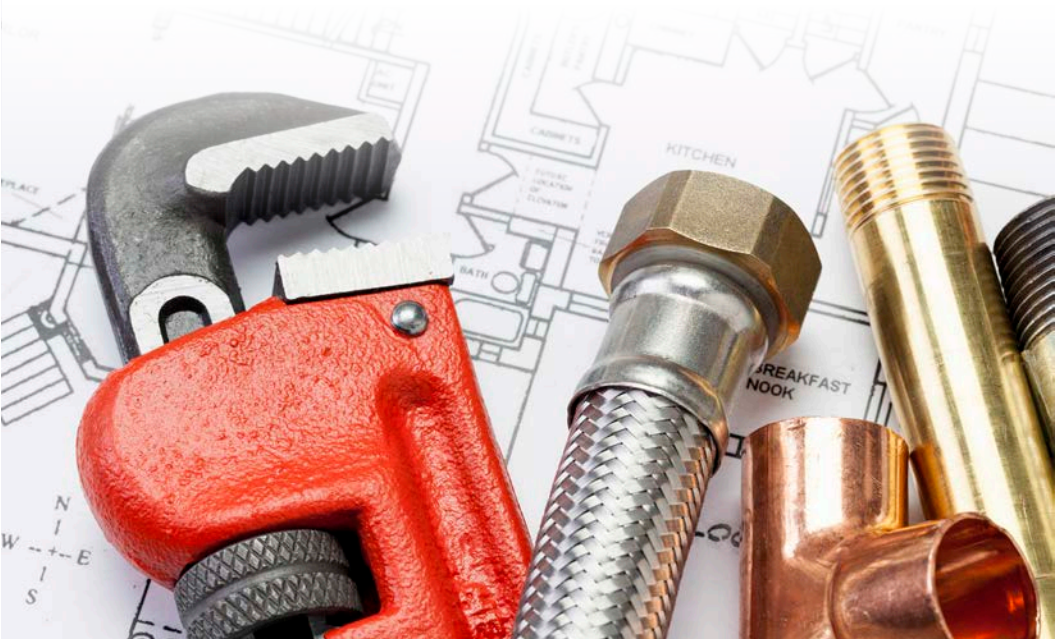




TOWNSHIP OF CENTRAL FRONTENAC
BUILDING DEPARTMENT

PLUMBING INSTALLATIONS

**A homeowner guide to
plumbing requirements for
single-family dwellings**



Permit Requirements 3

Inspection Requirements 4

Plumbing Code Requirements 4

New Drain and Vent Installations 5

Potable Water Systems 16

**Protection From Contamination
By Cross Connections 17**

Note:

This booklet has been written to:

- 1) Provide homeowners with a summary of some more common plumbing regulations; and
- 2) Provide information on the extent to which the plumbing work must be completed before requesting an inspection.

It is recommended that the applicable sections of this booklet be reviewed before commencing the project. Please note that this booklet is not intended to cover all of the plumbing regulations. Complete plumbing requirements are covered in the Ontario Building Code.

Every effort has been made to ensure the accuracy of information contained in this publication. However, in the event of a discrepancy between this publication and the Ontario Building Code (OBC), the OBC will take precedence

Permit Requirements

A plumbing permit must be obtained from the Township of Central Frontenac whenever:

- a) a plumbing system is constructed, extended, altered, renewed or repaired, and
- b) water supply lines in a building are replaced.

A plumbing permit is not required when:

- a) a stoppage in the drainage system is cleared;
- b) a leak is repaired in a water distribution system;
- c) a fixture is replaced (like for like) without any change to the drainage system; or
- d) a replacement is made to existing faucets, or service water heaters.

Plumbing permits can be issued only to:

- a) a licensed contractor
- b) a person who owns and resides at the single-family dwelling where the work is being done. The owner must personally do the work. The permit would be issued to the owner provided the Chief Building Official is confident the work will be done competently.

Inspection Requirements

Before calling for the initial inspection, all drains, vents and water supply lines must be completely roughed in. The work must not be covered or concealed before inspection. If any part of the plumbing work is found deficient during inspection, alterations or replacement must be made as necessary. You must call for a re-inspection of corrected defects.

