



Chapter 15.14

EI DORADO COUNTY

GRADING, EROSION, AND SEDIMENT CONTROL

ORDINANCE

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ARTICLE I. INTRODUCTION

Section 15.14.100 Title: This Chapter shall be known as the Grading Ordinance of the County of El Dorado.

Section 15.14.110 Purpose and scope: This Chapter is enacted for the purpose of regulating grading within the unincorporated area of El Dorado County to safeguard life, limb, health, property and public welfare; to avoid pollution of watercourses; and to ensure that the intended use of a graded site is consistent with the El Dorado County General Plan, any Specific Plans adopted thereto, the adopted Storm Water Management Plan, California Fire Safe Standards and applicable El Dorado County ordinances including the Zoning Ordinance and the California Building Code.

This Chapter establishes the administrative procedures for issuance of permits; and provides for approval of plans and inspection of grading construction. This Chapter is not intended to supersede or otherwise preempt any applicable local, state, or federal law or regulation. Where conflicts may occur between this Chapter and such laws or regulations, the most restrictive shall apply.

Section 15.14.120: Administrative Authority: This ordinance shall be implemented and enforced by the County agency or agencies granted administrative and enforcement authority by the Board of Supervisors of the County of El Dorado. For purposes of this ordinance, the term "Director" refers to a chief administrative officer (i.e. department head) of an agency identified as having administrative and enforcement authority. The term "Director" also refers to those persons authorized by a chief administrative officer to implement and enforce the provisions of this ordinance.

Section 15.14.130: Applicability: A grading permit issued by the Director is required for all grading activities in the unincorporated area of El Dorado County, including underground

Section references corrected

excavations associated with human occupancy, and agricultural grading activities that convert undisturbed vegetation to agricultural cropland, unless the proposed activities are exempt from this requirement pursuant to Section 15.14.140 of this chapter.

Section 15.14.140: Exemptions: The following categories of grading projects are exempt from the requirement of obtaining a grading permit except where such grading would create a cut or fill that could potentially endanger any structure intended for human or animal occupancy, threaten the stability of any public road, or obstruct any watercourse or drainage conduit. Projects located in the Tahoe Basin are not eligible for the exemptions listed below pursuant to Section 15.14.150, "Tahoe Basin special restrictions".

Exempt projects shall comply with all other requirements of this Chapter, CEQA, the County Storm Water Management Plan (SWMP) and all other relevant codes and ordinances.

- A. Single family dwellings and accessory structures that conform to all of the following design parameters:
 - 1. The volume of graded material is less than ~~50~~250 cubic yards.
 - 2. All cuts are less than five feet in height.
 - 3. All fills are less than three feet in height.
 - 4. The area of soil disturbance is less than 10,000 square feet.
 - 5. No potentially unstable slopes or areas subject to erosion are created, as determined by the Director.
 - 6. Grading activities do not encroach into septic effluent disposal areas.
 - 7. Drainage is not directed into a septic effluent disposal area.
 - 8. Fills are not intended for support of structural improvements, including flatwork concrete, driveways, roads, and buildings.
 - 9. The grading activities would not alter previously placed erosion control materials or drainage facilities.

- B. Multi-family residential or commercial/industrial projects that conform to all of the design parameters in Section 15.14.140.A above and for which a waiver of the requirement for a grading permit has been authorized by the Director.

- C. Grading that conforms to all of the design parameters in Section 15.14.140.A above necessary to conduct soil, geotechnical, geological, or environmental studies by engineers, geologists, environmental health specialists or soil scientists in which the disturbed areas are subsequently restored to substantially the pre-existing condition.

- D. Grading done under the supervision of a County agency for which the Board of Supervisors is the controlling body, or a public agency governed by an elected Board of Directors.

- E. Excavation and placement of fill associated with the installation, maintenance, repair or replacement of facilities for the production, generation, storage, treatment, or transmission of water, wastewater (including recycled water), or electrical energy by a utility company regulated by the California Public Utilities Commission, a public agency governed by an elected Board of Directors, an agency of the State of California or an agency of the United States of America.

- F. Excavations for the foundation of a building or structure where the construction of such building or structure has been authorized by a Building Permit issued by the County.
- G. Trenching and grading incidental to the construction or installation of county-approved underground pipelines, septic tank disposal fields, conduits, electrical or communication facilities, and drilling or excavation for approved wells or post holes.
- H. Grading in accordance with plans and specifications incorporated into an approved surface mining permit, reclamation plan, or solid waste facilities permit.
- I. Grading involving the ongoing operations of a vested mining facility that is conducted in conformance with an approved reclamation plan.
- J. Maintenance of existing firebreaks and roads to keep the firebreak or road substantially in its original condition.
- K. Routine cemetery excavations and fills.
- L. Excavation within the public Right-of-Way under the authority of an Encroachment Permit issued by the County.
- M. Installation of miscellaneous fills, such as landscape fills, that contain less than 50250 cubic yards of material and conform to the design parameters listed in Section 15.14.140.A of this Chapter.
- N. Construction of miscellaneous cuts that involve less than 50250 cubic yards of excavation and conform to the design parameters listed in Section 15.14.140.A of this Chapter.
- O. Agricultural grading activities that convert less than one acre of undisturbed vegetation to agricultural cropland.
- P. Agricultural grading or other practices, including fuel reduction and fire protection, that do not substantially change the natural contour of the land and that use "best management practices" as recommended by the County Agricultural Commission and adopted by the Board of Supervisors.

Section 15.14.150 Tahoe Basin special restrictions:

- A. The exemptions listed in Section 15.14.140 above are not applicable in the Tahoe Basin.
- B. All other applicable provisions of this Chapter shall apply to grading activities in the Tahoe Basin.
- C. Refer to Section E.6 of Volume III of the County Design and Improvement Standards Manual for conditions of approval applicable to the Tahoe Basin.

Section references corrected

Section 15.14.160 Severability: If any section, subsection, paragraph, subparagraph, sentence, clause or phrase of this Chapter is for any reason held to be invalid or unconstitutional, such invalidity or unconstitutionality shall not affect the validity or constitutionality of the remaining portions of this Chapter; and the Board declares that this Chapter and each section, subsection, paragraph, subparagraph, sentence, clause, and phrase of this Chapter would have been adopted irrespective of the fact that one or more of such sections, subsections, paragraphs, subparagraphs, or sentences, clauses or phrases be declared invalid or unconstitutional.

ARTICLE II. PERMIT PROCESSING

Section 15.14.200 Application Submittal Requirements: Grading plans submitted to the County in support of a permit application shall include the informational items listed in Section D, and be consistent with the design standards described in Section B, of the Grading, Erosion and Sediment Control Chapter of the Design and Improvement Standards Manual as currently adopted by the El Dorado County Board of Supervisors.

Section 15.14.210 Permit Processing Procedures: Applications for a Grading Permit shall be reviewed in accordance with the procedures outlined in Section E of the Grading, Erosion and Sediment Control Chapter of the Design and Improvement Standards Manual as currently adopted by the El Dorado County Board of Supervisors. Inspections shall be conducted pursuant to the procedures outlined in Section F of the Grading, Erosion and Sediment Control Chapter of the Design and Improvement Standards Manual as currently adopted by the El Dorado County Board of Supervisors.

