Project Guide

Homeowner Plumbing Permit

City of Saskatoon

PURPOSE

This Project Guide helps homeowners understand when a plumbing permit is required, who is eligible for a Homeowner Plumbing Permit, how to apply and book inspections and the key code requirements for typical residential plumbing projects.

Based on the most current editions of the National Plumbing Code of Canada (NPC) and Saskatchewan Plumbing Regulations.

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1.0 General Information

Homeowner plumbing permit

These guidelines apply when you, as a homeowner, are planning to construct, extend, alter, renovate, remove, or repair portions of a plumbing system within a single-family dwelling unit.

When is a plumbing permit required?

A permit is required whenever a plumbing system is constructed, extended, altered, renovated, removed or repaired.

When is a plumbing permit not required?

A plumbing permit is not required when:

- the repair or replacement of valve, faucet, or fixture;
- a leak is repaired in a water distribution system;
- a fixture is replaced (like for like) without any change to the drainage system; or
- if no extension of the plumbing system is required, the installation of a water treatment device, underground sprinklers, or a domestic dishwashing machine or laundry machine.

What is a single-family dwelling unit?

A single-family dwelling unit is a dwelling with a dedicated metered connection to a communal waterworks not shared with other dwelling units. It may include a secondary suite.

Important

All plumbing permits must comply with the current adopted National Plumbing Code of Canada and Saskatchewan Plumbing Regulations.

This information has no legal status and cannot be used as an official interpretation of the various bylaws, codes and regulations currently in effect. The City of Saskatoon accepts no responsibility to persons relying solely on this information.

2.0 Eligibility for a Homeowner Plumbing Permit

- **Who can apply?**
  You may apply for a Homeowner Plumbing Permit if:
- **You own the home.** You must be the legal owner. Recently purchased? You may be asked for a purchase agreement while title transfers.
- **You live in the dwelling.** The unit is intended to be used exclusively for living quarters and will be occupied by the owner.
- **You are doing the work yourself.** You cannot pull a homeowner permit for someone else (an individual or company).
- The property is not intended for sale or rent.

Can I hire a contractor?
If you are hiring a contractor, the contractor must obtain the plumbing permit. A homeowner permit is for work completed by the homeowner.

Are apartment-style condos eligible?
No. Apartment-style condominiums require work by a licensed contractor who must obtain the permit.

Can the inspector require a professional?
Yes. If, during inspection, the work appears beyond the homeowner's capabilities, the inspector may require a professional contractor to complete the work. The contractor must apply for their own plumbing permit.

Note: Plumbing permits are not transferrable.

3.0 Permit Types & Work Scopes

Residential permits
Homeowner plumbing permits apply only to single-family dwelling units.

- Alteration / Addition
- Set Fixtures
- Inspection Only
- Rough-in Only

4.0 How to Apply

What do I need before I apply?

- A clear description of the scope of work (e.g., adding a basement bathroom, relocating fixtures, installing backwater valve).
- Any supporting details or sketches that help demonstrate compliance with code requirements (if available).

How do I submit an application?
Apply online at **saskatoon.ca/ePermitting**. Create or sign in to your account, complete the application and upload any supporting information.

How do I track and manage my permit?
Through the ePermitting portal, you can track your permit from application through inspections, completion, renewal or expiration.

5.0 Inspections

How do I book inspections?
Inspections are booked online at **saskatoon.ca/ePermitting**.

Do I need to be present?
Yes. The homeowner who obtained the permit and is doing the work must be present.

When will the inspector arrive?
On the day of inspection, your inspector will confirm the time between 8–9 a.m. using the phone number provided.

Will additional inspections be required?
Some projects require multiple inspections (e.g., rough-in and final; or callbacks to verify corrections).

5.1 Rough-In Inspection

- All plumbing drainage and venting must be installed and complete with a test pressure of 5psi
- Waterlines must be installed and connected to the rest of the water distribution system.
- All drains, vents and waterlines must be properly supported.
- The bathtub/shower valve must be installed.

5.2 Final Inspection – Requirements

- All fixtures and equipment must be installed and ready for use.
- Temperature of water at the bathtub and shower must not exceed 49 degrees Celsius.
- All piping designed for future fixtures must be sealed with an approved plug or cap.
- Toilets must be provided with a shut off valve.

5.3 Inspection Outcomes

The plumbing inspector will advise of the inspection outcome verbally and via inspection report that will be accessible through your ePermitting customer portal.

- **Passed**: Work may continue (rough-in) or is complete (final).
- **Partially Passed**: Not all work was ready for inspection. Work may continue. A Partial Call-Back fee applies.
- **Failed**: Deficiencies found. Correct and reinspect. A Call-Back (re-inspection) fee applies.
- **Inaccessible**: Inspector could not access or homeowner not present. Rebook; a Call-Back fee may apply.

6.0 Understanding the Plumbing System

The plumbing system in a home has four basic elements:

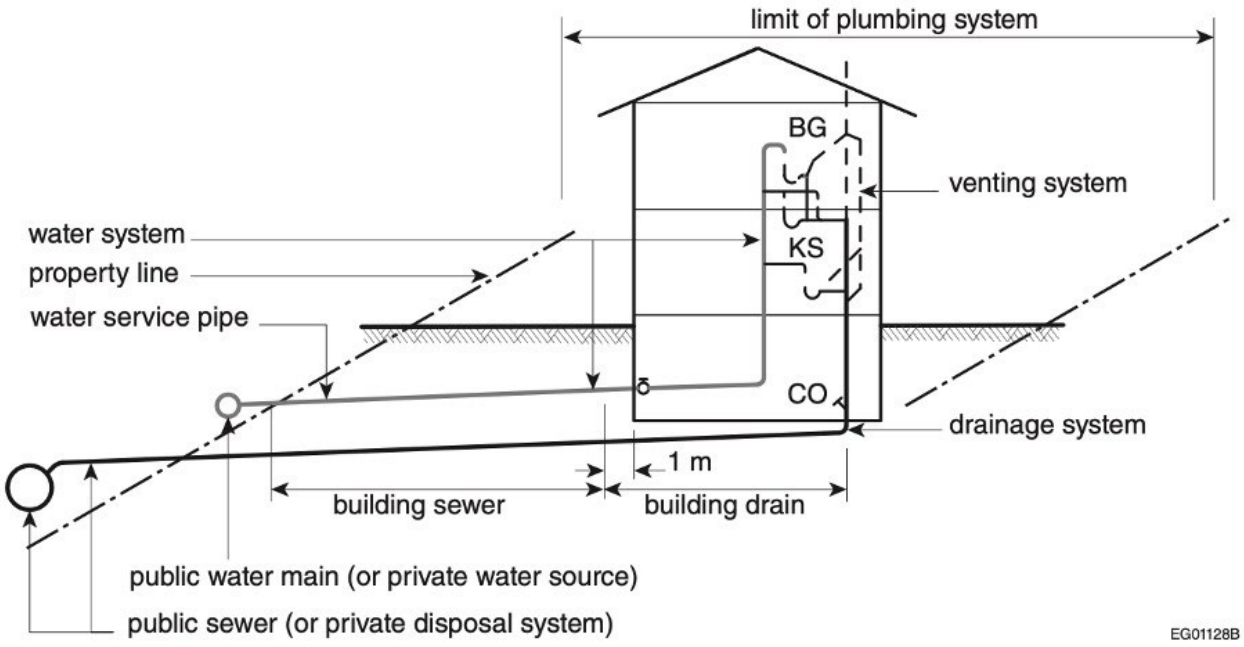
1. **The water supply and distribution system:** The water pipes that transport potable water from the source, including a water heater, to fixtures and devices.

2. **The drainage system:** consists of the drain and sewer pipes that transport waste fluids from the fixtures to the municipal sewer system.

3. **The venting system:** consists of pipes connected to the drainage system, typically terminated in open air above the roof for air circulation and to protect trap seals removing sewer gases and helps the drainage system to work properly.

4. **The fixtures and appliances:** sinks, water closets, laundry tubs, water heaters, washing machines, etc. All fixtures are required to be equipped with a trap, which provides a water seal in the drain preventing sewer gas emissions. The trap must be vented.

National Plumbing Code 2020 Figure A-1.4.1.2.(1)-L Plumbing system



7.0 Key Code Requirements Explained

7.1 Water Supply & Distribution

- Provide a shutoff valve where the water service pipe enters the building.
- Install so the system can be drained or blown out with air.
- Fixtures with hot/cold controls: hot on the left, cold on the right.
- Each water closet must have a shutoff valve on the water supply.
- Every pipe that passes through an exterior wall to supply water (e.g., lawn service) must be provided with a frost-proof hydrant with vacuum breaker or a stop-and-waste valve placed inside the building close to the outside wall or other approved location. A hose bib vacuum breaker must also be installed on a hose bib located outside a building or inside a garage to protect against backflow.
- Bathtub/shower valves must be pressure-balanced or thermostatic mixing valves conforming to CSA B125.

7.2 Cross-Connections & Backflow Prevention

- Hose bib vacuum breakers must be installed on every exterior hose bib and in garages.
- Design connections so non-potable liquids, chemicals, or substances cannot enter the potable system.

