

Dunkin – Douglas St & Victoria Dr



Preliminary Storm Drainage Memorandum
For Dunkin at
Douglas St and Victoria Dr

May 23, 2024

Prepared For: **Bluemont Group, LLC**
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Kimley»Horn

DRAINAGE MEMORANDUMMay 23rd, 2024**SUBJECT:**

Lot 5, Block 2 of Douglas Square Center
 Lee's Summit, MO 64086
 Jackson County, MO
 Missouri Uniform Parcel Number:
 52-910-15-01-00-0-00-000

PROJECT AREA: 1.51 acres

INTRODUCTION:

This drainage memorandum (memo) provides a summary of the existing and proposed conditions, related to the development of a drive through restaurant located on the corner of Douglas St and Victoria Dr in Lee's Summit, Jackson County, Missouri. The existing site is a parking lot with some landscaping islands.

EXISTING CONDITIONS:

The site is currently zoned as CP-2, Planned General Business District, and it is understood that rezoning will not be required. The existing area breakdowns for the site are as follows:

	Existing	
Parameter	Area (sf)	Area (ac)
Impervious Area	36,260	0.83
Pervious Area	29,658	0.68
Total	65,918	1.51

Currently, runoff from the site is collected by two curb inlets located on the south side of the site. All runoff is captured by inlets and discharges into a 48" pipe serving as detention for the site. This detention pipe is an unknown length and has a 12" overflow pipe that slows the discharge before dumping into the city system. Additional verification will need to be done to locate the existing pipe and confirm its size and length.

PROPOSED CONDITIONS:

The proposed area breakdowns for the proposed site are as follows:

	Proposed	
Parameter	Area (sf)	Area (ac)
Impervious Area	33,727	0.77
Pervious Area	32,191	0.74
Total	65,919	1.51

The site will continue to collect stormwater in the existing curb inlets on the south side of the site. The existing detention pipe will be removed as the proposed building sits on top of its assumed location. This pipe discharges out of a 12" overflow pipe. Because of these findings, it is assumed that detention will be required once further investigation into the site is completed.

DIFFERENCE:

	Change	
Parameter	Area (sf)	Area (ac)
Impervious Area	-2,533	-0.06
Pervious Area	+2,533	+0.06

Following the APWA 5600 design criteria, the existing site has an approximate composite runoff coefficient of 0.63. The proposed site has an approximate composite runoff coefficient of 0.61. The decrease in runoff coefficient is due to the proposed decrease in overall impervious area of the site.

CLOSURE

The site discussed located in Lee's Summit, Missouri is being proposed for a drive-through restaurant development. The stormwater from the proposed site will be captured by the existing private storm system before being released into the public storm system at the southwest corner of the site.

The proposed improvements will result in a decrease in impervious area but due to the existing pipe overflowing from design calculations, detention for this site may be necessary. Further evaluation of the existing conditions needs to be done to understand what the current system is providing before a suitable design can be completed.

Any questions or concerns that may arise can be addressed by Andrew Gribble at 816-652-2333 or Andrew.Gribble@Kimley-Horn.com.

KIMLEY-HORN AND ASSOCIATES, INC.

A handwritten signature in blue ink that reads "A W Gribble IV". The signature is written in a cursive, flowing style.

Andrew Gribble, P.E