



Update #15 to the  
Technical Drainage Study  
for

*The Village of Centennial Springs –  
Fore Brownstones*

Date Prepared:  
July 2021

Prepared for:  
Fore Green Development LLC  
1741 Village Center Circle  
Las Vegas, NV 89134

Prepared by:  
Kimley-Horn and Associates, Inc.  
6671 Las Vegas Boulevard South, Suite 320  
Las Vegas, NV 89119  
702.862.3600

**Kimley»»Horn**

# HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

## DRAINAGE STUDY INFORMATION FORM

Name of Development: The Village of Centennial Springs - Fore Brownstones Date: July 2021

Location of Development: a) Descriptive (Cross Streets) North/South: Tule Springs Road  
 East/West: Farm Road

b) Section: 17 Township: 19S Range: 60E

c) APN : 125-17-712-001 thru -003, 125-17-712-009, 125-17-712-012 & 125-17-712-015;  
125-17-718-010; and 125-17-795-007

Name of Owner: RH Centennial LLC & Centennial Holdings LLC

Telephone No.: 702-277-0390 Fax No.: N/A E-Mail Address: CLCLIFFORD@gmail.com

Address: PO Box 16242, Beverly Hills, CA, 90209

Contact Person-Name: Rachael R. Dennis, P.E. Telephone No.: 702.734.5666

\* E-Mail Address: rachael.dennis@kimley-horn.com Fax No.: N/A

Firm: KIMLEY-HORN

Address: 6671 Las Vegas Boulevard South, Suite 320 Las Vegas, NV 89119

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 checked="" type="checkbox"/>	Other (Please specify below)
<input type="checkbox"/>	Large Parcel Map	<input checked="" type="checkbox"/>	Building Permit	GRADING PERMIT	

1. Total Owned Land Area: At Site: ±12.2 Being Developed/Disturbed: ±5.02

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.): Apartments

5. Approximate upstream land area which drains to the subject site: N/A

6. Has the site drainage been evaluated in the past?  YES  NO If yes, please identify documentation: The Technical Drainage Study and Updates #1-14 for The Village of Centennial Springs (DS-3656)

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: 1) Orly Avenue, 2) Farm Road, and 3) Tule Springs Road

8. Briefly describe your proposed schedule for the subject project: ASAP

07/12/21

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

<b>CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM</b>		<b>DATE:</b> January 9, 2020
<b>TO:</b> Land Development Services Department of Building & Safety		<b>FROM:</b> Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
<b>SUBJECT:</b> Drainage Study for: <b>Village of Centennial Springs – Update for Fore Brownstone</b>		<b>COPIES TO:</b> Kimley-Horn and Associates
<b>Cross Streets:</b>	SWC of Farm Road & Tule Springs Road	Fore Green Development LLC
<b>File Number:</b>	F:\Depot\DSMemos\DS5162C.doc	Bart Anderson, P.E., DevCo
<b>Parcel Number:</b>	125-17-712-001	
<b>Zoning Action:</b>	SDR-76943	
<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	7/24/2019	8/6/2019	Not Approved	\$400.00	3500542: \$400
2 <sup>nd</sup> Submittal	8/29/2019	9/16/2019	Approved	\$400.00	3546860: \$400
3 <sup>rd</sup> Submittal	12/17/2019 & 1/7/2020	1/9/2020	See Comments Below	\$100.00	3675417: \$100
<b>TOTAL FEES (LDDRS):</b>				<b>\$900.00</b>	<b>----</b>

**REMARKS:**

**3<sup>rd</sup> Submittal: Update for minor site layout revision**

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

<b>X</b>	is approved subject to conformance to all City standards and the following conditions:
	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.

The following comment is repeated until it is complete:

1. The proposed onsite storm drain system at the northeast corner of *Nicklin Street* and *Orly Avenue* (**Sheet C3.4**) must be dedicated and recorded by separate document prior to the final acceptance of the improvement plans.

**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, conditional acceptance 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**  
ays

T/R/S: T19S/R60E/17  
AREA G-17



July 12, 2021

Mr. Albert Sung, P.E.  
City of Las Vegas Flood Control  
333 Rancho Drive  
Las Vegas, NV 89106

**RE: *Update #15 to the Technical Drainage Study for The Village of Centennial Springs – Fore Brownstones***

Dear Mr. Sung,

Attached is one (1) copy of the *Update #15 to the Technical Drainage Study for The Village of Centennial Springs – Fore Brownstones* for your review. This letter certifies that all items provided on the electronic submittal (CD) match the paper version bound into the study.

With Kimley-Horn, you should expect more and will experience better. Please contact me at (702) 734-5666 or [Rachael.Dennis@kimley-horn.com](mailto:Rachael.Dennis@kimley-horn.com) should you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Rachael R. Dennis".

Rachael R. Dennis, P.E.

A handwritten signature in blue ink that reads "JaLynn Zito".

JaLynn Zito, E.I.

