



Residential Site Development Inspection Process

Applicability: The requirements and procedures outlined in this handout apply to all residential construction projects requiring site development inspections under current policy. Projects with very limited potential for land disturbing activity, such as the replacement of an existing mobile home or the construction of a detached shed, may not require a site development permit.

Summary of Current Process: Almost all significant single-family construction projects in Pierce County require three site development inspections: Installation of Erosion Control, Residential Drainage, and Site Development Final. At the time of application, project proponents may elect to have a private engineer certify the required drainage provisions have been properly completed in lieu of the required residential drainage inspection. The assigned inspector may also make additional, unannounced erosion control inspections as his or her workload allows, and will complete check compliance Inspections in response to citizen complaints.

When the proponent requests the first building inspection, Pierce County automatically schedules and completes the Installation of Erosion Control Inspection. Builders are responsible, however, for requesting their own Drainage Inspections (unless certified by a private engineer) and their own Final Site Development Inspections. Each project must pass the Final Site Development Inspection before scheduling the Final Building Inspection and before obtaining a certificate of occupancy for any structure.

Inspection Criteria: The following chart lists the standard inspection criteria to be employed with regard to each inspection. Pierce County may revise these criteria from time to time. The inspector may find more stringent criteria must be imposed at some sites in order to meet the intent of the parent regulations.

Inspection	Inspection Criteria
Erosion Control	<p>If a specific erosion control plan has been approved for the subject site, all measures specified on the approved plan have been properly installed and appear adequate. OTHERWISE</p> <ol style="list-style-type: none"> 1. Construction approach installed unless native material is free of fines and poses no erosion danger (extremely unusual). See Detail No. 2. 2. Access limited to construction approach. The preferred method is a fence of standard orange construction netting with support posts at 4 foot maximum spacing. Tape barriers or other fragile methods which are unlikely to survive for the duration of construction will not be accepted. 3. Some form of sediment barrier properly installed unless site is a pothole and poses no erosion/sedimentation danger (extremely unusual). 4. Silt fence, if employed (even as access barrier only), substantially conforms to the detail approved by Pierce County. Silt fences must be securely keyed into the ground and supported by 2 x 2 (min) wooden stakes at 3 foot (max) spacing. Unreinforced prefabricated silt fence products are normally not adequate. Silt fence should be installed at the cut/fill slope setback line. See Detail No. 3. 5. Effective inlet protection (normally a CB insert) has been provided for drainage structures on, adjacent to, or immediately downstream of the project site. 6. Any known buffers on the project site are properly posted (see applicable handout). 7. There is no visible evidence of significant erosion or sedimentation leaving the project site at the time of the inspector's visit. <p>See Detail No. 1 for an example of erosion control placement. Inspectors may eliminate the requirement for a sediment barrier at their discretion when it is reasonably expected all construction activity will take place during the dry season (May 1st to September 30th).</p>

Inspection	Inspection Criteria
Residential Drainage	<ol style="list-style-type: none"> 1. Individual lot drainage system/measures have been provided per the approved plan and/or Storm Drainage Requirement form. Specific elements to be checked include capacity, sump structure, setbacks, driveway basin connection, tightlines, splash blocks, miscellaneous fixtures, and any required grading. 2. Individual lot drainage system appears to be functioning as designed (infiltration systems not flooded). When splash blocks are allowed, particular attention will be paid to the intended destination for runoff (i.e. for a requirement that reads 'splash block & retain on site' it must be visibly obvious that runoff will be contained on site.) 3. Drainage is not routed in a manner which is likely to cause a significant nuisance or safety hazard, such as by creating a point discharge at the back side of a sidewalk.
Final	<ol style="list-style-type: none"> 1. Ground surface around structures slopes away at 5% for 10' or to a point of positive drainage. 2. Permanent stabilization has been achieved – no unprotected, erosive surfaces are draining directly offsite. This measure is not intended to specifically require permanent landscaping except where absolutely necessary to prevent erosion. Measures which are obviously temporary and likely to be immediately removed by the purchaser are not an acceptable substitute for permanent stabilization. 3. Driveway has been poured or paved (unless served by a private or gravel road). 4. EV Access (when required) is constructed as depicted on the site plan and does not exceed a grade of 12% with a gravel surface, or 15% if paved. 5. Driveway culvert, if required, is the correct size and material and installed correctly. 6. Stormwater from driveway captured, routed, or tightlined as required by drainage plan (if applicable). 7. Gutters in place and downspouts routed or tightlined as required by drainage plan (if applicable). 8. Any construction materials stockpiled on the street and/or sidewalk in front of the subject lot have been removed. 9. Inlet protection has been removed from adjacent or downstream drainage structures IF this was the last exposed lot draining to the structure. 10. There is no evidence of exposed aggregate concrete slurry in project, adjacent and/or immediately downstream drainage facilities/structures. 11. Any impacts to County required improvements such as sidewalks, shoulders, bioswales, drainage systems, etc., have been corrected. 12. Any obvious impacts to adjacent properties have been corrected or resolved. 13. Site remains in compliance with cut and fill setback and slope requirements (2' min setback to PL for any cut or fill, ½ the height for cuts or fills greater than 5' w/max setback of 10') (Cut slopes ≤ 2:1, Fill slopes ≤ 1.5:1) 14. Any retaining walls on site over 4 feet in height or retaining a surcharge have been properly permitted. 15. Any Development Engineering administrative requirements (Private engineer certification, elevation certificate, etc) applying to this particular project and listed on the inspection worksheet have been met. If all construction requirements are met, but administrative requirements remain, only partial approval will be granted and building permit final will not be released.

