

SECTION 11: GRADING

11-1 INTRODUCTION

The City's authority to regulate grading on private property varies depending on the property's location. For properties located within specific plan areas of the City, the authority is provided by the zoning ordinance for the specific plan area. For properties which are not located within a specific plan area, the City's authority for regulating grading is provided by Chapter 33 & 18 of the California Building Code (CBC). The CBC requires that a Grading Permit be obtained from the City prior to beginning any grading work unless the work meets certain exemptions specified in the CBC. This is necessary to ensure that on-site drainage adequately accommodated, off-site drainage is conveyed through the project, the proposed grading is compatible with adjacent property topography and adequate erosion and sedimentation control measures are addressed.

This section specifies design and plan submittal requirements of Grading Plans for private developments. It includes items pertinent for the City's review and reflects established professional engineering practice for preparation of Grading Plans. Questions and clarifications regarding this Section should be directed to the Engineering Division of the Development Services Department.

The City of Roseville has adopted Stormwater quality design standards to reduce water pollution generated by urban runoff. These design standards are detailed in the Stormwater Quality Design Manual for the Sacramento and South Placer Regions. This manual is available on-line at the City of Roseville website, <https://www.roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=8754136>

Two (2) types of Grading Plans are reviewed by the City: Finished Grading Plans and Rough Grading Plans.

Finished Grading Plans shall be submitted as part of the Improvement Plans for a project. Finished grading requirements shall be specified in Section 11-4.

Rough Grading Plans are submitted separately from and may be accepted prior to Improvement Plans. The plans should detail only preliminary grading of a site. The design shall not allow for construction of any improvements (storm drains, streets, curbs, gutters, etc.) and shall indicate positive drainage flow except in those instances provided on the plans for erosion and/or sedimentation control. Rough grading requirements shall be as specified in Section 11-5.

11-2 FEES AND BONDS

Plan review and permit fees for grading shall be in accordance with Chapter 33 of the California Building Code (latest edition as adopted by the City). 100 percent of the plan review fees will be required at the time of submittal. See section 2-7 for Grading Permit fee schedule. The amount of the bond shall be equivalent to ten (10) percent of the cost of the grading and all erosion and sediment control measures, but not less than \$500.00.

11-3 PREPARATION

All Grading Plans shall be prepared by or under the direction of a Registered Civil Engineer. All Sheets shall be stamped and signed by a Registered Civil Engineer licensed in the State of California.

11-4 FINISHED GRADING PLAN REQUIREMENTS

Grading Plans for subdivisions and all developments located within Planned Development zones shall be submitted as part of the Improvement Plans and shall detail the following:

- A.** Slope symbols for all slopes 4:1 or steeper.
- B.** Typical lot grading details.
- C.** Proposed spot and/or pad elevations. All lot corner elevations shall be shown on the Grading Plan.
- D.** Flow directional arrows both on-site and off-site and perimeter elevation at the property line.
- E.** Existing spot elevations and or contour lines on-site and off-site around the perimeter of the development. Where the existing terrain is not relatively flat, contour lines shall be shown. Contour lines shall be in maximum increments of two (2) feet. The spot elevations or contour lines shall be extended off-site for a minimum distance of 25 feet (flat terrain-50 feet minimum).
- F.** Existing trees (variety, size and elevation at the base of all trees six (6) inches in diameter or larger). For native oak trees, the plan shall show the protected zone and the approved protective fencing locations. Encroachments into the protected zone require tree permit approval.
- G.** A Certificate of Compliance of Grading with signature blocks for both the Registered Civil Engineer and the Geotechnical Engineer licensed in the State of California shall be provided stating the following:

CERTIFICATE OF COMPLIANCE

I hereby certify that the grades shown on these plans and approved by the Development Services Department have been constructed to within 1/10th of one (1) foot of their indicated elevation for all lot pads and improvements shown.

Project Engineer

PE Number

Date

I hereby certify that the pads for the following lots for this project have been tested for compaction in accordance with generally accepted test methods and based upon the results of these tests the compaction of said pads conforms to the recommendations of this project's geotechnical report:

Lots: _____

I also state that our firm observed the grading operation to a sufficient extent to evaluate conformance with the project's geotechnical report as approved by the City, and further state that based upon our observations, the grading for this subdivision conforms with the recommendations of said soil report.

