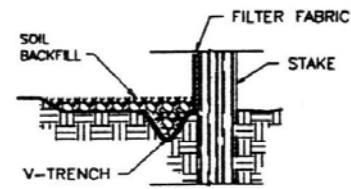


Commonly Used SESSC Measures

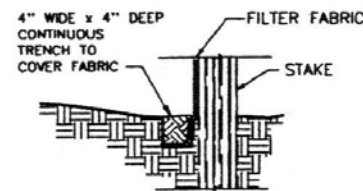
SILT FENCES

HOW TO INSTALL A SILT FENCE

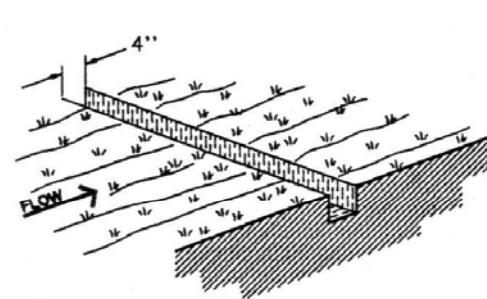
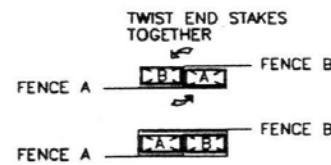
TWO TYPES OF TRENCHES



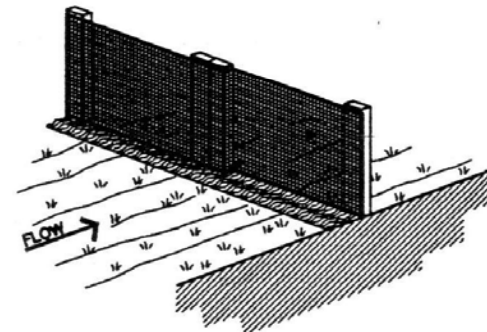
1. V-TRENCH



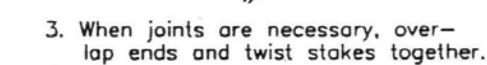
2. FLAT BOTTOM TRENCH (TYPICAL)



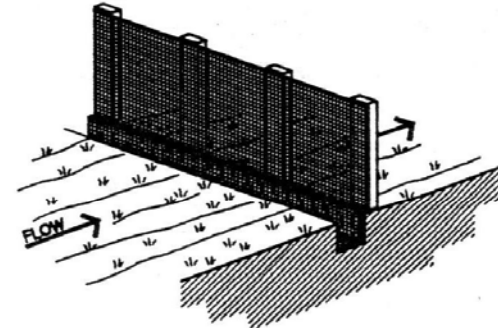
1. Excavate a 4"x4" trench along the contour.



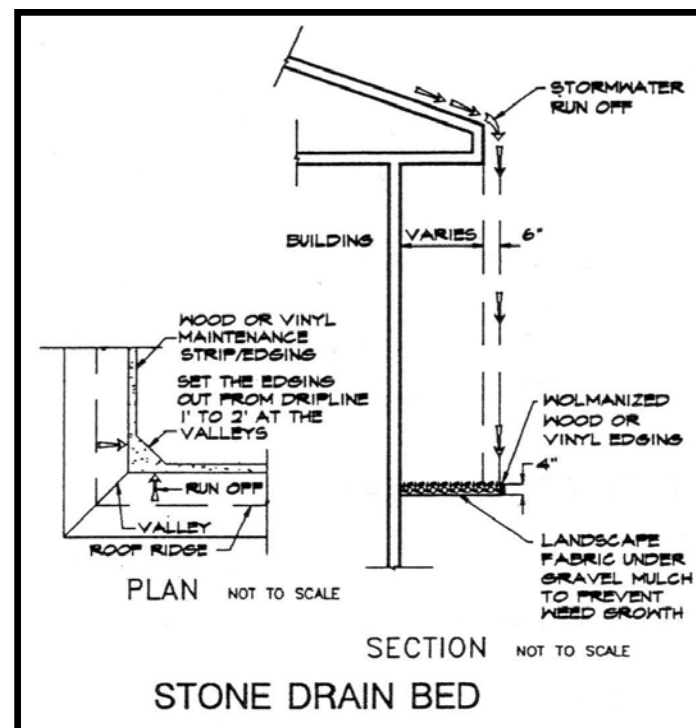
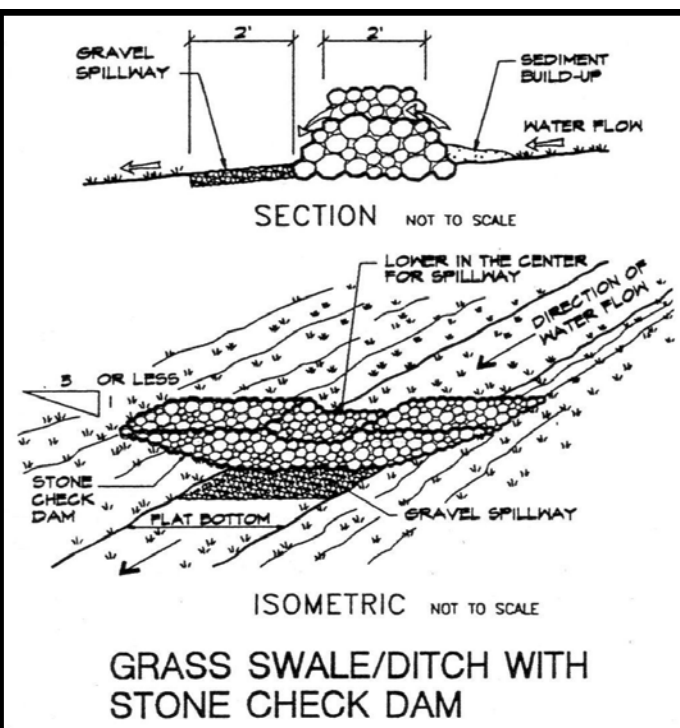
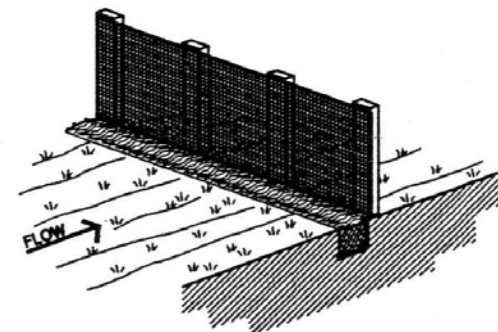
2. Stake the silt fence on downslope side of trench. Extend 8" of fabric into the trench.