Recent Change:

- Washington State and Pierce County adopted the International Residential Code Effective July 1, 2004. It has subsequently come to our attention that this code changed the specification for grading away from a structure from 2% to 5% for a distance of 10 feet or to a point of positive drainage. Our inspectors have been bringing this change to the attention of the building community for most of 2005 and will be enforcing it in earnest in 2006.

Common Pitfalls & Current Issues:

- Residential lots are relatively small in size and builders often forget or have difficulty complying with the setback requirements listed among the final inspection criteria in the chart above. For most residential lots, it is not permissible to cut or fill within two feet of the property line or within a greater setback if the cut or fill will be more than 5 feet deep. Terracing across the property line can only be legally completed in the plat development process before the individual lot lines are actually created. Questions about this issue should be directed to your site development inspector.
- Sediment control structures must strictly conform with the dimensions on the applicable detail (on the approved drainage plan for the site) and must have solid bottoms.
- Improperly constructed silt fence is a leading cause of failing site development inspections. We administer the minimum requirements listed on the attached detail consistently. Wooden support posts for silt fence must be a minimum of 2 x 2 and installed at a maximum spacing of 3 feet. Most prefabricated silt fence products purchased at home improvement warehouses or hardware stores fall seriously short of these standards. For a list of suppliers of better quality erosion control materials, see Development Engineering Handout 3. Also for silt fence to be effective, it must be keyed into the ground with the bottom flap securely buried.
- Rebar staking is no longer accepted as support posts for unreinforced silt fence. Securing the fabric to the rebar is difficult and seldom done adequately to prevent the fabric from sliding down to the ground.
- Access barriers of flagging tape tied to support posts are no longer accepted. Almost without exception, these types of barriers have proven inadequate to withstand even the shortest residential construction cycle. The preferred method is a fence of standard orange construction site delineation netting secured to support posts at 4 foot maximum spacing.

Clarification on Routing Drainage: Some confusion has been expressed regarding allowable methods for routing stormwater to a roadway drainage system. Where there is an approved plan depicting a specific method or route, the approved plan will govern. Where there is not an approved plan but the County has approved routing water to the roadway drainage system, the water may be routed by sheet flow, by tightline into the back of an existing drainage structure or to the existing ditch by tightline to properly prepared weep holes through the curb, or by tightline to a discharge fixture (bubbler) located immediately behind the top of the raised edge or curb. Under no circumstances will a tightline be installed in a manner which creates a point discharge at the back of a sidewalk, pedestrian path, or other walking surface.

Questions & Answers

- 1. What are a builder's responsibilities under this process?** To be familiar and comply with the inspection criteria listed in chart. To properly install erosion control measures for each site prior to any other land-disturbing activities. To maintain erosion control measures from the time of installation until the site passes final Site Development inspection. To complete any corrective measures required by the Site Development Inspector within the time periods allowed. To request drainage and final inspections at appropriate points during construction.
- 2. Are there any fees or costs for failed inspections?** Yes, a standard \$110.00 reinspection fee applies in certain circumstances. Whenever an inspector provides a list of required corrections and finds on reinspection that the required corrections have not been made, a reinspection fee will be assessed. In

addition, if the inspector comes out to do the initial erosion control inspection and finds earthwork has commenced and no effort has been made to comply with erosion control requirements, the Site Development Permit will be suspended, and a \$110.00 reinspection fee will be assessed and a reinspection will automatically be scheduled. Additional fines may be assessed for sites repeatedly failing to comply with inspection requirements and/or creating an off-site impact.

