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SINGLE FAMILY RESIDENTIAL INFILTRATION DISPERSION SYSTEM APPLICATION WORKSHEETS

2015 Pierce County Stormwater Management and Site Development Manual

Instructions

This application worksheet package is designed to aid you in designing a single-family residence infiltration dispersion system. Volume III, Table 3.5 of the *2015 Pierce County Stormwater Management and Site Development Manual* has been simplified in these worksheets to make the calculations easier. See Ordinance 2015 48s, *2015 Pierce County Stormwater Management and Site Development Manual* for a complete reference.

The following bullet items are needed for the design and review of the infiltration dispersion system:

- **Calculation Sheets.** Pages 1-3. Complete all calculations for the roof.
- **Sizing Table.** Page 4. Designate multiplier used.
- **Sediment Control Structure Detail.** Page 5.
- **Plan View of Infiltration Trench.** Page 6. Show length, width and pipe sizes.
- **Profile.** Page 6. Show length of trench(s).
- **Trench Section.** Page 7. Show trench(s) width, depth and pipe size.
- **Soil Evaluation Report Form.** Page 8. Complete all sections.
- **Site / Advanced Abbreviated Plan.** Draw to engineer scale, show north arrow, roads, driveway, buildings, easements, buffer areas, 2-foot contours (spot elevations are not acceptable) and on-site septic systems and reserve areas. Show the location and log number of the soil logs taken for the infiltration trench(s). Address all abbreviated plan content standards.

INFILTRATION DISPERSION TRENCH DESIGN WORKSHEET

DESCRIPTION OF PROJECT:

DESIGN:

Step 1. Determine the roof area and check the soil group/infiltration rate the design is based on. Check the soil group that applies to your site.

Building Area: _____sq. ft.

Roof Overhang: _____Feet

Roof Area: _____sq. ft.

(5,000 square foot maximum)

Saturated Percolation Rate: 60

inches/hour

12 inches/hour

4 inches/hour

2 inches/hour

1 inches/hour

Step 2. Select a trench depth between 2 and 5 feet.

Roof trench depth = _____ft.

Step 3. Select the correct trench bottom multiplier using the Sizing Table.

Roof multiplier = _____

Step 4. Select a trench width, the wider the trench (4 ft. max), the shorter the trench length.

Roof trench width = _____ft. (2' min. - 4' max.)

Step 5. Calculate the required trench length. (Maximum trench length must not exceed 100 feet from an inlet sump)

Trench length of the roof = roof area (Step 1) times the trench bottom multiplier (Step 3) divided by the trench width (Step 4).

_____ sq. ft. x _____ (multiplier) / _____ ft. = _____ ft.

Step 6. Summarize the trench dimensions:

Roof: _____ ft. deep x _____ ft. wide x _____ ft. long

The above design meets the minimum requirements for stormwater control in accordance with Ordinance 2015-48s, *2015 Pierce County Stormwater Management and Site Development Manual*.

Designer Name (print name)

Date

Signature

Registration No. (if applicable)

Sign, date, and stamp

SIZING TABLE

Saturated Infiltration Rate	Depth	Trench Bottom Multiplier
60 inches/hour	2'	0.024
	2.5'	0.022
	3'	0.019
	3.5'	0.018
	4'	0.017
	4.5'	0.016
	5'	0.015
12 inches/hour	2'	0.058
	2.5'	0.052
	3'	0.046
	3.5'	0.044
	4'	0.040
	4.5'	0.038
	5'	0.036
4 inches/hour	2'	0.101
	2.5'	0.090
	3'	0.080
	3.5'	0.076
	4'	0.072
	4.5'	0.066
	5'	0.063
2 inches/hour	2'	0.144
	2.5'	0.130
	3'	0.114
	3.5'	0.108
	4'	0.102
	4.5'	0.094
	5'	0.090
1 inch/hour	2'	0.206
	2.5'	0.184
	3'	0.163
	3.5'	0.153
	4'	0.146
	4.5'	0.135
	5'	0.129

FIGURE 1

SEDIMENT CONTROL STRUCTURE DETAIL NOT TO SCALE

NOTES:

1. SET THE TOP OF THE TEE RISER AT OR ABOVE THE TOP ELEVATION OF THE TRENCH DRAIN ROCK.
2. SET THE BOTTOM OF THE INLET PIPE AT THE SAME ELEVATION AS THE OUTLET PIPE.

