

**PLACER COUNTY LAND DEVELOPMENT MANUAL
SECTION 2**

PREPARATION OF PLANS, CONTRACT DOCUMENTS AND ESTIMATES

SEC. 2.01 IMPROVEMENT PLANS

Plans shall be prepared by a Private Engineer. The size of the Improvement Plan sheet shall be 24"x36". The plans shall show all existing facilities and improvements to be constructed. The plans shall be original drawings or film positives; sepias will not be permitted. Scales in order of preference shall be 1"=40' horizontal to 1"=4' vertical or 1"=50' horizontal to 1"=5' vertical. Other scales may be used as necessary to show plan details.

The plans shall have a 1.5 inch margin on the left side and a 0.75 inch margin on the remaining sides. The minimum height for lettering and numerals shall be 0.10 inch.

SEC. 2.03 PLAN DETAILS

The following details and supplemental information are to be shown on plans submitted for approval:

(1) Title Sheet - On subdivision or improvement plans exceeding three sheets per set excluding cross sections, a title sheet shall be prepared showing:

(a) The entire subdivision or project, including:

1. County Maintenance, Sanitation and Assessment Districts boundaries, as applicable.
2. City Limits.
3. Street names.
4. Section lines, property lines and corners.
5. Section, Township, Range and Assessor's Parcel Number(s) for the project site.

(b) Location Map - Show the project site, surrounding road names, lakes and water courses in the area, north arrow, scale and other landmarks to help locate project. The size of the map and wording shall be large enough for easy readability.

- (c) Date and scale of drawing.
- (d) Index of sheets.

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(e) Revision block - Index of all revisions on plans with blocks for revision number, revision date, revision description, applicable sheet number, approval initials, and date.

(f) In upper right hand corner outside border, project number (to be assigned by the Engineer after first submittal of plans for review), together with applicable parcel/tentative map number, conditional use permit number, encroachment permit number (to be assigned by the Engineer after first submittal of plans for review), etc.

(g) Legend and abbreviations.

(h) Private Engineer's name, registration number and signature. (Note: All original sheets of plans shall have a seal and original signature of the Private Engineer.)

(i) Name, address, contact person and telephone number of any agency whose facilities will be installed as part of the improvements along with their signed approval of the plans and special provisions.

(j) Name, address and telephone number of the Subdivider/Developer and of his representative who will act in authority for the Subdivider/Developer.

(k) The block for the necessary approval of the Engineer and/or other officials.

(l) General notes and other notices required by the Engineer.

(m) Record drawing certification note.

(2) When a title sheet is not required, the above information must be shown on the first sheet of the plans.

(3) Title Blocks - Each sheet within the set of drawings shall have a title block showing the sheet title, date, scale, revision block [see item 2.03(1)(e)] and the Private Engineer's name and registration number; and the name of the project.

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(4) Right-of-Way/Property Lines - Right-of-way lines, the boundaries of lots fronting on the street, drainage easements, utility easements, section lines and corners, property lines, and temporary construction easements, both existing and proposed, shall be shown on the plans. All right-of-way, boundary and easement lines shall be properly dimensioned.

(5) Topography - All existing topographic features shall be shown and identified including, but not limited to, existing contours (2 foot interval minimum - flatter areas may require a smaller interval and for steep areas, a larger interval may be appropriate), edge of pavement, curbs, sidewalks, shoulders, location and size of storm and sanitary sewer lines, high water and frequent inundation levels, water and gas lines, structures, houses, wooded areas, and other foliage, drainage ditches, utility poles, fire hydrants, fences, and all other features within or adjacent to the project which may affect the design or construction requirements. Topographic features, including existing contours, shall be extended to a minimum of 50 feet beyond the project site and/or construction limits, and further if needed to define intercepted drainage. It shall be extended a minimum of 100 feet outside of any future road rights-of-way.

(6) Grading - Reference is made to the Placer County Grading Ordinance Chapter 29 of the Placer County Code for information that must be shown on a grading plan and/or a road plan and profile. Additionally, the plans shall include the following information:

(a) Existing topography and right-of-way/property lines as noted in Sections 2.03(3) & (4).

(b) Contour lines of the proposed grading, 2 foot minimum interval (smaller intervals may be required for flatter grading and for steep slopes a larger interval may be appropriate). In lieu of final contours, spot elevations at a maximum spacing of 25 feet on center for variable slopes may be accepted. Spot elevations at 50' centers may be used for uniform slopes. These spot elevations must be supplemented with periodic transverse and longitudinal slope arrows and percentages. Finished contours are not required on plan and profile for road design. The preceding is subject to approval of the Engineer.