3. **How long will it take Pierce County to complete the requested inspections?** Development Engineering inspections are scheduled in the same manner as Building inspections. Inspection requests which are entered into our system before 11:00 on any working day will be scheduled for the following working day (except for the limited service areas of Anderson, Ketron and Herron Islands, Greenwater and Crystal Village). Development Engineering completes approximately 93% of our inspections on the scheduled date. When an inspector is unable to complete an inspection due to workload, the inspection is carried forward to the next working day. Residential inspection request are very seldom carried forward more than two days.
4. **How do I request a Site Development Inspection?** Call the Pierce County Permit Application Status System at 253-798-4900 or 7290. Select Option 2 from the main menu to request an inspection. Enter your Residential Site Development Inspection Permit number and confirm when prompted. Listen to the announcement and enter the two-digit code, plus the pound sign, for the type of inspection you need. If you are requesting an inspection in a gated community, it is your responsibility to ensure the inspector is provided the gate code. You can achieve this by selecting the 'leave special instructions for the inspector' option after entering your inspection request, or by calling or e-mailing the inspector directly. When leaving a message for the inspector through PASS, be sure to state the permit number and who the message is for in the message itself.
5. **How will I know the results of my inspections?** A copy of the Site Development Inspection Report will normally be left at the project site. You may also check the results and inspector's comments for a given inspection at the following website:

<http://www.co.pierce.wa.us/cfapps/dcis/PermitSearch.cfm>

Enter your permit number, then click 'Search', then click on the permit number link in the line that returns to see your complete permit status and inspection history. Inspection results and comments are normally entered the next working day following the inspection.

6. **At what point should I call for my Drainage Inspection?** For lots requiring drywells and/or infiltration trenches, the drainage system must be completely constructed, but not yet backfilled, at the time of inspection. All pipe connections must be in place, properly coupled or glued, and exposed. Provision must be made for the inspector to check the depth of washed rock. The preferred method is to provide a 4 to 6 inch perforated PVC pipe vertically in the trench before backfilling with washed rock. The perforated pipe should extend 6 to 18 inches above the top of the trench. As an alternative, a clean, smooth stake (preferably PVC) may be placed vertically in each trench prior to filling with washed rock. The inspector will remove this stake to check the depth of the rock. All accessory structures, such as residential sump structures, clean outs, and/or inspection wells depicted on the approved plan, must be in place.

For lots requiring tightline connections to an existing drainage system, the tightline must be completely installed, with all pipe connections properly coupled, glued, or mortared. All pipe connections must be exposed. Any accessory structures depicted on the approved plan must be in place.

For lots requiring detention systems, the detention system installation must be complete and stabilized. All necessary piping and control structures must be in place.