Section 15.14.220 Time limits on permits:

- A The permittee shall perform and complete all the work required by the permit within time limits specified in the permit. If the work cannot be completed within the specified time, a request for an extension of time setting forth the reasons for the requested extension shall be presented in writing to the Director no later than fifteen (15) days prior to the expiration of the permit. The Director may add additional time for completion of the work. For single parcel site development, the permit shall be valid for the length of time specified in the California Building Code as amended by County ordinance.
- B If all the permit work required is not completed within the time limit specified in subsection A of this section, no further grading shall be done without renewing the permit. The Director may require specific measures to be immediately implemented to ensure stabilization of the site. A written request for renewal shall be submitted to the Director, who may require a new application and fees depending on the time between the expiration date and the renewal request, revisions in county regulations, or changed circumstances in the immediate area. Any revised plan shall be submitted to the Director for review, and any costs thereof shall be at the applicant's expense.

Section 15.14.230: Fees

- A **Fee Schedule:** The schedule of fees and costs shall be those established from time to time by duly adopted resolutions of the Board of Supervisors.
- B **Timing of payment:** As part of the application, the applicant shall provide to the County either an initial deposit of funds or a fixed fee as authorized by the adopted County fee ordinance. Fees and deposits shall be provided to the Administrative Authority as identified pursuant to Section 15.14.120 of this chapter. The authorized methods of County cost recovery are described below:

Fixed fee cost recovery: For projects eligible for the fixed fee cost recovery method, the fee shall be paid at the time of application. Fixed fees shall be allocated in equal amounts to cover the cost of plan check and the cost of construction inspection and be subject to the refund procedures specified in the applicable adopted fee ordinance or resolution.

Time and Materials cost recovery: For projects that require time and materials reimbursement, an initial deposit of funds shall be provided based upon an engineer's estimate of project cost. This deposit shall constitute an estimate of the County's costs of permit processing. During permit processing, the applicant shall be periodically billed to cover ongoing County costs when a designated portion of the deposit, as determined by the Director, has been expended. Prior to permit issuance, or on an alternate schedule approved by the Director, any unpaid County costs associated with processing of the permit shall be paid by the applicant. In addition, the applicant shall provide a second deposit to cover the costs of construction inspection. During the inspection period, the applicant shall be periodically billed to cover ongoing County costs when a designated portion of the inspection deposit, as determined by the Director, has been expended. Any outstanding County costs at the time of final inspection shall be billed to the applicant. No additional permits shall be issued on a parcel with an unpaid bill for County costs. If there is a balance due the applicant at the time of final inspection approval, a refund will be processed within 60 days and funds will be forwarded to the owner of record.

- C **Public agencies:** The fee required of public agencies may be waived pursuant to the policy of the El Dorado County Board of Supervisors.
- D **Public utilities:** Public utilities may, at the option of the Director, make payment for the above charges as billed by the Director instead of by advance deposit as required above.
- E **Violation fees:** If grading work is done in violation of this Chapter or such work is not done in accordance with an approved permit, a fee covering investigation of any violation and the inspection and plan checking of work required to correct such violation shall be charged to the violator at an amount equivalent to twice the regular permit fee. These fees are in addition to any fines or penalties imposed pursuant to sections 15.14.410 and 15.14.420 of this Chapter.

Section 15.14.250 Transfer of permit: No permit issued under this Chapter may be transferred or assigned in any manner whatsoever, without the express consent of the Director.

Section 15.14.260 Validity: The issuance of a permit or approval of plans and specifications shall not be construed as an approval of any violation of the provisions of this Chapter or of any other applicable law, ordinance, rule or regulation. If a permit is issued by the County due to inaccurate plans and informational materials submitted by the applicant, the Director may revoke the permit at any time.

Section 15.14.270 Appeals: Final decisions made by the Director, or by any applicable County commission, appeals board or decision-maker, pursuant to this Chapter may be appealed to the Board of Supervisors within ten working days of the date of such decision. The appeal to the Board shall be made in writing and shall list the specific grounds for the appeal.

Section 15.14.280 Emergency Work: Grading activities to protect life or property, or to implement necessary erosion control measures, may be initiated prior to obtaining a permit when a situation exists that requires immediate action. Only the volume of grading necessary to abate an imminent hazard may be performed prior to obtaining a permit. The person performing such emergency work shall notify the Director and provide photographic evidence of the scope and necessity of the work on the next full working day after the onset of the emergency situation. The person performing the emergency work or the landowner shall apply for a permit within ten (10) calendar days after the commencement of grading. The Director may order work to be stopped or restricted in scope based upon the nature of the emergency.

Section 15.14.290: Hazards

Grading activities that cause or have the potential to result in the following conditions, as determined by the Director, are prohibited.

- A. The creation of a hazard to public health and safety
- B. A threat to the stability or use of adjacent property.
- C. Damage to public or private utilities.
- D. Damage to a public or private roadway or other transportation facility.
- E. Damage to, or obstruction of, watercourses or drainage facilities.
- F. Substantial degradation of water quality of any water body.
- G. Damage to existing septic systems and water supply wells.

If one or more of the above conditions exist or have the potential to occur, it is the responsibility of the landowner to immediately cease all grading activities and notify the Director. The landowner shall obtain a new or revised grading permit to authorize the work necessary to eliminate the hazard. The Director may require the submission of new plans and engineering or geological reports that include professional design recommendations. The Director may require design modifications to address the identified issues. In the case of an emergency condition, the Director may authorize immediate work to occur pursuant to Section 15.14.280 of this Chapter.

ARTICLE III. IMPROVEMENT SECURITY

Section 15.14.300 Security required: As a condition for the issuance of a permit, the Director may require the deposit of improvement security in sufficient amount deemed necessary by him to assure faithful performance of the work.

- A **Form of Security:** The security shall be in the form of cash, a certified or cashier's check, a letter of credit, or a faithful performance bond executed by the applicant and a corporate surety authorized to do business in this state. Public agencies are exempted from this provision by law.
- B **Effective period of Security-Subdivisions:** In the case of subdivisions, the improvement security shall remain in effect until final inspections have been made and all grading work and subdivision improvements have been accepted as complete by the Director.
- C **Effective period of Security-general projects:** For projects other than subdivisions, the improvement security shall remain in effect until final inspections have been made and all grading work has been accepted as complete by the Director.
- D **Maintenance security:** In addition to the improvement security, the Director may also require the deposit of maintenance security in sufficient amount deemed necessary to guarantee and maintain the grading work to assure the proper functioning of drainage systems and adequate erosion and sedimentation control. Said maintenance security shall be in the form of cash, a certified or cashier's check, a letter of credit, or a faithful performance bond executed by the applicant and a corporate surety authorized to do business in this state and shall remain in effect for a period of one year after the date of expiration of the improvement security as designated in subsections B and C of this section.
- E **Payee of Bond or other security:** Any bond or deposit required by the Director pursuant to this Chapter shall be payable to the County of El Dorado, El Dorado County Department of Transportation or Development Services Department, as applicable.
- F **Release of security:** Upon satisfactory completion of the permitted work (including any County-required monitoring period), as determined by the Director, the improvement and maintenance security deposits or bonds shall be released to the applicant. In the event of failure to complete the work in accordance with the approved plans and all permit conditions of approval, the County shall retain the security funds. The County may use these funds to complete the required work or to pay a contractor to complete the required work. Any funds remaining after the payment of all costs, including administrative and inspection costs, shall be returned to the permittee.
- G **Grading Agreement:** Where an Improvement Security Agreement is required, it shall be executed in a form approved by the Director.

