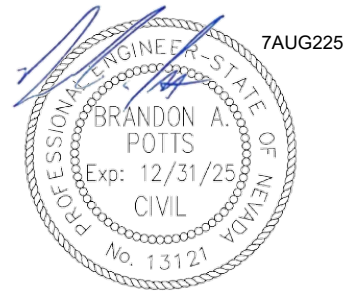


**Addendum #1 to the Technical Drainage Study Update**  
**for**  
**Commercial Center (W. Deer Springs Way)**  
**DS5874**

**August 2025**



**Prepared for:**  
**DC Building Group**  
**101 E Warm Springs Road**  
**Las Vegas, NV 89119**

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL  
**DRAINAGE STUDY INFORMATION FORM**

Name of Development: Commercial Center W. Deer Springs Way & N. Riley St (UP1ADD1) Date: August 2025

Location of Development: a) Descriptive (Cross Streets) North/South: Riley Street

East/West: Deer Springs

b) Section: 20 Township: 19S Range: 60E

c) APN : 125-20-710-006

Name of Owner: Deer Springs Land LLC; Developer: DC Building Group c/o Shawn Danoski

Telephone No.: (702)434-9991 Fax No.: \_\_\_\_\_ E-Mail Address: shawnd@buildwithdcbg.com

Address: 101 E Warm Springs Road, Las Vegas, NV 89118

Contact Person-Name: Brandon Potts Telephone No.: (702) 279-3576

\* E-Mail Address: bap@civilworksonline.com Fax No.: \_\_\_\_\_

Firm: CivilWorks, Inc.

Address: 4945 W. Patrick Lane, Las Vegas, NV 89118

Type of Land Development/Land Disturbance Process:

<input type="checkbox"/>	Rezoning	<input type="checkbox"/>	Subdivision Map	<input type="checkbox"/>	Clearing and Grading Only
<input type="checkbox"/>	Parcel Map	<input type="checkbox"/>	Planned Unit Development	<input type="checkbox"/>	Other (Please specify below)
<input type="checkbox"/>	Large Parcel Map	<input checked="" type="checkbox"/>	Building Permit	<input type="checkbox"/>	

1. Total Owned Land Area: At Site: 3.27-acres Being Developed/Disturbed: 3.27 acres

2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area?  Yes\*\*  No

3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility?  Yes\*\*  No

4. Proposed type of development (Residential, Commercial, Etc.): Commercial

5. Approximate upstream land area which drains to the subject site: 0

6. Has the site drainage been evaluated in the past?  YES  NO If yes, please identify documentation: DS3031

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Site drains southeast to Riley Street

8. Briefly describe your proposed schedule for the subject project: Single Phase (ASAP)

7AUG25

Engineer's Seal

Submit this form as part of the required drainage study to the local entity which has jurisdiction over the subject property. This form may provide sufficient information to serve as the Conceptual Drainage Study.

**\*New Required Field**

**\*\*Review and concurrence of the Clark County Regional Flood Control District is required.**

	Revision	Date
_____		
_____		
_____		

Local Entity File No. \_\_\_\_\_

REFERENCE: STANDARD FORM 1



# CITY OF LAS VEGAS

## MINIMUM DRAINAGE STUDY CRITERIA STANDARD FORM 2 CHECKLIST SUPPLEMENT

(Revised 5/18/11)

The following checklist is intended as a supplemental guide for the engineer preparing a Technical Drainage Study submittal to the City of Las Vegas. This supplement focuses on requirements specific to the City of Las Vegas. The requirements presented are in addition to the Clark County Regional Flood Control District (CCRFCD) Manual Standard Form 2. The listed items are the minimum information required prior to the City performing a review. The engineer will remain responsible to ensure the Technical Drainage Study is prepared within the guidelines as set forth in the CCRFCD Hydrologic Criteria and Drainage Design Manual (Design Manual).

An appointment must be made to preview this checklist in conjunction with CCRFCD Standard Form 2 prior to the City accepting a new drainage study for review. The engineer must contact the Flood Control Section at (702) 229-6541 to schedule a submittal appointment.

