Appendix D – Parking Lot LID

- LID Map
- Parking Lot LID Calculations

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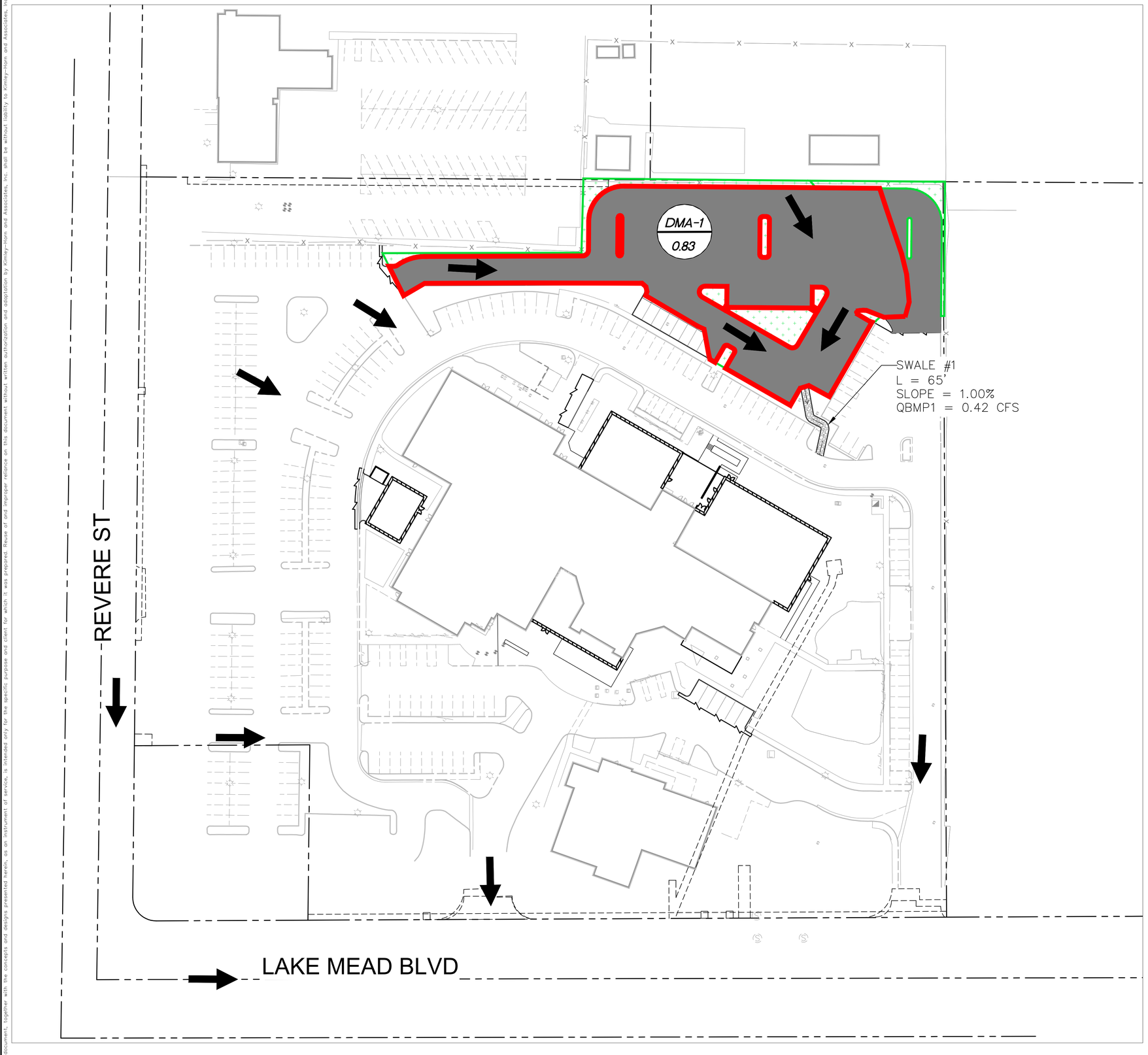

NORTH

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
- BUILDING AREA

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)	=	1.12	
Building Area (BA)	=	0.00	
Total Pervious Area (TPA)	=	0.14	
Parking Lot Area (PLA) = (PLA = PS-BA-TPA)	=	0.98	
Minimum PLA to be treated = (PLA * 0.75)	=	**0.73**	acres
Area to be treated by the proposed LID BMPs			
Drainage Area 1	=	0.83	
Total	=	**0.83**	acres

Since 0.83 ac >= 0.73 ac then site satisfies Parking Lot LID criteria

No.	REVISIONS	DATE	BY

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7/22/2024

KHA PROJECT	192468000
DATE	7/22/2024
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

PROJECT NAME: CALV Expansion

CALC'D BY: JE CHECKED BY: AA

DATE: 7/15/24 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)	=	1.12	
Building Area (BA)	=	0.00	
Total Pervious Area (TPA)	=	0.14	
Parking Lot Area (PLA) = (PLA = PS-BA-TPA)	=	0.98	
Minimum PLA to be treated = (PLA * 0.75)	=	**0.73**	acres
Area to be treated by the proposed LID BMPs			
Drainage Area 1	=	0.83	
Total	=	**0.83**	acres

Since 0.83 ac >= 0.73 ac then site satisfies Parking Lot LID criteria

PROJECT NAME: CALV Expansion
CALC'D BY: JE CHECKED BY: AA
DATE: 7/15/24 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	=	**0.83**	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

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

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

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

= **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 $\mathbf{D_{85}}$ value

Y = 1.5042**X** - 0.0066

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

X = $\mathbf{D_{85}}$ 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 = 0.0059**X** +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**