LEE'S SUMMIT
MISSOURI

DESIGN & CONSTRUCTION MANUAL
DESIGN CRITERIA MODIFICATION REQUEST

PROJECT NAME: 100 NE Douglas

ADDRESS: 100 NE Douglas Lee's Summit, MO 64063

PERMIT NUMBER: TBD

OWNER'S NAME: David W. Thompson & Kasey L. Thompson

TO: Deputy Director of Public Works / City Engineer

In accordance with the City of Lee's Summit's Design and Construction Manual (DCM), I wish to apply for a modification to one or more provisions of the code as I feel that the spirit and intent of the DCM is observed and the public health, welfare and safety are assured. The following articulates my request for your review and action. (NOTE: Cite specific code sections, justification and all appropriate supporting documents.)
We are requesting a waiver of Stormwater Detention and Retention Allowable Release Rates for the 2, 10 and 100-year storms as identified in KC Metro APWA Section 5608.4.C.1. Comprehensive Control. An onsite attenuation system is being proposed to reduce proposed peak discharge rates below existing peak discharge rates for all regulatory design storms. However, due to the size, geometry and topography of the drainage sub-basin allowable peak discharge rates will not be met at the POI for any of the regulatory design storms. See attachment A for additional information which supports the requested waiver. The proposed infiltration basin will help improve overall water quality in the drainage sub-basin.

SUBMITTED BY:

NAME: Engineering Solutions ( ) OWNER (X) OWNER'S AGENT
ADDRESS: 50 SE 30th Street PHONE #: 816-623-9888
CITY, STATE, ZIP: Lee's Summit, MO 64082
Email: mschlicht@es-kc.com SIGNATURE:

SUE PYLES, P.E.
DEVELOPMENT ENGINEERING MANAGER ( ) APPROVAL ( ) DENIAL
SIGNATURE: DATE:

JEFF THORN, P.E.
DEPUTY DIRECTOR OF WATER UTILITIES ( ) APPROVED ( ) DENIAL
SIGNATURE: DATE:

GEORGE M. BINGER III, P.E.
DEPUTY DIRECTOR OF PUBLIC WORKS / CITY ENGINEER ( ) APPROVED ( ) DENIAL
SIGNATURE: DATE:

COMMENTS:

Attachment A

The Table below provides a comparison of peak discharge data between Proposed, Existing and Allowable Conditions for Sub-basin A.

Point of Interest Peak Discharge Comparison

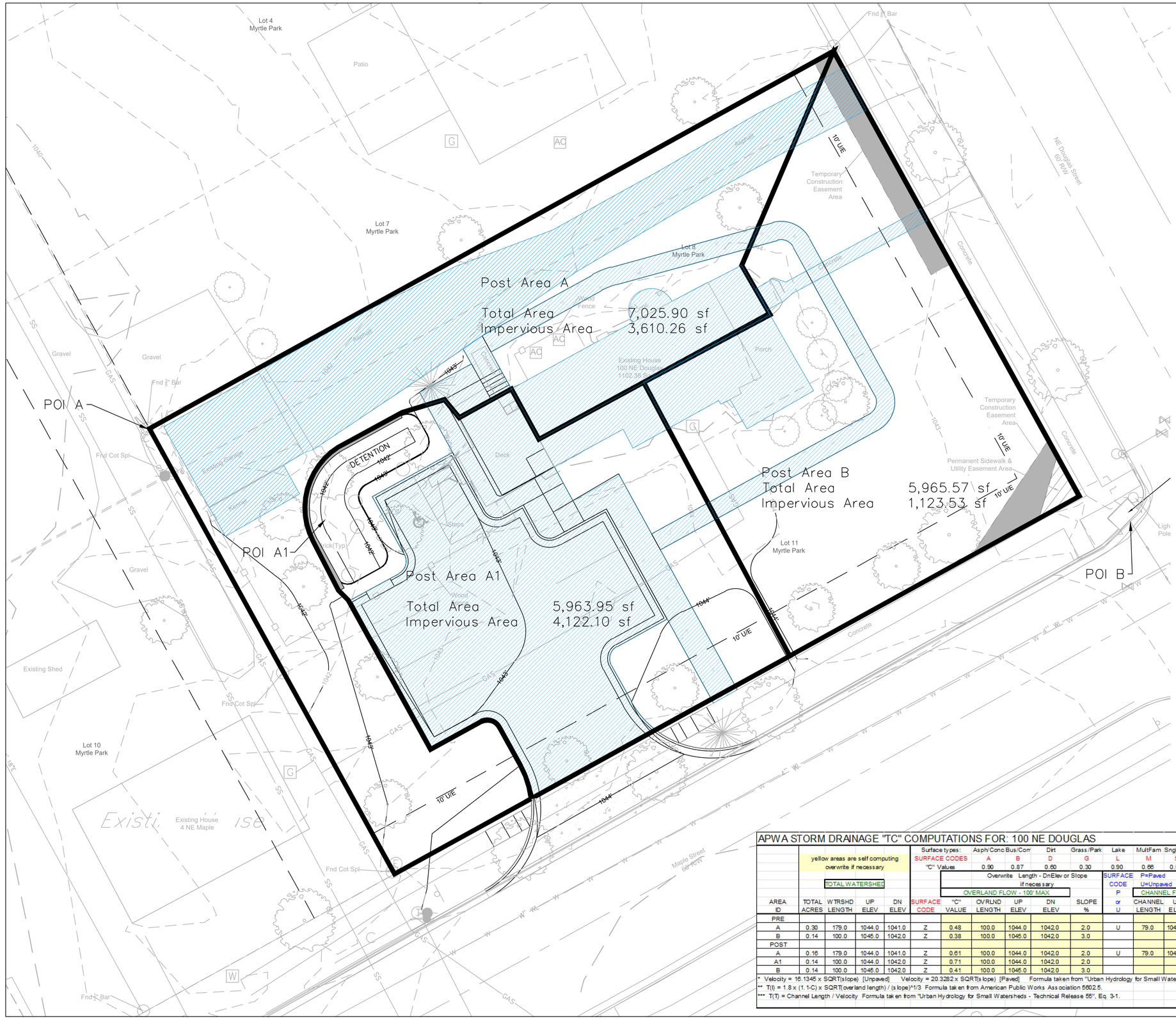
POI	Condition	Q2 (cfs)	Q10 (cfs)	Q100 (cfs)
A	Proposed	0.43	0.64	0.96
	Existing	0.60	0.88	1.33
	Difference	-0.17	-0.24	-0.37
	Allowable	0.15	0.60	0.90
	Difference	0.28	0.04	0.06