**If items are not applicable for the subject site, provide N/A.**

I. GENERAL REQUIREMENT		
Yes	No	
	N/A	A notarized letter from the adjacent property owner(s) allowing off-site grading. (A copy of the letter must be received prior to final acceptance of the drainage study.)
X		Copies of all conditions of approval for development related to this property. (e.g. zoning, use permit, tentative map, etc.) Verify compliance with conditions.
X		An electronic copy of the complete submittal is required to be submitted with one original hard copy of the study. Electronic documents should be on a universal computer-readable digital output device replicating your submittal. An Indexed Portable Document Format (PDF) or Print Ready CAD file formats with a minimum of 300dpi are the desired formats. If figures are in color, they must be scanned in color and saved as a separate file.  _____ by initial here, the engineer on record acknowledges that the electronic copy is an identical replicate of the original hard copy submitted to the City of Las Vegas.

II. GRADING PLAN INFORMATION		
Yes	No	
X		(1) 24" X 36" copy of the Grading Plan, (including all Detail Sheets) sealed by the engineer.
X		Proposed future and existing spot grades for top of curbs and street crowns at lot lines, grade breaks, and along curb returns on both sides of the street. Note: Proposed top of curb elevations must be provided for both sides of roadways even if only half street construction is required.
X		Label existing topography at a minimum 5 foot elevation interval including adjacent developments, finished floor elevations of existing buildings and top of existing curbs extending 100 feet around the perimeter of the site. (*Measured from the centerline of the adjacent roadway.)

**CITY OF LAS VEGAS MINIMUM DRAINAGE STUDY CRITERIA CHECKLIST**

II. GRADING PLAN INFORMATION		
Yes	No	
	N/A	Proposed on-site and off-site storm drains and other flood control facilities with plan and profile sheets for public storm drains showing the class of pipe, (Class III, IV, V, etc.), design hydraulic grade line, (HGL) and 100 year storm flow. A public drainage easement must be provided over on-site storm drains conveying off-site flows. An overflow path must be provided over all storm drains.
X		All existing and "to be constructed" walls with cross-sections showing wall type, (e.g. block wall, retaining wall, flood wall, etc.), with limits clearly defined, adjacent ground elevations. Wall heights must meet current ordinances and in no case exceed 14 feet above the adjacent property.
X		Street slopes for both interior and perimeter streets. Note: The minimum slope for a roadway is 0.4 percent, a minimum 18-inch storm drain must be provided where minimum slopes cannot be met.
	N/A	Back of lot elevations and lot drainage pattern for all lots including common lots.
	N/A	Sites with a grade difference two feet above or below existing ground are required to have approval from City of Las Vegas Current Planning. Current Planning approval is required prior to final approval of the drainage study.
	N/A	On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners. (The project must pass flows through the site every 600 feet where the project is blocking flow paths.)
	N/A	This project uses a solid grouted stem wall (or approved alternate) at the back of sidewalk to provide erosion protection for landscaped areas where the depth of flow in the roadway exceeds the back of walk elevation. A corresponding cross-section detail is included.
X		Commercial and Common Lot Landscape areas are not allowed to drain over the sidewalk. The grading plans show flow lines with grades and sidewalk under drains for all landscape areas draining to the public ROW.

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
X		Concrete valley gutters are required in parking lots with slopes less than 1 percent. Slopes through cul-de-sac must be at a 1 percent minimum where flow is drained through the cul-de-sac.
	N/A	Ten-foot wide public drainage easements to be privately maintained are allowed for flow less than 20 cfs. The depth of flow entering the easement must be checked using the submerged weir calculation.
	N/A	The limits of the flood zones and the base flood elevations (BFE) must be shown on all grading plans for all developments within a Special Flood Hazard Zone A, AO, AE, etc.
X		Minimum finish floor elevation is 6 inches above highest adjacent top of curb. Finish floor calculations must include allowances for super elevations on curves and velocity head for tee intersections.
	N/A	Finished floor elevations for buildings adjacent to public drainage easements must be a minimum of 18 inches above the Q100 weir of submerged weir elevation, whichever is greater.

