

## Albemarle County Engineering

### Erosion and Sediment Control Plan checklist for plan reviewers

January 24, 2022 (Use the latest checklist from the Team Services engineering forms site)

An erosion and sediment control plan is a document which illustrates the measures used to control erosion and sedimentation during construction. All measures follow the [Virginia Erosion and Sediment Control Handbook](#).

Reference key:

[Square Brackets] are County Code references, {Curved Brackets} are policy references, and (regular parenthesis) are explanatory. [Links](#) to reference documents are provided where possible.

#### Application information:

- \_\_\_\_\_ Completed WPO application and fees, with owners signature [[County Code 18-32.4.3.2, 18-32.3.9, 17 Article II](#)] Erosion Control plans require a [Water Protection Ordinance \(WPO\) application](#) and original owner's signature. No review is provided without application, owner signature(s) and fees. This is true even for revisions. It is important that the owner be aware of comments and resubmittals, and this is the county assurance.
- \_\_\_\_\_ Copies of federal and state permits for any wetland or stream disturbance (Army Corps, VDEQ, etc) [[17-604, 18-32.1.2, 14-311](#)].

VSMP:

- \_\_\_\_\_ SWPPP, PPP, SWMP approvals obtained where necessary. In most cases, the erosion control plan will not be submitted independently, but will be part of a Stormwater Pollution Prevention Plan (SWPPP). Unless exempt, it will be approved with the SWPPP.

#### Title information:

- \_\_\_\_\_ Project title. Titles should be appropriate. It should be an erosion control plan, not a stormwater plan, or site plan, etc. In some cases a WPO package will contain a stormwater plan and a mitigation plan, but they should be on separate sheets with keys and page titles. Mitigation plans require a separate review and fee.
- \_\_\_\_\_ Professional seal, with original signature and date for professionally prepared plans.
- \_\_\_\_\_ Content: The erosion control plan must not contain information regarding permanent improvements that do not also appear on other plans. Erosion control plans are temporary documents that are discarded after projects are complete.

#### Existing conditions plan view information:

- \_\_\_\_\_ accurate current *existing* topography at the time of submittal, including all existing site features, and any recent disturbances, all at a legible scale
- \_\_\_\_\_ date and source of the topographic information: All topography should be at least visually field verified by the designer within the last year
- \_\_\_\_\_ WPO stream buffer limits; 100' from stream or contiguous wetland, 200-ft from reservoirs, or floodplain limit if greater.
- \_\_\_\_\_ No buffer disturbances without WPO Program Authority approval and a **mitigation plan**.
- \_\_\_\_\_ floodplain limits (floodway and floodway fringe), including 100-yr flood limits for any channel with a drainage area of 50+ acres and floodplain designation.
- \_\_\_\_\_ Floodplain undisturbed. Disturbances require a Special Use Permit or Floodplain Development Permit.

- \_\_\_\_\_ all existing easements (access, drainage, sight, sanitary easements, etc.) with deed book references, locations and dimensions
- \_\_\_\_\_ all critical slopes (typically shaded)
- \_\_\_\_\_ Zoning Ordinance buffers shown and protected undisturbed. Disturbances require Planning approval of a waiver.

**Proposed plan view information:**

*Grading:*

- \_\_\_\_\_ *proposed* topography at minimum 2' contour intervals – tied into existing contours, as well as all proposed site features. (Sites with less than 6' of grade change should consider using smaller contour intervals.) These should agree with other final plans.
- \_\_\_\_\_ proposed slopes are all 2:1 (horizontal:vertical) or flatter {[Design Manual, Section 8](#)}
- \_\_\_\_\_ proposed slopes steeper than 3:1 have low maintenance (not grass) ground cover specified on the plan {[Design Manual, Section 8](#)}
- \_\_\_\_\_ existing critical slopes are not disturbed, unless a waiver or exemption has been granted for the disturbance. [18-4.2, 14-304]
- \_\_\_\_\_ **Retaining Wall Plans approved.** Any walls supporting roads or necessary infrastructure require engineered plans (not generic manufacturer's details) and computations. {[Design Manual, Section 8](#)} This will also be required where walls are close to property lines and there is the danger of affecting neighboring property, either during construction, with later failures, or with pedestrian or vehicle safety.
- \_\_\_\_\_ final contour shapes and slopes ensure no undrained pockets or stagnant pools

