



# Grading Permit Checklist

Revised on June 2015

The purpose of this checklist is to provide uniform, comprehensive, and well documented reviews of the Grading Plans submitted by project applicants. The completed checklist will be transmitted to the project applicant with the project owner with each plan check. **A copy of this checklist shall be returned to the City with each plan check submittal.** The original of the completed checklist will be retained with the project case file.

Grading Plan Check Number: GRA201 -0

Project Name: \_\_\_\_\_

Project Address: \_\_\_\_\_

Name of Plan Checker: \_\_\_\_\_

**First Review:** Grading Plan received on: \_\_\_\_\_

Review completed on: \_\_\_\_\_

**Second Review:** Grading Plan received on: \_\_\_\_\_

Review completed on: \_\_\_\_\_

**Third Review:** Grading Plan received on: \_\_\_\_\_

Review completed on: \_\_\_\_\_

**Subsequent Review:** Grading Plan received on: \_\_\_\_\_

Review completed on: \_\_\_\_\_

**Planning and Building Approval Dates:** \_\_\_\_\_

**PW Approval Date:** \_\_\_\_\_

Public Works Department  
 200 S Anaheim Blvd-276  
 Anaheim, CA 92805  
 Telephone Number: (714) 765-5176  
 Fax Number: (714) 765-5525

**CHECK LIST FOR PREPARATION AND SUBMITTAL OF GRADING PLANS**

**Legend:**

**√** = Completed, **X** = Incomplete, **NA** = Not Applicable, **?** = Provide More Information

Plan Check No.				CHECKLIST
1	2	3		<b>ITEMS REQUIRED TO BE SUBMITTED WITH GRADING PLAN CHECK</b>
				<p><b>1.</b> Grading plan (amount of sets per <a href="#">Initial Submittal List</a>) to be prepared by the Civil Engineer on 24" x 36" sheets at scale 1" = 10', 20', 30', 40' or other acceptable standard engineering scale and submit to Development Services Public Counter. All submittals shall be stamped and signed by the design engineer.</p>
				<p><b>2.</b> Plan checking, inspection deposit, and <a href="#">permit fee</a> indicated in the current Public Works most current fee schedule at the time of submittal.</p>
				<p><b>3.</b> Drainage study with hydraulic, <a href="#">hydrology calculations</a>, and map. Hydrology report, (2 sets) if any drainage structures are constructed or if required by City Engineer. The calculations must address first flush requirements for structural BMP's and performance criteria (see WQMP checklist for additional requirements).</p>
				<p><b>4.</b> Final Water Quality Management Plan (1 copy) if applicable.  (see OC DAMP [Table 7-1] for applicability: <a href="http://ocwatersheds.com/civicax/filebank/blobload.aspx?BlobID=9900">http://ocwatersheds.com/civicax/filebank/blobload.aspx?BlobID=9900</a> )</p>
				<p><b>5.</b> Soil Report (2 sets) prepared and signed by a licensed engineer competent in the field of Geotechnical Engineering. A Certified Engineering Geologist needs to stamp and sign the report for the Geology portion of the report. The Soil Report needs to provide a thorough engineering investigation based on the existing conditions and work proposed, including any segmental wall design requirements. <u>Soil Borings at 20' or deeper require a Well/Boring Permit</u> obtained from the Environmental Services Division of Anaheim Public Utilities. Please contact 714-765-4166 for information.</p>
				<p><b>6.</b> Erosion Control Plan with applicable details and General Notes per CASQA. Include WDID# in sheet 1 of the grading plans.</p>
				<p><b>7.</b> Include Conditions of Approval for project, if applicable. (Planning Commission, City Council, etc.)</p>

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				8. Submit copy of reference plans, field survey or recorded maps.
				9. Approval(s) from other agencies such as Caltrans, Railroad, Water Districts, etc.
				10. Site Demolition Plan showing disposition of existing improvements, existing utilities, all easements, and required erosion, sediment and dust control, as applicable.
				<b>Additional items are needed if submitted as hillside grading plans. The items are:</b>
				11. "Environmental Information" form filled out and signed by the developer or his/her representative.
				12. For hillside grading only, list (2 sets) and a verifying letter of property owner's name and address within 300 feet radius of the exterior boundaries of the site on typed self-adhesive address labels.
				13. Engineer's Construction Cost Estimates for grading, all drainage devices, landscaping and irrigation and retaining walls for hillside grading projects.
<b>Comments and notes:</b>				
				<b>ITEMS TO BE SHOWN ON GRADING PLAN</b>
				1. North arrow, graphic scale in feet (1" = 10', 20', 30, 40' or other acceptable standard engineering scale) vicinity and location map.
				2. Index to drawing sheets.
				3. Legal description and Assessor's Parcel Number.
				4. The purpose of the work and a statement as to whether the purpose of the excavation is to prepare the site for subdivision under the Subdivision Map Act.
				5. Legend and abbreviations
				6. List of utilities with contact names and phone numbers.
				7. Property owner and/or developer name, address, and phone.
				8. Property address and street name.
				9. Civil Engineer's name, company name, address, and phone.

