



Building Codes Division

Policies and Procedures

POLICY NUMBER: 94-11 (Revised)

SUBJECT: Rain drains and gutter requirements

CODE EDITION: 2014 Oregon Plumbing Specialty Code (OPSC)
2014 Oregon Residential Specialty Code (ORSC)
2014 Oregon Structural Specialty Code (OSSC)

CODE SECTION: OPSC Section 1101

EFFECTIVE DATE: May 5, 1994

REVISED DATE: January 2, 2015

ISSUE: The consistent application and procedure for the issuance of Rain Drain and Gutter permits.

POLICY:

Clackamas County policy dictates that all buildings are provided with roof gutters and rain drains that direct water to an approved drainage system or point of termination approved by the Building Official.

EXCEPTIONS:

1. Buildings considered Ag Exempt.
2. Outbuildings under 200 square feet in floor area.
3. Manufactured Homes located on their own property.
4. Buildings located at or above the Brightwood area due to the snow levels at these elevations.

NOTE: In the exceptions listed above, if a decision is made to add gutters even though not required, a permit and inspections will be required for the piping system to convey the water to an approved point of termination.

Buildings requiring rain drains shall have a permit for such issued at the same time as the building permit issued. The applicant should be informed of the requirement for rain drains at the time of application. If the applicant gets to the Building desk and does not have a plumbing permit application, one should be provided. The Plans Examiner shall verify that a plumbing permit has been assigned for all buildings that they are reviewing.

It is the responsibility of the Building inspector to verify that rain drains have been permitted, inspected, and have received an approved final inspection prior to giving building final.

Fees:

Detached garages or other outbuildings will require a full rain drain package.

If the detached garage is being built in conjunction with the house a separate rain drain package would not be required. If being built and/or inspected at a different time, then a separate rain drain package is required.

Remodeling involving the entire structure may require a full rain drain package. Permit specialists may use judgment in selecting the appropriate fee.

Adding a room to a single family residence will, in most cases, require a rain drain package at ½ the normal fee.

If gutters and downspouts are to be redone in a way that calls for an alteration in the existing rain drain system, half the normal rain drain fee is appropriate. If all components of the system are replaced, a full fee is required.

If a mechanical system is being installed on an existing residence a minimum fee of \$65 + state surcharge for the plumbing permit and appropriate electrical permit for the branch circuit.

If a soakage trench is being installed on an existing structure, the permit fee is the minimum fee. If part of new construction, then the inspection is part of the package fee.

On addition or remodels of commercial, industrial, etc. structures shall be treated as new work.

If questions arise, please contact the plumbing department.

Crawl Space or Low Point Drains:

Section 408.4 of the ORSC requires that where there is evidence of groundwater table within 6 inches of the finished grade at the building perimeter or where there is evidence that surface water does not readily drain from the building site, the grade in the under floor space shall be as high as the outside grade, unless an approved drainage system is provided in accordance with the plumbing code. In our jurisdiction, crawl space drains will be installed on all one and two family dwellings.

Section 1803.7 of the OSSC specifies that the ground under any building or portion thereof shall be sloped to a low point and drainage facilities shall be installed to provide positive drainage from the area under the building. If the premises abut a curbed street or a storm sewer is available, and if the grade is favorable, a gravity drainage system shall extend to the gutter, storm sewer or other approved means.

Crawl space drains may be connected to footing drains or the rain drain system. Whenever these drains are connected to the rain drain system an approved backwater prevention device must be installed according to the plumbing code.

In those instances where it is impossible to drain the space by gravity, mechanical devices shall be used. The appropriate pump and piping material shall be installed and inspected.

Similar to rain drains, one and two family dwellings and related structures on lots one acre or larger may have these drains day lighted. (See rain drain section.)

Piping Material; if the back water valve is located inside the crawl space then the piping material from the valve to point of termination must be cast iron, ABS Schedule 40 or PVC DWV. Remember the back water valve must be accessible.

If the back water valve is located outside the foundation then it must be located in an accessible area in a vault. The piping material from the crawl space to the valve shall be the same as above. From the valve to the point of termination the pipe shall be ABS Schedule 40, PVC DWV, Cast Iron, or PVC 3033 or 3034, as long as the pipe is more than two (2) feet from the foundation.

Inspections; the structural/mechanical section will be responsible for making certain that the low point drain is provided at the footing inspection stage. It will be the responsibility of the plumbing section to make certain the remainder of the system is installed.