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SEC. 2.03(6) (Continued)

(c) Warped surfaces shall be shown by profile or by elevations on the plan view at 10 foot or one-fourth the internal angle, whichever is less, (e.g. gutter flow lines at cul-de-sacs, knuckles, curb returns, etc.). Low points shall be identified, as applicable.

(d) Tops of cuts/fills and toes of cuts/fills shall be shown on the plan view using a slope symbol for all uniform slopes 4:1 or steeper.

(e) Overland release points for the 100 year storm shall be shown and properly identified within the project limits. All associated grading and limits of required drainage easements shall be shown. The easements shall be large enough to ensure that these release areas can be maintained.

(f) North arrow and scale.

(g) The location and associated grading of any borrow sites or disposal sites for excess material. Earthwork volumes of cut and fill shall be submitted with the improvement plans. If borrow or disposal of excess is off-site, a separate grading permit may be required for the off-site property accepting the fill or from which borrow is to be taken.

(h) Existing and proposed drainage structures with applicable sizes, lengths, slopes, elevations, type of material and reference to applicable details.

(i) Location and dimensioning of retaining walls with a profile showing top of wall elevations; top of footing elevations; existing grade; proposed grades at face of wall and other pertinent design information. Spot elevations shown on the plan view of the top of wall, top of footing and finish grade at the face of the wall may be substituted for the profile. These shall be shown at the end of the walls, all angle points and other points of change in wall height. A typical design section shall be provided on the plan showing all applicable dimensions and other structural design elements of the wall.

(j) Location of existing and proposed buildings or structures on the site and adjacent to the site. The pad and/or finish floor elevations must be shown.

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SEC. 2.03(6) (Continued)

(1) The applicable Class of lot grading incorporated in the design of subdivisions with lots less than one (1) acre shall be noted on the improvement plans with the applicable plate referenced (see Plates 73 and 74). Additionally, the applicable Class and Plate reference shall be included in the Subdivision Development Notebook for final grading of each lot. Lot grading shall be consistent with requirements outlined in Section 5.03 of this manual, applicable sections of the Stormwater Management Manual (SMM) and the following:

a. Class 1 lot grading to be completed as part of improvement plans shall be designed and graded to allow a minimum 1% slope toward the road.

b. In all cases, adequate erosion control shall be incorporated to stabilize graded areas and minimize ponding on lots.

c. Lot grading will be designed and constructed such that all building pads are a minimum of one foot above the 100 year water surface on the lot.

d. Rear lot storm drains associated with Class 2 and Class 3 lot grading shall be included within easements. Both shall be shown on the plans. It shall be noted in the Subdivision Development Notebook and on the final map that these are to be maintained by the respective property owner.

e. Single family residential lots shall have Class 1 grading whenever feasible. Other lot grading shall be allowed only with specific approval of the Engineer.

(7) Profiles

(a) The plans shall clearly show the existing and proposed profiles of all roadways, storm drains, culverts, sanitary sewers and all areas of possible conflict between underground utilities. This requirement is also applicable for all driveways constructed as part of the improvement plans.

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SEC. 2.03(7) (Continued)

(b) The horizontal scales shall be the same as those used on the plan view. The vertical scale is recommended to be 10% of the horizontal scale (e.g. Horizontal 1"=40' vertical 1"=4'). The vertical scale need not be less than 1"=4').

(c) The profile sheet grid shall match the profile scale.

(8) Horizontal & Vertical Control

(a) Permanent bench marks and datum shall be clearly shown on the plans both as to location, description and elevation. Unless hardship can be proven, the 1929 North American Datum (NGS/USC and GS) shall be used. If the permanent bench mark is further than 500 ft. from the construction site, additional temporary bench marks shall be shown on the plans. Temporary bench marks shall be provided, at 1,000 ft. intervals, prior to construction.

(b) The project improvements shall have ties to a minimum of two monuments of record shown on the plans. Sufficient dimensioning and survey control shall be shown on the plans so that the project can be constructed directly from the plans.

(c) It will be required that proposed improvements be tied into the California Coordinate System if monumented coordinate points are available within a reasonable distance of said improvement.

(9) Orientation and Stationing

(a) Insofar as practical the plans shall be so arranged that North shall be at the top or at the right edge of the sheet. The stationing on plan and profile shall be from West to East or South to North.

