project number

to be completed by city

DRAINAGE PLAN APPLICATION - PART 2 CHECKLIST

PROJECT: _____

ADDRESS: _____

This form is the second part of a three part application. Part 1 is the Application and Part 3 is the Invoice.

This sheet is part of the checklist utilized in the Substantial Submittal Review and the Detailed Review.

1. TOPOGRAPHIC & SOILS MAP

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Soils are to be identified. If SCS is utilized identify hydrologic classification.				
b	Contour intervals shall be 1' when slopes are less than 4%. If greater than 4% utilize 2' contours.				
c	Location of streams and other flood water runoff channels. Identify 100 year flood/ runoff elevations.				
d	Normal shoreline of lakes, ponds, swamps, detention basins and their flood plains. Include lines of inflow and outflow.				
e	Location of regulated drains, farm drains, inlets and outfalls if any of record.				
f	Storm, sanitary, and combined sewers and outfalls, if any of record.				
g	Septic tank systems and outlets if any of record.				
h	Seeps, springs, flowing and other wells, that are visible or of record.				

2. PRELIMINARY DRAINAGE PLAN

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Extent and area of each watershed affecting the design of the retention/detention facilities.				
b	Preliminary layout and design of proposed storm sewers and outlet locations. Show receiving stream/channel.				
c	Design of proposed street system including depressed pavements used to convey or temporarily store over flow from heavier storms.				
d	Locations, cross sections, and waterway openings and the basis for design (calculations) of culverts and bridges. (storm sewers)				
e	Materials, elevations, waterway openings and basis for design (calculations) of culverts and bridges. (storm sewers)				
f	Existing ponds and basins to be maintained, enlarged or altered and new ponds or basins to be constructed and the basis for their design (calculations).				
g	The estimated depth and the amount of storage required in the new ponds or basins. (calculations showing water elevations)				
h	The estimated location and amount of imperious surface to be constructed.				
i	Any interim plan which is to be incorporated into the development pending completion of the final drainage plan.				

3. VALLEY CROSS SECTION

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Typical cross-sections of existing and proposed channels. Identify 100 year runoff/ flood levels.				

4. SITE PLAN

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Site plan is drawn to scale and identifies site improvements and drainage facilities.				

5. FINAL DRAINAGE PLANS

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Extent and area of each watershed affecting the design of the retention/detention facilities.				
b	Design of storm sewers and outlet locations. Show receiving stream/channels.				
c	Design of proposed street system including depressed pavements used to convey or temporarily store over flow from heavier storms.				
d	Existing streams and floodplains to be maintained and new channels to be constructed. Location, cross section, and profiles.				
e	Proposed culverts and bridges to be built. Their materials, elevations, waterway openings and basis for design.				
f	Existing storage basins and ponds to be maintained, enlarged of otherwise altered.				
g	The estimated location and amount of imperious surface to be constructed.				
h	Slope, type and size of all sewers and other waterways.				
i	Plot or tabulation of storage volumes corresponding with water surface elevations. A tabulation of outflow rates.				

6. REPORT

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Description of the proposed development.				
b	Current land use conditions				
c	Method of hydraulic and hydrologic analysis used and any special assumptions of special conditions.				
d	Results of the Analysis. (Basis for design calculations)				
e	Recommended drainage control facilities.				

7. PERMISSION TO CONNECT TO LEGAL DRAIN

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Written permission from the County Surveyor must be obtained to outlet into a legal drain. (This includes any work in the legal drain easement.)				

8. STORM WATER RETENTION CALCULATIONS

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Retention utilized per drainage ordinance.				
b	Retention requirements waived:				
c	Retention storage requirements calculated. Required storage calculations and proposed pond volumes *(to hold the 100 year - 24 hour storm)*				
d	Proper Retention Storage provided. With 6% oversize				

9. STORM WATER DETENTION CALCULATIONS

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Outlet at a 10 year release rate or less *(confirm with City Engineering)*				
b	Orifice calculations included.				
c	Detention storage requirements calculated. Required storage calculations and proposed pond volumes. pond				
d	Proper Detention Storage Provided. With 6% oversize				

10. STORM WATER CONVEYANCE

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Flow and velocity of runoff calculated in pipe system and open channels				
b	Grade elevations set to drain into inlets: MH rim elevations set				
c	MH invert elevations calculated and set				
d	Accounted for all site runoff				
e	Proper outlet and channel protection				

11. DESIGN VALUES

		UNIT	VALUE
a	Site Size (the size of the site may include multiple parcels)	ACRE	
b	number of watersheds on the site	#	
	Complete the below information for each watershed:		
c	Existing watershed area	SQFT	
d	Existing watershed impervious area	SQFT	
e	Existing watershed runoff coefficient	----	
f	10 year runoff rate	CFS	
g	City allowable runoff (may be less than the 10 year runoff rate because of downstream restrictions)	CFS	
h	Final watershed area	SQFT	
h	Final watershed impervious area	SQFT	
h	Final watershed runoff coefficient- 100 year storm (*Note apply mark-up 125%)*	CFS	
i	Final outlet/orifice size	INCHES	
j	Watershed volume of detention (*Note apply mark-up 106%)*	CFT	

12. ITEMIZED DRAINAGE FINANCIAL GUARANTEE

		YES	N/A	PAGE #	SECTION-PARAGRAPH
a	Provide an Itemized list of Financial Guarantee				

The Itemized Financial Guarantees shall be a list of Drainage elements such as structures, convanance system, detention / retention basins, etc. Indicating the amount to be installed; unit price; total cost for each item; and total cost for the project. Cost for closeout as-built drawings measurement and preparation shall be included.