19.00 DRAINAGE, SITE IMPROVEMENTS AND EROSION CONTROL

19.01 Purpose and Scope

This section of the Improvement Standards has been prepared to help homeowners, contractors, and design professionals comply with local, state, and federal requirements related to grading projects and is supplemental to Section 15.30 of the City Code referred to herein as the Grading Ordinance.

In association with the requirements of the Grading Ordinance, the procedures, standards, and requirements contained in this section of the Improvement Standards have been put in place to safeguard public health, safety, and welfare and to ensure proper design and construction of grading projects. With respect to erosion and sediment control, this section of the Improvement Standards is intended to provide the basis for ensuring that contractors implement and maintain control measures needed to effectively reduce the offsite discharge of sediment to the maximum extent practicable.

19.01.01 Authority

The Grading Ordinance, Chapter 15.30 of the AMC includes various local requirements that apply to anyone conducting earthmoving operations within the City.

As provided for in the Grading Ordinance and as presented in this section of the Improvements Standards the City Engineer shall enforce the requirements of the Grading Ordinance and the requirements in this section of the Improvement Standards. As such, the City Engineer has authority to make various decisions regarding the application of associated design and construction requirements and, also, regarding the implementation of enforcement measures when appropriate. Section 15.30.270 of the Grading Ordinance presents procedures whereby a person can appeal any decision made by the City Engineer. Appeals are to be filed with the City Council in accordance with prescribed procedures in the Grading Ordinance.

19.01.02 Code And Technical Publications References

The following Angels Camp City Codes are referenced:

- Chapter 8.50 *Fire Safety Regulations* in Title 8 *Health and Safety*;
- Title 12 *Streets, Sidewalks, and Public Places*; and
- Chapter 15.04 *Uniform Codes* in Title 15 *Buildings and Construction*;

- Title 16 *Subdivisions*; and
- Title 17 *Zoning*.

The following technical publications are referenced:

- Angles Camp General Plan;
- Caltrans Standard Specifications, latest version;
- Caltrans Standard Plans, latest version; and
- Caltrans Storm Water Quality Handbooks, latest version.

19.01.03 Requirements and Limitations

The issuance of a grading permit, the approval of plans and specifications, or the acceptance of work are not to be construed as an approval of any violation of the provisions of the Grading Ordinance or of any other applicable law, ordinance, rule, or regulation. If a permit is issued or if work is approved based upon inaccurate or incomplete information submitted by the applicant, the grading permit may be cancelled at any time, a stop work order may be issued, and/or remedial action may be ordered. The requirements in this section of the Improvement Standards:

1. Do not limit the powers of the approving authority to protect the health, safety, and welfare of the public; and
2. Are minimums that may be exceeded to meet specific conditions associated with a proposed development and the purposes of this section of the Improvement Standards.

This section of the Improvement Standards provides appropriate practice under most conditions, based on past experience in the City of Angels Camp and other agencies. Situations may arise where the application of individual standards from this section of the Improvement Standards will not ensure the protection of public health, safety, and welfare. Accordingly, the City Engineer may impose additional or more stringent standards than those contained in the Improvement Standards. Modifications may also include scheduling or timing restrictions.

19.01.04 Scope

Unless specifically exempted, all earthmoving activities within the City of Angels Camp must conform to the Grading Ordinance and to applicable portions of this section of the Improvement Sta whether the work is done on private property, on public lands, or within city rights-of-way. Grading operations encompass all earthmoving activities including cuts (the excavation of soil

material), fills (the placement of soil materials), site clearing, and material stockpiling. Section 19.06 includes provisions to allow the city to consider alternative engineered designs if such alternatives meet or exceed the performance of the design standard.

This section of the Improvement Standards does not address geotechnical and related engineering requirements for the structural support of roads or structural support of buildings or other site improvements for which a building permit is required. Nonetheless, information regarding these requirements may be required by the City in order to evaluate proposed site grading activities. Requirements for building foundations and for other permitted structures are included in Chapter 15.04 *Uniform Codes* in Title 15 *Buildings and Construction* of the city Code. Roadway construction standards are included in the City's Design Standards.

Relevant portions of the city's Zoning Code (Title 17 *Zoning* of the city Code) and the City of Angels Camp General Plan (including Specific Plans, if applicable) apply to all grading activities and the proposed work and planned site use must be consistent with local land use guidelines and restrictions. The City will not issue a grading permit unless the proposed activity is consistent with local land use requirements.

19.02 General Provisions

All grading activities within the city must comply with the Grading Ordinance and with applicable portions of this section of the Improvement Standards. For the purposes of regulation, all grading activities have been categorized into a tiered regulatory structure as described in the next section.

19.02.01 Abatement of Existing Hazards

The Grading Ordinance requires the City Engineer to take specified action to address any existing excavation, embankment, or fill on public or private property that "may pose a hazard to life and limb, or endangers property, or adversely affects the safety, use or stability of a public way or drainage channel." In such cases, the Grading Ordinance requires that the City notify the property owner of the hazard and direct the owner to take action to abate or eliminate the hazard at no cost to the city. Any remedial earthwork that is required is subject to grading permit requirements unless emergency conditions exist.

If the property owner fails to take required actions or if necessary to address an "imminent threat to public health, welfare, or safety," the Grading Ordinance provides the City with the authority to take necessary measures to mitigate the hazard.

19.02.02 Emergency Work

Provisions in Section 15.30.230 of the Grading Ordinance allow for emergency

grading activities to be carried out without a grading permit if such activities are immediately necessary to protect life or property. This includes emergency action to implement erosion and sedimentation control measures.

If a person performs "emergency grading" without a grading permit, that person must notify the City of the emergency situation on the next full working day after the emergency work has begun. This notice shall include documentation with photographic evidence of the scope and necessity of the work. Following this notification, the property owner or their agent must submit a complete grading permit application within five calendar days after the commencement of grading. Additional time to complete final grading plans and to prepare required technical reports and analyses may be granted by the City Engineer upon request of the property owner in consideration of the level of required design effort.

As provided for in Section 15.30.230 of the Grading Ordinance, the City Engineer may order any emergency work to be stopped or restricted in scope at any time.

19.02.03 Coordination with Other Departments

Before issuing a grading permit, the City Engineer will verify that the proposed work is consistent with local requirements for which other city departments are responsible. This includes land use restrictions and environmental controls that are enforced by the city's Community Development Department. Grading permits are often issued in association with projects that have previously gone through a local inter-agency review process (e.g., building permits, site development permits, and other City entitlements). For projects that already have gone through a City permitting or environmental review process, the City Engineer does not require any additional inter-agency review prior to grading permit issuance but will verify that the proposed work is consistent with the conditions placed on the project.

For grading projects that have not been subject to an inter-agency review process, the City will circulate your grading permit application and grading plan to the appropriate departments and agencies for review and comment. Any requirements received from the departments and agencies will be included as conditions of the grading permit.

If a proposed grading plan includes a retaining wall for which a building permit is required, the grading permit applicant must obtain the required building permit and include it as part of the grading permit application. Grading permit applications will not be considered complete without required retaining wall building permits.

19.02.04 Compliance with Other Regulatory Requirements

In addition to complying with specific requirements contained in the Grading

Ordinance and those contained herein, the Grading Ordinance states that it is the responsibility of property owners to ensure that grading activities are in conformance with all other applicable local, state, and federal requirements. These may include, but are not necessarily limited to, various statutes and regulations related to safety, air quality, noise generation, water quality, waste management, traffic, to and from the work site, etc.

At the time of grading permit issuance, the City Engineer will require the applicant to agree to comply with all local requirements and with all applicable state, and federal statutes and regulations. The applicant will be required to indemnify the city against any liabilities caused by any such violations. Where alteration of drainages is proposed, the applicant must comply with all applicable requirements of the California Department of Fish and Wildlife and the US Army Corps of Engineers.

19.02.05 CEQA Compliance

The California Environmental Quality Act (CEQA) and local land use guidelines may require the preparation and processing of environmental documents for a proposed grading project. As part of the review process, the city's Community Development Department will determine whether environmental review is required. If so required, the environmental review must be completed before the City will issue a grading permit.

19.02.06 General Plan Consistency

The City Engineer will not issue a grading permit unless the project and intended site use conform to the Angels Camp General Plan, to any specific and to all other applicable city land use requirements including the Zoning Code.

19.03 Classification of Grading

The tiered permitting structure for grading activities of various scope and magnitude is summarized in Table 1 below.

TABLE 1. TIERED PERMITTING STRUCTURE

Permit	Category	Activity
Exempt	Permit Exempt Activities	These activities include small volumes of earthwork, less than 50 CY, limited site clearing operations for fire protection, and excavations for structural footings. Exempt activities are listed in Section 15.30.080 of the Grading Ordinance.
Required	Notification Tier Projects	Some "minor" activities exceed the volume threshold for permit exemption but require only minimal oversight because of the limited nature of

		the work. For these projects, grading plans must be submitted for compliance review and applicants are informed about regulatory requirements at the time of grading permit issuance.
Required	Minor Projects	Most relatively small-scale projects that involve the handling of limited quantities of material (typically less than 1,000 cubic yards) and present a minimal threat to water quality may be permitted without a requirement for professional design and inspection. The allowable depths of cut and height of fills are limited for Minor projects.
Required	Engineered Grading Projects	Engineered design and onsite inspection is required for all projects that include grading of more than 1,000 cubic yards of material or that meet other criteria as specified in Section 15.30.090 of the Grading Ordinance. For these projects, a registered civil engineer will need to submit engineered grading plans and certify that all construction has been completed in substantial conformance to approved grading plans
Prohibited		Any grading activity that will create a hazard to public health and safety is prohibited. Prohibitions also exist for grading that will obstruct watercourses or substantially degrade water quality. Prohibited grading activities are listed in Section 15.30.060 of the Grading Ordinance.