Geotechnical Engineer

PE Number

Date

- H.** Back of sidewalk elevations at property lines, curb returns, high and low points, and other areas deemed necessary by the City Engineer.
- I.** All existing and proposed surface and subsurface drainage facilities including drain inlets, underground pipes, surface swales, and any other drainage improvement proposed to be constructed with, or as a part of, the proposed work.
- J.** Location of existing and proposed buildings or structures on the site, including proposed pad and/or finished floor elevation. Proposed residential plot plans should not be shown on the Grading Plans.
- K.** Location of existing and proposed buildings or structures on the land of adjacent owners which are within fifteen (15) feet of the property and which may be impacted by the proposed grading operations.
- L.** Location of all existing and proposed retaining walls.
- M.** Typical sections across side yard property lines where the difference in finish pad elevations exceeds one (1) foot.
- N.** Names of adjacent subdivisions.

O. Off-site intersecting property lines.

P. For all projects involving the export of soil material:

1. Location of spoiled disposal. If spoil area is within a Specific Plan area of the City, a separate Conditional Use Permit is required for that site.
2. Spoil areas shall meet all the requirements of these standards.

Q. Silt retention and erosion control details as necessary and specified in these Design Standards.

R. Location of temporary protective fencing for environmentally sensitive areas such as: creeks, wetlands, vernal pools, perennial streams, and preserve areas.

11-5 ROUGH GRADING PLAN REQUIREMENTS

Grading Plans for subdivisions and all developments located within Planned Development zones shall conform to the same requirements as those specified for Finished Grading Plans excepting the following:

A. Improvements: Only existing improvements such as utilities, curbs, gutters, etc. shall be shown. Utilities and streets to be constructed with the Improvement Plans shall not be shown as part of the Rough Grading Plans.

B. Drainage: All rough plans shall provide for positive surface drainage flow except in those instances provided on the plans for erosion and/or sedimentation control.

11-6 DESIGN REQUIREMENTS

A. Rolling Terrain Grading: Grading of rolling terrain shall be accomplished in a manner whereby the effect of the rolling terrain is maintained as close to that which exists, to the extent practicable. Every effort shall be made to keep grading of rolling terrain to an absolute minimum.

B. 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 kept to an absolute minimum. Fills and cuts adjacent to the exterior perimeter property line shall be designed in accordance with the following:

1. When grading along existing residential property, the grade should be, if at all possible, held equal to or lower than the existing property grades. When grades are to be raised higher than existing adjacent residential lots, a masonry retaining wall shall be used, regardless of the difference in elevation. The wall shall be located as close to the property line as is feasible for construction. If permission can be obtained from the adjacent property owner(s), the wall should be placed on the property line or onto the lower lot and the fence relocated to the top of the wall.

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2. If possible, all exterior slopes, fill or cut, shall be constructed off-site, with the property line being situated a minimum of two (2) feet inside the higher elevation. If a right of entry cannot be obtained, a retaining wall shall be placed as near to property line as practicable.
3. A recorded notarized right of entry shall be required for all off-site fills and grading prior to plan approval.
4. Fill slopes adjacent to designated open spaces shall have a maximum slope of 3:1. Exceptions to this specification may be made where physical constraints restrict the use of 3:1 slopes, at the discretion of the City Engineer. Maximum slope of all other boundary grading shall be 2:1 or as specified by the Geotechnical Engineer.
5. All slopes steeper than 4:1 adjacent to the public right-of-way and private streets shall be protected with permanent erosion control measures.
6. All fill material shall achieve 90 percent relative compaction certified by a Registered Geotechnical Engineer.
7. When a drainage swale or ditch is proposed to run adjacent to the property line, a level area, minimum width of five (5) feet is required between the property line and the top of the slope bank.
8. A specific haul route shall be approved by the City Engineer when a large quantity of imported or exported soil is required. Where a haul route has not been determined at the time of plan approval, the permit shall be conditioned stating that no grading activities shall occur until a haul route has been approved by the City Engineer.

