



**BALZER**  
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September 1, 2020

Kafi Howard  
Town of Blacksburg  
400 South Main Street  
Blacksburg, Virginia 24060

RE: 1820 N. Main Street  
Conditional Use Permit  
B&A Project #: 24200017.00  
**Energy Balance Variance Request**

Dear Kafi,

As discussed during a phone call on Monday, August 10, we are submitting a variance request for the energy balance requirement at 1820 N. Main Street. The reasons we feel this variance is necessary are listed below:

1. The existing condition of the site is primarily a grass/woods combination, providing a very low runoff volume during the 1-year storm of 0.048 acre-feet.
2. The post-development runoff volume for the 1-year storm is calculated to be 0.46 acre-feet. Once the energy balance formula has been calculated, the allowable 1-year peak flow at the Point of Analysis in order to meet energy balance requirements is 3.49 cfs.
3. Approximately half of the drainage area flowing to the Point of Analysis is offsite, creating flows that won't be controlled by the proposed onsite stormwater management. The 1-year peak flow at the Point of Analysis from only the offsite runoff is 3.46 cfs.

The proposed underground detention facility controls the 1-year storm with a 3" flow control valve, reducing the 1-year flow out of the system as much as possible while minimizing the risk of clogs or other maintenance issues within the outlet structure. With this valve in place, the peak flow rate at the Point of Analysis during the 1-year storm is 3.56 cfs, therefore while the energy balance requirement is not being met, the peak flow during the 1-year storm has been reduced when compared to the pre-development rate.

If you need further information, please feel free to contact me.

Sincerely,

**BALZER AND ASSOCIATES**

Steven M. Semones  
Executive Vice President