Griffin Residence Residential Rebuild of existing structure with 500 sq ft of concrete patio to be demolished to make way for a 418 sq ft addition and 228 sq ft covered patio.

All footings, foundation walls, and floor joices are existing original construction. The addition is new from the ground up. There are a few top plates, bottom plates and wall studs that are original and the rest of the wood was replaced. The concrete driveway, utility yard and walk way on the side of the house are all existing.

The total amount of new non pervious surfaces added due to construction is 146 sq ft. This will produce 9 cu ft additional water runoff over the original non pervious materials.

To meet the requirements of **SECTION 5706. SOURCE CONTROL FOR NEW DEVELOPMENT**

(2) In developing an Urban Runoff Mitigation Plan, an applicant shall infiltrate, or

adequately treat, the projected runoff for the new development by an amount equal to,

or greater than, the volume of runoff produced by either a 0.75” total storm event, or

a continuing 0.2” per hour storm event.

Griffin lot 9600 Sq Ft

9600\* .75” /12= 600 cu ft of infiltration

I propose to use the following sections of the source control BMP’s to adequately satisfy this requirement:

(3) Structural and design elements that typically increase infiltration, reduce pollutant conveyance, and decrease runoff include:

a. Using green strips, sand filters, swales**, infiltration basins**, bio-filters, and planters to maximize infiltration;

c. **Directing** impervious surface runoff to permeable areas;

d. **Grading** the site to encourage runoff to permeable areas;

g. Using cisterns or **retention basins** to store precipitation; and

I will contour the front, side, and rear yards to create retention basins capable of holding a minimum of 600 cu ft of runoff. I had a soil sample taken (copy included below) and, as I am sure you are aware, our house is built on loamy sand with rapid drainage. I will install rain gutters and downspouts as shown on the drawing and will direct this flow to the permeable grassy areas as appropriate. I will attempt to make these changes in a manner that will allow the water from the rear retention basin to cascade to the side yard and the side yard to cascade to the front yard which will then overflow into the street in the highly unlikely event that all three basins were to fill to capacity and over flow.

Due to the extreme irregularity of the catch basin geometry it is impractical to calculate the volume without the aid of a computer.

I have used a professional engineering 3d design package (SolidWorks) to model the 3 catch basins. I have provided detailed drawings depicting the catch basins with dimensions. I have also included the mass properties calculated by SolidWorks showing the volume of each basin.

 I have also created scaled FDM models of the lot and house showing these basins. I can provide these for your inspection shall you desire.

**Below is a summary of these volumes:**

Mass properties of Griffin residence retention basins

Volume of catch basin calculated by SolidWorks Office Premium

Front yard catch basin volume 163.74 Cubic Feet or 1224.86 Gallons

Side yard catch basin volume 369.79 Cubic Feet or 2766.22 Gallons

Back yard catch basin volume 453.33 Cubic Feet or 3391.14 Gallons

Total Capacity: 986.86 Cubic Feet or 4892.22 gallons

The basins will be created by redistributing the soil in the rear and side yards to create the basins. This will not require removing any soil from the area and will be very cost effective. The front yard will need to have the soil removed to create the basin to maintain the level grade of the surrounding area.

**Soil sample summary:**

Mr. Griffin,

Enclosed is a summary of the soil material described at your property. Thank you for access to your property for collection of soils data to be used in the National Cooperative Soil Survey program and Los Angeles County Soil Survey.

Depth CMField Texture-USDASandClayKsat in/hrASTM soil type-UNIFIED

0-7Sandy loam6572-6SM

7-50Loamy sand8066-20SM

50-95Loamy sand8566-20SM

95-130Sand9046-20SP

130-200Sand9526-20SP

Ksat values range with bulk density and % clay (<http://www.ca.nrcs.usda.gov/intranet/techres/mlra02/guides/properties/sathydcond.html>

<http://soils.usda.gov/technical/handbook/contents/part618ex.html#ex9>)

Site info: 7803 Puritan St., Downey, CA 90242

 Slope- 0-2%

Aspect- 110 to 135

Drainage Class- Somewhat excessively drained

Permeability- Rapid