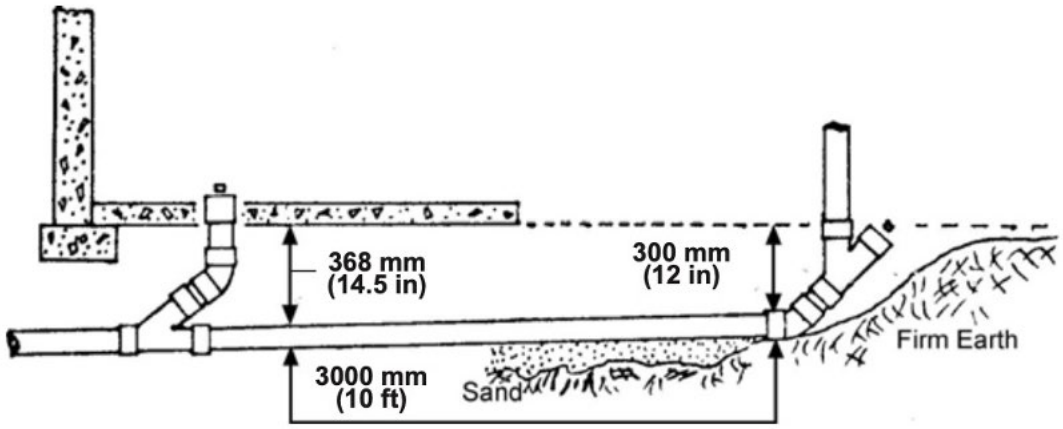
A cross connection is a direct arrangement of piping which allows the potable water supply to be connected to a line that contains a contaminant. The purpose of a hose bib is to permit easy attachment of a hose for outside watering purposes. The ordinary garden hose is the most common offender as it can be easily connected to the potable water supply and used for a variety of potentially dangerous applications. A garden hose can:

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

7.3 Drainage & Venting – Slope, Supports, Trap Arms, Fittings

Slope of drains: Minimum 6 mm (¼") per 300 mm (1 ft) away from fixtures.

Figure 1: *Minimum Slope of Drains*

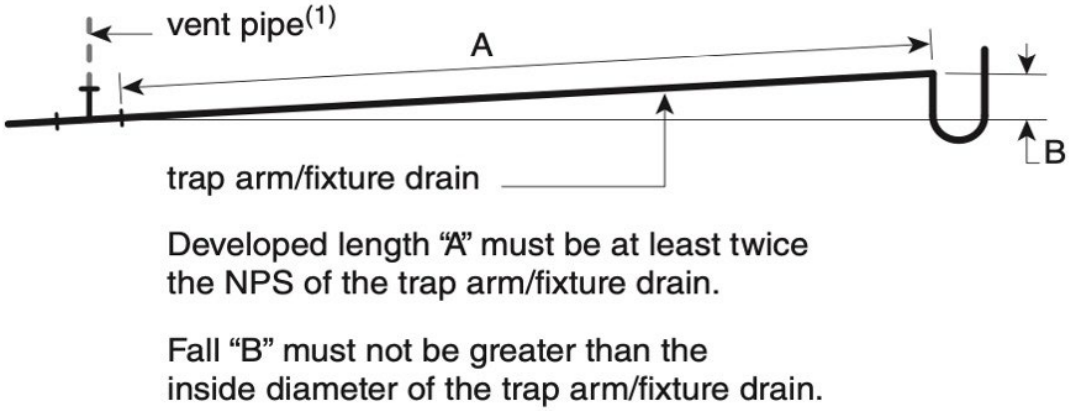


Support of Drains: Underground drains must be supported by a full firm base and any supports used to support the drain prior to the installation of granular material must remain in place.

Above ground horizontal pipes shall be supported every 1200mm (4 ft) by a hanger.

Trap arms: Total vertical fall from trap to vent must not exceed the diameter of the fixture drain (except water closets, max 1000 mm). See **Figure 2**.

Figure 2: *Fall of Trap Arm*

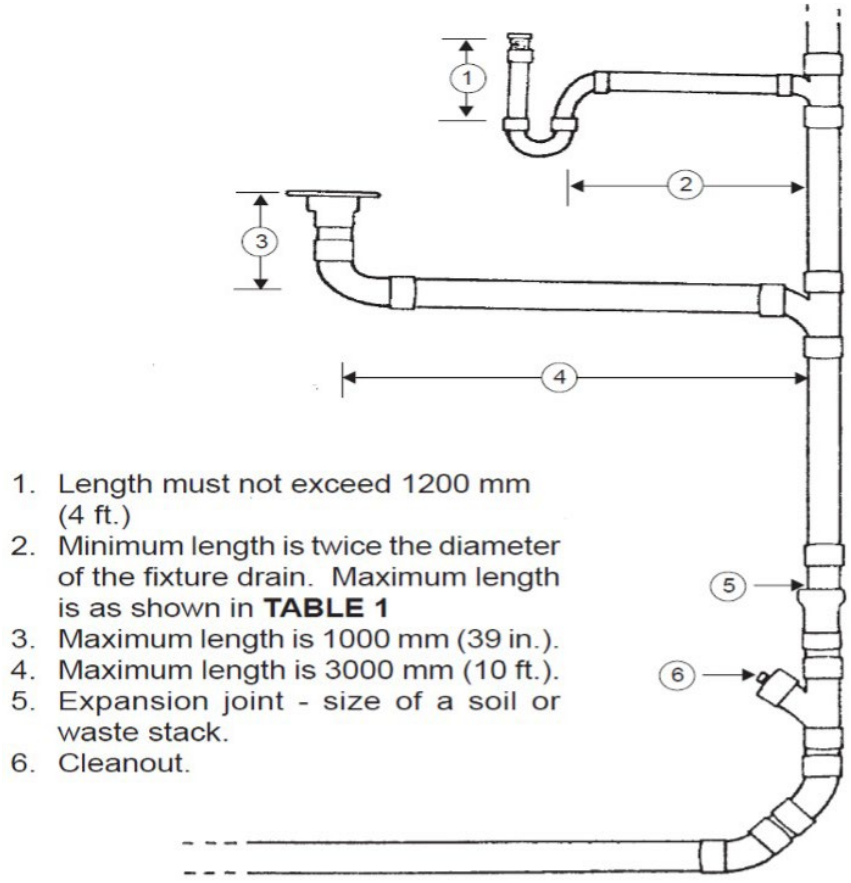


The maximum distance between a vent pipe and a fixture trap must not exceed the distances shown in **Table 1** and **Figure 3**.

Table 1: Trap Arm Slope Table (See Figure 2)

Pipe Size (B) (in.)	Slope	Total Allowable Length (A)
1 ¼	1/50	1500mm (5 ft.)
1 ½	1/50	1800mm (6 ft.)
2	1/50	2400mm (8 ft.)
3	1/50	3600mm (12 ft.)

Figure 3: *Lengths of Fixture Drains and Expansion Joint*



7.4 Expansion Joints

The design and installation of every piping system must, where necessary, include means to accommodate expansion and contraction of the piping system caused by temperature change and soil movement. Therefore, expansion joints must be installed at the base of every soil or waste stack. See **Figure 3.**

Approved cleanout fittings must be installed at the following locations:

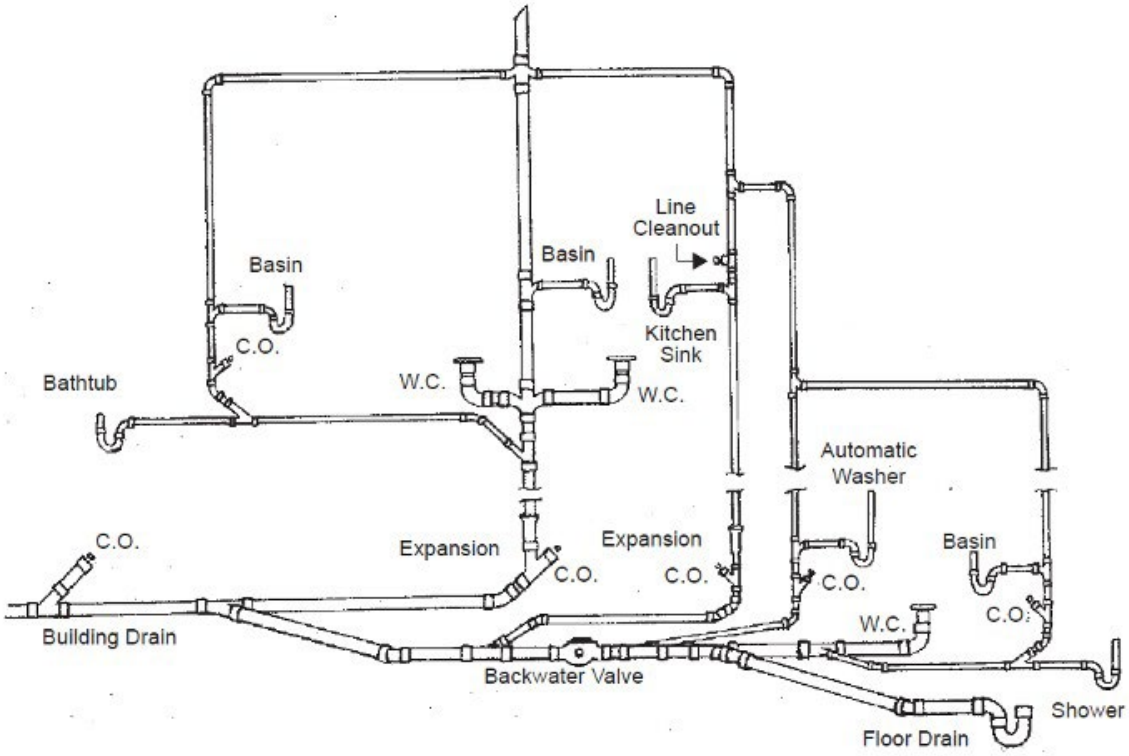
a) as close as practicable to the point where the building drain leaves the building;

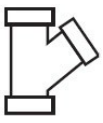
b) at the base of every soil or waste stack;

c) to permit the cleaning of a fixture drain from the trap to the vent.

d) at every change of direction of more than 45 degrees in sink drains. See Figure 4.

