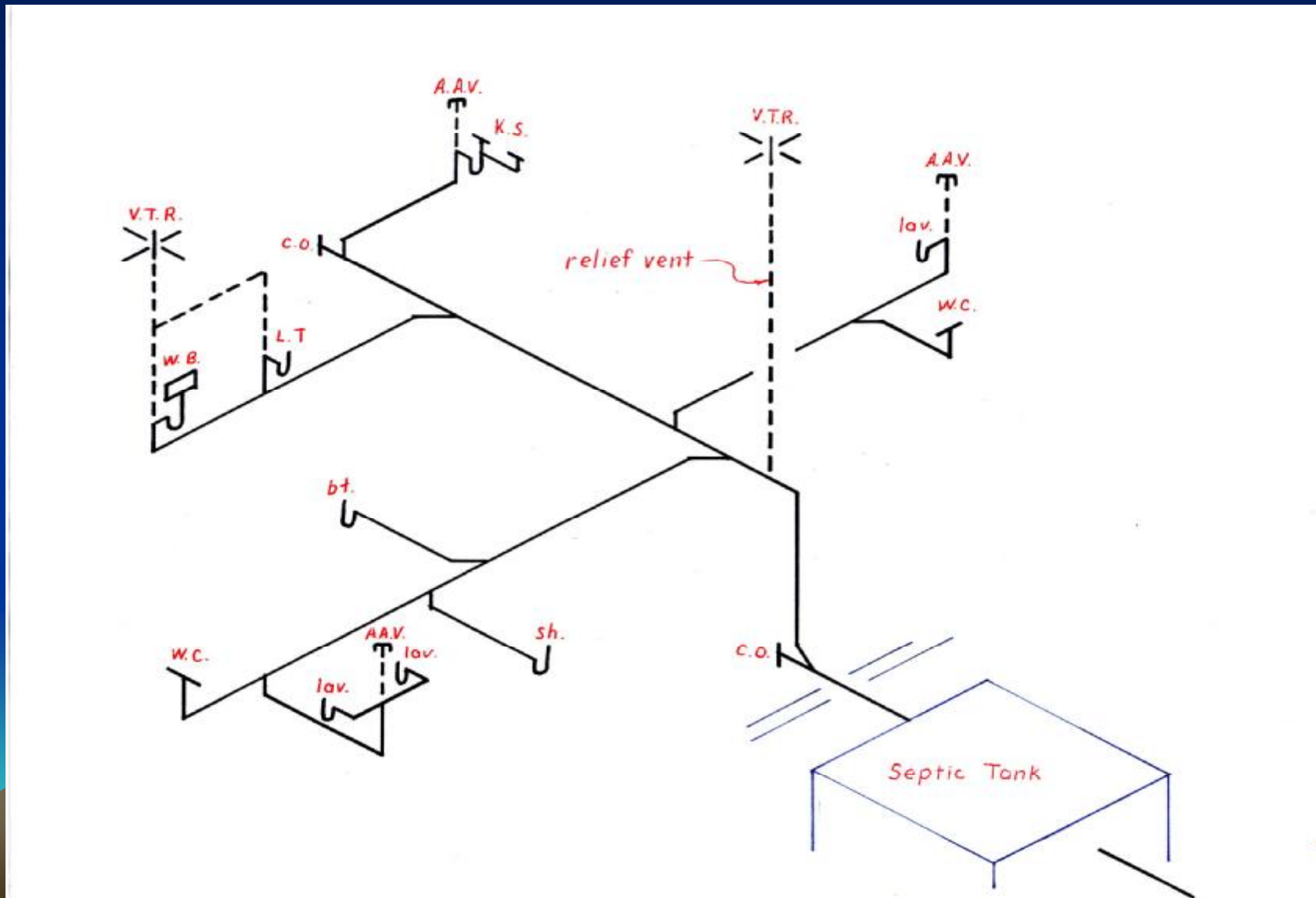
# Septic System and Drainfield







# Ranch with basement



**917.8 Prohibited installations.** Air admittance valves shall not be installed in nonneutralized special waste systems as described in Chapter 8. Air admittance valves shall not be located in spaces utilized as supply or return air plenums or where limited by the manufacturer's installation instructions. *Air admittance valves shall not be installed to vent sumps or tanks of any type.*



# Chapter 10

## Traps, Interceptors and Separators



**1002.1 Fixture traps.** Each plumbing fixture shall be separately trapped by a **liquid** seal trap, except as otherwise permitted by this code.



**1002.4 Trap seals.** Each fixture trap shall have a liquid seal of not less than 2 inches (51 mm) and not more than 4 inches (102 mm), or deeper for special designs relating to accessible fixtures. Where a trap seal is subject to loss by evaporation, a trap seal primer valve shall be installed. **Trap seal primer valves shall connect to the trap at a point above the level of the trap seal. A trap seal primer valve shall conform to ASSE 1018 or ASSE 1044.**

**Exception:** Where a fixture trap is supplied with water on a regular basis, a trap seal primer valve shall not be required.





# ASSE 1018



# ASSE 1044

## **SPECIFICATION**

Sioux Chief 200/213 series Trap Primer tailpieces shall be used where necessary in drainage systems. Trap primer tailpiece shall be a gravity fed device with no mechanical parts.

Trap primer tailpiece shall embody a 1/2" nominal branch connection.

**Tailpiece drainage requirements set forth by ASSE 1044.**



**1003.4 Oil separators required.** At repair garages, car washing facilities, at factories where oily and flammable liquid wastes are produced, separators shall be installed into which all oil bearing, grease bearing or flammable wastes shall be discharged before emptying into the building drainage system or other point of disposal.

*Deleted*

Exception: an oil separator is not required in hydraulic elevator pits where an approved alarm system is installed.

The End