3. When joints are necessary, overlap ends and twist stakes together.

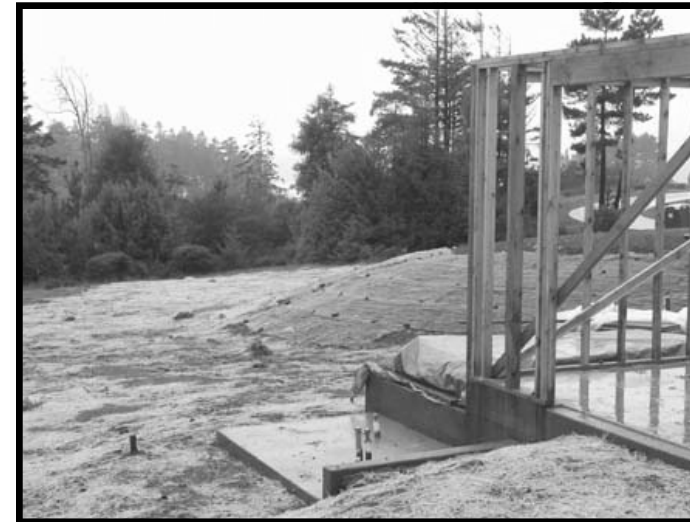


4. Backfill and compact the excavated soil.



Soil Erosion, Sedimentation & Stormwater Control

SESSC Informational Guide: Maintaining Clean Water in Benzie County



Controlling erosion protects water quality.

SOIL EROSION AND SEDIMENTATION ARE COSTLY PROBLEMS...

Eroding construction sites are a leading cause of water quality problems throughout Northern Michigan. For every acre under construction, about a dump truck and a half of soil washes into a nearby lake or stream unless the builder uses soil erosion and sedimentation controls. Problems caused by this sediment include:

- **Increased local taxes:** Cleaning up sediment in streets, sewers and ditches adds extra costs to local government budgets. The expense of dredging sediment from lakes, harbors and navigation channels can also be a heavy burden for taxpayers.
- **Lower property values:** Property values are damaged when a lake or stream fills with sediment. Shallow areas encourage weed growth and create boating hazards.
- **Poor fishing:** Silt and sediment smothers gravel beds where many fish and aquatic insects find food and lay their eggs.
- **Nuisance weed & algae growth:** Sediment carries excess nutrients, or fertilizers, that fuel weed and algae growth, making our waters undesirable for swimming, boating and fishing.

CONTROLLING SOIL EROSION & SEDIMENTATION IS EASY...

Soil erosion and sedimentation control is important even for home sites of an acre or less. The materials needed are easy to find and relatively inexpensive: *silt fence, stakes, plastic tubes, topsoil, grass seed and mulch*. Putting these materials to use is a simple process. Some controls which may be needed include:

- **Preserving** existing trees and vegetation where possible to prevent erosion;
- **Silt fence** to trap sediment on the downslope sides of the lot;
- **Soil piles** located away from roads and waterways whenever possible;
- **Immediate cleanup** of sediment carried off-site by vehicles or storms;
- **Stone drain beds or downspout extenders** to prevent erosion from roof runoff; and
- **Revegetate** bare soils as soon as possible using native plants, if feasible. Contact the Benzie Conservation District at 882-4391 for suggestions.

A SESSC permit is needed if your project:

- is within 500 feet of any lake or stream.
- disturbs more than one acre of land.
- is an industrial or commercial, or subdivision development, regardless of size, location, or environmental sensitivity.
- is located within 25 feet of a regulated wetland.
- plans a driveway with slope greater than 10%.
- is located in an area with clay soils (high runoff).

