

## VI. GRADING AND IMPROVEMENT PLANS

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This chapter outlines the requirements for grading and improvement plans. Grading and improvement plans must be approved prior to moving soil or making improvements to a site. The permits may be issued jointly or individually, depending on the nature of the project.

### A. GRADING PLANS

#### A.1 OVERVIEW

When property is developed for the first time or when the site is being cleared for an entirely new building, grading of the site usually needs to take place. A grading permit is required for all grading work, including filling excavations, except as specifically exempted by California Building Code Appendix J. The following list summarizes some of these exemptions:

- a) An excavation:
  - 1. Which is less than two feet in depth; or
  - 2. Which does not create a cut slope greater than five feet in height and steeper than one unit vertical in 1.5 units horizontal (66.7% slope)
- b) A fill less than one foot in depth and placed on natural terrain with a slope flatter than one unit vertical in five horizontal (20% slope), or less than three feet in depth, not intended to support structures, which does not exceed 50 cubic yards on any one lot and does not obstruct a drainage course.
- c) 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 after the completion of such structure.
- d) Cemetery graves;
- e) Mining, quarrying, excavating, processing, stockpiling of rock, sand, gravel, aggregate, or clay where established and provided for by law, provided such operations do not affect the lateral support of increase the stresses in or pressure upon any adjacent or contiguous property.
- f) Exploratory excavations under the direction of soil engineers or engineering geologists.

Generally, grading permits are issued in conjunction with the release of improvement plans for construction; however they may be applied for individually or issued separately from the release of improvement plans based on the nature and timing of the project and its various components.

Applications for grading permit are filed and approved by the Public Works department. The City reviews applications for grading permits based upon the standards listed in the California Building Code. The City has not adopted any special standards, requirements, or exemptions for grading of property.

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### A.2 SUBMITTAL REQUIREMENTS

In addition to the required application form, the applicant shall submit two sets of drawings for review by the City with the following information:

- a) All property lines with bearings and distances;
- b) Street names, railroad right-of-way, etc.
- c) Exact location(s) of existing and proposed buildings and structures both on the subject site and within 15 feet of the site on adjacent property (note pad and building finish floor elevations);
- d) Building setbacks dimensioned;
- e) Finish grades and finish floor elevations;
- f) Vertical relationship of footings and drainage swales;
- g) Drainage flow lines;
- h) Limits of grading/paving under the subject Grading Permit application;
- i) Any easements recorded on the subject property;
- j) Utilities on and adjacent to the subject property, including water, sewer, gas, electrical, telecommunication;
- k) Flood zone designation;
- l) Datum, benchmark, and date of survey;
- m) Notes on natural features such as rock outcroppings;
- n) Existing routes of surface runoff, drainage area, and estimated runoff (note: a drainage study may be required);
- o) The Wastewater Discharge Identification (WDID) number for the project as issued by the Central Valley Regional Water Quality Control Board.
- p) Details of drainage structures, retaining walls, etc.;
- q) Existing and proposed contours, slopes, etc; and
- r) The amount of excavated material in cubic yards.

All plans are to be drawn to scale and should include a title block that identifies the location of the subject property (both street address and APN); north arrow; person/design firm name and contact information, along with the relevant professional registration number and stamp; drawing legend; complete and accurate legal description of the subject property; and name and address of property owner. Both sets of plans shall be stamped and "wet-signed."

At the time of application submittal, the applicant must submit a \$200 application deposit. The City may require a different deposit amount based on the amount of excavated material in the grading plan. These deposits are to cover initial costs of plan review and may not be sufficient to cover all costs the project incurs. In addition to the deposit, the applicant will be invoiced for the full cost of plan review, which is calculated on a time and materials basis based on the rates listed in Table III.C-1 (Discretionary Approval/Entitlement Deposits and Costs). Furthermore, the applicant must pay a final inspection fee at the time of the final inspection, as determined by the California Building Code and as adopted by Ordinance and/or Resolution by the City. This additional cost covers inspection of the improvements during grading. At the time of issuance of the grading permit, any remaining balance for the review fee is due.