**CITY OF LAS VEGAS MINIMUM DRAINAGE STUDY CRITERIA CHECKLIST**

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
	N/A	Lots with “B and C Type Drainage” that drain from one lot to another through a drainage easement shall be required to install an underground nuisance drainage system or a 2-foot valley gutter. 16” x 24” minimum block wall openings are required for both options.
	N/A	Bubblers are required across 80 foot and greater ROW streets. When flows exceed 10 cfs, bubblers larger than 18 inches will be required up to a maximum of 36”. Inlets must be sized to match the pipe size provided.

- Contact the Flood Control Section regarding the drainage study review fee. These fees are payable at the time of submittal.
- The Drainage Study must be conditionally approved prior to submitting improvement plans to the Civil and Planning Development of the Department of Building and Safety for review.

This document is intended as an **aid** in preparing Technical Drainage Studies for the City of Las Vegas. Each study submitted is reviewed for compliance with local and regional criteria. This form is not intended to be all-inclusive and does not limit the extent of the information, calculations or exhibits which may be necessary to properly evaluate the intended land use.

<b>CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM</b>		<b>DATE:</b> July 23, 2025
<b>TO:</b> Land Development Services Department of Community Development – Building & Safety Division		<b>FROM:</b> Stanley Fong, P.E. Flood Control Sr. Eng. Associate Department of Public Works
<b>SUBJECT:</b>	Drainage Study for:	<b>COPIES TO:</b>
	<b>Commercial Center (W. Deer Springs Way)</b>	Civil Works, Inc.
<b>Cross Streets:</b>	W Deer Springs Way & N. Riley St	DC Building Group
<b>File Number:</b>	F:\Depot\DSMemos\DS5874A.doc	Lucien Paet, P.E., DevCo
<b>Parcel Number:</b>	125-20-710-010, 125-20-710-011	
<b>Zoning Action:</b>	25-0130-SDR1	
<b>FEMA Flood Zone</b>	YES	NO <b>X</b>
<b>Proposed Storm Drain</b>	YES	NO <b>X</b>

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 <sup>st</sup> Submittal	7-9-2025	7-23-2025	See Comments Below	\$400	6312007: \$400
<b>TOTAL FEES (LDDRS):</b>				<b>\$400</b>	<b>----</b>

**REMARKS:**

**Update to previously approved DS3031 Montecito Town Center**

The Drainage Study for the subject project has been reviewed and:

	is approved subject to conformance to all City standards and the following conditions:
<b>X</b>	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Public Works Department concurrence.

1. From the reference Montecito Town Center Ultimate Drainage Condition Map, it looks like additional flow from basin ON3 will be added to Deer Springs Way. Address on the next submittal.
2. What is the 100-year depth of flow in the private drive south of the proposed site. Provide a hydraulic cross section and calculations.
3. The driveway is not humped 6 inches above 100-year depth of flow in Deer Springs Way. At flow line elevation 46.75', the top of curb elevation needs to be at least 48.41'. The high point should be provided in between the 3-ft valley gutter and the 8-ft valley gutter. Revise for the next submittal.
4. It appears that flow exiting the north curb opening (41.84TC) and the south curb opening (42.38TC) along Riley Street will go straight out the sidewalk underdrains and not be treated by the BMP swale. The minimum length of treatment is 30-ft per HCDDM 1503.4.5. Revise for the next submittal.
5. Update the Stormwater Management Notes to City of Las Vegas version.

**\*\*\* The City of Las Vegas Flood Control is standardizing the file naming of drainage studies and plans during the digitizing process. When saving the project files in the CD or thumb drive, please follow the system below:**

**If drainage study only contains one combined file, use the following naming convention in Document Title:**

**1<sup>st</sup> Submittal DS and Plans (for first and original submittal);**

**2<sup>nd</sup> Submittal DS and Plans (for second submittal (addendum #1)) etc.**

**If drainage study contains multiple files, use the following naming convention in Document Title:**

**1<sup>st</sup> Submittal DS (for the report of the drainage study)**

**1<sup>st</sup> Submittal Plan 1 (could be the drainage condition maps)**

**1<sup>st</sup> Submittal Plan 2 (could be the improvement plans) etc.**

**NOTE:** Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see <http://ndep.nv.gov/bwpc/storm01.htm> or call (775) 687-9429.

