

# EROSION AND SEDIMENT CONTROL FOR HOME BUILDERS 2004 Edition



## Erosion Is a Costly Problem

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

**Flooding** - Uncontrolled stormwater & surface runoff from sediment filled streams.

**Local taxes** - Cleaning up sediment in streets, sewers and ditches adds extra costs to local government budgets.

**Dredging** - The expense of dredging sediment from lakes, harbors and navigation channels are a heavy burden for taxpayers.

**Lower Property Values** - Neighboring property values are damaged when a lake or stream fills with sediment. Shallow areas encourage weed growth and create boating hazards.

**Poor Fishing** - Muddy turbid water drives away fish that rely on sight to feed. As it settles, sediment smothers gravel beds where fish like small mouth bass, find food and lay their eggs.

**Nuisance Growth of Weeds and Algae** - Sediment carries fertilizers that fuel algae and weed growth.

## Controlling Erosion

**Erosion control is important for all construction sites.** The materials needed are easy to find and are relatively inexpensive - straw bales or silt fence, stakes, rocks, slope drains, grass seed, mulch or geo-textiles.

Putting these materials to use is a straight forward process. Only a few controls are needed on most sites, however all erosion controls must be **maintained regularly**.

- **Use of slope drains and stilling basins** on all vertical drops;
- **Use of riprap** at the outflow end of all storm drains and stilling basins shall be installed.

## Soil Piles

- **Locate** away from any down-slope street, driveway, stream, lake, wetland, ditch or drainage way.
- **Stabilize** with mulch and/or vegetation. Temporary seed such as annual rye or winter wheat is recommended for topsoil piles.

## Sediment Cleanup

- **By the end of each workday, sweep and scrape up soil tracked onto the road.** Stabilize with mulch and/or vegetation on all areas at finish grade while maintaining normal erosion controls.

## Preserving Existing Vegetation

- Wherever possible, preserve existing trees, shrubs or vegetation.
- 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 their branches.

## Re-vegetation

- Seed and mulch, or sod bare soil as soon as possible. Vegetation is the most effective way to control erosion.
- Exposed areas left undisturbed for **greater than two weeks must be vegetated.**

Anchor straw or hay mulch immediately after application with one of the following methods:

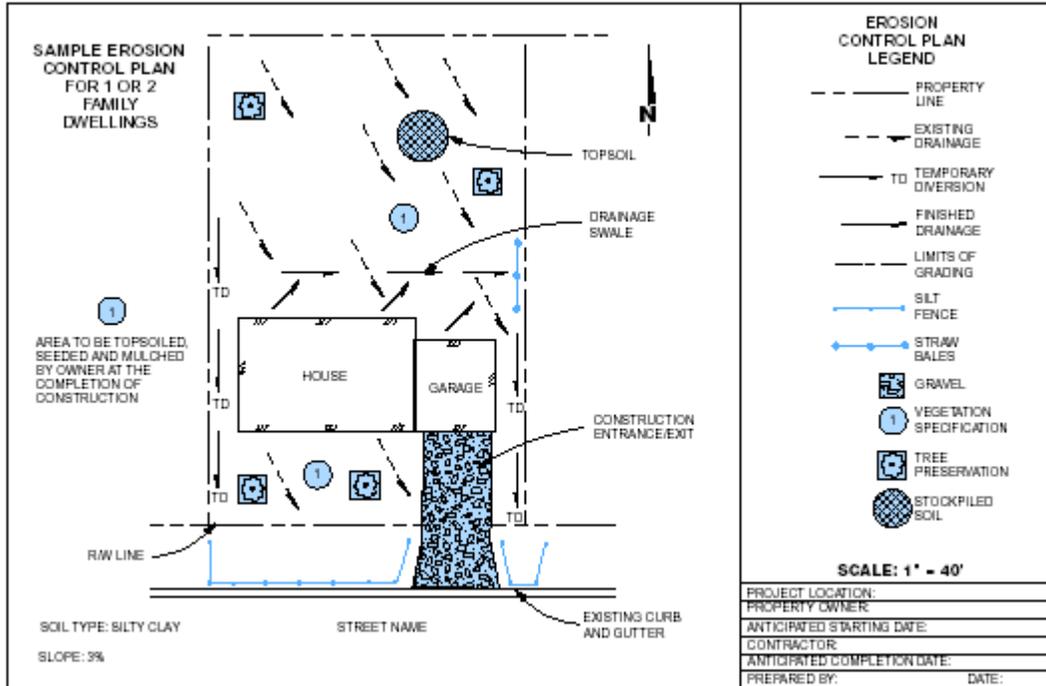
- Spray with emulsified asphalt
- Press into soil with a roller, packer disk, etc.
- Apply synthetic binders
- Add rye or wheat seed to fall and winter plantings
- Install 1" x 1" mesh netting
- Note: wood cellulose and wood fiber mulch is self-anchoring

**Mulch is Very Important!**

Use straw/hay that is dry, not caked, and free of weed seed.

