



# LEE'S SUMMIT MISSOURI

## DESIGN AND CONSTRUCTION MANUAL DESIGN MODIFICATION REQUEST

PROJECT NAME: StorageMart 156

PREMISE ADDRESS: 3924 & 3930 SW Raintree Drive

PERMIT NUMBER: \_\_\_\_\_

OWNER'S NAME: New TKG-StorageMart Partners Portfolio, LLC

TO: The City Engineer

In accordance with the Lee's Summit Design and Construction Manual (DCM) Section 1002.A, I wish to apply for a modification to one or more specification (s). The following articulates my request for your review and action. (NOTE: Cite specific code sections and engineering justification and drawings.)  
Design modification request for APWA Section 5608.4.C-1a & b. Release rates for the 50%, 10% & 1% peak discharge and the 40-hour extended detention from water quality storm event (1.37"/24-hour rainfall). Due to site constraints this site will exceed the allowable release rates for the 50%, 10% and 1% peak discharges. The peak discharges for the 50%, 10% and 1% will be reduced from existing condition. Please refer to Stormwater Report for StorageMart 156 dated 11/22/2019 for calculations. Per MARC Manual Section 8.10.5 the minimum diameter for an orifice is 1 inch. With a 1 inch diameter orifice the outlet structure the detention basin will drain in approximately 37 hours instead of the required 40 hour detainment requirement per APWA Section 5608.4.Cb. Refer to said Stormwater Report & FDP for StorageMart 156 dated 11/22/2019.

SUBMITTED BY:

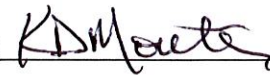
NAME: Tim Crockett ( ) OWNER (x) OWNER'S AGENT

ADDRESS: 1000 W Nifong Blvd., Bldg. 1 Tel.# 573-447-0292


CITY, STATE, ZIP: Columbia, MO 65203

Email: tim@crockettengineering.com SIGNATURE: 

FORWARDING MANAGER: Kent Monter RECOMMENDATION ☒ APPROVAL ( ) DENIAL

SIGNATURE:  DATE: 3 Jan 2020

GEORGE BINGER III, P.E. – CITY ENGINEER: ☒ APPROVED ( ) DENIED

SIGNATURE:  DATE: 3/1/2020

COMMENTS \_\_\_\_\_

Development Services

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**A COPY MUST BE ATTACHED TO THE APPROVED PLANS**

The table below shows the reduction from the Predeveloped to the Combined Post Developed runoff:

Allowable  
0.64  
2.54  
3.81

	Pre Dev. (1.27 ac.) (cfs)	Combined Post Dev. (cfs) *	Reduction (cfs)
Frequency			
2-year	2.03	1.40	0.63
10-year	4.18	3.67	0.51
100-year	7.76	6.09	1.67

\* Values from  
hydrograph  
summary  
report

## 5. Conclusions and Recommendations

The proposed StorageMart facility development has been evaluated and this report shows that the post development stormwater runoff is lower than the predeveloped condition. The new detention facility will release stormwater at a rate that meets the APWA 5600 stormwater requirements. However, due to site constraints the combined stormwater runoff for the site will exceed the APWA 5600 release rate requirements. The areas not being detained consists mainly grass areas that cannot be routed to the detention facility due to site grades. With the post development condition being less than the predeveloped condition this development will have no impact on downstream properties.

### Requested Waivers:

Due to site constraints it is requested that the combined allowable stormwater discharge to exceed the APWA 5600 allowable release rate. The majority of the proposed impervious area will be routed through the detention facility with the exception of 0.10 acres of pavement located north of the building and as depicted on the proposed condition drainage area map (Appendix A2). There will be 0.09 acres of exiting pavement area that will be routed through the detention facility that was previously not being detained. Both these area go to the same watershed therefore by almost treating the equivalent area there will be little to no increase in impervious areas that are not routed through the detention facility. Also, the grass areas located along the east side of the proposed building and south side of the detention facility cannot be detained due to site grades. Due to these areas not being able to be detained by the proposed detention facility the post developed runoff for the entire site exceeds the APWA 5600 release rates. As shown in the tables above the detention facility release rate does meet these requirements and the post developed condition does not exceed the predeveloped condition runoff rates.

For the detention facility the detention outlet structure is required to have a minimum orifice size of 1" diameter. For water quality a 40 hour detainment is required. The detention facility cannot meet both of these requirements. A waiver for a slight reduction to the 40 hour detainment is being requested. This will allow for a 1" orifice to drain the pond in approximately 37 hours.