Prior to covering any new work, you must schedule an inspection by calling the Building Inspection office at **613-279-2935 ext. 258** between 8:30 am and 4:30 pm, Monday to Friday or email DS@centralfrontenac.com

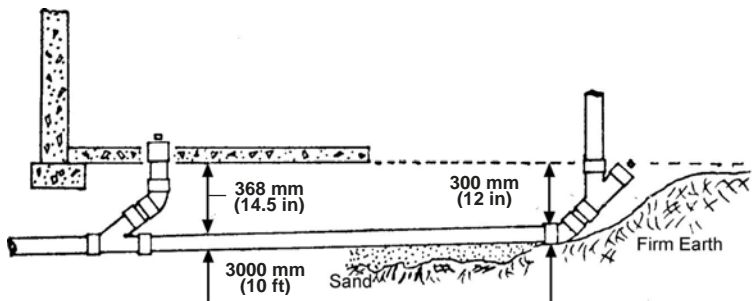
Before calling for a final inspection, all fixtures and equipment must be installed, operational and ready for use. If a fixture drain has been roughed-in for future use, it must be sealed with an approved plug or cap.

Plumbing Code Requirements

Slope of drains

All drains must be installed to provide a minimum slope away from the fixture of at least 6 mm (1/4 in.) for every 300 mm (1ft) of pipe length. See **FIGURE 1**.

FIGURE 1 - Minimum Slope of Drains



Support of drains

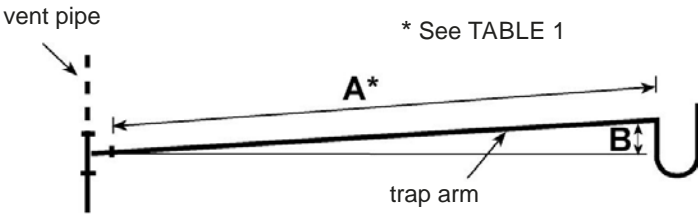
Underground drains must be supported by a full firm base and any supports used to support the drain prior to the installation of granular material must remain in place.

Above ground horizontal pipes shall be supported every 1,200 mm (4 ft).

Trap arms

Except for a water closet (maximum 1000 mm), the total fall from the trap to the vent must not exceed the diameter of the fixture drain. See **FIGURE 2**.

FIGURE 2 - Fall of a Trap Arm



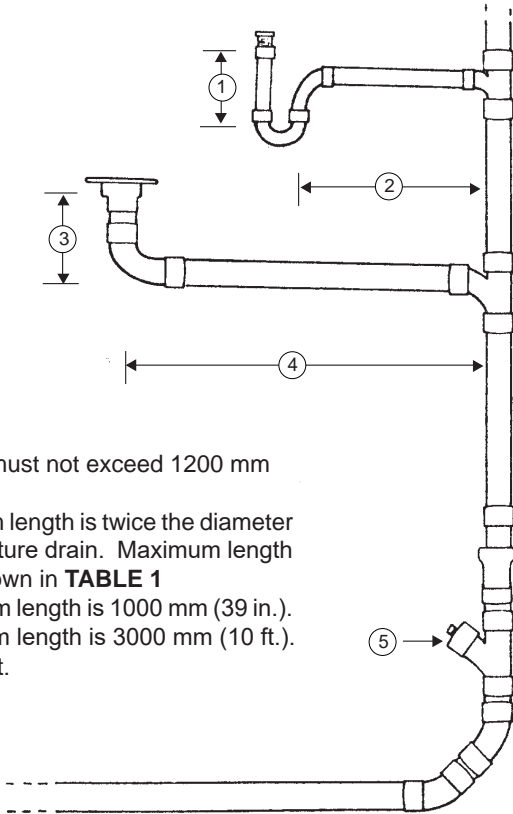
Developed length "A" must be at least twice the size of the trap arm. Fall "B" must not be greater than the size of the trap arm.

The maximum distance between a vent pipe and a fixture trap must not exceed the distances shown in **TABLE 1**. See **FIGURE 3**.

TABLE 1 - Trap Arm Slope (see Figure 2)

<u>Pipe Size (B)</u> <u>(in.)</u>	<u>Slope</u>	<u>Total Allowable</u> <u>Length (A)</u>
1 1/2	1/50	1800 mm (6 ft.)
2	1/50	2400 mm (8 ft.)
3	1/50	3600 mm (12 ft.)

