Albemarle County Engineering
Erosion and Sediment Control Plan checklist for plan reviewers
Updated 1 Dec 2014

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 Erosions 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 and fees. This is true even for revisions. It is important that the owner be aware of comments and re-submittals, 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.
_____ 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. Adequate erosion control cannot be designed without accurate topography and drainage areas.
_____ WPO buffer limits; 100’ from stream or wetland bank, 200’ from reservoirs, or floodplain limit if greater.
_____ No buffer disturbances without WPO Program Authority approval and a mitigation plan.
_____ floodplain limits, including 100yr flood limits for any channel with a drainage area of 50+ acres.
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 in later phases. (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 un-drained 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 or basin
____ 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/phases 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, may 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. 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. (Don’t make the inspectors chase trucks to find the dump site violation.)
____ 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 100ft 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. Diversions which travel more than 100ft, or go in and out of swales, are usually not maintainable in the field. 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 67cy or more
____ dry storage is 67cy or more
____ wet storage is 4’ 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’ 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 67cy or more
____ dry storage is 67yr 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 25yr storm with emergency spillway
____ embankment has 2’ freeboard during 25yr 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. Baffles specified only on temporary structures (p.III-79). Baffles are a big hassle in construction, and should not substitute for properly dimensioned design if at all 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 asposed to after final plan approval, requires specific approval from the County Engineer.