

BERNALILLO COUNTY GRADING & DRAINAGE PLAN CHECK LIST

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CHAPTER 38 "FLOODS"

1. Engineer's certification that the site has been personally inspected and no grading, filling, or excavation has occurred since the preparation of the topography shown on the plan.
2. Is access to the subject site gained from a maintained or non-maintained **Bernalillo County** road? If the road is not maintained by **Bernalillo County**, a certification from the owner is required acknowledging that fact.
3. A vicinity map indicating the location of the site relative to well-known streets or landmarks should be indicated on the grading and drainage plan. **Typical vicinity maps are from the Bernalillo County Zone Atlas pages.**
4. A **FEMA** floodplain map should be provided on the grading and drainage plan, which indicates the relationship of the subject site to any **FEMA** floodplains in the vicinity. The elevation of the floodplain should be given at the most critical point to the subject site. Include a citation for the map which includes the full panel number and effective date.
5. The septic tank, leach field, and well location should be shown on the grading and drainage plan when applicable. Septic systems shall be placed out of concentrated flow areas or the erosion setback (ESB).
6. If there is fencing proposed for the subject site, then the fencing shall not impede or disturb any offsite runoff. Three inches (3") above finish grade is adequate for sheet flows, but an analysis should be performed for concentrated flows to determine the minimum distance the fence must be above finish grade in order to not impede or disturb offsite flows. Walls must allow cross-lot drainage as determined by the **Bernalillo County Drainage Engineer**.
7. Hydrology: Must be calculated in accordance with **Section 22.2** of the **DPM (City of Albuquerque Development Process Manual)**
 - a. Offsite Flows – If there is a potential for offsite flows to impact the subject site, then they must be fully addressed. These include:
 - i. An adequate map (1"=500' or better. **If 1"=500' is not available contact the Bernalillo County Drainage Engineer for options**) with surrounding topography of the subject site should be provided in order to fully address all contributing and adjacent offsite flows. This map should include the basin delineation of all contributing offsite flows to the subject site.

- ii. In quantifying offsite flows, all basins should be considered “fully” developed. **Table A-5** in the **DPM** should be used in computing the appropriate impervious area percentage (%D). Appropriate allowances should be given to the remaining three land treatments (A, B, & C).
 - iii. Location(s) of where the offsite flows enter the subject site should be indicated on the grading and drainage plan.
 - iv. An allowance for sediment should be included for all substantial offsite flows. The range is typically from 12-15% of the peak flow rate and volume. For developed flows use a 3-5% bulking factor.
 - v. An erosion setback analysis should be performed for all watercourses which could potentially damage any structures on the subject property. See **Sediment and Erosion Design Guide 1994** at **AMAFCA** or ESB calculations.
 - vi. The potential for watercourses to leave their watershed and jump into a contributing offsite watershed (avulsions) to the subject site should be thoroughly examined.
 - b. Onsite Flows – must be addressed in accordance with **DPM, Section 22.2 (1993)**.
 - i. An adequate map (1”=50’ or better) with property lines, existing structures, proposed structures, basin limits and drainage infrastructure prepared by a **Professional Surveyor** licensed to practice in the State of New Mexico. Indicate flows for each basin on the plan.
 - ii. Show the limits of erosion protection.
 - iii. Provide a summary table for all drainage infrastructure including dimensions, slope, design discharge, etc.
 - iv. **Contact the Bernalillo County Drainage Engineer for discharge allowance requirements for specific areas and zoning.**
- 8. Flows greater than 30 cfs will require an easement to **AMAFCA** or **Bernalillo County**. All **FEMA** floodplains require an easement to **AMAFCA** or **Bernalillo County**.
- 9. Development in **FEMA** flood zones must meet the minimum requirements indicated in **Chapter 38** of the **Bernalillo County Code**. For residential construction in Zone A, a detailed analysis is required to determine the Base Flood Elevation, and any residential structures must be elevated one (1) foot above this Base Flood Elevation. For residential construction in an AO zone with a flood depth specified, structures must be elevated one (1) foot plus the flood depth measured from the Highest Adjacent Grade. For residential construction within an AH or AE zone with an established Base Flood Elevation, residential structures must be elevated one (1) foot above the base flood elevation and either a **LOMR** based on Fill or a standard **LOMR** application must be submitted to **FEMA** to document the flood zone changes. For commercial construction in flood zones, structures must be elevated as indicted above but without the 1-foot freeboard requirement. Additionally, commercial

structures may be flood-proofed to the BFE rather than elevated with the certification of a registered engineer competent in flood-proofing methods.

10. Hydraulics – Calculations for culverts, channels, ponds, etc.
11. Details for channels, culverts, ponds, rip rap structures, etc.
12. Erosion protection for areas where erosion is a potential (culvert outlets, channels, etc.).
13. Development involving land disturbance equal to or greater than one acre requires a **Storm Water Pollution Prevention Plan (SWPPP)** in accordance with **EPA NPDES Phase II Regulations**. An acceptable **SWPPP** and certification that a **NOI** has been submitted to the **EPA** are required prior to any development. Disturbance of areas larger than $\frac{3}{4}$ acre require an **Air Quality, Fugitive Dust Permit** from the **City of Albuquerque Environmental Health Department**.
14. A **Drainage Covenant**, completed, notarized (owner's signature), and recorded with the **Bernalillo County Clerk** is required for the pond or drainage system.
15. A letter indicating the acceptance of any free discharge indicated on the plans to the governing entity (**COA, NMDOT**, etc.).
16. **Grading and Paving Permits** are required for areas over 1000 square feet.
17. Intent to perform rainwater harvesting and any associated infrastructure must be called out on the plan. Only rooftop harvesting is allowed as per the **New Mexico State Engineer's Office**. Vegetated detention ponds may qualify for rainwater harvesting credit.
18. Construction of a stormwater quality pond is recommended for all sites; however, it may not be required for all sites. Contact the **DR Review Engineer** regarding this matter.
19. Area **Review Engineer** contact information: **AMAFCA** – Lynn Mazur 884-1511, **City of Albuquerque Hydrology** – Rudy Rael 924-3977, **Bernalillo County** – Don Briggs 848-1511.