FIGURE 3 - Lengths of Fixture Drains

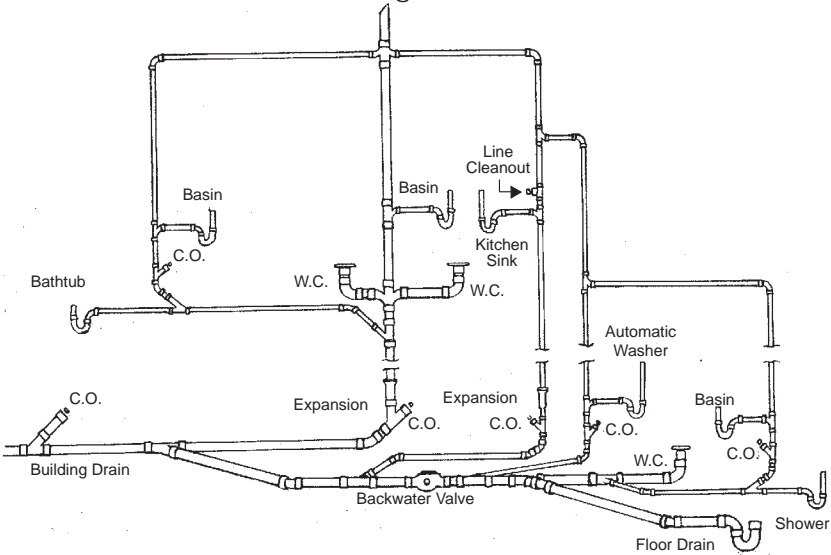


1. Length must not exceed 1200 mm (4 ft.)
2. Minimum length is twice the diameter of the fixture drain. Maximum length is as shown in **TABLE 1**
3. Maximum length is 1000 mm (39 in.).
4. Maximum length is 3000 mm (10 ft.).
5. Cleanout.

Approved cleanout fittings must be installed at the following locations:

- a) as close as practicable to the point where the building drain leaves the building;
- b) at the base of every soil or waste stack;
- c) A clean out shall be installed on a trap arm serving a kitchen sink as close as practical to the trap outlet and shall be readily accessible

FIGURE 4 - Building Drainage System With Cleanout Fittings



Use of “TY” and “Y” fittings



Tee fittings or 90 degree elbows must not be used in the horizontal portion of a drainage system. All changes of direction must be made with the use of “Y” and 45 degree bends. Except that a 90-degree elbow or “TY” fittings may be used to change the direction of horizontal drains when the direction of flow is down to the vertical. “TY” fittings may be used to make the connections to vent pipes. See **FIGURE 5** and **FIGURE 6**. (Exceptions see **FIGURE 7**).

FIGURE 5 - Permitted Use of Sanitary "TY" Fittings - Part 1

- A cross fitting shall not be used in a drainage system
- A cross fitting may be used to connect vent pipes

