GUIDELINES FOR THE INSTALLATION AND USE OF CLOTHES WASHER GRAYWATER SYSTEMS(CWGS)

The 2013 California Plumbing Code (CPC) approved by the California Building Standards Commission went into effective on January 20, 2010. Chapter 16 establishes minimum standards for the installation of gray water systems in residential occupancies. Section 1602.1.1 authorizes the installation of a clothes washer gray water system (CWGS) without a construction permit from Placer County if the system is installed as prescribed in this document. It is important to remember that exemption from the permitting requirements does not mean the system is exempt from meeting the requirements of Chapter 16.

The purpose of this document is to aid Placer County homeowners with proper installation guidelines ensuring code compliance and proper sanitary conditions. It is advisable when using a CWGS, at least one small load of wash per week should be diverted to the sewer or septic system ensuring the plumbing system trap remains full of water preventing sewer gases from entering the home.

What is a Clothes Washer Gray water disposal System? A gray water system utilizing only a single domestic clothes washing machine in a one or two family dwelling.

Where can a Clothes Washer Gray water disposal System be Installed? A CWGS system can be installed in any single-family dwelling where soil conditions are adequate to absorb gray water into the soil as intended.

Where can the clothes washing machine be located? Clothes washing machine shall be located on an exterior wall. For clothes washing machines located at an interior wall, the proper plumbing permits must be obtained in order to install new drain lines as necessary.

Can a filter be installed on the CWGS irrigation drain pipe? Although not required by the code, it is recommended that a filter be installed in the irrigation line at point before the perforated pipe. The filter will help prevent clogging of the drain holes.

What plants should I avoid watering with gray-water? A general rule of thumb is gray-water should NOT be used for irrigating food crops of any sort. It is OK to irrigate trees and shrubs. Please consult with your local nursery or landscape professional in determining plant or tree compatibility.

A plumbing permit is not required for a Clothes Washer gray water disposal system when supplied by one clothes washer and where the existing drain pipe is on an exterior wall. For permit exempt installations, please follow the prescribed method below:

1. **1602.1.1 (2)** The design shall allow the user to direct the flow to the irrigation/disposal field or the building sewer. The direction control of the gray water system shall be clearly labeled and readily accessible to the user.

   A diverter valve may be installed at the point of connection between the washing machine drain hose, the Graywater disposal line, and the standpipe leading to the sewer system. A diverter valve, if used, must be labeled and be easily reached by the user for changing the direction of the Graywater flow to either the receiving landscape or the sewer system. Graywater disposal piping downstream of the diverter valve should be identified with the words "CAUTION: NONPOTABLE WATER. DO NOT DRINK"

   1602.1.1 (3) The installation, change, alteration or repair of the system does not include a potable water connection or a pump and does not affect other building, plumbing, electrical or mechanical components including structural features, egress, fire-life safety, sanitation, potable water supply piping or accessibility.

   The Graywater system cannot have a direct connection to any potable water supply and must use gravity flow to the receiving landscape. Except for the pump in the washing machine, no pumps are allowed on this type of system. For your protection, the system must not interfere with, or change, other components of the house without first checking with and, if necessary, obtaining permits the County's Building Services Division.

2. **1602.1.1 (4)** The gray water system shall be contained on the site where it is generated.

   The receiving landscaping must be on the same property where the gray water is produced and cannot be directed to an adjacent property or to the public street or road.

3. **1602.1.1 (5)** The gray water shall be directed to and contained within an irrigation or disposal field.

   Disposal/Irrigation field recommendations:
   - ✓ *The disposal trench or mulch basin should be at least 13.5 lineal feet per occupant in the house*
   - ✓ *The number of occupants should be determined by counting 2 for the first bedroom and 1 for each bedroom after that. For example, a 3 bedroom house would have 4 occupants.*
   - ✓ *4 occupants multiplied by 15.5 feet per occupant equals a 54 foot long trench and disposal line.*
   - ✓ *Owners should also confirm that there is no groundwater within 3 feet of the bottom of the disposal area before installing the system. To do this, simply excavate a post hole down three feet, wait approximately 30 minutes, and look for the presence of water. If water is present, the gray water disposal system shall not be installed. In those areas where seasonal high groundwater is known and documented to be less than within 3 feet, installation should not take place.*
   - ✓ *Caution should be exercised if placing an irrigation or disposal field at the top of a slope. The concentrated discharge of gray water could saturate the slope and allow movement of the soil or the gray water could begin to drain down the surface of the slope. Therefore, irrigation or disposal lines should be no closer than 15 feet to the top of a slope.*

5. **1602.1.1 (6)** Ponding or runoff is prohibited and shall be considered a nuisance.

   When planning and installing the disposal piping, depth and trench length is important. Gray water cannot be allowed to accumulate on the ground and must not be allowed to runoff the property where the system is located or to reach a surface body of water (lake, pond, or stream) or discharge into a storm water drainage system.

6. **1602.1.1 (7)** Gray water may be released above the ground surface if at least two (2) inches of mulch, rock, or soil or a solid shield covers the release point. Other methods which provide equivalent separation are also acceptable.

   It is recommended disposal trenches be at least 9 inches below grade to ensure the gray water does not come to the surface. However, at a minimum, the trench must be at least 2 inches in depth and covered in mulch.

7. **1602.1.1 (8)** Gray water systems shall be designed to minimize contact with humans and domestic pets.

   When designing and installing the disposal piping, depth and trench length is important. When the ground becomes over-saturated, there is a potential for pets and people to come in contact with the gray water.

8. **1602.1.1 (9)** Water used to wash diapers or similarly soiled or infectious garments shall not be used and shall be diverted to the building sewer.