19.03.01 Exempt Activities

Exempt activities are listed in Section 15.30.080 of the Grading Ordinance. Even though a grading permit is not required for these exempt activities, the work must conform to all applicable provisions of the Grading Ordinance and to applicable requirements contained in this section of the Improvement Standards including those provisions that relate to erosion and sediment control. Construction work for "exempt activities" is still subject to inspection by the City Engineer and applicable enforcement mechanisms apply even though no permit has been issued.

19.03.02 Permit Activities

A grading permit is required for all non-prohibited grading unless an activity is listed as an "exempt activity" as referenced above. Additionally, Section 15.30.080 of the Grading Ordinance imposes grading permit requirements for certain "exempt activities" that meet specified criteria. A grading permit is also

required prior to initiating any grading activities for site improvements associated with tentative maps. Approval of these maps and of associated improvement plans does not, in and of itself, constitute authorization to begin grading. As described below, a tiered system of regulation has been established for all grading for which a permit is required.

A. Notification Tier

"Notification tier" projects are those that are unlikely to have any significant impact on water resources and are not expected to affect adjoining properties. To be considered "minor," projects will typically involve minor cuts and fills. Project plans will be reviewed for compliance with the Grading Ordinance and the permit applicant will be provided information about any restrictions or other requirements that must be followed during grading operations.

B. Minor Grading

Grading of limited scope can often be done without the need for professional design services, but many of these projects require detailed design review and onsite inspections by Public Works in order to ensure regulatory compliance. These projects are typically more extensive, complex, or greater in scope than those in the notification tier.

19.03.03 Engineered Grading

Depending on the nature and extent of proposed grading, professional engineering and geotechnical services may be required for project design, construction inspection, quality assurance, material testing, and project certification. As described in subsequent sections of this section of the Improvement Standards, the requirements for engineered grading are generally more stringent than those for minor projects. Section 15.30.070 of the Grading Ordinance lists criteria for determining whether or not engineered grading is required.

For the purposes of determining the level of regulatory oversight that is required for specific projects, the City Engineer has established management categories for all engineering grading projects. These projects will be classified as either "standard" or "major." Major projects will generally involve complex engineering or present a comparatively high potential for adverse water quality impacts if proper controls are not adequately implemented and maintained. For example, construction work in areas that discharge storm water to environmentally sensitive areas would be considered "major" and subject to more frequent inspections by the City. Similarly, most projects that are on hillsides, where existing slopes are greater than five units horizontal for every one unit vertical or involve highly erosive soil would be considered "Engineered." For engineered projects, the required Construction Quality

Assurance plan will generally need to be more rigorous compared to other grading activities, a more comprehensive material testing program will typically be required, and technical reports will often be required to substantiate design recommendations. Grading for most subdivision improvements will be considered an engineered grading activity because of the volume of material and the areal extent of work being done.

19.03.04 Prohibited Activities

Section 15.30.060 of the Grading Ordinance lists grading activities that are prohibited anywhere in the city. A Grading Permit will not be issued for any such activities and if the City is aware of any prohibited grading, the City Engineer, or their representative, will issue a stop work order and require remedial action by the property owner.

19.04 Permit Procedures and Requirements

This section explains the procedures that need to be followed to obtain a grading permit from the City.

19.04.01 Permit Application Submittal

The first step in getting a grading permit is to complete a grading permit application form that is available from the City. The form generally requests information that will be needed to enable the City to determine whether or not the proposed work is consistent with all associated city requirements. The grading permit application form requires that the applicant provide the following information:

1. Property owner's name and address
2. Address and Assessor's Parcel Number of the property where the work will be done
3. Purpose for which grading is being done
4. Estimated volume of cut and fill material
5. The area of disturbed ground (acres or square feet)
6. Location of an off-site disposal site for excess materials (if applicable)
7. The proposed hours/days of work activity
8. The maximum number of trucks per day entering or leaving the site

Along with the completed application form, applicants will need to provide the City with copies of the proposed grading plan. The grading plan must be

consistent with the submittal requirements described below and must include an erosion and sediment control plan.

The permit application form must be signed by the property owner of the parcel on which grading is being done or by an authorized agent of the property owner. If the application is signed by an authorized agent of the owner, the applicant must provide the City with a letter from the property owner authorizing the agent to act on the owner's behalf. Delegation of authority to an authorized agent does not relieve the property owner of his/her responsibilities to comply with the requirements of the Grading Ordinance and those specified herein.

A. Preliminary Completeness Review

Before accepting the application as complete, the City will do a preliminary check to ensure that all required information has been provided and that the grading plan and erosion and sediment control plan are in general conformance with all associated requirements. If items are missing or if the plans are incomplete, the applicant will be requested to provide necessary information prior to acceptance of the application as complete by the City.

B. Plan Review Fee Deposit

Fees for the review and processing of grading permits shall be assessed in accordance with a Council-approved fee schedule. The fee schedule is based on actual time-and-expenses. At the time the grading permit application is accepted by Community Development, the applicant will need to pay the appropriate application fee (grading plan review fee deposit). Since the fee amount is based on time-and-expenses, the applicant will be required to deposit funds to Community Development to cover the anticipated costs for grading plan review. Any unexpended funds will be returned to the applicant in accordance with procedures in the adopted fee schedule. Additional fees may be required if the actual costs exceed initial estimates. The costs to review the plans are directly related to the complexity of the project and the quality of the submitted plans.

19.04.02 Permit Processing

Once the grading application and grading plan are accepted, the City will review the application to determine whether the proposed design is consistent with city requirements. If design modifications are necessary or if supplementary information or more detailed design details are needed, these requirements will be transmitted to the applicant in writing.

A. Technical Supporting Documentation

Depending on the nature and complexity of the proposed project, Community Development may require that technical reports, studies,

investigations, and analyses be prepared to substantiate the proposed project design. All required technical documentation must be prepared by an appropriately licensed professional consistent with the requirements of section 19.08.

B. Construction Quality Assurance Plan

A Construction Quality Assurance (CQA) Plan must be submitted for all engineered grading projects. The CQA Plan must be consistent with the CQA Plan requirements as described in section 19.07. No grading permit will be issued for engineered grading without an approved CQA Plan.

C. Utility Coordination

For some grading activities, direct coordination with various utility companies may be required prior to issuance of a grading permit. This will be required if, in the opinion of the City Engineer, the proposed work has potential to impact utility services. It is the applicant's responsibility to show the existing utilities and utility easements on the plans. In addition to utility poles, underground pipelines and conduits, the City may require utility notification for projects that have the potential to impact water and wastewater facilities. If so required, grading permit applicants shall provide written notice to the owners of utilities on or adjacent to the work site. The notice must describe the proposed work, the proposed work schedule, and the measures that will be taken to minimize or eliminate and impacts to the utility service. The notice must provide the utility owner with the opportunity to comment on the project and its impact on utility service. Specifically, the utility owner must be told that the utility has thirty calendar days (unless a reduction is granted by the City Engineer) following receipt of the notice to provide written comments to the City regarding any concerns that the utility company may have about the impact of the proposed work on existing or future utility service. Any such concerns will need to be addressed by the grading permit applicant.

D. Inter-Department City Review

As described in section 19.02.04, the grading permit application and grading plan will be routed to other city departments if an inter-department review is required to ensure that the proposed work is consistent with city land use guidelines and environmental controls.

E. Plan Re-Submittal

Grading Plans that do not meet the requirements of the Grading Ordinance and this section of the Improvement Standards will be returned to the applicant. Information provided by the applicant must be sufficiently clear to enable the City to verify that construction will meet adopted standards. If grading plan modifications are required, the applicant shall submit a

revised grading plan for review. Revised plans that are not responsive to written comments previously provided by the City will not be accepted for further review.

19.04.03 Permit Issuance

After the grading plan review is complete and after it has been determined that the proposed work is consistent will all city requirements, the applicant will be notified that the City has approved the grading plan, and the requested grading permit is ready for issuance. At the time of grading permit issuance, the applicant will be required to provide to provide the following information on the grading permit application form:

A. Contractor Identification

The applicant will be required to provide the name, address, and phone number of the contractor who will be doing the approved grading. Contractors shall be licensed as required by State law. Contractors shall have a valid city business license.

B. Identification of Contact Person

The applicant will need to identify the person who should be contacted by the City to address permit compliance issues during construction. This person may be the property owner, contractor, design engineer, or other person.

C. Work Schedule

The estimated start date and completion date for work activities needs to be provided on the grading permit application form.

D. Compliance with Storm Water Discharge Permit

Prior to permit issuance, the applicant will need to certify compliance with applicable storm water discharge requirements of the Regional Water Quality Control Board. For all projects disturbing an acre or more of ground, the Regional Water Quality Control Board assigns "waste discharge identification number" to all projects for which a "Notice of Intent" has been filed for coverage under the statewide general permit for storm water discharges associated with construction activity. This ID number must be included on the grading permit application form. Also, the project applicant will need to certify to Public Works that a Storm Water Pollution Prevention Plan (SWPPP) has been prepared in accordance with Regional Water Quality Control Board discharge permit requirements.

E. Requirements for Utility Coordination

If utility company notification has been required by the City as a condition of a grading permit issuance, the applicant will need to provide the City with documentation showing that all utility owners have been notified and afforded the opportunity to comment on the work in accordance with the requirements of subsection 19.04.02.B.

F. Inspection Fee Deposit

Amounts remaining after plan review will be applied to inspection. The applicant will be required to pay additional fees to the City if the actual cost of inspection services exceeds the initial deposit. Any unexpended funds will be returned to the applicant in accordance with procedures in the grading fee resolution.

19.04.04 Securities

The City may require that surety bonds or other financial assurance be provided in such form and amounts as deemed necessary to ensure that approved grading, including the implementation and maintenance of erosion and sedimentation controls, and repair of damages to the public right of way will be completed in accordance with approved plans and these Improvement Standards. Among other considerations, the City will make this determination based of the nature, location, and extent of work, timing and the consequences that could result from the contractor's failure to complete work as required by the permit.