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*

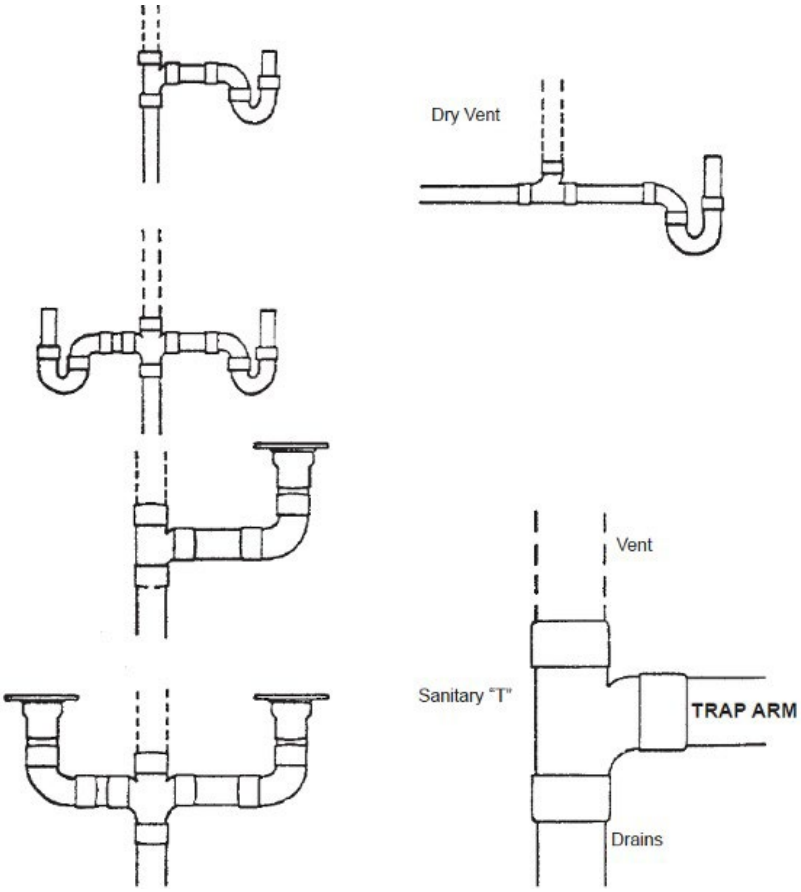


Figure 6: *Permitted Use of Sanitary "TY" Fittings – Part 2*

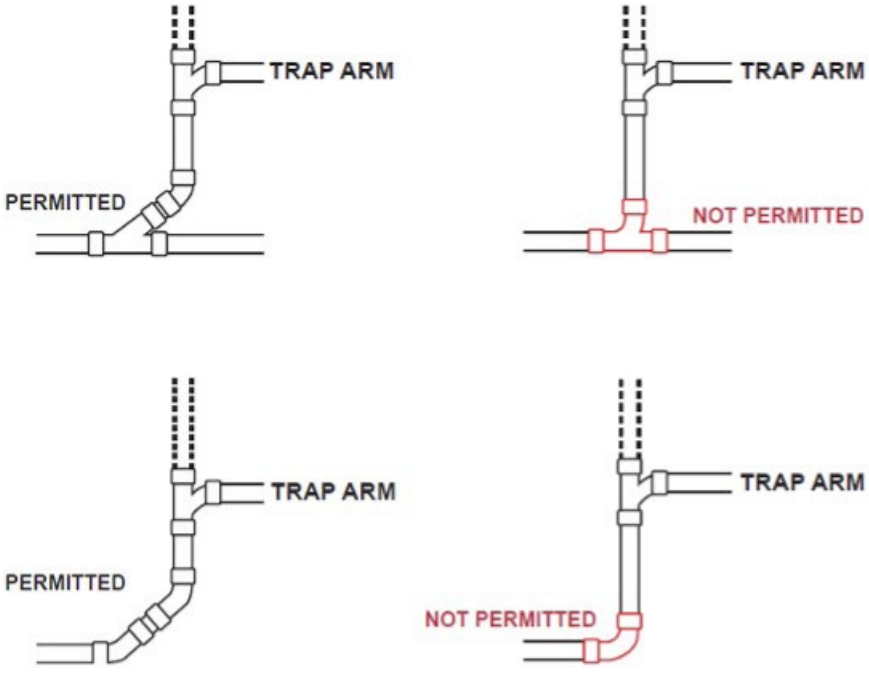
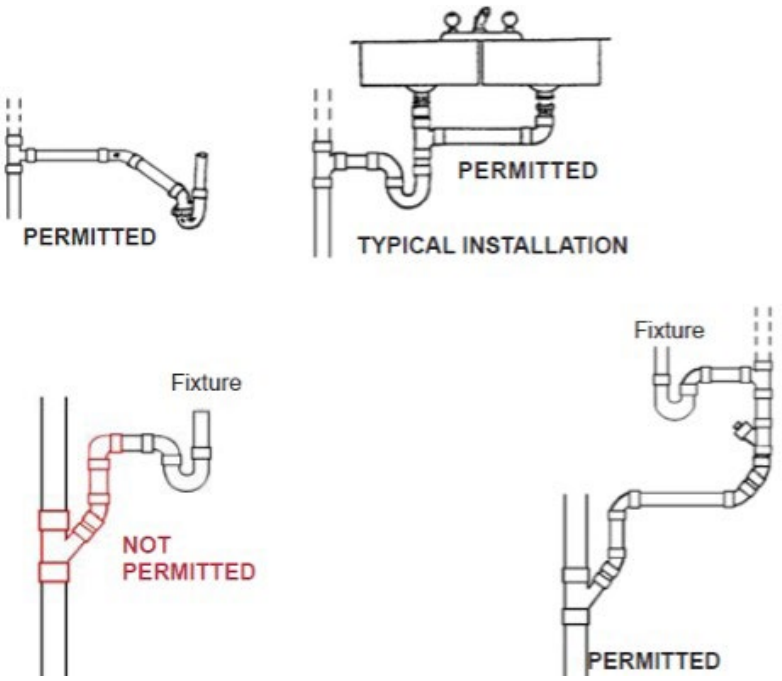


Figure 7: *Permitted Use of Sanitary "TY" Fittings – Exceptions*



7.5 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. Spray foam is not permitted to be in contact with the plumbing system.

7.6 Wet Venting

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

- the number of water closets does not exceed two;
- water closets are installed downstream of all other fixtures;
- if two water closets are installed on the same wet vent a double "TY" fitting must be used for a vertical installation and a double "Y" fitting for a horizontal installation;
- trap arms and fixture drains connected to the wet vent cannot exceed 2" except for emergency floor drains;
- 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), and
- a wet vent cannot be reduced in size except for an emergency floor drain portion. See **Figures 8, 9, 10A & 10B**

