

### Sec. 4.3.3 Grading standards.

The following design standards apply to any land disturbing activity either (i) to establish a use permitted by right or by special use permit in the steep slopes overlay district or (ii) requiring a Virginia Erosion and Sediment Control Program (VESCP) application plan, or a Virginia Stormwater Management Program (VSMP) application plan, or both.

- A. *Retaining walls.* Retaining walls shall meet or exceed the following minimum standards:
1. *Height.* The maximum height for a single retaining wall, measured from grade to grade, shall be ten feet, except as provided in subsection (A)(3). When the overall retained height would exceed ten feet, the retaining wall shall be broken into multiple stepped walls.
  2. *Multiple stepped walls; separation.* A minimum horizontal distance of three feet shall be maintained between each individual wall in a stepped wall system, and shall be landscaped with screening shrubs planted on ten foot centers.
  3. *Incorporation of wall into design of a building.* Retaining walls may be incorporated into the design of a building so that they become part of the building. Retaining walls incorporated into the design of a building shall not be subject to height limitations of subsection (A)(1).
  4. *Special exception.* By special exception, the Board of Supervisors may waive or modify the standards otherwise required by this subsection (A). A special exception may be granted only for public improvements requiring a linear corridor (such as roads, sidewalks, shared-use paths, or trails) where the required standards would either:
    - a. Require acquisition of right of way or easements at a cost that would not be consistent with the prudent use of public funds; or
    - b. Require rerouting or redesign of the improvement(s) to an extent that the improvement(s) would not serve the intended purpose; or
    - c. Significantly increase maintenance costs; or
    - d. Result in a design that would be unsafe for users and/or maintenance of the improvement(s).
- B. *Cuts and fills.* Any cut or fill shall meet or exceed the following minimum standards:
1. *Rounding off.* Any cut or fill shall be rounded off to eliminate sharp angles at the top, bottom and side of regraded slopes.
  2. *Location of toe of the fill slope.* The toe of any fill slope shall not be located within ten feet horizontally of the top of an existing or proposed cut slope.
  3. *Tops and bottoms.* Tops and bottoms of cut and fill slopes shall be located either: (i) a distance from existing and proposed property lines at least equal to the lesser of three feet plus one-fifth ( $\frac{1}{5}$ ) of the height of the cut or fill, or ten feet; (ii) any lesser distance than provided in subsection (B)(3)(i) the zoning administrator determines would not adversely impact the abutting parcel based on information provided by the owner of the abutting parcel; or (iii) on the abutting parcel if the owner obtains an easement authorizing the slope on the abutting owner's parcel.
  4. *Steepness.* Cut and fill slopes shall not be steeper than a 2:1 (50 percent) slope. If the slope is to be mowed, the slope shall be no steeper than a 3:1 (33 percent) slope.
- C. *Reverse slope benches or a surface water diversion.* Reverse slope benches or a surface water diversion or both shall meet or exceed the following minimum standards:
1. *When required.* Reverse slope benches or a surface water diversion or both shall be provided whenever: (i) the vertical interval (height) of any 2:1 (50 percent) slope exceeds 20 feet; (ii) the vertical

interval (height) of any 3:1 (33 percent) slope exceeds 30 feet; or (iii) the vertical interval (height) of any 4:1 (25 percent) slope exceeds 40 feet.

2. *Width and location of benches.* Reverse slope benches shall be at least six feet wide and located to divide the slope face as equally as possible and shall convey the water to a stable outlet. Benches shall be designed with a reverse slope of 6:1 (approximately 17 percent) or flatter to the toe of the upper slope and have a minimum of one foot. The bench gradient to the outlet shall be between two percent and three percent, unless accompanied by appropriate design and computations.
3. *Flow length within a bench.* The flow length within a reverse slope bench shall not exceed 800 feet unless accompanied by appropriate design and computations demonstrating that the flow length is designed to be adequate to ensure the stability of the slope and prevent or minimize erosion.
4. *Surface water diversions.* Surface water shall be diverted from the face of all cut or fill slopes or both, using diversions, ditches, and swales, or conveyed downslope by using a designed structure. The face of the slope shall not be subject to any concentrated flows of surface water such as from natural drainage ways, graded swales, downspouts, or similar conveyances.