19.04.05 Time Limits on Permits

At the time of grading permit issuance, the City will indicate the permit start date and expiration date on the permit application form based on the work schedule submitted by the applicant. If permitted grading is not initiated within 90 days of the estimated start date shown on the permit application form or if work is suspended or abandoned for one year after the work has commenced, the permit shall become null and void. If work cannot be initiated within this specified time period or if work cannot be completed prior to the expiration of the permit, the applicant may request permit renewal. Such request shall be made in writing at least ten days prior to such time when the permit would be declared null and void or at least ten days prior to the expiration of the existing permit. Permit renewal requests shall include the time extension needed and a statement explaining the reasons for the requested time extension. The City Engineer may renew the permit and grant additional time for initiation of work or completion of the work. Alternatively, the City Engineer may require the submittal of a new grading permit application and additional fees depending on the time between the expiration date and the renewal request and in consideration of any revised regulatory requirements or changed circumstances in the project area. If permitted work is not initiated within 90 days of the scheduled date or if work is not completed prior to the expiration of the grading permit and the grading permit has not been renewed, no further earthwork shall

be done until the grading permit is renewed or until a new grading permit is issued. Notwithstanding this prohibition, the City Engineer may require that interim measures be immediately implemented to ensure the stabilization of the site.

19.04.06 Limitations of Permit Issuance

According to the Grading Ordinance, neither the issuance of a grading permit nor the approval of plans and specifications by the City is to be construed as an approval of any violation of the provisions of the Grading Ordinance or of any other applicable law, ordinance, rule, or regulation. If a permit is issued based upon inaccurate or incomplete information submitted by the applicant, the grading permit may be cancelled at any time and a stop work order may be issued. The Grading Ordinance further states that the issuance of a grading permit by the City does not relieve the permittee of his/her responsibility for securing whatever other permits or approvals may be required for work that is being done. Similarly, the issuance of a Grading Permit for a specific parcel does not provide authorization for the off-site disposal of excess material on another parcel unless such activity is shown on the grading plans and the owner of the property where excess material has been placed has signed the permit application as indication of approval for the proposed owner If off-site material of excess disposal is not shown on an approved grading plan, a revised or separate grading application must be submitted for City approval. The application must describe how and where excess material will be placed and demonstrate compliance with the requirements of the Grading Ordinance and these Improvement Standards

19.05 Grading Plans

All applications for a grading permit must include a grading plan and an erosion and sediment control plan that shows the full nature and extent of proposed work. These plans must accurately depict the proposed work in sufficient detail to properly and clearly direct construction activities so that all grading and associated work is in conformance with these requirements, while also enabling the Community Development to determine compliance with the requirements of this section of the Improvement Standards.

Grading plans must be submitted electronically and allowing for print outs on minimum 18” x 24” sheets of substantial paper, vellum, or other approved media and must be drawn to scale. For parcels less than ¾-acres, a scale of 1”= 10 feet is required. For larger parcels, a scale of 1 inch = 20 feet or 1 inch = 40 feet is acceptable.

19.05.01 Grading Plans

At a minimum, all grading plans must clearly distinguish between existing conditions and proposed work and include the following information:

A. General

1. Vicinity map.
2. Property address and assessor's parcel number.
3. Recorded map number and development reference , if applicable
4. Property owner's name, address, and phone number.
5. North arrow and scale.

B. Existing Conditions

1. Property corners and lines with distances and bearings.
2. Access to property.
3. Rights-of way, easements, and setbacks.
4. Locations of existing utilities, water, sewer, power, communications, etc.
5. Centerline of adjacent roadways and edge of roadway pavement.
6. Existing topography shown as contours extending at least 20 feet beyond the limits of work. If tops of cuts are within ten feet of a property line or if the toes of slopes are within 20 feet of a property line, the topographic information must extend at least 20 feet beyond the property line. For relatively level surfaces, spot elevations are required in sufficient detail to identify site drainage patterns.
7. Existing natural features including trees, rock outcroppings, etc.
8. Existing drainages, streams, creeks, ponds, inlets, etc.
9. Location and size of all existing culverts on and adjacent to the parcel, including those immediately downstream of the work through which site runoff will flow. If drainage study is required (see section 19.08.02) additional information regarding downstream drainage facilities may be required.
10. Existing site improvements including buildings, wells, utilities, power poles, hydrants, driveways, pavements, etc.

C. Proposed Work

D. Access to proposed use,

E. Dimensions and grades of driveway or roadway including sections.

1. Horizontal limits of work including all site clearing and grubbing.

2. Location and dimensions of any stockpiles.

3. Finished grades shown as contour lines at minimum two-foot intervals. For relatively level surfaces, spot elevations may be required in sufficient detail to identify site drainage patterns.

4. Cross-sections, reference on the plan, showing existing and finished grades.

5. Temporary benchmark elevations and construction ties (e.g., distances from existing fixed features to locate proposed work.)

6. Location, size, length, and slope of all proposed drainage pipes and culverts. Pipes carrying run-off from a catchment area of greater than one acre will require calculations to determine size and slope of pipe.

7. Location and type of erosion and sediment control devices.

8. Location of all proposed structures and other site improvements including driveways, on-site wastewater treatment and disposal systems, and retaining walls.

9. Location, species, and size of trees to be removed.

19.05.02 Engineered Grading Plans

In addition to items listed above, engineered grading plans must also include the following information unless inapplicable or otherwise approved by the City Engineer as described in section 19.05.04 below.

A. Name, signature, address, and phone number of the design engineer.

B. Engineer's stamp, including California registration number and expiration date.

C. Existing and finished contour lines shown as contour lines at minimum two-foot intervals and tied to a vertical datum. For relatively level surfaces, existing and finished grade spot elevations shall be provided in sufficient detail to identify site drainage patterns.

D. Limiting elevations and dimensions with tie to existing monuments. Vertical control for grading and drainage plans shall be tied to a

published vertical datum such as NGVD29 or NAVD84, where practical. The datum used must be cited on the cover sheet of the plans.

E. Cross-sections to scale showing existing and finished grades in sufficient number to clearly and accurately depict proposed grading.

F. The longitudinal slope and cross-section of all drainage ditches and swales.

G. Invert and rim elevations of all drainage structures, piping, and culverts.

H. Profiles and sections of all retaining structures greater than three feet in height.

I. The size and placement depth of all drainage rock and rip-rap.

J. Details of all drainage structures, walls, drainage ditches, channels, berms, cribbing, dams, and other proposed site improvements.

Any recommendations for construction that have been included in any geotechnical, hydrologic or other studies or reports must be reflected on the plans, including notes and design details. Specific reference shall be made to the studies or reports upon which the design recommendations are based.

Engineered plans must also include material specifications needed for proper construction. This includes, but is not limited to, specifications for imported fill materials, rip-rap, drainage pipe and fittings, filter fabric, filter rock, etc.

Unless otherwise required as a condition of project approval, separate grading plans may be submitted for approval for separate phases of construction. The first phase plan shall show all intermediate grades and drainage systems. A second plan may then be submitted for approval showing the elements of final site design. Each set of plans must include all required information as described above.

For projects involving the submittal and approval of Improvement Plans, underground drainage facilities do not need to be shown on the grading plan provided that the underground drainage facilities are shown on Improvement Plans that are submitted along with the grading plan application and provided that the location and elevation of all surface drainage system appurtenances, including inlet grates, manhole covers, and drainage outlets, are called out on the grading plan.

19.05.03 Construction Notes

In addition to the required design information listed above, the general construction notes listed below must be included on all grading plans as applicable, unless otherwise provided for in section 19.05.04, below. The notes

are intended to help ensure that construction work will be done in conformance with the requirements of the Grading Ordinance and of these Improvement Standards. Adherence to the construction notes on an approved grading plan is a requirement of grading permit issuance and failure to conform to these requirements is considered a violation of permit conditions. Notes may be modified as may be needed to address project-specific conditions.

A. Contractor shall comply with all applicable local, State, and federal requirements.

B. A copy of the approved Grading Plan and Grading Permit Application must be available on-site at all times.

C. If required on the Grading Permit, contractor shall contact the City (209-736-1346) or cda@angelscamp.gov at least 48 hours prior to the start of construction to arrange for an on-site pre-construction meeting.

D. Contractor shall contact Underground Service Alert (USA) at 800-227-2600 for utility location before excavation work.

E. Cut slopes shall be no steeper than 2:1 (horizontal to vertical); fill slopes shall be no steeper than 2: 1 (horizontal to vertical). A geotechnical report must be submitted for cut and fill slopes in excess of 2:1.

F. Estimated quantity of cut material is _____ cubic yards.

G. Estimated quantity of fill material is _____ cubic yards.

H. Excess cut materials to be disposed of at _____.

I. Fill materials shall be compacted to a relative compaction of not less than 95% under paved areas and where the fill will support a structure. Compaction of not less than 90% shall be required for all other fills. For engineered grading projects, test results and a description of the test method must be submitted by a licensed geotechnical engineer as evidence of compliance.

J. Best management practices shall be implemented to control erosion and reduce the off-site discharge of sediment to the maximum extent practicable.

K. Erosion control best management practices shall be in place year-round, unless otherwise approved by the City.

L. Contractor shall keep adjoining public streets free of dirt, mud, and other project related debris throughout construction. Any damage to

public streets or roadways shall be repaired by the Contractor at no cost to the city. City may use securities to fund clean-up or repair of damages.

1. Dust generation must be minimized and a water truck must be available on-site when necessary for adequate dust control.

2. An encroachment permit is required before doing any work in the city right-of way.

3. Contractor shall provide appropriate measures for traffic control and public protection in accordance with the city Code and the California Manual on Uniform Traffic Control Devices.

4. Survey monuments shall be re-established by a licensed Surveyor if disturbed during construction.

5. Any required construction staking is to be in place prior to beginning of construction and is to be maintained or replaced as needed for construction purposes. Minimum staking for public and private roads includes the BC, EC, BVC, PVI, and EVC of all curves and at 50-foot intervals. Field locates and delineate easements and rights-of way.

6. All required local, State, and federal permits shall be obtained prior to construction and copies of all such permits shall be available on-site.