Figure 8: *One Storey Venting (Back-to-Back)*

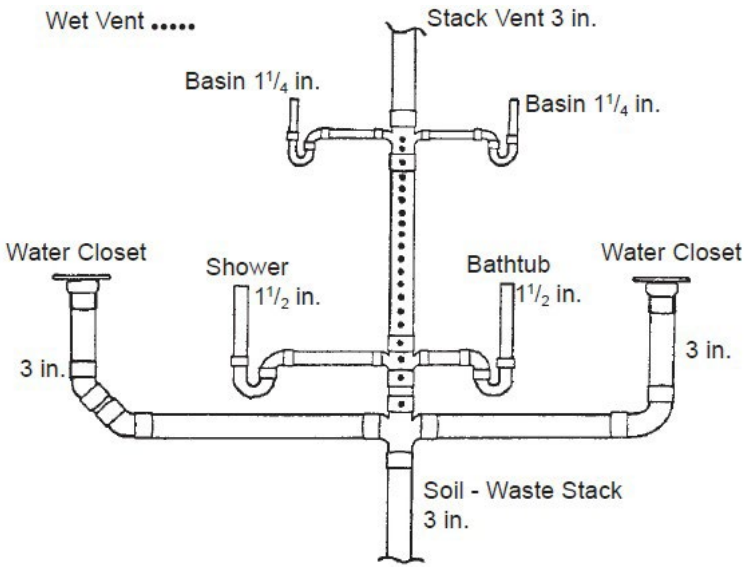
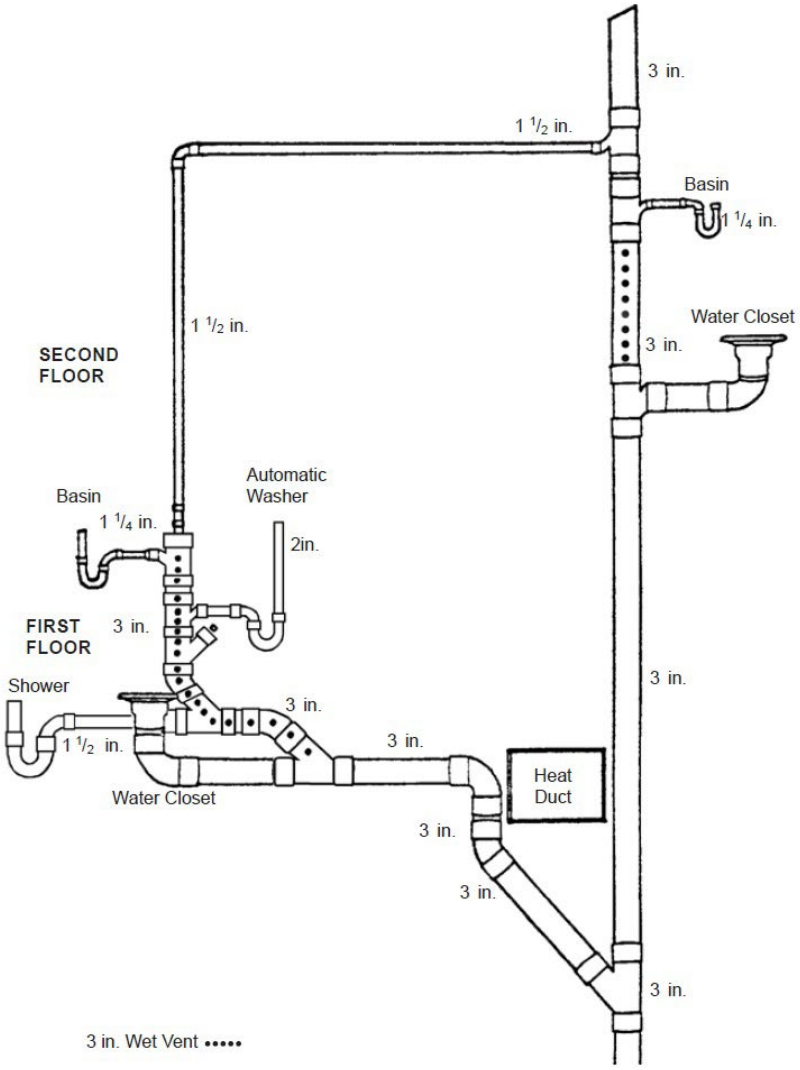


Figure 9: *Two Storey Venting*



7.7 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.
- One Backwater Valve is permitted to be installed on the branch that serves fixtures that are located in the same room or installed on every fixture drain.

See **Figures 4, 10A, & 10B**

Figure 10a: *Typical Basement Plumbing Installation Showing Venting Method, Backwater Valve & Attachment to "Cast-Iron" Piping*

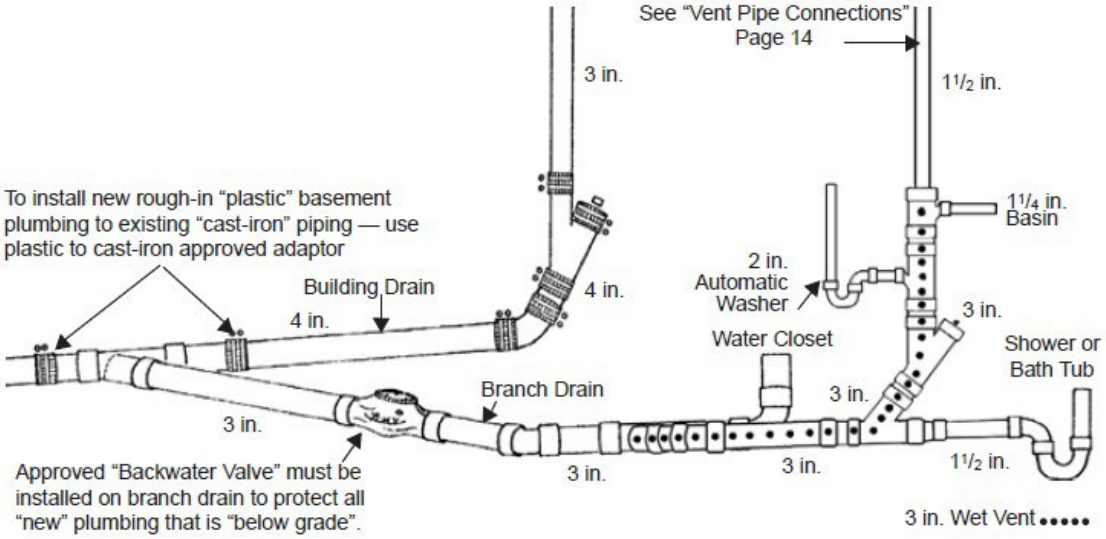
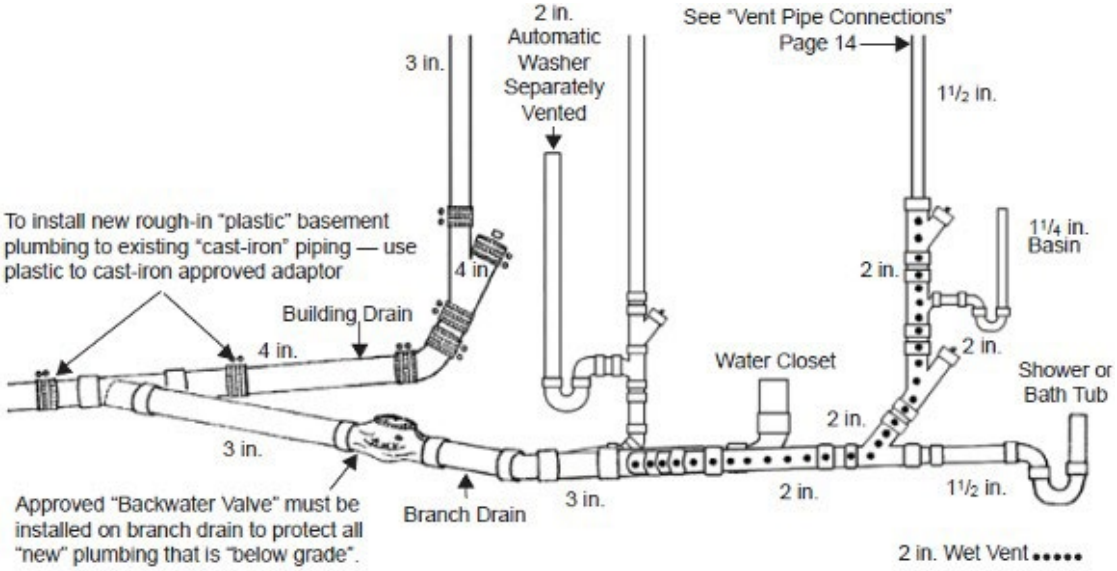


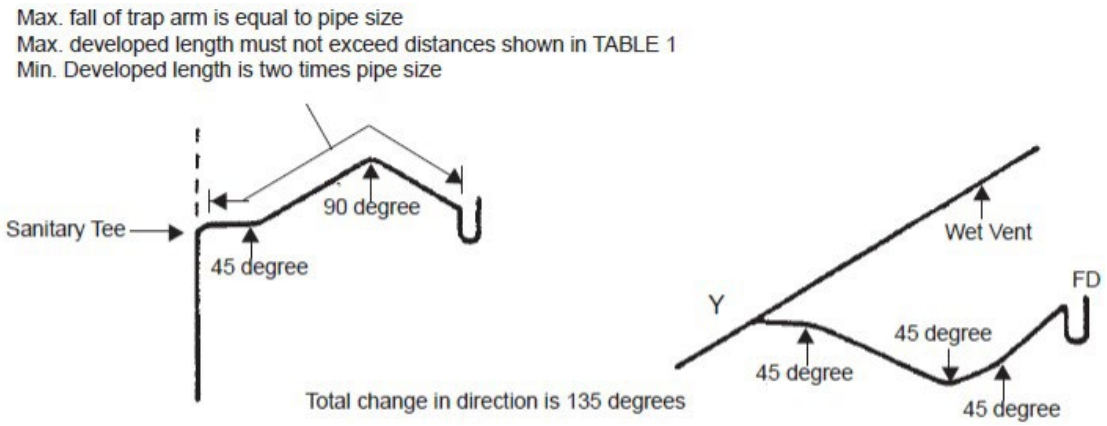
Figure 10b: *If the washer drain will not be installed on the wet vent with the bathroom group the size of the wet vent can be reduced to 2"*



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.**

Figure 11: *Location of Vent Pipes Cumulative Change in Direction*



7.8 Venting

- 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.
- A vent located in attic spaces must be insulated.
- Vent pipes must be installed without depressions in which moisture can collect.
- A vent pipe must extend vertically above the flood level rim of every fixture that it serves before being connected to another vent pipe.