(b) The beginning and ending stations shall be shown for all street and utility centerlines.

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SEC. 2.03 (Continued)

(10) Typical Sections

(a) A typical section shall be shown for each type of street within the improvement showing the structural features, limits of the section. The design traffic index and R values shall be shown when required by the conditions of approval.

(11) Cross Sections

(a) Two sets of supplemental cross sections shall be submitted with the plans on 50' intervals or as required to show necessary details. These cross sections will not be required as part of the improvement plans but are for County review and records only. Cross sections shall be provided for all widening/reconstruction improvements of existing, new and CSA maintained roads. Cross sections will not be required for mass graded subdivisions. The scale for cross sections shall be 1"=10' or 1"=5' horizontal and/or vertical.

(12) Utilities

(a) All existing and proposed utilities (e.g. utility poles, water, sewer, gas, electric, telephone, cable TV, etc.) within and 50 feet adjacent to the project limits or affected by the project construction shall be shown on plans including the location of all joint trenches, (typical details and sections shall be included on the detail sheets).

(13) Erosion and Pollution Control

(a) The plans shall provide for erosion control and for the prevention of pollution during and after construction in accordance with Federal and State Laws, County Ordinances and this Manual (Reference Placer County Grading Ordinance and Section 15).

(14) Signing/Striping and Traffic Control

(a) When applicable, a separate signing and striping plan shall be prepared showing all existing and proposed striping and how the proposed signing and striping will conform to existing.

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SEC. 2.03(14) (Continued)

(b) When proposed striping within a roadway must conform to existing, the striping plan shall show existing striping a minimum of 200 feet past the conform point. If an existing turn lane or other change in striping occurs within 300 feet of the conform point, the existing striping shall be shown a minimum of 350 feet past the conform point.

(c) A traffic control plan shall be included as part of the plans when work is proposed within an existing roadway and where a traffic control plan is required by the Engineer. When the work requires phased construction, or is otherwise controlled by the Contractor's Order of Work, the preparation of the traffic control plan may be deferred to the Contractor. The Contractor shall then be required to obtain an Encroachment Permit. This plan shall be reviewed and approved by the County Traffic Engineer.

(15) Detail Sheets

(a) All detail drawings shall be fully dimensioned.

(b) Any detail drawings included in this Land Development Manual which are required for the project, shall be referenced on the improvement plans, and in the special provisions, by Placer County plate number.

(c) Any detail drawings from the State Standard Plans which may be required for the project, shall be referenced on the improvement plans and in the special provisions by Caltrans standard plan number.

(d) Dimensioning associated with these details shall be shown on the plans as applicable.

(e) Portions of the Placer County plates and/or the Caltrans standard plans may be required to be shown on the plans if reference to the detail is not sufficient to identify the applicable design.

(f) A notice to contractor, in bold print, shall be included on the first sheet of all improvement plans which states the following. All contractors shall have a current set of the Placer County General Specifications with the plates and the Caltrans standard specifications and standard plans on site for all projects in Placer County associated with plans approved by the Department. Failure of the contractor to have such documents shall be just cause for stopping construction of the project until these documents are obtained.

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SEC. 2.05 SUPPLEMENTAL INFORMATION

(1) Design Information

(a) All information developed by the Private Engineer for the design of the improvements shall be submitted with the plans as required by the various sections within this Manual. The final copies of all supplemental information prepared and submitted shall have the seal and original signature by the appropriate engineer(s).

(2) Special Provisions

(a) The special provisions (technical specifications) shall be submitted with or shown on the plans.

(3) Estimate

(a) An estimate shall be prepared showing the calculated quantities, unit cost, description and total of each item of work and shall include a 10% contingency for the total value of the work to be done. The estimate shall be submitted with the plans.

(4) Drainage Report

(a) A drainage report, when required, shall be prepared and submitted in conformance with Section 5 of this Manual.

(5) Soils Report

(a) A soils report, when required, shall be prepared by a California Registered Civil Engineer or Geotechnical Engineer. The report shall address and make recommendations for the specific project. These shall include, as appropriate, road, pavement and parking area designs, structural foundations criteria, retaining wall design criteria, recommendations for grading practices, erosion/winterization recommendations, special problems discovered on-site (groundwater, expansive/unstable soils, etc), slope stability and additional information that may be required for the specific project. See the Placer County Grading Ordinance, the project conditions of approval, the Uniform Building Code and the Subdivision Map Act for additional requirements pertinent to the project.

