



The following information is applicable for all single family residential developments not covered by an approved subdivision grading and drainage plan on file with the City of Phoenix Development Services Department, (200 W. Washington, 2nd Floor, Phoenix, Arizona, 85003). For additional information, contact 602-262-7811.

This publication can be made available in alternate formats (Braille, large print, computer diskette, or audiotape) upon request. Contact the Development Services Department at (602) 262-7811 (voice) or (602) 534-5500 (TTY).

A. Retention & Applicability Requirements:

On-Lot retention for single family lots was adopted by the grading and drainage ordinance in 1972 (Section 32A-24 of the City Code). Retention shall be determined based on the recorded subdivision plat date or *project acreage as follows:

Subdivision Plat Date	Retention Volume
1971 or earlier	Exempt from on-lot retention
1971-June 1988	0.0859 x Lot area = retention volume in cubic feet (c.f.) (Based on 10-year storm)
July 1988-Feb 2004	0.1343 x Lot area = retention volume in cubic feet (c.f.) (Based on 100-year storm)
March 2004-Present and lot area	Retention is a function of the land use runoff coefficient, rainfall in inches area. V = 0.225xCxA V: Volume C: Run-off Coefficient A: Lot area

* Section 32A-24 of the City Code exempts all developments less than 1/2-acre from on-lot retention.

B. How to Calculate On-Lot Retention Requirements

**City Of Phoenix Storm Water Policies & Standards
Table 6.2.2.**

Land Use	Run-Off Coefficient (C)
RE-35	0.55
R1-18	0.60
R1-10	0.65
R1-8	0.70
R1-6	0.75
R-2	0.80
R-3	0.80
R-3A	0.85
R-4	0.85
R-5	0.85
Undeveloped Desert	0.45
Agricultural Areas	0.20
Graveled Surfaces	0.85
Lawns	0.30
Parking Lots	0.95

Example:

Zoning: R1-8
Net area: 8,000 square feet

1971 or earlier	Exempt from on-lot retention
1971-June 1988	$0.0859 \times 8,000 = 687.20$ cubic feet (c.f.)
July 1988-March 2004	$0.1343 \times 8,000 = 1,074.40$ cubic feet (c.f.)
March 2004-Present	$s0.225 \times 0.70 \times 8,000 = 1,260.00$ cubic feet (c.f.)

C. How to Show On-Lot Retention on a Site Plan

After determining the retention volume requirement, show the retention basin(s) location, drawn to scale, on the site plan. Retention details must include the outfall and bottom elevations, the berm side slope, high water and bottom surface area, basin volume and complete retention calculations. Refer to “Residential-Single Family Plot Plan/Grading Plan Checklist” for additional information.

D. Key Facts for On-Lot Retention

On-lot retention information is found in the “The Code of the City of Phoenix Arizona” section 32A-24 and “City of Phoenix Storm Water Policies and Standards Manual” section 6.0

- Retention basin volume must be adequate to retain the runoff from a 100-year 2-hour storm.
- Retention is required if the lot was created by plat or lot split after 1971.
- Retention is required for all lots greater than ½-acre.
- The required retention must be located on private property.
- Once storm water storage basins are filled the outfall must be directed to a public right of way, public accessway or public drainage easement. In all other cases the minimum calculated retention volume must be increased by 25%.
- When the designed retention basin depth is greater than 1-foot (12-inches) a geotechnical report and percolation test is required.
- All retained storm water must evaporate or percolate within 36-hours, without exception.
- The maximum side slope for all residential retention basins is 4:1.
- The maximum depth of any retention basin located within 10-feet of the right-of –way is limited to 18-inches.
- The maximum depth of any retention basin located within 20-feet of the right-of –way is limited to 24-inches.
- Berms shall not be located closer than 2-feet from the back of sidewalk or 2-feet from the curb, where the sidewalk is detached from the curb.
- Berms shall not be higher than 2-1/2 feet above the top of sidewalk or curb.
- Berms shall have a minimum top width of 2-feet with an overflow area (emergency spillway) cut into the berm.
- Retention basin sides, edges, or top of slopes shall be of irregular geometry.
- The minimum finish floor elevation must be at least 12-inches above the high water elevation of all retention basins.

This document should be used in conjunction with the Residential Single Family/Single Lot Grading & Drainage Guidelines and submitted to the Development Services Department, 2nd Floor, City Hall, with appropriate fees. Contact Development Services Department, 602-262-7811, for the correct fee.