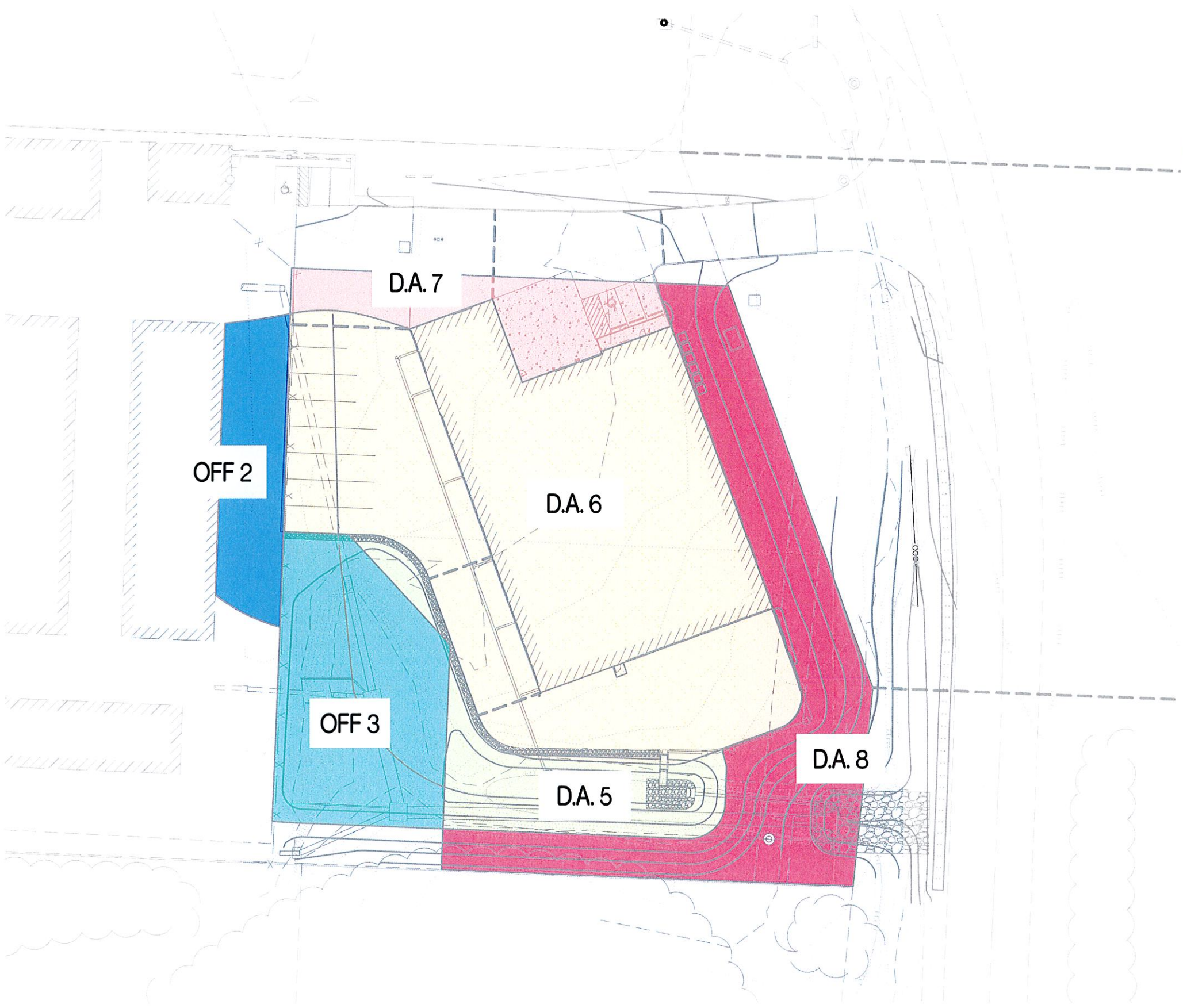


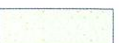




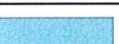
# APPENDIX A2

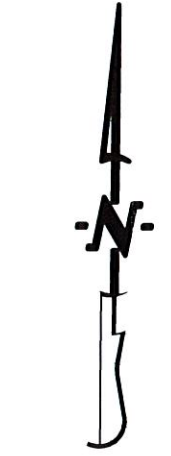
## STORAGE MART

### HWY 291, LEE'S SUMMIT, MO

#### PROPOSED CONDITION DRAINAGE AREA MAP



SUMMARY TABLE				
LEGEND	SUBBASIN	DRAINAGE AREA (ACRES)	CURVE NUMBER	TC (MIN.)
	DA 5	0.12	80	13.5
	DA 6	0.76	98	5
	DA 7	0.10	98	5
	DA 8	0.29	80	5
	OFF 2	0.09	98	5
	OFF 3	0.21	80	13.8



SCALE: 1"= 50'

SITE/CIVIL ENGINEER:

**CROCKETT**

ENGINEERING CONSULTANTS  
 1000 W. Nifong Blvd., Bldg. 1  
 Columbia, Missouri 65203  
 (573) 447-0292

www.crockettengineering.com

Crockett Engineering Consultants, LLC  
 Missouri Certificate of Authority  
 #2000151301







