Tolleson
Development Services

City of Tolleson Stormwater Drainage Requirement Checklist

Development: _____

Developer: _____ Proj Mgr: _____

Engineer/Architect: _____ Proj Mgr: _____

Date Submitted: _____ Dev Serv Log #: _____

Reviewed By: _____ Date: _____

REGULATORY REFERENCE	DESIGN/PLAN CRITERIA	
§ 12-1-130	STORMWATER DRAINAGE REQUIREMENTS; PURPOSE. (A) The relatively flat topography and lack of defined drainage patterns within the city necessitates special attention for controlling stormwater collection and retention. Regulatory controls and measures are identified in this chapter to minimize stormwater problems and to ensure that developments in the city are not subject to flooding,nor will they contribute to the flooding potential of properties both upstream and downstream, during construction and after full development has occurred. (B) It is not the intent of these requirements to abrogate sound engineering judgment, but to establish some design guidelines and criteria. In general, unless modified herein, the design criteria and calculations shall be as specified in the "Drainage Design Manual for Maricopa County, Arizona, Volume I, Hydrology, 4th Edition", "Drainage Design Manual for Maricopa County, Arizona, Volume II, Hydraulics", and "Drainage Design Manual for Maricopa County, Arizona, Volume Ill, Erosion Control, 2nd Edition."	
§ 12-1-131	CONCEPTUAL DRAINAGE PLAN: A conceptual stormwater collection and retention plan shall be submitted with a preliminary plat or site development plan and must be approved prior to the approval of such plat or plan. In the design of the development, every effort shall be made to utilize the natural slope of the land for the stormwater collection system. Subsurface drainage systems shall be discouraged wherever possible. The plan shall include, but not be limited to, the following: (A) Method of collection (surface and/or subsurface). (B) Depth, side slopes and area of retention. (C) Calculations of volume held and required. (D) Highwater elevation and invert of pipes. (F) Method of disposal of water within 36-hours. (G) Any other data to form a complete plan.	
§ 12-1-132	SUBDIVISION AND PARCEL REQUIREMENTS. (A) All water which falls within the parcel to be developed, including the respective one-half of all streets adjacent to the parcel,for a 100-year storm of six-hour duration (approximately two and six-tenths inches) as established by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) Atlas 14, must be retained within the boundaries of the parcel. The method of collection and retention shall be approved by the City Engineer. The method of retention calculation and drainage flows shall conform to § 12-1-134. (B) Two or more developers may join together to provide a common retention facility. A letter of agreement signed by all developers participating in the common retention facility must be approved by the city and the recorded plat shall indicate that the retention area is a joint facility. In the case of single-user developments, the letter of agreement will be recorded as an encumbrance against all participating parcels. The joint retention area must meet all criteria as a single area.	