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July 12, 2021

Mr. Albert Sung, P.E.  
City of Las Vegas Flood Control  
333 Rancho Drive  
Las Vegas, NV 89106

**RE: Update #15 to the Technical Drainage Study for The Village of Centennial Springs – Fore Brownstones (DS-5162)**

Dear Mr. Sung,

The purpose of this letter is to serve as **Update #15** to the subject project. This update includes development of **+/-5.14 acres on APNs 125-17-712-001 thru 003; 125-17-712-009, -012, & -015; 125-17-718-010; and 125-17-795-007**; within the +/-12.2 acres of the existing Village of Centennial Springs. A copy of the Assessor's Parcel Map is included in **Appendix A**. *The Technical Drainage Study for The Village of Centennial Springs* (hereinafter referred to as **TDS**) was approved by CLV on June 2, 2005. The TDS was subsequently updated fourteen (14) times for various reasons. The proposed project generally maintains existing drainage patterns and the proposed buildings and garages meet finished and garage floor elevation criteria of at least twice the depth of flow. The methodologies and calculations presented in this report are in compliance with the CCRFCD Hydrologic Criteria and Drainage Design Manual (Manual).

Since approval of **Update #14**, the site layout has been revised. The proposed revisions include:

- Buildings 3 & 4 shifted approximately 8-feet north to avoid existing utility conflicts
- Revised storm drain north of Building 1 to accommodate existing utility conflicts with the following:
  - Drop Inlet in Nicklin Street has been revised to a Type A drop inlet
  - Added a storm drain manhole at **Station 12+54** to accommodate the proposed **38" x 24" HERCP**. Note that the inverts will have an approximate **2-foot drop in the manhole**.
- Updated onsite BMP treatment.

The proposed ultimate onsite flow patterns are generally consistent with the ultimate condition drainage patterns presented in **Update #14**. Due to Buildings 3 & 4 shifting north, the prorates have been revised to show the updated grading. However, it should be noted that the area revisions are minor and do not impact the previously submitted onsite flowrates or sections. **Figures ULT-1** and **ULT-2** depict the subbasins and drainage patterns used in the proposed conditions hydrologic analysis. **Figure ULT-1** in **Appendix A** shows the overall referenced drainage basin boundaries and **Figure ULT-2** shows the proposed onsite prorated subbasins and flow summary tables. The revised flowrate at **CP1A** has been summarized in **Table 1** below and on **Figures ULT-1** and **ULT-2** in **Appendix A**. In general, the overall drainage patterns for the site are in conformance with the previously approved **Update#14** and will not pose any negative impacts to downstream facilities and developments.

Table 1: Ultimate Condition Flow Summary

COMB. PT.	Tributary Area	100-YR FLOW	10-YR FLOW	Δ 100-YR FLOW	Δ 10-YR FLOW
		(cfs)	(cfs)	(cfs)	(cfs)
CP1A	NICKLIN ST / ORLY AVE (117/75)* + ON2A + ON2M - DIN1	105.5	66	n/a	-0.5

\*Referenced from TDS.

Due to the revised site design and grading constraints, Drainage Management Areas (DMA) 4 & 5 treated via landscaped swales, have been revised. Based on hydraulic analysis, the proposed **landscaped swales** will convey, contain and treat the peak BMP discharge (QBMP) as well as facilitate the 100-year peak flow rate. The revised **LID Basin Map** and calculations are included in **Appendix D**. The revised BMPs are shown on the grading plan included in **Appendix E**.

The propose storm drain system north of Building 1 has been updated to show a **Type A drop Inlet in Nicklin Street with 24 linear feet of 38" x 24" HERCP to an added storm drain manhole where the inverts will have a 2-foot drop in the manhole** to accommodate existing utility conflicts encountered in the field during construction and to accommodate what has already been constructed in the field. Copies of the revised hydraulic calculations have been included in **Appendix B**. The revised Standard Form 6 model for the proposed storm drain revision has been included in **Appendix B**. In general, the revisions have minor impacts to the mainline storm drain and do not change the design concept presented and approved with **Update#14**.

In general, the overall drainage patterns for the site are consistent with the previously approved referenced drainage studies and the proposed site plan does not significantly alter existing peak flows or the character of flows downstream of the development and do not pose any negative impacts on the downstream facilities and development.

Please contact me at (702) 734-5666 or [rachael.dennis@kimley-horn.com](mailto:rachael.dennis@kimley-horn.com) should you have any questions.

Sincerely,



Rachael R. Dennis, P.E.



JaLynn Zito, E.I.

## LIST OF APPENDICES

### Appendix A – Documents & Figures

- ULT-1 Overall Ultimate Condition Basin Map
- ULT-2 Ultimate Condition Basin Map
- Assessor's Parcel Map

### Appendix B – Hydraulic Calculations

- Offsite Street Sections
- Drop Inlet Calculations
- Standard Form 6 Lateral Calculation

### Appendix C – Parking Lot LID Calculations

- LID Parking Lot LID Map
- Figure 501
- QBMP Calculations

### Appendix D – References

- Update #14 to the Technical Drainage Study for the Village of Centennial Springs (TVOCS Study, January 2020, DS5162)

### Appendix D – Improvement Plans