**NOTE:** Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section*. Additionally, final approval of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

**END OF REMARKS**  
SF

T/R/S: T19S/R60E/S20  
AREA G20

August 7, 2025

City of Las Vegas  
Department of Flood Control  
495 S. Main Street  
Las Vegas, NV 89101

**Subject: Addendum #1 to the Technical Drainage Study Update for Commercial Center W. Deer Springs Way & N. Riley Street – DS5874  
(Previously Approved DS3031 aka Montecito Town Center)**

This Addendum #1 to the Technical Drainage Study Update will serve to address the following plan review comments received on July 23, 2025:

**Comment 1: From the reference Montecito Town Center Ultimate Drainage Condition Map, it looks like additional flow from basin ON3 will be added to Deer Springs Way. Address on the next submittal.**

Response 1: A revised FlowMaster model has been provided to use the flow value of 145 cfs which is represented as CP8 on the Montecito Town Center Ultimate Drainage Condition Map which takes into account runoff from basin ON3 entering Deer Springs Way and being conveyed via surface flow.

Street Section	Q100 (cfs)	D100 (ft)	V100 (fps)
Deer Springs	145	0.70	5.96

**Comment 2: What is the 100-year depth of flow in the private drive south of the proposed site. Provide a hydraulic cross section and calculations.**

Response 2: The depth of flow in the private drive south of the proposed site is 0.50'. The finished floor elevations are set greater than twice the depth of flow in the private drive.

FlowMaster Section	Impacting Basin	*Prorated Q100 (cfs)	D100 (ft)	V100 (fps)
Private Drive South	ON5	12.5	0.50	1.63

\*Prorated flow impacting area equates to approximately 14% of overall ON5 basin area.

**Comment 3: The driveway is not humped 6 inches above the 100-year depth of flow in Deer Springs Way. At flow line elevation 46.75', the top of curb elevation needs to be at least 48.41'. The high point should be provided in between the 3-ft valley gutter and the 8-ft valley gutter. Revise for the next submittal.**

Response 3: The high point at the driveway has been revised to be at least 48.41' in order to meet the minimum driveway freeboard requirements.

**Comment 4: It appears that flow exiting the north curb opening (41.84TC) and the south curb opening (42.38TC) along Riley Street will go straight out the sidewalk underdrains and not be treated by the BMP swale. The minimum length of treatment is 30-ft per HCDDM 1503.4.5. Revise for the next submittal.**

Response 4: The onsite low points and curb openings have been revised to allow flows that enter the BMP swale to have a minimum treatment length of at least 30-feet.

**Comment 5: Update the Stormwater Management Notes to City of Las Vegas version.**

Response 5: The Stormwater Management Notes have been revised to the City of Las Vegas version. See revised Improvement Plans.

If you have any questions or require additional information, please do not hesitate to contact me at (702) 279-3576.

Respectfully,

CivilWorks, Inc.

Brandon A. Potts, P.E.

## **APPENDIX A**

- **FlowMaster Section – Deer Springs Q100 = 145 cfs**
- **FlowMaster Section – Private Drive South Q100 = 12.5 cfs**

## Worksheet for Deer Springs Q100 = 145 cfs

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	2.100 %
Discharge	145.00 cfs

### Section Definitions

Station (ft)		Elevation (ft)
	0+00	0.76
	0+05	0.66
	0+08	0.60
	0+09	0.50
	0+09	0.00
	0+10	0.16
	0+40	0.61
	0+71	0.16
	0+72	0.00
	0+72	0.50
	0+72	0.60
	0+75	0.66
	0+80	0.76
	0+89	1.80

### Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.76)	(0+05, 0.66)	0.013
(0+05, 0.66)	(0+08, 0.60)	0.025
(0+08, 0.60)	(0+10, 0.16)	0.013
(0+10, 0.16)	(0+71, 0.16)	0.016
(0+71, 0.16)	(0+72, 0.60)	0.013
(0+72, 0.60)	(0+75, 0.66)	0.025
(0+75, 0.66)	(0+80, 0.76)	0.013
(0+80, 0.76)	(0+89, 1.80)	0.025

