Surface Water Management

Small Lot Construction Stormwater Permit Manual

NPDES 1200-C General Permit
Disturbance Less than One Acre

October 2014

State of Oregon
Department of
Environmental
Quality

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By: Mark Riedel-Bash
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This report prepared by:

Oregon Department of Environmental Quality
811 SW 6th Avenue
Portland, OR 97204
1-800-452-4011
www.oregon.gov/deq

Contact:
DEQ Erich Brandstetter
(503) 229-5047

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Introduction

Does Your Construction Site Need a Permit?

Local government entity administered areas:

In the jurisdictions listed in Table 1, applying for a DEQ permit is generally not required for construction that will disturb less than one acre. If your site is within a jurisdiction listed in Table 1, contact the local government entity (city, service district, county, etc.) for information on what they will require. The local government entity will administer the construction project. You do not need to apply to DEQ.

Note: If a dewatering treatment system is to be used it must be approved by DEQ or Agent. Use of a filtering media alone during the November through May period is insufficient in many soils.

Table 1: Local permit Issuance Government Entities for Construction that Disturbs Less Than One Acre

CITIES OR DISTRICTS ACTING AS DEQ AGENT	JURISDICTIONS WITH AUTOMATIC COVERING (1200-CN)
Eugene	Albany
Troutdale	Corvallis
Clackamas Water Environment Services Within Service District 1 and Surface Water Management District 1, Gladstone and Rivergrove	Gresham
Clean Water Services (Cities within CWS Service District)	Milwaukie
Rogue Valley Sewer Services (Cities of Talent, Phoenix, Central Point, parts of Jackson Co.)	Springfield
	West Linn
	Wilsonville
	Wood Village
	Lane County within MS4
	Multnomah County

Areas not covered by government entities in Table 1:

Please answer the following questions:

1. Does your construction project disturb less than one acre of land through clearing, grading, excavating, or stockpiling of fill material, and is part of a larger common plan of development or sale (for example, a subdivision) that ultimately disturbs one acre or more?

2. Is there any possibility that stormwater could run off your site during construction and into surface waters or conveyance systems leading to surface waters of the state?

If you answered *"yes"* to both of these questions, your construction site needs permit coverage. DEQ will administer the construction project under the NPDES 1200-C Permit. You can obtain permit coverage under the 1200-C using the Small Lot Erosion and Sediment Control Plan (ESCP) Template provided in this guidance. Submit your application under the NPDES 1200-C Permit to the appropriate DEQ Regional Office or DEQ Agent (Table 2 and Figure 1).

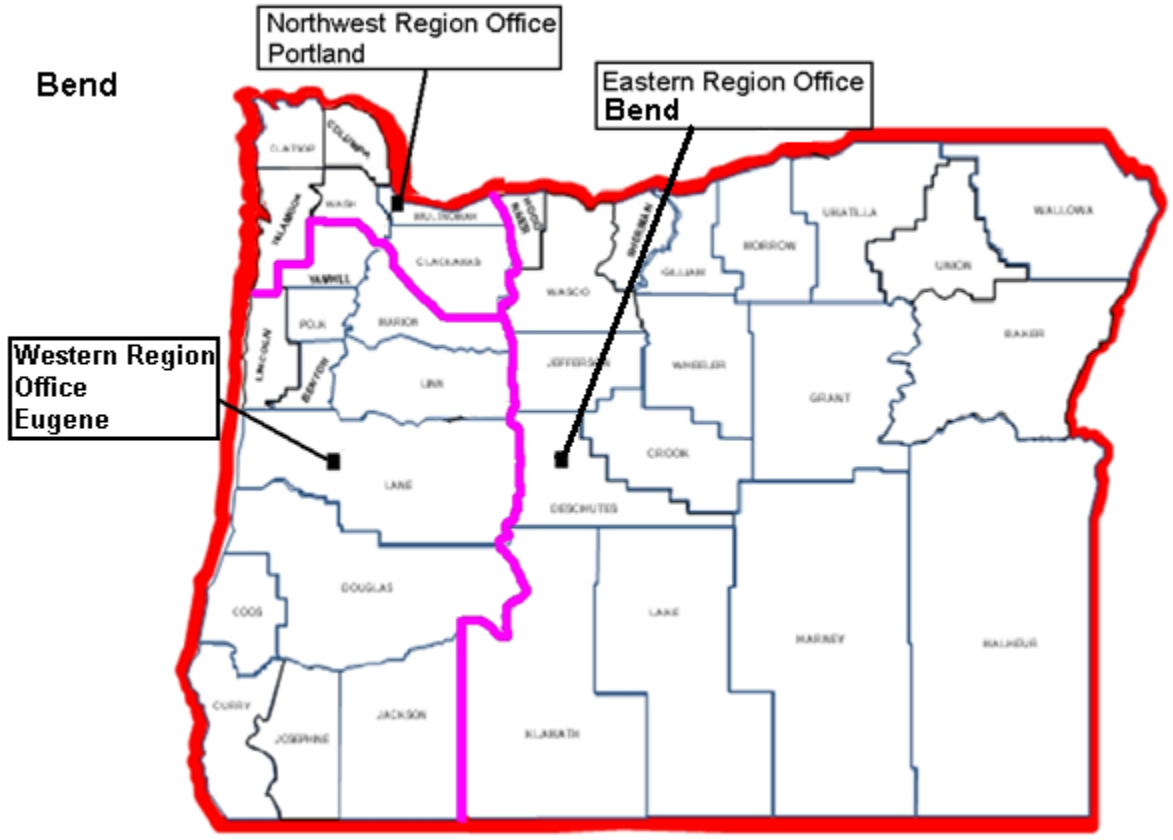
Projects that disturb more one acre or more:

Larger projects must develop a site-specific ESCP as described in "Construction Stormwater Permit Guidance, 1200-C NPDES General Permit, Disturbance of One Acre or More," available at http://www.deq.state.or.us/wq/stormwater/construction.htm

Table 2: DEQ Regional offices and 1200-C Permit Issuance Government Entity for Construction that Disturbs Less Than One Acre

DEQ Northwest Region	DEQ Western Region	DEQ Eastern Region
2020 SW 4th Avenue, Suite 400 Portland, OR 97201-4987 503-229-5263 or 1-800-452-4011	165 East 7th Avenue, Suite 100 Eugene, OR 97401 541-687-7326 or 1-800-844-8467	800 SE Emigrant Avenue, Suite 330 Pendleton, OR 97801 541-278-4605 or 1-800-304-3513