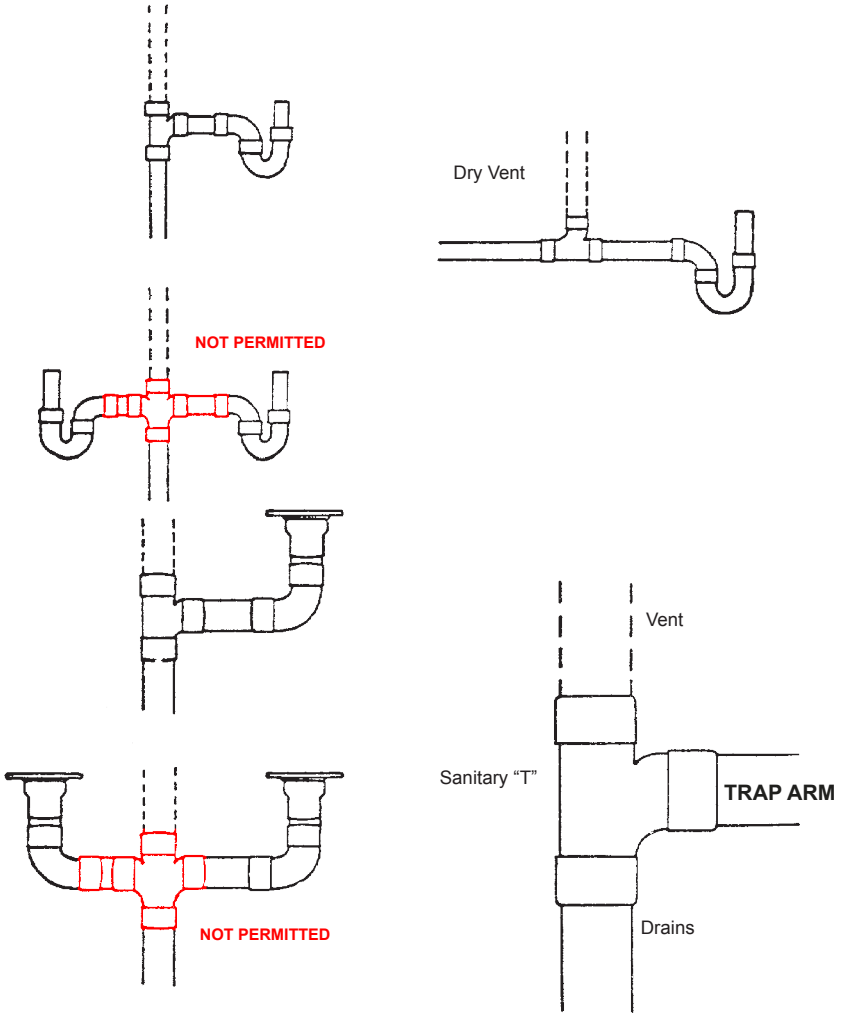


FIGURE 6 - Permitted Use of Sanitary "TY" Fittings - Part 2

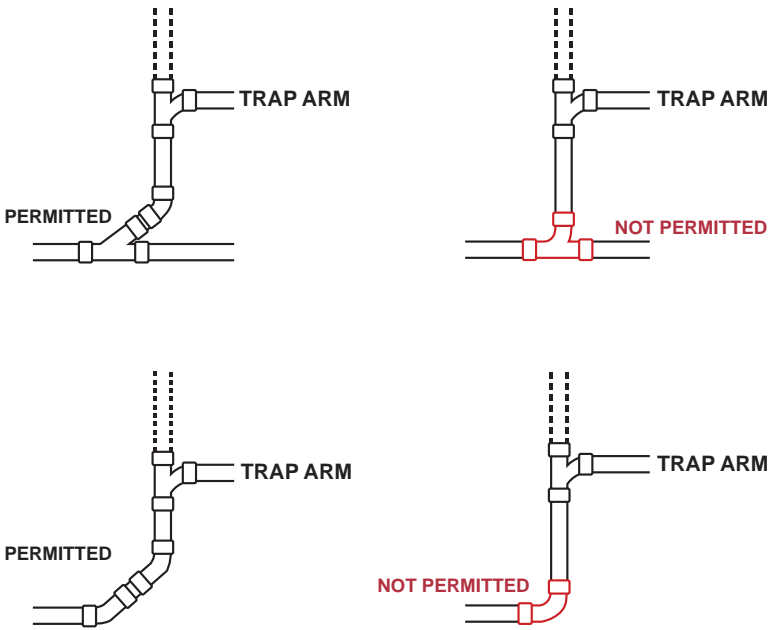
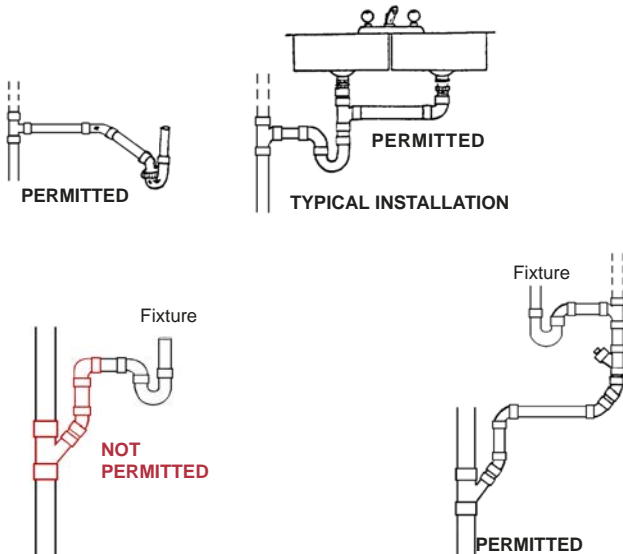


FIGURE 7 - Permitted Use of Sanitary "TY" Fittings - Exceptions



Piping in Exterior Walls

Where piping may be exposed to freezing conditions, it must be protected. No drainage or water system can be installed in any exterior wall of a building. Vent pipes are permitted in exterior walls provided they are protected from frost.