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	0.7 ft

## Worksheet for Deer Springs Q100 = 145 cfs

---

### Results

---

Roughness Coefficient	0.016
Elevation	0.74 ft
Elevation Range	0.0 to 1.8 ft
Flow Area	24.3 ft <sup>2</sup>
Wetted Perimeter	79.3 ft
Hydraulic Radius	0.3 ft
Top Width	78.25 ft
Normal Depth	0.7 ft
Critical Depth	0.9 ft
Critical Slope	0.520 %
Velocity	5.96 ft/s
Velocity Head	0.55 ft
Specific Energy	1.29 ft
Froude Number	1.883
Flow Type	Supercritical

---

### GVF Input Data

---

Downstream Depth	0.0 ft
Length	0.0 ft
Number Of Steps	0

---

### GVF Output Data

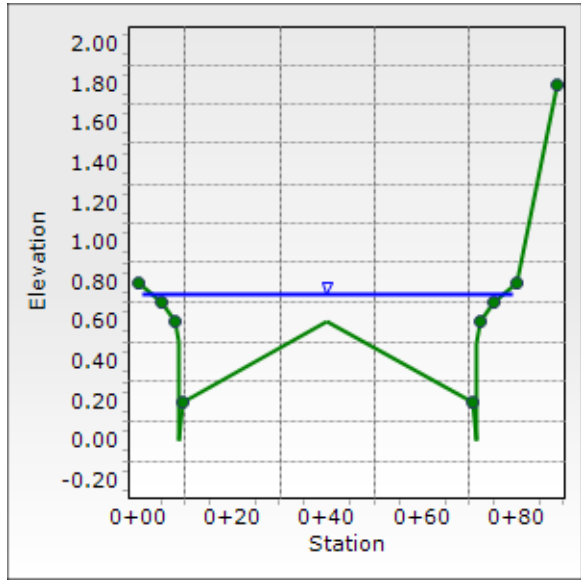
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Upstream Depth	0.0 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.7 ft
Critical Depth	0.9 ft
Channel Slope	2.100 %
Critical Slope	0.520 %

---

## Cross Section for Deer Springs Q100 = 145 cfs

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	2.100 %
Normal Depth	0.7 ft
Discharge	145.00 cfs



## Worksheet for Private Drive Min Slope 0.9%

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.900 %
Discharge	12.50 cfs

### Section Definitions

	Station (ft)	Elevation (ft)	
	0+00		0.60
	0+01		0.50
	0+01		0.00
	0+02		0.16
	0+15		0.42
	0+28		0.16
	0+29		0.00
	0+29		0.50
	0+29		0.60

### Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.60)	(0+02, 0.16)	0.013
(0+02, 0.16)	(0+28, 0.16)	0.016
(0+28, 0.16)	(0+29, 0.60)	0.130

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	0.5 ft
Roughness Coefficient	0.035
Elevation	0.55 ft
Elevation Range	0.0 to 0.6 ft
Flow Area	7.7 ft <sup>2</sup>
Wetted Perimeter	29.5 ft
Hydraulic Radius	0.3 ft
Top Width	28.49 ft
Normal Depth	0.5 ft
Critical Depth	0.5 ft
Critical Slope	3.332 %

## Worksheet for Private Drive Min Slope 0.9%

---

### Results

---

Velocity	1.63 ft/s
Velocity Head	0.04 ft
Specific Energy	0.59 ft
Froude Number	0.553
Flow Type	Subcritical

---

### GVF Input Data

---

Downstream Depth	0.0 ft
Length	0.0 ft
Number Of Steps	0

---

### GVF Output Data

---

Upstream Depth	0.0 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	0.5 ft
Critical Depth	0.5 ft
Channel Slope	0.900 %
Critical Slope	3.332 %

