

CHAPTER XX.XX GRADING and EXCAVATION

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XX.xx.010 Purpose

The purpose of this chapter is to protect the public health, safety and general welfare by establishing standards for grading and excavation which address the impacts of grading and excavation on adjacent properties, including but not limited to: slope stability, re-vegetation, maintenance, and drainage. Grading performed in accordance with these Standards may not be adequate to support further development, including but not limited to construction of a structure or transportation facilities. Performance of grading and excavation in accordance with these standards shall not assure subsequent approval of future site development. Future site development may require compliance with other sections of Douglas County Code and may necessitate additional studies, engineering, design, testing and approval.

XX.xx.020 County Engineer-Powers and duties

The county engineer shall enforce DCC Chapter XX.xx and is authorized to promulgate such rules, policies and/or procedures as may be deemed necessary to administer and enforce such regulations.

XX.xx.030 Definitions

For the purposes of this chapter, the terms, phrases and words listed in this section and their derivatives shall have the indicated meanings. Definitions applicable to this chapter are supplemented by DCC chapter 14.98.

1. "Bench" means a relatively level step excavated into earth material on which fill is to be placed.
2. "Compaction" means the densification of a fill by mechanical means.
3. "Cut" See "Excavation".
4. "Down Drain" means a device for collecting water from a swale or ditch located on or above a slope, and safely delivering it to an approved drainage facility.
5. "Erosion" means the wearing away of the ground surface as a result of the movement of wind, water or ice.
6. "Excavation" means the removal of earth material by artificial means, also referred to as a cut.
7. "Fill" means the deposition of earth materials by artificial means. Fill does not include soil amendments/enhancing materials that are traditionally tilled into the soil, including but not limited to fertilizer, lime, compost, or other organic amendments.
8. "Grade" means the vertical location of the ground surface.
9. "Grade, existing" means the grade prior to grading.
10. "Grade, finished" means the grade of the site at the conclusion of all grading efforts.
11. "Grading" means an excavation or fill, or combination.
12. "Key" means a compacted fill placed in a trench excavated in earth material beneath the toe of a slope.
13. "Slope" means an inclined surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance.
14. "Terrace" means a relatively level step constructed in the face of a grade slope for drainage and maintenance purposes.
15. "Self-contained area" means an area that does not create or affect: an adverse impact on adjoining property; a danger to the public; a natural drainage way; or a wetland.
16. "Site" means any lot or parcel of land or contiguous combination thereof, under the same ownership, where activities regulated by this chapter are performed.
17. "Structure" means that which is built or constructed.

XX.xx.040 Other Requirements.

- A. Other laws, ordinances, regulations and plans may be applicable. These include, but are not limited to the State Environmental Policy Act, Douglas County

Resource Lands and Critical Areas Policy Plan, Douglas County Shoreline Master Program, shoreline public access plan, comprehensive plans and sub-area plans, Douglas County Regional Policy Plan, Douglas County Road Standards, International Codes, Douglas County Flood Hazard and Critical Areas ordinances, and the laws, ordinances, regulations and plans of federal, state and local agencies. Where other regulations are in conflict with this chapter, the more restrictive regulations shall apply.

- B. The Washington State Department of Ecology administers the Washington Clean Air Act and the Construction Stormwater Program. The owner is responsible for compliance with these and any other regulations, including acquisition of permits.
- C. The owner is responsible for notifying the State Office of Archeology and Historic Preservation in Olympia if cultural resources are discovered in the course of grading.

XX.xx.050 Soils report

A soils report prepared by a registered professional engineer may be required that identifies the nature and distribution of existing soils; conclusions and recommendations for grading procedures; soil design criteria for any structures or embankments required to accomplish the proposed grading; and, where necessary, slope stability studies, and recommendations and conclusions regarding site geology. Recommendations shall be incorporated into the design of the project. This section may be required to be addressed as part of a required submittal associated with a proposed development permit. Grading done prior to submittal of a development application is not exempted from a soils report. Upon submittal of a development application additional testing and studies to support previous grading activities may be required.

XX.xx.060 Liquefaction study

For sites with mapped maximum considered earthquake spectral response accelerations at short periods greater than 0.5g as determined by Section 1613 of the 2006 edition of the international building code, as it now exists or may hereafter be amended, or as required by the County, a study of the liquefaction potential of the site shall be provided, and the recommendations incorporated in the plans. This section may be required to be addressed as part of a required submittal associated with a proposed development permit. Grading done prior to submittal of a development application is not exempted from a liquefaction study. Upon submittal of a development application additional testing and studies to support previous grading activities may be required.