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				<b>10.</b> Civil Engineer's plan preparation certification with seal with opaque ink and signature.
				<b>11.</b> Soil Engineer's name, company name, address, and phone.
				<b>12.</b> City signatures <a href="#">Flatland Block</a> or <a href="#">Hillside Block</a> .
				<b>13.</b> City Standard Grading General <a href="#">Flatland Notes</a> or <a href="#">Hillside Notes</a> .
				<b>14.</b> City Standard Water General <a href="#">Notes</a> .
				<b>15.</b> City Standard Street Improvement & Storm Drain General <a href="#">Notes</a> . Sewer, water and other utilities need to be shown for reference only. New sewer lateral construction can be included on Grading Plan, but a Right-of-way Construction Permit is required.
				<b>16.</b> Construction notes, quantities, and cost estimate for hillside grading, including retaining walls and landscape improvements.
				<b>17.</b> Property line dimensions and bearings of the property, including radial bearings and curve data. Basis of bearings, street centerline, existing and ultimate right-of-way line, and existing improvements with dimensions. All setbacks shall be measured from the ultimate right-of-way.
				<b>18.</b> Show and label all existing and proposed easements affecting the property. Review of a current title report or City's GIS may be required.
				<b>19.</b> Show and label existing and proposed utilities in the right-of-way and utility services to the property. (All services to be underground)
				<b>20.</b> Show and label proposed and existing contours, spot elevations, elevations for top of curb, flow line, building pads and finish floor, sidewalks, streets, parking lots and drive aisles, and existing adjacent property elevations, buildings, and/or structures on all sides of development within 15 feet of property lines. To establish drainage patterns, elevations 50' beyond the property lines may need to be shown.
				<b>21.</b> Segmental wall and/or slope geogrid shall be shown and labeled in profile and plan view. Plans shall show all constriction details for leveling course, drainage, connections of wall façade to geogrid, vertical interval for geogrid, horizontal limits, provisions for drip irrigation devices, contractor's minimum license requirements, required design engineer's field observations and approvals and provision for revisions due to field changes.

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				<b>22.</b> Proposed elevations and contours shall be clearly defined. Use of contour grading is required. Cut and fill slopes in excess of two hundred feet in length shall be contour graded and shall have a variety of slope ratios. Grade Elevations must be shown in full, not truncated.
				<b>23.</b> On sheet 1, show raw cut and fill quantities and maximum depth for earthwork. List cubic yardage to be excavated, filled, exported and/or imported. List new and refurbished landscape area in square feet.
				<b>24.</b> If existing topography is shown as a screened linework, show the existing items at 70% of original intensity (30% screening).
				<b>25.</b> List <a href="#">city benchmark</a> used to establish elevation control for property. No assumed benchmarks are permitted. The datum must be NAVD 88 per AMC 12.04.
				<b>26.</b> For reference only, show trash enclosure(s) and all masonry perimeter walls.
				<b>27.</b> Show cross-sections through slopes and for each side of property as a minimum.
				<b>28.</b> Details of retaining segmental (crib) walls and any drainage and protective devices. Show all required Special Inspection items for construction of segmental/retaining walls. All walls visible from public view shall be screened in conformance with AMC Section 18.46.110.120
				<b>29.</b> Show proposed block/retaining wall locations, including estimated heights and elevations for top of wall, top of footing and finish grade at base of wall. All walls visible from public view shall be in conformance with Section 18.46.110.130 of the Anaheim Municipal Code. Add note: BLOCK RETAINING WALLS REQUIRE SEPARATE PERMIT FROM THE BUILDING DIVISION.
				<b>30.</b> Show parking lot dimensions and details including handicap stalls, islands, ramps, radii on islands, and gradients. Refer to City Standard No. 470 and California Building Code 2013 or latest adopted Code.
				<b>31.</b> Disabled Person's Parking standard configurations are reviewed by the Building Division per the California Building Code 2013 or latest adopted Code.
				<b>32.</b> Show pavement structural section for parking lot construction per Soils Engineer's recommendations based on the assumed R value and TI=4 for stalls and TI=5.5 for drive isles. Add the following note to the plans: "PRIOR TO PLACEMENT OF THE PAVEMENT (AC/BASE OR PCC) THE FINAL PAVEMENT STRUCTURAL SECTION SHALL BE SUBMITTED FOR REVIEW AND APPROVAL AND BE BASED ON THE FIELD "R" VALUE TEST AFTER GRADING IS COMPLETED."