### **B. IMPROVEMENT PLANS**

#### **B.1. OVERVIEW**

All development in the City must comply with the City's adopted improvement standards. Improvements to property include the installation of on-site water, sewer, drainage, street lighting, highways, curbs/gutters/sidewalks/streets, and other associated improvements. The City's standards for these improvements, whether eventually dedicated to the City or otherwise, are listed in the City's adopted Improvement Standards, adopted by Resolution 1430 on February 4, 2004, and updated in 2007 by Resolution 1600. These standards cover the design and construction of streets, storm drainage, sanitary sewers, and standard details for infrastructure such as manholes, inlet boxes, trenches, stop signs, and curbs. These improvement standards establish minimum standards to be applied to improvements including those dedicated to the public to be City maintained and operated, private development projects, and improvements in existing rights of way and easements. The standards also work to protect the public, ensuring the adequate design of public facilities. Plans including waterline improvements must also be reviewed and approved by Amador Water Agency prior to approval by the City.

The City's adopted improvement standards provide guidelines to developers, engineers, and contractors that are intended to assist them as they create improvements that are consistent with City standards and transferred to the City for maintenance. However, the City is unable to create universal regulations that are applicable to all improvements in all situations; therefore, the Planning Commission or City Council may impose additional project requirements in addition to adopted improvement standards. In cases when a situation is not addressed by City standards, the design and construction shall proceed in accordance with accepted engineering practice, applicable Caltrans regulations, and shall be subject to the approval of the City Engineer. The City's adopted improvement standards are intended for use by Civil Engineers or other engineering professionals. The City Engineer, along with the Public Works Project Manager and Fire Chief, review improvement plan applications for consistency with City improvement standards. Plans must also be reviewed and signed off by Amador Water Agency prior to approval by the City.

#### **B.2. TIMING OF IMPROVEMENTS**

Normally, improvements must be completed prior to recording a Final Map or, in the case of projects that do not involve a tentative map, prior to issuance of building permits. However, if an applicant wishes to subdivide the property prior to release of improvement plans for construction OR before the acceptance of improvements in those cases where the improvements will be dedicated to the City (e.g., a new public street), an improvement agreement and security may be enacted for the improvements. Chapter V of this manual

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discusses the security process in more detail, as does section 9.00 of the City's Improvement Standards.

To finalize the Tentative Map prior to completion of improvements, the applicant must enter into an Improvement Agreement with the City, which requires that the applicant provide sufficient security. The amount of the form of security is generally 100% of the engineer's approved cost estimate for materials and 100% of the estimate for faithful performance of the work, for a total of 200% of the approved cost estimate. The agreement will stipulate a time frame for the completion of all improvements. Upon faithful completion of portions of the work, the City Engineer may release portions of the security, subject to a release enacted by resolution of City Council. Otherwise, the full amount of the security is released upon final completion of improvements.

### **B.3. ENGINEER'S ESTIMATE OF IMPROVEMENTS**

The City requires that an itemized estimate of the costs for completing improvements be provided as part of the improvement plans. The estimate must be submitted in a format acceptable to the City Engineer. A sample is provided in Appendix C (Cost Estimate Sample for Improvements). The intent of this estimate is to ensure that the costs of the improvements have been correctly estimated and that, in the case of issuance of security, if the City needs to complete the work, enough funds have been offered in security that the City can complete the work. Unlike private projects, the City must pay the prevailing wage; therefore, costs reflected in an approved engineer's estimates may be higher than the costs incurred for a private project and higher than the costs the applicant may actually pay for the improvements.

### **B.4. IMPROVEMENT PLAN SUBMITTAL, REVIEW, AND RELEASE**

Applicants for improvement plans must submit an improvement plan application, along with the required plans. An applicant must provide complete plans and engineering specifications for all proposed streets, drainage facilities, sewerage, street lighting, and water distribution system improvements. All plans and specifications must be completed by an engineer licensed in California. An engineer must prepare plans and specifications for improvements to be accepted by the City for maintenance. Easements and dedications must be submitted to the City Engineer for approval.