7.9 Fixture Size Requirements

Table 2: Fixture Size Requirements

Fixture	Minimum Size of Fixture Outlet Pipes (in.)
Bathtub	1 ½
Bidet	1 ¼
Clothes Washer	2
Dishwasher	1 ½
Garbage Disposal Unit – Residential type	1 ½
Laundry Sinks	1 ½
Lavatory (Basin) Sink	1 ¼
Shower Drain (with 1 shower head)	1 ½
Shower Drain (with more than 1 shower head)	Sized as per Table 2.4.9.3 of the NPC
Sink – one and two compartments	1 ½
Water Closet (Toilet)	3

8.0 Typical Plumbing Installations

Three-Piece Bathroom (Toilet, Sink, Tub/Shower)

Toilet

- The minimum wet vent size serving a toilet is 2” (50mm)
- The maximum distance a toilet can be from a vent/wet vent is 10’ (3 m).
- Standard distance from a wall to the center of a toilet is 12” (305 mm).

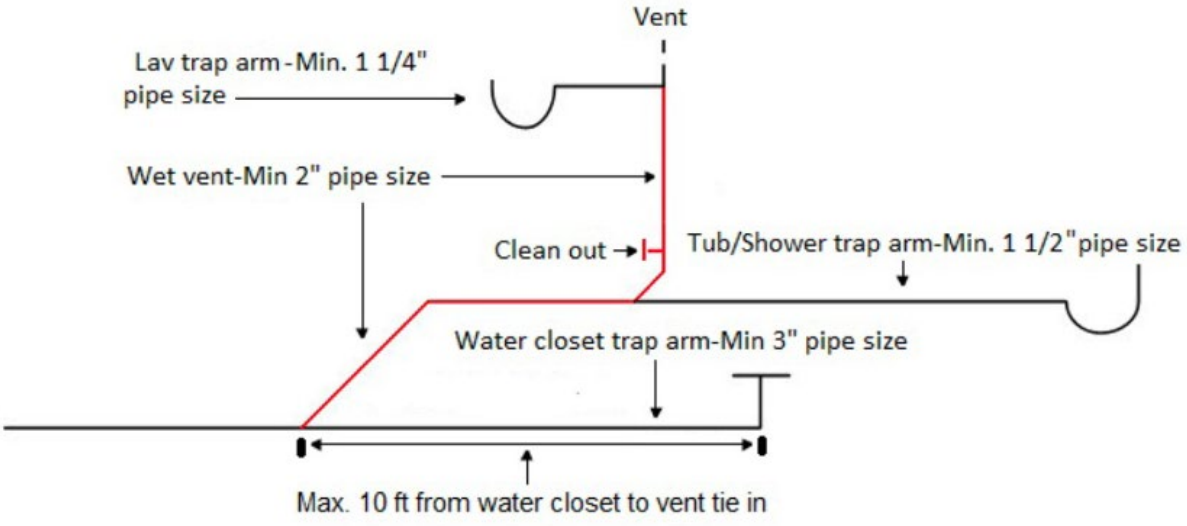
Sink

- Standard drain height from floor for a sink is 18” (457 mm) and the water lines are 21” (533mm).
- P-Traps on Sinks and Basins must be the ‘Union’ type for cleaning and maintenance

Shower

- A bathtub/shower P-trap installed below the floor must be of the solid weld type.

Figure 12: *Example of typical bathroom plumbing installations*



9.0 Common Reasons Inspections Fail

- Insufficient drain slope (less than 6 mm per 300 mm).
- Wrong fittings used in horizontal drainage (tees or 90° elbows instead of Y + 45°).
- Trap arms exceeding maximum fall or distance to vents.
- Missing cleanouts at required points.
- Unprotected exterior wall piping (freeze risk).
- Backwater valve not installed for below-grade fixtures.
- Hose bibs missing vacuum breakers.
- Water temperature above 49 °C at tub/shower.
- System not under test at rough-in (no 5 psi).
- Inaccessible site or homeowner not present.

10.0 Homeowner Checklists

10.1 Before You Apply

- ❑ I am the legal owner of the property.
- ❑ I live in the single-family dwelling unit (not for sale or rent).
- ❑ I will perform the work myself (no contractor pulling a homeowner permit).
- ❑ My project requires a permit (see Section 1.0).
- ❑ I can describe the scope of work (fixtures, drains, vents, waterlines).

10.2 Before Rough-In Inspection

- ❑ Drains installed with proper slope and supports.
- ❑ Trap arms within allowable fall and distance; correct venting provided.
- ❑ Fittings correct for horizontal drainage (Y + 45°, TY only where permitted).
- ❑ Cleanouts installed where required.
- ❑ Backwater valve installed for below-grade fixtures (if applicable).
- ❑ Waterlines installed and connected; bathtub/shower valve installed.
- ❑ System under 5 psi test (as applicable).
- ❑ Site accessible and I will be present.

10.3 Before Final Inspection

- ❑ All fixtures installed and operational.
- ❑ Hot water ≤ 49 °C at tub/shower.
- ❑ Shutoff valves installed at toilets and service entry.
- ❑ Future piping capped with approved plugs/caps.
- ❑ Deficiencies corrected from previous inspection (if any).
- ❑ Site accessible and I will be present.

11.0 Figures & Tables

National Plumbing Code 2020 Figure A-1.4.1.2.(1)-L Plumbing system

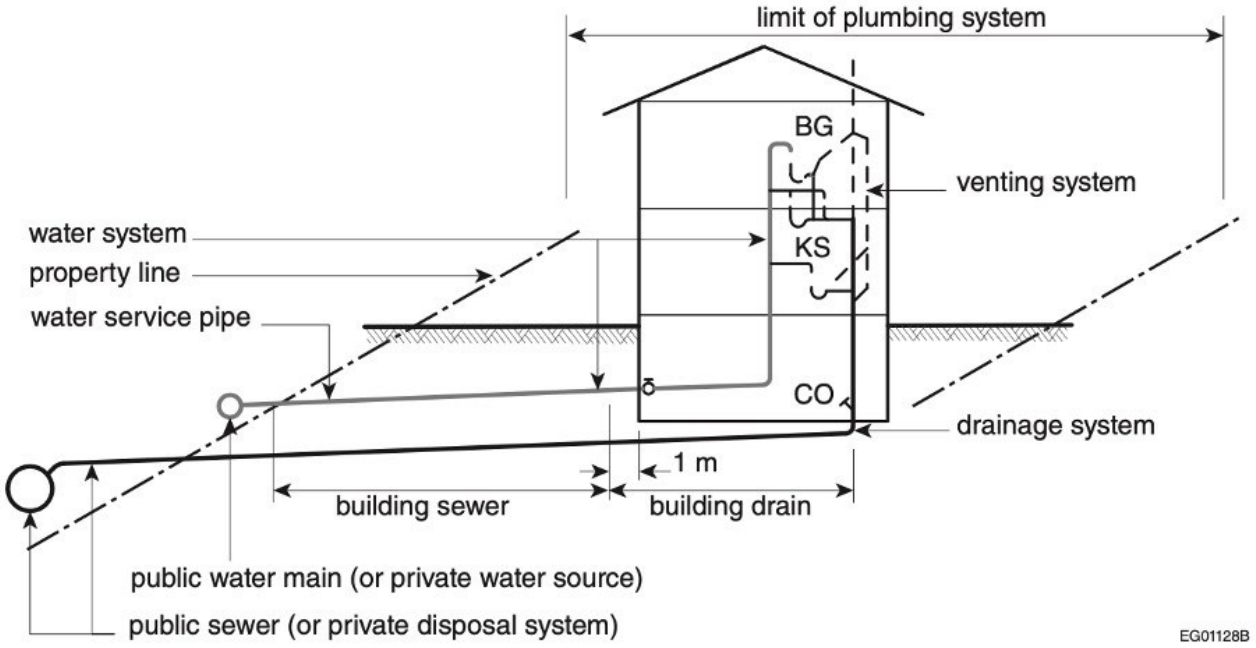


Figure 1: *Minimum slope of drains*

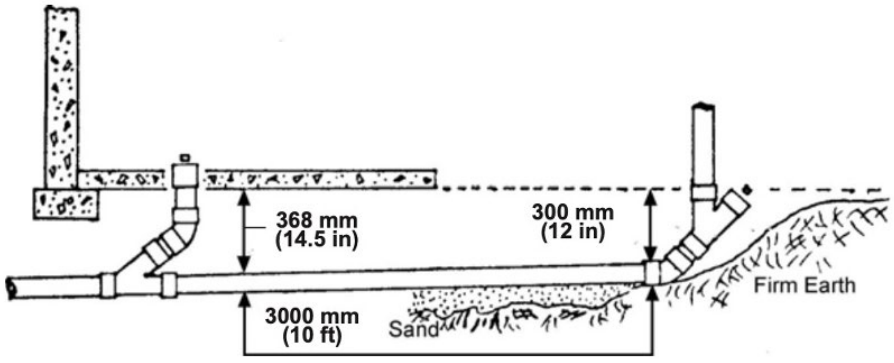
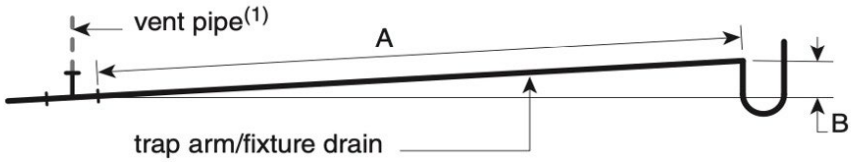


Figure 2: Fall of trap arm



Developed length "A" must be at least twice the NPS of the trap arm/fixture drain.