Section 15.14.310 Bond for stockpiles: If required by the Director, a bond and grading agreement in conformance with Section 15.14.300 of this Chapter shall be provided to assure future stockpile removal, implementation of erosion control and restoration of the site.

ARTICLE IV. ENFORCEMENT

Section 15.14.400 Suspension and revocation of permit: The Director may suspend or revoke a permit for good cause, subject to appeal to the Board of Supervisors. Except for erosion control facility installation and maintenance, no work shall be performed pending an appeal except as authorized by the Director.

Section 15.14.410 Corrective work:

A. Abatement of Unlawfully Created Conditions:

1. **Entry onto property:** Pursuant to Section 15.14.440 of this Chapter, the Director may order County workers or contractors to immediately enter private property to conduct work necessary to abate hazards to public health and safety such as:
 - a. The alteration of drainage patterns that has caused, or has the potential to cause, flooding of or siltation upon any downstream property as determined by the Director.
 - b. Grading activities that cause or have the potential to cause erosion, sedimentation or landslides that could affect offsite property, sensitive environmental resources or public safety as determined by the Director.
 - c. Other emergency conditions that threaten public or private property.
2. **Cost Recovery:** Whenever the County expends any funds or takes any action, the County shall bill the landowner, lessee or licensee for the costs indicated herein. Pursuant to the requirements of Government Code Section 54988, the costs shall become a lien on the property, or shall be recoverable from the property owner by other legal means. All of the following costs shall be billed:
 - a. Engineering and design--professional and specialized services (private or County);
 - b. Construction - contractor's invoices or County's force account cost;
 - c. Administration and supervision overhead costs as authorized by Government Code Section 54985;
 - d. Interest accrued at the percentage rate currently authorized by the Board of Supervisors on all unpaid amounts from the date of billing.

B. Stop Work Orders:

1. **Order and Penalty:** Whenever it comes to the attention of the Director that any person is performing work in violation of the provisions of this Chapter or without a permit as required by this Chapter, or the work is in violation of the conditions of approval of an approved permit, the Director may serve upon such person a written order citing such violations and directing that person performing the work to stop work immediately. A violation of a Stop Work

Order is a misdemeanor punishable pursuant to Section 15.14.420 of this Chapter.

2. Failure to comply: Upon failure of any person to comply with the stop work notice served pursuant to this section, the department may perform the corrective work either with County crews or by contract. All persons responsible for the violation shall be liable jointly and severally to the county for the cost of such corrective work.
3. Required actions by violator: Upon receipt of such stop work notice, the person performing the work shall comply with all of the following:
 - a. Stop work immediately except as allowed under Section 15.14.280 of this Chapter.
 - b. Within twenty-four (24) hours, provide the Director with a list of remedies which can be immediately undertaken to bring the work into compliance with this Chapter. The Director shall review the proposed remedies for conformance with this Chapter, the El Dorado County General Plan and other applicable laws and regulations;
 - c. Within twenty-four (24) hours after acceptance of the proposed remedies by the Director, implement the remedies accepted by the Director as is necessary to bring the work into compliance with this Chapter. All costs associated with the remedial work are the responsibility of the violator.
4. Engineering work: Necessary engineering work required to identify and define the proper course of action, as determined by the Department of Transportation or the Development Services Department, shall be funded by the violator at no cost to the County.

C. Notice of Noncompliance:

1. Unpermitted work: In those cases where there has been a failure to secure the required permit or permits, or an approved permit has expired, the Director, shall record a notice of noncompliance with the County Recorder. This action shall be taken no sooner than thirty (30) days after attempting to notify the owner of the property by certified mail of the requirement of permits, the nature and extent of the identified violation and the sections of County Code that pertain to this violation. The filing of a notice of noncompliance shall be done in addition to any other legal remedy that the department may employ.
2. Notice of Cancellation: When the work has been completed under the authority of a grading permit, the Director shall record with the County Recorder and provide to the property owner of record, a notice of cancellation certifying that a permit has been issued and the notice of noncompliance has been rescinded. This shall be done at the permittee's expense.

D. Noncompliance notification by licensed professional: The Geotechnical Engineer, Certified Engineering Geologist or Civil Engineer retained to monitor construction shall immediately notify the Director if it is observed that the work is not being performed substantially in accordance with the approved plans and specifications. The licensed professional shall make recommendations for corrective measures that would abate the violation. Any necessary modifications of project plans shall be submitted to the Director for review and approval.

Section 15.14.420 Penalties imposed by law: Notwithstanding any other provisions of this code, a violation of a provision of this ordinance is considered a misdemeanor punishable by a fine of not more than one thousand dollars (\$1,000.00) or by imprisonment in the county jail for not more than six (6) months, or by both such fine and imprisonment pursuant to Section 1.24.020 of the El Dorado County Code. Each day that such violation continues shall constitute a separate offense punishable as set forth herein.

Section 15.14.430 Nonexclusive remedies: The remedies provided in this Chapter are not exclusive, and are in addition to any other remedy or penalty provided by law. The available remedies include, but are not limited to, actions taken by El Dorado County pursuant to Section 9.02 of the County Code.

Section 15.14.440 Right of entry: Whenever necessary to enforce the provisions of this Chapter, the Director may enter the premises at all reasonable times in the manner provided by law to perform any duty imposed by this Chapter. If such entry is refused, the Director shall have recourse to every remedy provided by law to secure entry.

Section 15.14.450 Liability: Neither issuance of a permit under the provisions of this Chapter nor compliance with the provisions hereof or with any conditions created in a permit issued hereunder shall relieve any person from responsibility for damage to any person or property or impose any liability against the county for damage to any person or property.

Section 15.14.460 Denial of other permits and inspections: No new permit of any type shall be issued, nor any inspection services provided, for a parcel upon which an unabated violation of this ordinance exists.

Appendix Chapter 33 EXCAVATION AND GRADING

SECTION 3304 – PURPOSE

The purpose of this appendix is to safeguard life, limb, property and the public welfare by regulating grading on private property.

SECTION 3305 – SCOPE

This appendix sets forth rules and regulations to control excavation, grading and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction.

The standards listed below are recognized standards (see Sections 3503 and 3504).

1. Testing.

- 1.1 ASTM D 1557, Moisture-density Relations of Soils and Soil Aggregate Mixtures
- 1.2 ASTM D 1556, In Place Density of Soils by the Sand-Cone Method
- 1.3 ASTM D 2167, In Place Density of Soils by the Rubber-Balloon Method
- 1.4 ASTM D 2937, In Place Density of Soils by the Drive-Cylinder Method
- 1.5 ASTM D 2922 and D 3017, In Place Moisture Contact and Density of Soils by Nuclear Methods

The following California section replaces the corresponding model code section for applications specified by law for the Department of Housing and Community Development and the Office of Statewide Health Planning and Development.

SECTION 3305a – SCOPE

(For HCD1, OSHPD 1 & 2) This chapter sets forth rules and regulations to control excavation, grading and earthwork construction, including fills and embankments, and provides for approval of plans and inspection of grading construction.

SECTION 3306 – PERMITS REQUIRED

3306.1 Permits Required. Except as specified in Section 3306.2 of this section, no person shall do any grading without first having obtained a grading permit from the building official.

