

August 26, 2024

Harold Harpe, 745 Georgetown Rd, Paris KY 40361
Modeling Analysis and Assessment for Proposed Development

Abbie Jones Consulting has completed an analysis assessing the hydrologic and hydraulic effects of the proposed development mentioned above for review by local authorities. The 12.2-acre site is located on Georgetown Road in the Licking River watershed. As illustrated in our construction plans, our site, which includes a gravel pad addition and a single new storage building, will have a new detention pond which outlets directly into the Licking River. Figure 1 illustrates the site and existing detention areas on site. Additional runoff from this development is directed into the newly proposed detention pond, and the existing detention areas will not receive any additional runoff.



Red = Approx. Site Area
Blue = Existing Detention

Figure 1 – Project Site Analysis Area

**ANALYSIS OF
DETENTION POND**

HydroCAD® was used to analyze the 12.2-acre site

for current and proposed runoff. Paris rainfall data for the 10-yr 24hr, 25-yr 24hr, and 100-yr 24hr storms were used for this analysis. A detention pond with a multi-stage outlet has been designed to control the additional runoff contributed from the proposed storage yard and mini-storage building. Table 1 summarizes the results of the site analysis. The pre-development and post-development watersheds used in this analysis are detailed in the exhibits attached to this report.

Design storm	10yr – 24hr	25yr – 24hr	100yr – 24hr
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Pre-development peak flow (cfs)	2.25	3.02	4.19
Post-development peak flow (cfs)	1.99	2.35	2.94
Peak storage volume (cf)	3,120	2,012	1,351
Peak storage depth (ft)	0.99	1.22	1.51
Peak storage freeboard (ft)	1.76	1.53	1.24

Note: Results in table reflect data provided at outlet of proposed detention pond.

Table 1 – Summary of Site Analysis

CONCLUSION

Based upon the analysis results, the proposed outflow is not greater than the existing runoff for the analysis area. Therefore, the proposed detention pond is fully capable of handling the additional flow from the proposed development for all necessary rainfall events. Extra freeboard is provided for potential additional storage needs from future development.

Please feel free to contact me directly with any questions you have regarding this analysis.



Abbie Jones, PE, PLS
President

Attached: Pre-development site plan
Post-development site plan