Figure 1. DEQ Regional and Branch Offices



NORTHWEST REGION COUNTIES					
Clackamas	Clatsop	Columbia	Multnomah	Tillamook	Washington
WESTERN REGION COUNTIES					
Benton	Coos	Curry	Douglas	Jackson	Josephine
Lane	Lincoln	Linn	Marion	Polk	Yamhill
EASTERN REGION COUNTIES					
Baker	Crook	Deschutes	Gilliam	Grant	Harney
Hood River	Jefferson	Klamath	Lake	Malheur	Morrow
Sherman	Umatilla	Union	Wallowa	Wasco	Wheeler

Applying for 1200-C Coverage

Preparing Your Application

To prepare your application:

1. Fill out the application form.
   The application form and instructions are available online or through local DEQ offices.
2. Provide a location map.
3. Prepare a site sketch.
   Instructions for preparing the location map and site sketch are provided in the following section.
4. Attach the Standard ESCP Notes and applicable Standard BMP (best management practice) Detail Sheets.
   The Standard ESCP Notes and Standard BMP Detail Sheets are provided in the Appendix. The Standard Notes are summary instructions and guidance regarding BMPs for erosion and sediment control. The Detail Sheets show the installation details for BMPs commonly used on small lots to control soil and turbidity discharges.
5. Include the appropriate permit fee.

Permit Fees

You must submit the appropriate permit fees to DEQ or Agent or local government entity as applicable at the time you apply for new permit coverage.

If you are submitting your application to DEQ, please visit DEQ's website at: http://www.deq.state.or.us/wq/wqpermit/stminfo.htm for the current fees. Make checks payable to the Department of Environmental Quality. If you send your application to a DEQ Agent or other local government entity, you must pay the specific application fee charged by the Agent or entity. Make checks payable to the Agent or entity. Please contact the Agent or local government entity to determine the application process and fee.

Submitting a Complete Application

For your application to be accepted, you need to submit the following *at least thirty (30) days* before beginning any soil disturbance:

☐ Completed Application Form
☐ Location Map
☐ Site Sketch or Drawing
☐ Standard ESCP Notes
☐ Standard BMP Detail Sheets (those applicable to the site)
☐ Fee

Location Map and Site Sketch

The ***location map*** must show the location of the site within the subdivision. It must include enough detail so that someone not familiar with the subdivision can find the site.

The ***layout sketch*** is required to show detailed information about the ongoing activities and storm water drainage both on and off the lot construction site. It serves to illustrate the complete drainage for the lot, and includes the property boundaries, building(s), drainage pattern(s), storm water control erosion and sediment controls (such as sediment fence, stockpile covering, straw wattles, compost, check dams, and so on) and locations of these controls on the lot.

To prepare the location map and site sketch, a suitable base sketch showing the lot boundaries is necessary to start the process. The property or tax map (such as Figure 2) can serve as the basis for this sketch. The property description on your property tax statement can be used to search the ORWEB Tax Map Program on the internet at http://www.ormap.org/ or you should be able to obtain a tax map from your local planning or tax department. Also you should have received a tax map when you closed on the purchase or your lot.

For the location map, indicate on the tax plot map or other map the location of your site.

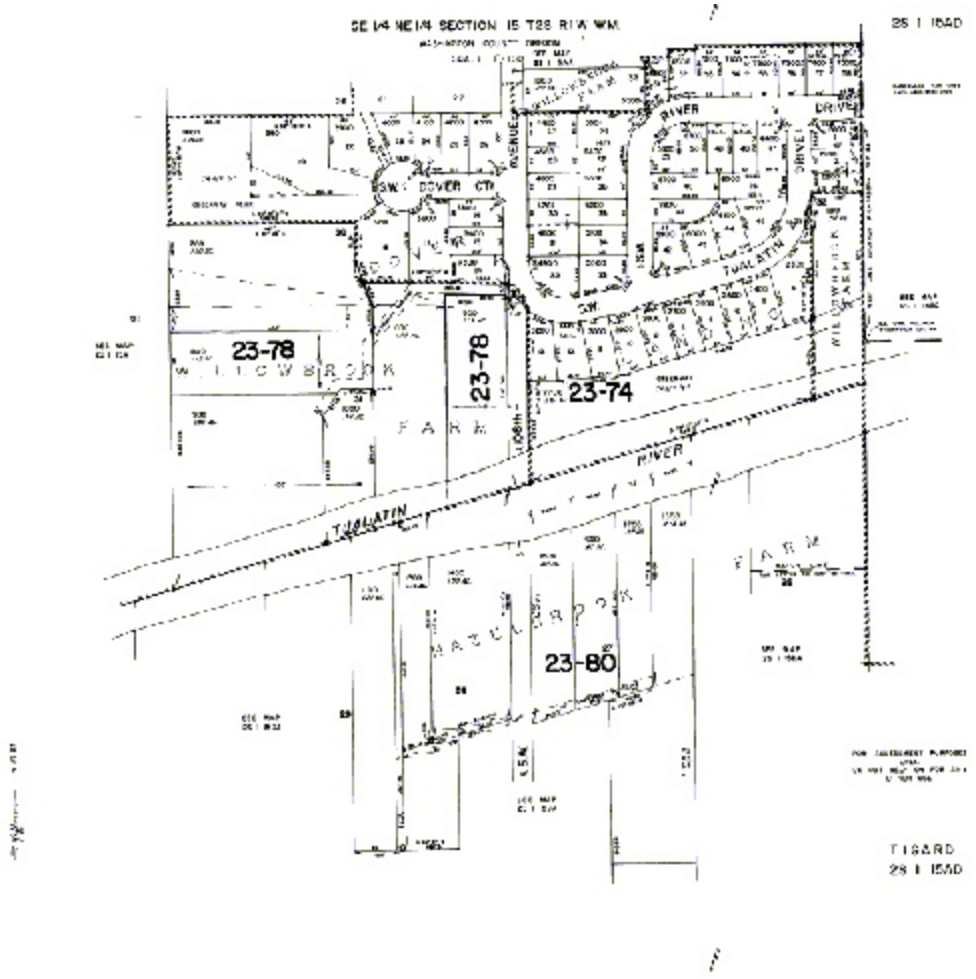


Figure 2: Example Tax Plot Map

For the site sketch, start by drawing your project site based on the tax plot map or other map (Figure 3). A sketch drawn to scale is not required, although buildings and other features should be shown in relative proportion. If a drawing to scale is used, the scale will vary depending on the size of the lot. Good judgment should be used in selecting the size of the base sketch so that it is easy to read and understand after all the details (location of buildings, drainage patterns, and storm water erosion and sediment controls) are added to the base map.