(§ 30.7.5; Ord. 14-18(2) , 3-5-14; § 4.3.3; Ord. 20-18(1) , 7-15-20)

State law reference(s)—Va. Code §§ 15.2-2280 (1), (2), 15.2-2286 (A)(4).

### **Sec. 30.7.5 Design standards.**

~~The following design standards apply to land disturbing activity to establish a use permitted by right or by special use permit in the steep slopes overlay district.~~

~~A. — *Retaining walls.* Retaining walls shall meet or exceed the following minimum standards:~~

- ~~1. — *Wall height.* The maximum height for a single retaining wall, measured from grade to grade, shall be six feet, except as provided in subsection (A)(3). When the overall retained height would exceed six feet, the retaining wall shall be broken into multiple stepped walls.~~
- ~~2. — *Multiple stepped walls; separation.* A minimum horizontal distance of three feet shall be maintained between each individual wall in a stepped wall system, and shall be landscaped with screening shrubs planted on ten foot centers.~~
- ~~3. — *Incorporation of wall into design of a building.* Retaining walls may be incorporated into the design of a building so that they become part of the building. Retaining walls incorporated into the design of a building shall not be subject to height limitations of subsection (A)(1).~~

~~B. — *Cuts and fills.* Any cut or fill shall meet or exceed the following minimum standards:~~

- ~~1. — *Rounding off.* Any cut or fill shall be rounded off to eliminate sharp angles at the top, bottom and side of regraded slopes.~~
- ~~2. — *Location of toe of the fill slope.* The toe of any fill slope shall not be located within ten feet horizontally of the top of an existing or proposed cut slope.~~
- ~~3. — *Tops and bottoms.* Tops and bottoms of cut and fill slopes shall be located either: (i) a distance from existing and proposed property lines at least equal to the lesser of three feet plus one fifth of the height of the cut or fill, or ten feet; (ii) any lesser distance than provided in subsection (b)(3)(i) the zoning administrator determines would not adversely impact the abutting parcel based on information provided by the owner of the abutting parcel; or (iii) on the abutting parcel if the owner obtains an easement authorizing the slope on the abutting owner's parcel.~~

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4. *Steepness.* Cut and fill slopes shall not be steeper than a 2:1 (50 percent) slope. If the slope is to be mowed, the slope shall be no steeper than a 3:1 (33 percent) slope.
- C. *Reverse slope benches or a surface water diversion.* Reverse slope benches or a surface water diversion or both shall meet or exceed the following minimum standards:
1. *When required.* Reverse slope benches or a surface water diversion or both shall be provided whenever: (i) the vertical interval (height) of any 2:1 (50 percent) slope exceeds 20 feet; (ii) the vertical interval (height) of any 3:1 (33 percent) slope exceeds 30 feet; or (iii) the vertical interval (height) of any 4:1 (25 percent) slope exceeds 40 feet.
  2. *Width and location of benches.* Reverse slope benches shall be at least six feet wide and located to divide the slope face as equally as possible and shall convey the water to a stable outlet. Benches shall be designed with a reverse slope of 6:1 (approximately 17 percent) or flatter to the toe of the upper slope and have a minimum of one foot. The bench gradient to the outlet shall be between two percent and three percent, unless accompanied by appropriate design and computations.
  3. *Flow length within a bench.* The flow length within a reverse slope bench shall not exceed 800 feet unless accompanied by appropriate design and computations demonstrating that the flow length is designed to be adequate to ensure the stability of the slope and prevent or minimize erosion.
  4. *Surface water diversions.* Surface water shall be diverted from the face of all cut or fill slopes or both, using diversions, ditches, and swales, or conveyed downslope by using a designed structure. The face of the slope shall not be subject to any concentrated flows of surface water such as from natural drainage ways, graded swales, downspouts, or similar conveyances.

Land disturbing activity to establish a use permitted by right or by special use permit in the steep slopes overlay district is subject to the design standards of Section 4.3.3, regardless of whether such activity requires a Virginia Erosion and Sediment Control Program (VESCP) application plan, or a Virginia Stormwater Management Program (VSMP) application plan, or both.