City of Fayetteville
Building Safety
125 W Mountian St.
Fayetteville, AR 72701

RESIDENTAL GRADING PLAN REQUIREMENTS

A residential building permit application must contain sufficient information to allow the Development Services Department to determine whether the lot development complies with the requirements of the Grading and Stormwater chapters of the Unified Development Code (UDC).

Low Impact Development. Use of Low Impact Development (LID) design strategies, as described in Chapter 179 of the UDC, to attenuate lesser storms and more closely mimic predevelopment hydrology is encouraged. LID features appropriate for residential sites include: rain gardens, dry wells, filter strips, grassed swales, infiltration trenches, enhanced retention ponds, rain barrels, cisterns, permeable pavement or pavers, green roofs, etc.

Grading Plan:

If the proposed structure is located in a subdivision that includes an approved master drainage plan, the approved plan shall be included in the building permit application and the individual lot drainage plan shall follow the master drainage plan. (Subdivisions platted after December 2010 will include a master drainage plan.)

Lots that are not included in an approved Master Drainage Plan are required to have a specific drainage plan for each lot. The grading plan must establish a minimum Finish Floor Elevation (FFE) of the structure(s) and properly drain the parcel without detrimental affects to adjacent or downstream property owners.

Submittal information and plans include, but shall not be limited to, the following:

1. The grading plan shall be drawn to a legible conventional Engineer scale (1" = 20') using the site plan as a base map.
2. *The Grading plan shall include, a minimum, the following features*:
    a. Provide a lot drainage plan with the Finish Floor Elevation (FFE) of the building**,** along with flow arrows and spot elevations. In general, drainage should be routed along the shortest practicable flow path to the street or drainage easement. (Existing flow conditions will be considered for site specific applications.)
    b. Identify existing drainage features on the lot, adjacent lots, and at the street; including inlets, storm drain pipes, culverts, swales, springs, water impoundments, etc. and existing structures on adjacent lots (within 20 feet of the property line).
    c. Label and identify height of retaining walls, if applicable.
    d. Identify the 100-year floodplain and/or floodway and base flood elevations, if applicable.
3. The Grading Plan must establish positive drainage and not re-direct existing runoff to an adjacent property unless an existing drainage easement or property owner agreement is provided, or the approved master drainage plan requires runoff to be directed across adjacent properties.
4. Non structural grassed swales for rear lot drainage concentration are discouraged and shall not be installed in combination with a utility easement.

Grading Design Guidelines Information:

1. *Account for slope away from structure.*
    a. The minimum slope of the flow path for a swale or sheet flow to the top of curb, top bank of ditch, or approved drainage inlet from the high point of the final graded lot shall be a minimum of 2% for grassed surfaces.
    b. Final grade adjacent to structures shall slope away from the structure at a minimum rate of 5% (1:20) for a minimum of 10 ft, where possible. Where lot lines, walls, slopes or other physical barriers prohibit 6 inches of fall within 10 feet, the slope away from the structure shall be a minimum of 5% until a parallel swale is provided and slopes away from the structure at a minimum slope of 2% to the discharge point.
    c. Grading Plan must establish positive drainage to a collection point.
    d. Provide swales, as needed, to drain property to the right of way or dedicated drainage easement.
    e. No standing water shall remain, unless planned low areas such as bio-retention swales, rain gardens, etc, are planned for and properly designed, including underdrains as necessary.

2. *Account for driveway/sidewalk slope.*
    a. Show actual or relative final elevations at the gutter, back of sidewalk, at the property corners, driveway, the proposed FFE, swales, and identify Temporary Bench Mark, if used.
        i. If no sidewalk is required and the street has a curb, grade the driveway approach and the adjacent ground to maintain a minimum of six inches elevation above the gutter at or near the right of way. This will prevent gutter flow from the street from entering the site.
        ii. If a sidewalk is required, establish the back of sidewalk elevation above existing curb by adding the width of greenspace (6ft typ), sidewalk (5ft), and 1 ft beyond at 2%, then slope site to drain. (max 3:1)
        iii. For either situation above, if the lot is lower than the roadway, grade driveway to divert runoff away from garage. Minimum slope away from garage should be 4% for at least 8 ft, which results in a 4 inch drop, then divert to either side and away from house.

3. *Establish the minimum FFE (finished floor elevation).*
    a. The minimum FFE shall be at least 12 inches above the highest elevation of the bottom of swales, within 10 ft of structure.
    b. The minimum FFE shall be at least 6 inches above the adjacent final grade.
    c. Generally the FFE shall extend at least 18 inches above the elevation of the street gutter (when draining to the street), inlet on site, an approved drainage structure, or point at which the drainage leaves the site.
    d. Alternate elevations are permitted subject to the approval of the building official, provided it can be demonstrated that the required drainage to the point of discharge and away from the structure is provided at locations on site, and standard methods are not feasible.