



B-05 - EROSION AND SEDIMENTATION CONTROL - Guidelines for Construction Projects

Required Permits/Approvals

All projects one (1) acre or larger are required to submit an ESC plan to the NCDEQ Division of Energy, Mineral and Land Resources (DEMLR), Land Quality Section (LQS). The ESC plan must be reviewed by UNC Environment, Health and Safety before the plan is submitted to DEMLR. These projects will receive an NC General Permit 01000 for Construction Activities and must follow all permit conditions.

All projects greater than 0.8 acres will be scaled up to exceed one (1) acre and will require an ESC Permit.

All projects between 0.1 acres and 0.8 acres must submit a written ESC plan for approval to the UNC Department of Environment, Health and Safety.

Projects less than 0.1 acre (4,345 square feet) must include in the construction documents ESC and stormwater permit compliance measures that meet the specifications outlined in this document.

References

1. [North Carolina Sedimentation Control Act of 1973](#)
2. [North Carolina Erosion and Sediment Control Planning and Design Manual](#) (Revised May 2013)
3. [NC General Permit for Construction Activities, NCG01000](#) (Updated April 2019): The NC General Permit is issued upon approval of the ESC plan. The NC General Permit and ESC plan are related, but separate, and both must be followed. Section A is a complete checklist of required elements.
4. [NCDEQ DEMLR Inspection and Monitoring Form](#): This 6-page inspection form is completed by the contractor and kept on site. Different sections are required to be filled out daily, weekly, after each 1.0-inch rain event, and/or at the beginning of each construction phase.
5. [UNC Spill Prevention Control and Countermeasure \(SPCC\) Plan, Construction Site Guidelines](#)
6. [UNC National Pollutant Discharge Elimination System \(NPDES\) Permit](#)

Examples of Land-Disturbing Activities Requiring ESC Plan and/or Permit

- Typical construction project
- Trenching for utility installation or removal
- Synthetic turf field replacement
- Building demolition
- Removing asphalt and/or concrete
- Grading gravel or dirt roads
- Outdoor staging area for an interior construction project
- Two or more unrelated projects if on same scope of work or same contract
- Other projects as required by UNC EHS

Design Requirements and ESC Management

Part II, Section A of the *NC General Permit for Construction Activities NCGO1* (updated April 2019) contains a complete checklist of items that must be included in the ESC plan. All grading, erosion and sedimentation control practices, and waterway crossings must meet the design criteria set forth in the most recent version of the *NC DEQ Erosion and Sediment Control Planning and Design Manual* (latest update May 2013). Additional requirements may be added by UNC EHS.



UNC-Specific ESC Measures

The following UNC requirements are either commonly overlooked during ESC plan development or are more stringent than required by the State.

1. Construction Limits (NCGO1, Part II, Section A #3 and Section B #2)

The entire project limit, including all phases added together, is used in determining the size of the project.

Project limits must include:

- A. Construction area. A reasonable amount of room must be included for maneuvering equipment around the work areas.
- B. Material storage locations. Include all vehicle and equipment staging areas, whether located adjacent to the site or anywhere else on UNC property (e.g. Carolina North, Odum Village).
- C. Access to ESC measures.
- D. Access roads and driveways.
- E. Utility work that may extend offsite. This includes utility work completed by any entity (construction contractor, UNC, public utility, etc.) that will be performed *as part of* the project or *because of* the project during any phase.
- F. Borrow and waste areas and soil stockpiles.

2. Dewatering of Excavations

Rain and pipe breaks can cause excavated areas and low spots to require dewatering. Turbid (muddy) water from excavations must not be pumped directly to the storm drain system. The ESC Plan shall contain Details for a pump system and dirt/filtration bag or comparable filtration system for removing water from excavated areas. Dewatering discharge must be filtered and diffuse before entering the storm drain system.

3. Construction Entrance

Construction entrances must be designed and maintained to prevent sediment from tracking off-site. Soil tracked onto the road must be swept up using a dry method (e.g. no water trucks or hoses). Tire wash stations are recommended for high-traffic sites. Identify the flow direction of stormwater runoff from the site and do not allow turbid (muddy) runoff to enter storm drains or run down the road.

4. Temporary Cover and Surface Stabilization

- A. Rolled erosion control products (RECP). Rolled erosion control products (nets, blankets or mats) must be free of plastic or synthetic materials, even if labeled “biodegradable” or “photodegradable”. These products must be made with natural fibers, for example, jute, straw, sisal, cotton, or coir.
- B. Seeding. All seeding mixes must be approved by UNC Grounds and UNC EHS. All types of lespedeza are prohibited on campus. The use of straw may be prohibited in some locations, such as in conservation areas.

5. Inlet Protection

Provide several options for inlet protection, including drop-in sediment sacks, hardware wire and gravel, and curb gutter protection. Gravel can be a safety hazard and should not be used on public roads. Inlet protection may be indicated outside of the construction limits to protect storm drains from construction site runoff.



6. Silt Fence/Sediment Fence/Compost Socks

- A. Silt fence design must comply with state-approved design. Indicate silt fence outlets in areas with concentrated flow behind the fence. J-hooks can be used on steep slopes to direct flow to outlets. Outlets can be made from wattles or gravel and hardware wire.
- B. Compost socks can be used as alternative to silt fence when 6" or less of sediment accumulation is anticipated. Compost socks can be an effective alternative to silt fence on brick sidewalks.

7. Fuel and Oil Storage

Fuel and oil containers 55 gallons or greater are required to be stored and inspected according to the UNC SPCC Plan. The SPCC includes requirements for providing secondary containment, conducting inspections, and providing spill kits, signage, and spill and overfill prevention.

8. Pressure- and Non-Pressure-Washing Operations

- A. Do not wash sediment or debris into storm drains, either on-site or on public roadways.
- B. If pressure washing or other cleaning operations are required, use only plain water.
- C. If soap (including biodegradable or "green" soap) or other chemicals must be used, block storm drains to prevent any water from entering the system and collect wastewater for disposal at an approved water treatment facility.
- D. Many projects use pressure washing that is not included in the initial scope, so plan ahead for unexpected project additions.
- E. Refer to the UNC guidelines for specific strategies in managing power washing runoff:
<https://stormwater.unc.edu/prevent-pollution/power-washing/>

9. Trash/Litter/Spills

Garbage is to be disposed of properly. Spills generated from equipment are to be cleaned up immediately.

10. Inspection of ESC Measures

- A. All sites 0.1 acres or larger are required to fill out inspection sheets for ESC measures weekly AND within 24 hours of rain greater than 1.0 inches.
- B. Sites smaller than 0.1 acres are required to inspect ESC measures regularly but are not required to keep records of the inspections.
- C. A rain gauge must be kept on site. Write down daily rain amount, even when amount is "zero".
- D. Inspection sheets are to be kept on site throughout the duration of the project.

11. The (ESC) Plan must include the following statements:

- A. "Contact UNC EHS at (919) 883-7163 or (919) 962-5507 to schedule and hold a pre-construction meeting before installation of ESC measures and again once ESC measures are in place."
- B. "Erosion and sedimentation control devices must be installed prior to the start of clearing, demolition, grading, and/or construction."
- C. "Any land clearing, construction, or development involving the movement of earth shall be in accordance with the approved ESC Plan and the superintendent in-charge or contractor shall be on site on all days when construction or grading activity takes place."