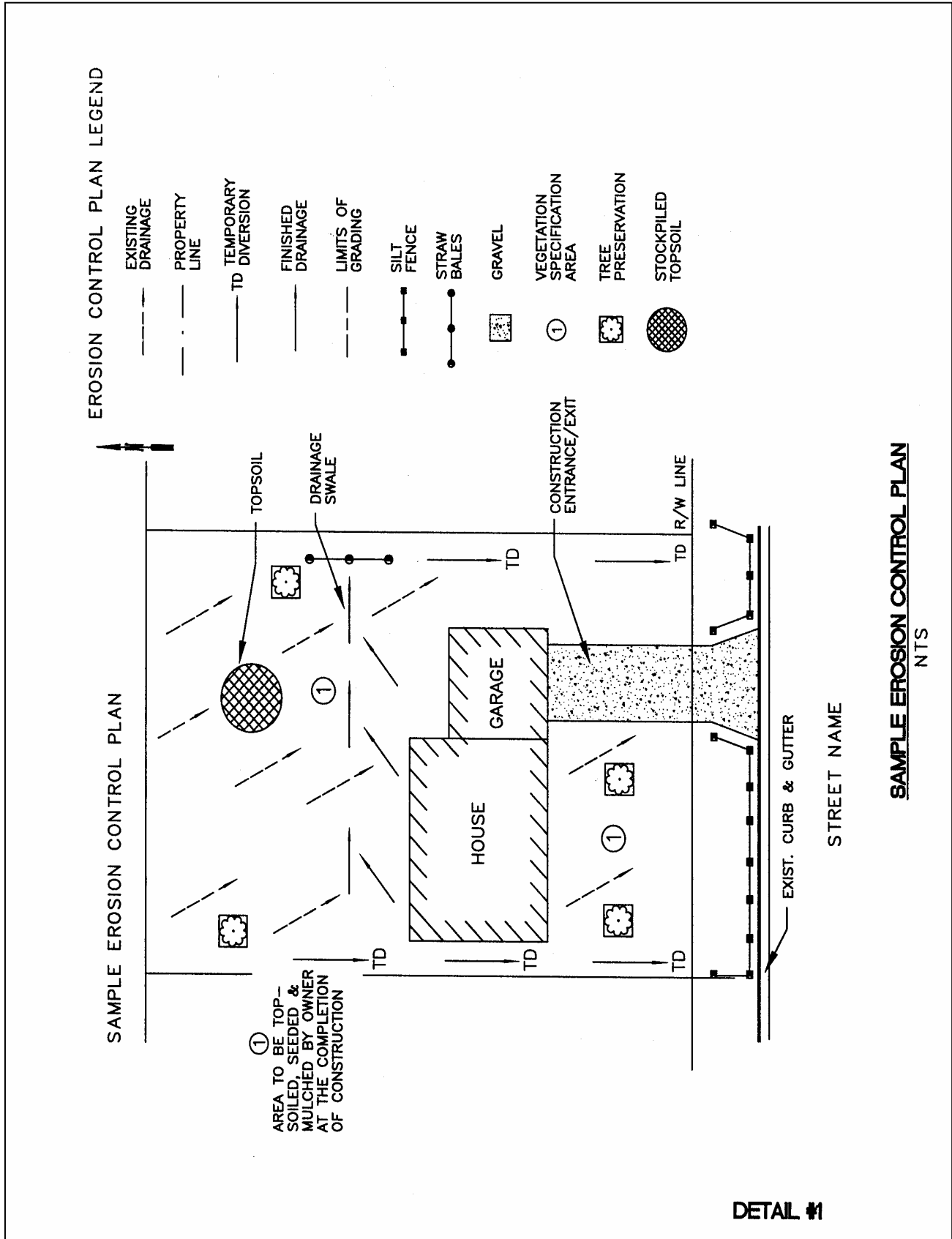
For lots requiring inspection of grading and/or routing intended to retain stormwater on site, inspection should be requested when the site has been finish graded in a manner making it visibly obvious drainage will be retained on site.

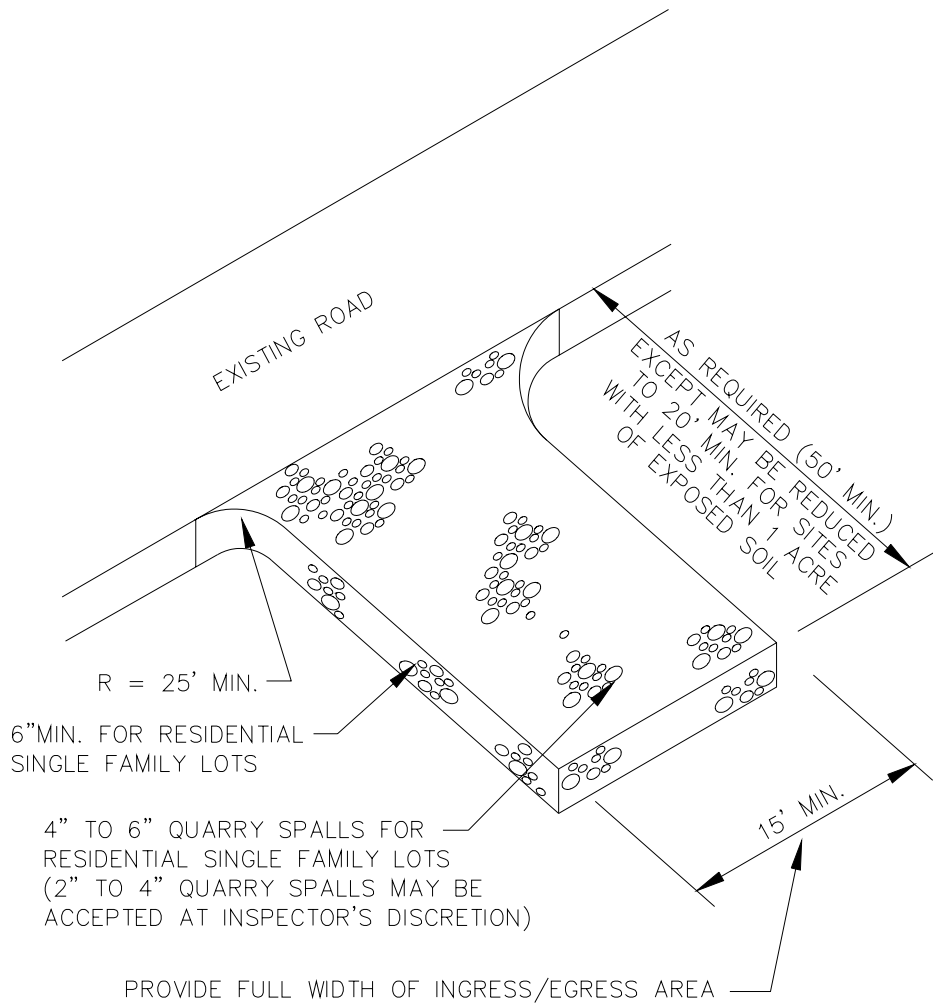
For all plans requiring a driveway basin or grate, a connection point must be provided in the driveway and must be located in such a manner that it will capture all or nearly all the stormwater from the driveway. Installation of the driveway basin or grate itself will be checked during the Final Site Development Inspection.