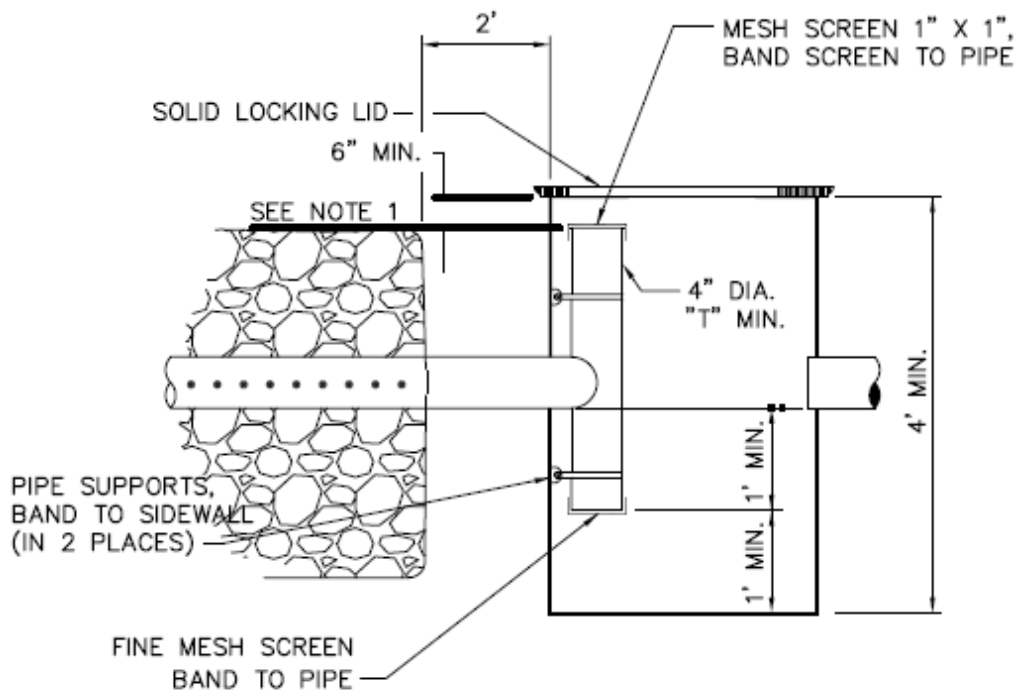


FIGURE 2

ROOF SYSTEM NOT TO SCALE

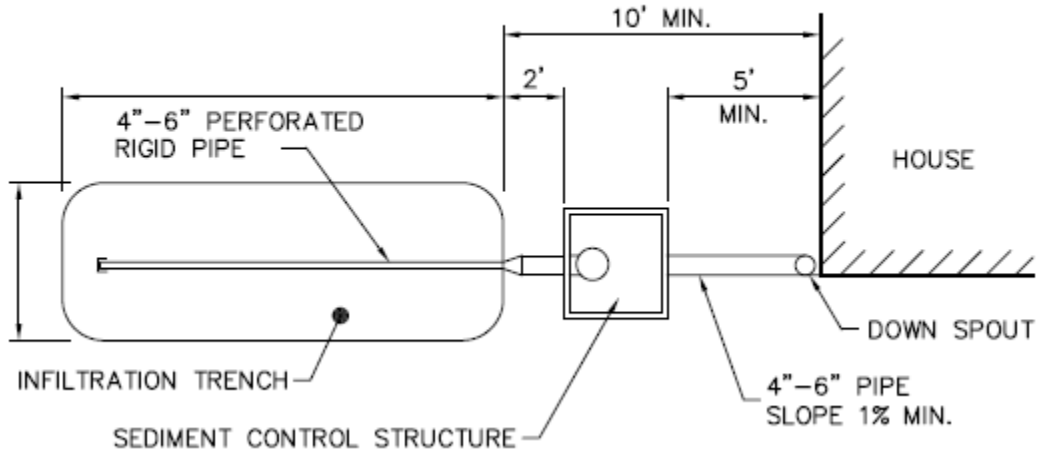


