



**Update #2 to the
Technical Drainage Study
for**

ANN ROAD & HUALAPAI WAY

Date Prepared:
March 2023

Prepared for:
Richmond American Homes of Nevada, Inc.
7770 Dean Martin Drive, Suite 308
Las Vegas, NV 89193
702.240.5605

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: Ann Road & Hualapai Way Date: March 2023

Location of Development: a) Descriptive (Cross Streets) North/South: Hualapai Way

East/West: Ann Road

b) Section: 31 Township: 19S Range: 60E

c) APN : 125-31-101-001

Name of Owner: Richmond American Homes of Nevada, Inc.

Telephone No.: 702.240.5605 Fax No.: _____ E-Mail Address: angela.pinley@mdch.com

Address: 7770 Dean Martin Drive, Suite 308; Las Vegas, NV 89139

Contact Person-Name: Michael Schwab, P.E. Telephone No.: 702.790.0206

* E-Mail Address: michael.schwab@kimley-horn.com Fax No.: _____

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 checked="" type="checkbox"/> Planned Unit Development	<input checked="" type="checkbox"/> Other (Please specify below)
<input type="checkbox"/> Large Parcel Map	<input type="checkbox"/> Building Permit	PLAN REVISION

1. Total Owned Land Area: At Site: +/- 25.9 acres Being Developed/Disturbed: +/- 25.9 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.): Residential

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: TDS for Ann & Grand Canyon

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Two drainage easements to the northeast; undeveloped parcel to the southeast

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

<p>Engineer's Seal</p>	<p>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.</p> <p style="color: red; font-weight: bold;">*New Required Field</p> <p style="font-weight: bold;">**Review and concurrence of the Clark County Regional Flood Control District is required.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%;">Revision</th> <th style="width: 20%;">Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> <p style="text-align: center;">Local Entity File No. _____</p>		Revision	Date									
	Revision	Date											

REFERENCE: STANDARD FORM 1

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: December 12, 2022
TO: Land Development Services Department of Building & Safety			FROM: Neil Wacaser Flood Control Sr. Eng. Associate Department of Public Works
SUBJECT:		Drainage Study for: Ann & Hualapai (SEC)	COPIES TO: Kimley-Horn Associates
Cross Streets:	SEC of Ann Road & Hualapai Way		Richmond American Homes
File Number:	F:\Depot\DSMemos\DS5439H.doc		Bart Anderson, P.E., DevCo
Parcel Number:	125-31-101-001		CCPW
Zoning Action:	21-0017-TMP1; 21-0017-VAR1 & 21-0017-VAC1		
FEMA Flood Zone	YES	NO X	
Proposed Storm Drain	YES	NO X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	4/7/2021	4/23/2021	Not Approved	\$400.00	4238287: \$400
2 nd Submittal	6/2/2021	6/16/2021	Not Approved	\$400.00	4318126: \$400
3 rd Submittal & Supplement	6/28/2021 & 7/13/2021	7/8/2021 & 7/21/2021	Conditional Approval	\$400.00	4350050: \$400
4 th Submittal	9/2/2021	9/16/2021	Not Approved	\$400.00	4437599: \$400
5 th Submittal (Supplement)	9/22/2021	10/4/2021	Conditional Approval	N/C	N/C
6 th Submittal	9/23/2021	10/4/2021	Approved	\$100.00	4461365: \$100
7 th Submittal	10/20/2021	10/26/2021	See Comments Below	N/C	N/C
8 th Submittal	12/8/2022	12/12/2022	See Comments Below	\$100.00	5070099: \$100
TOTAL FEES (LDDRS):				\$1,800.00	----

REMARKS:

8th Submittal: Update #2 for modification to curb in Justin Earl Avenue drainage easement

7th Submittal: CCPW Concurrence Received

6th Submittal: Stockpile Permit Only

5th Submittal: Supplement to response of CCPW Comments

4th Submittal: Addendum in response to Clark County Public Works Department Comments

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

X	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.