Wet Venting

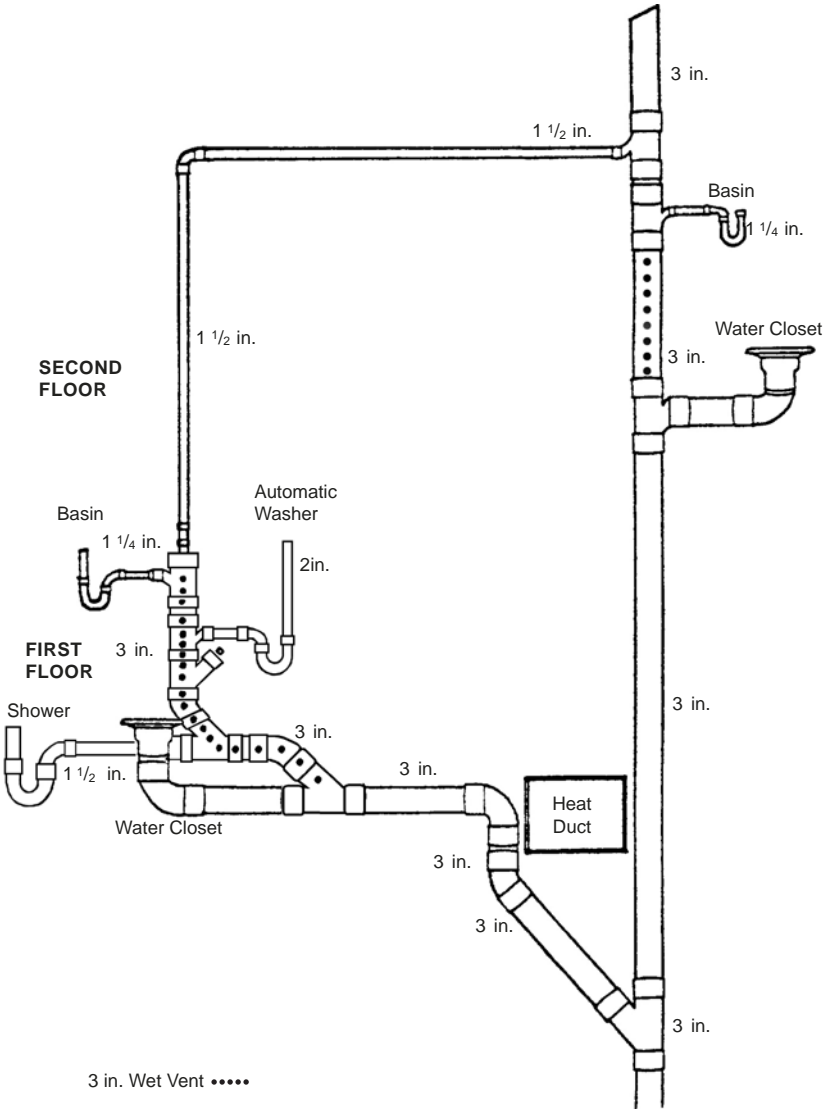
A soil or waste pipe may serve as a wet vent if:

- a) the number of water closets does not exceed two;
- b) water closets are installed downstream of all other fixtures;
- c) Double "Y" fitting must be used for a horizontal installation;
- d) trap arms and fixture drains connected to the wet vent cannot exceed 2" except for emergency floor drains;
- e) where a wet vent extends through more than one storey the discharge from any one storey above the first does not exceed 4 fixture units (see **TABLE 2** on page 15), and
- f) a wet vent cannot be reduced in size except for an emergency floor drain portion.

See **FIGURES 8, 9, 10A & 10B**.

FIGURE 9 - Two Storey Venting

new drain & vent installations



Backwater Valves

All fixtures installed below street level must be protected by a backwater valve arranged to prevent sewer back-up. The backwater valve must be installed to protect the branch drain serving below grade fixtures only. Not applicable to individual on-site sewage systems.

