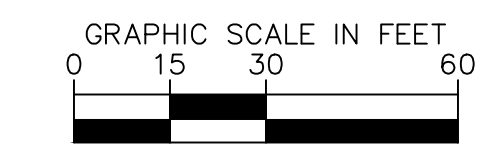
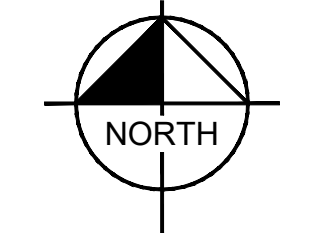
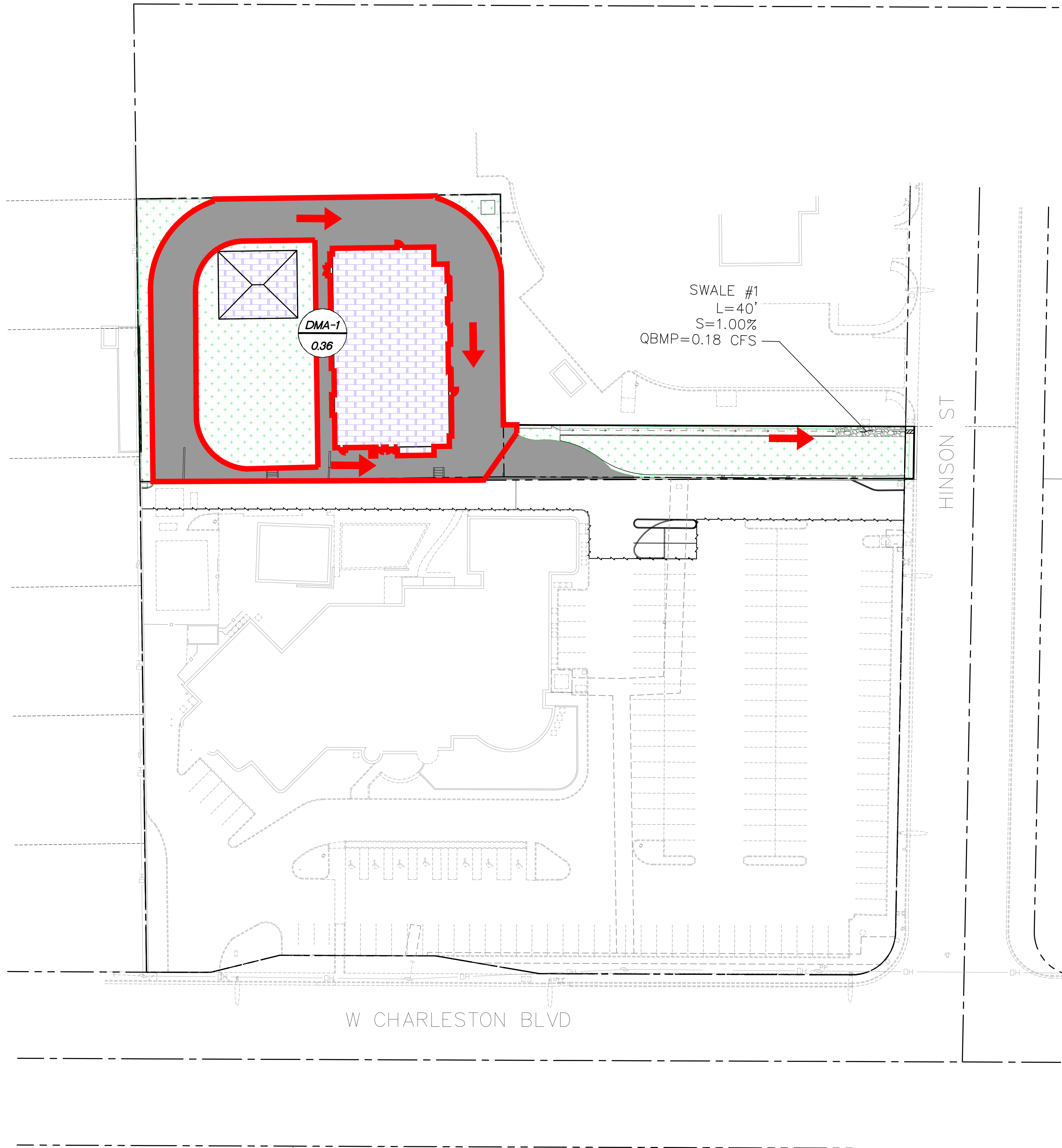



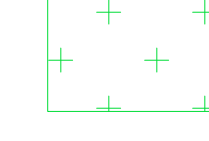
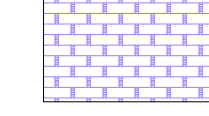


Appendix D – Parking Lot LID Calculations

- LID Parking Lot LID Map & Calculations



LEGEND

-  DRAINAGE MANAGEMENT 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:	Northwest Corner of Charleston Blvd & Hinson Street	
Parking Lot Data	Acreage	
Property Size (PS)	=	0.95
Building Area (BA)	=	0.22
Total Pervious Area (TPA)	=	0.34
Parking Lot Area (PLA) = (PS - BA - TPA)	=	0.39
Minimum PLA to be treated = (PLA * 0.75)	=	0.29 acres
Area to be treated by the proposed LID BMPs		
Drainage Management Area :	=	0.36
Total	=	0.36 acres

Since 0.36 ac >= 0.29 ac then site satisfies Parking Lot LID criteria

No.	REVISIONS	DATE	BY

Kimley-Horn

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PHONE: 702-862-3600
WWW.KIMLEY-HORN.COM

KHA PROJECT	092815003
DATE	9/7/23
SCALE	AS SHOWN
DESIGNED BY	CK
DRAWN BY	CK
CHECKED BY	DH

LID MAP

SAGE COLLEGIATE
PHASE II
PREPARED FOR
RED HOOK SAGE LLC
CITY OF LAS VEGAS NEVADA

PROJECT NAME: Sage Collegiate Expansion Phase II

CALC'D BY: CK

CHECKED BY: DH

DATE: 9/5/23

KH No. 092815003

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: Northwest Corner of Charleston Blvd & Hinson Street

Parking Lot Data		Acreage	
Property Size (PS)	=	0.95	
Building Area (BA)	=	0.22	
Total Pervious Area (TPA)	=	0.34	
Parking Lot Area (PLA) = (PS-BA-TPA)	=	0.39	
Minimum PLA to be treated = (PLA * 0.75)	=	0.29	acres
Area to be treated by the proposed LID BMPs			
Drainage Management Area 1	=	0.36	
Total	=	0.36	acres

Since 0.36 ac >= 0.29 ac then site satisfies Parking Lot LID criteria

PROJECT NAME: Sage Collegiate Expansion Phase II
 CALC'D BY: CK CHECKED BY: DH
 DATE: 9/5/23 KH No. 092815003

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: Northwest Corner of Charleston Blvd & Hinson Street
 Drainage Area = 0.36 acres
 Avg % Impervious = 98 %

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 Rainfall depth **D₈₅** using following equation

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 **D₈₅** value

$Y = 1.5042X - 0.0066$

where, **Y** = Average **Qp/A** in cfs/ac
X = **D₈₅** 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 = 1.05
Qp/A (adjusted) = 0.50 cfs/ac

QBMP = **Qp/A (adjusted) * Area**
 = **0.18 cfs**