XX.xx.070 Inspections, general

- A. As required, inspections shall be governed by Section 109 of the 2006 edition of the international building code, as it now exists or may hereafter be amended.
- B. Grading and excavation activities may be subject to inspection by the County. The County Engineer or his/her designee may visit the project site from time to

time to monitor the overall progress of the project. Such site visits do not relieve the owner, the contractor or the engineer of any responsibilities for performing all work in accordance with approved plans and/or these Standards.

- C. As required, it is the responsibility of the owner and their engineer to provide the day-to-day inspection of such work, perform such inspections and testing of materials and their placement as may be required. The engineer of record shall certify all inspections and testing has been completed as required and that the work performed has been completed in accordance with approved plans and these Standards. If required, certifications may be required to be submitted to the County.
- D. Minimum inspections may include the following elements:
 - 1. Installation and maintenance of temporary erosions control measures.
 - 2. Conformance of the grading activity with approved plans and/or these Standards.
 - 3. Installation of final site stabilization.

XX.xx.080 Special inspections

The special inspection requirements of Section 1704.7 of the 2006 edition of the international building code, as it now exists or may hereafter be amended, shall apply to work performed under a development permit as required by the County.

XX.xx.090 Excavation maximum slope

The slope of cut surfaces shall be no steeper than is safe for the intended use, and shall be no steeper than 2 horizontal to 1 vertical (50 percent) unless as part of a development permit, the owner furnishes a soils report from a professional engineer supporting a steeper slope.

Exceptions:

- 1. A cut surface may be at a slope of 1.5 horizontal to 1 vertical (67 percent) provided that all the following are met:
 - a. It is not intended to support structures or surcharges.
 - b. It is adequately protected against erosion.
 - c. It is no more than 8 feet in height.
- 2. A cut surface in bedrock shall be permitted to be at a slope of 1 horizontal to 1 vertical (100 percent).

XX.xx.100 Fills, general

Unless otherwise recommended in a soils report, accepted as part of an approved development permit, fills shall conform to provisions of this section.

XX.xx.110 Surface preparation

The ground surface shall be prepared to receive fill by removing vegetation, topsoil, and other unsuitable materials, and scarifying the ground to provide a bond with the fill material.

XX.xx.120 Benching

Where existing grade is at slope steeper than 5 horizontal to 1 vertical (20 percent) and the depth of the fill exceeds 5 feet, benching shall be provided in accordance with Figure XX.xx.120. A key shall be provided which is at least 10 feet in width and 2 feet in depth.

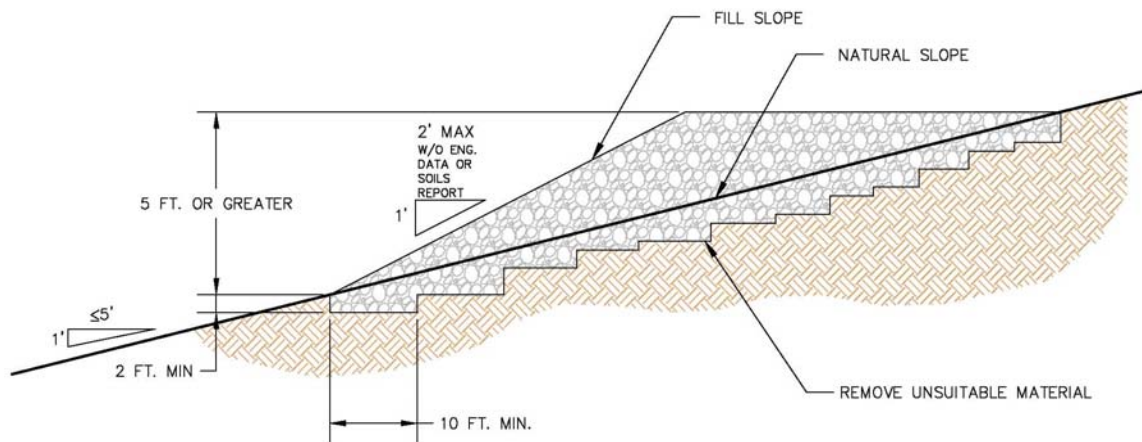


Figure XX.xx.120 Benching

XX.xx.130 Fill material

Unless otherwise approved by the County as part of an approved development permit, fill material shall not include organic, frozen or other deleterious materials. Unless otherwise approved by the County, as part of an approved development permit, no rock or similar irreducible material greater than 12 inches in any dimension shall be included in fills.