3306.2 Exempted Work. A grading permit is not required for the following:

1. When approved by the building official, grading in an isolated, self-contained area if there is no danger to private or public property.
2. An excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid building permit. This shall not exempt any fill made with the material from such excavation or exempt any excavation having an unsupported height greater than 5 feet (524 mm) after the completion of such structure.
3. Cemetery graves.
4. Refuse disposal sites controlled by other regulations.
5. Excavations for wells or tunnels or utilities.
6. Mining, quarrying, excavating, processing or stockpiling of rock, sand, gravel, aggregate or clay where established and provided for by law, provided such operations do not affect the lateral support or increase the stresses in or pressure upon any adjacent or contiguous property.
7. Exploratory excavations under the direction of soil engineers or engineering geologists.
8. An excavation that (1) is less than 2 feet (610 mm) in depth or (2) does not create a cut slope greater than 5 feet (1524 mm) in height and steeper than 1 unit vertical in 1 ½ units horizontal (66.7% slope).
9. A fill less than 1 foot (305 mm) in depth and placed on natural terrain with a slope flatter than 1 unit vertical in 5 units horizontal (20% slope), or less than 3 feet (914 mm) in depth, not intended to support structures, that does not exceed 50 cubic yards (38.3 m³) on any one lot and does not obstruct a drainage course.

Exemption from the permit requirements of this chapter shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this chapter or any other laws or ordinances of this jurisdiction.

SECTION 3307 – HAZARDS

Whenever the building official determines that any existing excavation or embankment or fill on private property has become a hazard to life and limb, or endangers property, or adversely affects the safety, use or stability of a public way or drainage channel, the owner of the property upon which the excavation or fill is located, or other person or agent in control of said property, upon receipt of notice in writing from the building official, shall within the period specified therein repair or eliminate such excavation or embankment to eliminate the hazard and to be in conformance with the requirements of this code.

SECTION 3308 – DEFINITIONS

For the purposes of this appendix, the definitions listed hereunder shall be construed as specified in this section.

APPROVAL shall mean that the proposed work or completed work conforms to this chapter in the opinion of the building official.

AS-GRADED is the extent of surface conditions on completion of grading.

BEDROCK is in-place solid rock.

BENCH is a relatively level step excavated into earth material on which fill is to be placed.

BORROW is earth material acquired from an off-site location for use in grading on a site.

CIVIL ENGINEER is a professional engineer registered in the state to practice in the field of civil works.

CIVIL ENGINEERING is the application of the knowledge of the forces of nature, principles of mechanics and the properties of materials to the evaluation, design and construction of civil works.

COMPACTION is the densification of a fill by mechanical means.

EARTH MATERIAL is any rock, natural soil or fill or any combination thereof.

ENGINEERING GEOLOGIST is a geologist experienced and knowledgeable in engineering geology.

ENGINEERING GEOLOGY is the application of geologic knowledge and principles in the investigation and evaluation of naturally occurring rock and soil for use in the design of civil works.

EROSION is the wearing away of the ground surface as a result of the movement of wind, water or ice.

EXCAVATION is the mechanical removal of earth material.

FILL is a deposit of earth material placed by artificial means.

GEOTECHNICAL ENGINEER. See “soils engineer.”

GRADE is the vertical location of the ground surface.

Existing Grade is the grade prior to grading.

Finish Grade is the final grade of the site that conforms to the approved plan.

Rough Grade is the stage at which the grade approximately conforms to the approved plan.

GRADING is any excavating or filling or combination thereof.

KEY is a designed compacted fill placed in a trench excavated in earth material beneath the toe of a proposed fill slope.

PROFESSIONAL INSPECTION is the inspection required by this code to be performed by the civil engineer, soils engineer or engineering geologist. Such inspections include that performed by persons supervised by such engineers or geologists and shall be sufficient to form an opinion relating to the conduct of the work.

SITE is any lot or parcel of land or contiguous combination thereof, under the same ownership, where grading is performed or permitted.

SLOPE is an inclined ground surface the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

SOIL is naturally occurring superficial deposits overlying bedrock.

SOILS ENGINEER (GEOTECHNICAL ENGINEER) is an engineer experienced and knowledgeable in the practice of soils engineering (geotechnical) engineering.

SOILS ENGINEERING (GEOTECHNICAL ENGINEERING) is the application of the principles of soils mechanics in the investigation, evaluation and design of civil works involving the use of earth materials and the inspection or testing of the construction thereof.

TERRACE is a relatively level step constructed in the face of a graded slope surface for drainage and maintenance purposes.

SECTION 3309 – GRADING PERMIT REQUIREMENTS

3309.1 Permits Required. Except as exempted in Section 3306 of this code, no person shall do any grading without first obtaining a grading permit from the building official. A separate permit shall be obtained for each site, and may cover both excavations and fills.

3309.2 Application. The provisions of Section 106.3.1 are applicable to grading. Additionally, the application shall state the estimated quantities of work involved.

3309.3 Grading Designation. Grading in excess of 5,000 cubic yards (3825 m³) shall be performed in accordance with the approved grading plan prepared by a civil engineer, and shall be designated as “engineered grading.” Grading involving less than 5,000 cubic yards (3825 m³) shall be designated “regular grading” unless the permittee chooses to have the grading performed as engineered grading, or the building official determines that special conditions or unusual hazards exist, in which case grading shall conform to the requirements for engineered grading.

3309.4 Engineered Grading Requirements. Application for a grading permit shall be accompanied by two sets of plans and specifications, and supporting data consisting of a soils engineering report and engineering geology report. The plans and specifications shall be prepared and signed by an individual licensed by the state to prepare such plans or specifications when required by the building official.

Specifications shall contain information covering construction and material requirements.

Plans shall be drawn to scale upon substantial paper or cloth and shall be of sufficient clarity to indicate the nature and extent of the work proposed and show in detail that they will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations. The first

sheet of each set of plans shall give location of the work, the name and address of the owner, and the person by whom they were prepared.

The plans shall include the following information:

1. General vicinity of the proposed site.
2. Property limits and accurate contours of existing ground and details of terrain and area drainage.
3. Limiting dimensions, elevations or finish contours to be achieved by the grading, and proposed drainage channels and related construction.
4. Detailed plans of all surface and subsurface drainage devices, walls, cribbing, dams and other protective devices to be constructed with, or as a part of, the proposed work, together with a map showing the drainage area and the estimated runoff of the area served by any drains.
5. Location of any buildings or structures on the property where the work is to be performed and the location of any buildings or structures on land of adjacent owners that are within 15 feet (4572 mm) of the property or that may be affected by the proposed grading operations.
6. Recommendations included in the soils engineering report and the engineering geology report shall be incorporated in the grading plans or specifications. When approved by the building official, specific recommendations contained in the soils engineering report and the engineering geology report, which are applicable to grading, may be included by reference.
7. The dates of the soils engineering and engineering geology reports together with the names, addresses and phone numbers of the firms or individuals who prepared the reports.

3309.5 Soils Engineering Report. The soils engineering report required by Section 3309.4 shall include data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria for corrective measures, including buttress fills, when necessary, and opinion on adequacy for the intended use of sites to be developed by the proposed grading as affected by soils engineering factors, including the stability of slopes.

3309.6 Engineering Geology Report. The engineering geology report required by Section 3309.4 shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic

conditions on the proposed development, and opinion on the adequacy for the intended use of sites to be developed by the proposed grading, as affected by geologic factors.