C. Interior Grading: Differences in elevations across interior property lines within a development, such that slopes or retaining walls are required, shall conform to the following:

1. Cross lot drainage is not allowed unless specifically approved by the City Engineer for tree preservation. All single-family residential lots shall have Class 1 grading as per the Standard Drawings unless approved otherwise by the City Engineer. When a Class 2 or Class 3 lot grading plan is proposed as part of a tentative map application for a single-family residential subdivision, the tentative grading plan showing rear lot drains shall be supplemented with an alternative plan showing the effect on the subdivision if rear lot drains are not utilized.
2. Retaining Walls shall be required whenever adjacent side lot elevations differ by more than 1/2 foot. In such cases, a minimum three (3) foot wide walk path shall be maintained adjacent to all side property lines. Where the Consulting Engineer feels that this path will be maintained without the use of a retaining wall, application for a waiver may be made by preparing and submitting a site plan scale on 8-1/2" X 11" reproducible paper for each lot which is requested to be exempted, or by submitting a standard Lot Grading and

Setback Guarantee. The Lot Grading and Setback Guarantee shall specify which lots for which a waiver of the retaining wall requirement is requested, shall state the minimum setback of the proposed structure from the toe of slope, and shall state that should the minimum setback not be possible during construction, a retaining wall shall be constructed to the requirements of these Design Standards. Upon approval, a copy of these will be given to the Building Division to utilize in their review. Any deviation to these plans will be subject to the approval by the Engineering Division.

3. Property lines shall be situated a minimum of 1.0 foot inside the top of fill or cut slopes when pad elevations differ by $\frac{1}{2}$ foot or less. When retaining walls are used, the property lines shall be situated on the high side of the retaining wall with a minimum setback of one (1) foot from the property line to the retaining wall. Where pad elevations differ by more than $\frac{1}{2}$ foot and waiver of placement of retaining walls is required per the requirements stated above, property lines shall be situated a minimum of two (2) feet inside the top of fill or cut slopes.
4. The maximum earth slopes allowed shall be 2:1 (horizontal to vertical). Minimum asphalt concrete surface slopes shall be 1% and minimum concrete cement surface slopes shall be 0.25%. All proposed slopes that are 3:1 or steeper shall be shown on the plans by some type of slope symbol delineation.
5. Lots on the low side of streets at sag points shall have pad elevations a minimum of one (1) foot above the 100 year water

Surface elevation assuming failure of all subsurface drainage systems.

D. Retaining Walls: Retaining walls, when required, shall be shown on the plans and shall include all necessary information and details for construction. All retaining walls adjacent to the public right-of-way or along the exterior boundary of the project shall be masonry. Other retaining walls less than or equal to 2' -6" in height may be redwood conforming to the Standard Drawings except as specified in Section 11-6. Walls higher than 2' -6" shall be masonry. All walls higher than four (4) feet as measured from base of foundation to top of wall shall be substantiated with structural calculations stamped by a Registered Civil Engineer licensed in the State of California and a Building Permit shall be obtained from the Building Division.

E. Grading near Trees: No person shall conduct any activity within the Protected Zone of a Native Oak Tree or Landmark Tree without approval of a Grading Permit issued conformance with the Tree Permit Conditions. Great care must be exercised when work is conducted upon or around Protected Trees. The purpose of this section is to define procedures necessary to protect the health of the Protected Trees. The policies and procedures described in this section apply to all encroachments into the Protected Zone of Protected Trees. All Tree Permits shall be deemed to incorporate the provisions of this section except as the Tree Permit may otherwise specifically provide.

1. General

- a.** Trenching within the protected Zone of a Protected Tree, when permitted, may only be conducted with hand tools, in order to avoid root damage.
- b.** Minor roots less than one (1) inch in diameter may be cut, but damaged roots shall be traced back and cleanly cut behind any split, cracked or damaged area.
- c.** Major roots over one (1) inch in diameter may not be cut without approval of an Arborist. Depending upon the type of improvement being proposed, bridging techniques or a new site design may need to be employed to protect the root and the tree.
- d.** If any Native Ground Surface Fabric within the Protected Zone must be removed for any reason, it may be protected within 48 hours.
- e.** An independent low-flow irrigation system may be used for establishing drought-tolerant plants within the Protected zone of a Protected Tree. Irrigation shall be gradually reduced and discontinued after two (2) years.
- f.** Planting Live material under native Oak Trees is generally discouraged and it will not be permitted within six (6) feet of the trunk of a Native Oak Tree with a DBH of eighteen (18) inches or less, or within ten (10) feet of the trunk of a Native Oak Tree with a DBH of more than eighteen (18) inches. Only drought tolerant plants will be permitted within the Protected Zone of Native Oak Trees.
- g.** A minimum of four (4) foot high protective fence shall be installed at the outermost edge of the Protected Zone of each Protected Tree or group of Protected Trees. The fence shall not be removed until written authorization is received from the Planning Director. Exceptions to this policy may occur in cases where Protected Trees are located on slopes that will not be graded. However, approval must be obtained from the Planning Department to omit fences in any area of the project. The fences must be installed in accordance with the approved fencing plan prior to the commencement of any grading operations or such other time as determined by the approving body. The Developer shall call the Planning Department and Engineering Division for an inspection of the fencing prior to grading operations.

