## STORMWATER NARRATIVE - U-HAUL LEE'S SUMMIT

A stormwater management report was prepared in conjunction with site plans to facilitate construction of a new U-Haul moving and storage facility located at 710 SE Blue Parkway in Lee's Summit, Missouri. Development of the 4.11-acre site will accommodate construction of a multi-story Self-Storage Building and a U-Box Building, parking lot, and stormwater system, along with all other related site work. Stormwater will be directed via onsite storm sewer to the proposed underground detention system basin prior to outletting into the existing public storm sewer along the northeast edge of the property. The project involves the City of Lee's Summit stormwater regulations, which references Section 5600 of the Kansas City Metropolitan Chapter of the American Public Works Association Standard Specifications & Design Criteria.

The allowable release rate for the site was calculated using the sites 4.11 acres in Table 4.1. Table 4.2 below summarizes the results of the stormwater model by comparing the stormwater runoff rates of the pre-development conditions to the proposed conditions for each design rainfall event, including the peak elevation of the underground detention basin.

## Table 4.1 Lee's Summit Required Detention Release Rates

RAINFALL EVENT	REQUIRED DETENTION RELEASE RATE EQUATION (CFS)	REQUIRED DETENTION RELEASE RATE USING 4.11-ACRES (CFS)
1-YR, (1.37")	40 HOUR RELEASE	TBD
2-YR, (3.71")	0.50 CFS/ACRE	0.5 CFS/ACRE x 4.11 ACRES = 2.05
10-YR, (5.67")	2.0 CFS/ACRE	2.0 CFS/ACRE x 4.11 ACRES = 8.22
100-YR, (9.24")	3.0 CFS/ACRE	3.0 CFS/ACRE x 4.11 ACRES = 12.33

## **Table 4.2 Site Runoff Calculations**

	CONDITIONS			
RAINFALL EVENT	PRE-DEVELOPMENT PEAK FLOW (CFS)	ALLOWABLE RELEASE RATE FLOW (CFS)	PROPOSED PEAK FLOW (CFS)	ELEVATION
1-YR, 24-HR Storm (1.37")	0.15	TBD	0.15	978.57
2-YR, 24-HR Storm (3.71")	5.17	2.05	1.91	980.49
10-YR, 24-HR Storm (5.67")	11.20	8.22	3.88	981.76
100-YR, 24-HR Storm (9.24")	23.22	12.33	12.02	984.24

Reviewing all the flows above, it can be concluded that the developed site releases well below the sites pre-developed runoff rate and are also below the sites required release rates. The overall impact to the neighboring properties and downstream storm sewer network has been greatly considered during the design of this stormwater management system, which is displayed above.

Sincerely,

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