7. If more than one acre of ground is disturbed, the Contractor must apply to the Central Valley Regional Water Quality Control Board for coverage under the State's "General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities" and comply with all associated Permit requirements, including the preparation of a Storm Water Pollution Prevention Plan (SWPPP). Copies of the SWPPP must be available on-site at all times.

19.05.04 Alternative Documentation of Required Information

If a design engineer feels that it is inappropriate to include certain information, as required in sections 19.05.02 and 19.05.03, above, on an engineered grading plan, the design engineer shall provide the City Engineer with a written statement demonstrating how the requirement will otherwise be met and explaining how the alternative mechanisms will be implemented to ensure compliance during construction. The City Engineer will determine if proposed alternative mechanisms are sufficient to ensure compliance with grading permit requirements.

19.05.05 Erosion and Sedimentation Control Plans

All grading plans must include an erosion and sediment control plan designed to reduce the offsite discharge of sediment to the maximum extent practicable. The plans must show the storm water runoff patterns during all major phases of construction and must provide sufficient detail to ensure proper field installation and maintenance of all required control measures. This includes the location, number, and installation details for all best management practices and measures.

A. Soil Stabilization

If soil stabilization techniques are required for erosion control, the plan must show the limits of the areas to be stabilized and the type and quantity of seed, mulch, tackifier, or other stabilizing agent. Maintenance requirements must be clearly indicated on the plan.

B. Run-off Controls

The erosion and sediment control plan must show all drainage patterns during and after all major grading operations. The plans must also show how runoff from off-site areas will be diverted from disturbed areas and, if not diverted, the plan needs to show the estimated peak discharge flowing onto the site and this discharge will need to be considered in the design of onsite controls.

C. Equipment Staging and Access Controls

Plans must indicate the areas for vehicle storage, equipment and vehicle wash down, and stockpiling of any waste materials and provide details about how discharges from these areas will be controlled. Locations where vehicles will enter and leave the site must be clearly marked and the type of stabilizing surface for such access points shall be called out on the plans. Plans must provide for a paved or graveled entryway for vehicles. This entryway must be designed, adequately sized, and constructed so as to effectively prevent the tracking of mud and dirt on to adjoining road surfaces

D. Maintenance

The erosion control plan must show all control measures that will remain in-place after completion of grading activities. The plan must describe on-going maintenance that may be necessary for effective erosion control and identify the entity responsible to ensure that such maintenance activities (such as watering of seeded areas) are being implemented.

19.05.06 Modifications to Approved Plans

If, during the course of construction, it becomes necessary to revise the approved

grading plan, a new plan must be submitted to Public Works for review and approval along with an explanation for why changes are being proposed. For engineered grading projects, the revised grading plan must be certified by the engineer of record.

Depending on the nature and extent of proposed changes, the City Engineer may require that no additional grading be done prior to review and approval of the revised plan. If the changes are significant, the property owner may be required to apply for a new grading permit with revised grading plans.

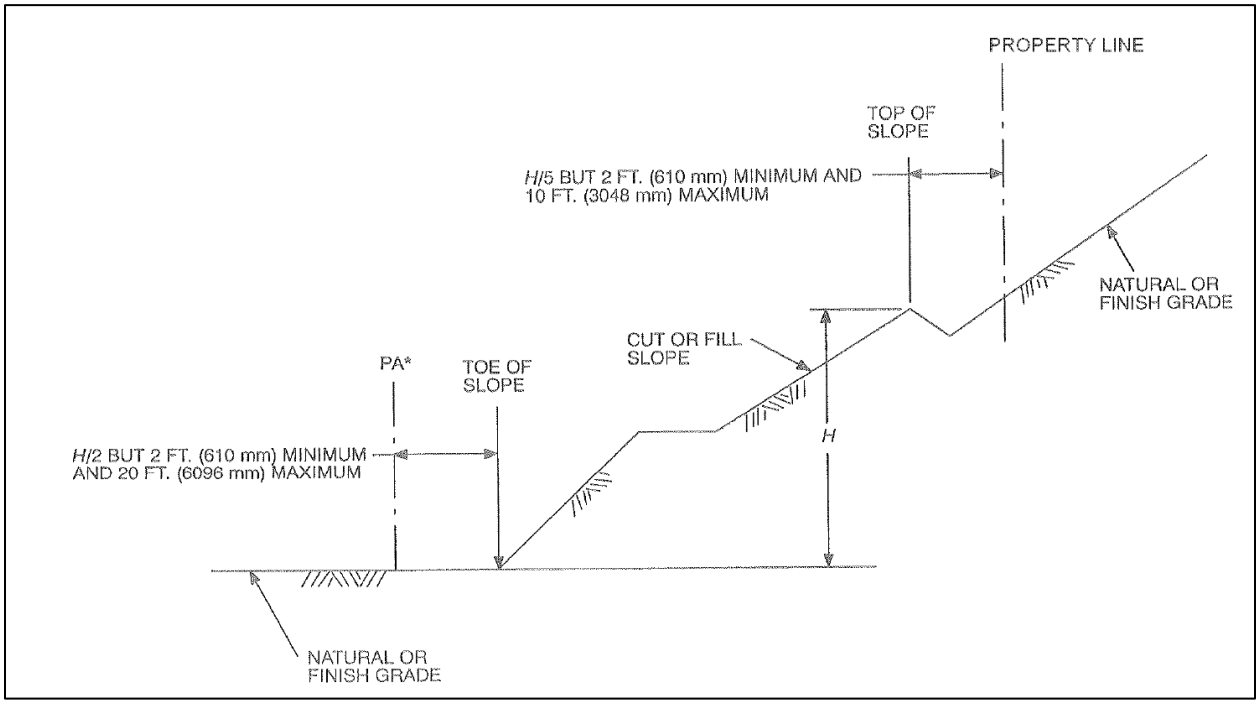
19.06 Design Standards

19.06.01 Dust Control

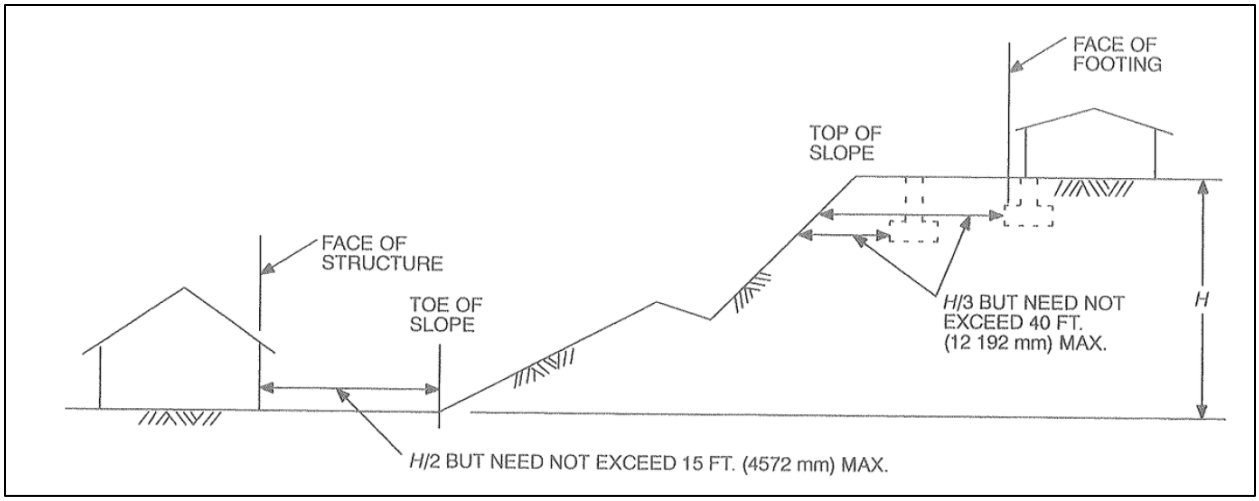
Dust generation shall be minimized to the greatest extent practicable during earthmoving operations and appropriate control measures, including the use of a water truck, shall be used whenever necessary. The City Engineer may require grading permit applicants to submit a dust control plan for approval and all work shall be done in accordance with the approved dust control plan.

19.06.02 Setback Requirements

Unless otherwise recommended in a geotechnical report, the setback dimensions from buildings, property boundaries, and other structures shall be as shown in the following figures:



PA is property line or structure footing.



Setback dimensions shall be the horizontal distance measured perpendicular to the property boundary and shall be considered minimums and a geotechnical report may be required to demonstrate that the recommended minimum setbacks are sufficient to protect adjacent property and nearby structures. Additional setback or other precautions may be required. Other precautions may include a provision for retaining or sloughing walls, surface water controls, and slope treatment to control erosion.

As shown in the above figures, the distance from the top of cut slopes to site boundary line shall be at least one fifth of the vertical height of the cut with a minimum of two feet and a maximum required setback of ten feet. Distances shall be increased as needed for the installation of interceptor drains. The distance from the top of a fill slope to the property line shall be at least one-half the height of the fill with a minimum of two feet and at maximum required setback of 20 feet.

19.06.03 Excavation

All excavations shall be constructed and protected in such a manner as to prevent danger to life or property and in accordance with the following unless otherwise recommended in an approved geotechnical report.

A. Allowable Slopes

The slope of cut surfaces for permanent excavations shall not be steeper than two units horizontal for every unit vertical unless steeper slope inclinations are in accordance with recommendations contained in a site-specific geotechnical report. Cut slopes shall be rounded into the existing terrain to produce a contoured transition from cut face to natural ground.

19.06.04 Fill

Except as may be otherwise recommended in an approved geotechnical report,

fill operations shall conform to the following except where the City has waived selected provisions for minor fills not intended to support structures or pavements.

A. Ground Preparation

Prior to fill placement, the natural ground surface shall be prepared by removing vegetation, non-complying fill materials, topsoil, and other unsuitable materials. The ground surface shall be scarified to provide a bond with the new fill. Where the existing grade is steeper than five horizontal units for every one vertical unit and where the height of fill is greater than five feet, a keyway or bench into sound bedrock or other competent material is required. The bench at the toe of fill slopes steeper than five horizontal units for every one vertical shall be at least ten feet wide. The area beyond the toe of all fill slopes shall be sloped for sheet flow away from the slope unless a paved drainage ditch is provided.