Fall "B" must not be greater than the inside diameter of the trap arm/fixture drain.

Figure 3: Fixture drain lengths and expansion joint

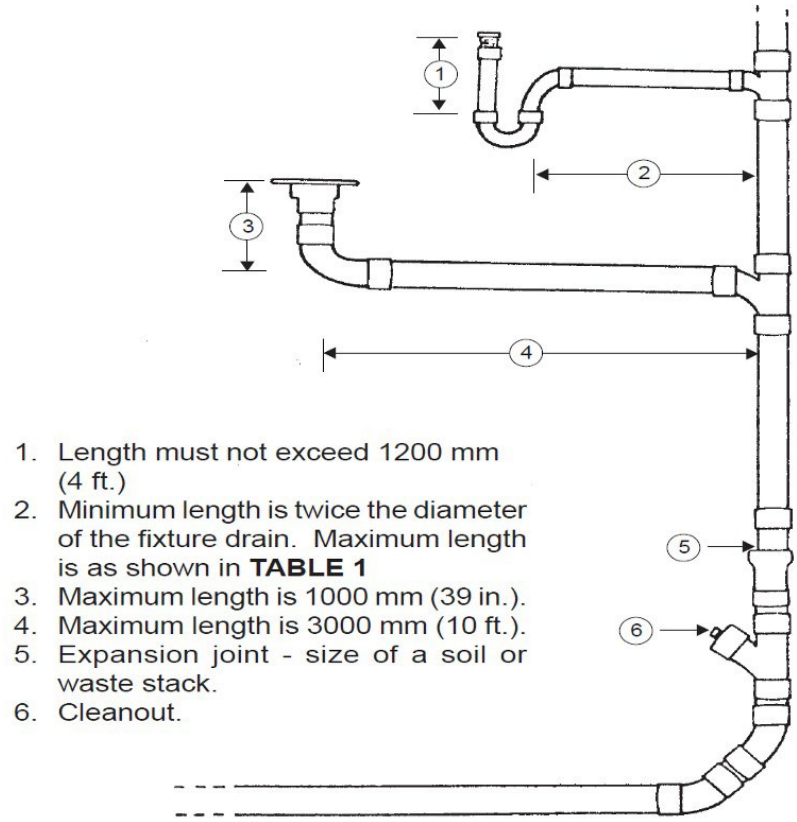


Figure 4: *Building drainage with cleanout fittings*

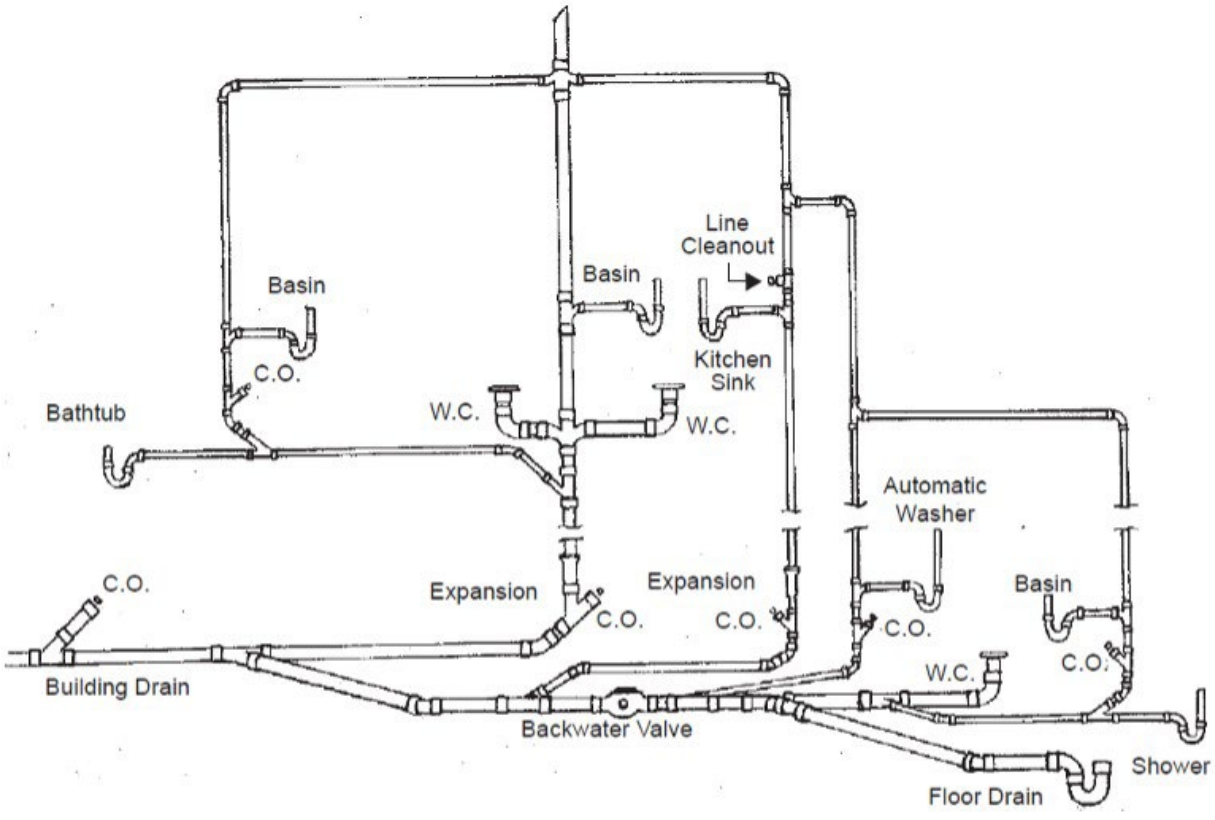


Figure 5: *Permitted use of sanitary TY fittings – Part 1*

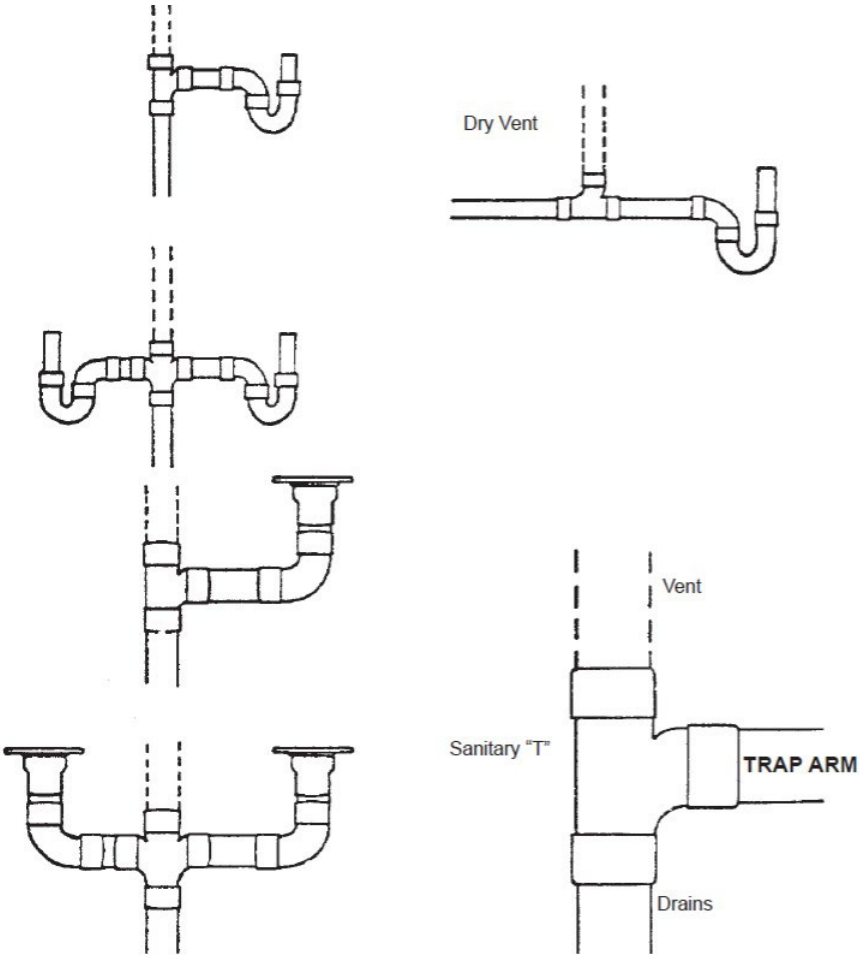


Figure 6: *Permitted use of sanitary TY fittings – Part 2*

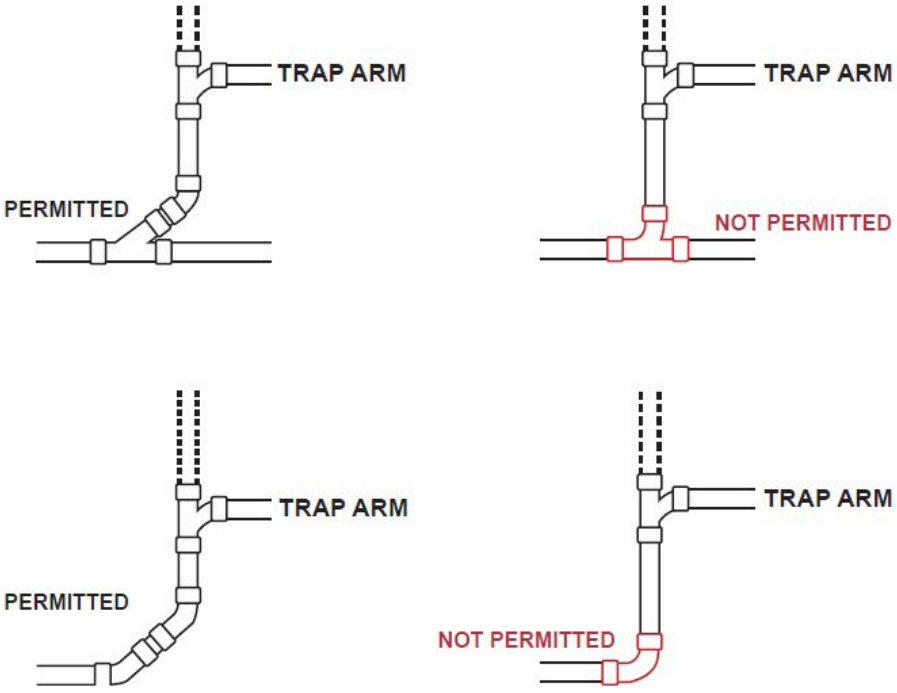


Figure 7: *Exceptions for sanitary TY fittings*

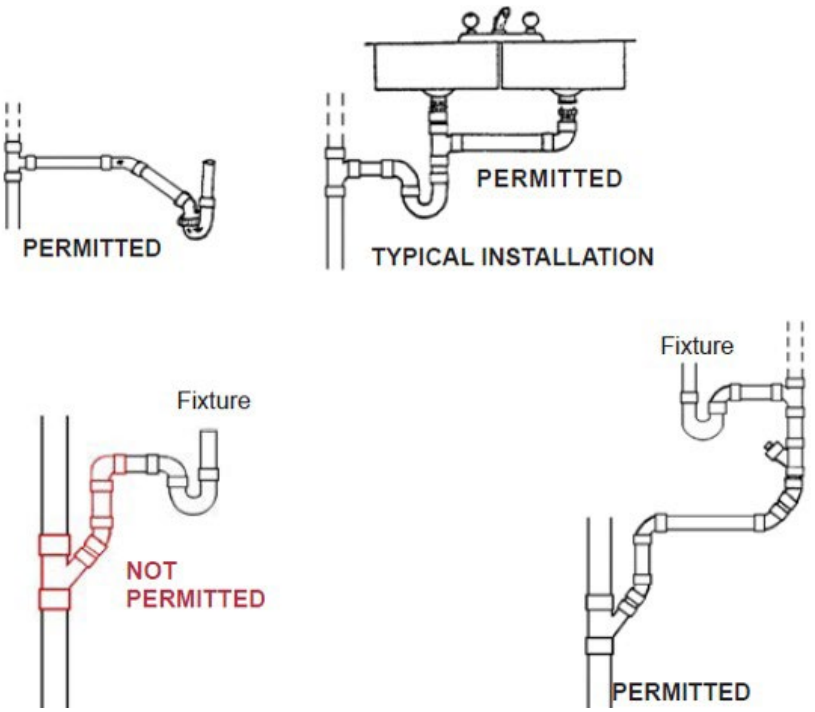