				<b>33.</b> Minor frontage street work, including construction of sidewalks, drive approaches, parkway landscaping, curb & gutter, curb drains, parkway drains, catch basin relocation may be shown on the grading plans. As separate right-of-way construction plan may be required for major frontage work. A separate right-of-way construction permit is required for the work in the public right-of-way.
				<b>34.</b> For construction of new driveway approaches or curb and gutter in public R/W, show minimum of 24" wide asphalt replacement area in the street for placement of construction forms. Inspector to verify need for saw cut prior to work being performed. Asphalt shall be full depth.
				<b>35.</b> For any items shown for construction as part of the Grading Plan, references to landscape, building plans or other plans are not allowed. All details required for construction per the grading plans shall be made part of the plans.
				<b>36.</b> Street widening work shall be per a separate Right-of-Way Construction plan.
				<b>37.</b> All private streets shall comply with City Standard No. 162. Show pavement structural section per Soils Engineer's recommendations with a minimum section of 4" AC over 4" AB. Add the following note to the plans: "PRIOR TO PLACEMENT OF THE PAVEMENT (AC/BASE OR PCC) THE FINAL PAVEMENT STRUCTURAL SECTION SHALL BE SUBMITTED FOR REVIEW AND APPROVAL AND BE BASED ON THE FIELD "R" VALUE TEST AFTER GRADING IS COMPLETED."
				<b>38.</b> Private streets shall have a minimum grade of 0.2% and a maximum grade of 10%. The minimum cross fall is 2%.
				<b>39.</b> Private streets greater than 300 feet in length without outlet, must have a minimum 38 foot radius cul-de-sac per City Standard No. 166 and No. 168.
				<b>40.</b> Design per <a href="#">City of Anaheim Storm Drainage Manual for Public and Private Storm Drainage Facilities</a> .
				<b>41.</b> The design recurrence interval shall be 10-year or 25-year and 100-year storm.
				<b>42.</b> Private storm drains within the City R/W shall have 18" RCP minimum mainlines and 15" RCP minimum connections to existing catch basins (City Standard 350-B). The plans shall show the minimum required D-load.
				<b>43.</b> Private storm drain mainlines within private property shall have a 12" minimum pipe diameter.
				<b>44.</b> Maximum distance between manholes shall be 200 feet for 18" diameter pipe.
				<b>45.</b> Storm drain inlets in sump condition shall be designed to capture Q25.

				<b>46.</b> A secondary emergency outlet for the sump condition is required to provide a minimum of 1.0 foot freeboard between the maximum water surface elevation and minimum finish floor elevation.
				<b>47.</b> The emergency outlet must direct overflows to either an adequate downstream street or natural conveyance system.
				<b>48.</b> The minimum depth of catch basin shall be 4 feet and will round up to the nearest 0.25 foot interval (i.e.: 4.25, 4.5, 4.75, etc).
				<b>49.</b> Private storm drains connecting to the City storm drain system require a Save Harmless In-lieu of Encroachment Agreement. The agreement shall be recorded prior to the issuance of the permit.
				<b>50.</b> Private storm drain main lines within a public R/W, excluding direct connection segment, will require an Encroachment License.
				<b>51.</b> Private storm drains with diameter of 15" or greater shown on grading plans require a profile. Storm drain lines smaller than 15 inches do not require a profile, but shall show rates of grade, direction of flow, size of pipe, invert elevations at begin of pipe and end of pipe and grade breaks, locations and elevations of all adjacent or crossing underground facilities, sufficient horizontal control to permit the system to be located in the field, and any other information which may be required to adequately check, construct, and inspect the system.
				<b>52.</b> Add construction notes to each sheet with private storm drains. The note shall read "APPROVED ONLY FOR INSPECTION OF WORKMANSHIP AND MATERIALS ON PRIVATE PROPERTY".
				<b>53.</b> In private property, PVC Plastic Pipe, High Density Polyethylene (HDPE) Solid Wall Pipe, Corrugated HDPE Pipe with smooth interior can be use as an alternative pipe material to RCP. Any segment of the private storm drain line within the public ROW shall be RCP and the plans shall show the minimum required D-load required.
				<b>54.</b> Pipe bedding detail per <a href="#">Figure 8</a> of the Drainage Manual.
				<b>55.</b> Design life of plastic pipe shall be 50 years.
				<b>56.</b> Plastic pipe within private streets shall have 1.5 feet minimum and 20 feet maximum cover, 4 inches minimum and 36 inches maximum diameter, and the slurry backfill must be in accordance with <a href="#">Figure 7</a> .
				<b>57.</b> Plastic pipe shall not be used within City ROW except for landscape median drains and subdrains.
				<b>58.</b> Plastic pipe outside street shall use slurry backfill in accordance with <a href="#">Figure 7</a> when cover is less than 1.5 feet and pipe is subjected to highway loading.

