Proposals

Item #: 132
WEStand 2023  Section: Figure F 301.1(1) - Figure F 301.1(9)

SUBMITTER: Laura Allen
Chair, WE-Stand Gray Water Ready Plumbing Task Group

RECOMMENDATION:
Add new text

![Diagram of Gray Water Drainage System with Diverter Valve in Crawlspace](image)

**FIGURE F 301.1(1)**
GRAY WATER DRAINAGE SYSTEM– DIVERTER VALVE IN CRAWL SPACE

For SI units: 1 inch = 25 mm
FIGURE F 301.1(2)
GRAY WATER DRAINAGE SYSTEM – SINGLE FIXTURE ON SECOND FLOOR NEAR EXTERIOR WALL

For SI units: 1 inch = 25 mm

FIGURE F 301.1(3)
GRAY WATER DRAINAGE SYSTEM – SINGLE FIXTURE ON SECOND FLOOR WITH STUB-OUT ABOVE GRADE, FROM CRAWL SPACE UNDER THE FIRST FLOOR

For SI units: 1 inch = 25 mm
FIGURE F 301.1(4)
GRAY WATER DRAINAGE SYSTEM – MULTIPLE FIXTURES ON CONCRETE SLAB FOUNDATION

For SI units: 1 inch = 25 mm
**Note:** A dedicated electrical receptacle should be installed not less than 10 feet (3048 mm) away from the stub out to ensure that power is available for a future gray water system pump.

FIGURE F 301.1(5)
GRAY WATER DRAINAGE SYSTEM – GRAYWATER PIPING EXTENDS OUTSIDE SLAB FOR ACCESS, THEN RETURNS INTO SLAB TO JOIN OTHER DRAINAGE PIPING

For SI units: 1 inch = 25 mm
**Note:** A dedicated electrical receptacle should be installed not less than 10 feet (3048 mm) away from the stub out to ensure that power is available for a future gray water system pump.
FIGURE F 301.1(6)
GRAY WATER DRAINAGE SYSTEM – CLOTHES WASHER GRAYWATER SYSTEM WHERE GRAYWATER IRRIGATION PIPE IS RUN THROUGH CRAWLSPACE

For SI units: 1 inch = 25 mm

Notes:
1. The union is necessary to provide access for maintenance of the standpipe and trap.
2. The air admittance valve prevents accidental siphoning of the washing machine and is installed at the highest elevation of the piping on the irrigation side of the diverter valve.

FIGURE F 301.1(7)
GRAY WATER DRAINAGE SYSTEM – CLOTHES WASHER GRAYWATER SYSTEM WHERE CLOTHES WASHER IS NEAR AN EXTERIOR WALL OR ON A CONCRETE SLAB FOUNDATION

For SI units: 1 inch = 25 mm
FIGURE F 301.1(8)
OVERVIEW OF A GRAVITY-FLOW, BRANCHED DRAIN SYSTEM

For SI units: 1 inch = 25 mm

Notes:
1. Check with AHJ for surge tank venting requirements.
2. A dedicated electrical receptacle should be installed not less than 10 feet (3048 mm) away from the stub out or pump basin to ensure that power is available for a future gray water system pump.
SUBSTANTIATION:
Figure F 301.1(1) through Figure F 301.1(9) have been included to assist users of the appendix in visualizing the listed requirements. Offering a wide variety of detailed figures ensures that provisions are understood and implemented correctly.

Figure F 301.1(1) illustrates graywater being collected from a first-floor shower/bath, with the diverter valve located in the crawlspace or basement. Figure F 301.1(2) shows graywater being collected from a second-story shower/bath, with the diverter valve located below the bathroom inside the wall of the first floor.

Figure F 301.1(3) shows the same plumbing set-up as installed in Figure F 301.1(2), except the shower/bath drain pipe runs through the first floor and into the crawlspace. The graywater stub-out is located outside of the exterior crawl space foundation wall or crawl space vent, above grade. This configuration may be applicable when fixtures are located in the interior of the building and a stub-out can’t be piped easily through an exterior wall above floor level.

Figure F 301.1(4) shows graywater diversion from the shower/bath and clothes washing machine in a house with a slab-on-grade foundation, where the diverter valve is located outside the building envelope in a subsurface enclosure (i.e., an irrigation valve box). The subsurface enclosure containing the diverter valve needs to be permanently accessible (i.e., no structures or hardscape covering it). The diverter valve should be positioned as high as possible in the enclosure to ensure graywater can drain at a 1/4 inch per 12 inch slope into a future gravity irrigation system or pump basin.

Figure F 301.1(5) demonstrates how to make graywater from a tub/shower (or other fixture) accessible when the bathroom is on a slab and the main drain is in another area of the building. The tub/shower drain has been directed through the slab and perimeter foundation to a subsurface enclosure (i.e., an irrigation valve box). A diverter valve and backwater valve are located in the box, providing a graywater stub out. The tub/shower drain then loops back through the foundation and into the slab to proceed to where it connects with the building's other drainage piping. 1/4 inch per 12 inches of slope must be carefully maintained on this loop piping.

Figure F 301.1(6) illustrates laundry-to-landscape piping in a building with a crawl space.

Figure F 301.1(7) illustrates laundry to landscape piping in a slab on grade building. A diverter valve is mounted to the wall in an access panel and connected directly to the discharge hose of the clothes washer.

Figure F 301.1(8) demonstrates a conceptual image of how a gravity-flow, branched drain graywater system transports graywater to multiple landscape plants without a storage tank or pump.

