

**SECTION 10
GRADING**

10.1 GENERAL REQUIREMENTS

Grading during the wet season (typically October to April) shall be limited and phased for erosion control purposes.

10.2 PLAN SHEET DETAILS

In addition to the requirements of Section 3, "Improvement Plan Requirements", the following items shall be included on grading plans:

- A. Slope symbols for 3:1 slopes or steeper, where grade difference exceeds one foot
- B. Ridge and/or valley delineation
- C. Typical lot grading details
- D. Proposed spot and/or pad elevations
- E. Flow directional arrows (off-site, around perimeter of development when adjacent to developed areas) and perimeter elevations at the property line
- F. Existing spot elevations and/or contour lines on-site and off-site around perimeter of development. Where the existing terrain is not relatively flat, contour lines shall be mandatory. The spot elevations or contour lines shall be extended off-site for a minimum distance of 50 feet (flat terrain – 100 feet minimum) when adjacent to undeveloped areas.
- G. Existing vegetation including trees (variety, size and elevation at base of all trees nine inches (9") or larger)
- H. Retaining wall details (symbols, construction details, limits, and top and bottom of wall elevations)
- I. Back of sidewalk or curb elevations
- J. Location and grate elevation of storm drain inlets
- K. Typical sections across side yard property lines where the difference in finish pad elevations exceeds two feet. Delineated on the section shall be the side yard drainage swale and minimum distance between the proposed building and the side yard property line.
- L. Names of adjacent subdivisions
- M. Off-site intersecting property lines
- N. Signature block for certification of pad elevations by Engineer of Record for subdivision projects

- O. For all export projects:
 - 1. Location and plan of spoils disposal
 - 2. Spoils slopes of 3:2 or flatter
 - 3. Finish spoils heights of 3 feet or less
 - 4. No spoils within 5 feet of property lines
 - 5. Spoils shall not block drainage
 - 6. Spoils shall be leveled prior to acceptance of project
- P. Erosion control details as required in Section 11, "Stormwater Quality Protection".
- Q. Overland release grades and details.

10.3 ROLLING TERRAIN GRADING

Grading or rolling terrain shall be accomplished in a manner whereby the profile of the rolling terrain is maintained as close to that which exists as practically possible. Interior cuts and fills shall be no greater than 5 feet.

10.4 BOUNDARY GRADING

Special attention shall be given to grading adjacent to the exterior perimeter property line of a development. All adverse effects to off-site properties adjacent to new developments shall be reduced to an absolute minimum. Fills and cuts adjacent to the exterior perimeter property line shall be designed in accordance with the following:

- A. Fills – Fills in excess of 2 feet shall not be allowed unless permitted by project conditions of approval. When fills are unavoidable, they shall conform to Standard Drawing G-1. If possible, fill slopes shall be constructed off-site, with the property line being situated at the top of the fill. A right of entry shall be required for all off-site fills prior to plan approval. A note shall be placed on the plans listing the name of the grantor of the right of entry and the date obtained.
- B. Cuts – Cuts shall be constructed in accordance with Standard Drawing G-2, except that the slope setback from the property line to the slope hinge point shall be a minimum of 2 feet for all slopes steeper than 5:1.
- C. Fences – When fences are required, they shall be placed within one foot of the property line. Where the adjacent property is City owned or public right-of-way, the fence shall be placed on the private property side of the boundary. The height of a fence shall be measured from the highest ground adjacent to the fence, regardless of the side that is developing.

10.5 INTERIOR GRADING

Grading at interior property lines within a subdivision shall conform to Standard Drawing G-2 and the following:

- A. Property Lines – Property lines shall be situated at the top of fill and cut slopes. Grading shall be such that surface runoff will not be allowed to sheet flow down the slopes steeper than 5:1. Property lines shall be situated at the top sides of retaining walls with a minimum setback of 1.0 foot from the property line to the retaining wall. See Standard Drawing G-3.
- B. Slopes – The maximum earth slopes allowed shall be 2:1 (horizontal to vertical) and the minimum shall be 1%. Minimum asphalt concrete surface slopes shall be 1% and minimum Portland cement concrete slopes shall be 0.25%.
- C. Cross Lot Surface Flow – Grading of residential or duplex lots shall be such that surface flow shall be restricted to a maximum of one lot flowing across another lot. Developments with situations that mandate grading which allows more than one lot to drain across another lot shall be required to provide a pipe system to maintain the one-lot rule.
- D. Lots on the low side of streets and at sag points shall be graded in such a manner as to preclude flooding of the building pad area in the event of malfunction or overloading of the street drainage system. All building pad grades shall be a minimum of 1 foot above the overland release elevation.
- E. Commercial developments shall not be allowed to “sheet drain” more than twenty-five feet of site frontage to a public street. Area outside the 25-foot strip shall be graded to drain into an on-site drainage system.

10.6 RETAINING WALLS

Retaining walls shall be in accordance with the following:

- A. Redwood retaining walls for interior property lines shall conform to Standard Drawing G-3 as a minimum design. Construction details of redwood retaining walls on the plans shall not be required when reference to Standard Drawing G-3 is made. When fences are to be constructed atop redwood retaining walls, 4” x 6” posts at 4’ centers shall extend above the retaining wall and act as fence posts.
- B. Masonry or concrete retaining walls for boundary or phase lines shall conform to Standard Drawing G-4 as a minimum design. Construction details of masonry or concrete retaining walls on the plans shall not be required when reference is made to Standard Drawing G-4.
- C. Design calculations stamped and signed by the Engineer of Record shall be required for all walls exceeding twenty-four inches (24”) inches in height (excluding footing height) or when a fence greater than 6 feet high is an integral part of the wall.

- D. All retaining walls within 8 feet of boundary, phase, or right-of-way lines shall be either concrete or masonry.
- E. Grading shall be such that on-site-runoff will not flow over retaining walls.
- F. Where pads on adjacent lots are ten feet (10') apart or less and the difference in elevation exceeds two and a half feet (2.5'), a retaining wall will be required as per Standard Drawings G-3 or G-4.

10.7 GRADING AT TREES

The City of Elk Grove desires to preserve the existing trees within the City whenever reasonably possible. The regulations governing these preservation objectives are in Chapter 19.12, "Tree Preservation and Protection", of the Elk Grove Municipal Code.

10.8 CERTIFYING PAD ELEVATIONS

Upon completion of the grading and prior to acceptance of the subdivision improvements by the City, the Engineer of Record shall verify the final pad elevations. The elevations shall be verified at the center and the corner of each pad. Elevation deviations more than one tenth feet (0.10') shall be noted on the record drawings.

A signature block, certifying that final graded elevations in the field are the same as those shown on the record drawings shall be included on the subdivision grading plans. The Engineer of Record shall sign the signature block, certifying to the above, and shall provide three sets of record (as built) grading plans to the Director.

10.9 MAINTENANCE OF ACCESS TO UTILITY FACILITIES

Continuous, suitable access shall be maintained during all stages of construction of any facility owned or operated by a utility/district providing essential services, i.e., sanitary sewer, water, drainage, electricity, gas, telephone, etc.