Appendix C – Parking Lot LID

- LID Map
- Parking Lot LID Calculations

PROJECT NAME: CALV Expansion

CALC'D BY: JE CHECKED BY: AA

DATE: 9/4/24 KH No. 192468000

PARKING LOT DATA CALCULATIONS

Note: Stormwater Quality Design Volume calculated using steps from Section 1500 Figures 1501-1503 of the CCRFCD HCDDM, Revised 2013

GIVEN:

Project Description:			CALV Expansion	
Parking Lot Data			Acreage	
Property Size (PS)		=	1.37	
Building Area (BA)		=	0.00	
Total Pervious Area (TPA)		=	0.14	
Parking Lot Area (PLA) = (PLA = PS-BA-TPA)		=	1.23	
Minimum PLA to be treated = (PLA * 0.75)		=	0.92	acres
Area to be treated by the proposed LID BMPs				
	Drainage Area 1	=	0.84	
	Drainage Area 2	=	0.25	
	Total	=	1.09	acres

Since 1.09 ac >= 0.92 ac then site satisfies Parking Lot LID criteria

PROJECT NAME: CALV Expansion
CALC'D BY: JE CHECKED BY: AA
DATE: 9/4/24 KH No. 192468000

PARKING LOT LID CALCULATIONS - Peak QBMP FOR DRAINAGE AREA "1"

Note: Stormwater Quality Design Volume calculated using steps from Section 1502.3 of the CCRFCD HCDDM, Revised 2013

GIVEN:

Project Description:	CALV Expansion		
Drainage Area	=	0.84	acres
Avg % Impervious	=	100	%

Determine BMP Design Precipitation - 85th Percentile Rainfall Depth

Is site located within McCarran Airport Rainfall Area? (Yes/No?) YES

If yes, use Table 505 to obtain 2-year 6-hour rainfall depth; this is your D2

If no, use Figure 501 to obtain 2-year 6-hour rainfall depth; this is your D2

D2 = 0.72

Compute ratio of D2 of site to D2 for the McCarran Area

$D2_{,site}/D2_{,\ McCarran}$ = 1.00

Compute 85th Percentile Rainfal depth D_{85} using following equation

D_{85} = $0.32 * D2_{,site}/D2_{,McCarran}$

= 0.32

Calculate BMP Design Peak Discharge, QBMP

Page 1 of 2 Use the following regression equation to calculate the unit discharge (Qp/A) for the 90 percent average percent impervious area condition based on D_{85} value

Y = 1.5042X - 0.0066

where, Y = Average Qp/A in cfs/ac

X = D_{85} in inches

Qp/A = 0.47 cfs/ac

Adjust the Qp/A for site based on actual percent impervious using the following regression equation

Y = 0.0059X +0.4688

where, Y = Ratio Qp/A to 90% Impervious Value (unitless)

X = Percent Impervious

Y = 1.06

Qp/A (adjusted) = 0.50 cfs/ac

QBMP = Qp/A (adjusted) * Area

= 0.42 cfs

PROJECT NAME: CALV Expansion
CALC'D BY: JE CHECKED BY: AA
DATE: 9/4/24 KH No. 192468000

PARKING LOT LID CALCULATIONS - Peak QBMP FOR DRAINAGE AREA "2"

Note: Stormwater Quality Design Volume calculated using steps from Section 1502.3 of the CCRFCD HCDDM, Revised 2013

GIVEN:

Project Description:	CALV Expansion		
Drainage Area	=	0.25	acres
Avg % Impervious	=	100	%

Determine BMP Design Precipitation - 85th Percentile Rainfall Depth

Is site located within McCarran Airport Rainfall Area? (Yes/No?) YES

If yes, use Table 505 to obtain 2-year 6-hour rainfall depth; this is your D2

If no, use Figure 501 to obtain 2-year 6-hour rainfall depth; this is your D2

D2 = 0.72

Compute ratio of D2 of site to D2 for the McCarran Area

$D2_{,site}/D2_{,McCarran}$ = 1.00

Compute 85th Percentile Rainfal depth D_{85} using following equation

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Page 1 of 2 Use the following regression equation to calculate the unit discharge (Qp/A) for the 90 percent average percent impervious area condition based on D_{85} value

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Qp/A = 0.47 cfs/ac

Adjust the Qp/A for site based on actual percent impervious using the following regression equation

Y = 0.0059X +0.4688

where, Y = Ratio Qp/A to 90% Impervious Value (unitless)