- 7. At what point should I call for my Final Site Development Inspection?** At the time of final Site Development inspection, the driveway must be poured or paved (unless served by a private and/or gravel road), all grading on the site must be complete, and the site must be stable. See also the inspection criteria for the Final Site Development Inspection in the chart on page 2.

Any additional questions, comments or suggestions may be directed to Scott Murdock, Development Engineering Inspection Supervisor, at 253-798-3756, or by e-mail to Scott.Murdock@co.pierce.wa.us .

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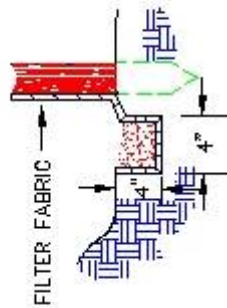
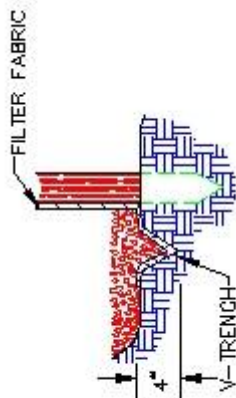
RESIDENTIAL CONSTRUCTION ENTRANCE ROCK PAD

N.T.S.

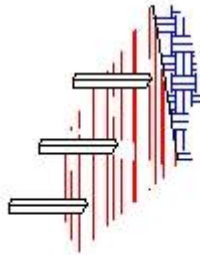
DETAIL #2

HOW TO INSTALL FILTER FABRIC FENCE FOR RESIDENTIAL CONSTRUCTION

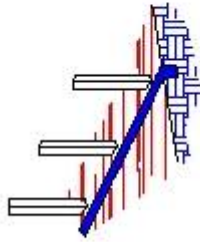
CROSS SECTIONS OF TRENCH
FOR FILTER FABRIC FENCES



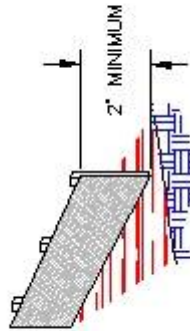
1. SET 2 X 2 STAKES NO MORE THAN 3 FT. APART AND DRIVE THEM INTO THE GROUND AT LEAST 8".



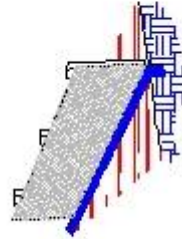
2. EXCAVATE A 4"x4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



3. STAPLE FILTER MATERIAL ON UPSLOPE SIDE OF STAKES AND EXTEND IT INTO THE TRENCH. WHEN JOINTS ARE NECESSARY, OVERLAP MATERIAL BETWEEN TWO STAKES AND FASTEN SECURELY.



4. BACKFILL WITH WASHED ROCK OR FREE DRAINING NATIVE MATERIAL.



NOTE: TRENCH SHAPE IS NOT AS IMPORTANT AS INSURING FILTER FABRIC IS KEYED IN AND SECURELY BURIED.

FILTER FABRIC FENCES
N.T.S.

DETAIL #3