Keyways under the toe of fill shall be provided as needed to stabilize the fill slope. Fills shall not be constructed on natural slopes steeper than five units horizontal for every vertical unit unless designed by a geotechnical engineer and constructed in accordance with recommendations in an approved geotechnical report. The geotechnical engineer of record shall submit a final report confirming the ground has been prepared consistent with the engineered design.

When fill is to be placed over a cut surface, the bench at the toe of the slope shall be at least ten feet wide. The bench cut shall be made before placing the fill.

B. Fill Material

Fill materials shall be clean and have no more than trace amounts of organic matter. Unless otherwise approved and inspected by a geotechnical engineer, fill materials shall not include any rocks or other irreducible material larger than twelve inches in any direction.

Placement of oversized rocks may be permitted under the supervision of the geotechnical engineer of record.

C. Fill Placement

Fills shall be constructed in layers and the loose thickness of each layer prior to compaction shall not exceed eight inches. Moisture conditioning shall be required to ensure that completed fills are stable masses of well-integrated material bonded to adjacent materials and to the materials on which the fill rests. Fills shall be constructed so as to be competent to support anticipated loads and shall be stable when constructed at the design gradient.

D. Compaction

All fill materials shall be compacted throughout their full extent to a minimum of 90 percent maximum density. Tests to verify compaction shall be made on the basis of not less than one test for each three vertical feet of fill, but not less than one test for each 1,000 cubic yards of fill material placed. All tests shall be reasonably uniformly distributed over the fill or fill slope surface. Compaction tests shall be performed under the supervision of the geotechnical engineer of record. Results of compaction testing shall be included in periodic and final reports.

Compaction may be less than 90 percent within six inches of the surface when material is placed and compacted in a suitable method for planting of the slope.

Compaction of temporary stockpile fills to be used within six months is not required except as may be necessary to prevent saturation or sloughing or to control erosion of the fill and prevent off-site discharge of sediment.

Certificate of occupancy and or final acceptance will not be issued until all compaction testing has been submitted by the geotechnical engineer of record and approved by the City.

E. Allowable Slopes

Fill slopes shall not be steeper than two units horizontal for every one vertical unit unless a geotechnical report provides technical documentation in support of a steeper slope. In no case shall a fill slope be steeper than one-and-a-half units horizontal for every one vertical unit unless the fill is reinforced in accordance with the design recommendations of a geotechnical engineer.

19.06.05 Terracing

Suitable access shall be provided for the cleaning and maintenance of all terraces and associated drainage systems and for slope maintenance. Access shall be a minimum width of 8 feet.

Terraces at least eight feet in width shall be established at not more than 25-foot vertical intervals on all cut or fill slopes except that if only one terrace is required, it shall be located at mid-height. For cut and fill slopes greater than 60 feet and less than 120 feet in vertical height, the one terrace at approximately mid-height shall be at least twelve feet in width.

Swales or ditches on terraces shall have a minimum gradient of five percent into the slope and shall be paved with reinforced concrete not less than three inches thick or approved equal paving. The tributary area for a single run of swale or ditch shall not exceed 13,500 square feet.

The design of terraces shall be in conformance with an approved geotechnical report. The geotechnical engineer of record shall validate the finished terraces have been constructed consistent with their recommendations.

19.06.06 Stockpiling

The location of all stockpiles must be shown on a grading plan subject to approval by the City. Individual stockpiles shall not exceed 20,000 cubic yards of material or be placed on a slope that is steeper than one unit vertical for ten units horizontal unless otherwise approved by the City Engineer based upon an engineered design with supporting documentation to confirm stability of the stockpile. If stockpiles are left in-place during the rainy season (generally from October 15th to April 15th), side slopes of stockpiled material shall not exceed one unit vertical for every three unit horizontal unless the material is compacted to a maximum relative density of 90% throughout.

Drainage and erosion control measures shall be provided as needed to prevent the off-site discharge of sediment from the stockpile to the maximum extent practicable. Control measures shall be implemented to reduce dust generation to the maximum extent practicable. Stockpiles shall not be left in-place for more than one rainy season, except the City Engineer may extend this time frame for up to one year upon receipt of a written request by the property owners stating the reasons for the extension. No time extensions shall be allowed if previous erosion and dust control measures have been inadequately maintained or improperly installed. If excess soil is exported from the site, the applicant must include the final location of n of that soil. If the soil is to be placed on another site documentation must be provided to demonstrate that the site is permitted to accept the soil.

19.06.07 Drainage

All natural drainage must enter and leave graded properties at its original horizontal alignment and vertical elevation unless a drainage easement, acceptable to the City Engineer, has been executed with impacted property owners and recorded.

A drainage study must be submitted, consistent with section 19.13. Post-development peak storm water runoff discharge rates shall not exceed the calculated predevelopment rate.

For engineered grading projects, the Grading Ordinance requires that the peak off-site storm water discharge from the project site shall not exceed pre-construction conditions. The applicant must demonstrate that hydromodification of downstream receiving natural channels and basins does not occur. Additional controls on storm water run-off volumes and peak discharge rates shall be in accordance with the requirements of the city’s General Plan and all other sections of the city Code.

All onsite drainage systems shall have adequate capacity to prevent inundation, flood hazards, ponding, or the creation of any danger to the stability of any cut or fill slope as a result of storm water run-off. Storm water discharges must be controlled so as to prevent injury to any structure, site improvement or other adjacent property. Energy dissipaters or other control devices shall be constructed as needed to prevent scour in downstream drainage ways. Unless specifically intended for the retention or for the conveyance of collected storm water, non-paved finished grades shall be sloped at no less than one percent toward drainage conveyances so as to prevent ponding and standing water. Lesser gradients may be provided for interim building pads as part of phased construction if they are clearly identified on the grading and or improvement plans which are reviewed and approved by the City.

A drainage study is required for all engineered grading permits and when impervious area is increased on any site by more than 10,000 square feet.

the Drainage Studies and analyses shall be prepared by a licensed professional in accordance with established industry standards and with applicable provisions of section 19.13.

A. Interceptor Drains

Paved interceptor drains shall be installed along the top of all cut and fill slopes where necessary to prevent erosion. Interceptor drains shall be paved with a minimum of three inches concrete or gunite and reinforced. The minimum depth of interceptor drains shall be 12 inches and the interceptor drains shall have a paved width of no less than 30 inches measured horizontally across the drain perpendicular to the flow line.

B. Subsurface Drainage

Cut and fill slopes shall be provided with subsurface drainage as needed for stability and in accordance with recommendations from a geotechnical engineer.

C. Measures to Control Pollutants

Storm water runoff from a site has the potential to contribute oil and grease, suspended solids, metals, gasoline, pesticides, and pathogens to the storm water conveyance system. The drainage appurtenances must be designed so as to minimize, to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the storm water conveyance system. Pollutants of concern consist of any pollutants that exhibit one or more of the following characteristics:

1. Current loadings or historic deposits of the pollutant are impacting the beneficial uses of a receiving water,

2. Elevated levels of the pollutant are found in sediments of a receiving water and/or have the potential to bioaccumulate in organisms therein, or

3. The detectable inputs of the pollutant are at concentrations or loads considered potentially toxic to humans and/or flora and fauna.

As such, designs shall incorporate Best Management Practices including but not limited to oil/water separators or passive measures such as vegetative swales to ensure that pollutants are not discharged.

19.06.08 Retaining Walls

A building permit is required for all retaining walls that are over 4 feet in height (as measured from the bottom of the footing to the top of the wall) and for retaining walls of lesser height that support a surcharged load. Surcharge loads include loads from adjacent streets, parking or slopes above the slope. When required, it shall be the responsibility of the applicant to demonstrate to the City that retaining structures less than four feet in height are not supporting a load surcharge. This demonstration must consider soil types, backfill materials, and the location of fill or structural loads relative to the retaining wall.

Grading plans will not be issued until required building permits have been issued for retaining walls that are included as part of the proposed grading.

19.06.09 Erosion and Sediment Control Measures

All grading projects must include the use of appropriately selected, correctly installed, and properly maintained controls to minimize erosion and to reduce the offsite discharge of sediment to the maximum extent practicable. Design standards for all erosion and sediment control devices must, at a minimum, be consistent with the requirements for best management practices as required by the statewide *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*. Control measures must be selected, sized, and located to address site specific conditions.

All inactive soil-disturbed areas of a site and most active areas must be stabilized and protected from erosion prior to the onset of rain. Acceptable erosion control techniques include mulches, vegetation, soil stabilizers, binders, straw, erosion control blanket, or other methods to effectively minimize dislodging of soil particles and the entrainment of soil particles in storm water run-off.

Grading shall be phased to the maximum extent practicable so as to minimize areas that are disturbed at any one time and work should, when practicable, be scheduled to minimize the extent of grading activities that will take place during the rainy season. To the extent practicable, design features should be provided to encourage the infiltration of storm water. Such features and techniques

include permeable/porous paving (when soil conditions facilitate percolation), bio-retention areas (such as water/rain gardens and sunken basins), vegetated drainage swales, on-site detention and infiltration basins, and preservation of existing trees and vegetation.

Grading should be designed to minimize, to the greatest degree practicable, the amount of storm water run-on that flows on to disturbed areas of a project site. Temporary construction devices (such as berms or drainage ditches) shall be installed up-gradient from the project site and shall be maintained and protected from erosion.

During the rainy season, generally October 15 – April 15, all cut and fill slopes need to be protected with appropriate erosion controls such as erosion control blankets, bonded fiber matrices, or turf reinforcement mats. Slopes with highly erodible soil may require a more complex combination of control devices. Erosion control for moderate slopes may include silt fences or fiber rolls. These devices must be installed on level contours and spaced at intervals of no more than 20 feet measured along the ground surface. Rolled erosion control products shall be used for erosion protection on slopes that are steeper than three-to-one and in swales and long channels.