REGULATORY REFERENCE	DESIGN/PLAN CRITERIA	
	(C) All retention basins shall have a design capacity to preclude a water depth in excess of three feet resulting from a ten-year, six-hour duration storm rainfall of approximately one and seven-tenths inches. The depth of retention basins shall be measured from the nearest adjacent top of curb. Side slopes shall be hinged to conform to the following slope/depth ratios:	
	Basic Depth — Maximum Side Slope First 3 feet — 4:1 From 3 feet to 6 feet — 8:1 From 6 feet to 9 feet — 10:1 Basin depth greater than 6 feet subject to city approval	
	(D) Retention volumes in excess of a ten-year, six-hour duration storm may be retained in areas other than the retention basin, such as paved parking areas, with the permission of the city. Where allowed,the maximum depth ponding on parking lots shall be eight inches. The maximum water depth allowed in any retention basin resultingfrom a 100-year, six-hour duration storm shall be four feet.	
	(E) In no event shall stormwater stand in the retention basins longer than 36 hours. Where possible, basins may be drained by pumping or controlled gravity flow into existing storm drainage lines or irrigation ditches when approved by the controlling agency. With the permission of the city,the right-of-way area from one foot in back of sidewalk may be used for the retention basin.	
	(F) Retention basins shall not encroach upon public or private utility easements.	
	(G) All retention basins that will be controlled by the city shall be improved by the developer per city guidelines for retention basin development and installed prior to the city's acceptance of the retention. The landscape plan shall be submitted with the engineering plans. Retention basins,when not privately maintained, shall be dedicated to the city infee title as stormwater retention basins or drainage rights-of- way. In the case where private retention basins receive water other than that which falls upon the property and adjacent streets and/or alleys, the areas shall be designated as easement areas for retention purposes and shall have a recorded restrictive covenant requiring perpetual maintenance.	
	(H) On-lot retention is permissible in single-family residential developments providing that the lots contain not less than 18,000 square feet and are fully irrigated. The lot shall be depressed to contain the indicated design storm, includingthat of street runoff.	
	(I) Curbed streets shall be designed and constructed to carry the stormwater runoff from a ten-year storm between curbs. When peak flows from the design storm exceed the street capacity,a subsurface storm drainage system shall be provided to convey the excess stormwater. Local and secondary collector streets serving one-acre or larger lots designed for on-lot retention may be constructed with a ribbon curb. Local streets, serving lots of 18,000 square feet to one (1) acre in size designed for on-lot retention, may be designed with 18-inch curb depressions at each lot to permit street runoff to flow into the depressed lots.	
	(J) Peak flows from a 100-year storm shall be carried within the limits of public right-of-way or a dedicated drainage easement. The finished floor elevation of all buildings shall be a minimum of 14 inches above the 100-year floodplain elevation or the emergency outlet elevation, whichever is greater.	
§ 12-1-2	FFE "on the new construction will be a minimum of 12 inches above grade as defined by the International Building Code."	

Project: _____

By: _____ Date: _____

REGULATORY REFERENCE	DESIGN/PLAN CRITERIA	
§ 12-1-133	**NON-SUBDIVISION DEVELOPMENTS.**	
	(A) All stormwater from a 100-year storm of six-hour duration (approximately two and six-tenths inches) as established by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) Atlas 14,shall be retained on-site. All stormwater within the right-of-way adjacent to the site shall be retained within the site unless other means of disposal of the water (i.e.,storm drain, irrigation ditch, or drainage-way) is designed and constructed to convey that water.	
	(B) A maximum of 50% of the required retention can be held upon asphalt, concrete or other hard surface with permission of the city. When allowed, the maximum depth of ponding on such hard surfaces shall not exceed 12 inches.	
	(C) The city shall not be responsible for the design, performance, operation or maintenance of the retention basin.	
	(D) The retention basin shall conform to § 12-1-132 and calculations and drainage flows shall conform to.§. 12-1-134.	
	(E) The property owner of a single lot zoned Rl-10 or smaller will be excluded from the requirements to provide on-site retention.	
§ 12-1-134	**RETENTION CALCULATIONS AND DRAINAGE FLOWS.**	
	(A) Retention calculations shall be submitted as follows: V = (D/12) AC A = Area (square feet or acres) V = Volume required to be retained (cubic feet or acre-feet) D = 100-year, six-hour rainfall (inches) C = Runoff factor for tributary areas*	

(*Initial planning only, final drainage design will utilize "C" values based on weighted averages or City Engineer approval.)

General:		
Pavement (asphalt, concrete, brick, etc.)	0.95	
Roofs	0.95	
Grass lawn (average slope 0 - 7%)	0.20	
Grass lawn (steep 7%)	0.35	
Desert lawn or rock lawn	0.70	
Farmland 0.1O		
Bare ground (vacant lots)	0.25	
Undeveloped desert	0.40	
Commercial,Industrial Area	0.80	
Residential Area	0.65	
Multi-Unit Area:		
Townhouses, mobile home parks	0.75	
Apartments	0.75	

(B) The point or points in which natural drainage flows from a property prior to development shall remain the same after the property has been altered for the development.	
(C) Drywells or exfiltration trenches are required in the City of Tolleson to drain surface retention areas. A 50% clogging factor shall be applied to the percolation rate used in computing dry up times.	