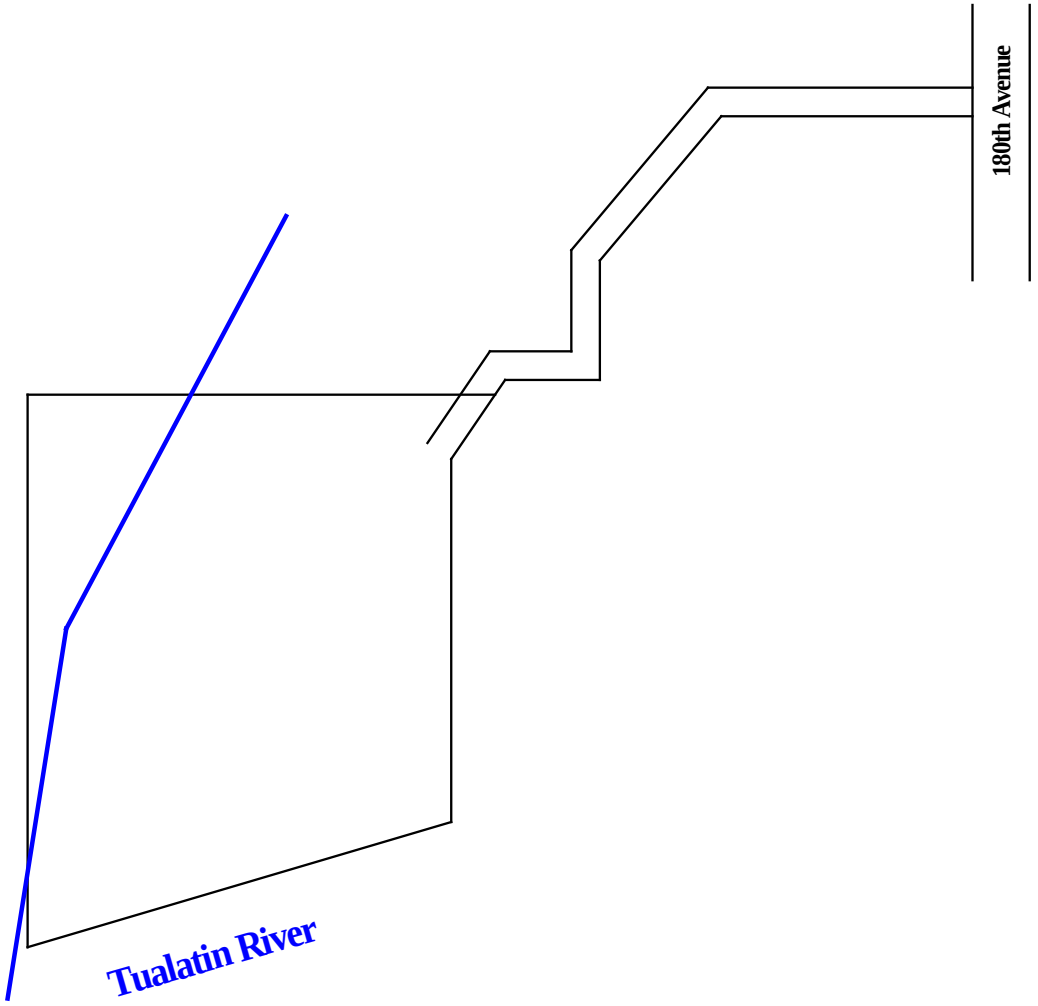


Figure 3: Example Base Map.

Based on the elevations and slope of the land, use arrows to show the surface water runoff flow direction. Prior to development flow direction arrows should be distinguishable from post development runoff flow directions either through different colored arrows ↑ ↑ or through the use of outlined arrows ⇦ for before and filled arrows ⬅ for after construction flow directions or some other method. If there is no significant change in the surface water flow direction, then only one type of arrows is needed. A legend should show which arrows are predevelopment and which are post development. The legend should also contain symbols for the erosion and sediment controls used on the lot. Place a North Arrow on the sketch showing the approximate direction of north.

Legend Example:

↑ Pre-construction surface water flow direction
↑ Post-construction surface water flow direction
-X-X- Sediment Fence


Area Drain Catch Basin Inlet Protection

Additional information to place on the lot sketch includes:

- *Discharge structures or outfalls.* Such structures refer to definite points where storm water runoff is collected and leaves the site. Examples of discharge structures or outfalls include pipes, ditches, channels, tunnels, or conduits. Outfalls should be numbered.

- *Buildings, structures, and pavement.* These portions of the site are considered to be impervious surfaces that will not allow the runoff to infiltrate, or pass into, the natural ground.

- The *location of wells* on the site (such as septic drain fields, seepage pits, dry wells, infiltration trenches, and drinking water wells).

- *Erosion and sediment controls* including sediment fences, compost berms and blankets, biobags, pipe slope drains, temporary lined diversion ditches, check dams, berms, straw wattles, and any other existing or planned controls.

Figure 4 presents an example finished site sketch.

