



Minimum Requirements for Erosion and Sediment Control Planning at Animal Feeding Operations and Other Construction Sites Not Subject to Sedimentation Pollution Control Act of 1973

PURPOSE

This Technical Note identifies the requirements for erosion and sediment control on construction sites not subject to North Carolina’s Sediment Pollution Control Act of 1973 when USDA provides technical assistance. It is not USDA policy to facilitate or encourage environmental degradation. Consequently, these requirements also apply to USDA direct or guaranteed loans.

BACKGROUND

Construction of agricultural facilities including animal feeding operations (AFO) can result in significant sediment loads to surface water if the proper erosion and sediment control practices are not utilized. Successful erosion control at these sites depends on the development and timely implementation of a comprehensive erosion control plan.

Inadequate erosion control planning during and after construction on agricultural facilities can result in:

- substantial off-site sediment in streams and rivers, negatively affecting the image of agriculture with downstream neighbors and increasing the producer’s liability,
- costly repairs (some have estimated the cost to repair a severely eroded site at 4 to 6 times the cost of prevention),
- potential serious damage to the houses or other structures on the site, and
- increased future operating costs.

The [North Carolina NRCS Field Office Technical Guide \(FOTG\)](#), [NRCS Engineering Field Handbook](#), and [North Carolina Erosion Control and Sediment Control Planning and Design Manual](#) are the primary technical references for planning, designing, and installing erosion and sediment control practices on agricultural facilities.

CHECKLIST / MINIMUM REQUIREMENTS

The following are the minimum requirements for an erosion and sediment control plan. All federal, state, and local laws and ordinances shall also be followed. As always, additional measures should be considered when appropriate for specific site conditions.

BEFORE CONSTRUCTION

Erosion and sediment control planning shall be incorporated into the initial site plan.

- Site Grading Plan**
Property lines, easements, rights-of-way,

Location of utilities, power lines, cables, and pipelines,

Location of wetlands, streams and other bodies of water, showing buffer zones of natural or established vegetative buffers of not less than 25 feet (other local laws or ordinances may apply),

Grading plan, showing entire disturbed area, with all cut slopes not steeper than 2:1, and fill slopes not steeper than 3:1,

Location of existing and planned buildings, animal mortality practices (incinerators, composters), waste storage structures, wells, septic systems, walls, fences, roads and other paved areas,

Location of existing and planned drainage patterns, culverts/pipes, drop structures, waterways, and diversions, sediment basins, silt fences, and other best management practices,

Location of future known expansion areas,

Land uses for contiguous land,

Design Criteria

Divert Clean Water

Divert clean runoff water that would normally enter the construction site from an upstream drainage. A typical method is by using a Diversion (362)*. If water is collected and diverted, a stable outlet shall be provided to prevent additional erosion and sediment pollution.

Collect Roof Runoff

Collect roof runoff in gutters, downspouts, or drip drains along all buildings in accordance with Roof Runoff Structure (558)* standard. Provide a stable outlet or control the flow as listed under "Direct Concentrated Flow" shown below.

Control Sediment

Install any needed temporary or permanent sediment control measures such as silt fences **, rock dams **, Grass Filter Strips (393)*, or Sediment Basins (350)*.

Direct Concentrated Flow

Concentrated flows shall not outlet on cut or fill slopes unless measures are installed to prevent erosion. Some options used to prevent or control concentrated flow include Underground Outlets (620)*, Lined Outlets (468)*, Dike (356)*, Diversion (362)*, Grassed Waterways (412)*, Access Roads (560)*, Sediment Basins (350)*, Water and Sediment Control Basins (638)*, Heavy Use Area Protection (561)*, Structure for Water Control (587)* (surface inlet structures or drop boxes), etc. In all cases, practices that convey concentrated water are required to include a stable outlet.

Vegetative Specifications

Temporary

Use temporary seeding on disturbed areas that are expected to be bare of ground cover more than 15 calendar days and active construction is not being undertaken. Broadcast 40 lbs/ac of Rye Grain (cereal) in the fall or winter or seed 35 lbs/ac of Browntop Millet in the spring or summer. Evenly applying 1-2 tons per acre of straw mulch as temporary ground cover is also acceptable. Other temporary seeding options are available in the Critical Area Planting (342)* standard.

Permanent

All disturbed areas shall be permanently vegetated according to the following:

* Indicates NC NRCS Practice Standard. These standards can be found online in the NC NRCS eFOTG at <http://efotg.nrcs.usda.gov/treemenuFS.aspx> , in Section IV on the tree menu.