1. The *Ann Road Improvement project* and the associated storm drain system is owned and constructed by the *Clark County*. It is clear that the *Ann Road* intersections at Hualapai Way, Eula Street fronting the subject development require modifications to the *County Ann Road Project*.

Coordinate and obtain pertinent permits from the *Clark County Public Works Department* for the proposed curb cut in *Ann Road* prior to the final approval of the improvement plans.

2. The proposed channel on the north half of *Hammer Lane* alignment is within *Clark County's* jurisdiction. Obtain construction permit from *Clark County Public Works Department* prior to the final approval 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
nw

T/R/S: T19S/R60E/31
AREA G-31



March 14, 2023

Albert Sung, P.E.
Flood Control Project Engineer
Department of Public Works

**RE: *Update #2 to the Technical Drainage Study for Ann Road & Hualapai Way
(DS5439H)***

Dear Mr., Sung,

This letter certifies that all items provided on Update #2 to the Technical Drainage Study for Ann Road and Hualapai Way electronic submittal matches the paper version bound into the study.

With Kimley-Horn, you should expect more and will experience better. Please contact me at (702) 790-0206 or michael.schwab@kimley-horn.com should you have any questions or concerns.

Sincerely,

Michael E. Schwab, P.E.

David Harvey, P.E.

**Update #2 to the
Technical Drainage Study
for**

Ann Road & Hualapai Way

Date Prepared:
March 2023

Prepared for:
Richmond American Homes of Nevada, Inc.
7770 Dean Martin Drive, Suite 308
Las Vegas, NV 89139
702.204.5605

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



March 14, 2023

Albert Sung, P.E.
Flood Control Project Engineer
Department of Public Works

**RE: Update #2 to the Technical Drainage Study for Ann Road & Hualapai Way
(DS5439H)**

Dear Mr., Sung,

The purpose of this letter is to serve as **Update #2** to the subject project. The *Technical Drainage Study for Ann Road and Hualapai Way* (hereinafter referred to as **TDS**) was approved by City of Las Vegas (CLV) on October 4, 2021. **Update #2** included herein, is intended to supersede data contained in previous studies.

Since approval of the **TDS**, the construction of the lot wall for Lot 40 will impede the flow from the parcel to the south (APN 125-31-101-006). As a result, the lot wall will be adjusted to allow a two-foot-wide valley gutter to convey the flow north, then east to the existing drainage easement.

The proposed project maintains existing drainage patterns and the proposed buildings meet finished floor elevation criteria. The methodologies and calculations presented in this report are in compliance with the CCRFCD Hydrologic Criteria and Drainage Design Manual.

The proposed revisions include new hydrology for offsite basin **OFF1**. The updated hydrology results in a negligible amount of flow reaching the easement, however a 100-year flow of 1 CFS was conservatively used for the analysis. The modified easement geometry was analyzed with hydraulic section **OFF-1**. Please refer to the grading plans in **Appendix E** and the hydraulic section in **Appendix C**. The easement section summary table has been updated on **Figure PRO** in **Appendix A**. Pertinent reference material from the TDS and Update has been included in **Appendix D**.

In general, the overall drainage patterns for the site are consistent with the original **TDS**, 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.

With Kimley-Horn, you should expect more and will experience better. Please contact me at (702) 790-0206 or michael.schwab@kimley-horn.com should you have any questions.

Sincerely,

Michael Schwab, P.E.

David Harvey, P.E.

LIST OF APPENDICES

Appendix A – Documents & Figures

- PRO Proposed Condition Basin Map

Appendix B – Hydrologic Parameters & HEC-1 Analyses

- Table 602A Runoff Curve Numbers (Residential Districts)
- USDA NRCS Custom Soils Resource Report for Las Vegas Valley
- Curve Number Calculations
- Proposed Condition Standard Form 4
- Proposed Condition HEC-1 Output

Appendix C – Hydraulic Calculations

- Normal Depth Calculations – Easements

Appendix D – Reference Materials

- *Technical Drainage Study for Ann & Hualapai. Approved October 4, 2021 (Ann & Hualapai Study, October 2021, DS5439)*

Appendix E – Improvement Plans

Appendix F – Data CD