Peak discharge rates at POI A consisting of the Combined POI A Hydrograph (Sub-basin A + A1) will be reduced below Existing for all regulatory design storms. However, Allowable Peak Discharge Rates will not be met based on the sub-basin size, geometry and topography. It is not practical to convey runoff from certain parts of the unimproved tributary area to the infiltration basin.

The majority of the proposed improvements will be constructed in Sub-basin A1 where runoff traditionally drains via overland flow to the west property boundary. No concentrated flows will be released directly to any of the adjacent neighboring properties. The infiltration basin will release excess flows via a 50 lineal foot broad crested weir. Discharge will be released in a northwesterly direction via the proposed 90-degree weir helping minimize any potential impacts to surrounding properties. A consecutive 100-year storm would have a peak discharge of approximately 1.05 cfs across the 50' broad crested weir equating to 0.04' of depth at 0.52 fps.

The infiltration basin is designed to hold the 100-year storm volume. Infiltration was not figured in the reduction of proposed peak discharge rates but is being employed to provide water quality benefits. The infiltration basin design allows for any excess water not drained to percolate underground through clean rock into the surrounding soil minimizing if not eliminating any vector nuisances.

See Proposed Drainage Map attached on next Sheet.



North

0 5' 10' 20'

POST DEVELOPMENT DRAINAGE PLAN

SCALE: 1" = 10'

APWA STORM DRAINAGE "TC" COMPUTATIONS FOR: 100 NE DOUGLAS

	yellow areas are self computing overwrite if necessary				Surface types:	Asph/Conc	Bus/Com	Dirt	Grass/Park	Lake	MultFam	SnglFam	Undev	Other									
					SURFACE CODES	A	B	D	G	L	M	S	U	Z									
					"C" Values	0.90	0.87	0.60	0.30	0.90	0.66	0.51	0.3										
	TOTAL WATERSHED				Overwrite if necessary	Length - DnElev or Slope if necessary				SURFACE CODE P or U	P=Paved U=Unpaved	Overwrite Slope or Elevations if necessary			TC COMPUTATION								
					OVERLAND FLOW - 100' MAX						CHANNEL FLOW - FIRST REACH												
AREA ID	TOTAL ACRES	WTRSHD LENGTH	UP ELEV	DN ELEV	SURFACE CODE	"C" VALUE	OVRLND LENGTH	UP ELEV	DN ELEV	SLOPE %	CHANNEL LENGTH	UP ELEV	DN ELEV	SLOPE %	VELOCITY F/S	Cal Overland Flow T(i)	Used Min 5 Max 15 T(i)	Cal Channel One T(T)	Cal Channel Two T(T)	Total T@ 10	AREA ID
PRE																					PRE
A	0.30	179.0	1044.0	1041.0	Z	0.48	100.0	1044.0	1042.0	2.0	U	79.0	1042.0	1041.0	1.27	1.8	8.9	8.9	0.7	0.0	9.6	A
B	0.14	100.0	1045.0	1042.0	Z	0.38	100.0	1045.0	1042.0	3.0							9.0	9.0	0.0	0.0	9.0	B
POST																						
A	0.16	179.0	1044.0	1041.0	Z	0.61	100.0	1044.0	1042.0	2.0	U	79.0	1042.0	1041.0	1.27	1.8	7.0	7.0	0.7	0.0	7.7	A
A1	0.14	100.0	1044.0	1042.0	Z	0.71	100.0	1044.0	1042.0	2.0							5.6	5.6	0.0	0.0	5.6	A1
B	0.14	100.0	1045.0	1042.0	Z	0.41	100.0	1045.0	1042.0	3.0							8.6	8.6	0.0	0.0	8.6	B

* Velocity = 16.1345 x SQRT(slope) [Unpaved] Velocity = 20.3282 x SQRT(slope) [Paved] Formula taken from "Urban Hydrology for Small Watersheds - Technical Release 55", Appendix F, Figure 3-1.

** T(i) = 1.8 x (1.1-C) x SQRT(overland length) / (slope)^1/3 Formula taken from American Public Works Association 5602.5.

*** T(T) = Channel Length / Velocity Formula taken from "Urban Hydrology for Small Watersheds - Technical Release 55", Eq. 3-1.

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P:(816) 623-9888 F:(816)623-9849

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

100 NE DOUGLAS STREET
Lee's Summit, Jackson County, Missouri

Project: 100 NE DOUGLAS LSMO
Issue Date: June 24, 2025

Post Development
Final Development Plans for:
100 NE DOUGLAS STREET
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS

REV. 12/18/2025

REV. 1/15/2026

REV. 1/30/2026