3309.7 Liquefaction Study. The building official may require a geotechnical investigation in accordance with Sections 1804.2 and 1804.5 when, during the course of an investigation, all of the following conditions are discovered, the report shall address the potential for liquefaction:

1. Shallow ground water, 50 feet (15 240 mm) or less.
2. Unconsolidated sandy alluvium
3. Seismic Zones 3 and 4.

3309.8 Regular Grading Requirements. Each application for a grading permit shall be accompanied by a plan in sufficient clarity to indicate the nature and extent of the work. The plans shall give the location of the work, the name of the owner and the name of the person who prepared the plan. The plan shall include the following information:

1. General vicinity of the proposed site.
2. Limiting dimensions and depth of cut and fill.
3. Location of any buildings or structures where work is to be performed, and the location of any buildings or structures within 15 feet (4572 mm) of the proposed grading.

3309.9 Issuance. The provisions of Section 106.4 are applicable to grading permits. The building official may require that grading operations and project designs be modified if delays occur which incur weather-generated problems not considered at the time the permit was issued.

The building official may require professional inspection and testing by the soils engineer. When the building official has cause to believe that geologic factors may be involved, the grading will be required to conform to engineered grading.

SECTION 3310 – GRADING FEES

3310.1 General. Fees shall be assessed in accordance with the provisions of this section or shall be as set forth in the fee schedule adopted by the jurisdiction.

3310.2 Plan Review Fees. When a plan or other data are required to be submitted, a plan review fee shall be paid at the time of submitting plans and specifications for review. Said plan review fee shall be as set forth in Table A-33-A. Separate plan review fees shall apply to retaining walls or major drainage structures as required elsewhere in this code. For excavation and fill on the same site, the fee shall be based on the volume of excavation or fill, whichever is greater.

3310.3 Grading Permit Fees. A fee for each grading permit shall be paid to the building official as set forth in Table A-33-B. Separate permits and fees shall apply to retaining walls or major drainage structures as required elsewhere in this code. There shall be no separate charge for standard terrace drains and similar facilities.

TABLE A-33-A – GRADING PLAN REVIEW FEES

50 cubic yards (38.2 m ³) or less	No fee
51 to 100 cubic yards (40 m ³ to 76.5 m ³)	\$23.50
101 to 1,000 cubic yards (77.2 m ³ to 764.6 m ³).....	37.00
1,001 to 10,000 cubic yards (765.3 m ³ to 7645.5 m ³).....	49.25
10,001 to 100,000 cubic yards (7646.3 m ³ to 76 455 m ³) --\$49.25 for the first 10,000 cubic yards (7645.5 m ³), plus \$24.50 for each additional 10,000 yards (7645.5 m ³) or fraction thereof.	
100,001 to 200,000 cubic yards (76 456 m ³ to 152 911 m ³) -- \$269.75 for the first 100,000 cubic yards (76 455 m ³), plus \$13.25 for each additional 10,000 cubic yards (7645.5 m ³) or fraction thereof.	
200,001 cubic yards (152 912 m ³) or more --- \$402.25 for the first 200,000 cubic yards (152 911 m ³), plus \$7.25 for each additional 10,000 cubic yards (7645.5 m ³) or fraction thereof.	
Other Fees:	
Additional plan review required by changes, additions or revisions to approved plans.....	\$50.50 per hour *
(minimum charge – one-half hour)	

*Or the total hourly cost to the jurisdiction, whichever is the greatest. This cost shall include supervision, overhead, equipment, hourly wages and fringe benefits of the employees involved.

TABLE A-33-B – GRADING PERMIT FEES⁴

50 cubic yards (38.2 m ³) or less	\$23.50
51 to 100 cubic yards (40 m ³ to 76.5 m ³)	37.00
101 to 1,000 cubic yards (77.2 m ³ to 764.6 m ³) -- \$37.00 for the first 100 cubic yards (76.5 m ³) plus \$17.50 for each additional 100 cubic yards (76.5 m ³) or fraction thereof.	
1,001 to 10,000 cubic yards (765.3 m ³ to 7645.5 m ³) -- \$194.50 for the first 1,000 cubic yards (764.6 m ³), plus \$14.50 for each additional 1,000 cubic yards (764.6 m ³) or fraction thereof.	
10,001 to 100,000 cubic yards (7646.3 m ³ to 76 455 m ³) -- \$325.00 for the first 10,000 cubic yards (7645.5 m ³), plus \$66.00 for each additional 10,000 cubic yards (7645.5 m ³) or fraction thereof.	
100,001 cubic yards (76 456m ³) or more -- \$919.00 for the first 100,000 cubic yards (76 455 m ³), plus \$36.50 for each additional 10,000 cubic yards (7645.5 m ³) or fraction thereof.	
Other Inspections and Fees:	
1. Inspections outside of normal business hours.....	\$50.50 per hour ² (minimum charge – two hours)
2. Reinspection fees assessed under provisions of Section 108.8.....	\$50.50 per hour ²
3. Inspections for which no fee is specifically indicated.....	\$50.50 per hour ² (minimum charge – one-half hour)

¹The fee for a grading permit authorizing additional work to that under a valid permit shall be the difference between the fee paid for the original permit and the fee shown for the entire project.

²Or the total hourly cost to the jurisdiction, whichever is the greatest. This cost shall include supervision, overhead, equipment, hourly wages and fringe benefits of the employees involved.

SECTION 3311 – BONDS

The building official may require bonds in such form and amounts as may be deemed necessary to ensure that the work, if not completed in accordance with the approved plans and specifications, will be corrected to eliminate hazardous conditions.

In lieu of a surety bond the applicant may file a cash bond or instrument of credit with the building official in an amount equal to that which would be required in the surety bond.

SECTION 3312 – CUTS

3312.1 General. Unless otherwise recommended in the approved soils engineering or engineering geology report, cuts shall conform to the provisions of this section.

In the absence of an approved soils engineering report, these provisions may be waived for minor cuts not intended to support structures.

3312.2 Slope. The slope of cut surfaces shall be no steeper than is safe for the intended use and shall be no steeper than 1 unit vertical in 2 units horizontal (50% slope) unless the permittee furnishes a soils engineering or an engineering geology report, or both, stating that the site has been investigated and giving an opinion that a cut at a steeper slope will be stable and not create a hazard to public or private property.

SECTION 3313 – FILLS

3313.1 General. Unless otherwise recommended in the approved soils engineering report, fills shall conform to the provisions of this section.

In the absence of an approved soils engineering report, these provisions may be waived for minor fills not intended to support structures.

3313.2 Preparation of Ground. Fill slopes shall not be constructed on natural slopes steeper than 1 unit vertical in 2 units horizontal (50% slope). The ground surface shall be prepared to receive fill by removing vegetation, noncomplying fill, topsoil and other unsuitable materials scarifying to provide a bond with the new fill and, where slopes are steeper than 1 unit vertical in 5 units horizontal (20% slope) and the height is greater than 5 feet (1524 mm), by benching into sound bedrock or other competent material as determined by the soils engineer. The bench under the toe of a fill on a slope steeper than 1 unit vertical in 5 units horizontal (20% slope) shall be at least 10 feet (3048 mm) wide. The area beyond the toe of fill shall be

sloped for sheet overflow or a paved drain shall be provided. When fill is to be placed over a cut, the bench under the toe of fill shall be at least 10 feet (3048 mm) wide but the cut shall be made before placing the fill and acceptance by the soils engineer or engineering geologist or both as a suitable foundation for fill.

3313.3 Fill Material. Detrimental amounts of organic material shall not be permitted in fills. Except as permitted by the building official, no rock or similar irreducible material with a maximum dimension greater than 12 inches (305 mm) shall be buried or placed in fills.