*Narrative:*

- \_\_\_\_\_ narrative and project title (*Narratives are now optional, and not reviewed by the County, other than noting whether they are not seriously in error, like a boilerplate with another County's name on it.*)
  - \_\_\_\_\_ project description
  - \_\_\_\_\_ existing site conditions description
  - \_\_\_\_\_ adjacent areas description
  - \_\_\_\_\_ off-site areas description including any off-site areas for borrow, waste or other disturbance.
  - \_\_\_\_\_ special use permit for cut greater than 50,000cy in RA zoning
  - \_\_\_\_\_ soils descriptions
  - \_\_\_\_\_ County erosion control notes
  - \_\_\_\_\_ stormwater runoff considerations: this can refer to the stormwater management plan
  - \_\_\_\_\_ sediment basin design computations summary for each sediment basin
  - \_\_\_\_\_ sediment trap design computation summary for each sediment trap

*Erosion and sediment control measures:*

- \_\_\_\_\_ limits of clearing and grading encompassing all disturbances, entrances, staging and parking areas, areas where sediment laden runoff will cross, or any construction related activities. *This must match any landscaping and conservation plans submitted with site plans*
- \_\_\_\_\_ a construction entrance (CE) draining to a sediment trap (ST) or sediment basin (SB)
- \_\_\_\_\_ dust control symbols (DC)
- \_\_\_\_\_ temporary and permanent seeding symbols (TS, PS)

- \_\_\_\_\_ existing drainage divides
  - \_\_\_\_\_ existing vegetation, with trees to be saved located by drip lines. This must match any landscaping and conservation plans.
  - \_\_\_\_\_ protection provided for all stages/phase of construction, from initial land clearing to final grades and hardscapes. This is our most important item. Plans which show only inlet protection on proposed drainage systems, which are only possible to install upon completion of grading, should be denied without further review.
  - \_\_\_\_\_ no erosion control measures in the way of construction access or grading. Diversion dikes or silt fence are not placed in the middle of the site, or through access or grading. Sediment traps are not under or on top of fill material or held up by retaining walls. Construction entrances are not on fill, etc. Grading cannot occur without perimeter controls. *If the concept for site protection is not adequate in this regard, further review of the plan may not be possible.*
  - \_\_\_\_\_ existing soil boundaries are shown with labels. Areas already disturbed are indicated, with constructed fill depth or cut noted.
  - \_\_\_\_\_ critical erosion areas are identified; areas of constructed slopes, areas near property lines
  - \_\_\_\_\_ adjacent off-site disturbances are shown with erosion control facilities
  - \_\_\_\_\_ a stockpile location.
  - \_\_\_\_\_ where cut or fill balances have a 10,000 cubic yard deficit or more, plans should not be approved without a waste area identified. This must be on-site, or on another approved and permitted site. (Inspectors will confirm this during pre-construction meeting.)
  - \_\_\_\_\_ a staging and parking area, or other construction related areas
  - \_\_\_\_\_ diversion dikes are used to direct drainage to traps and basins
  - \_\_\_\_\_ silt fence is not used across contours in place of diversion dikes.
  - \_\_\_\_\_ silt fence is limited to areas of sheet flow with ¼ acre per 100-ft of level on-grade silt fence. Plans showing only silt fence, without sediment trapping measures, should not be approved unless they meet this criteria and fill dirt is minimal.
  - \_\_\_\_\_ all swales and low points at the perimeter of the site have a sediment trap or basin. Silt fence in swales is typically not adequate. Check dams do not substitute for traps. *If the concept for site protection is not adequate in this regard, further review of the plan may not be possible.*
  - \_\_\_\_\_ temporary slope drains (TSD) or diversions are provided to prevent discharge over disturbed or fill slopes
  - \_\_\_\_\_ inlet protection (IP) on all inlets
  - \_\_\_\_\_ culvert inlet protection (CIP) on all culvert inlets
  - \_\_\_\_\_ outlet protection (OP) on all outlets
  - \_\_\_\_\_ all watercourses are protected and encroachments minimized
  - \_\_\_\_\_ stream crossing (USC, SC) and diversions are provided at all stream crossings.
  - \_\_\_\_\_ adequate channels (MS-19) provided for each outfall ([see Design Manual for minimum content](#)).
  - \_\_\_\_\_ all traps and basins are shown with proposed contours. Simple boxes or symbols are not sufficient, in most cases, to determine layout or bond amounts.
- For each trap;*
- \_\_\_\_\_ drainage area is 3 acres or less
  - \_\_\_\_\_ sized for total drainage area, including those for in-line upstream facilities
  - \_\_\_\_\_ wet storage is 67 cy or more
  - \_\_\_\_\_ dry storage is 67 cy or more
  - \_\_\_\_\_ wet storage is 4-ft deep or less

