



NOTES TO THE DESIGNER

North Carolina Erosion & Sediment Control Narrative

January 15, 2019

General Information

Several states that we regularly work in have recently re-issued their NPDES permits. With their re-issuance, they have made several changes that we will need to comply with in order to obtain coverage under these permits.

Provide an Erosion & Sediment Control (ESC) plan sheet for the entire project limits. (M Sheets)

On the ESC plans, show a "Limits of Disturbance" (LOD) line that encompasses the proposed work and perimeter control BMP's. There is a Microstation "LOD" linestyle available for this use.

Show existing AND proposed contours on the ESC plans.

Show the USDA soil map on the ESC plans.

Show the stream buffer and trout buffer on the ESC plans. Hatch and call out the impact areas. (note that these are two different buffers) The trout buffer extends 25 feet from the top of bank. The stream buffer is calculated as 25 feet + (slope % - 5) feet.

Disturbed areas within the trout buffer must be seeded with a riparian seed mix.

Provide outlet protection sizing calculations in the permitting package submitted to EFL ENV. (not in ESC plans)

Provide diversion channel calculations in the permitting package submitted to EFL ENV. (not in ESC plans) Calculations should demonstrate that the channel has adequate capacity. The capacity of the conveyance should carry the Q10 or Q25 flow, based on the water classification (for HQW, it is 25-yr). The design of the liner may be based on the peak flow for a 2 year storm event.

Maintenance and Inspection Procedures

- **Edit the list of BMPs (silt fence, filter bags, straw wattle, etc) to include ONLY the erosion & sediment control measures being used on the project.** Contact Environment for maintenance and inspection procedures for BMP's not listed.
- If using a **turbidity curtain** pay item, **ADD THE FOLLOWING** to the Erosion & Sediment Control Narrative, under the Maintenance section;

Inspect daily and repair if necessary. Remove any floating construction or natural debris immediately to prevent damage. If necessary, remove sediment deposited behind the curtain by hand prior to removal. Remove the barrier by carefully pulling it toward the construction site to minimize the release of attached sediment.

- **Inlet protection – Inspect to ensure that inlet protection remains firmly in place and is not damaged or clogged. Clean clogged inlet protection or replace clogged or damaged inlet protection as necessary.**
- **Temporary earth berm – inspect after every rainfall event and at least once every 14 days, regardless of storm events. Remove accumulated debris and maintain positive drainage. Ensure that runoff is diverted at the outlet of the earth berm as designed. Keep earth dike and point of discharge free of erosion. Do not allow vehicular or construction traffic to travel across or near the earth berm.**

Supplemental Guidance

North Carolina

- All swales with a velocity greater than 2.0 fps must have a temporary liner. The liner must be shown on the plan. A liner detail, maintenance requirements, and documentation must be provided in the ESC.
- Self inspection of ESC plan is requirement after each project phase (in addition to the inspection of the ESC measures at least once a week and after every rainfall event). The following language needs to be included in the SCR: Inspect the project after each phase is completed. If the approved erosion and sedimentation control plan cannot be followed, submit a revised plan for review. Document result of the self-inspection on the Self Inspection Report for Land Disturbing Activity as Required by NCGS 113A-54.1. Maintain a copy of the report on site and make available to the erosion control inspector at the site.
- Silt fence needs to have steel posts – Use the NCDOT Detail.
- Matting details must include the stapling pattern.

North Carolina Trout Buffer Waiver Comment Highlights:

- Erosion control matting used on stream banks needs to have biodegradable netting.
- A skimmer used to dewater the skimmer basins should be a 1.5 inch skimmer with a 0.5-inch orifice to extend the dewatering time to approximately two days.
- In-stream construction and grading cannot be done from October 15 through April 15.

SWPPP (Storm Water Pollution Prevention Plan)

Every project with an NPDES permit (typically over one acre of ground disturbance) needs to have a stand-alone Storm Water Pollution Prevention Plan. The SWPPP is intended to be a stand-alone document, separate from the project plans, that is updated throughout the construction of the project, and remains on-site. A template of the stand-alone SWPPP can be found here: http://www.epa.gov/npdes/pubs/exampleswppp_smallcommercial.pdf

Updates

- 4/16/2013

Typically each state will have a table of runoff coefficients in their stormwater manual.

For example, **Virginia**:

http://www.dcr.virginia.gov/stormwater_management/documents/smhbdraft05.pdf.

Another example is here: <http://water.me.vccs.edu/courses/civ246/table2b.htm>,

North Carolina's table is listed below;

Rational runoff coefficients (ASCE, 1975; Viessman, et al., 1996; and Malcom, 1999)

<u>Description of Surface</u>	<u>Rational Runoff Coefficients, C</u>
Unimproved Areas	0.35
Asphalt	0.95
Concrete	0.95
Brick	0.85
Roofs, inclined	1.00
Roofs, flat	0.90
Lawns, sandy soil, flat (<2%)	0.10
Lawns, sandy soil, average (2-7%)	0.15
Lawns, sandy soil, steep (>7%)	0.20
Lawns, heavy soil, flat (<2%)	0.15
Lawns, heavy soil, average (2-5%)	0.20
Lawns, heavy soil, steep (>7%)	0.30
Wooded areas	0.15

Use your State's specific runoff coefficients, if available.

If none are available in the State's stormwater manual, use the table above or compute manually using the form at;

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