Point of termination for Residential Structures:

Subdivisions

Most subdivisions have been designed with provisions for connecting to the storm sewer system or a perimeter system. Before considering mechanical systems or soakage trench systems check with the engineering department regarding connecting to a system specifically designed for rain and crawl space drains.

Properties of less than one acre

Rain drains installed on structures on properties of less than one acre will be required to terminate as per chapter 11 of the plumbing code. In Clackamas County storm water from rain drain systems will be conveyed to a storm sewer, storm sewage system, drainage ditch, street gutter or natural surface drainage course, or a rain water harvesting system in a manner which will not cause flooding to adjacent property, streets, alleys, or walkways.

Properties one acre or larger:

The point of termination of rain drains installed on structures on properties one acre or larger shall terminate a minimum of ten (10) feet from all structures and five (5) feet from property lines. The point of termination shall be placed so that the storm water does not cross over a drain field or cross into neighboring property. There shall be acceptable erosion control measures provide at the outfall of the storm water line.

Point of termination for commercial, industrial, apartments:

The provisions for rain drain systems on these structures fall under the category for "lots less than one acre" noted above for residential.

In the case of apartment complex carports, if the asphalted parking area is designed to receive storm drain water and to allow gravity drainage away from carports, then the down spouts may discharge on the asphalt parking area to an approved catch basin.

Manufactured Homes:

Manufactured homes are not required to put in rain drain systems unless they are located in an urban zoning district. However, if the applicant is going to install or have installed gutters, then a rain drain system permit and inspection is required and the methods of installation and point of termination outlined above apply.

At the time of application, the question must be asked, "Are you going to install a rain drain system?" If the applicant responds "No" the answer must be noted on the front of the file. If the answer is "yes" mark the front of the file with "Rain Drains Yes".

Some manufactured home parks and subdivisions require all units placed in the development to have rain drains. In this instance, the front of the file should be marked. When inspections are requested and the file notes "Rain Drains," the plumbing section will do the installation inspection. Rain drains must be installed at the time of the home's installation inspection.

Mechanical Systems:

(These are a last resort)

When mechanical systems are required because of inadequacy of the soil or because of the size of the lot, the system at a minimum will have a 30 gallon wet well located outside the foundation. The pump and piping shall be of approved material and sized to handle the average storm. The plumbing section will be responsible for inspections. Remember an electrical permit is necessary for the pump.

Commonly asked questions about rain drains:

What type of pipe may I use?

Around the perimeter one may use cast iron, ABS Schedule 40, or white PVC DWV schedule 40. If someone asks about CPE or ADS (pipe which comes in a roll) contact a plumbing inspector to advise.

The pipe used to terminate the drain can be black ABS Schedule 40, white PVC DWV, cast iron, green PVC-3033 or PVC 3034. If asked about CPE or ADS contact a plumbing inspector to advise.

May one terminate in a soakage trench or dry well?

Soakage trenches or dry wells should be avoided if possible. When a soakage trench is being considered the soil must be of adequate porosity to facilitate drainage. If the soil is inadequate, a mechanical system will be required.

Can we tie the footing drain and/or the low point drain to the rain drain?

Yes, in most cases. An approved "back water prevention device" must be installed in an "accessible location on the branch line to the footing or low point drain."

What is the appropriate pipe size?

To answer correctly the size of the roof area, number of down spouts, and system configuration needs to be known. Contact the plumbing section. Usually a three inch pipe will suffice for roof areas of up to 3500 square feet.

What is the appropriate grade or fall?

Rain drain lines may be laid on the footing around the perimeter when cast iron, ABS or PVC-DWV is used. When leaving the footing or if laid next to the footing, piping shall run at a minimum of one quarter of an inch per foot out to point of termination.

How deep and what the back filling requirements?