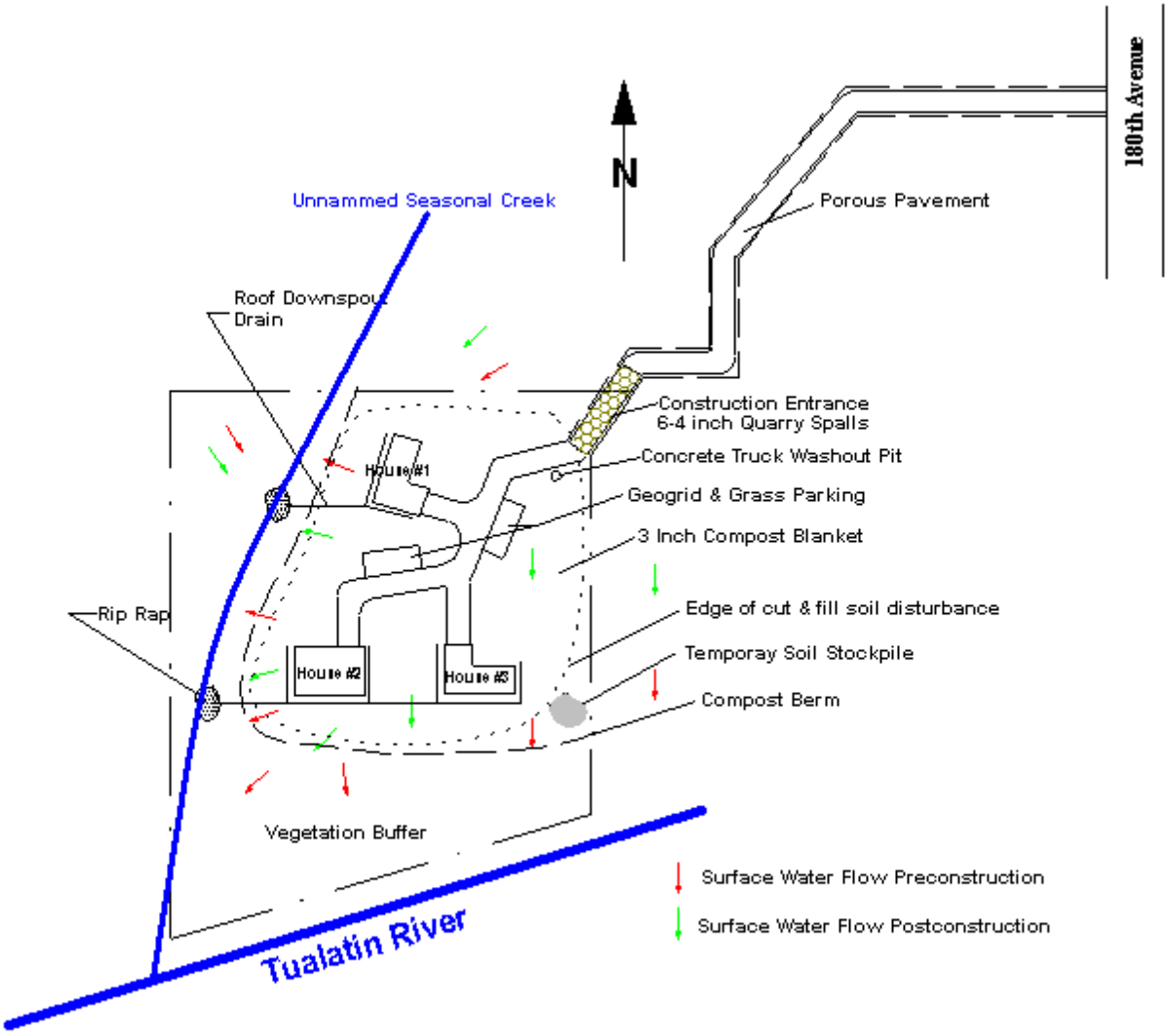


Figure 4: Completed Site Sketch

Storm Water Best Management Practices

The last part of the Erosion and Sediment Control plan is the details of the erosion and sediment controls used on the site. Standard Detail Sheets are provided in the Appendix for typical erosion and sediment controls that would be applicable to individual lot ESCPs. Below are brief descriptions of the various erosion and sediment controls and their typical use with respect to individual lots. If you plan to use other erosion and sediment controls, provide appropriate detail sheets.

Sediment Fencing

Use sediment fencing at the toe (bottom) of slopes and on contour (perpendicular to the slope). Sediment fencing is used to filter heavy sediment from surface runoff. Sediment fencing that is installed cross-contour (down the slope) may create more erosion then the lack of having the sediment fence would cause. Fencing or some other control should also be used along curbs at the toe of the slope to block any curb drain holes that may be exposed.

Straw Wattles

Staked straw wattles (straw contained in netting tube) can be used instead of sediment fencing on shallower slopes or with sediment fencing up slope of the sediment fencing. If installed on relatively loose soil, wattles must be slightly embedded in the soil. The embedding is usually accomplished by walking on it.

Plastic Sheeting

Use plastic sheeting for temporarily excavated material or steep lawn areas until the sod or seeding can take place. Cover stockpiles and disturbed areas with plastic sheeting to prevent contact with rain and runoff. If the ground is too soft to install other types of erosion and sediment controls use plastic sheeting to temporarily stabilize disturbed areas. Use sand bags or other weighted objects tied together at some regular spacing to hold plastic sheeting in place. A lined ditch may be needed to collect and move the clean runoff water away from the area. For stockpiles which have to be accessed a lot during the week during the wet season, sediment fencing should surround the stockpile so that the stockpile does not need to be covered every night but only on weekends and holidays. The stakes in the sediment fence in the traffic area can be removed allowing vehicles to drive over it and then be reinstalled at the end of the day or during heavy downpours.

Compost

Compost can be used as a cover (blanket), in a netted tube (sock), and/or in a berm; and may be either seeded or unseeded. It is typically blown in using special blowers (different from those used to blow bark dust).

Bio Bag Check Dam

Bio bags are netted bags filled with wood chips, and are effective at removing larger heavy soil particles (sediment). They should be used packed tightly or overlapped in concentrated stream flows such as a roadside ditch which may be in front of the lot. They often need to be staked in place. Placement is dependent upon the steepness of the ditch or conveyance; steeper slopes require the more frequent (closer) check dams. This temporary erosion and sediment control can easily be removed and cleaned up when it is no longer needed.

Inlet Protection

Special care should be given to street inlets, as they are a direct conduit to local waterways. If other measures have failed, inlet protection is the last opportunity to protect local streams and surface water. Sediment control should be provided along the site perimeter and at all operational internal storm drain inlets at all times during construction. Active inlets should be treated as if they are part of the site perimeter, because they provide an avenue for sediment and other pollutants to leave the site. Inlet protection must be provided for all active inlets for the duration of construction to keep sediment, trash, and other construction-related pollutants out of the storm drain system. A variety of temporary inlet protection devices are available that are designed to be installed on soil, on pavement, or inside the inlet, including:

- Block and gravel inlet protection;
- Sediment fence (alone or with gravel bags);

- Gravel bags (alone or combined with mesh screen) Important: Sand bags are not typically recommended for inlet protection unless they are being used on a short-term basis to block or divert non-stormwater flows (for example, water used during pavement saw-cutting);
- Weighted fiber rolls (fiber rolls with a gravel core designed for use on pavement);
- Under-grate filters;
- Inlet insert devices; and
- Prefabricated inlet protection devices.

NOTE: Straw Bales are not considered to be an erosion and sediment control best management practice and should not be used for this purpose on the site.

Implementation of ESCP and Permit Requirements

Implementation of the Lot ESCP must begin before any soil disturbance for the lot.

