ENGINEERING INFORMATION BULLETIN
Erosion and Sediment Control (ESC)

Sediment runoff from construction sites can harm local creeks and streams. The District of Saanich's stormwater system connects to waterways that support salmon, trout, and other aquatic life. Proper erosion and sediment control (ESC) practices helps prevent pollution and protects these ecosystems.

Effective ESC practices are required for any development or construction project in the municipality that disturbs land or alters drainage patterns. This information bulletin provides best management practices to minimize sediment and erosion at your site. Implementing proper ESC not only safeguards aquatic life and the environment but also saves time and money by preventing costly cleanup, delays and repair efforts.

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Access and Egress Control

- Prevent debris tracking from construction vehicles onto the municipal roadway. A single point of access/egress for the site controls traffic and minimizes ESC maintenance. A site access pad consisting of uniform drain rock with geotextile fabric underlay aids in the removal of debris from vehicle tires as they exit the site **(Figure 1)**.
- Grade access road into the site and towards a sediment trap to prevent runoff from entering municipal roadways **(Figure 2)**.
- Sweep roadways fronting the site frequently to prevent any tracked soil from being further displaced onto the road or being carried into catch basins or ditches.
- Regularly inspect and maintain the site access pad and periodically replace or top-dress with additional gravel when it is not achieving the intended function.
- Wheel washing stations enhance sediment removal for complex sites with high traffic.

Site Perimeter Control

- Silt fencing **(Figure 3 & 4)** or other sediment barriers around the perimeter of the construction site control sediment transport and runoff in times of rainfall or high wind.
- Interceptor ditches provide containment of sediment laden rainfall runoff and permit water to infiltrate while containing the sediment onsite.

FIGURE 1 - ACCESS ROAD SECTION DETAIL

Access road section detail

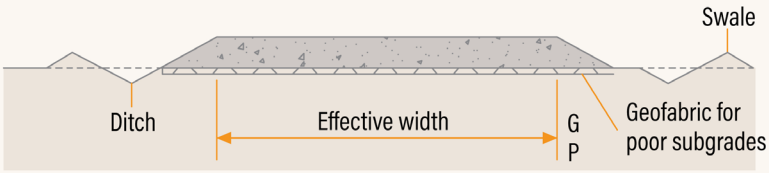


FIGURE 2 - SEDIMENT TRAP SECTION DETAIL

Sediment trap section detail

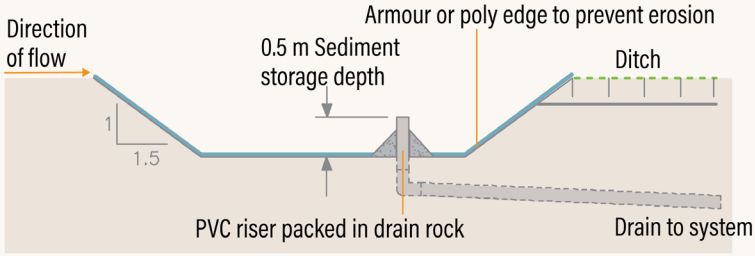
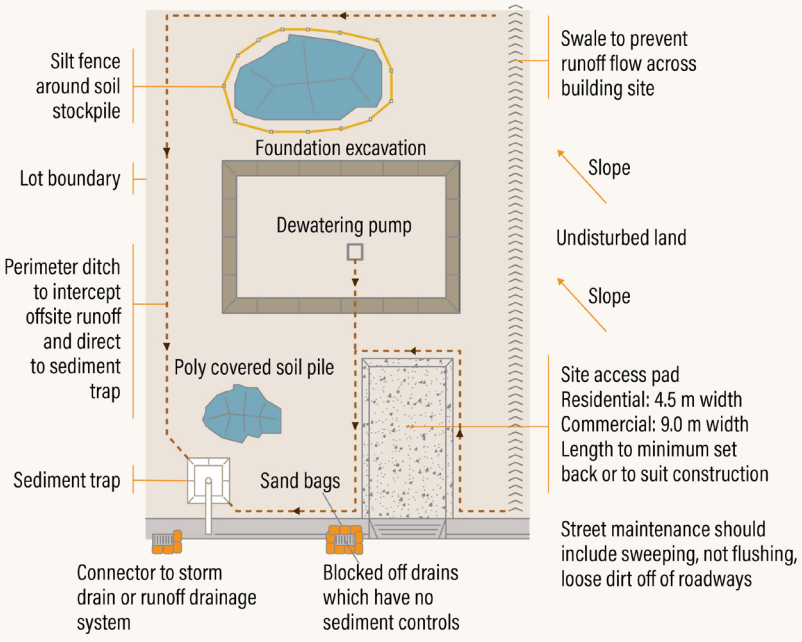


FIGURE 3 - LOT PLAN



Erosion and sediment control measures shall not impact bylaw protected trees, their roots or canopy. A tree permit from Saanich Parks may be required. For more information, please contact ***TreePermit@saanich.ca.***