Signs must be installed on the fence in four (4) locations (equidistant) around each individual Protected Tree. The size of each sign must be a minimum of two (2) feet by two (2) feet and must contain the following language:

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**WARNING:
THIS FENCE SHALL NOT BE REMOVED
OR RELOCATED WITHOUT WRITTEN
AUTHORIZATION FROM THE
DEVELOPMENT SERVICES**

- h.** Once approval has been obtained, the fences must remain in place throughout the entire construction period and may not be removed without obtaining written authorization from the Planning Department.
- i.** A minimum of \$10,000 deposit, or amount deemed necessary by the approving body, shall be posted and maintained to insure the preservation of Protected Trees during construction. The deposit shall be posted in a form approved by the City Attorney prior to any grading or movement of heavy equipment onto the site or issuance of any permits. Each violation of any Tree Permit condition regarding Tree Preservation shall result in forfeiture of a portion of the deposit, in the discretion of the approving body.
- j.** In cases where a Tree Permit has been approved for construction of a retaining wall(s) within the Protected Zone of a Protected Tree, the Developer will be required to provide for immediate protection of exposed roots from moisture loss during the time prior to completion of the wall. The retaining wall shall be constructed within 72 hours after completion of the grading.
- k.** If required, preservation devices such as aeration systems, Oak Tree wells, drains, special paving and cabling systems must be installed per approved plans and certified by the Developer's Arborist.
- l.** Every effort should be made to avoid cut and/or fill slopes within or in the vicinity of the Protected Zone of any tree.
- m.** No grade changes are permitted which cause water to drain to within twice the longest radius of the Protected Zone of any Protected Tree.
- n.** Certification letters are required for all regulated activity conducted within the Protected Zone of Protected Trees. The Developer's Arborist will be required to submit a certification letter to the Planning Department within five (5) working days of completion of such regulated activity attesting that all of the work was conducted in accordance with the appropriate permits and requirements of this section.
- o.** The following information must be located and permanently retained in the construction trailer starting at the site planning meeting:
 - 1)** *Arborist's* report and all future modifications.

- 2) Tree location map with a copy of the tree fencing plan.
- 3) Tree permit and inspection card.
- 4) Approved Construction Plans.
- 5) Tree Preservation guidelines.
- 6) Approved Planting and Irrigation Drawings.

2. Tree Permit Construction Phase

- a. All work conducted within the Protected Zone of any Protected Tree shall be performed as required by this section and as required in project approval.
- b. As a condition of the Tree Permit, the Developer will be required to submit a utility trenching-pathway plan for approval following approval of the project Improvement Plans. The trenching-pathway plan shall depict all of the following systems; storm drains, sewers, easements, water mains, area drains, and underground utilities. Except in lot sale subdivisions, the trenching-pathway plan must show all lateral lines serving buildings. To be completely effective, the trenching-pathway plan must include the surveyed locations of all Protected Trees on the project as well as an accurate plotting of the Protected Zone of each Protected Tree.

The trenching-pathway plan should be developed considering the following general guidelines:

- i. The trenching-pathway plan must be developed to avoid going into the Protected Zone of any Protected Tree on its path from the street to the building.
- ii. Where it is impossible to avoid encroachment, the design must minimize the extent of such encroachment. Encroachments and mitigation measures must be addressed in supplemental Arborist's report.
- c. All of the tree preservation measures required by the conditions of the discretionary project approval, the Arborist's report and the Tree Permit, as applicable, shall be completed and certified by the Developer's Arborist's prior to issuing an Occupancy Permit.

F. Stormwater Pollution Prevention Plan (SWPPP): A site specific SWPPP shall be submitted concurrently with the Improvement and /or Grading Plans when a project disturbs land. For information concerning the preparation of a SWPPP, the Project Engineer should refer to the City of Roseville's "Stormwater BMP Guidance Manual for Construction", the California Stormwater Quality Association (CASQA). "Stormwater BMP Handbook/

Construction”, and the State of California NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities.