As specified in section 5.00 of the City's Improvement Standards, all improvement plans must include, at a minimum, the following items:

- a) Title Sheet (Sheet 1) that includes:
  1. Map of the entire subdivision or project, complete with subdivision or assessment district limits, City limits, street names, section lines, corners, and the location within the City at a minimum scale of 1"=500';
  2. Index of sheets;
  3. Engineer's name, license number, and signature;
  4. Date;
  5. Scale of the drawing;

6. North arrow;
  7. Block for the necessary approval of the City Engineer and other officials.
- b) Layout Sheet (Sheet 2) that includes:
1. Map of the entire subdivision or project on one sheet at a scale of 1"=100' or 1"=200' that features sewer and water lines.
    - i) All drainage pipe, sewer pipe, water lines, and other underground utilities must be identifiable from other underground conduits.
    - ii) Manholes, valves, drop inlets, and other appurtenances must be identified.
  2. An index of the plan and profiles sheets.
- c) Title Blocks on each sheet that include
1. Sheet title;
  2. Sheet number;
  3. Date;
  4. Scale;
  5. Engineer's name, signature, and license number.
- d) Right of Way lines that are properly dimensions, including:
1. The boundaries of lots fronting on the street;
  2. Drainage easements;
  3. Utility easements;
  4. Planting easements;
  5. Section lines and corners;
  6. Land grant lines;
  7. Temporary construction easements.
- e) All pertinent topographic features, including:
1. Street lines;
  2. Curbs;
  3. Sidewalks;

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4. Shoulders;
  5. Location and size of storm and sanitary sewer lines;
  6. High water and 100 year storm inundation levels;
  7. Water lines;
  8. Gas lines;
  9. Telephone conduits;
  10. Other underground utilities;
  11. Existing structures;
  12. Houses;
  13. Trees and other foliage (6" and larger. Any tree that falls in the existing or proposed right of way or easement shall be shown on the cross section when requested by the City Engineer. Permission to remove any tree (not required to be removed by construction) in the City rights of way or easements must be obtained from the City Manager prior to removal, as detailed in Chapter 8.20 of the City's Municipal Code );
  14. Traffic signals;
  15. Street lights;
  16. Pull boxes;
  17. Underground electrical conduits;
  18. Drainage ditches;
  19. Utility poles;
  20. Fire hydrants;
  21. Retaining Walls;
  22. Masonry structures;
  23. All other features that may affect the design requirements for the area.
- f) Contours, elevations, and drainage plans, as follows:
1. All existing contour lines or other supportive elevation data shall be shown on all plans.
  2. If a drainage plan is required, it must contain contours of the subdivision unit and the immediate vicinity sufficient to indicate the perimeter of areas to be drained

by each structure. Supporting calculations must be submitted with the drainage sheet. The map scale must be of a sufficient size to clearly show the drainage features and location of major structures. When applicable, FEMA established 100-year floodplains shall be identified.

- g) Profiles for existing roadway centerlines, existing edges of pavement, existing curb and gutter flow lines, drainage ditches, storm and sanitary sewers that include the following data for each item:
  - 1. Centerline elevations at 50' intervals and rate of grades;
  - 2. Vertical curves and other vertical alignment data;
  - 3. Elevations of warped surfaces set at 25' intervals;
  - 4. Centerline profiles and cross section information beyond the limits of the proposed development when required by the City Engineer.
- h) Orientation requirements are as follows:
  - 1. All sheets shall read from left to right;
  - 2. The north arrow shall point toward the top or upper 180 degrees of the sheet.
- i) Bench marks and datum designated as follows:
  - 1. Clearly noted on plans as to location, description, elevations;
  - 2. Datum shall be U.S.G.S. or otherwise approved by the City Engineer.
- j) A typical section set forth in the plans that displays the structural features for each type of facility within the improvement.
- k) Additional improvements to be shown:
  - 1. Storm drainage improvements on street plans;
  - 2. Sanitary sewer and water improvements may be shown on street plans or separately as indicated above;
  - 3. Street lighting shown separately, drawn to a scale of 1"=100' with individual lot dimensions and street dimensions shown;
  - 4. Location of all utilities shown on "as-built" plans.
- l) Sign and Striping Plan on a separate plan or detail sheet in Caltrans format or with reference thereto.
- m) Cross sections with all plans. When an unusual topographic feature or other special condition occurs on the site that would affect work, individual cross sections or typical sections may be shown on the relevant plan sheet.