Post-construction discharges from all storm water conveyances shall be controlled through the use of non-erosive down drains, energy dissipators, or other devices to minimize downstream erosion. All unlined drainage channels and ditches shall be designed so as to control the velocity of storm water within the channel or ditch to prevent erosive flow velocities. Engineering calculations shall be provided when required by the City to demonstrate the effectiveness of these required controls.

19.06.10 Entryways for Construction Vehicles

All grading sites must have a paved or graveled entryway for vehicles. This entryway must be designed, adequately sized, and constructed so as to effectively prevent the tracking of mud and dirt on to adjoining road surfaces.

19.06.11 Good Housekeeping

The design of all grading plans shall include provisions for the proper handling, storage, and disposal of construction debris and other waste materials. Storm water run-off from material and waste storage areas shall be controlled as necessary to prevent the off-site discharge of pollutants including hazardous materials. Clearly defined areas for collecting wash water from concrete trucks shall be provided.

A. Outdoor Construction Material Storage

Outdoor construction material storage areas refer to storage areas or storage facilities solely for the storage of materials used for construction

or site improvement of the project. Improper storage of materials outdoors may provide an opportunity for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter the storm water conveyance system. Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system, the following Structural or Treatment BMPs are required:

1. Materials with the potential to contaminate storm water must be:

    a. Placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the storm water conveyance system;

    b. Protected by secondary containment structures such as berms, dikes, or curbs.

2. The storage area must be paved and sufficiently impervious to contain leaks and spills.

3. The storage area must have a roof or awning to minimize collection of storm water within the secondary containment area.

B. Construction Trash and Recycling Storage Areas

A trash and recycling storage area refers to an area where a trash receptacle or receptacles (dumpsters) are located for use as a repository for solid wastes or recyclables during construction. Loose trash and debris can be easily transported by the forces of water or wind into nearby storm drain inlets, channels, and/or creeks. All trash/recycling container areas must meet the following Structural or Treatment Control BMP requirements (individual single-family residences are exempt from these requirements):

1. Trash/recycling container areas must have drainage from adjoining roofs and pavement diverted around the area(s).

2. Trash/recycling container areas must be screened or walled to prevent off-site transport of trash.

19.06.12 Standards for Specific Project Categories

The design criteria for specific project categories described herein are in addition to any other applicable local, state, and federal requirements. The most stringent requirement shall apply.

The following is a summary of requirements as related to grading, drainage, site improvement, and erosion control. They are considered minimum requirements. More stringent measures may be necessary to ensure that storm water discharges

are in compliance with applicable laws, ordinances, and regulations. More detailed information regarding the included requirements may be found in applicable codes, regulations, and standards, such as building codes.

A. Commercial Developments - Properly Design Loading/Unloading Dock Areas

Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

1. Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.

2. Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

B. Commercial Developments - Properly Design Repair/Maintenance Bays

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

1. Repair/maintenance bays must be indoors or designed in such a way that does not allow storm water run on or contact with storm water runoff.

2. Design a repair/maintenance bay drainage system to capture all wash water, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

C. Commercial Developments - Properly Design Vehicle/Equipment Wash Areas

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. The area in the site design must be:

1. Self-contained and/ or covered, equipped with a clarifier, or other pretreatment facility, and

2. Properly connected to a sanitary sewer or other appropriately permitted disposal facility.

D. Restaurants

Properly Design Equipment/Accessory Wash Areas. The activity of outdoor equipment/ accessory washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for the washing/steam cleaning of equipment and accessories. This area must be:

1. Self-contained, equipped with a grease trap, and properly connected to a sanitary sewer as authorized by the local sanitary district.

2. If the wash area is to be located outdoors, it must be covered, paved, have secondary containment, and be connected to the sanitary sewer as authorized by the local sanitary district or other appropriately permitted disposal facility.

E. Retail Gasoline Outlets

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. The project plans must include the following BMPs:

1. The fuel dispensing area must be covered with an overhanging roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.

2. The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.

3. The fuel dispensing area must have a 2% to 4% slope to prevent ponding and must be separated from the rest of the site by a grade break that prevents run on of storm water to the extent practicable.

4. At a minimum, the concrete fuel dispensing area must extend 6.5 feet from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot, whichever is less.

F. Automotive Repair Shops - Properly Design Fueling Area.

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. Therefore, design plans, which include fueling areas, must contain the

following BMPs:

1. The fuel dispensing area must be covered with an overhanging roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.

2. The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.

3. The fuel dispensing area must have a 2% to 4% slope to prevent ponding and must be separated from the rest of the site by a grade break that prevents run on of storm water to the extent practicable.

4. At a minimum, the concrete fuel dispensing area must extend 6.5 feet from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot, whichever is less.

G. Automotive Repair Shops - Properly Design Repair/Maintenance Bays.

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

1. Repair/maintenance bays must be indoors or designed in such a way that does not allow storm water run-on or contact with storm water runoff.

2. Design a repair/maintenance bay drainage system to capture all wash-water, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/ maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

H. Automotive Repair Shop - Properly Design Vehicle/Equipment Wash Areas

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and

equipment. This area must be self-contained and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer or other appropriately permitted disposal facility.

I. Parking Lots - Properly Design Parking Area

Parking lots contain pollutants such as heavy metals, oil and grease, and polycyclic aromatic hydrocarbons that are deposited on parking lot surfaces by motor-vehicles. These pollutants are directly transported to surface waters. To minimize the offsite transport of pollutants, the following design criteria are required:

1. Reduce impervious land coverage of parking areas.

2. Infiltrate or treat runoff.

J. Properly Design To Limit Oil Contamination and Perform Maintenance.

Parking lots may accumulate oil, grease, and water insoluble hydrocarbons from vehicle drippings and engine system leaks:

1. Treat to remove, to the maximum extent practicable, oil and petroleum hydrocarbons at parking lots that are heavily used (e.g., fast-food outlets, lots with 25 or more parking spaces, sports event parking lots, shopping malls, grocery stores, discount warehouse stores).

2. Ensure adequate operation and maintenance of treatment systems, particularly sludge and oil removal, system fouling, and plugging prevention control.

19.06.13 Provide Proof of Ongoing BMP Maintenance

As part of project review, if a project applicant has included or is required to include, Structural or Treatment Control BMPs in project plans, the city shall require that the applicant provide verification of maintenance provisions through legal agreements or other enforceable documents and including, unless otherwise waived, filing of a Notice of Action that will serve notice on all subsequent landowners of ongoing maintenance requirements.

For all properties, the verification will include the developer's signed statement, as part of the project application, accepting responsibility for all structural and treatment control BMP maintenance until the time the property is transferred and, where applicable, a signed agreement from the public entity assuming responsibility for Structural or Treatment Control BMP maintenance. The condition of transfer shall include a provision that the property owners conduct maintenance inspection of all Structural or Treatment Control BMPs at least

once a year and retain proof of inspection. The developer shall be required to provide printed educational materials to accompany the first deed transfer to highlight the existence of the requirement and to provide information on what storm water management facilities are present, signs that maintenance is needed, how the necessary maintenance can be performed, and assistance that the city can provide. The transfer of this Information Shall Also Be Required With Any Subsequent Sale Of The Property Unless A Notice of Action has been filed addressing these requirements.

A. Design Standards for Structural or Treatment Control BMPs.

Post-construction treatment control BMPs shall incorporate, at a minimum, either a volumetric or flow-based treatment control design standard, or both, as identified below to mitigate (infiltrate, filter or treat) storm water runoff.

B. Design Standards for Structural or Treatment Control BMPs. *Volumetric Treatment Control BMP*

1. The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998); or

2. The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook - Industrial! Commercial, (2003); or

3. The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for “treatment” that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.

C. Design Standards for Structural or Treatment Control BMPs. *Flow Based Treatment Control BMP*

1. The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the area; or

2. The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

19.06.14 Engineered Alternatives

Engineered alternatives to the design standards in these Improvement Standards will be allowed if the engineer demonstrates to the satisfaction of the City Engineer that the alternative design will meet or exceed the performance characteristics of the design standard and that the alternative design is consistent with the purposes and intent of this section of these Improvement Standards. For example, the City Engineer may consider modifications to the minimum standards set forth in this chapter when it appears inappropriate or impracticable for a specific property including but not limited to extreme limitations of space for treatment on a redevelopment project or unfavorable or unstable soil conditions at a site to attempt infiltration and provided that stormwater discharge is not affected.

A. Modification Request

All requests for modifications shall be in writing and must be submitted to the City prior to permit approval. The request shall state and describe all modifications to the applicable standards and shall include all relevant data and facts establishing the grounds for which the modification is requested, and be accompanied by written justification, and a statement by a licensed engineer that storm water quality is not compromised.

B. Approval

The City Engineer may approve a modification to the standards based upon the following criteria:

1. There are physical characteristics unique to the property, including size, shape, topography, location, or surroundings that are so unusual that the City Engineer determines that complying with the requirements of this chapter would create practical difficulties or is inappropriate.

2. Financial motivation as sole justification for a modification will not be approved. Approval of any modification shall be supported by findings based upon engineering evaluation.

Any final written action by the City Engineer related to these design standards may be appealed to the City Council in accordance with the procedures defined in the City of Angels Camp Municipal Code Section 1.19.

19.07 Construction Quality Assurance

For all engineered grading projects, a Construction Quality Assurance (CQA) Plan must be submitted to the City for review along with the permit application form and grading plan. The grading permit application for engineered grading projects will not be considered complete unless accompanied by a CQA Plan that meets the requirements of this Section. No grading permit will be issued

until after approval of the CQA Plan.

19.07.01 CQA Engineer

The design engineer may serve as the CQA engineer or the grading permit applicant may elect to retain the services of another civil engineer. If the CQA engineer is different from the design engineer, the name and contact information of the CQA engineer shall be provided to the City.