See **FIGURES 4, 10A, & 10B.**

FIGURE 10A - Typical Basement Plumbing Installation Showing Venting Method, Backwater Valve & Attachment to "Cast-Iron" Piping

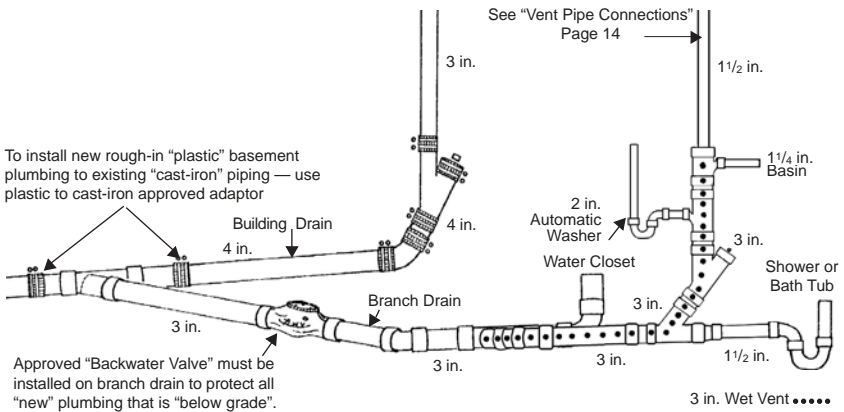


FIGURE 10B - If the washer drain will not be installed on the wet vent with the bathroom group the size of the wet vent can be reduced to 2"

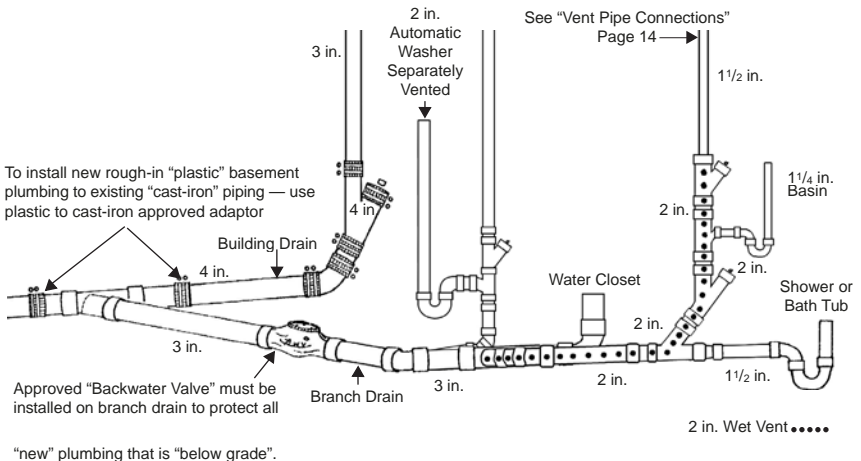
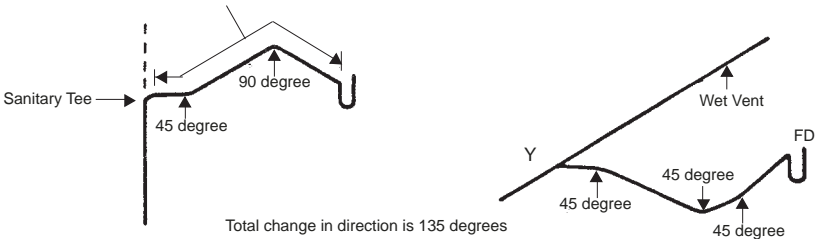


FIGURE 11 - Location of Vent Pipes Cumulative Change in Direction

Max. fall of trap arm is equal to pipe size
 Max. developed length must not exceed distances shown in TABLE 1
 Min. Developed length is two times pipe size



Change in direction between trap and vent

The cumulative change of direction between a fixture trap and a vent must not exceed 135 degrees except for a water closet trap arm which cannot exceed 225 degrees.