- \_\_\_\_\_ wet storage side slope is 1:1 or flatter
- \_\_\_\_\_ dry storage side slope is 2:1 or flatter
- \_\_\_\_\_ stone weir is 6ft per acre of drainage area
- \_\_\_\_\_ embankment and stone weir height is 5-ft maximum from outside toe
- \_\_\_\_\_ embankment top width is adequate (see table 16 reference)
- \_\_\_\_\_ 2:1 length:width ratio for flow path

*For each basin; (GB 3.14)*

- \_\_\_\_\_ sized for total drainage area, including those for in-line upstream facilities
- \_\_\_\_\_ wet storage is 67 cy or more
- \_\_\_\_\_ dry storage is 67 cy or more
- \_\_\_\_\_ wet storage side slope is 1:1 or flatter
- \_\_\_\_\_ dry storage side slope is 2:1 or flatter
- \_\_\_\_\_ embankment 15' high or less from downstream toe
- \_\_\_\_\_ principle and emergency spillways sized per handbook requirements
- \_\_\_\_\_ embankment has 1' freeboard during 25-yr storm with emergency spillway
- \_\_\_\_\_ embankment has 2' freeboard during 25-yr storm without emergency spillway
- \_\_\_\_\_ trash rack / anti-vortex device specified per handbook requirements
- \_\_\_\_\_ riser anchor size specified per floatation computation
- \_\_\_\_\_ dewatering device sized for 6-hr drawdown of dry storage: 3" dia. minimum
- \_\_\_\_\_ safety fence and signs stating "danger, quick sand, do not enter" provided if near any residential properties, or public access
- \_\_\_\_\_ structures and embankment match permanent design for facilities to be converted to permanent stormwater management facilities
- \_\_\_\_\_ embankment top width is adequate (see Design Manual reference details)
- \_\_\_\_\_ 2:1 length:width ratio for flow path. If necessary, baffles specified only on temporary structures (p.III-79). Baffles must extend to bottom of basins. Baffle design during construction is a hassle so should be properly dimensioned during design if possible.

*Details:*

- \_\_\_\_\_ a paved construction entrance detail (see Design Manual reference details) for projects in the development areas over 10 acres
- \_\_\_\_\_ a typical section for each temporary channel or diversion, referenced from the plan sheets. Existing ground should be shown at the maximum cross-slope on the plan.
- \_\_\_\_\_ details and copies of Program Authority permissions for any variances.

*Mass or Early Grading:*

\_\_\_\_\_ mass grading Planning approval. (This is also called rough or early grading plans which contain only approximate finished grades and culverts necessary to grade) Mass grading can only be permitted within planned developments where a concept grading plan was approved with the rezoning. The agent (Director of Planning) needs to formally determine that the grading plan is in general conformity with the approved rezoning plan. Otherwise, an initial site plan needs to be approved prior to issuance of a grading permit. Issuance of a grading permit at the initial site plan stage, as apposed to after final plan approval, requires specific approval from the County Engineer.