EXCEPTION: The building official may permit placement of larger rock when the soils engineer properly devises a method of placement, and continuously inspects its placement and approves the fill stability. The following conditions shall also apply:

1. Prior to issuance of the grading permit, potential rock disposal areas shall be delineated on the grading plan.

2. Rock sizes greater than 12 inches (305 mm) in maximum dimension shall be 10 feet (3048 mm) or more below grade, measured vertically.

3. Rocks shall be placed so as to assure filling of all voids with well-graded soil.

3313.4 Compaction. All fills shall be compacted to a minimum of 90 percent of maximum density.

3313.5 Slope. The slope of fill surfaces shall be no steeper than is safe for the intended use. Fill slopes shall be no steeper than 1 unit vertical in 2 units horizontal (50% slope).

SECTION 3314 – SETBACKS

3314.1 General. Cut and fill slopes shall be set back from site boundaries in accordance with this section. Setback dimensions shall be horizontal distances measured perpendicular to the site boundary. Setback dimensions shall be as shown in Figure A-33-1.

3314.2 Top of Cut Slope. The top of cut slopes shall not be made nearer to a site boundary line than one fifth of the vertical height of cut with a minimum of 2 feet (610 mm) and a maximum of 10 feet (3048 mm). The setback may need to be increased for any required interceptor drains.

3314.3 Toe of Fill Slope. The toe of fill slope shall be made not nearer to the site boundary line than one half the height of the slope with a minimum of 2 feet (610 mm)

and a maximum of 20 feet (6096 mm). Where a fill slope is to be located near the site boundary and the adjacent off-site property is developed, special precautions shall be incorporated in the work as the building official deems necessary to protect the adjoining property from damage as a result of such grading. These precautions may include but are not limited to:

1. Additional setbacks.
2. Provision for retaining or slough walls.
3. Mechanical or chemical treatment of the fill slope surface to minimize erosion.
4. Provisions for the control of surface waters.

3314.4 Modification of Slope Location. The building official may approve alternate setbacks. The building official may require an investigation and recommendation by a qualified engineer or engineering geologist to demonstrate that the intent of this section has been satisfied.

SECTION 3315 – DRAINAGE AND TERRACING

3315.1 General. Unless otherwise indicated on the approved grading plan, drainage facilities and terracing shall conform to the provisions of this section for cut or fill slopes steeper than 1 unit vertical in 3 units horizontal (33.3% slope).

3315.2 Terrace. Terraces at least 6 feet (1829 mm) in width shall be established at not more than 30-foot (9144 mm) vertical intervals on all cut or fill slopes to control surface drainage and debris except that where only one terrace is required, it shall be at midheight. For cut or fill slopes greater than 60 feet (18 288 mm) and up to 120 feet (36 576 mm) in vertical height, one terrace at approximately midheight shall be 12 feet (3658 mm) in width. Terrace widths and spacing for cut and fill slopes greater than 120 feet (36 576 mm) in height shall be designed by the civil engineer and approved by the building official. Suitable access shall be provided to permit proper cleaning and maintenance.

Swales or ditches on terraces shall have a minimum gradient of 5 percent and must be paved with reinforced concrete not less than 3 inches (76 mm) in thickness or an approved equal paving. They shall have a minimum depth at the deepest point of 1 foot (305 mm) and a minimum paved width of 5 feet (1524 mm).

A single run of swale or ditch shall not collect runoff from a tributary area exceeding 13,500 square feet

(1254.2 m²) (projected) without discharging into a down drain.

3315.3 Subsurface Drainage. Cut and fill slopes shall be provided with subsurface drainage as necessary for stability.

3315.4 Disposal. All drainage facilities shall be designed to carry waters to the nearest practicable drainage way approved by the building official or other appropriate jurisdiction as a safe place to deposit such waters. Erosion of ground in the area of discharge shall be prevented by installation of nonerosive down-drains or other devices.

Building pads shall have a drainage gradient of 2 percent toward approved drainage facilities, unless waived by the building official.

EXCEPTION: The gradient from the building pad may be 1 percent if all of the following conditions exist throughout the permit area:

1. No proposed fills are greater than 10 feet (3048 mm) in maximum depth.
2. No proposed finish cut or fill slope faces have a vertical height in excess of 10 feet (3048 mm).
3. No existing slope faces steeper than 1 unit vertical in 10 units horizontal (10 % slope) have a vertical height in excess of 10 feet (3048 mm).

3315.5 Interceptor Drains. Paved interceptor drains shall be installed along the top of all cut slopes where the tributary drainage area above slopes toward the cut and has a drainage path greater than 40 feet (12 192 mm) measured horizontally. Interceptor drains shall be paved with a minimum of 3 inches (76 mm) of concrete or gunite and reinforced. They shall have a minimum depth of 12 inches (305 mm) and a minimum paved width of 30 inches (762 mm) measured horizontally across the drain. The slope of drain shall be approved by the building official.

SECTION 3316 – EROSION CONTROL

3316.1 Slopes. The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.

3316.2 Other Devices. Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.

SECTION 3317 – GRADING INSPECTION

3317.1 General. Grading operations for which a permit is required shall be subject to inspection by the building official. Professional inspection of grading operations shall be provided by the civil engineer, soils engineer and the engineering geologist retained to provide such services in accordance with Section 3317.5 for engineered grading and as required by the building official for regular grading.

3317.2 Civil Engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade and surface drainage of the development area. If revised plans are required during the course of the work they shall be prepared by the civil engineer.

3317.3 Soils Engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the building official and the civil engineer.

3317.4 Engineering Geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine of conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.

3317.5 Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this code, and the permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor and the building official. In the event of changed conditions the permittee shall be responsible for informing the building official of such change and shall provide revised plans for approval.

3317.6 Building Official. The building official shall inspect the project at the various stages of work requiring

approval to determine that adequate control is being exercised by the professional consultants.

3317.7 Notification of Noncompliance. If, in the course of fulfilling their respective duties under this chapter, the civil engineer, the soils engineer or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the building official.

3317.8 Transfer of Responsibility. If the civil engineer, the soils engineer, or the engineering geologist of record is changed during grading, the work shall be stopped until the replacement has agreed in writing to accept their responsibility within the area of technical competence for approval upon completion of the work. It shall be the duty of the permittee to notify the building official in writing of such change prior to the recommencement of such grading.

SECTION 3318 – COMPLETION OF WORK

3318.1 Final Reports. Upon completion of the rough grading work and at the final completion of the work, the following reports and drawings and supplements thereto are required for engineered grading or when professional inspection is performed for regular grading, as applicable.

1. An as-built grading plan prepared by the civil engineer retained to provide such services in accordance with Section 3317.5 showing original ground surface elevations, as-graded ground surface elevations, lot drainage patterns, and the locations and elevations of surface drainage facilities and of the outlets of subsurface drains. As-constructed locations, elevations and details of subsurface drains shall be shown as reported by the soils engineer.

Civil engineers shall state that to the best of their knowledge the work within their area of responsibility was done in accordance with the final approved grading plan.

2. A report prepared by the soils engineer retained to provide such services in accordance with Section 3317.3, including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during grading and their effect on the recommendations made in the approved soils engineering investigation report. Soils engineers shall submit a statement that, to the best of their knowledge, the work within their area of responsibilities is in accordance with the approved soils engineering report and applicable provisions of this chapter.