Maintenance Requirements

The following maintenance activities must be implemented.

a. Under no conditions shall sediment intentionally be washed into storm sewers or drainageways. It is to be captured by an erosion and sediment control and removed.
b. For a sediment fence, the trapped sediment must be removed before it reaches one third of the above-ground fence height.
c. For catch basin protection, cleaning must occur when design capacity has been reduced by fifty percent.
d. All erosion and sediment controls not in the direct path of work must be installed before any lot land disturbance.
e. If fertilizers are used to establish vegetation, the application rates must follow manufacturer's guidelines and the application must be done in such a way to minimize nutrient-laden runoff to receiving waters.
f. If construction activities cease for thirty (30) days or more, the entire lot site must be stabilized, using vegetation or a heavy mulch layer, temporary seeding, or another method that does not require germination to control erosion.
g. Any use of toxic or other hazardous materials must include proper storage, application, and disposal.
h. The permittee shall manage abandoned hazardous wastes, used oils, contaminated soils or other toxic substances discovered during construction activities in a manner approved by DEQ.

Availability of ESCP

A copy of the ESC Plan must be available on-site for review by DEQ, local agencies, and the public.

Termination of the Permit Coverage

The following actions must be completed before permit coverage is terminated.

a. Ensure that all disturbed areas of the site are stabilized and that there is no potential for discharge of a significant amount of construction related sediment to surface waters through the stabilization of the site by permanent vegetation, landscaping, buildings, sidewalks, driveway, etc.
b. Ensure that construction materials, waste, and temporary erosion and sediment controls have been removed and disposed of properly. This includes any sediment that was being retained by the temporary erosion and sediment controls.
c. Submit a completed DEQ Notice of Termination Form to the appropriate DEQ office.

Sources of Further Information

- *Construction Stormwater Best Management Practices Manual,* Oregon Department of Environmental Quality, March 2013.
  http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes1200c/BMPManual.pdf

- *Code of Federal Regulations (CFR),* Title 40- Protection of Environment, § 122.26.
  http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl

- Planning and Design Manual, Clackamas Water Environmental Services.
  http://www.clackamas.us/wes/designmanual.jsp

- *Stormwater Erosion and Sediment Control Manual,* City of Portland, BES.
  http://www.portlandonline.com/shared/cfm/image.cfm?id=192327

- *Stormwater Erosion and Sediment Control Manual (1200-C ESCP),* Clean Water Services.
  http://www.cleanwaterservices.org/DocumentCenter/GeneralDocuments.aspx

Appendix: Small Lot Erosion and Sediment Control Plan Template

To use this Appendix to prepare your 1200-C application and Erosion and Sediment Control Plan:

1. Fill out the application form (available online or through local DEQ offices).
2. Provide a location map.
3. Prepare a site sketch.
4. Attach the Standard ESCP Notes and Applicable Standard BMP Detail Sheets (in this Appendix).
5. Include the appropriate permit fee.

Location Map
(place a map showing the location of your site within the subdivision here)

Site Erosion and Sediment Control Plan Sketch
(place your sketch here)

Required ESCP Drawing Standard Notes

INFORMATION REQUIRED ON ESCP DRAWINGS

Inspection Frequency

Site condition	Minimum Frequency
1. Active Period	Daily when stormwater runoff, including runoff from snowmelt, is occurring. At least once every two weeks, regardless of whether or not runoff is occurring.
2. Prior to the site becoming inactive or in anticipation of site inaccessibility.	Once to ensure that erosion and sediment control measures are in working order. Any necessary maintenance and repair must be made prior to leaving the site.
3. Inactive periods greater than fourteen (14) calendar days.	Once every two (2) weeks.
4. Periods during which the site is inaccessible due to inclement weather.	If practical, inspections must occur daily at a relevant and accessible discharge point or downstream location.

1. Hold a pre-construction meeting of project construction personnel that includes the inspector to discuss erosion and sediment control measures and construction limits. (Schedule A.8.c.i.(3))
2. All inspections must be made in accordance with DEQ 1200-C permit requirements.
3. Inspection logs must be kept in accordance with DEQ's 1200-C permit requirements.
4. Retain a copy of the ESCP and all revisions on site and make it available on request to DEQ, Agent, or the local municipality. During inactive periods of greater than seven (7) consecutive calendar days, retain the ESCP at the construction site or at another location. (Schedule B.2.a)
5. All permit registrants must implement the ESCP. Failure to implement any of the control measures or practices described in the ESCP is a violation of the permit. (Schedule A 8.a)
6. The ESCP measures shown on this plan are minimum requirements for anticipated site conditions. During the construction period, upgrade these measures as needed to comply with all applicable local, state, and federal erosion and sediment control regulations. (Schedule A.8.c.ii.(1)(c))
7. Submission of all ESCP revisions is not required. Submittal of the ESCP revisions is only under specific conditions. Submit all necessary revision to DEQ or Agent. (Schedule A.12.c.iii)
8. Phase clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion. (Schedule A 8.c.ii.(1)(d))
9. Identify, mark, and protect (by fencing off or other means) critical riparian areas and vegetation including important trees and associated rooting zones, and vegetation areas to be preserved. Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas. (Schedule A.8.c.i.(1) & (2))
10. Preserve existing vegetation when practical and re-vegetate open areas. Re-vegetate open areas when practicable before and after grading or construction. Identify the type of vegetative seed mix used. (Schedule A.7.b.iii(1) and A.7.b.iii(3))
11. Erosion and sediment control measures including perimeter sediment control must be in place before vegetation is disturbed and must remain in place and be maintained, repaired, and promptly implemented following procedures established for the duration of construction, including protection for active storm drain inlets and catch basins and appropriate non-stormwater pollution controls. (Schedule A.7.d.i and A.8.c)