   Instances of contaminated washing require the diversion of the waste-water to the sewer or septic system and shall not be dispersed to the gray water disposal system.

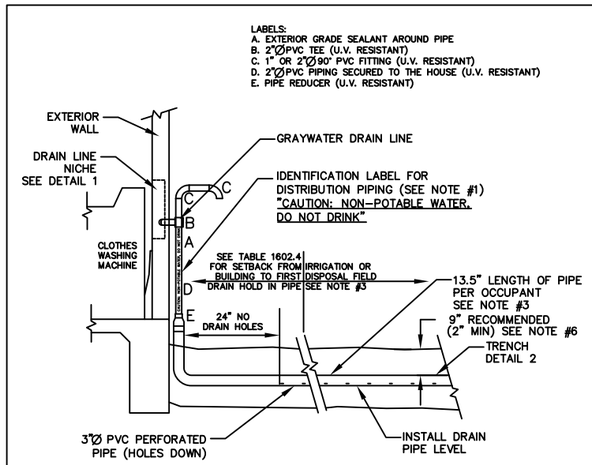
9. **1602.1.1 (10)** Gray water shall not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo labs or similar hobbyist or home occupational activities.

   The potential for contamination from hazardous waste could occur should these be deposited in your yard through the gray water system. Besides damaging your plants, your pets or humans could also be harmed if they were to come in contact with these chemical wastes.

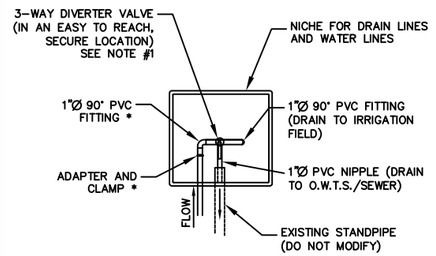
10. **1602.1.1 (11)** Exemption from construction permit requirements shall not be deemed to grant authority for any gray water system to be installed in a manner that violates other provisions of the CPC or any other laws or ordinances of the Enforcing Agency.

    The California Plumbing Code does not require a construction permit for the installation a CWGS. However, not being required to have a permit does not mean the system can be installed in any manner. For permit exempt installations, follow the prescribed methods in this document. Except for the wall penetration, no other building components are to be modified without a permit.

11. **1602.1.1 (12)** *An operation and maintenance manual shall be provided. Directions shall indicate the manual is to remain with the building throughout the life of the system and indicate that upon change of ownership or occupancy, the new owner or tenant shall be notified the structure contains a gray water system.*



SECTION 1
EXTERIOR OF BUILDING



DETAIL 1
WALL ELEVATION AT NICHE
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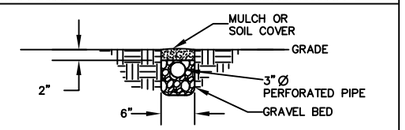
*IRRIGATION PIPING LEADING TO THE DISPOSAL AREA MUST NOT BE SMALLER THAN THE WASHER HOSE



DETAIL 2
DISPOSAL/IRRIGATION FIELD RECOMMENDATIONS

TABLE 1602.4
LOCATION OF GREY WATER SYSTEM

MINIMUM HORIZONTAL DISTANCE IN CLEAR REQUIRED FROM	SURGE TANK (feet)	SUBSURFACE AND SUBSOIL IRRIGATION FIELD AND MULCH BASIN	DISPOSAL FIELD
Building structures[1]	5 [2, 3, 9]	2 [3, 8]	5
Property line adjoining private property	5	5 [8]	5
Water supply wells[4]	50	100	100
Streams and lakes [4]	50	100 [5, 10]	100 [5]
Sewage pits or cesspools	5	5	5
Sewage disposal field [10]	5	4 [6]	4 [6]
Septic tank	0	5	5
On-site domestic water service line	5	0	0
Pressurized public water main [7]	10	10	10 [7]

For SI units: 1 foot = 304.8 mm

NOTES:

1 *Building structures do not include* porches and steps, whether covered or uncovered, breezeways, roofed carports, *roofed porte cocheres*, roofed patios, carports, covered walks, covered driveways and similar structures or appurtenances.
2 The distance shall be permitted to be reduced to 0 feet for aboveground tanks where first approved by the Authority having Jurisdiction.
3 *Underground tanks shall not be located within a 45 degree angle from the bottom of the foundation, or they shall be designed to address the surcharge imposed by the structure. The distance may be reduced to six (6) inches (153 mm) for aboveground tanks when first approved by the Enforcing Agency.*
4 Where special hazards are involved, the distance required shall be increased as directed by the Authority Having Jurisdiction.
5 These minimum clear horizontal distances shall apply between the irrigation or disposal field and the ocean mean higher high tide line.
6 Add 2 feet (610 mm) for each additional foot of depth in excess of 1 foot (305 mm) below the bottom of the drain line.
7 For parallel construction or for crossings, approval by the Authority Having Jurisdiction shall be required.
8 The distance shall be permitted to be reduced to 1 ½ feet (457 mm) for drip and mulch basin irrigation systems.
9 The distance shall be permitted to be reduced to 0 feet for surge tanks of 75 gallons (284 L) or less.
10 The minimum horizontal distance may be reduced to 50 feet (15 240 mm) for irrigation or disposal fields utilizing gray water which has been filtered prior to entering the distribution piping.

BUILDING

COUNTY OF PLACER
COMMUNITY DEVELOPMENT RESOURCE AGENCY

DATE:
June 1, 2014

SCALE:
NOT TO SCALE

STD.
GW-1