19.07.02 CQA Plan

At a minimum, the CQA Plan shall include the following elements:

A. Professional Qualifications and Organization

The CQA Plan must include a description and schedule of activities that will be undertaken to certify that all grading has been completed in substantial conformance to the approved grading plans and with the requirements of the Grading Ordinance and this section of these Improvement Standards. During construction, all CQA work shall be conducted under the responsible charge of a licensed professional engineer who must certify that all field inspections, material testing, and field logs will be done by appropriately qualified individuals capable to complete assigned duties in a responsible and reliable manner. To meet this requirement, the CQA Plan must include the name and a brief qualification summary statement for all such persons anticipated to work on the subject project. If individuals other than those listed in the CQA Plan provide field services, the names and qualifications of these persons shall be submitted, in writing, to Public Works.

B. Inspections and Material Testing

CQA Plan shall include a schedule of the type, number, and frequency of various inspections and material testing that will be required throughout the project. The geotechnical/soils report submitted with the plans will also identify frequency of testing, testing procedures, testing standards, pass/fail criteria, etc. and will be incorporated by reference.

The CQA Plan must also address specific actions that will be taken by the engineer to monitor the implementation and effectiveness of required erosion and sediment control measures. The Plan shall include a description of corrective measures that will be undertaken to address any deficiencies in this regard.

C. Documentation and Reports

The CQA Plan shall include a schedule of documentation and reports that shall be completed to document daily work in progress, work conditions,

inspection and testing logs, site conditions, construction changes, problems encountered, project meetings, etc. Various reports will be required such as soils testing for R-values, optimum density, etc.

D. Record Drawings

As construction proceeds, changes in the design documents are often required to address differing site conditions. The CQA Plan must include specific measures that will be taken for dealing with unanticipated conditions. This information needs to be logged on a daily basis and complied in a final "as-built" set of plans. The CQA Plan must indicate how data will be compiled to ensure the completion of an accurate set of "as-built" drawings. Grade staking, if any, and proposed survey methods for verifying slopes and elevations shall be presented in the CQA Plan.

E. Final Certification Report

The Final Certification Report must include a certification by the engineer of record that work has been completed in substantial conformance to the approved plans, specifications, quality assurance plan, and this section of these Improvement Standards. The Final Certification Report must include, but not be limited to, the documentation, testing reports, and record drawings identified above. Documentation shall be provided in an electronic format. The City will review this Report to verify that all project requirements were satisfied. Failure to accomplish any aspect of the approved project plans, specifications, and CQA Plan will require corrective action by the applicant and may jeopardize acceptance of the work, either in the form of notice of completion or release of bonds.

19.07.03 CQA Plan Review

The City will review the proposed CQA Plan along with the grading plan and a determination will be made as to whether or not proposed CQA methods are sufficient to ensure that grading proceeds in accordance will all applicable requirements. If it is determined that additional site inspections, more frequent material testing, or other activities are needed to ensure regulatory compliance, the engineer preparing the Plan will be so notified and the Plan will need to be revised and resubmitted to conform to the requirements of the City.

19.08 Technical Studies and Reports

Depending on the nature and extent of proposed work and in consideration of existing conditions on and adjacent to the work site, the City may require that various technical reports be prepared in support of the proposed design. When such reports are required they shall be prepared by a licensed professional with expertise in the area of work and shall conform to the following minimum requirements.

Grading permits will not be issued until required technical reports are satisfactorily completed and accepted by the Public Works.

19.08.01 Geotechnical Reports

- Geotechnical reports will be required whenever the City Engineer determines that geotechnical investigations and analyses are necessary to ensure public health, welfare, or safety and as may be needed to document compliance with the design standards presented herein. A geotechnical report is specifically required for any one of the following conditions:

- When proposed grading includes a cut or fill exceeding 10 feet in height or depth

- When the slope of the natural ground exceeds 30 percent.

- When proposed cut or fill slopes are steeper than two units horizontal for every unit vertical.

- In areas of known or suspected geological hazards, including slope instability or hazards of ground failure stemming from seismically induced ground shaking.

A. Site Investigations

Those portions of the soil or geotechnical investigation that constitute civil engineering, as defined by Section 6734 of the Business and Professions Code of California shall be conducted by or done under the direct supervision of a California-licensed geotechnical engineer or civil engineer. Investigations, evaluations, and analyses of soil mechanics, including slope stability analyses, shall be performed by a California-licensed geotechnical engineer. Investigations shall be based on observations and tests of materials exposed by exploratory borings or excavations and on field inspections made at appropriate locations. Investigative studies may be required to evaluate soil and rock strength, the effect of moisture variation on soil, bearing capacity, compressibility, expansiveness, stability, keying, drainage, benching, and other factors.

B. Report Contents

Geotechnical reports shall, at a minimum, include the following items unless not applicable to the proposed work:

- An index map showing the regional setting of the site

- A site map showing the topographic features of the site and locations of all soil borings and test investigations

- Classification of the soil types and pertinent laboratory test data
- A description of the geology of the site and the geology of adjacent areas when pertinent to the proposed work
- A suitably scaled map with cross-sections showing identified areas of land slippage
- A description of the soil and geotechnical investigative techniques used
- Logs for all soil borings and test excavations with key map showing location, elevation at ground level, and the depth of each soil or rock strata
- An evaluation of the stability of natural slopes and recommendations regarding maximum cut-and-fill slopes
- Recommended material specifications
- An assessment of the settlement associated with any fill placement
- Recommended grading procedures and methods for excavation and fill placement, including recommendations regarding keyways and benching
- Evaluation regarding the nature, distribution, and characteristics of existing soils and professional opinions regarding slope stability, soil bearing potential and any suggested restrictions on site use, including setbacks from the top or toe of slopes
- Recommendations regarding surface and subsurface drainage and erosion control methods
- Recommended mitigations for any potential geologic hazards

C. Erosion Control Analysis

The soils/geotechnical report must include an analysis of the potential for soil erosion on the project site and for sediment discharge from the project site both during and after construction. This analysis shall be done in consideration of flow velocities, slope, soil type, and vegetative cover. The report must address the extent to which proposed control measures will adequately control erosion, capture sediment, and stabilize exposed soils. As may be required to further reduce offsite sediment discharges, the report should include specific recommendations for additional site controls.

D. Review and Acceptance

All geotechnical reports are subject to review by the City. Prior to acceptance, the City may require supplemental reports and data.

E. Design Recommendations

All recommendations presented in the final geotechnical report as accepted by the City shall be incorporated in the project construction plans and material specifications.

19.08.02 Drainage/Hydraulic and Hydrological Reports

When a project is greater than one acre, a hydraulic and hydrologic report is required to ensure the proper design on storm water control devices and to verify compliance with the requirements of the Grading Ordinance and these Improvement Standards, unless otherwise waived by the City Engineer. All such reports and analyses shall be certified by a registered civil engineer.

A. Site Characterization

The hydrologic/hydraulic report must address all potential natural and anthropogenic features that may impact drainage on to and from the site including the following:

- Existing drainage patterns, features
- Catchment areas and sub-basins
- Vegetation
- Natural features such as slopes, slides, creeks, streams, and other waterways
- Impervious surfaces
- Location, size, and type of existing and proposed structures

B. Project Description

The report must include a summary description of the proposed construction and shall, at a minimum include analyses of the following:

- Routing of storm water including proposed diversions of sub-basins
- Any proposed systems for storm water retention, detention, or infiltration

- Discharge rates and storm water run-off volumes before and following construction

- All storm water controls, conveyances, methods of collection and discharge

The report shall include a drainage area map along with calculations of the estimated peak discharges on to and off the site. The map shall show the catchment area for all drainage onto the work site and into existing drains, inlets, channels, or culverts.

C. Drainage System Design

The report shall provide calculations in support of the design for all elements of the storm drain system including inlets, culvert, pipes, channels, swales, and other conveyances or discharge devices. Unless otherwise recommended by the design engineer and approved by the City Engineer, peak flow discharges shall be determined using the rational formula using appropriate coefficients of runoff. Rainfall intensities shall be based on "Bulletin No. 195—Rainfall Analysis for Drainage Design, Volume III" from the California Department of Water Resources. In cases where the City has not adopted specific design criteria based on storm frequencies, the capacity of drainage structures and facilities shall be determined based on reasonable storm magnitudes in consideration of the importance of the structure and the nature of impacted land uses.

Profiles shall be provided for all drainage pipes and open channels including the hydraulic grade line for the design storm event. Hydraulic flow capacity for conveyance systems shall be calculated using Manning's Equation with appropriately selected coefficient values and shall include, as appropriate, an analysis of inlet and outlet conditions.

19.09 Construction

All grading activities shall be consistent with the approved grading plan, including all notes and specifications thereon, and shall be in accordance with the Grading Ordinance and all associated requirements including the design standards contained in section 19.06 of these Improvement Standards. Work shall be consistent with the approved erosion and sediment control plan and conform to the Storm Water Pollution Prevention Plan (SWPPP) if such a Plan is required for the work being done.

19.09.01 Pre-Construction

Prior to the start of construction, the applicant shall coordinate an on-site pre-construction conference if so required as a condition of grading permit issuance. The applicant shall notify the City at least 48 hours prior to the scheduled pre-construction meeting. At a minimum, attendees at the pre-construction meeting

must include the grading contractor and the engineer- of-record for engineered grading projects. The prime contractor, subcontractor, consultants, and utility representative shall be in attendance if so required by the City. A construction work schedule shall be provided to all attendees.

Prior to scheduling the pre-construction conference, all property corners and lines within 20 feet of the work shall be field located and the areal limits of grading activity shall be staked in the field. If the project is required to have permit coverage under the Regional Water Quality Control Board's "*General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*," a copy of the SWPPP must be available onsite for review prior to the preconstruction meeting. Upon satisfaction of all pre-construction obligations, the City will issue a "Notice to Proceed" with work in accordance with the permit.