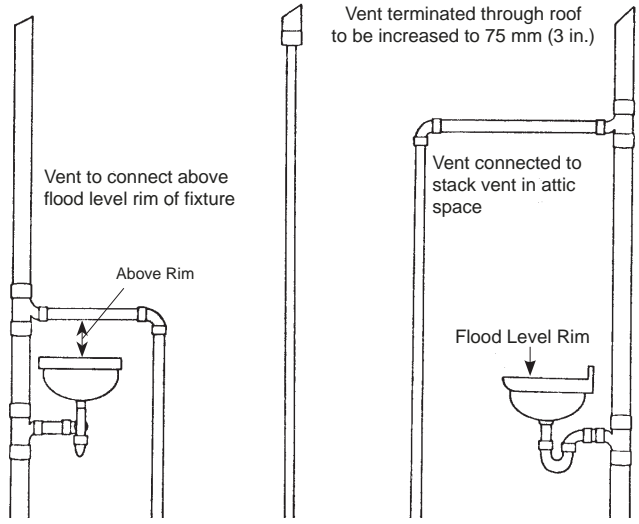
See **FIGURE 11**.

Venting

- a) Where a vent pipe passes through the roof, it must be protected from frost closure by increasing the pipe size to at least 75 mm (3 in.) in diameter immediately before penetrating the roof.
- b) Vent pipes must be installed without depressions in which moisture can collect.
- c) A vent pipe must extend vertically above the flood level rim of every fixture that it serves before being connected to another vent pipe.

See **FIGURE 12**.

FIGURE 12 - Vent Pipe Connections



Drain pipe sizing

The sizes of all fixture outlet pipes must comply with **TABLE 2**. See **FIGURE 13**.

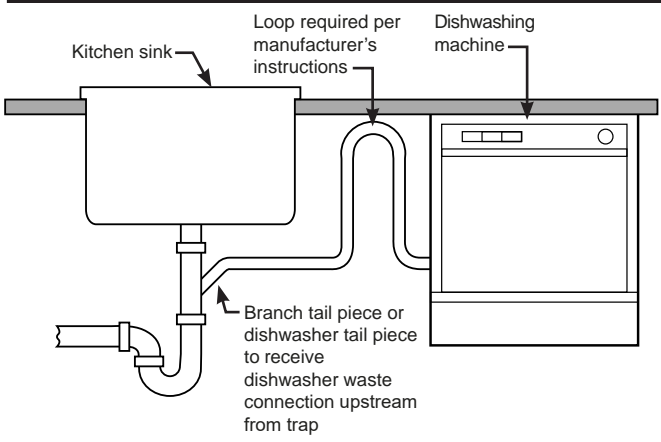
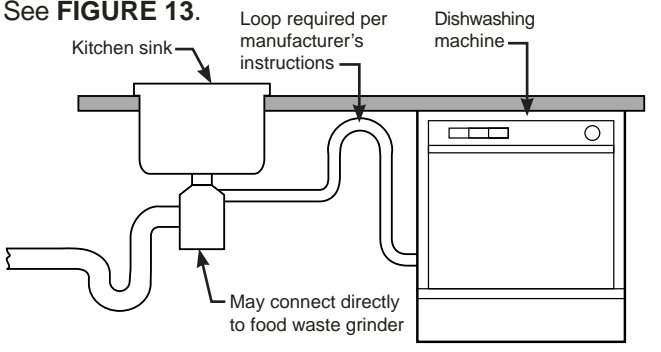
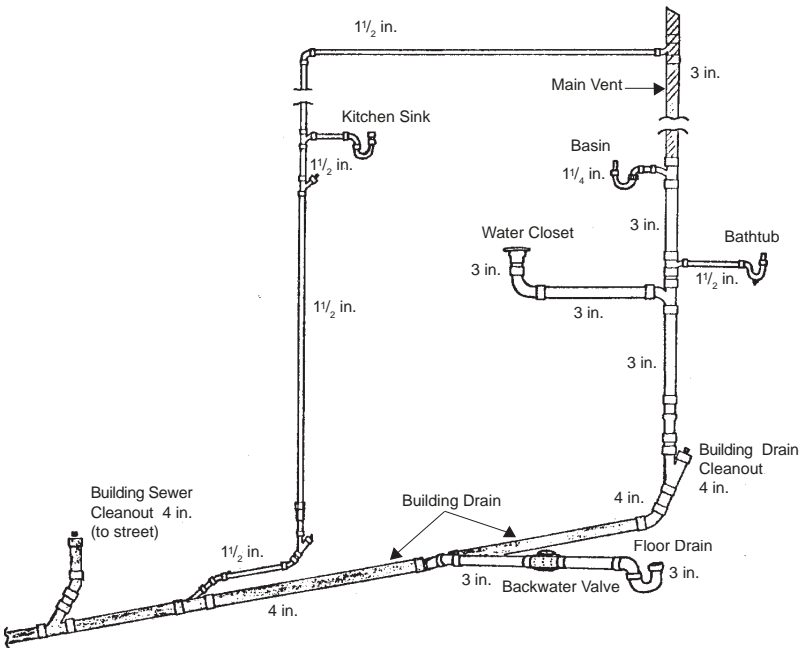


