



CITY OF LOMPOC CALIFORNIA

STANDARD REQUIREMENTS FOR THE DESIGN AND CONSTRUCTION OF SUBDIVISIONS AND SPECIAL DEVELOPMENTS

(Exclusive of Land Use Planning Requirements)

SECTION 2

GRADING

GENERAL

This Section sets forth rules and regulations to control all grading, including, but not limited to, excavations, earthwork, road construction, fills and embankments, and related drainage systems, facilities, and erosion control measures; establishes the procedure for issuance of permits; and provides for approval of plans and inspection of grading construction.

Suspension of Work

The Engineer shall have the authority to suspend the work wholly or in part, for such period of time as may be necessary because of the failure of the Contractor to carry out orders from the Engineer to comply with any of the provisions of these Specifications. Upon receipt of a written notice from the Engineer, the Contractor shall immediately suspend operations. Only upon written instructions from the Engineer shall the Contractor resume construction. Upon receipt of such written instructions to resume work, he shall immediately proceed with the work. No claim for damages or additional compensation will be allowed as a result of any such suspension of the work.

DEFINITIONS

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

AVERAGE CROSS SLOPE is the ratio, expressed as a percentage, of the vertical difference in elevation to the horizontal distance between two points on the perimeter of the area, with the line connecting the two points being essentially perpendicular to the contours between the two points.

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

CERTIFICATION means a written engineering opinion concerning the process and completion of the work.

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

ENGINEERING OPINION means the application of Engineering knowledge and principles in the investigation and evaluation of naturally occurring rock or soil for use in the design of civil works.

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

EXCAVATION means the mechanical removal of earth material.

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

GRADE means the vertical location of the ground surface.

EXISTING GRADE means the grade prior to grading.

ROUGH GRADE means the state at which the grade approximately conforms to the approved plan.

FINISH GRADE means the final grade which conforms to the approved plan.

GRADING means any excavating or filling or combination thereof.

KEY means a designed compacted fill placed in a trench excavated in earth material beneath a proposed fill slope.

SITE means the area where grading is performed or permitted.

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

SOIL ENGINEER means a registered civil engineer experienced and knowledgeable in the practice of soil engineering.

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

PERMIT EXEMPTION

The following are exempted from grading permit requirements:

1. Cemeteries: Cemetery graves.
2. Refuse Disposal: Refuse disposal sites controlled by other regulations.
3. Wells -- Utilities: Excavations for wells or tunnels or utilities.
4. Work within the public right-of-way.
5. Minor Excavations: An excavation which does not exceed fifty (50) cubic yards, and (a) is less than two (2) feet in depth, or (b) which does not create a cut slope greater than five (5) feet in height and steeper than two horizontal to one vertical and does not obstruct a drainage course.
7. Minor Fills: A fill containing earth material only, which does not exceed fifty (50) cubic yards on any one site and does not obstruct a drainage course, and (a) is less than two (2) feet in depth and placed on natural terrain with a slope flatter than five horizontal to one vertical.
8. Basements - Footings: An excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid building permit.
9. Soil Testing: Exploratory excavations under the direction of a California licensed Soils Engineer or Engineering Geologist where such excavation is to be returned to the original condition under the direction of such engineer or geologist within 45 days after the start of work.

PERMIT REQUIRED

- (a) Permit Required: No person shall do any grading without first obtaining a grading permit from the City Engineer. A separate permit shall be required for each site, and may cover both excavations and fills on each site.
- (b) Application: To obtain a grading permit, the applicant shall first file an application in writing on a form furnished by the City. Each application shall:
1. Identify and describe the work to be covered by the permit.
 2. Describe the land on which the proposed work is to be done by lot, block, tract, and house and street address, or similar description that will readily identify and definitely locate the proposed building or work.
 3. Indicate the estimated quantities, in cubic yards, of grading work proposed.
 4. Be accompanied by Plans and Specifications as required in subsection (c) of this section.
 5. Be signed by the permittee or his authorized agent, who may be required to submit evidence to indicate such authority.
 6. Give such other information required by the City Engineer.
 7. Give the location of any import or export to be used.
 8. Pay the required fees.
- (c) Plans and Specifications: Each application for a grading permit shall be accompanied by two sets of Plans and, if required by the City Engineer, Specifications and supporting data consisting of a soils engineering report. The Plans and Specifications shall be prepared and signed by a civil engineer.
- (d) When Report Required: A soils engineering report is hereby required in areas of potential or questionable stability, as determined by the City Engineer.
- (e) Information on Plans and in Specifications: Plans shall be drawn to scale upon reproducible cloth or mylar and shall be of sufficient clarity to indicate the nature and extent of the work proposed and show in detail that the work will conform to the provisions of this section and all relevant laws, ordinances, rules and regulations.