				59. Maximum velocity of plastic pipe shall be 15 fps unless for special conditions where higher velocity is appropriate. The special design and manufacturer's specification shall be submitted to the City Engineer for approval.
				60. Bedding details shall be shown in the plans per <a href="#">Figure 7</a> and <a href="#">Figure 8</a> .
<b>Comments and notes:</b>				
<b>PLAN CHECK: REQUIRED AGREEMENTS</b>				
				1. Covenant to Maintain Landscaping to Screen Crib/Retaining Wall
				2. Agreement for Accepting Public Water Agreement and Covenant Not to Sue
				3. Agreement for Accepting Water from Adjacent Properties with Same Ownership
				4. Agreement for Accepting Water from Adjacent Properties and/or Grade Within Private Properties for Different Owner
				5. Agreement for Private Storm Drain of Encroachment
				6. Agreement for Drainage to Adjacent Properties Without Permission
				7. Agreement for Community Driveway Approaches (Ingress and Egress Easement)
				8. Reciprocal Parking Agreement
				9. Agreement for Private Sewer and Storm Drain Easement
<b>Comments and notes:</b>				
<b>PLAN CHECK: DRAINAGE ITEMS</b>				
				1. The City has adopted the following minimum slopes for Flatland Grading (for Hillside please go to the bottom on this section):
				• 0.50% for flow-line of concrete gutters and other concrete structures for drainage
				• 1.00% for flat concrete surfaces
				• 1.25% for asphalt concrete surfaces (with adequate concrete swales or gutters for drainage)
				• 2.00% for unimproved or landscaped areas

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				<ul style="list-style-type: none"> <li>• 2.00% for cross-fall of dedicated public streets, unless otherwise approved by City Engineer</li> </ul>
				<ul style="list-style-type: none"> <li>• 0.30% for flow-line of dedicated public streets, unless otherwise approved by City Engineer</li> </ul>
				<p><b>2.</b> Drainage for small developments (1.0 acres or less) may be directed over the driveway approach(es). Drainage for larger developments or developments with special requirements may use a parkway drain (City Standard No. 151-1) as approved by the City Engineer. (No pipes or curb cores allowed through curbs except single residential lots).</p>
				<p><b>3.</b> Back of driveway approaches may be uniformly depressed to assist on site drainage with review and approval by the City Engineer</p>
				<p><b>4.</b> Private storm drain: If a city or county storm drain system is available in an adjacent street, a private storm drain (minimum 18" diameter) may be extended and curb opening catch basins constructed on site, per City Standard Plans.</p>
				<p><b>5.</b> Water quality requirements shall be observed in conformance with latest County Drainage Area Master Plan requirements and Best Management Practices (BMP's) (See WQMP Procedures for additional requirements).</p>
				<p><b>6.</b> Calculations for "first flush" diversion treatment for structural BMP's shall be included in the drainage report and submitted for review and approval.</p>
				<p><b>7.</b> Provide a hydrology map showing the drainage basin(s), the site of proposed grading, and any proposed drainage structures.</p>
				<p><b>8.</b> A summary of the hydrology and any proposed drainage structures</p>
				<p><b>9.</b> Streets adjacent to the project site: show 100-year storm section.</p>
				<p><b>10.</b> Private storm drain: if plastic pipes are used, show pipe bedding details</p>
				<p><b>Hillside Grading Minimum Slopes</b></p>
				<p><b>1.</b> The City has adopted the following minimum slopes for Hillside Grading:</p>
				<ul style="list-style-type: none"> <li>• 1% minimum and 21% maximum for earth at rough stage</li> </ul>
				<ul style="list-style-type: none"> <li>• 2% minimum and 21% maximum for earth fine grade (sheet flow away)</li> </ul>
				<ul style="list-style-type: none"> <li>• 1% minimum and 5% maximum for earth swales</li> </ul>
				<ul style="list-style-type: none"> <li>• 1% minimum and 5% maximum for asphalt and concrete</li> </ul>