Table 2 - Fixture Size Requirements

FIXTURE	MIN. SIZE OF FIXTURE OUTLET PIPES (inches)
Bathtub (with or without shower)	1½
Bidet	1¼
Clothes Washer	2
Dishwashers (no load when connected to a garbage disposal unit or a kitchen sink trap)	1½
Garbage disposal units - residential type	1½
Laundry sinks	1½
Lavatories (basin)	1¼
Shower Drain (with one shower head)	1½
Shower Drain (with two or three shower heads)	2
Shower Drain (with more than three shower heads)	3
Sink - one and two compartments	1½
Water Closet	3

FIGURE 13 - Typical Drainage & Vent Sizing



Note: Every building drain must be at least 100 mm. (4 in.) in size and must be terminated by a vent at least 75 mm (3 in.) in size.

Potable water system

All potable water systems must meet the following standards:

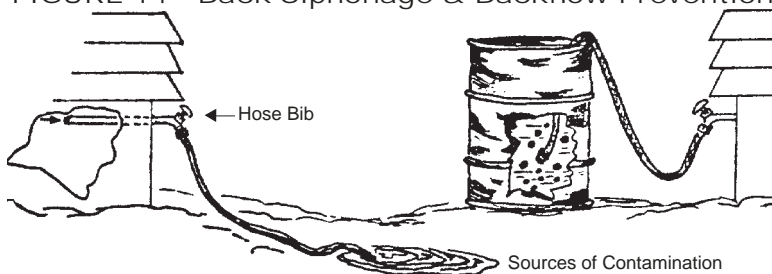
- a) Every water service pipe must be provided with a shut-off valve where the pipe enters the building.
- b) A water distribution system must be installed so that the system can be drained or blown out with air
- c) Every fixture supplied with hot and cold water controls must have the hot water control on the left and the cold water control on the right.
- d) Every water closet must be provided with a shut-off valve on the water supply pipe.
- e) Every pipe that passes through an exterior wall to supply water (i.e., lawn service) must be provided with a frost-proof hydrant with vacuum breaker and a stop-and-waste valve placed inside the building close to the outside wall or other approved location. Also, a hose bib vacuum breaker must be installed on a hose bib located outside a building or inside a garage to protect against backflow.
- f) All shower valves must be pressure-balance or thermostatic-mixing valves conforming to CSA B125, "Plumbing Fittings".

Protection from contamination by cross connection

A hose bib vacuum breaker must be installed on every hose bib located outside a building or in a garage to isolate garden hose applications thus protecting the potable water supply from contamination. Connections to potable water systems must be designed so that non-potable water, foreign matter, foreign chemicals or substances that may render the water non-potable cannot enter the system. A cross connection is a direct arrangement of piping which allows the potable water supply to be connected to a line that contains a contaminant. The purpose of a hose bib is to permit easy attachment of a hose for outside watering purposes. The ordinary garden hose is the most common offender as it can be easily connected to the potable water supply and used for a variety of potentially dangerous applications. A garden hose can:

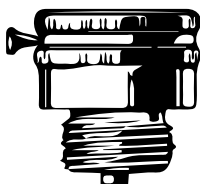
- a) be left submerged in a swimming pool, puddle or other vessel containing non-potable water;
- b) have chemical sprayers attached, for spraying pesticides or herbicides;
- c) be lying on ground that may be contaminated with fertilizer, and garden chemicals;
- d) be attached to a laundry tub with the end of the hose submerged in a tub full of detergent; or
- e) be connected to the supply lines of bottom fed tanks, and boilers, etc. See **FIGURE 14**.

FIGURE 14 - Back Siphonage & Backflow Prevention



What is Back Siphonage?

A reversal of normal flow in the system caused by a negative pressure (vacuum or partial vacuum) in the supply piping.



Vacuum breaker



For more information, please call
the Building Department:

613-279-2935 ext. 226

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[Building Permits Page](#)