** Guidance for these practices can be found in the Erosion and Sediment Control Planning and Design Manual Chapter 6 at <http://www.dlr.enr.state.nc.us/pages/publications.html>

1. Remove all woody material, loose rock, and other obstructions that may interfere with seeding.
2. Follow soil test results, or if not available, apply 1 ton of finely ground dolomitic limestone and 400 pounds of 10-10-10 fertilizer (or equivalent formulation) per acre.
3. Work lime and fertilizer into the soil where conventional equipment can be used. Use disk or similar equipment to prepare the seedbed to a depth of 3-4 inches. When using a hydro seeder, particularly around cut and fill slopes, apply lime and a low salt formulation fertilizer, with the seed mixture if the fertilizer is not already incorporated in the soil.
4. Where conventional equipment is used, apply seed uniformly. Cover seed to a depth of approximately ½ to 1 inch, depending on the size of the seed. Adhere to the seeding recommendations and guidelines shown below.
5. Spread and anchor dry, weed-free, small grain straw at the rate of 1-2 tons per acre so that about 25% of the ground surface is visible. Use wood cellulose fiber mulch or equivalent material when hydro seeding.
6. Avoid damaging vegetation through use of proper mowing equipment and staying off the site when the ground is soft enough to be rutted by mower or tractor wheels.
7. Other permanent seeding options are available in the Critical Area Planting (342) * standard.

Site Location	Seed	Planting Rate per Acre	Geographic Location	Planting Dates
Cut and Fill Slopes	Sericea Lespedeza <i>(seed scarified or hulled)</i>	30-40 lbs.	West of I-77 East of I-77	March 15 - April 30 February 15 - April 30
Cut and Fill Slopes	Tall Fescue and Annual Rye grass	30-40 lbs. 25-30 lbs.	West of I-77 Between I-77 & I-95 East of I-95	December - January November - January October - February
Pad/Other Areas	Pensacola Bahiagrass <i>(seed scarified)</i>	50lbs.	West of I-77 East of I-77	February 15 - April 30 February - March
Pad/Other Areas	Common Bermudagrass <i>(seed scarified or hulled)</i>	6 lbs.	Between I-77 & I-95	April - June 15

DURING CONSTRUCTION

- To extent possible, construction should be done in late summer or early fall, during periods of least amount of rain, to minimize construction time and maximize establishment of vegetation.
- At anytime a rainfall event is eminent, install diversions or berms at top of all bare cut or fill slopes. Remove prior to final grading.
- All areas of vehicular traffic must be stabilized with appropriate surface material if subject to erosion.
- When topsoil is to be stockpiled, a temporary protective cover of vegetation or mulch shall be established on the stockpile.
- Stabilize each cut or fill slope within 15 days after final grading is completed.

* Indicates NC NRCS Practice Standard. These standards can be found online in the NC NRCS eFOTG at <http://efotg.nrcs.usda.gov/treemenuFS.aspx> , in Section IV on the tree menu.

- Install planned erosion and sediment control measures control measures.
- Regularly maintain all silt fences, brush windrows, and sediment control structures. Remove and/or spread sediment accumulations.
- Establish permanent vegetation after final grading.
- Check site after significant rainfalls periodically for erosion until vegetation is well established. Repair as necessary.

OPERATION & MAINTENANCE

- Inspect practices annually and after significant storm events to identify potential repair and maintenance needs.
- Mowing
 - Mow Sericea Lespedeza to control growth of woody vegetation only after a killing frost or December-March. Mowing is not needed annually
 - Mow Tall Fescue mixtures annually, but not closer than 3-4 inches.
 - Mow Pensacola Bahiagrass or Common Bermudagrass as often as necessary.
 - Do not mow in extreme drought or heat, or when soil is very wet.
- Control weeds by mowing or applying chemicals in accordance with the current NC Agricultural Chemicals Manual weed control recommendations and adhere strictly to chemical label instructions.
- Repair any washouts by laying sod or reseeding.
- Fertilize vegetation annually after establishment. In the absence of a soil test, apply 1-2 tons dolomitic limestone during late fall or winter every 4-5 years to maintain healthy, vigorous growing plants. In early spring, apply 500 pounds of 10-10-10 on Tall Fescue or 0-10-20 on Sericea Lespedeza.
- Additional practices may be needed if those installed originally are not effective. Get assistance.

WHERE TO GET MORE ASSISTANCE

Call your local soil and water conservation district to request an erosion and sediment control plan, which is a component of a conservation plan. A directory is located on the internet at <http://www.nc.nrcs.usda.gov>

REFERENCES

North Carolina NRCS Electronic Field Office Technical Guide (eFOTG)
<http://efotg.nrcs.usda.gov/treemenuFS.aspx>

NRCS Engineering Field Handbook
<http://policy.nrcs.usda.gov/>

North Carolina Erosion Control and Sediment Control Planning and Design Manual
<http://www.dlr.enr.state.nc.us/pages/publications.html>