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, including areas beyond property lines for a minimum of 100 feet.
 3. A statement of the estimated quantity of work involved.
 4. Description of existing vegetation including the special location and size of all trees on the site which are three inches in diameter or larger at the trunk, measured at 4-1/2 feet above the ground level.
 5. Cross sections of the existing and finish contours including typical sections and sections depicting the most severe grades proposed. All cut and fill slopes exceeding 4:1 are to be shaded or crosshatched.
 6. Elevations or finish contours to be achieved by the grading; existing and proposed drainage channels and related construction.
 7. Detailed plans and calculations as may be required by the City Engineer of all surface and subsurface drainage devices, existing or to be constructed showing the drainage area and estimated runoff.
 8. Location of any buildings or structures on the site and the location of any buildings or structures on land of adjacent owners which are within 50 feet of the site or which may be affected by the proposed grading operations.
 9. Detailed Plans and Specifications shall indicate the type of erosion control planting and irrigation proposed for all slopes.
 10. A statement, including related plans and details outlining erosion and runoff control measures to be followed during construction .
 11. Existing and proposed elevations shall be based upon established bench marks furnished by the City Engineer.
 12. Specifications shall contain information covering construction as outlined in the soils engineer's report.
- (f) Soils Engineering Report: A soils engineering report shall include data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria for corrective measures when necessary, and opinions and recommendations covering adequacy of sites to be developed by the proposed grading, soil bearing values and expansion of index soils. Potentials for landslide risk and liquification shall be considered and mitigation measures specified.

- (g) Expiration: Every permit issued under the provisions of this section shall expire by limitation and become null and void, if the grading or work authorized by such permit is not commenced within 60 days from the date of such permit, or is suspended or abandoned at any time after the work is commenced for a period of 120 days. Before such work can be recommenced, a new permit shall be first obtained and the fee therefor shall be one-half the amount required for a new permit for such work, provided no changes have been made or will be made in the original plans and specifications for such work; and provided, further, that suspension or abandonment has not exceeded one year.
- (h) Suspension or Revocation: The City Engineer shall, in writing, suspend or revoke a permit issued under provisions of this section whenever the permit is issued in error or on the basis of incorrect information supplied, or in violation of any ordinance or regulation or any of the provisions of this section.
- (i) The amount of the plan checking and grading fee for grading plans shall be as set forth in Table 70-A and -B of the Uniform Building Code, latest edition, or by Council modification

GRADING ON ADJOINING SITES

The City Engineer may extend the area covered by a grading permit to include adjoining sites upon receipt of a letter of permission from the owner if:

1. The adjoining sites are subject to a tentative map or preliminary plan of development.
2. He finds that a common grading operation is reasonably necessary and convenient for development purposes.
3. He finds that a common grading operation upon the adjoining sites will not detrimentally affect the final design and development of the said adjoining sites.

EMERGENCY GRADING

The City Engineer may authorize emergency grading operations upon any site deemed necessary for the protection of the public health, safety and welfare, and to protect public facilities.

HAZARDOUS CONDITIONS

Whenever the City Engineer determines that any existing excavation or fill 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 within the period specified therein shall repair or eliminate such excavation or embankment so as to eliminate the hazard and be in conformance with the requirements of this chapter. The City Engineer may require that grading operations and project designs be modified if delays occur due to weather-generated problems not considered at the time the permit was issued.

SECURITY TO GUARANTEE THE WORK

The City Engineer may require bonds in such forms and amounts as may be deemed necessary to assure that the work, if not completed in accordance with the approved Plans and Specifications, will be corrected to eliminate hazardous conditions.

DESIGN STANDARDS - GENERAL

- (a) Preparation of Ground: The ground surface shall be prepared to receive fill by removing vegetation, noncomplying fill, top soil and other unsuitable materials as determined by the soils engineer, and where the ground surface is a slope five to one or steeper, by benching into sound undisturbed soil or other competent material as required by the City Engineer.
- (b) Fill Material: Only earth materials which have no more than minor amounts of organic substances and have no rock or similar irreducible material with a maximum dimension three inches shall be used. A statement of suitability of material by a soils engineer may be required.
- (c) Compaction: All fills shall be compacted to a minimum of 90 percent of maximum density or as determined by the soils engineer and Uniform Building Code. The applicant shall provide tests as required by the City Engineer. All areas within the right-of-way shall be compacted to 95% utilizing California Test Method 216G.
- (d) Slope: The slope of a fill surface shall be no steeper than is safe for the intended use. Fill slopes shall be no steeper than two horizontal to one vertical.
- (e) Drainage and Terracing: Drainage and terracing shall be provided and the area above fill slopes and the surfaces of terraces shall be graded and paved as required.

SLOPE SETBACKS

The tops and the toes of cut and fill slopes shall be set back from the property boundaries as far as necessary for safety of adjacent properties and to prevent damage resulting from water run-off or erosion of the slopes.

DRAINAGE AND TERRACING

- a) General: Drainage facilities and terracing shall conform to the provisions of this section.
- b) Terrace: Terraces at least six feet in width shall, be established at not more than 30 foot vertical intervals to control surface drainage and debris. Suitable access shall be provided to permit proper cleaning and maintenance.