				• 0.5% minimum for concrete gutter in earth area
				• 0.2% minimum for straight section of concrete gutter in paved area
				• 0.4% minimum for curved section of concrete gutter in paved area
<b>Comments and notes:</b>				
<b>PLAN CHECK: AS-GRADED SOILS REPORT</b>				
				1. Job address, lot and map number
				2. Grading plan number
				3. Signature(s) and professional number(s) of person of the same level of registration or certification as the parties signing the preliminary report.
				4. Purpose of which fill was place
				5. Preparation of natural grade to receive fill
				6. Placement of fill (depth of fill, watering, etc.)
				7. Equipment used for compaction
				8. Method of compaction for outer slope area
				9. Test procedure (field and laboratory)
				10. Plot plan graphically depicting the location of all density tests. The plan should be of sufficient size to be reviewable
				11. Summary of test results:
				• Test identification number
				• Date test performed
				• Maximum dry density test
				• Optimum moisture
				• Field dry density
				• Field moisture
				• Relative compaction

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				<ul style="list-style-type: none"> <li>• Approximate elevation of test</li> </ul>
				<ul style="list-style-type: none"> <li>• Approximate finish grade elevation at test site</li> </ul>
				<b>12.</b> Location of test
				<b>13.</b> Depth of test
				<b>14.</b> Method of backfill compaction equipment
				<b>15.</b> Summary of test results
				<b>16.</b> Summary of expansion test results (identify lots or areas with swelling potential)
				<b>17.</b> Summary of chemical test results, as required
				<b>18.</b> Summary of corrosion test results, as required
				<b>19.</b> Fertility reports: Results of agricultural suitability and fertility analysis to support plant life for slope landscaping only.
				<b>20.</b> Plot plan showing limits of the compacted area including approximate pad elevation, depth of fill, areas of over excavation, keys and subdrains. If slope failures occurred during construction, the limits of these failed areas should be shown on the plan
				<b>21.</b> Treatment of “daylight” or cut/fill transition zones (extent of over excavation outside of footing)
				<b>22.</b> Type of soil encountered during grading (fill, in-situ, imported borrow)
				<b>23.</b> Groundwater conditions identified and subdrains or other methods used to mitigate adverse effects.
				<b>24.</b> Geologic conditions encountered, including geologic contacts, structural attitudes, marker beds, faults, and bedding plan shears. Geologic data should be included in areas mapped as fill and in buttress excavations
				<b>25.</b> Comments on changes made during grading and their effect on the recommendations and in the geotechnical report
				<b>26.</b> Exploratory borings and trenches performed during grading should be located on the maps attached to the report, and logs of these excavations should be included in the report

				<b>27.</b> Locations of instrumentation at the site, including settlement monuments, extensometers, piezometers, inclinometer, etc., should be plotted on the maps attached to the report. Results of instrument readings should be included in the report
				<b>28.</b> Field Elevations at the bottoms of cleanouts, keyways, or other excavations
				<b>29.</b> Footing recommendations and bearing value on compacted fill
				<b>30.</b> Footing and floor slab recommendations (Applicant needs to contact the Building Division of the Planning Department for their requirements).
				<b>31.</b> Statement as to the suitability of natural soil to support the fill or structure
				<b>32.</b> Statement as to the adequacy of the site for the intended use, as affected by soil engendering and/or geologic factors
				<b>33.</b> Statement as to the gross and surficial stability of all slopes. Cross-sections prepared during grading for stability calculations should be included in the report, as well as a description of the calculations method, summary of calculation results, and conclusions
				<b>34.</b> A statement addressing whether the soil engineering and engineering geologic aspects of the grading are in compliance with the applicable conditions of the grading permit and the geotechnical engineer's and engineering geologist's recommendations
				<b>35.</b> Statement as to the expected plant life over the slopes
				<b>36.</b> Statement as to the approval and the field inspection during the construction of all segmental (crib) walls, and the stability of overall slopes with the segmental wall in place.
				<b>37.</b> Statement as to the field observations of the installation of all segmental wall and/or slope geogrid and all drainage devices. Installations not done per the approved plans and reports are subject to review and may delay Public Works final building and zoning sign-off.
<b><u>Comments and notes:</u></b>				