Figure F 301.1(9) shows graywater from a lavatory and tub/shower being made available for irrigation. All of figures were gathered from the Guidance on Ordinance Compliance in Illustrations which may be accessed via the following link: https://localenergycodes.com/download/787/file_path/fieldList/CCGA%20Illustrated%20Compliance%20Guidance.pdf

COMMITTEE ACTION: ACCEPT AS SUBMITTED

TOTAL ELIGIBLE TO VOTE: 30

VOTING RESULTS: AFFIRMATIVE: 27 NEGATIVE: 1 NOT RETURNED: 2 CRAWFORD, WILLIAMS

EXPLANATION OF AFFIRMATIVE:
ALLEN: As the proponent, I plan to check back in with the task group and incorporate the concerns I heard at the TC meeting, for example, not calling-out specific pipe material in the images. I think the images are important to include in the appendix as they turn the concept of graywater ready plumbing into what a builder would actually need to do to comply with it.

EXPLANATION OF NEGATIVE:
WHITE: The illustrations show some issues with this concept. The use of diverter valves seems to show an issue for cleaning out the line through the diverter valve, and it does not appear they are sanitary pattern valves. Also, the use of splitter fittings (double elbows) would present cleanout issues.
PUBLIC COMMENT 1

Code Year: 2023 WEStand  Section #: Figure F 301.1(1), Figure F 301.1(6) - Figure F 301.1(8)  Item #: 132

SUBMITTER: Laura Allen  Grewater Action

RECOMMENDATION:  
Accept as Modified

Request to accept the code change proposal as modified by this public comment.

FIGURE F 301.1(1)
GRAY WATER DRAINAGE SYSTEM– DIVERTER VALVE IN CRAWL SPACE
For SI units: 1 inch = 25 mm

**Notes:**

1. The union is necessary to provide access for maintenance of the standpipe and trap.
2. The air admittance valve prevents accidental siphoning of the washing machine and is installed at the highest elevation of the piping on the irrigation side of the diverter valve.
FIGURE F 301.1(7)
GRAY WATER DRAINAGE SYSTEM – CLOTHES WASHER GRAYWATER SYSTEM WHERE CLOTHES WASHER IS NEAR AN EXTERIOR WALL OR ON A CONCRETE SLAB FOUNDATION

For SI units: 1 inch = 25 mm
FIGURE F 301.1(8)
OVERVIEW OF A GRAVITY-FLOW, BRANCHED DRAIN SYSTEM

For SI units: 1 inch = 25 mm

SUBSTANTIATION:
These images are to support the new Appendix F. Though the original proposal passed, several people brought up the issue of calling out materials in the drawing as problematic since the specific material used may vary based on regional conditions. This proposal intends to fix that and remove mention of specific materials (ABS or PVC) while keeping the useful information. The following revisions were made:
Figure F 301.1 (1)- Removed “ABS” label
Figure F 301.1 (6)- Removed “Schedule 40 PVC” label
Figure F 301.1 (7)- Removed “Schedule 40 PVC” label
Figure F 301.1 (8)- Removed “ABS” labels

COMMITTEE ACTION: ACCEPT AS SUBMITTED

TOTAL ELIGIBLE TO VOTE: 28

VOTING RESULTS: AFFIRMATIVE: 25 NEGATIVE: 1 ABSTAIN: 1 NOT RETURNED: 1 WILLIAMS

EXPLANATION OF NEGATIVE:
WHITE: I do not believe some portions of the illustrations meet the intent of the plumbing code but perhaps others do not believe this is plumbing.

EXPLANATION OF ABSTAIN:
TABAKH: The level of potential public risk warrants further discussion on this section, and language beyond that of a conceptual nature for blackwater treatment for potable water reuse is premature at this time.
PUBLIC COMMENT 1A

Code Year: 2023 WEStand  Section #: Figure F 301.1(6), Figure F 301.1(7)  Item #: 132
SUBMITTER: Arnie Rodio  Pace Setter Plumbing, Corp.  Comment #: 1A

RECOMMENDATION:
Accept as Modified

For SI units: 1 inch = 25 mm, 1 foot = 304.8 mm

Notes:
1* The union is necessary to provide access for maintenance of the standpipe and trap.
2 The air admittance valve prevents accidental siphoning of the washing machine and is installed at the highest elevation of the piping on the irrigation side of the diverter valve.

FIGURE F 301.1(6)
GRAY WATER DRAINAGE SYSTEM – CLOTHES WASHER GRAYWATER SYSTEM WHERE GRAYWATER IRRIGATION PIPE IS RUN THROUGH CRAWLSPACE*
**FIGURE F 301.1(7)**

GRAY WATER DRAINAGE SYSTEM – CLOTHES WASHER GRAYWATER SYSTEM WHERE CLOTHES WASHER IS NEAR AN EXTERIOR WALL OR ON A CONCRETE SLAB FOUNDATION

**SUBSTANTIATION:**

Figures F 301.1(6) and F 301.1(7) are being updated to illustrate graywater piping vented through the roof. This update is necessary to prevent conflict with an existing American National Standard, the Uniform Plumbing Code, which requires venting through the roof per Section 1002.1.

**[2024 UPC] 906.1 Roof Termination.** Each vent pipe or stack shall extend through its flashing and shall terminate vertically not less than 6 inches (152 mm) above the roof nor less than 1 foot (305 mm) from a vertical surface. ABS and PVC piping exposed to sunlight shall be protected by water based synthetic latex paints.

For SI units: 1 inch = 25 mm, 1 foot = 304.8 mm