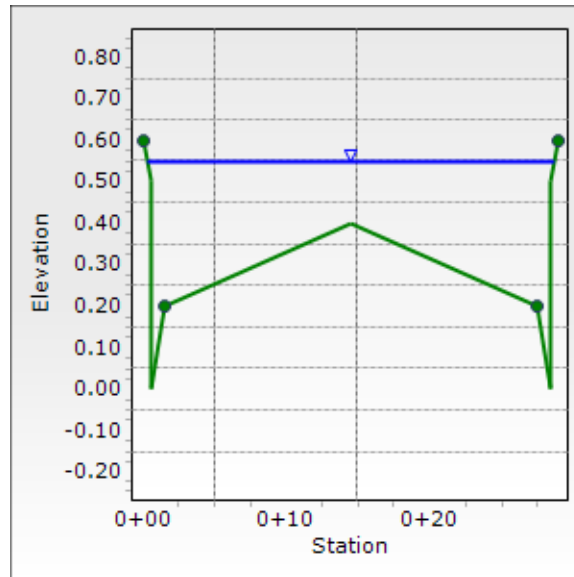
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## Cross Section for Private Drive Min Slope 0.9%

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

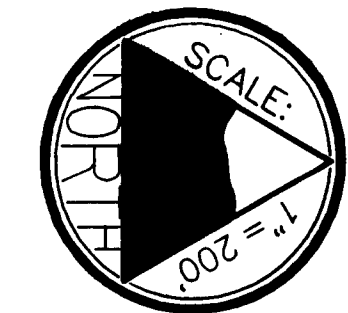
  

Input Data	
Channel Slope	0.900 %
Normal Depth	0.5 ft
Discharge	12.50 cfs

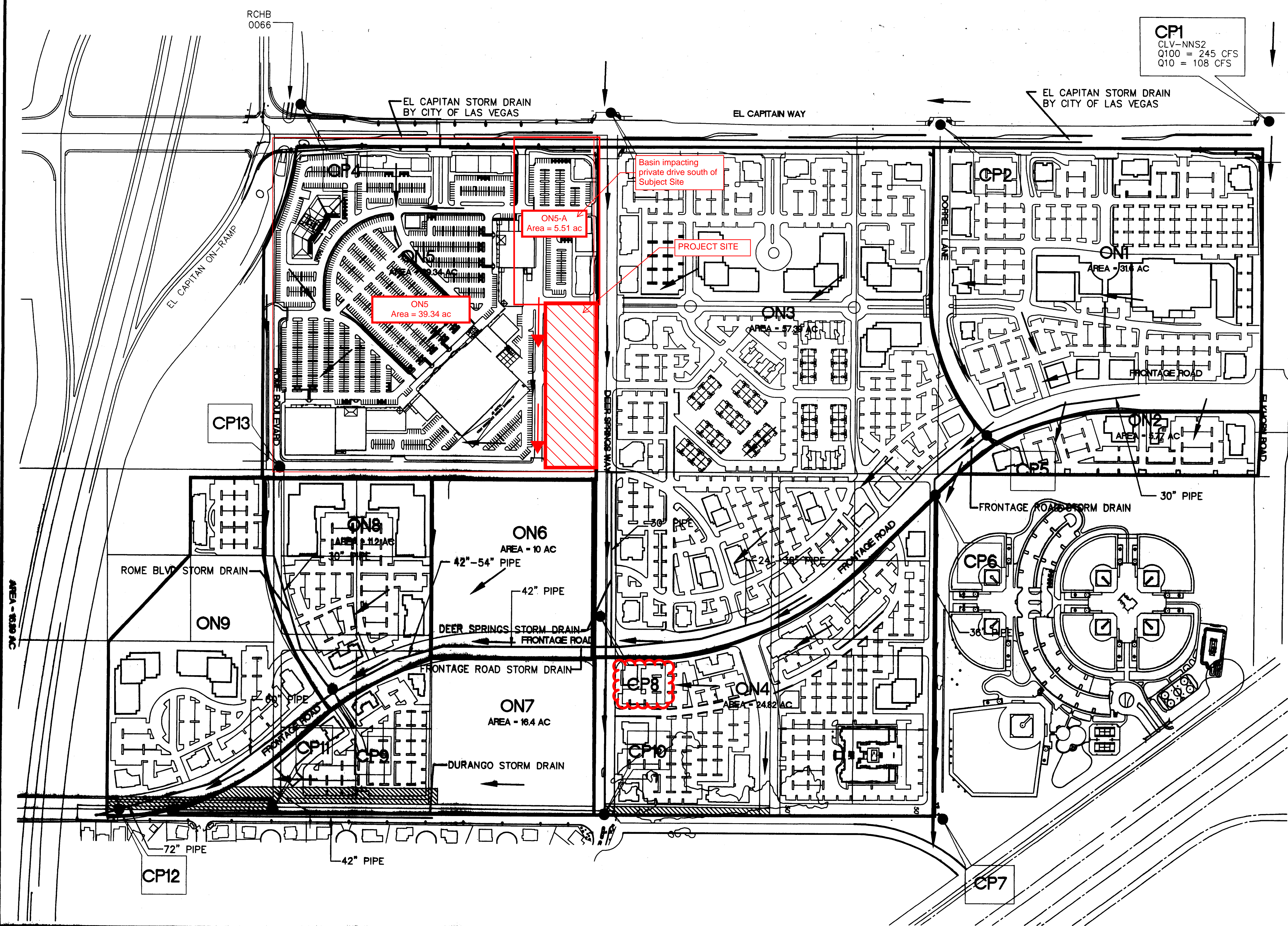


## **APPENDIX B**

- **Referenced Material from Montecito Town Center**
  - **Ultimate Drainage Condition Map with revised markups**



200 0 100 200 400  
 ( IN FEET )  
 1 inch = 200 ft.



**CP1**  
 CLV-NNS2  
 Q100 = 245 CFS  
 Q10 = 108 CFS

Rational Method Formula:  $Q = kiia$

$i_{10} = 3.16$  in/hr  
 $i_{100} = 5.11$  in/hr  
 $k = 0.5$ ; CCRPCD local factor

Basin	Area	C10	C100	Q10(cfs)	Q100(cfs)
ON1	31.6	0.88	0.89	44	72
ON2	5.77	0.88	0.89	8	13
ON3	57.39	0.88	0.89	80	131
ON4	24.82	0.88	0.89	35	56
ON5	39.34	0.88	0.89	55	89
ON6	10.0	0.88	0.89	14	23
ON7	16.4	0.88	0.89	23	37
ON8	11.2	0.88	0.89	16	25
ON9	16.39	0.88	0.89	23	37

Offsite flows from CLV-NNS	In SD	Surface	Q10	Q100
CP1 (From CLV-NNS Existing Condition)	108	245	-	-