Straw - 2 tons/AC or  
Hay - 2½ tons/AC

This will cover about 75%  
of the soil surface.



**Silt Fence**

- Install on **down-slope sides** of site parallel to contour of land.
- Dig a small toe-in trench along the line where Silt Fence is to be placed. **The trench should be a minimum of 6 in. deep.** Place the excavated material on the front or upstream side of the trench to facilitate back filling later.
- Drive the fence posts into the back or downstream side of the trench. The posts should be driven so that at least 1/3 of the height of the post is in the ground. When installing a prefabricated Silt Fence with fabric attached to the posts, the posts should be driven so that at least 6 in. of fabric will be buried in the ground. Place posts between 2 ft. and 10 ft. apart depending on the anticipated volume of sediment runoff at the site. Most prefabricated Silt Fences have posts spaced approximately 7 to 10 ft. apart, which is usually adequate. If there is a low spot where most sediment tends to collect, closer spacing may be required and prefabricated Silt Fences can be backed up with extra posts. Post constructed of hardwood or metal with sufficient strength to support a full load of deposited sediment are recommended.
- Extend low fence ends enough up-slope forming a “J” hook to allow water to pond in hook.
- **Backfill the trench with the excavated material and tamp so that at least 6 in.** of the fabric is securely toed into the ground to prevent under-mining.
- **Maintain** until vegetation is established.
- **Along creeks and streams, two rows of Type C State approved Silt Fence shall be used with a minimum of 6 ft. between posts. Maintain 25-ft. buffer from stream bank on both sides.**
- An additional row of Silt Fence may be installed from the initial row.

## Sediment Logs

- Sediment logs should be used in areas where there is high construction traffic, as these BMP's do not need to be trenched and they can be pulled up and put back in place as needed. They can also be formed around curves easily.
- Sediment logs should be used for disturbed areas ranging from 0.1 to 0.2 acres only.
- Sediment logs should be staked in every 4 to 6 feet, on the downhill side, through the netting only. Do not stake in through the center of the log.



## Proper Vegetation Practices

Selecting Vegetation
1. Suitable for the site
2. Ease of establishment
3. Planting dates
4. Plant characteristics (height)
5. Maintenance requirements

Accurate Seeding Rates for a Quality Stand
Under-seeding <u>reduces</u> the potential stand.
Over seeding creates excessive demand on moisture, nutrients, light, and space.
More seed is not always better.

NRCS Recommended Seeding Rates for Critical Areas			
Species	LB/AC <sup>1</sup>	Seed/LB	Seed/ sq.ft.
Tall Fescue	50	227,000	260
Pensacola	60	166,000	230
<u>Bahia</u>			
Sericea	60	350,000	480
<u>Lespedeza</u>			

NRCS Recommended Seeding Rates for Critical Areas			
Species	LB/AC <sup>1</sup>	Seed/LB	Seed/ sq.ft.
Common	10	1,800,000	410
<u>Bermuda</u>			
Weeping	4	1,500,000	140
<u>lovegrass</u>			

Companion Plants
<u>Rye</u> is the best winter annual because it grows well on cold, acidic, and infertile soils.

Companion Plants
<u>Do Not use Ryegrass</u> in seeding mixtures.
Ryegrass is a sod-forming annual.

Companion Plants
Do <u>not</u> include them in the seeding mixtures if perennials are planted during optimum planting dates.

Suitable Plants for Temporary Cover
Common Bermuda
Millet
Rye
Tall Fescue
Weeping Lovegrass

Seeding Recommendations
Target species: <b>sericea</b> <b>lespedeza</b>
Location: <b>Atlanta, Ga.</b>
<b>Planting Dates</b> <b>Seed Per Acre</b>
1/1-3/1      sericea lesp.-50lb
(scarified) sericea lesp.-30lb
Tall Fescue -30lb
Rye - 28lb (½BU)
(unhulled) Common Bermuda - 6lb

Seeding Recommendations
Target species: <b>sericea</b> <b>lespedeza</b>
Location: <b>Atlanta, Ga.</b>
<b>Planting Dates</b> <b>Seed Per Acre</b>
3/1-6/1      sericea lesp.-60lb
(scarified)
(hulled) Common Bermuda - 6lb

Seeding Recommendations
Target species: <b>sericea</b> <b>lespedeza</b>
Location: <b>Atlanta, Ga.</b>
<b>Planting Dates</b> <b>Seed Per Acre</b>
3/15-6/1      sericea lesp.-60lb
(scarified)
Weeping Lovegrass - 2lb

Seeding Recommendations
Target species: <b>sericea</b> <b>lespedeza</b>
Location: <b>Atlanta, Ga.</b>
<b>Planting Dates</b> <b>Seed Per Acre</b>
6/1-8/15      sericea lesp.-60lb
(scarified)
Weeping Lovegrass - 2lb
Browntop Millet - 10lb

