

## CHAPTER 3

### GRADING PLANS

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#### Section 3.010 Grading Plans - Single Family, Multiple Family, Commercial, & Industrial Projects.

- A. All grading plans for single family, multiple family, commercial and industrial projects, submitted to the Community Development Department for review by the Engineering Division, shall follow the standards of the items listed below. A single family lot in a platted subdivision or a lot 1 acre or less will not be required to submit hydrology, geotechnical or soil reports.
  - 1. Two copies of the grading plan drawn at a scale of forty feet equals one inch (40' = 1"), or adjusted to produce an overall drawing of twenty-four inches by thirty-six inches (24" x 36"). The drawings shall be readable, readily interpreted and sufficient for the purpose for which they were prepared.
  - 2. Proposed name of project and its location by section, township and range, referenced by dimension and bearing to a section corner or quarter section corner, or referenced to appropriate street right-of-way centerline or other approved monumentation.
  - 3. Location map.
  - 4. Small scale subdivision and sheet index map, if applicable.
  - 5. Name, address and phone number of owner.

6. Name, address and phone number of engineer and surveyor preparing the plans.
7. Topography by contours related to City, Mohave County, ADOT or USC&GS survey datum. Contour interval shall adequately reflect character and drainage of the land.
8. Location of fences, wells, lakes, ditches, power lines, etc. Location and extent of areas subject to inundation, and indicate frequency, etc. for properties within the FEMA floodplain.
9. Location, widths and names of all rights-of-way, public utility easements or other easements of public record. Permanent structures to remain, including water wells and utility lines within or adjacent to the property.
10. Name, book and page number of any recorded adjacent subdivision having common boundary with the property.
11. By note, acreage of the subject property.
12. All existing bench marks in the area of the project and whether it is necessary to remove or destroy them due to new construction. Notify the public works inspection division for reestablishment of same.
13. All bench marks used on this project. Any project submitted to the City of Bullhead City for review must use USGS, Mohave County or ADOT datum. Single lots less than 1/2 acre may use assumed datum, if out of floodplain.
14. Elevations referenced to mean sea level at each lot corner, or other adequate controlling grading.
15. Existing direction of natural drainage and any existing channels or washes will be shown on the plan.
16. Proposed drainage system to carry off-site flows, including point of discharge from property.
17. Finished elevations at lot corners, pad and structures, and direction of surface drainage after grading. A typical lot may be used for details, if applicable.
18. Identify the flood hazard area and elevation of the base flood, if

applicable.

19. Limiting dimensions or finished contours to be achieved by the grading, and proposed drainage channels and related constructions.
20. Detailed plans of all surface and subsurface drainage devices, wall, cribbing, dams and other protective devices to be constructed with, or as a part of, the proposed work together with a map showing the drainage area the estimated run off of the area served by any drains.
21. Location of any buildings or structures on the property where the work is to be performed and the location of any buildings or structures on land of adjacent owners which are within fifteen feet of the property or which may be affected by the proposed grading operations.

**Section 3.020 Hydrology Reports.**

- A. Improvement plans for all single family, multiple family, commercial and industrial projects, submitted to the Community Development Department for review by the Engineering Division, shall include a hydrology report. See Chapter 10 of this Manual for submission requirements.

**Section 3.030 Geotechnical & Soils Reports.**

- A. Improvement plans for all single family, multiple family, commercial and industrial projects, submitted to the Community Development Department for review by the Engineering Division, shall include a geotechnical and soils report. See Chapter 12 of this Manual for submission requirements.

**Section 3.040 Cuts.**

- A. Unless otherwise recommended in the approved soils engineering and/or engineering geology report, cuts shall conform to the following:
  1. Cut slopes shall not be steeper than two horizontal to one vertical.
  2. If such cuts exceed three feet at any time during construction activity on the property, specific measures shall be employed to assure that such excavations are protected from public encroachment. Said measures shall be noted on the grading plans and approved by the Building Official. These measures may include:

- a. Physical barriers, including berms, temporary fencing or other suitable obstruction.
  - b. Warning lights, signs or banners, which shall clearly indicate the danger to trespassers of all ages.
  - c. Where possible, stable trench coverings.
3. Drainage and terracing shall be provided on the plans as required by UBC Appendix, Chapter 70-Grading & Excavation, latest edition, as adopted by the City.