The SWPPP shall match identically to that of the SWPPP submitted to the State Water Resources Control Board via their electronic SMART system, up until the time improvement plans are approved, encroachment and/or grading permits are issued, and construction commences.

SWPPPs are not required for projects under one acre, unless they are part of a larger development encompassing over one acre. For projects less than one-acre, an erosion and sediment control plan shall be submitted with the improvement plans to the City for approval. This is generally part of the Grading Plan for the development. The Development Services Department, Engineering Division will accept the erosion and sediment control plan upon review of the project. All erosion and sediment control devices shall be identified and implemented in the same fashion as projects with SWPPPs over one acre. Enforcement will be conducted similarly, with exception to SWPPP administrative requirements.

1. Criteria

The purpose of the SWPPP is to ensure protection of the following:

- a. Water Quality:** Measures shall be provided to prevent siltation of streams, rivers, etc; avert in stream degradation due to turbidity and pollutant load; and prevent toxic materials from leaving construction sites.
- b. Collection System:** Methods shall be provided to prevent sediment from entering the storm drainage system.
- c. Adjacent Properties:** Methods shall be employed to prevent any damage to adjacent properties.

2. SWPPP Site Plan Requirements

SWPPP site plan(s) shall be submitted along with other SWPPP State permit required documents.

The discharger shall ensure that the SWPPP for the project site is developed and amended or revised by a Qualified SWPPP Developer (QSD). The SWPPP shall be designed to address the following:

- a. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled;**

- b.** Where not otherwise required to be under Regional Water Board permit, all non-storm water discharges are identified and either eliminated, controlled, or treated;
 - c.** Site BMP's are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges from construction activity to the BAT/BCT standard;
 - d.** Calculations and design details as well as BMP controls for site run-on are complete and correct, and
 - e.** Stabilization BMP's installed to reduce or eliminate pollutants after construction are completed.
 - f.** Phasing of Erosion Control Measures - The Engineering Division may require phasing of the SWPPP plan(s) to ensure that all necessary erosion control measures are taken during separate phases of construction. As an example, this may require the Developer to construct sediment traps and basins during the first phase of grading operation.
 - g.** To demonstrate compliance with requirements of the SWPPP, the QSD shall include information in the SWPPP that supports the rationale used in selecting BMP's including supporting soil loss calculations, if necessary, conclusions, selections, use, and maintenance of BMP's
 - h.** The discharger shall make the SWPPP available at the construction site during working hours while construction is occurring and shall be made available upon request by State or City inspectors. When the original SWPPP is retained by a crew member in a construction vehicle and is not currently at the construction site, current copies of the BMP's and map/drawing will be left with the field crew and the original SWPPP shall be made available via request by radio/telephone.
- 3. SWPPP Control Measures Requirements:** The following is a list of requirements for erosion and sediment control measures, also referred to as BMPs (Best Management Practices). The following erosion and sediment control requirements shall be part of site specific SWPPP.
- a.** All sediment control measures (drain inlet protection, perimeter protection, stabilized construction access, etc.) shall be implemented prior to the commencement of grading operations or other construction activities or as approved by the City Engineer. Grading during the wet season should be minimized.
 - b.** An adequate supply of erosion and sediment control materials (fiber rolls, blankets, mats, straw bales, silt fencing, etc.) shall be stored onsite throughout the course of construction and made available for maintenance and repair work.

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- c.** Straw, when used, shall be broadcasted, or hand distributed, at a rate of 4000 pounds per acre. Straw shall be anchored to soil surface by “punching”, “pressing”, or by tacking down using a tackifier.
- d.** Slopes steeper than 4:1 and adjacent to the City right-of-way, flood plains, natural drainages, park land or designated open space shall be broadcast seeded and covered with a blanket material grade appropriate to the steepness and length of the slope. Alternative methods shall be approved by the Engineering Division.
- e.** All areas of disturbed soil, regardless of slope, shall be protected for erosion control. For measures approved by the City for erosion control, see the City of Roseville’s Stormwater BMP Guidance Manual for Construction, and the State of California NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities.
- f.** Where required, broadcast seed shall be applied as follows:

Blando Brome	12lbs/acre
Rose Clover	9lbs/acre

Areas with sandy, dry soil shall be:

Zorro Annual Fescue	12lbs/acre
Rose Clover	9 lbs/acre

16-20-0 fertilizer or equivalent shall be applied at the rate of 500 pounds per acre. If hydro-seeding/mulching is used, seed quantities shall be increased by 30 percent.

