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**Benjamin R. Boggs ASLA**  
**Landscape Architect**



Clotfelter-Samokar, PSC  
Architecture | Interiors | Landscapes | Planning  
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Subject: Garrard County Board of Education Storm Water Management Study and Development of Detention and Discharge System.

Mr. Boggs:

Two things are key to keeping our client the Garrard County Board of Education from losing a lawsuit. One, the discharge rate (Cubic Feet per second) from the water shed we are developing in cannot increase for the standard storms which are the 2-year, 25-year, 50-year, and 100-year frequency of occurrence storms. Two, we cannot change the total acreages of the natural water sheds. For example, if three acres of the Board property around the Bus Garage drained west and under US 27 to a stream, we could not redirect that water and take it east to the stream along Crab Orchard Road. These two ideas are quite simple but when significant grade change occurs, and substantial amounts of impervious pavements are placed, the task can be very difficult to achieve while spending a reasonable amount of money.

The Site Grading Plan and the Planning Storm Water Management need to work simultaneously, with effective communication between the designers. It is possible that areas requiring fill under everything except buildings (especially on jobs that require borrow materials be brought in) could be utilized as detention structures. Another concept is to detain storm water that enters the subject property and detain this water to offset the increased discharge rates from the developed areas.

I think the initial study of the site to determine the number of water sheds, discharge types (point source discharge, or sheet flow), and discharge locations will take 20 hours at \$125.00 per hour for a total of **\$2500.00**.

Work on the storm drainage infrastructure and routing of storm water will depend on the number of iterations of the site design and site grading plan. Calculations to determine the volume of storm water to be detained will depend on the number and location of Rooftops and Parking Areas and any other impervious surfaces. I would

project 48 hours by a PE at \$125.00 per hours to work with the site design engineer to route storm water and design detention basins. Total Cost of this activity **\$6000.00**

If AGE is going to do the storm structures, detail sheets of the storm structures and create the plan and profile drawing of the storm pipe sections and calculate the size and slope on ditches and swells, I would plan on 40 hours at \$75 per hour for the CAD Technician and 10 hours of PE time at \$125 per hour. Total Cost **\$4250.00**

We appreciate the opportunity to propose work on this project.

Douglas G Gooch PE, PLS  
Owner  
AGE Engineering Services, Inc.