FIGURE 3

PROFILE NOT TO SCALE

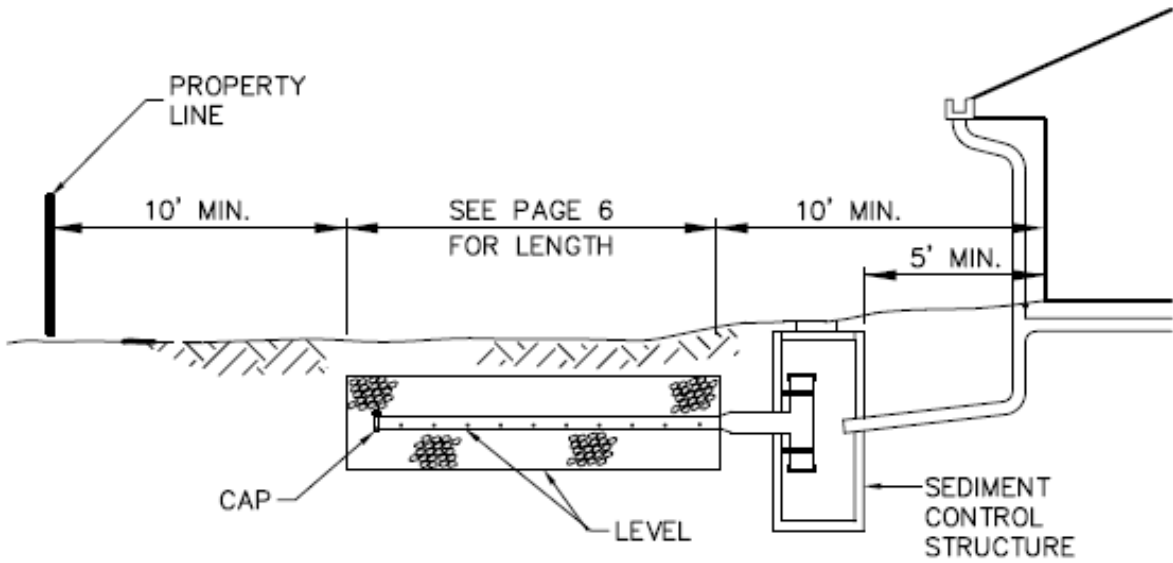
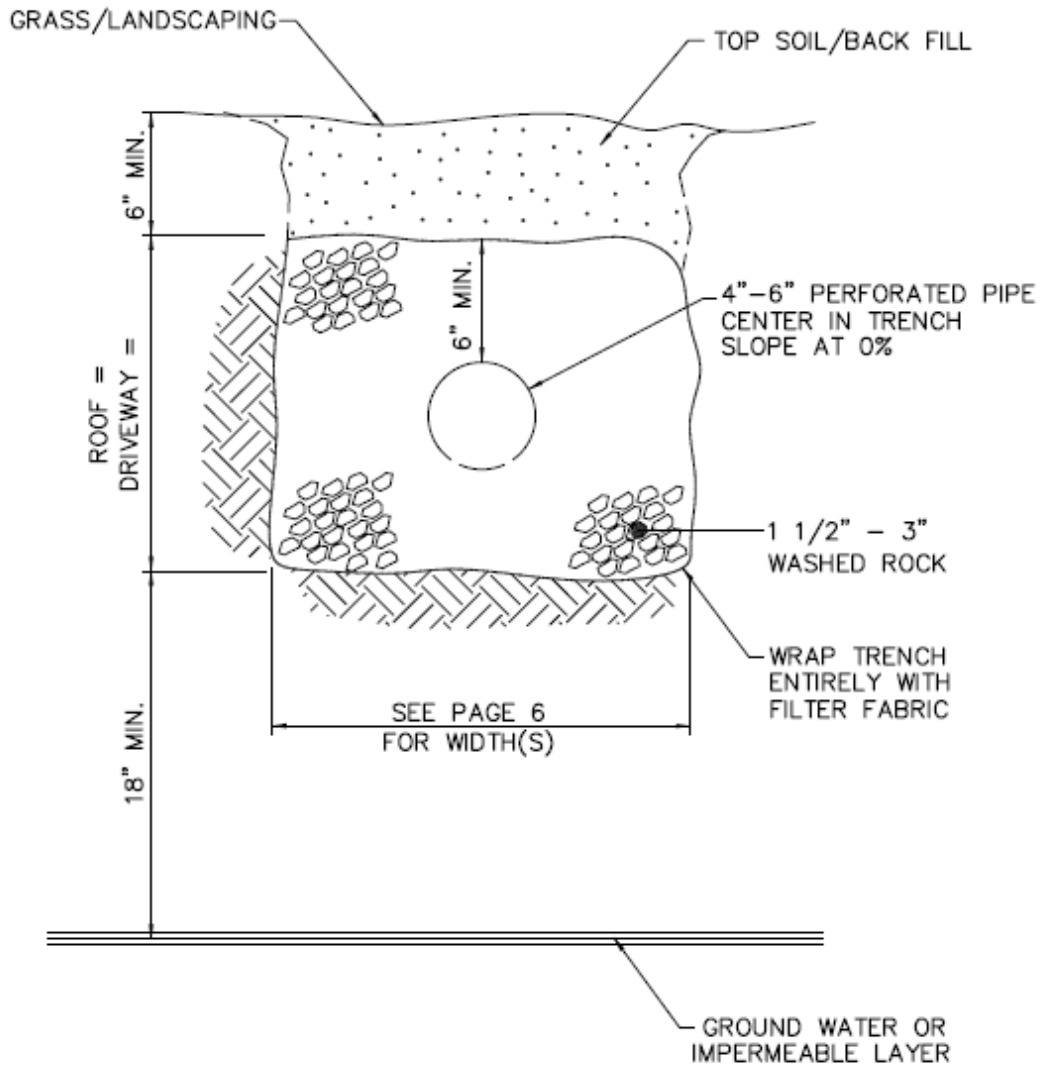


