What is an Erosion and Sediment Control Plan?

Few activities cause the magnitude of soil disturbance in urbanized areas that construction sites do. An Erosion and Sediment Control (ESC) Plan is the first step in protecting the soil resource on a construction site.

Soil erosion and the resulting sedimentation are a leading cause of water quality problems in Ohio. Therefore, through the Geauga County Commissioners the Geauga Soil and Water Conservation District (SWCD) developed the Geauga County Water Management and Sediment Control Regulations (WMSC) in order to protect the county's water resources by ensuring that the proper stormwater and erosion and sediment control measures are in place. When erosion and sediment control measures, or Best Management Practices (BMPs), are installed and maintained correctly they help prevent soil from leaving the site.

The Geauga SWCD has the authority through the Geauga County WMSC Regulations, to regulate construction sites to ensure sediment remains on site. ***All homeowners on any size lot are required to comply with these provisions,*** regardless of whether an Erosion and Sediment Plan for individual lot construction is required by your local zoning department. Check with your local zoning department to determine if this is required. The Ohio EPA through the NPDES Phase 2 Permitting program requires a permit to be obtained for all projects disturbing over one (1) acre of land. This includes landscaping and grading. Contact the Ohio EPA at 330-963-1145 for details of these requirements. The homeowner is ultimately responsible if these measures are not properly in place.

This brochure is designed to illustrate the steps involved in generating an Erosion and Sediment Control Plan. A sample plan is provided to help with the use of the proper terminology and illustrations. If required by your local zoning, please contact the Geauga SWCD to set up an appointment for assistance in the development of an Erosion and Sediment Control Plan. For further questions or a copy of the Geauga County WMSC Regulations, contact the Geauga SWCD.

ESC Plan Checklist

Items required to be contained in the ESC Plan

- **Contact Information** for the landowner, the builder and/or engineer; and address or sub lot number.
- **Permit Verification**, if wetlands or identified (named) streams are present on your lot, a permit may be required from the U.S. Army Corps of Engineers and/or the Ohio Environmental Protection Agency. Contact both agencies if there is any question as to the need of a permit.
- **Existing Site Conditions** including existing contour lines; vegetation, ditches, springs, streams, lakes, wetlands, woods, agricultural fields; location of downstream lakes and wetlands within 1000' of the project; and, existing drainage patterns including direction of flow; and buildings, drives, or structures.
- **Grading Plan** showing limits of disturbance, areas of excavation and fill with final contours.
- **Proposed Construction** including structure and drive location, and septic location in relation to natural features and property lines.
- **Erosion and Sediment Control Measures** showing location, type and construction detail of:
  - **Construction entrances**—*stoned construction entrances reduce tracking of sediment onto streets*
  - **Silt fence**—*can be used to filter storm water runoff; must be entrenched to be effective*
  - **Stockpile placement and protection**—*build away from critical areas such as streams, and seed immediately to protect from erosion*
  - **Seeding mixtures**—*Seeding areas such as drainage swales, areas near curb inlets, and buffer areas near streams and waterways is an effective erosion control measure and requires little maintenance*
  - **Mulching**— *effective erosion control when seeding is not practical*

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Geauga Soil & Water Conservation District

14269 Claridon-Troy Rd.
PO Box 410
Burton, Ohio 44021

440-834-1122
Fax: 440-834-0316
gswcd@geaugaswcd.com
website: http://www.geaugaswcd.com

Geauga SWCD Mission:
"To conserve, protect, and enhance the resources of Geauga County by providing leadership, education, and assistance to all."

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Geauga Soil and Water Conservation District

Homebuilder Plan Requirements

A Landowner's Guide for Developing an Erosion & Sediment Control Plan

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Erosion and Sediment Control Measures

Below are *some* examples of Best Management Practices (BMPs) that should be included in your ESC Plan. These BMPs should be illustrated on your plan, and the specifications included in this brochure should be attached as well. In addition to these Erosion and Sediment Control measures, care should be taken to handle post-construction stormwater runoff.

Silt Fence

Silt Fence is a sediment control structure, made of geotextile fabric, that restricts the movement of disturbed soil.

- *Install before upslope excavation or grading begins*
- *Place along the contour of the land and at least five feet from the base of the slope*
- *Cut a trench six (6) inches deep and bury the bottom eight (8) inches of the fabric*
- *Stretch the fabric tight, placing the support stakes on the downslope side*
- *Backfill the trench and compact the soil*
- *All soil stockpiles must have silt fence place around them to prevent soil erosion*
- *Inspect once a week, and after a storm event*

Post-Construction Stormwater Controls

Controls for post-construction stormwater runoff should be indicated on the drawing to control the storm water discharges and potential pollutants contained within it. These controls may include but are not limited to:

- *Well-vegetated buffers where runoff can pass through before entering adjacent properties and streams.*
- *Placement of rock lined outlets at drain pipe outlets from the house to disperse (spread out) discharge before entering a neighbor's property or streams.*
- *Permanent seeding on all bare areas of soil.*

Construction Entrance

A Construction Entrance is a graveled area located where vehicles enter and leave a land disturbance site. Construction Entrances provide an area where mud can be removed from vehicle tires before entering a public road. The motion of the vehicle as it moves over the gravel construction material dislodges the caked mud.