CP2 (From CLV-NNS Existing Condition)	41	119	41	78
CP3 (From CLV-NNS Existing Condition)	85	237	85	145
Spill CP3 El Capitan	0	58	85	58
Spill CP3 Deer Springs	0	94	0	94

Onsite Flow Combination Points	Q10	Q100
CP4 (From VTN Study)	116	244
CP5 (ON1)	44	72
CP6 (Sum of CP5 and ON2)	52	85
CP7 (CP6)	52	85
CP8 (Sum of ON5 and CP3)	80	225
CP9 (Sum of ON5, ON6, ON8, & CP9)	164	362
CP10 (ON4)	35	56
CP11 (Sum of ON7 and ON4)	57	94
CP12 (Sum of CP11, CP9, and ON9)	244	493
CP13 (ON5)	55	89

used to calculate depth of flow in Deer Springs, adjacent to Subject Site

NOTE:  
 ELKHORN ROAD & EL CAPITAN WAY STORM DRAIN SYSTEMS WILL BE INSTALLED BY THE CITY OF LAS VEGAS SID.

**PRIMAS AND ASSOCIATES CONSULTING ENGINEERS**

1001 SOUTH CHARLES BLVD. SUITE 4-3  
 LAS VEGAS, NEVADA 89142  
 (702) 253-8184  
 FAX (702) 253-8184

SCALE: 1" = 200'  
 DRAWING NO. 7115128  
 DESIGNER: [Name]  
 CHECKED: [Name]  
 DATE: [Date]

**FIGURE 2-3**  
**MONTECITO TOWN CENTER**  
**ULTIMATE DRAINAGE CONDITION MAP**

BY: [Name] DATE: [Date] APPR: [Name]

## **APPENDIX C**

- **Improvement Plans**