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- n) Special notes must be clearly indicated and it must be conspicuously noted on the plans that all construction work and installation shall conform to the State Standard Specifications, the City of Lone Improvement Standards, and that all work is subject to approval of the City Engineer.
- o) Formatting shall be as follows:
  - 1. Size: All plans must be prepared on plan and profile sheets, 24" x 36".
  - 2. Scale: Horizontal 1"=20', 40', or 50'; Vertical 1"=2', 5', or 10'; or if exaggerated for purposes of clarity in either a vertical or horizontal elevation, scale shall be depicted as consistent with standard engineering practice; Design cross sections 1"=5', (taken on maximum 50' intervals shall be submitted with preliminary improvement plans or cut and fill slopes shall be shown on the plans); all cross sections must be plotted with background grid with reference to identifiable base line or centerline.

For improvement plans, the applicant is required to furnish two separate deposits in accordance with Table VI.B-1 (Improvement Plan Review and Inspection Deposit Amounts) at the time of plan submittal: a deposit to cover the cost of plan checking, and a deposit for inspection services of the completed improvements, both of which are based on the engineer's estimate of improvement costs. However, both deposits only cover initial costs: in addition to the two deposits, the applicant will be billed for full costs of plan checking and inspection services based on a time materials basis as established in Table III.C-1 (Discretionary Approval/Entitlement Deposits and Costs). Full costs will be billed later and due at the time the improvement plans are issued and on a monthly basis as the plan check and inspections are completed. Prior to the release of the approved plans, any remaining balance for full costs of plan checking and inspection services is due.

An applicant can perform work in the City right of ways or easements once he or she possesses a complete set of City approved plans and a valid encroachment permit. Any contractor conducting work on the project must be licensed by the State of California and bonded to meet City requirements.

### B.5. INSPECTION REQUIREMENTS

Inspections during and post construction are required to ensure that all improvements are constructed to City standards and as established in the approved improvement plans. The City Engineer will conduct all inspections, and shall approve each phase of construction before construction on subsequent phases can begin. Any construction that has not been inspected by the City Engineer or is built contrary to his direction will not be accepted by the City.

As explained above in Section B.4, Improvement Plan Submittal, Review, and Release, the applicant is required to furnish two separate deposits: a deposit to cover the cost of plan checking, and a deposit for inspection services of the completed improvements, both of which are based on the engineer's estimate of improvement costs and charged in accordance with Table VI.B-1 (Improvement Plan Review and Inspection Deposit Amounts) at the time of plan submittal. In addition to these two deposits, the applicant will also be invoiced for the full cost of plan checking and inspection of improvements in accordance with Table III.C-1 (Discretionary Approval/Entitlement Deposits and Costs). Full costs will be billed later and are due at the time the plans are issued. Additionally, the applicant must pay a final inspection fee at the time of the final inspection, as determined by the California Building Code. The deposit requirements

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listed in Table VI.B-1 (Improvement Plan Review and Inspection Deposit Amounts) are established in section 6.00 of the City's Improvement Standards.

**TABLE VI.B-1: IMPROVEMENT PLAN REVIEW AND INSPECTION DEPOSIT AMOUNTS**

Total Estimated Cost of Improvements	Plan Check	Inspection	Total Deposit <sup>1</sup>
Less than \$10,000	\$300	\$600	\$900
\$10,000 to \$49,999	\$500	\$1,000	\$1,500
\$50,000 to \$99,999	\$1,000	\$5,000	\$6,000
\$100,000 to \$399,999	2% <sup>2</sup>	4% <sup>2</sup>	6% <sup>2</sup>
\$400,000 and over	1.75% <sup>2</sup>	3.75% <sup>2</sup>	5.5% <sup>2</sup>

1. These figures only reflect total deposit amount; the City will bill the applicant for the full cost of review and inspection services.

2. Percentage of Approved Engineer's Estimate of Improvement Costs.

When the applicant requests a final inspection of completed improvements, the work area must be thoroughly cleaned of all work material, rubbish, and excess material. The project site must be in a neat and orderly condition. Within five days of the request for the final inspection, the City Engineer will conduct the inspection. The City Engineer will notify the contractor, engineer, and developer in writing of any deficiencies that must be remedied, which the contractor must remedy as soon as possible. Furthermore, the developer must submit one complete set of "as-built" plans prior to final acceptance of improvements. The plans will be kept for the permanent records of the City. Once the City Engineer approves all improvements by determining that the project is devoid of all defects and in compliance with the City's Improvement Standards, the City Clerk will be notified and improvement acceptance scheduled for City Council approval.