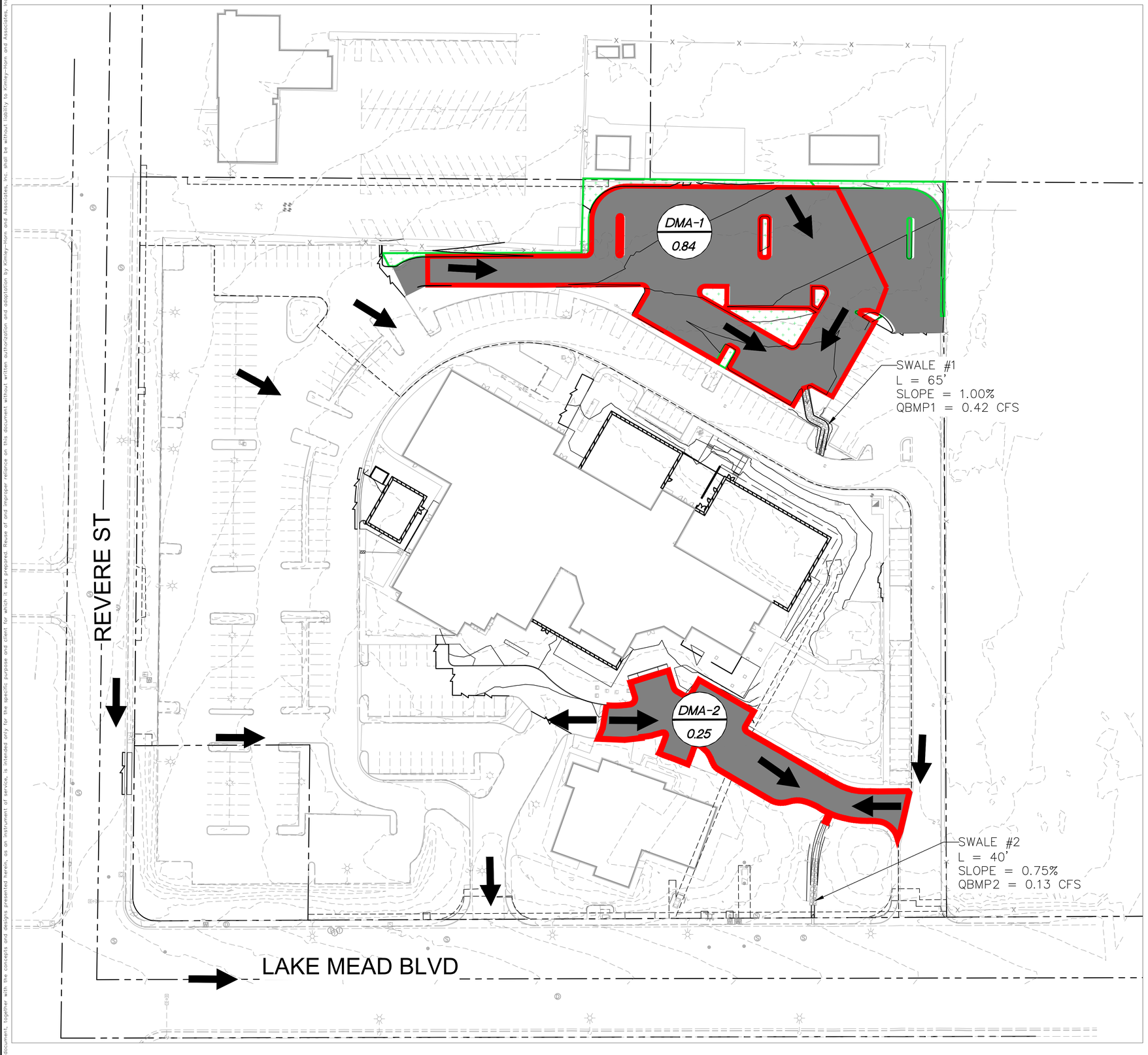
X = Percent Impervious

Y = 1.06

Qp/A (adjusted) = 0.50 cfs/ac

QBMP = Qp/A (adjusted) * Area

= 0.13 cfs



NORTH

GRAPHIC SCALE IN FEET
0 20 40 80
SCALE: 1" = 40'

LEGEND

- DMA-1 / 0.98 — DRAINAGE MANAGEMENT AREA / AREA
- ON-SITE FLOW ARROW
- TREATED IMPERVIOUS AREA
- PERVIOUS AREA

PARKING LOT DATA CALCULATIONS

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No.	REVISIONS	DATE	BY

Kimley»Horn

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9/3/2024

KHA PROJECT	192468000
DATE	9/3/2024
SCALE	AS SHOWN
DESIGNED BY	AA
DRAWN BY	JE
CHECKED BY	RRD

LID MAP

CULINARY ACADEMY OF LAS VEGAS EXPANSION
PREPARED FOR
BLOC9, LLC
CITY OF NORTH LAS VEGAS NEVADA

LID