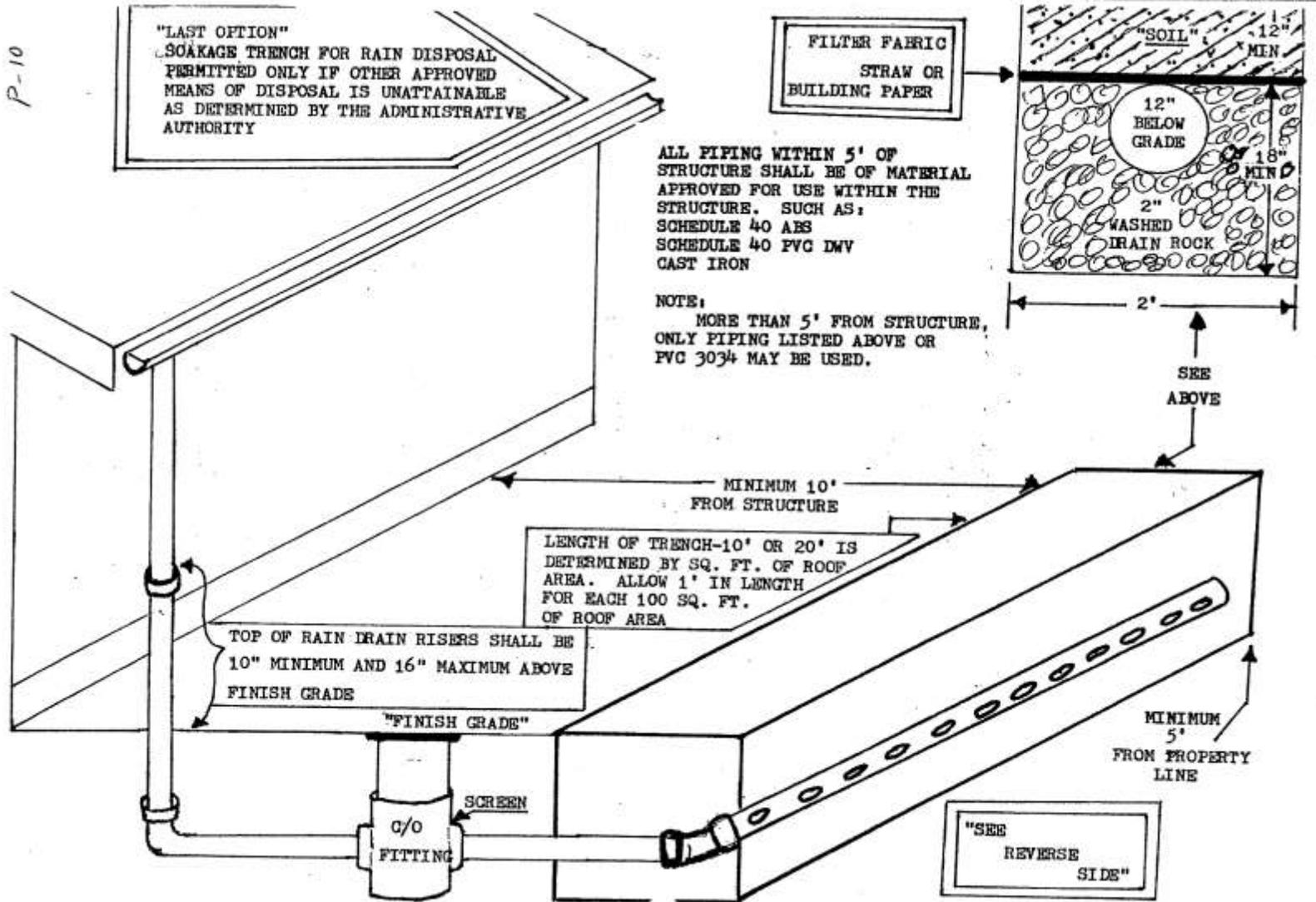
Piping shall be buried twelve inches deep and laid on firm bed for its entire length. Sand, gravel, or natural earth, free of rocks, are acceptable.

What kind of tests need to be done?