XX.xx.140 Compaction

Back fill for roadbed, roadway embankments, structures and drains shall be 95% of the maximum density as per Section 2-09 of the WSDOT Standard Specifications. Unless otherwise approved by the County, as part of an approved development permit, all other fill material shall be compacted in lifts no more than 2-feet thick, with each layer tamped and graded so final settling will leave the backfill flush with the surrounding ground.

XX.xx.150 Maximum slope

Slopes shall be no steeper than is safe for the intended use. Maximum slopes shall be no steeper than 2 horizontal to 1 vertical (50 percent). A soils report from a professional engineer as part of an approved development permit may be submitted for acceptance in order to support a steeper slope.

XX.xx.160 Setbacks, general

Cut and fill slopes shall be set back from the property lines in accordance with this section. Setback dimensions shall be measured perpendicular to the property line and shall be as shown in Figure XX.xx.160, unless substantiating data is submitted by the professional engineer of record justifying reduced setbacks.

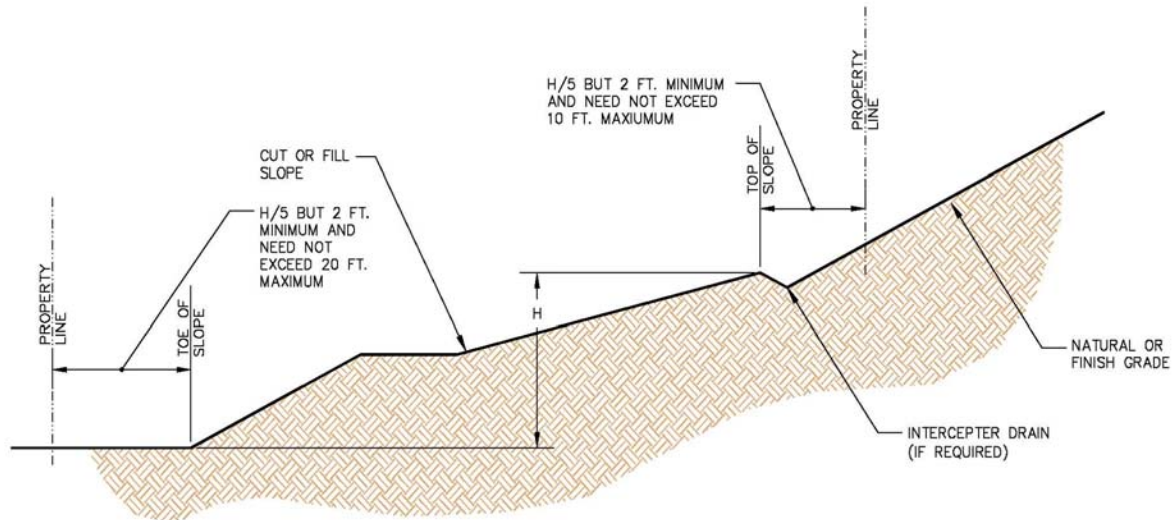


Figure XX.xx.160 Setbacks

XX.xx.170 Top of slope

The setback at the top of slope shall not be less than that shown in Figure XX.xx.160, or than is required to accommodate required drainage features, whichever is greater.

XX.xx.180 Slope Protection

Where required to protect adjacent properties at the toe of a slope from adverse effects of the grading, additional protection shall be included. Such protection may include but not be limited to:

1. Setbacks greater than those required by Figure XX.xx.160
2. Provisions for retaining walls or similar construction.
3. Erosion protection of the exposed slopes.
4. Provision for the control of stormwater runoff.

XX.xx.190 Drainage general

Grading activities which modify existing drainage patterns or stormwater characteristics shall comply the provisions of Douglas County Code 20.34. Drainage across property lines shall not exceed that which existed prior to grading. Excess or concentrated drainage shall be contained on site or directed to an approved drainage facility.

XX.xx.200 Terraces

Terraces at least 6 feet in width shall be established at not more than 30-foot vertical intervals on all cut or fill slopes to control surface drainage and debris. Suitable access shall be provided to allow for cleaning and maintenance.

Where more than two terraces are required, one terrace, located at approximately mid-height, shall be at least 12 feet in width.

Swales or ditches shall be provided on terraces. They shall have a minimum gradient of 20 horizontal to 1 vertical (5 percent) and shall be paved with concrete not less than 3 inches in thickness, or with other materials suitable to the application. They shall have a minimum depth of 12 inches and a minimum width of 5 feet.

XX.xx.210 Interceptor drains

Interceptor drains shall be installed along the top of cut slopes receiving drainage from a tributary width greater than 40 feet, measured horizontally. They shall have a minimum depth of 1 foot and minimum width of 3 feet. The slope shall be not be less than 50 horizontal to 1 vertical (2 percent). The drain shall be paved with concrete not less than 3 inches in thickness, or by other materials suitable to the application. Discharge from the drain shall be accomplished in a manner to prevent erosion.

