

project. The detention facility is designed to capture most of the site runoff and to mitigate increases in peak discharge from the site.

The detention facility will contain a 15" outlet pipe with an orifice plate containing a 10" orifice set at the bottom of the detention basin and an additional 10" orifice set 6" higher than the top of the bottom orifice. Additional information will be provided for the outlet design with the final stormwater drainage study. ????

It should be noted that this detention basin/structure will consist of a (4) sided 6' tall retaining wall with (1) opening on the northern side to allow for ease of maintenance and an overflow path. Due to site constraints with existing utilities/etc. this was the only available location to fit a sufficient basin.

Tables 6 includes hydrologic summaries of the proposed detention facilities for the 10- and 100-year storm events, respectively.

Table 6. Proposed Conditions Detention Flow

Drainage Area	Storm Event	Runoff Q (cfs) (Rational)	Runoff Q (cfs) (SCS)
Proposed A (On-site)	10-YR	2.728	7.052
	100-YR	5.665	10.66

4.4 Effects of Proposed Detention

The tables above compare the results of the proposed conditions analysis with the detention described above to the existing conditions from Section 3 at the points of interest.

As shown in Table 6, with the addition of detention facility, peak discharges at Drainage Area A will be at or below the allowable release rates for the 10-year and 100-year storm.

5. SUMMARY

This stormwater drainage study was prepared to evaluate the hydrologic impact generated by the Car Wash project and to provide recommendations for a comprehensive stormwater management plan. The project is a proposed car wash on approximately 1.29 acres.

6. CONCLUSIONS AND RECOMMENDATIONS

This proposed stormwater management plan was designed to achieve compliance with current design criteria in effect for the City of Lee's Summit, Missouri.

The results of the analysis demonstrate that the future stormwater management plan for the project will achieve compliance with design criteria. We therefore request approval of this Preliminary Stormwater Drainage Study. This approval is conditional and should be substantiated with each plat of the project.