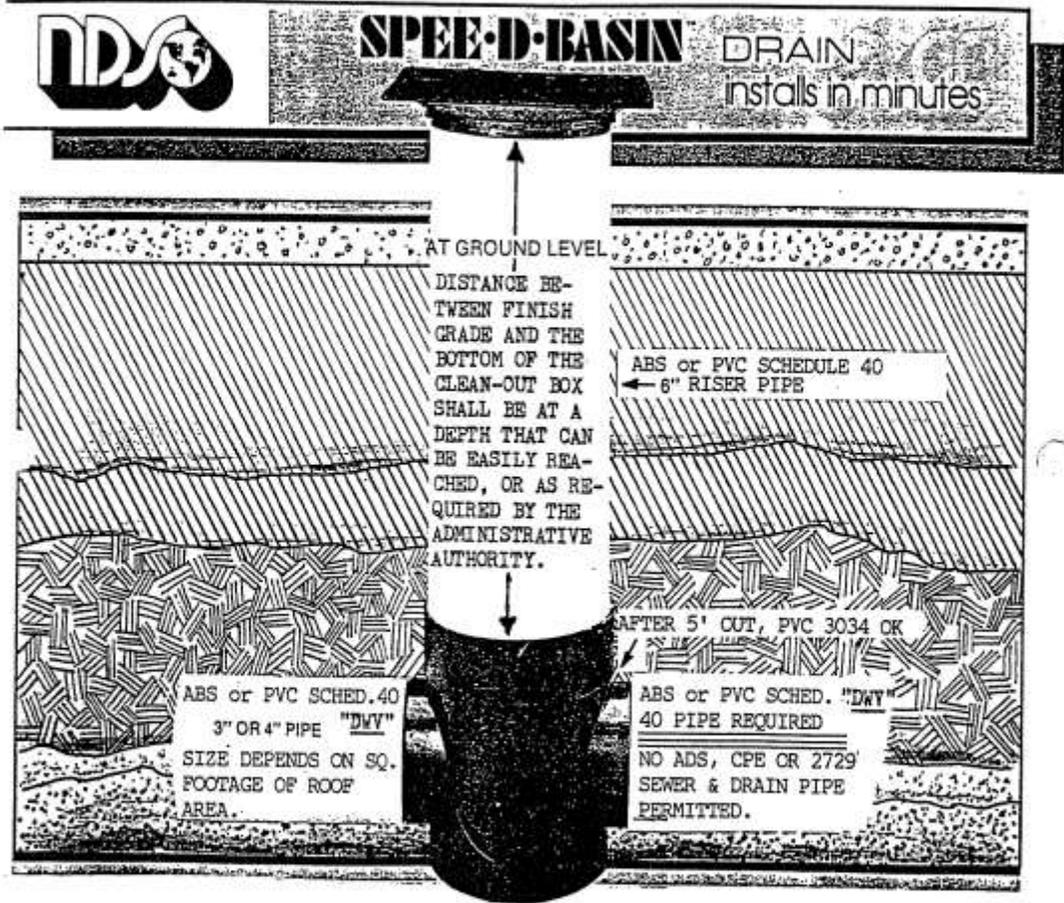
When installed on the exterior of a residential unit, no test is required. For other applications contact the plumbing department.

Who may install rain drains?

The home owner on his own residence or a contractor with a plumbing business license.



MATERIAL REQUIREMENTS PERMITTED FOR
CLEAN-OUT USED ON "LAST OPTION"
SOAKAGE TRENCH.



ANY FURTHER INFORMATION THAT IS NEEDED,
PLEASE CONTACT THE PLUMBING DEPARTMENT.

*Basin to have a screened
outlet & be installed
Between structure & Soakage trench*

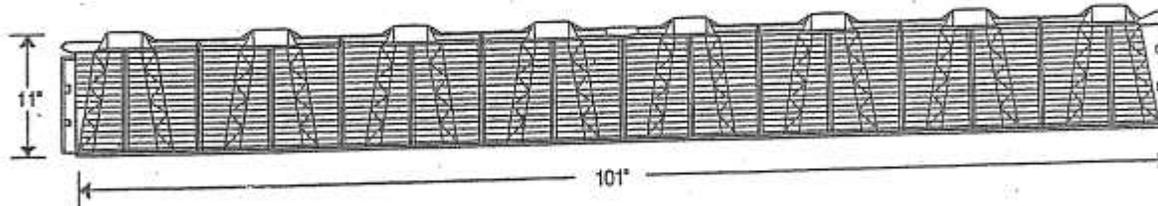
"THIS INFORMATION PROVIDED BY CLACKAMAS COUNTY PLUMBING DEPARTMENT"

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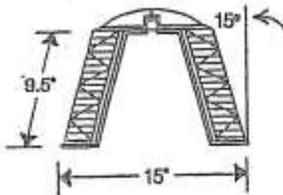
**1' OF INFILTRATOR FOR EACH
100 SQ.FT. OF ROOF AREA**