XX.xx.220 Erosion control, general

- A. The owner shall be responsible for erosion control during the grading activities and for final stabilization of the site upon completion of grading. Grading shall be completed in a manner to minimize erosion and siltation in conformance with all statutory requirements, permits and approved plans. The owner or their representative shall be responsible for the prevention of discharge of sediment or sediment laden water from the site. Temporary and permanent erosion control and final stabilization of the site shall be implemented and maintained in accordance with the Stormwater Management Manual for Eastern Washington or as directed by the County Engineer.
- B. At final site stabilization, all disturbed areas not otherwise vegetated or stabilized shall be seeded and mulched. Final stabilization means the completion of all soil disturbing activities at the site and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures which will prevent erosion.
- C. Seeding for erosion control may require a warranty assurance agreement to guarantee that plantings survive and establish themselves in the manner

intended. This warranty shall be secured with a form of collateral acceptable to the County in conformance with the requirements of Douglas County Code 14.90. The amount of this collateral shall be 15 percent of the construction cost as reviewed and concurred to by the County or \$5,000.00, which ever is greater. Maintenance guarantees will not be required when the required guarantee is \$1,000.00 or less. During the course of the warranty period, periodic inspections will be conducted by the County. If deficiencies are observed, other than normal deterioration, they shall be brought to the attention of the owner or contractor for his/her action.

XX.xx.230 Alternatives

- A. These Standards represent the appropriate practice under most conditions.
- B. Engineering design is an endeavor that examines alternative solutions to real world situations and accordingly, these Standards are not provided to hamper the introduction of new ideas. It is fully expected that creative engineering will continue to take place. Situations will present themselves where alternatives may be preferred to allow conformance with existing conditions, to overcome adverse topography or to allow for affordable solutions without adversely affecting safety, maintainability or aesthetics. These Standards are intended to provide predictability yet still allow for the flexibility necessary for innovation.
- C. Alternatives to these Standards shall be proposed, evaluated and accepted prior to beginning grading and excavation activities.
- D. The alternative request shall be in writing and address the following points:
 - 1. Specifically outline the reason for the alternative request.
 - 2. Specify the chapter and section for which the alternative is requested.
 - 3. Provide supporting evidence demonstrating that an alternative from these Standards is based on sound judgment that the requirements for safety, function, appearance and maintainability are fully met.
 - 4. The above information shall be used in evaluating requests for use of alternatives to these Standards.

XX.xx.240 Investigation

County Staff will investigate reports of potential code violations. The County's first priorities for investigation and resolution of reported violations are health and safety.

XX.xx.250 Fees

If the County finds any work regulated by these Standards being performed in a manner contrary to the provisions of these Standards the owners shall be subject to Grading and Excavation Investigation Fees as shall be established by resolution of the Board of Commissioners.

XX.xx.260 Violations

- A. If an inspection confirms a code violation, the County will inform the property owner, the owner's agent or the person doing the work, of the violation and request voluntary action to correct the violation. If the owner does not comply, enforcement will proceed in accordance with Douglas County Code Chapter 14.92.
- B. Whenever the County finds any work regulated by these Standards being performed in a manner either contrary to the provisions of these Standards or dangerous or unsafe, the County is authorized to issue a stop work order.
- C. The stop work order shall be in writing and shall be given to the owner of the property involved, the owner's agent or to the person doing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work may resume. A stop work order may be followed by a Notice of Violation and Order in accordance with Douglas County Code Chapter 14.92.

XX.xx.270 Interpretation, Enforcement and Appeals

- A. Interpretation and enforcement of these Standards shall be the responsibility of the County Engineer or designated representative.
- B. Violation of this chapter, performing in violation of these standards; shall be a class 1 civil infraction pursuant to Chapter 7.80 RCW. A notice of infraction may be issued for each day of any such violation; however, a notice of infraction is not required to be issued for each day of such violation. Failure to comply with these Standards shall be subject to penalties as provided for in Douglas County Code Chapter 14.92 and 15.90.
- C. All appeals of any decision by the County Engineer in administration, interpretation or enforcement of these Standards shall be in writing and within fourteen (14) days of the decision. The written appeal, including the recommendations and analyses of the County Engineer, shall be made to the County Hearing Examiner in accordance with Douglas County Code 14.12.010.
- D. The County may require the posting of a performance bond in an amount and form approved by the County in order to guarantee abatement of violations.