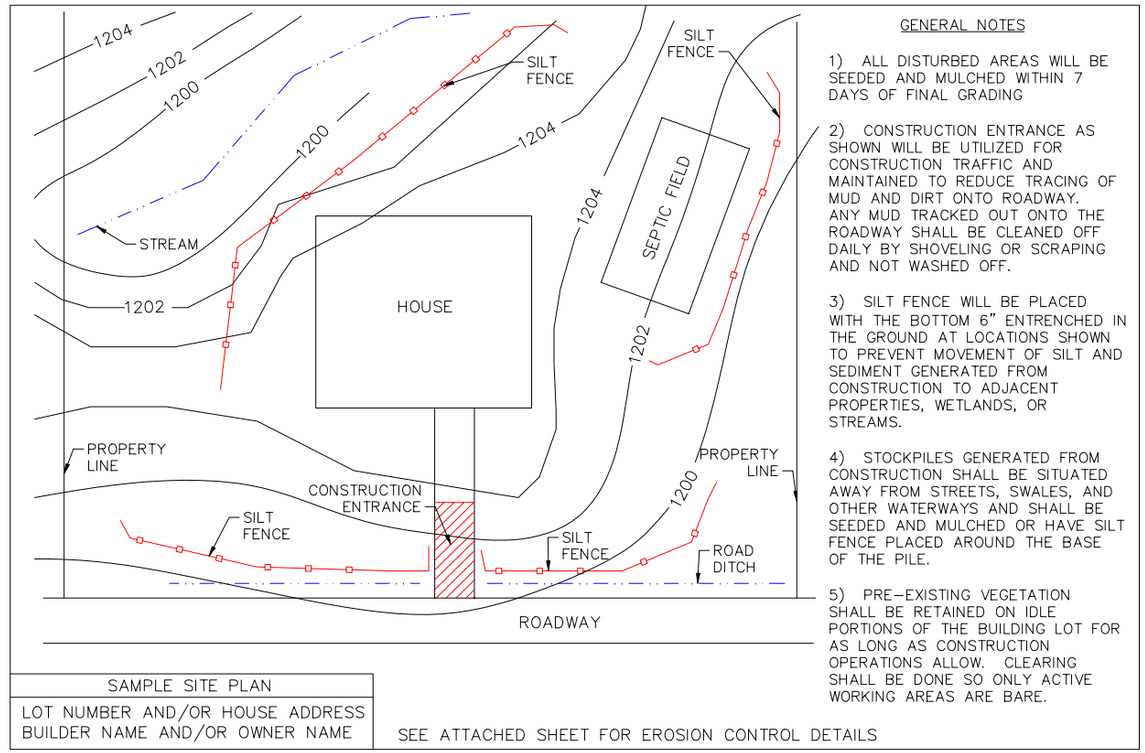
- *Construct the drive at least ten (10) feet wide and at least fifty (50) feet long*
- *Place two (2) to three (3) inch stone over a stable subgrade*
- *Add stone as needed to maintain six (6) inches of clean depth*
- *A pipe or culvert should be constructed under the entrance if needed to prevent surface water flowing across the entrance*

Temporary Seeding

Temporary Seeding is an erosion control practice that is needed on all bare areas to provide protection against soil movement. It is not intended to be a permanent lawn seeding, but rather a temporary erosion control practice.

- *The seeding needs to be made within seven (7) days on areas that are not planned to be disturbed for 21 days or more*
- *All soil stock piles must be temporarily seeded*
- *Apply as early in the day as possible, but no later than the end of the day, to benefit from moisture still in the surface layer*
- *Protect with straw mulch at the rate of two (2) tons per acre*
- *Apply 650 pounds of 10-10-10 fertilizer per acre*

Sample Erosion & Sediment Control Plan
For Individual Residential Lot Construction



Construction Sequence

The following steps should be followed during the construction process:

1. Evaluate the Site
   - *Identify vegetation to be saved/ sensitive areas*
2. Install Perimeter Controls
   - *Protect down-slope areas*
3. Prepare the Site for Construction
   - *Stockpile the topsoil*
4. Build the Structures and Install the Utilities
   - *Install sewage disposal system*
5. BMP Maintenance
   - *Maintain all BMPs until construction is complete*
6. Revegetate the Site
   - *Spread topsoil/ seed bare areas*
7. Remove Remaining Temporary Control Measures
   - *Once seed is established, remove remaining BMPs*

Planning Tips:
Questions to Ask

Where should I direct the extra water?
Direct stormwater to existing vegetation, seeded areas, or buffer areas.

How should I grade the lawn areas?
Leave undulations and micro-pool areas during grading to slow down runoff. Bulldoze perpendicular to the flow of water so that flow is broken up and slows down.

Where does my runoff water go?
Locate receiving streams, ponds, wetlands, and sewer inlets and ensure they are protected.