A permit from the Michigan Department of Environmental Quality is required for sites within:

- the high watermark of a lake or stream
- a regulated wetland
- a high risk erosion area
- a critical dune area

For more information, contact Benzie County's Soil Erosion & Sedimentation Control Agent at 882-9674.

Soil Erosion, Sedimentation and Stormwater Control Practices for Home Sites

Use this sample as a guide for submitting your own SESSC plan

Home owners are required to retain on their property all additional runoff generated by the development of the site.
Impervious areas which generate additional runoff include: roof tops, sidewalks, driveways and decks.

SILT FENCE

- Available from most construction supply companies.
- Install silt fence prior to any excavation.
- Install on downslope sides of the site, parallel to the contour of the land.
- Extend ends upslope enough to allow water to pond behind the fence.
- Bury 8 inches of fabric into trench (*see back page*).
- Leave no gaps. Intertwine sections of silt fence.
- Inspect and repair once a week or after every ½ inch rain.
- Remove sediment if deposits reach half of fence height.
- Maintain until vegetation is established.

DRAINAGE SWALE AND CHECK DAMS

- Grassed drainage swales or waterways reduce the runoff velocity of stormwater and allow for infiltration into the soil.
- Check dams, made of stone, are placed on the bottom of drainage swales, across the path of stormwater flow, to assist with water velocity reduction and infiltration.
- The side slope of the swale should be 3:1 or flatter if the site allows.
- To prevent erosion, the middle of the dam should be lower than the outer edges at natural ground elevation.

ROOF RUNOFF

- To manage stormwater runoff from roof tops, install stone drain beds or gutters with downspout extenders. This limits erosion and protects surrounding vegetation.

Stone Drain Beds

- Place a strip of small stones 4-6 inches deep, extending at least 6 inches past the drip line surrounding your home or structure.
- Do not use stone drain beds when basements or crawlspaces are built in clay or sandy loam soils.

Gutters with Downspout Extenders

- Use plastic drainage pipe to direct water to a grassed or other appropriate area for infiltration.

SOIL PILES

- Locate away from any downslope street, driveway, stream, lake, wetland or drainageway.
- Temporary seed such as annual rye or winter wheat is recommended for topsoil piles.

WIND EROSION

- During high winds, exposed soil may need to be watered down to prevent soil from leaving the site.

SEDIMENT CLEANUP

- Immediately sweep or scrape up soil tracked on the road.
- After all storms, clean up any soils washed off-site.

SEWER INLET PROTECTION

- Protect on-site storm sewer inlets with silt fences.
- Inspect, repair and remove sediment deposits after every storm.

PRESERVE EXISTING VEGETATION

- Wherever possible, preserve existing trees, shrubs and other vegetation.
- Minimize the area of disturbance near lakes, streams and wetlands.
- To prevent root damage, do not grade, place soil piles or park vehicles near trees marked for preservation.
- Place plastic mesh or snow fence barriers around trees to protect the area below the branches.

REVEGETATION

- Seed and mulch or place sod on bare soil as soon as possible.
- Establish buffer strips of undisturbed vegetation at least 25 feet wide adjacent to water bodies for water quality protection.
- Plant native species, if possible. Contact the Benzie Conservation District at 882-4391 for suggestions.
- Consider attractive, low maintenance alternatives to traditional lawns such as native ground covers or wildflowers. Plant quick growing annual rye grasses to stabilize soils until other vegetation is established.
- Generally, the best times to sod or seed are early fall (Aug. 15 to Sept. 15) or spring (May to June).
- Summer revegetation should be attempted if project is completed then. More frequent watering is needed.
- If construction is completed after September 15, permanent seeding should be delayed.
- Sod may be laid until November 15.
- Temporary seed (such as rye or winter wheat) may be planted until October 15, if weather permits.
- Silt fences must be maintained until the disturbed area is stabilized.

SEEDING AND MULCHING

- Spread 4 to 6 inches of topsoil.
- Fertilize and lime only if needed according to a soil test. Contact Benzie County's MSU Extension office at 882-0025 for more information about soil testing.
- Seed with an appropriate mix of grasses for the site.
- Rake lightly to cover the seed with ¼ inch of soil. Roll lightly.
- Mulch with straw. Two or three bales will cover approximately 1000 square feet.
- Anchor mulch using biodegradable netting, or on slopes >12%, mulch blankets are recommended.
- Water gently ever day or two to keep soil moist. Less watering is needed once grass is 2 inches tall.

SODDING

- Spread 4 to 6 inches of topsoil.
- Fertilizer and lime only if needed according to a soil test. Contact Benzie County's MSU Extension office at 882-0025 for more information about soil testing.
- Lightly water the soil.
- Lay sod. Tamp or roll lightly.
- On slopes, lay sod starting at the bottom and work toward the top, laying in a brickwork pattern. Peg each piece down in several places.
- Initial watering should wet soil 6 inches deep (or until water stands 1 inch deep in a straight-sided container). Then water lightly every day or two to keep soil moist, but not saturated, for two weeks.