Seeding Recommendations
Target species: <b>sericea</b> <b>lespedeza</b>
Location: <b>Atlanta, Ga.</b>
<b>Planting Dates</b> <b>Seed Per Acre</b>
6/1-8/15      sericea lesp.-60lb
(scarified)
(hulled) Common Bermuda - 6lb
Browntop Millet - 10lb

Seeding Recommendations
Target species: <b>sericea</b> <b>lespedeza</b>
Location: <b>Atlanta, Ga.</b>
<b>Planting Dates</b> <b>Seed Per Acre</b>
9/1-10/15      sericea lesp.-75lb
(unscarified)
Tall Fescue - 30lb

Seeding Recommendations
Target species: <b>sericea</b> <b>lespedeza</b>
Location: <b>Atlanta, Ga.</b>
<b>Planting Dates</b> <b>Seed Per Acre</b>
10/15-1/1      sericea lesp.-75lb
(unscarified)
Tall Fescue - 30lb
Rye - 28lb (½ BU)

## Proper Vegetation Practices Continued

### Applying Agricultural Lime

Lime does not move readily through the soil.

For Conventional Planting- apply lime immediately prior to seedbed preparation.

If Hydroseeding- apply lime following the application of straw/hay mulch or with the top dressing fertilizer.

### Agricultural Lime on Critical Areas

Apply agricultural lime according to a soil test.

Or

Apply agricultural lime at the rate of **1 to 2 tons / acre.**

### Fertilizer for Grasses Planted Alone on Critical Areas

Type	When applied	Elements
1 <sup>st</sup> Year Topdressing	Prior to/at planting 6-8 weeks after planting	N, P, & K N
2 <sup>nd</sup> Year Maintenance	Second Season Each Year	N, P, & K N, P, & K

### Fertilizer for Grasses and Legumes Planted Together

Type	When Applied	Elements
1 <sup>st</sup> Year Topdressing	Prior to/at planting 6-8 weeks after planting	N, P, & K N
2 <sup>nd</sup> Year Maintenance	Second Season Each Year	P & K P & K

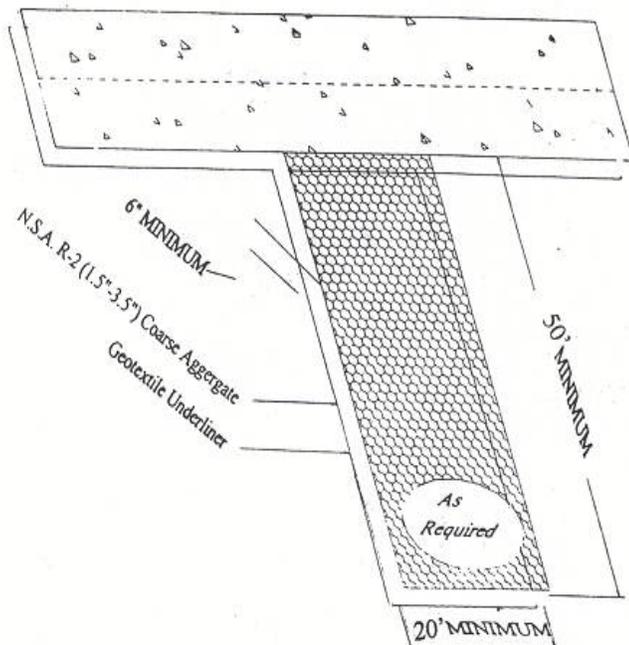
The target species is the legume.

**WARNING!** Extra measures may be needed if your site:

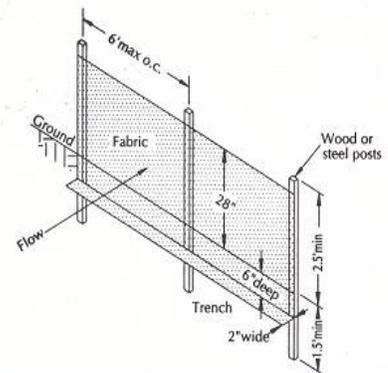
- Is within 300 ft. of a stream or wetland;
- Is within 1,000 ft. of a lake;
- Has a waterway or ditch;
- Is steep (slopes of 12% or more);
- Receives runoff from 10,000 sq. ft. or more of adjacent land;
- Has zoning or construction buffers;
- Has more than an acre of disturbed ground.

For information on appropriate measures for your site, call the City of Griffin Public Works & Stormwater Offices at (770) 229-6424.

## RESIDENTIAL HOME BUILDING CONSTRUCTION EXIT



## **SILT FENCE**



Use Type "A" silt fence: 1) on developments where the life of the project is greater than six months, 2) where the slope gradient is steeper than 3:1.

## **IMPORTANT!**

- Erosion control measures must be installed prior to, or concurrent with land disturbing activities.
- The City of Griffin Stormwater Department requires inspections before Building Permits are issued, and before Certificates of Occupancy are issued to ensure that there is proper drainage and that proper erosion control measures are in place.
- Check with the Stormwater Department to see if your home construction project requires a plan and a permit.