12. Establish concrete truck and other concrete equipment washout areas before beginning concrete work. (Schedule A.8.c.i.(6))
13. Apply temporary and/or permanent soil stabilization measures immediately on all disturbed areas as grading progresses and for all roadways including gravel roadways. (Schedule A.8.c.ii.(2))
14. Establish material and waste storage areas, and other non-stormwater controls. (Schedule A.8.c.i.(7))
15. Prevent tracking of sediment onto public or private roads using BMPs such as: graveled (or paved) exits and parking areas, gravel all unpaved roads located onsite, or use an exit tire wash. These BMPs must be in place prior to land-disturbing activities. (Schedule A 7.d.ii.(1) and A.8.c.i(4))
16. When trucking saturated soils from the site, either use water-tight trucks or drain loads on site. (Schedule A.7.d.ii.(3))
17. Use BMPs to prevent or minimize stormwater exposure to pollutants from spills; vehicle and equipment fueling, maintenance, and storage; other cleaning and maintenance activities; and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, leftover paints, solvents, and glues from construction operations. (Schedule A.7.e.i.(2))
18. Implement the following BMPs when applicable: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures, spill kits in all vehicles, regular maintenance schedule for vehicles and machinery, material delivery and storage controls, training and signage, and covered storage areas for waste and supplies. (Sch A 7.e.iii.)
19. Use water, soil-binding agent or other dust control technique as needed to avoid wind-blown soil. (Schedule A 7.b.ii)
20. The application rate of fertilizers used to reestablish vegetation must follow manufacturer's recommendations to minimize nutrient releases to surface waters. Exercise caution when using time-release fertilizers within any waterway riparian zone. (Schedule A.9.b.iii)
21. If a stormwater treatment system (for example, electro-coagulation, flocculation, filtration, etc.) for sediment or other pollutant removal is employed, submit an operation and maintenance plan (including system schematic, location of system, location of inlet, location of discharge, discharge dispersion device design, and a sampling plan and frequency) before operating the treatment system. Obtain plan approval before operating the treatment system. Operate and maintain the treatment system according to manufacturer's specifications. (Schedule A.9.d)
22. Temporarily stabilize soils at the end of the shift before holidays and weekends, if needed. The registrant is responsible for ensuring that soils are stable during rain events at all times of the year. (Schedule A 7.b)
23. At the end of each workday soil stockpiles must be stabilized or covered, or other BMPs must be implemented to prevent discharges to surface waters or conveyance systems leading to surface waters. (Schedule A 7.e.ii.(2))
24. Construction activities must avoid or minimize excavation and creation of bare ground during wet weather. (Schedule A.7.a.i)
25. Sediment fence: remove trapped sediment before it reaches one third of the above ground fence height and before fence removal. (Schedule A.9.c.i)
26. Other sediment barriers (such as biobags): remove sediment before it reaches two inches depth above ground height. and before BMP removal. (Schedule A.9.c.ii)
27. Catch basins: clean before retention capacity has been reduced by fifty percent. Sediment basins and sediment traps: remove trapped sediments before design capacity has been reduced by fifty percent and at completion of project. (Schedule A.9.c.iii & iv)
28. Within 24 hours, significant sediment that has left the construction site, must be remediated. Investigate the cause of the sediment release and implement steps to prevent a recurrence of the discharge within the same 24 hours. Any in-stream clean up of sediment shall be performed according to the Oregon Division of State Lands required timeframe. (Schedule A.9.b.i)
29. The intentional washing of sediment into storm sewers or drainage ways must not occur. Vacuuming or dry sweeping and material pickup must be used to cleanup released sediments. (Schedule A.9.b.ii)

30. The entire site must be temporarily stabilized using vegetation or a heavy mulch layer, temporary seeding, or other method should all construction activities cease for 30 days or more. (Schedule A.7.f.i)
31. Provide temporary stabilization for that portion of the site where construction activities cease for 14 days or more with a covering of blown straw and a tackifier, loose straw, or an adequate covering of compost mulch until work resumes on that portion of the site. (Schedule A.7.f.ii)
32. Provide permanent erosion control measures on all exposed areas. Do not remove temporary sediment control practices until permanent vegetation or other cover of exposed areas is established. However, do remove all temporary erosion control measures as exposed areas become stabilized, unless doing so conflicts with local requirements. Properly dispose of construction materials and waste, including sediment retained by temporary BMPs. (Schedule A.7.b.iii(2) and A.8.c.iii)

Standard Erosion and Sediment Control Detail Sheets

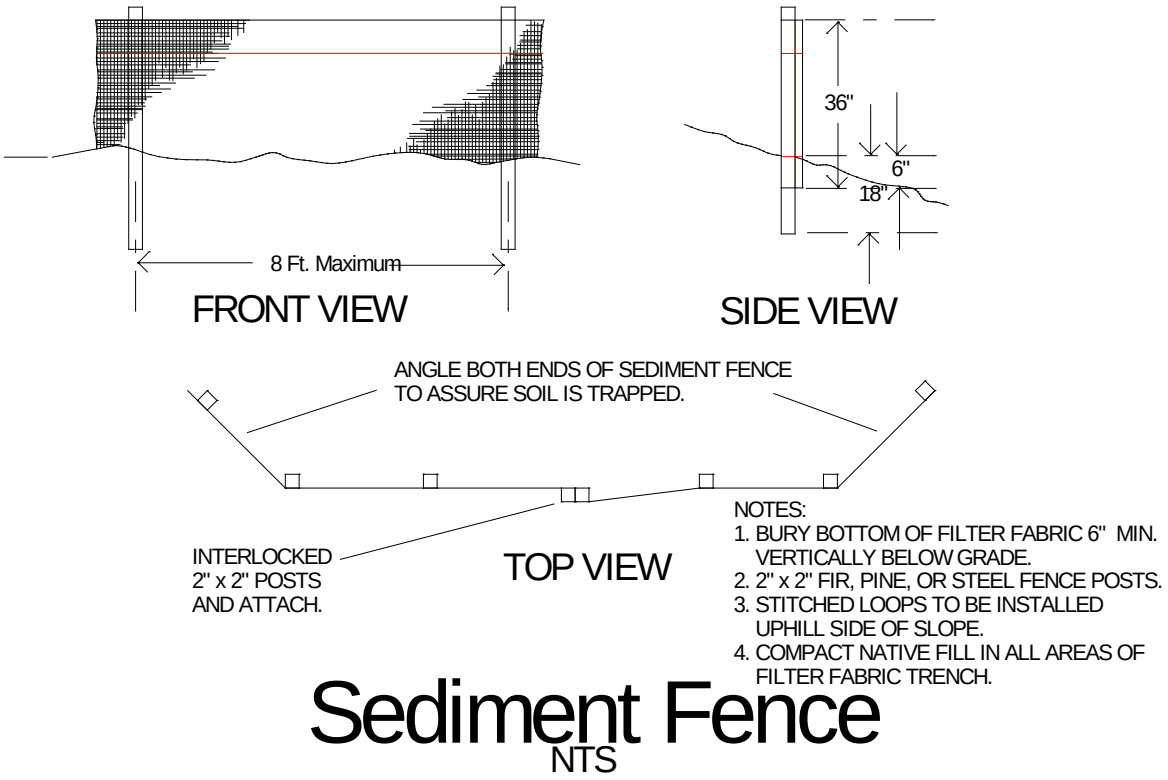


Figure A.1: Sediment (Silt) Fence Detail Sheet.