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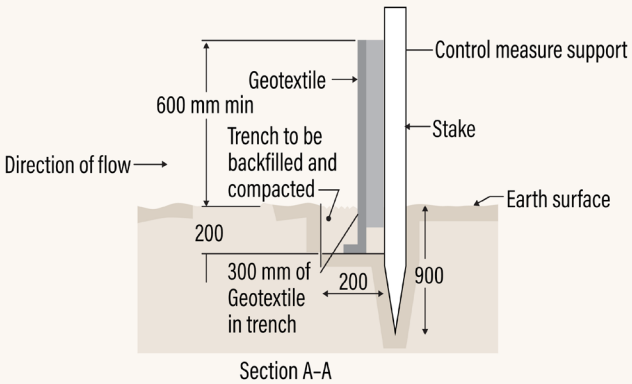
Management of Exposed Soils

- Phase Construction: Minimize soil exposure, especially during rainy periods. Install erosion control measures before construction begins.
- Clearing and Grading: Clear vegetation in phases to minimize soil exposure. Where possible, leave vegetation intact in areas where work is not immediately required and flag or fence it off to prevent disturbance.
- Stockpile Locations: Locate soil stockpiles away from storm drains or watercourses to reduce the opportunity of sediment runoff.
- Stabilize Exposed Soils: Stabilize exposed soils through revegetation or other means as soon as possible, and cover stockpiles when not in use to prevent sediment transport during rainy and windy conditions.
- Protect Steep Slopes: Avoid cutting and grading steep slopes (>15 %). Redirect water away from slopes and apply erosion control methods (straw matting, hydroseed) to prevent sediment-laden runoff.

FIGURE 4 - SILT FENCE DETAIL



Section A-A

Storm Drain Inlet Protection

The District of Saanich **Watercourse and Drainage Bylaw** defines prohibited waste pollutants. Among them are excessively suspended solids like those found in dirty or silty rainwater runoff. Practices that can mitigate poor discharge water quality include:

- Sediment traps, ponds, or other barriers contain runoff before it reaches storm drains. These facilities capture and treat sediment-laden water prior to discharging offsite by providing settling time. Check them regularly and remove built-up sediment as needed.
- Sediment Barriers: Installed around excavation or grading areas to prevent sediment from escaping such as straw bale, straw wattles or rock mulch berms.
- Check Dams: Temporary dams in ditches and channels throughout site to slow water flow and promote sediment settlement and water infiltration.
- Catch Basin Protection such as filter fabric socks and “Donuts” around catch basin grates remove sediment while allowing water to pass through them. Regular maintenance to remove built up sediment is needed to sustain functionality.

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Inspection and Monitoring

ESC measures are not a “set-it and forget-it” system. They require continual monitoring, regular inspections throughout the project to ensure they are functioning as intended, and repairs and replacement when their functionality is no longer effective.

Effective ESC management accounts for the following:

- Weather: Prepare for rainfall by ensuring all measures are in place and in good working order. Conduct follow-up inspections after heavy rainfall and make adjustments to ESC measures that are damaged.
- Maintenance: Repair damaged controls immediately and remove sediment build-up in traps or barriers promptly. Ensure additional erosion control materials are available on site when a replacement is needed.
- Training: Inform work crews of the purpose and benefits of ESC measures, their proper installation and their maintenance and management requirements.

Site Specific Considerations

Effective ESC management begins at the construction planning stage. The owner/developer is responsible for reviewing site specific conditions to determine an appropriate construction implementation plan. ESC measures need to be tailored to the specific site to be most effective.

Onsite conditions, such as terrain slopes, soil types, and proximity to watercourses or environmentally sensitive areas may require more advanced planning, permitting, and ESC measures.

How does sediment laden water affect aquatic life?
Sediment in water bodies can reduce the amount of sunlight reaching aquatic plants, clog or abrade fish gills causing suffocation, smother aquatic feeding sites and spawning areas and interfere with the ability of fish to navigate. Sediment can also carry other pollutants such as heavy metals or excess nutrients that are toxic to aquatic life.

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Bylaws and Regulations

The District of Saanich **Watercourse and Drainage Bylaw**, 1996, No 7501 states in:

Section 3 that **"***No person shall foul, […] a stream, creek, waterway, watercourse, waterworks, ditch, drain or sewer, whether or not it is situated on private property*," and

Section 7a that "*No person shall discharge or allow or cause to be discharged into a storm sewer or watercourse any domestic waste, trucked liquid waste or prohibited waste*"

The **Federal Fisheries Act** prohibits the discharge of harmful substances into any fish-bearing watercourse or any place which such substances may enter fish-bearing waterways.

Failure to implement or maintain ESC measures may result in:

- Fines and penalties under municipal, provincial or federal laws
- Stop Work orders
- Legal action in cases of significant environmental harm

Please note that this bulletin is provided as a reference guide. It is the responsibility of the applicant, owner, developer, or contractor of the project to ensure compliance with all applicable bylaws and regulations.

Resources and Contacts

- International Erosion Control Association (IECA) Design Standards
- Department of Fisheries & Oceans Canada (DFO) - Land Development Guidelines for the Protection of Aquatic Habitat (1993)
- Engineers & Geoscientists of BC (EGBC) Professional Practice Guideline – Erosion and Sediment Control Version 1.0 (2024)

For more information on Erosion and Sediment Control requirements or for guidance on best practices, please contact Saanich Engineering at engineering@saanich.ca

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