Swales on terraces shall have a minimum gradient of one percent and must be paved with reinforced concrete or reinforced air blown mortar not less than three inches in thickness or an approved equal paving with a minimum depth of one foot and a minimum paved width of three feet.

The City Engineer may waive the requirements for terraces where a soil engineering report indicates the requirements are not necessary to carry out the purpose and intent of this section.

- c) Subsurface Drainage: Cut or fill slopes shall be provided with subsurface drainage as necessary for stability.
- d) Site Drainage: All drainage patterns and facilities shall be designed to carry waters to the nearest practical drainageway approved by the City Engineer as a safe place to deposit such waters. The site shall be suitably protected against water runoff from adjacent properties.
- e) Roof Drainage: All roof drainage shall be directed away from adjacent properties and slopes. Where possibility of slope erosion or excessive accumulation exists, gutters and downspouts shall be used to catch and divert roof drainage toward an acceptable drainage way.

EROSION CONTROL

- a) Slopes: All disturbed surfaces resulting from grading operations shall be prepared and maintained to control erosion. This control shall consist of effective planting to be completed as soon as practicable after grading. All planting shall be specified in the approved grading plan. Plant material shall be installed and growing before grading security is released. An automatic irrigation system may be required by the City Engineer.
- b) Other Devices: Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.

DUST AND PROTECTION OF ADJOINING PROPERTY

All grading shall be carried out in such a manner to keep the blowing of dust or silt from a grading site to a feasible minimum. It shall be the responsibility of the permittee to contain all earth materials on the site of the grading or within any vehicles to bringing or carrying away any earth materials, and no such materials shall be allowed to be scattered on adjoining properties, public streets, or other areas.

GRADING INSPECTION

- (a) General. All grading operations shall be subject to inspection by the City Engineer. A copy of an approved grading permit shall be available in a conspicuous place on site during all grading operations.
- (b) Initial Inspection. Prior to the commencement of any grading on the site, all property corners shall be staked and all grading stakes and markers shall be set using normal construction procedures indicating the tops and toes of all cuts and fills and limits of grading.
- (c) Inspections and Reports. The City Engineer may require inspection and testing by an approved testing agency at the expense of the permittee. Tests and inspections shall include compaction reports and certifications that grading is in accordance with plans, specifications and the soils report. Copies of these tests shall be sent by the testing agency to the City Engineer upon his request.
- (d) Ratification of Noncompliance. If, in the course of fulfilling responsibilities under this section, the engineer, the soils engineer, or the testing agency finds that the work is not being done in conformance with this section or the approved grading plans, the discrepancies shall be reported immediately in writing to the person in charge of the grading work and to the City Engineer. Recommendations for corrective measures, if necessary, shall be submitted.
- (e) Transfer of responsibility for Certification. If the engineer, the soils engineer, or the testing agency of record are changed during the course of the work, a replacement shall be immediately found, and the City Engineer shall be notified in writing by the replacement indicating acceptance of all conditions and responsibilities.
- (f) Rough Grading Inspection. Prior to the commencement of any building construction pursuant to a building permit, inspection shall be provided to verify that the building site is graded in conformance with the approved grading plan. No building construction shall be started until the City Engineer has inspected the site and approved the rough grading work, including any interim or permanent erosion control measures deemed necessary.

STOCKPILING

Upon issuance of a temporary grading permit, stockpiling will be allowed only in those areas with prior approval of the City Engineer. The following must be accomplished for stockpiling of fill materials:

1. Letter from the permittee stating the ultimate purpose of the area being filled.
2. Imported structural fill material shall be approved prior to use, be free of organic and otherwise deleterious materials, having equal or better bearing and settlement characteristics than in situ soils.
3. Removal of the surface soils in areas to be filled containing vegetation or other deleterious materials and waste.
4. The exposed surface, after removal of deleterious materials shall be scarified to a depth of 1', brought to near optimum moisture content, and compacted to a minimum of 90% relative density prior to placement of fill.
5. Stockpiled area shall not be filled after leveling to more than three (3) feet.
6. Within one (1) year, the structural fill material should then be placed in lifts not exceeding 8", brought to optimum moisture content, and compacted to a minimum of 90% relative density.
7. Moisture density relations shall be determined in accordance with ASTM D1557-78 modified to three (3) lifts.

COMPLETION OF WORK

Upon completion of the grading work and after final approval by the City Engineer an "as graded" grading plan prepared by the engineer shall be submitted which includes ground surface elevations, lot drainage patterns and locations and elevations of all surface and subsurface drainage facilities. He shall provide certification by a licensed soils engineer that the work was done in accordance with the final soils report and approved grading plan. The report shall be reviewed by the City Engineer as it relates to the pad elevation and soils report requirements.

UNIFORM BUILDING CODE CHAPTER 70 REFERENCES

Portions of Chapter 70 of the Uniform Building Code which are referenced herein are adopted by such reference, whether or not Chapter 70 is specifically elsewhere adopted, so long as the City has adopted the Uniform Building Code and it is in effect.