Sediment fence spacing on slopes should be at no greater distance than:

	<10%	300 ft.
	<15%	150 ft.
	<20%	100 ft.
	<30%	50 ft.
	<50%	25 ft.
Stock pile slope	>50%	25 ft.

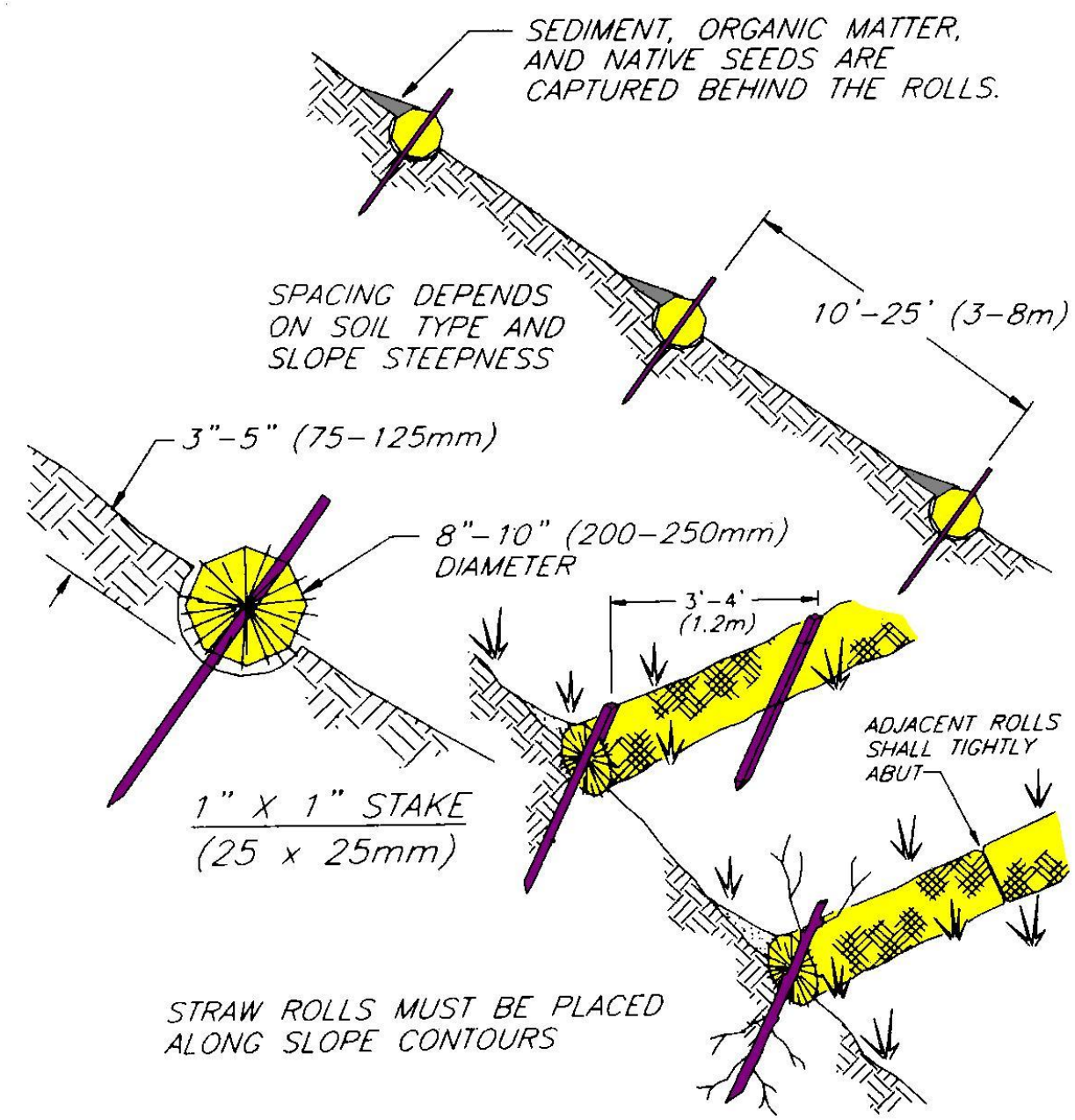


Figure A.2: Straw Wattles Detail Sheet.