Figure 8: One-storey venting

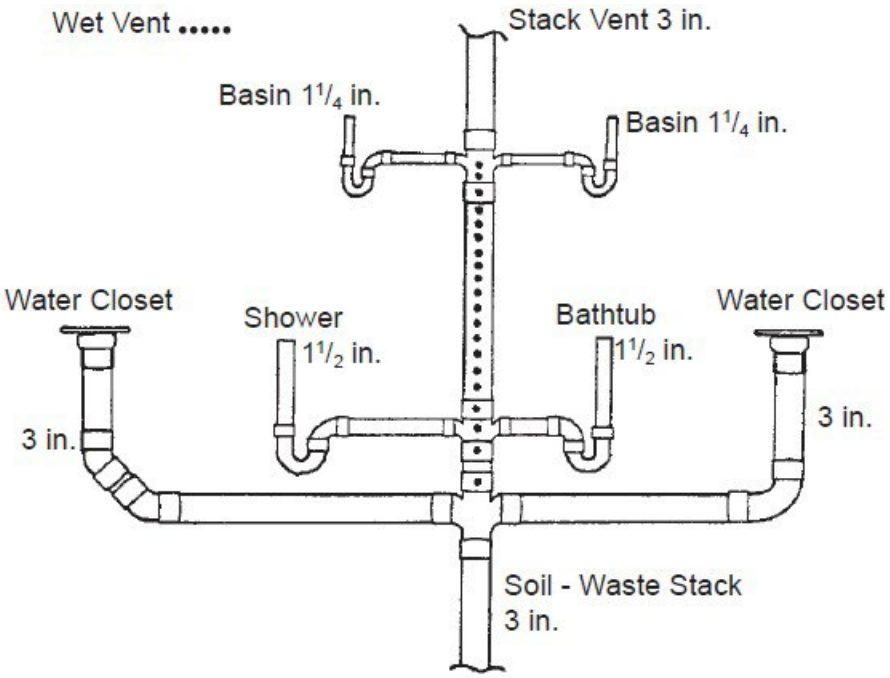


Figure 9: Two-storey venting

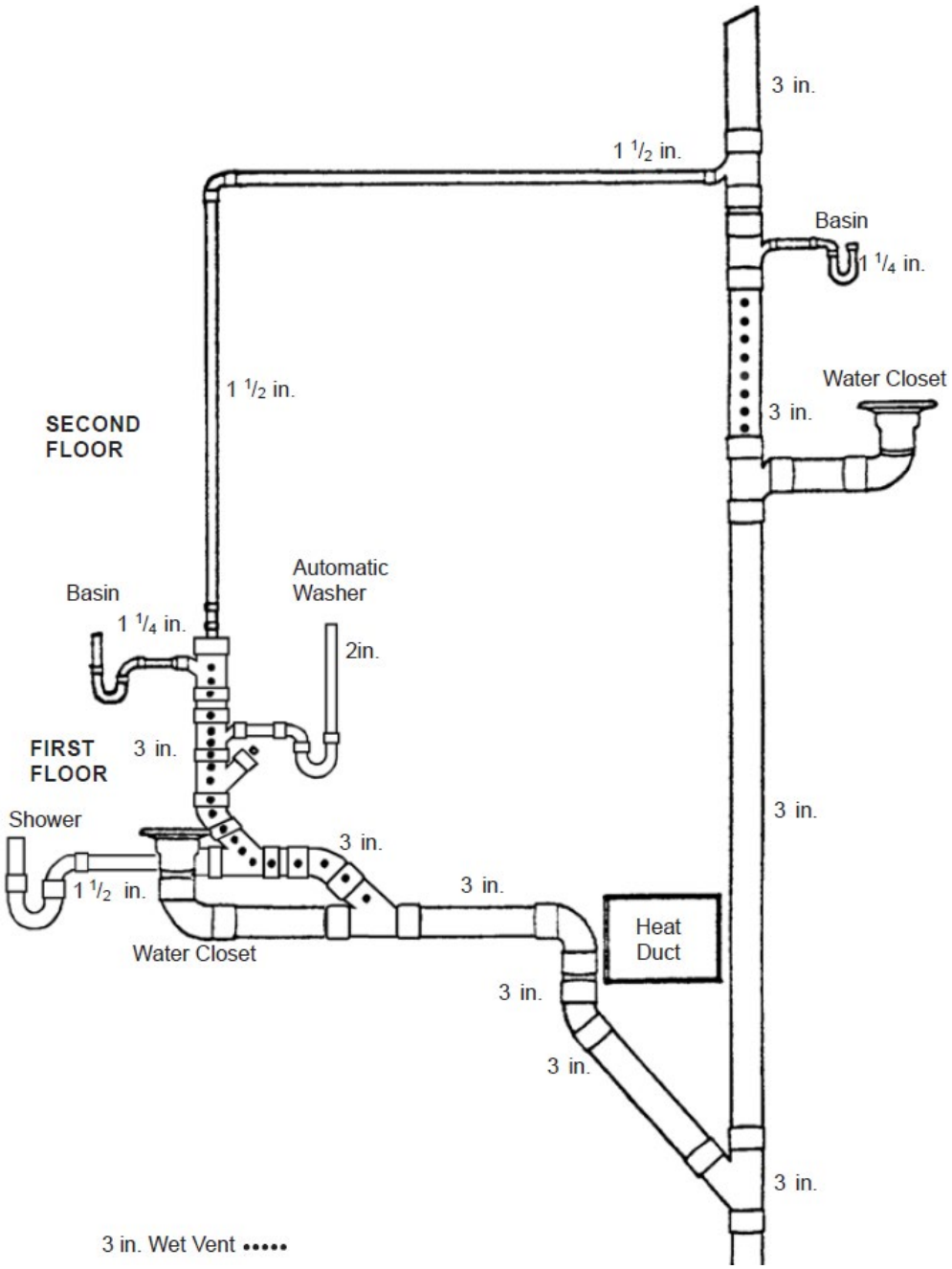


Figure 10a: *Basement plumbing with backwater valve*

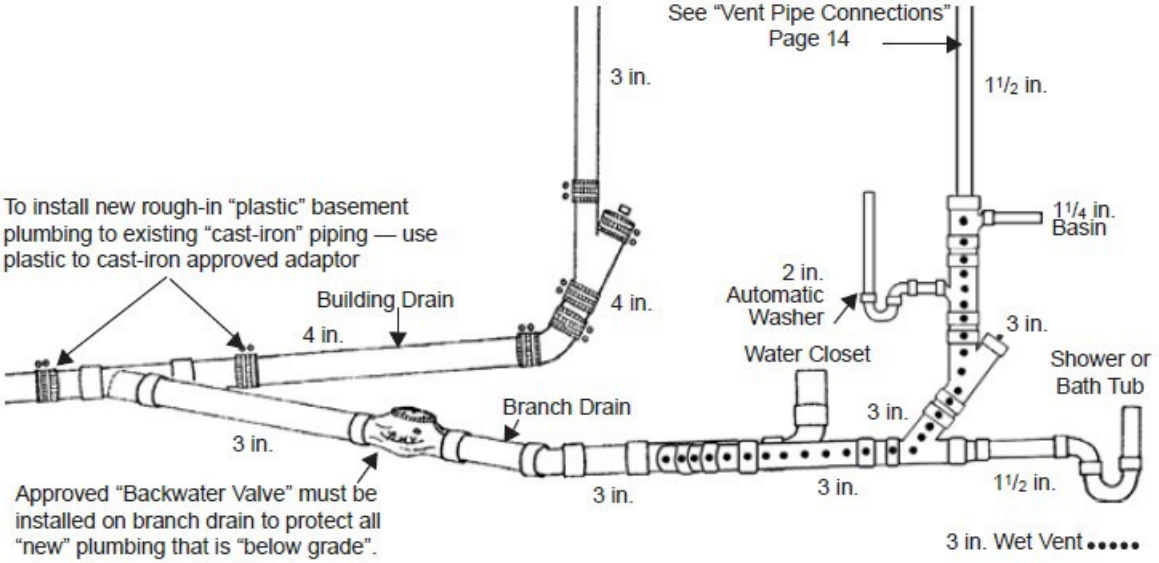


Figure 10b: Wet vent sizing variation

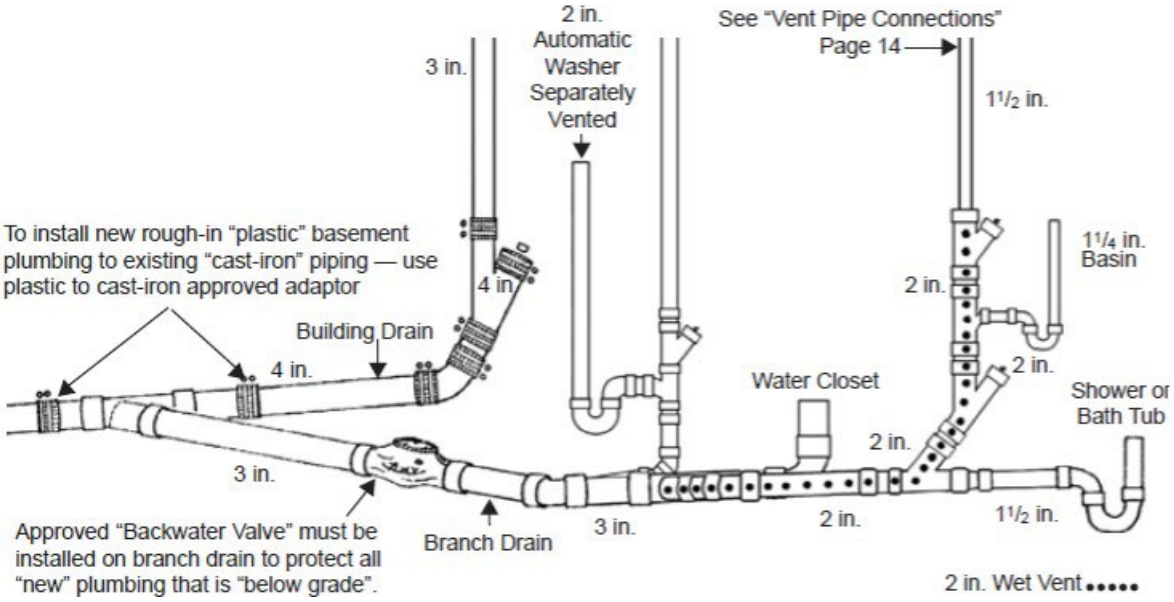


Figure 11: *Cumulative change of direction to vent*

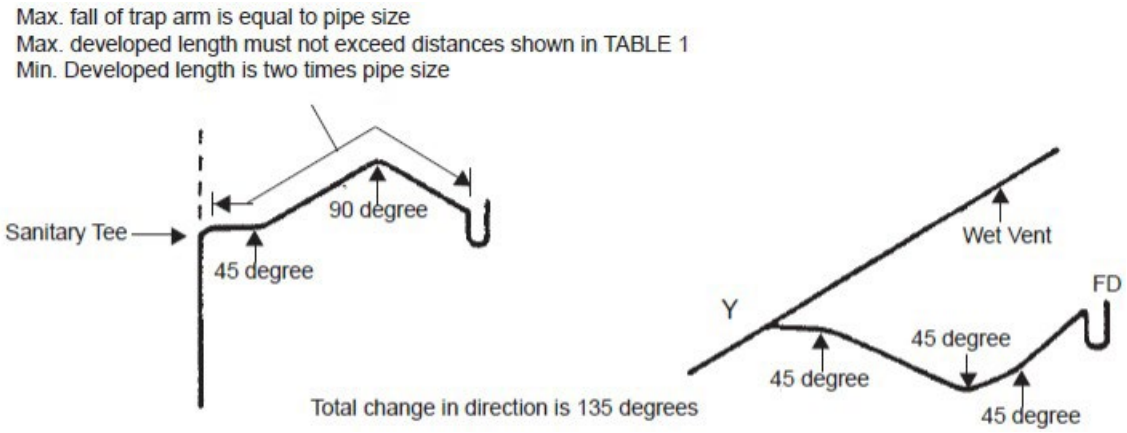


Figure 12: *Example of typical bathroom plumbing installations*

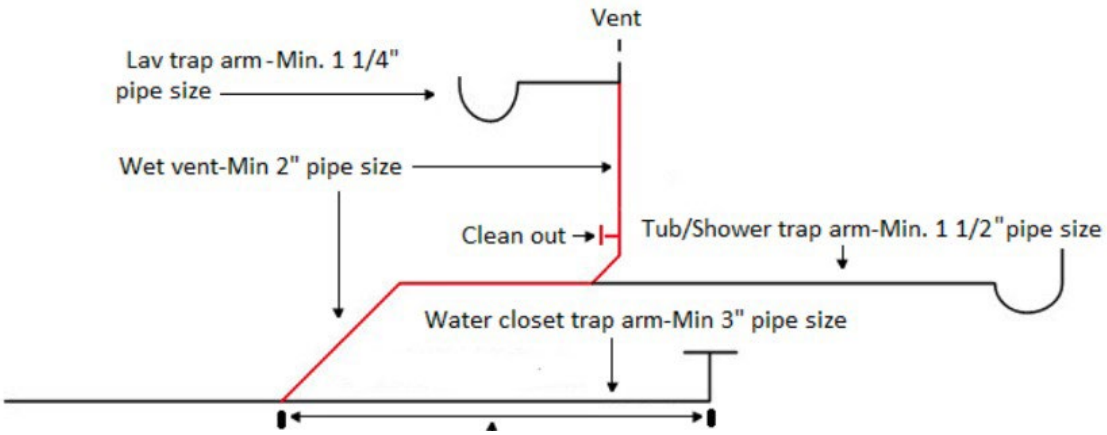


Table 1: *Trap Arm Slope*

Pipe Size (B) (in.)	Slope	Total Allowable Length (A)
1 ¼	1/50	1500mm (5 ft.)
1 ½	1/50	1800mm (6 ft.)
2	1/50	2400mm (8 ft.)
3	1/50	3600mm (12 ft.)

Table 2: *Fixture Size Requirements*

Fixture	Minimum Size of Fixture Outlet Pipes (in.)
Bathtub	1 ½
Bidet	1 ¼
Clothes Washer	2
Dishwasher	1 ½
Garbage Disposal Unit – Residential type	1 ½
Laundry Sinks	1 ½
Lavatory (Basin) Sink	1 ¼
Shower Drain (with 1 shower head)	1 ½
Shower Drain (with more than 1 shower head)	Sized as per Table 2.4.9.3 of the NPC
Sink – one and two compartments	1 ½
Water Closet (Toilet)	3

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REVISED JANUARY 2026