For areas adjacent to City designated open space, perennial streams, creeks, or environmentally sensitive areas, native seeds shall be used. Approved seed blends are listed below.

Seed blends and proposed alternate seed blends shall be submitted to the stormwater or construction inspector for approval prior to application.

Dry Mix

Botanical Name (Common Name)	Ecotype/Orgin	Approximate Live Seeds/Bulk Lb.	Approximate Live Seeds/Sq. foot	Bulk Lb/Acre
Nassella pulchra (purple needlegrass)	Yolo County: Stone Ranch	50,000	14.9	13.00
Nassella cernua (nodding needlegrass)	Tehama County: Inks Creek	115,000	15.8	6.00
Bromus carinatus (California brome)	Amador County: Sierra Nevadas	47,000	5.4	5.00
Poa secunda (one sided bluegrass)	Yolo County: Fiske Creek	500,000	11.5	1.00
Vulpia microstachys (three weeks fescue)	Yolo County: Fiske Creek	350,000	16.1	2.00
Melica californica (California melic)	Yolo County: Fiske Creek	240,000	16.5	3.00
Total:			63.7	30.0

Swale/Wet Mix

Botanical Name (Common Name)	Ecotype/Orgin	Approximate Live Seeds/Bulk Lb.	Approximate Live Seeds/Sq. foot	Bulk Lb/Acre
Nassella pulchra (purple needlegrass)	Yolo County: Stone Ranch	50,000	9.2	8.00
Bromus carinatus (California brome)	Amador County: Sierra Nevadas	47,000	5.4	5.00
Vulpia microstachys (three weeks fescue)	Yolo County: Fiske Creek	350,000	8.0	1.00
Elymus glaucus (blue wildrye)	Butte County: Ilano Seco Ranch	120,000	11.0	4.00
Leymus triticoides (creeping wildrye)	Yolo County: Yolo Bypass	125,000	11.5	4.00
Hordeum brachyantherum (meadow barley)	Yolo County: Yolo Bypass	75,000	6.9	4.00
Elymus trachycaulus (slender wheatgrass)	Yolo County: Willow Slough	69,000	6.3	4.00
Total:			52.0	30.0

- h.** All erosion and sediment control measures shall be checked prior to, and following all storms to ensure that all measures are functioning properly.
- i.** Sediment and trash accumulated on-site, in drainages, or detention basins shall be removed and properly discarded as soon as possible.

- j.** Construction activities throughout the year shall have erosion and sediment control measures in place or capable of being placed within 24 hours. The Contractor shall ensure that the construction site is prepared prior to the onset of any storm. Per the States General Construction Permit, a Rain Event Action Plan (REAP) shall be reviewed and completed by a qualified SWPPP practitioner (QSP) 48 hours prior to a rain event.
- k.** The Contractor shall establish a specific site within the development for maintenance and storage of equipment or any other activity that may adversely contribute to the water quality of the runoff. This area shall include secondary containment measures such as, but not limited to weather protected bins, awnings, tubs for liquid pollutant containers, and spill kits, etc. This area shall be managed to prevent spills and storm water from coming into contact with pollutants, and shall be restored to an acceptable condition upon completion of project.
- l.** Hydro-seeding and hydro-mulching may be considered as an alternative to broadcast straw subject to the Engineering Division's approval based on a review of the existing site conditions (location, slopes, proximity to streams) and time of year.
- m.** SWPPP shall define erosion and sediment control measure objectives, and clearly identify control measure selections.

G. Mitigation Monitoring Requirement: All mitigation measures and mitigation monitoring measures as required to mitigate environmental impacts shall be complied with. The Developer is responsible for monitoring all mitigation measures and shall submit to the Planning Department a letter certifying compliance with such measures.

H. Certifying Pad Elevations: Upon completion of the grading and prior to acceptance of the subdivision improvements or issuance of building permits by the City, the Consulting Engineer shall verify the final pad elevations. The elevations shall be verified at the center and the corners of each pad. Pad grades shall be certified to an accuracy of 0.10 feet.

A signature block (see Section 11-4G), certifying that final graded elevations in the field are the same as those shown on the plans, shall be included on the tracings of the subdivision grading plans. The Consulting Engineer shall sign the signature block, certifying to the above, record (as-built) Grading Plans to the City Engineer.

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