19.09.02 Schedule

The City Engineer shall have access to the work to ascertain that the materials and workmanship are in accordance with the requirements of these Improvement Standards and the approved plans. Prior to proceeding to subsequent phases, each phase shall subject to inspection and the contractor shall provide necessary submittals to the City verifying that work has been completed in accordance with permit conditions. At least 48 hours prior to beginning the next phase of construction, the permittee shall notify the City of their schedule if so required. The following is a list of typical phases of construction and notification to and inspection by the City may be required prior to initiating work on each subsequent phase:

- Construction staking;
- Groundbreaking;
- Fill operations;
- Completion of sub grade;
- Installation of drainage structures and utilities;
- Pad certification; and
- Cleanup.

Any substandard work or materials employed in the work and all work done contrary to the provisions of the Grading Ordinance or these Improvement Standards shall be repaired or replaced as directed by the City.

19.09.03 Utility Location

When performing grading, property owners have responsibility to ensure the protection of all utilities on or adjacent to the work site. Prior to any excavation, a designated utility location service shall be contacted. Underground Services Alert (commonly known at USA) should be called at least 48 hours prior to beginning work. USA will field-locate any and all underground utilities.

19.09.04 Construction Staking

When required for grade control and for all roadway grading, construction staking shall be in place prior to beginning construction. Staking shall be maintained or replaced as needed throughout the construction process. All easements, property lines, property corners, and rights-of-way shall be delineated in the field if they are within 20 feet of the limits of grading or as may be otherwise required by the City. For roadway grading, centerline staking shall be provided at 50-foot intervals along with staking at the beginning and end of both horizontal and vertical curves and at the point of vertical intersection for vertical curves.

19.09.05 Limits of Construction

The extent and nature of construction shall be limited to the work shown on an approved grading plan.

19.09.06 Required Onsite Documentation

Copies of the following documents, if required as a condition of grading permit issuance, shall be available on the construction work site at all times and shall be presented to the City Engineer or his/her designee upon request:

- Signed grading permit application form and approved grading plan including the approved erosion and sediment control plan
- Storm Water Pollution Prevention Plan (SWPPP, if applicable)
- Construction Quality Assurance Plan (if applicable)
- Encroachment Permit (if applicable)

19.09.07 Site Inspections and Material Testing

A. Inspection by the City

All grading and related construction activities shall be subject to inspection by the City Engineer or his/her designee and access to all areas of activity shall be provided by the contractor responsible for the work. If such entry is refused, the Grading Ordinance provides that the City Engineer shall have recourse to every remedy provided by law to secure entry.

B. Inspection by Civil Engineer

For all engineered grading plans, the certifying engineer shall provide professional inspection services in accordance with the approved Construction Quality Assurance (CQA) Plan and as may be needed to determine that the grading has been completed in substantial compliance with all applicable requirements. Field observations shall at a minimum include, but not be limited to, field review as to the establishment of line/grade and the timely implementation and proper functioning of required erosion and sediment control measures. The CQA engineer or designee shall immediately notify the City Engineer if it is observed that work is not being performed substantially in accordance with the approved grading plan or if required erosion and sediment control measures are not being implemented or maintained. In such cases, the CQA engineer shall make recommendations for corrective measures, as needed, to address any observed violations. Any necessary modifications of project plans shall be submitted to Public Works for review and approval.

C. Geotechnical Inspections

Geotechnical inspections, construction observation, and reporting shall be provided by licensed professionals as may be required in the CQA Plan or as recommended in any required soils or geotechnical reports.

D. Material Testing

For engineered grading, material testing shall be done in accordance with the methods and frequency specified in the CQA Plan. Material testing may be required for Minor grading activities. In such cases, the services of a qualified material testing firm shall be secured to perform material testing as required on the grading plan and as required by the City.

19.09.08 Schedule

All construction work shall proceed in accordance with the work schedule submitted to the City at the time of grading permit issuance. Any significant changes in schedule must be submitted to the City particularly if the schedule changes result in unanticipated grading activities during the rainy season.

19.09.09 Erosion and Sediment Control

No grading shall be done unless all requirements of an approved erosion and sediment control plan are being implemented and the grading is in conformance with the Storm Water Pollution Prevention Plan. Required control devices and materials must available on-site, and properly installed consistent with the requirements of the Central Valley Regional Water Quality Control Board.

All erosion and sediment control devices must be inspected on a regular basis

by the responsible contractor and properly maintained. If during rainfall events, it is apparent that approved control measures and installed devices are not sufficient to adequately control the offsite discharge of sediment, additional controls shall be put in-place immediately as needed to further reduce sediment discharges to the maximum extent practicable.

19.09.10 Construction Entrances

Construction entryways shall be constructed as required in section 19.06 of these Improvement Standards. Wash down of vehicle tires is required as necessary to prevent off-site tracking of mud and dirt. Graveled entryways shall be maintained so that the construction entrance does not become buried in soil.

19.09.11 Good Housekeeping Practices

Construction sites should be organized and maintained for the proper storage of building materials and for proper handling, storage, and disposal of debris and waste materials as may be necessary to reduce the potential for adverse water quality impacts. Sanitary facilities shall be provided and properly sited. Locations for the containment of concrete truck washout shall be provided and litter shall be controlled. Provisions shall be provided for the proper storage and use of chemicals and other hazardous materials including provisions for containing and responding to leaks and spillage.

19.09.12 Non-Compliance

If, during construction, work is being done in violation of the grading permit or at variance with the approved grading plan, the City will take necessary enforcement action to correct any violations and ensure future compliance. section 19.11 of these Improvement Standards describes various enforcement mechanisms that may be used to address such violations.

19.10 Work Completion

The City shall be notified when all grading has been completed and when all requirements of the grading permit have been met.

19.10.01 Final Inspection for Minor Grading

Upon notification, the City shall conduct a final site inspection for all permitted grading activities. If, after notification that work is complete, the City Engineer determines that work is deficient or not in accordance with the approved grading plan, the City will advise the permittee, in writing, of required remedial work that must be done prior to final acceptance by the City. Upon completion of the remedial work, the permittee shall notify the City that the remedial work has been done and request a re-inspection.

19.10.02 Final Inspection for Engineered Grading

For engineered grading, the City will require final inspection by the CQA engineer in accordance with permit requirements.

A. Final Reports and Certifications

For engineered grading, the engineer, upon work completion, shall submit a written report to the City certifying that all work has been completed in substantial conformance with approved plans and specification. The report shall include record as-built drawings, material test results, inspection reports, and other information as specified in Construction Quality Assurance Plan.

B. As-Built Plans

The as-built plans shall show all original ground surface elevations, as-graded ground surface elevations, drainage patterns and locations and elevations of all surface and subsurface drainage facilities. Final surveys may be required as determined by the City Engineer.

C. Soils/Geotechnical Report

If a soils or geotechnical report was required for the project, the soils or geotechnical engineer shall prepare a report including location and elevations of all field density and other tests, summaries of all field and laboratory tests and other substantiating data and comments on any changes made during grading and their effect on the recommendations in the design report.

D. Certification by the Engineer

The responsible engineer shall include in the final report, a statement that work was done in substantial compliance with the approved grading plan and associated requirements. The engineer shall certify that the requirements of the CQA Plan have been satisfied.

E. CQA Documentation

The final report shall include documentation that all elements of the CQA Plan have been carried out. This includes notes from all meetings, copies of all inspection logs and reports, material test results, and copies of any available photographs taken during construction.

19.10.03 Notice Of Work Completion

After determining that work has been satisfactorily completed in substantial conformance to the grading permit and after all required reports and documentation have been received and accepted by the City, the City Engineer shall provide the grading permit applicant with a written statement accepting the works as complete. As provided for in the Grading Ordinance, issuance of a notice of work completion does not relieve the permittee of responsibility for

having complied with all grading permit requirements and, if the City Engineer finds that additional work is required to comply with the requirements of the grading permit, such work shall be completed at no cost to the city. Similarly, issuance of a notice of work completion should not be construed as modifying any permit requirements or as relieving the permittee of responsibilities for satisfactory work completion.

19.10.04 Certificate of Occupancy

No certificate of occupancy shall be issued for a permitted structure until the City Engineer has issued a written notice that permitted grading work has been satisfactorily completed or until the property owner has posted an approved security with the City in sufficient amount, as determined by the City Engineer, to ensure satisfactory completion of all outstanding work within a specified period of time. Acceptance of an approved security in lieu of grading completion shall be at the discretion of the City Engineer who may find that such an alternative is unacceptable.

19.10.05 Ongoing Maintenance of Post-Construction Best Management Practices

For all properties, the developer shall sign a statement, as part of the project application, accepting responsibility for all post-construction BMP maintenance until the time the property is transferred and, where applicable, a signed agreement from the public entity assuming responsibility for on-going maintenance of post-construction BMPs. The condition of transfer shall include a provision that the property owners conduct maintenance inspection of all postconstruction BMPs at least once a year and retain proof of inspection. Reports of the yearly maintenance inspection are to be submitted to the City by January 31st to cover inspections during the previous calendar year. The developer shall be required to provide printed educational materials to accompany the first deed transfer to highlight the existence of the requirement and to provide information on what storm water management facilities are present, signs that maintenance is needed, how the necessary maintenance can be performed, and assistance that the city can provide. The transfer of this information shall also be required with any subsequent sale of the property.

For development projects where new lots will be created, evidence that the developer has created a funding mechanism and an administrative mechanism such as a Homeowner’s Association to provide ongoing maintenance of post-construction storm water best management practices through the life of the subdivision must be submitted prior to map approval.

19.11 Enforcement

The Grading Ordinance requires the City to enforce the provisions of the Ordinance and to ensure that all grading activities are in conformance with the

requirements of these Improvement Standards. While the goal of the City is to foster voluntary compliance with all regulatory requirements, the Grading Ordinance recognizes that a variety of enforcement tools may be needed to ensure compliance and to provide consistent regulation throughout the city. In that regard, the Grading Ordinance establishes a progressive enforcement policy that directs the City to take action in consideration of the facts and circumstances of the violation, including but not limited to, the length of time of the violation, the willfulness of the violation, the extent of the violation and its impact on environmental resources and adjoining properties, attempts, if any, to comply with legal requirements, the history of violations on a property or by a contractor, and other factors in accordance with AMC Sections 15.30.220 through 15.30.280.