**Section 3.050 Fills.**

- A. Unless otherwise recommended in the approved soils report, the plans and specifications for fills shall conform to the provisions of this section. In the absence of an approved soils report, these provisions may be waived by the Building Official for minor fills not intended to support structures.
  1. Fill slopes shall not be steeper than two horizontal to one vertical.
  2. The ground surface shall be prepared to receive fill by removing vegetation, noncomplying fill, topsoil and other unsuitable materials, scarifying to provide a bond with the new fill, and where slopes are steeper than five to one and the height is greater than five feet, by benching into sound bedrock or other competent materials as determined by the soils engineer.
  3. The bench under the toe of a fill on a slope steeper than five to one shall be at least ten feet wide. The area beyond the toe shall be sloped for sheet overflow or a paved drain shall be provided.
  4. Where fill is to be placed over a cut, the bench under the toe of fill shall be at least ten feet wide, but the cut must be made before placing fill and approved by the soils engineer as a suitable foundation for fill. Unsuitable soil is soil which, in the opinion of the Building Official or the soils engineer, is not competent to support other soil or fill, to support structures or to satisfactorily perform the other functions for which the soil is intended.
  5. The specifications must indicate that detrimental amounts of organic material shall not be permitted in fills. Except as permitted by the Building Official, no rock or similar irreducible material with a maximum

dimension greater than twelve inches shall be buried or placed in fills.

6. All fills shall be compacted to minimum of ninety percent of maximum density as determined by UBC (under pavement ninety-five percent [95%]). Field density shall be determined in accordance with UBC as adopted by the City, or equivalent, as approved by the Building Official.
7. Drainage and terracing shall be provided and the area above fill slopes and the surfaces of terraces shall be graded and placed as required by the UBC, Appendix, Chapter 70-Grading & Excavation, latest edition, as adopted by the City.
8. Grading in retention basins is also to be in accordance with the additional requirements contained in Chapters 9 and 10 of this Manual.

**Section 3.060                      General Information - Single Family, Multiple Family, Commercial, & Industrial Projects.**

**A.      General Information**

1. All designs must be in accordance with the Uniform Standard Specifications and Details published by the Maricopa Association of Governments, latest edition, as amended by the City.
2. The developer is required to contact the utility companies for location of existing and proposed buried conduit or cable which must be shown on plans to ensure that no conflicts arise before approval can be given. Conflicts that arise shall be the responsibility of the developer.
3. Any contractor found working on a project without an official set of stamped, approved drawings by the Community Development Department, shall be issued a stop work order until further notice.
4. If fill is to be transported off site, the name and address of the property owner where the fill is to be placed will be required along with evidence of permission from that property owner. A grading permit will be required for the export or import of materials.
5. A statement from the property owner or agent assuming full responsibility for the performance of the operation and an assurance that other public and private property shall be adequately protected.

6. The plans and permits for all excavation and grading operations of any scope or magnitude conducted within the city limits, whether on public or private land, shall show provisions for the control of dust during such operations. The permittee shall also leave the property in a condition that shall prevent dust from arising.
7. The plans must provide for protection against erosion and run off generated maintenance problems.
8. All subdivision projects located in areas zoned R1S, may provide grading for building pads, drive accesses and 30% of the remaining lot.

**Section 3.070**

**Notes.**

- A. All grading plans for single family, multiple family, commercial and industrial projects, submitted to the Community Development Department for review by the Engineering Division, shall include notes which address the items listed below, as applicable.
  1. If details are shown, indicate to which sheet they refer.
  2. Engineer's seal and stamp of approval on each sheet.
  3. Notification of the public works inspection division at least 48 hours in advance of any construction or inspection.
  4. Staking that will be required and by whom. Contractor shall provide fill/cut sheets from the surveyor staking the project.
  5. Responsibility for the coordination of the relocation of power poles or other utilities, if applicable.
  6. Contractor shall conform to "Arizona Blue Stake" laws. Blue Stake Center can be reached by calling 1-800-782-5348.
  7. Permits required and who is responsible for obtaining, including right-of-way permits.
  8. Contractor to adjust all valves, manholes, clean-outs, etc., both new and old to finish grade per standard details.
  9. Back-fill and compaction within Bullhead City right-of-way to be in accordance with the latest Mohave County Special Provisions for

installation of underground utilities." Specify "mechanical compaction only" in maximum compacted six-inch lifts.

10. Contractor to comply with the provisions for traffic control and barricading as per the Manual on Uniform Traffic Control Devices (MUTCD).
11. Underground utility owners to be contacted for their utility locations (include the telephone number), prior to any digging.
12. All improvements within the public rights-of-way to be in accordance with the latest Procedures Manual.
13. The control of dust.
14. Contractor is advised that an excavation and dirt moving permit is required by the City. It is the responsibility of the contractor to obtain this permit and comply with its requirements.
15. Fences, retaining walls or toe of slopes will not extend into any easement or right-of-way.

**Section 3.080                      Certifications.**

- H. All grading plans for single family, multiple family, commercial and industrial projects, submitted to the Community Development Department for review by the Engineering Division, shall include the certifications listed below, as applicable.
1. I certify to the best of my knowledge, information and belief, that the boundary of the 100 year floodplain and the zone designations shown on the plat and on the approved grading for this subdivision are shown accurately, and that the finished floor elevations shown for each lot in the flood zone are (1) one foot above the regulatory base flood elevation according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM).

ENGINEERING FIRM: \_\_\_\_\_  
ENGINEER'S NAME: \_\_\_\_\_  
TITLE: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ AFFIX SEAL