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SEC. 2.07 DEPARTMENTAL REVIEW

(1) Initial Submittal

(a) The Private Engineer shall submit ten sets of 24"x36" bluelines or photocopied plans, two sets of special provisions, if bound separately, and engineer's estimate, conforming to Sections 2.03 and 2.05 of this manual to the Department for review.

(2) Field Review

(a) Prior to approval as specified in this section, a field review may be performed by the Department.

(3) Plan Approval

(a) After the plans, special provisions, supplemental information and estimates have been reviewed, one copy of each shall be returned to the Private Engineer with the required changes noted thereon. The Private Engineer shall correct the original plans, special provisions, supplemental information and estimate, and submit two copies (unless otherwise requested by the Engineer) of the revised plans and the supporting documents to the Department for review. Submit two copies of all reports and supplemental information (drainage report, soil report, engineer's cost estimate, special provisions, etc.) with all required revisions.

(b) Once all required corrections have been made to the satisfaction of the Engineer, the Private Engineer shall submit the original plans and final copies of supporting reports, special provisions, etc., to the Department for signature of the Engineer. Final reports and supporting data must have the original signature and seal of the appropriate Private Engineer. After approval, the original plans will be returned to the Private Engineer. The Private Engineer shall supply one set of mylars and a minimum of four sets of blueline or photocopies of the approved plans. More copies of plans may be required by the Engineer for specific projects.

(4) Changes to Plans

(a) Prior to Plan Approval - Revisions to plans made during the plan check process shall be documented with the plan resubmission as follows:

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SEC. 2.07(4) (Continued)

1. A written response shall be submitted for all revisions/comments from the Department from the previous plan check. This shall include an explanation of plan revisions, supporting data revisions and/or reasoning why a revision was not done.

2. Written documentation shall be submitted outlining all revisions to the plans and supporting documents which were not required by the Department. This shall include a complete description of the revision, applicable sheets of the plan where the revision was made, reasoning for the revisions and the entity requiring this revision.

(b) After Plan Approval - All changes to the plans, special provisions and supporting documents after plan approval shall be submitted for the approval of the Engineer as outlined in Section 2.09 of this Manual. Changes shall be clearly noted on the plans. A revision block making a reference to changes shall be placed on the affected sheet of the plans and shall contain a space for the date, description of revision, and approval by the Engineer. Also see Section 2.03(1)(e).

SEC. 2.09 RECORD DRAWINGS

(1) Prior to the acceptance of the improvements by the Engineer, the Private Engineer shall submit the original plans or film positives of the original plans to the Department labeled "RECORD DRAWINGS" showing all changes made during construction.

(2) Corrections shall be made to the original transparencies. Original data that is superseded shall be crossed/hatched out. New data shall be border clouded and identified with the respective revision number within a triangle. Do not eradicate original figures, nor make corrections over them. All lettering must be clear and legible. Extensive changes which cannot be made clearly on the original plan should be made on a new sheet (supplemental sheet). The new sheet shall be signed by the Private Engineer and included with the "RECORD DRAWINGS" transparencies. Any supplemental sheet shall be of the same quality as the original plans. The sheets that these replace must remain in the plan set but shall be crossed out with a note in the revisions block which identifies that this sheet is superseded by the replacement sheet number. All revisions must be noted within a revision block on the applicable sheet with revision number, description, date revised, and approval initial/date by the Engineer. An index of all plan revisions shall be included on the title (first) sheet of the

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SEC. 2.09(2) (Continued)

plans. This shall include the revision number, date revised, sheet numbers of revisions and Engineer approval initial and date. Diazo transparencies or sepias will not be accepted.

(3) The following data shall be shown:

- (a) Contract change order number where applicable.
- (b) Revision in alignment and right-of-way.
- (c) Grade revisions in excess of 0.1 foot for paved areas, and in designated drainageways where such deviations are significant.
- (d) Length, size, flow line elevations, and station of culverts.
- (e) Drainage changes.
- (f) All underground utilities and appurtenant features.
- (g) Location of monuments, bench marks, and freeway fences.
- (h) Revision of typical sections.
- (i) Change in pavement lanes, tapers, ramps, frontage roads, road connections, driveways, sidewalks, islands, and median openings.
- (j) Curb and gutter changes.

(4) The following data shall not be shown:

- (a) Construction quantities.
- (b) Property fences.
- (c) Miscellaneous small features, such as guide posts, etc.