**"TRENCH TO BE A MINIMUM OF 10' FROM
STRUCTURE & 5' FROM PROPERTY LINE"**

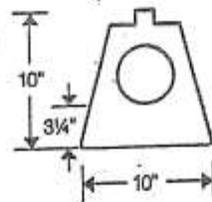
Chamber Side View



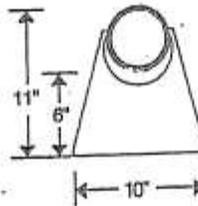
Chamber End View



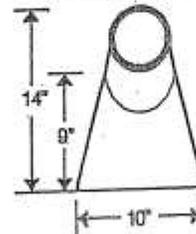
Standard Invert End Plate



6-Inch Invert End Plate



8-Inch Invert End Plate



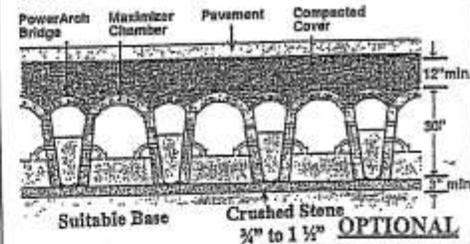
Note: invert heights are based on the measurement from the bottom of the end plate to the bottom of the inner 4-inch cutout (4" SDR 35). Cutouts accommodate 4" SDR 35, 4" SDR 40, 4" SCH 40, or 4" corrugated pipe. Call Infiltrator Systems for technical service.

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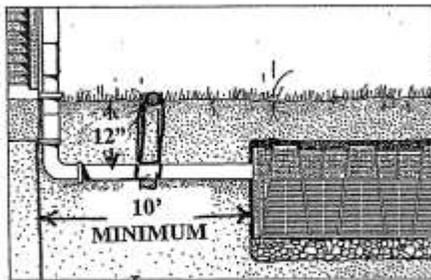
U.S. Patents 6,204,811; 5,817,440; 6,162,496; 6,206,812; 6,451,891; 6,491,600; 6,311,460; 6,260,770; Canadian Patents 2,200,440; 2,460,876; 2,460,877; 2,460,878; 2,460,879; 2,460,880; 2,460,881; 2,460,882; 2,460,883; 2,460,884; 2,460,885; 2,460,886; 2,460,887; 2,460,888; 2,460,889; 2,460,890; 2,460,891; 2,460,892; 2,460,893; 2,460,894; 2,460,895; 2,460,896; 2,460,897; 2,460,898; 2,460,899; 2,460,900; 2,460,901; 2,460,902; 2,460,903; 2,460,904; 2,460,905; 2,460,906; 2,460,907; 2,460,908; 2,460,909; 2,460,910; 2,460,911; 2,460,912; 2,460,913; 2,460,914; 2,460,915; 2,460,916; 2,460,917; 2,460,918; 2,460,919; 2,460,920; 2,460,921; 2,460,922; 2,460,923; 2,460,924; 2,460,925; 2,460,926; 2,460,927; 2,460,928; 2,460,929; 2,460,930; 2,460,931; 2,460,932; 2,460,933; 2,460,934; 2,460,935; 2,460,936; 2,460,937; 2,460,938; 2,460,939; 2,460,940; 2,460,941; 2,460,942; 2,460,943; 2,460,944; 2,460,945; 2,460,946; 2,460,947; 2,460,948; 2,460,949; 2,460,950; 2,460,951; 2,460,952; 2,460,953; 2,460,954; 2,460,955; 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INFILTRATOR

P-8

Downspout Drainage System

Eliminate the problem of standing water on lawns and keep stormwater away from foundations with an INFILTRATOR® chamber downspout system. The system also meets stormwater recharge regulations (where applicable).



OPTIONAL

- KEEPS STORM DRAINAGE AWAY FROM FOUNDATIONS
- ELIMINATES EROSION DITCHES CAUSED BY CONVENTIONAL ROOF DRAINS
- ELIMINATES UNSIGHTLY WATER BUILDUP ON LAWNS
- COST EFFECTIVE MEANS FOR UNDERGROUND DRAINAGE AND RECHARGE
- USED FOR DRIVEWAY DRAINS, TENNIS COURTS AND SWIMMING POOLS
- MINIMIZES RUNOFF ONTO ADJOINING PROPERTIES
- PROVIDES GREATER STORAGE THAN 1.5 CUBIC YARDS OF STONE

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See Page 6 for details of clean-out box shown above extending 12-inches below ground level.