3. A report prepared by the engineering geologist retained to provide such services in accordance with Section 3317.5, including a final description of the geology of the site and any new information disclosed during the grading and the effect of same on recommendations incorporated in the approved grading plan. Engineering geologists shall submit a statement that, to the best of their knowledge, the work within their area of responsibility is in accordance with the approved engineering geologist report and applicable provisions of this chapter.

4. The grading contractor shall submit in a form prescribed by the building official a statement of conformance to said as-built plan and the specifications.

3318.2 Notification of Completion. The permittee shall notify the building official when the grading operation is ready for final inspection. Final approval shall not be given until all work, including installation of all drainage facilities and their protective devices, and all erosion-control measures have been completed in accordance with the final approved grading plan, and the required reports have been submitted.



2007 California Building Code

**California Code of Regulations
Title 24, Part 2, Volume 2 of 2**

**California Building
Standards Commission**

Based on 2006 International Building Code®



**2007 California Historical Building Code
Title 24, Part 8**

**2007 California Existing Building Code
Title 24, Part 10**

**EFFECTIVE
JANUARY 1, 2008**

(For Errata and Supplements, see History Note Appendix)

**CALIFORNIA BUILDING CODE—MATRIX ADOPTION TABLE
APPENDIX J – GRADING**

Adopting Agency		BSC	SFM	HCD			DSA		OSHDP				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Appendix				X							X									
Adopt Entire Appendix as amended (amended sections listed below)									X	X		X								
Adopt only those sections that are listed below								X												
Chapter / Section	Codes																			
J101	IBC							X												
J102	IBC							X												
J104.4	CA								X	X		X								
J105	CA							X												
J105.1	CA							X												
J106	CA							X												
J107	CA							X												
J107.5	CA							X	X	X		X								
J108	CA							X												
J109	CA							X												
J110	CA							X												
J111	CA							X												

APPENDIX J

GRADING

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION J101 GENERAL

J101.1 Scope. The provisions of this chapter apply to grading, excavation and earthwork construction, including fills and embankments. Where conflicts occur between the technical requirements of this chapter and the soils report, the soils report shall govern.

J101.2 Flood hazard areas. The provisions of this chapter shall not apply to grading, excavation and earthwork construction, including fills and embankments, in floodways within flood hazard areas established in Section 1612.3 or in flood hazard areas where design flood elevations are specified but floodways have not been designated, unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed work will not result in any increase in the level of the base flood.

SECTION J102 DEFINITIONS

J102.1 Definitions. For the purposes of this appendix chapter, the terms, phrases and words listed in this section and their derivatives shall have the indicated meanings.

BENCH. A relatively level step excavated into earth material on which fill is to be placed.

COMPACTION. The densification of a fill by mechanical means.

CUT. See Excavation.

DOWN DRAIN. 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

EROSION. The wearing away of the ground surface as a result of the movement of wind, water or ice.

EXCAVATION. The removal of earth material by artificial means, also referred to as a cut.

FILL. Deposition of earth materials by artificial means.

GRADE. The vertical location of the ground surface.

GRADE, EXISTING. The grade prior to grading.

GRADE, FINISHED. The grade of the site at the conclusion of all grading efforts.

GRADING. An excavation or fill or combination thereof.

KEY. A compacted fill placed in a trench excavated in earth material beneath the toe of a slope.

SLOPE. An inclined surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

TERRACE. A relatively level step constructed in the face of a graded slope for drainage and maintenance purposes.

SECTION J103 PERMITS REQUIRED

J103.1 Permits required. Except as exempted in Section J103.2, no grading shall be performed without first having obtained a permit therefor from the building official. A grading permit does not include the construction of retaining walls or other structures.

J103.2 Exemptions. A grading permit shall not be required for the following:

1. Grading in an isolated, self-contained area, provided there is no danger to the public, and that such grading will not adversely affect adjoining properties.
2. Excavation for construction of a structure permitted under this code.
3. Cemetery graves.
4. Refuse disposal sites controlled by other regulations.
5. Excavations for wells, or trenches for utilities.
6. Mining, quarrying, excavating, processing or stockpiling rock, sand, gravel, aggregate or clay controlled by other regulations, provided such operations do not affect the lateral support of, or significantly increase stresses in, soil on adjoining properties.
7. Exploratory excavations performed under the direction of a registered design professional.

Exemption from the permit requirements of this appendix shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction.

SECTION J104 PERMIT APPLICATION AND SUBMITTALS

J104.1 Submittal requirements. In addition to the provisions of Section 105.3, *Appendix Chapter 1*, the applicant shall state the estimated quantities of excavation and fill.

J104.2 Site plan requirements. In addition to the provisions of Section 106, *Appendix Chapter 1*, a grading plan shall show the existing grade and finished grade in contour intervals of sufficient clarity to indicate the nature and extent of the work and show in detail that it complies with the requirements of this code. The plans shall show the existing grade on adjoining properties in sufficient detail to identify how grade changes will conform to the requirements of this code.

J104.3 Soils report. A soils report prepared by registered design professionals shall be provided which shall identify 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.

Exception: A soils report is not required where the building official determines that the nature of the work applied for is such that a report is not necessary.

J104.4 Liquefaction study. For sites with mapped maximum considered earthquake spectral response accelerations at short periods (*S_s*) greater than 0.5g as determined by Section 1613, a study of the liquefaction potential of the site shall be provided, and the recommendations incorporated in the plans.

Exception:

1. A liquefaction study is not required where the building official determines from established local data that the liquefaction potential is low.
2. [OSHPD 1, 2 & 4] Exception 1 not permitted by OSHPD.

**SECTION J105
INSPECTIONS**

J105.1 General. Inspections shall be governed by Section 109, Appendix Chapter 1, of this code.

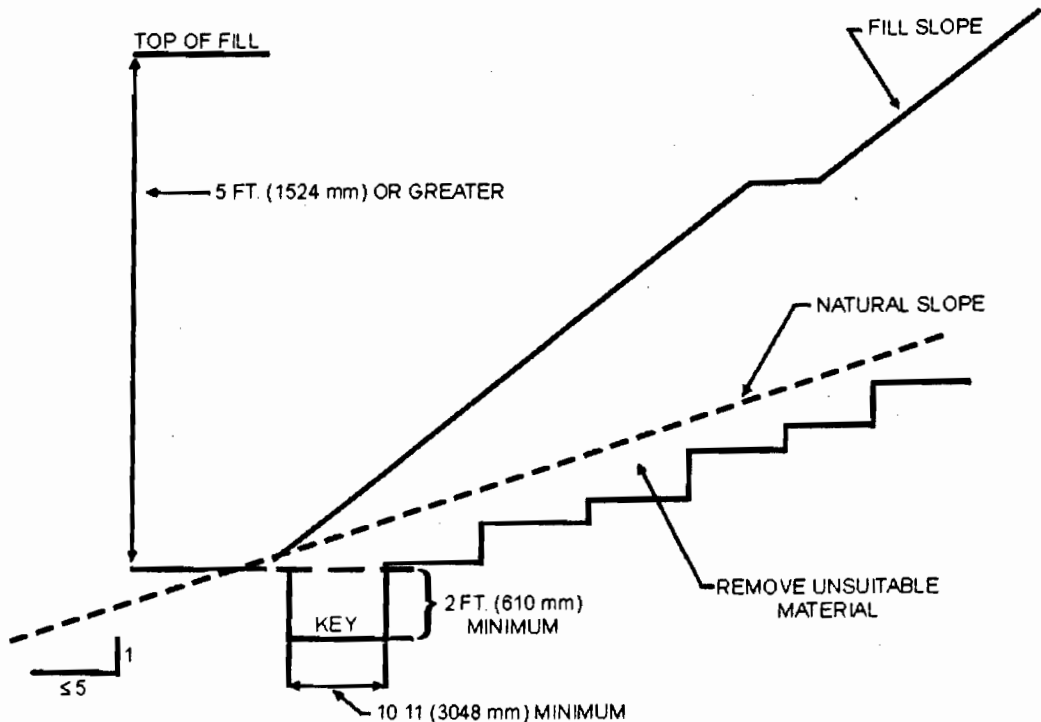
J105.2 Special inspections. The special inspection requirements of Section 1704.7 shall apply to work performed under a grading permit where required by the building official.

