



# City of Bastrop, Texas

## Preliminary Drainage Plan Checklist

Planning Department • 1311 Chestnut Street • 512-332-8840

APPLICANT:		OFFICIAL USE ONLY	
Included in Submittal	Bastrop Ordinance 2019-36 – Stormwater Drainage Design Manual – Appendix B requires:	Meets Standard	Does Not Meet Standard
	For a standard plat, this sheet shall be submitted with the preliminary plat and shall be at the same scale as the preliminary plat. For a minor plat, this sheet shall be submitted with the final plat. The preliminary drainage site plan should consist of maps, narrative, and supporting design calculations (hydrologic and hydraulic) for the proposed stormwater management system. The scale of supplementary plans, profiles and cross-sections shall be sufficient to clearly show details, if required to demonstrate the adequacy of existing or proposed facilities. The Preliminary Drainage Plan shall include the following sections:		
	1. Existing Conditions Hydrologic Analysis. Provide an existing condition hydrologic analysis for stormwater runoff rates, volumes, and velocities which includes:		
	1a. Existing conditions data developed in the conceptual drainage site plan;		
	1b. All existing stormwater conveyances and structural control facilities;		
	1c. Direction of flow and exits from the site;		
	1d. Analysis of runoff provided by off-site areas upstream of the project site;		
	1e. Methodologies, assumptions, site parameters and supporting design calculations used in analyzing the existing conditions site hydrology.		
	2. Project Description and Design Considerations. Provide an updated description of the project and the considerations and factors affecting the design approach that have changed between the conceptual and preliminary plans, including:		
	2a. A description of the overall project and the site plan showing facility locations, roadways, etc.;		
	2b. A discussion of the applicable local criteria and how it will be integrated into the design of the project;		
	2c. Evaluate the integrated and low impact design site design practices and their applicability to this site;		
	2d. A discussion of any credits for integrated site design being requested;		
	2g. Identify hotspot land uses, if applicable, and how runoff will be addressed.		
	3. Post-Development Hydrologic Analysis. Provide a post-development hydrologic analysis for stormwater runoff rates, volumes, and velocities, which includes:		
	3a. A topographic map of developed site conditions (minimum one-foot (1') contour interval recommended) with post development basin boundaries indicated;		
	3b. Total area of post development impervious surfaces and other land cover areas for each sub-basin affected by the project;		
	3c. Runoff calculation for flood control and streambank protection for each sub-basin.		
	3d. Location and boundaries of proposed natural feature protection and conservation areas;		
	3e. Methodologies, assumptions, site parameters and supporting design calculations used in analyzing the post-development conditions site hydrology;		
	3f. Supporting documentation that there is existing streambank protection/reinforcement or that the planned development will provide streambank protection downstream;		
	3g. Supporting calculations for a downstream peak flow analysis to show safe passage of post-development design flows downstream. Document point downstream at which analysis ends, and how it was determined.		
	3h. Where a lot is located adjacent to a major drainage course or overflow channel, such that a part of all of the lot lies within the regulatory 100-year flood boundary, the drainage plan shall show proposed building sites and elevations required to put finish floor a minimum of one foot (2') above the 100-year flood level of drainage course		

		or overflow channel as stipulated in the City of Bastrop's Flood Damage Prevention Regulations, as periodically amended.		
		In calculating runoff volumes and discharge rates, consideration may need to be given to any planned future upstream land use changes. Depending on the site characteristics and given local design criteria, upstream lands may need to be modeled as "existing conditions" of "projected buildout/future condition" when sizing and designing on-site conveyances and stormwater controls.		
	4.	Stormwater Management System Design. Provide drawings and design calculations for the proposed stormwater management system, including:		
	4a.	A drawing or sketch of the stormwater management system including the location of nonstructural site design features and the placement of existing and proposed structural stormwater controls. This drawing should show design water surface elevations, storage volumes available from zero to maximum head, location of inlets and outlets, location of bypass and discharge systems, and all orifice/restrictor sizes;		
	4b.	Narrative describing that appropriate and effective structural stormwater controls have been selected;		
	4c.	Cross-section and profile drawings and design details for each of the structural stormwater controls in the system. This should include supporting calculations to show that the facility is designed to the applicable design criteria;		
	4d.	Hydrologic and hydraulic analysis of the stormwater management system for all applicable design storms (should include stage-storage or outlet rating curves, and inflow and outflow hydrographs);		
	4e.	Drawings, design calculations and elevations for all existing and proposed stormwater conveyance elements including stormwater drains, pipes, culverts, catch basins, channels, swales and areas of overland flow.		
	5.	Plans shall show storm (flood) water routing and all drainage structures with sizes of culverts, retarding and retaining structures, drainage easements with course and distance of centerline and boundaries, lot lines, street layout, proposed inlets, culverts, roadside swales, channel sections and slopes, bridges, channel improvements, levees, or berms, fills necessary to elevate land above flood levels, and remove same from the flood area.		
	6.	The limits of the 100-year frequency storm watershed area shall be shown for all water ways, including overflow of structures and related backwater effects. Storm water runoff resulting from a design storm of 100-year frequency shall be contained within the available right-of-way and/or drainage easement. All drainage facilities must be designed for a capacity to safely contain storm water from a design storm of 25-year frequency and sufficient right-of-way and drainage easements to accommodate the 100-year frequency.		
	7.	The drainage plan shall be prepared by a Licensed Professional Engineer of the State of Texas, whose seal and signature shall appear on the plan.		
	8.	Engineering drainage report to support all drainage designs shall be submitted to the City. Computations shall be complete and orderly and shall clearly state all assumptions and design basis.		
	9.	Profiles, cross-sections, or substantiating data may be required at the City's request as necessary to support flood levels and backwater analysis.		