FIGURE 4

TRENCH SECTION NOT TO SCALE



SFR INFILTRATION SYSTEM SOIL LOG EVALUATION REPORT

SOIL LOG NUMBER: (Number shall match site plan)		Sheet ___ of ___		
1. SITE ADDRESS:				
2. PARCEL NUMBER: _____				
3. SITE DESCRIPTION:				
4. LIST METHODS USED TO EXPOSE, SAMPLE AND TEST SOILS:				
5. NUMBER OF TEST HOLES LOGGED: _____		6. SATURATED INFILTRATION RATE: Inches / Hour		
7. HAS FILL MATERIAL BEEN PLACED OVER THE PROPOSED INFILTRATION TRENCH AREA? NO YES		8. DEPTH TO SEASONAL HIGH WATER:		
9. CURRENT WATER DEPTH:	10. DEPTH TO IMPERVIOUS LAYER:		11. PROFILE DESCRIPTION:	
HORIZON (See Note 1)	DEPTH	TEXTURAL CLASS	MOTTLING	INDURATION
<p>Note 1: Identify limits of any outwash type soils (i.e. those meeting USDA soil texture classes ranging from coarse sand and cobbles to medium sand.</p> <p>I hereby state that I prepared this report, and conducted or supervised the performance of related work. I state that I am qualified to do this work. I represent my work to be complete and accurate within the bounds of uncertainty inherent to the practice of soil science, and to be suitable for its intended use.</p> <p>SIGNED: _____</p> <p>DATE: _____ LICENSED STAMP: _____ (Sign & Date)</p>				