**SECTION J106
EXCAVATIONS**

J106.1 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 the applicant furnishes a soils report justifying 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:
 - 1.1. It is not intended to support structures or surcharges.
 - 1.2. It is adequately protected against erosion.
 - 1.3. It is no more than 8 feet (2438 mm) in height.
 - 1.4. It is approved by the building official.
2. A cut surface in bedrock shall be permitted to be at a slope of 1 horizontal to 1 vertical (100 percent).



For SI: 1 foot = 304.8 mm.

**FIGURE J107.3
BENCHING DETAILS**

**SECTION J107
FILLS**

J107.1 General. Unless otherwise recommended in the soils report, fills shall conform to provisions of this section.

J107.2 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.

J107.3 Benching. Where existing grade is at a slope steeper than 5 horizontal to 1 vertical (20 percent) and the depth of the fill exceeds 5 feet (1524 mm) benching shall be provided in accordance with Figure J107.3. A key shall be provided which is at least 10 feet (3048 mm) in width and 2 feet (610 mm) in depth.

J107.4 Fill material. Fill material shall not include organic, frozen or other deleterious materials. No rock or similar irreducible material greater than 12 inches (305 mm) in any dimension shall be included in fills.

J107.5 Compaction. All fill material shall be compacted to 90 percent of maximum density as determined by ASTM D 1557, Modified Proctor, in lifts not exceeding 12 inches (305 mm) in depth.

[DSA-SS and OSHPD 1, 2 & 4] This section establishes minimum requirements only.

J107.6 Maximum slope. The slope of fill surfaces shall be no steeper than is safe for the intended use. Fill slopes steeper than 2 horizontal to 1 vertical (50 percent) shall be justified by soils reports or engineering data.

**SECTION J108
SETBACKS**

J108.1 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 J108.1, unless substantiating data is submitted justifying reduced setbacks.

J108.2 Top of slope. The setback at the top of a cut slope shall not be less than that shown in Figure J108.1, or than is required to accommodate any required interceptor drains, whichever is greater.

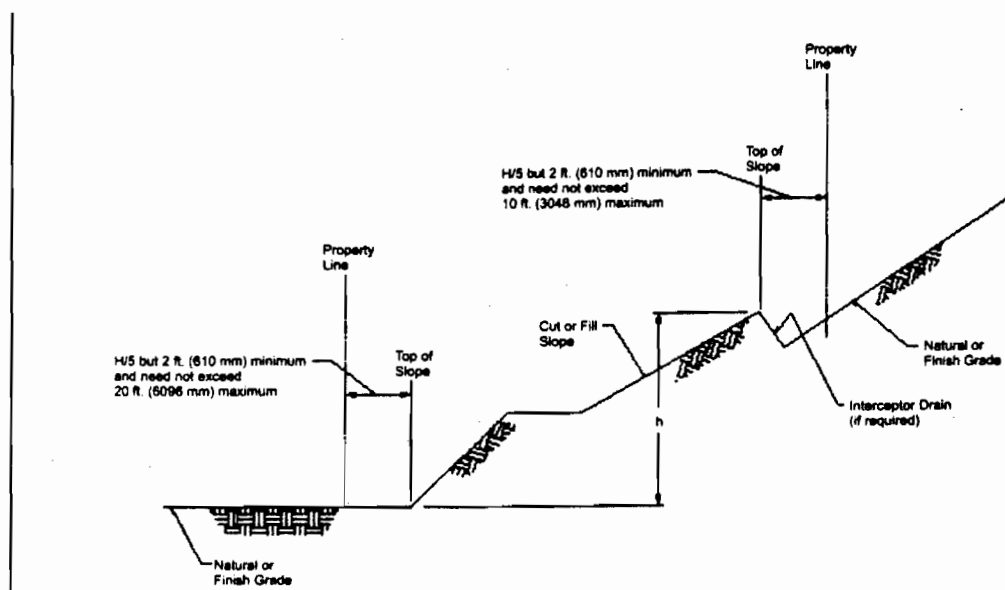
J108.3 Slope protection. Where required to protect adjacent properties at the toe of a slope from adverse effects of the grading, additional protection, approved by the building official, shall be included. Such protection may include but shall not be limited to:

1. Setbacks greater than those required by Figure J108.1.
2. Provisions for retaining walls or similar construction.
3. Erosion protection of the fill slopes.
4. Provision for the control of surface waters.

**SECTION J109
DRAINAGE AND TERRACING**

J109.1 General. Unless otherwise recommended by a registered design professional, drainage facilities and terracing shall be provided in accordance with the requirements of this section.

Exception: Drainage facilities and terracing need not be provided where the ground slope is not steeper than 3 horizontal to 1 vertical (33 percent).



For SI: 1 foot = 304.8 mm.

**FIGURE J108.1
DRAINAGE DIMENSIONS**

J109.2 Terraces. Terraces at least 6 feet (1829 mm) in width shall be established at not more than 30-foot (9144 mm) 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 (3658 mm) 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 (76 mm) in thickness, or with other materials suitable to the application. They shall have a minimum depth of 12 inches (305 mm) and a minimum width of 5 feet (1524 mm).

A single run of swale or ditch shall not collect runoff from a tributary area exceeding 13,500 square feet (1256 m²) (projected) without discharging into a down drain.

J109.3 Interceptor drains. Interceptor drains shall be installed along the top of cut slopes receiving drainage from a tributary width greater than 40 feet (12 192 mm), measured horizontally. They shall have a minimum depth of 1 foot (305 mm) and a minimum width of 3 feet (915 mm). The slope shall be approved by the building official, but shall not be less than 50 horizontal to 1 vertical (2 percent). The drain shall be paved with concrete not less than 3 inches (76 mm) in thickness, or by other materials suitable to the application. Discharge from the drain shall be accomplished in a manner to prevent erosion and shall be approved by the building official.

J109.4 Drainage across property lines. 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. Erosion of the ground in the area of discharge shall be prevented by installation of nonerosive down drains or other devices.

**SECTION J110
EROSION CONTROL**

J110.1 General. The faces of cut and fill slopes shall be prepared and maintained to control erosion. This control shall be permitted to consist of effective planting.

Exception: Erosion control measures need not be provided on cut slopes not subject to erosion due to the erosion-resistant character of the materials

Erosion control for the slopes shall be installed as soon as practicable and prior to calling for final inspection.

J110.2 Other devices. Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.

**SECTION J111
REFERENCED STANDARDS**

ASTM D 1557-e01	Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lb/ft ³ (2,700kN-m/m ³)].	J107.6
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