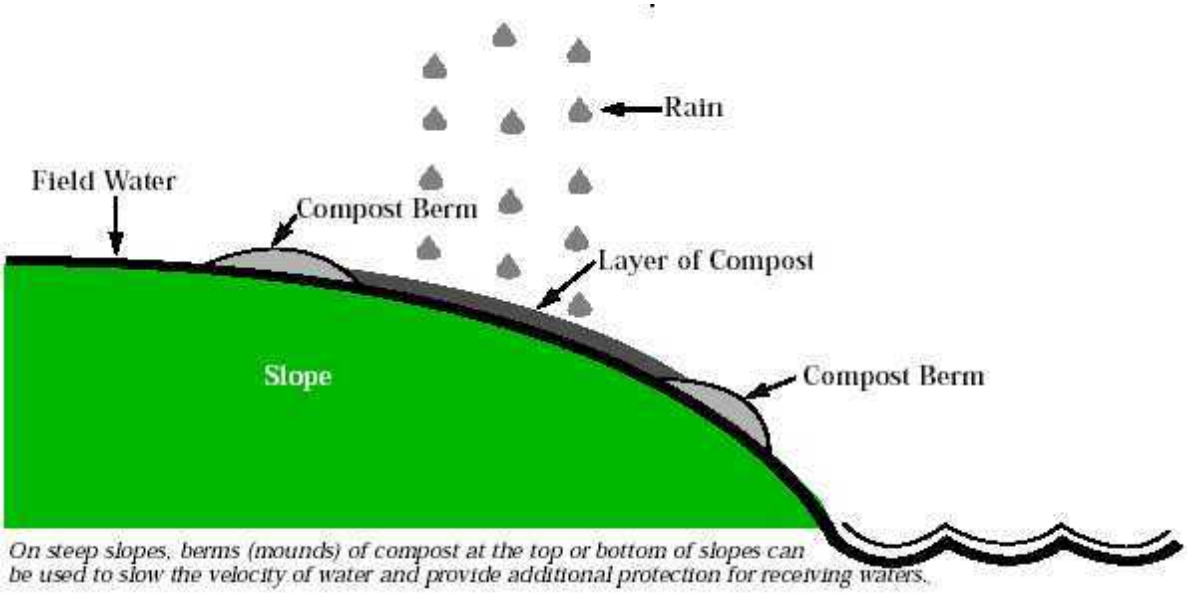


Figure A.3: Compost Berm & Blanket Detail Sheet

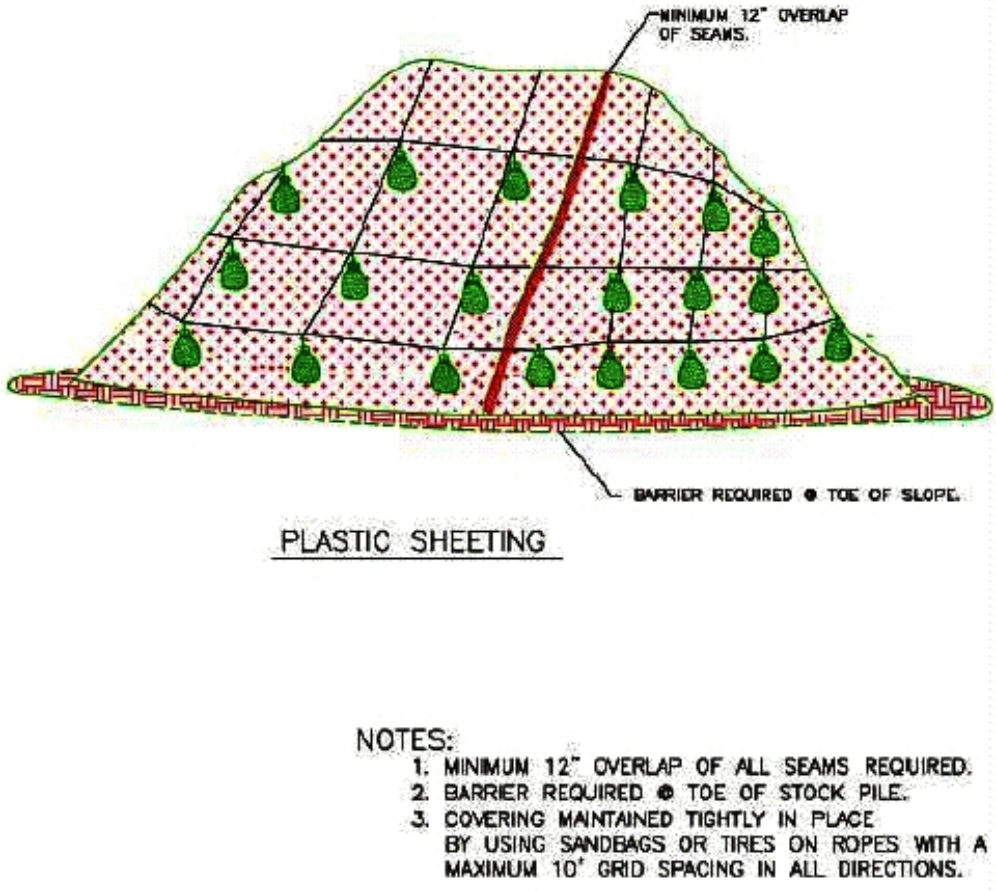


Figure A.4. Stockpile Plastic Sheet Covering Detail Sheet (figure courtesy of Clean Water Services; adapted)

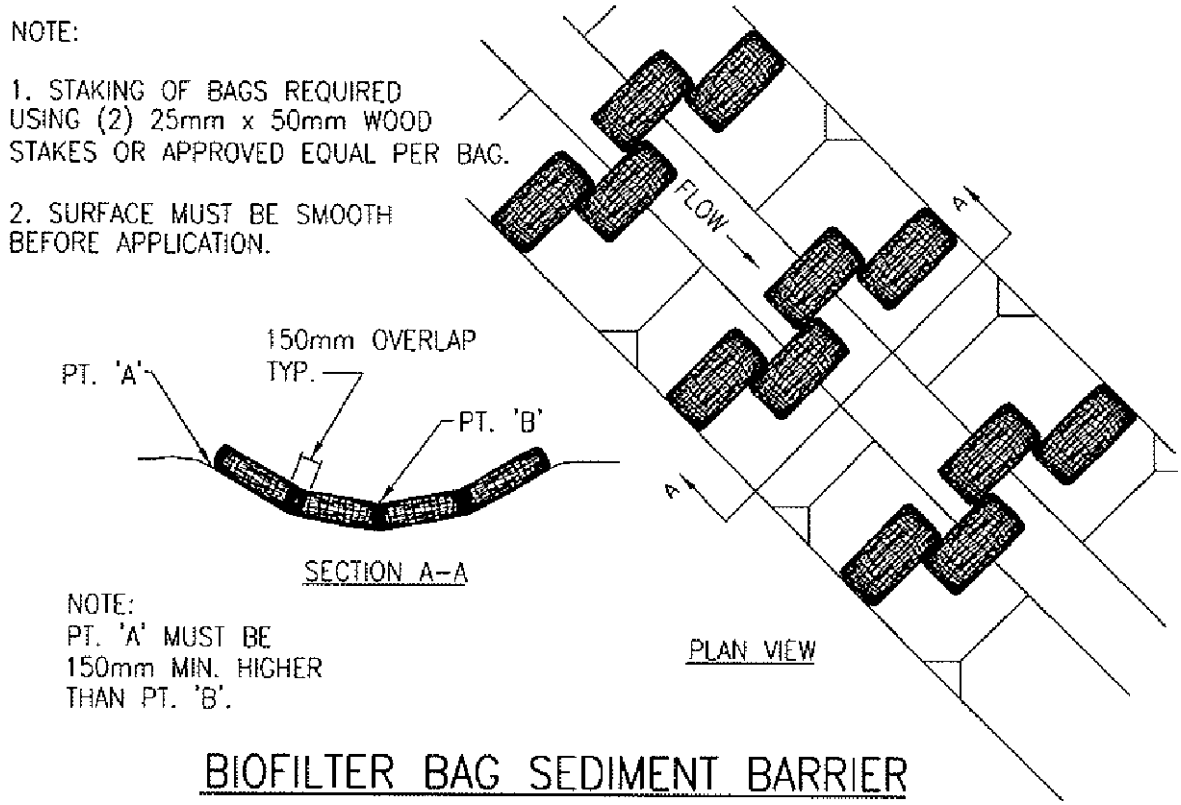


Figure A.5. Bio Bag Check Dam Detail Sheet (figure courtesy of Clean Water Services)