Addendum to the Technical Drainage Study for

DURANGO AND GRAND MONTECITO

Date Prepared:
June 2024

Prepared for:
Lennar Corporation
5505 Waterford District Drive
Miami, FL 33126
305.229.6400

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: Durango and Grand Montecito Date: June 2024

Location of Development: a) Descriptive (Cross Streets) North/South: Grand Montecito Parkway

East/West: Durango Drive

b) Section: 29 Township: 19 Range: 60

c) APN : 125-29-512-015

Name of Owner: Greystone Nevada, LLC

Telephone No.: 702.821.4603 Fax No.: E-Mail Address: jeanette.jeffery@lennar.com

Address: 9275 W. Russel Road, Suite 400

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

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

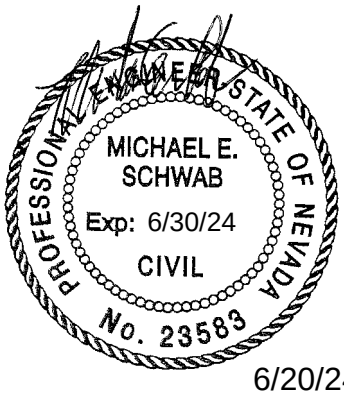
Firm: KIMLEY-HORN

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

Type of Land Development/Land Disturbance Process:

☐	Rezoning	☐	Subdivision Map	☐	Clearing and Grading Only
☐	Parcel Map	☐	Planned Unit Development	☒	Other (Please specify below)
☐	Large Parcel Map	☒	Building Permit	GRADING PERMIT	

1. Total Owned Land Area: At Site: +/- 8.8 acres Being Developed/Disturbed: +/- 8.8 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 Durango & Grand Montecito (DS5570)
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Grand Montecito Parkway
8. Briefly describe your proposed schedule for the subject project: ASAP



6/20/24

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

Updated 05/01/2008

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: May 5, 2024
TO: **Land Development Services** Department of Community Development - Building & Safety Division				**FROM:** Jefferson Torrecampo, P.E. Flood Control Engineering Associate Department of Public Works
SUBJECT:	Drainage Study for:			**COPIES TO:** Kimley-Horn
Durango and Grand Montecito				Greystone Nevada, LLC
Cross Streets:	Grand Montecito Pkwy & Durango Dr			Bart Anderson, P.E., Devco
File Number:	F:\Depot\DSMemos\DS05772.doc			
Parcel Number:	125-29-512-015			
Zoning Action:	24-0075-MOD1; 24-0075-SDR1; 24-0075-SUP1; 24-0075-VAR1			
FEMA Flood Zone	YES	NO **X**		
Proposed Storm Drain	YES **X**	NO		

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	05/16/2024	6/4/2024	See Comments Below	$400.00	5763913:$400
			TOTAL FEES (LDDRS):	**$400.00**	**----**

REMARKS:

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

	is approved subject to conformance to all City standards and the following conditions:
X	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. A review of the grading plan shows an elevation difference of approximately 3-feet of cut/fill adjacent to (un)developed properties. Sites with a grade difference of 2 feet above or below existing grades are required to have approval from the *City of Las Vegas Planning and Development Department.* The engineer must submit copies of the grading plans and detail sheet with a letter justifying the grade difference to the *City Planning Department* (229-6301). The engineer must provide *City Planning* approval with the next submittal
2. Standard Form 4 Ultimate Condition: Basin ON Tlag does not match HEC-1 data.
3. **HEC-1 Ultimate Condition:** CP3 and CP1 Q_{100} and Q_{10} do not match HEC-1 data.
4. **Hydraulic Calculations, SW-ON2** does not match table on Sheet PRO-2.
5. Label and provide record number for the existing inlets along Durango Drive in all the exhibits and grading plans provided in this study.
6. Provide Existing Condition and Ultimate Condition drainage map in the next submittal.
7. **Proposed Conditions**: In the report it refers to Figure PRO, however exhibit is labeled as PRO-2.

8. **Proposed Conditions**: Explain why CP3 and CP1 Q_{100} and Q_{10} in Condition Flow Summary has two sets of number.
9. **Proposed Conditions:** Provide existing contour elevations.
10. **Proposed Conditions:** Basin *DOF5 flows does not matches the flows from the reference study.
11. **Proposed Conditions:** Referenced offsite basins **ON1-U and **ST1-U and Combination Point **CP-7 not listed on the *Proposed Condition Flow Summary*.
12. **Proposed Conditions:** Referenced *DOF3 not shown on onsite basin map.
13. Drop Inlet Calculations: Inlets #3 and #6 total intercepted flows do not match the Drop Inlet Summary Table and WSPG map. For example, in the calculations Inlet #3 shows 18.4 cfs and the table shows 15.5 cfs. Revise accordingly.
14. The following garage finish floors do not meet the Regional Flood Control District minimum criteria of twice the Q100 depth of flow up to 18-inches above the water surface (CCRFCD Manual Section 304.4.E.1). The following garage finish floors should be revised or alternate flood protection provided.

LOT	GFF Shown	Min GFF
4	82.25	82.28
5	82.50	82.51
10	84.10	84.14
12	85.15	85.22
14	86.20	86.30
18	88.75	88.77
20	89.80	89.85
21	90.40	90.50
34	82.35	82.42
35	82.80	82.88
37	83.80	83.81
39	84.85	84.93
40	85.35	85.39
41	85.80	85.85
54	86.35	86.36
55	85.80	85.82
60	83.30	83.32
61	82.80	82.85
63	81.90	81.93
65	83.00	83.07
66	83.50	83.52
67	83.80	83.98
68	84.40	84.44
70	85.50	85.54

LOT	GFF Shown	Min GFF
71	85.90	86.00
73	86.80	86.91
82	86.00	86.02
84	85.00	85.09
102	85.45	85.53
103	85.30	85.35
104	85.20	85.24
105	85.10	85.12
106	84.90	84.98
107	84.80	84.82
108	84.60	84.67
109	84.45	84.51
111	84.10	84.14
115	83.20	83.53
116	83.10	83.37
117	83.10	83.22

15. SDDI #6 is at a low point, and it appears there is no emergency overflow being proposed in case the inlet gets clogged. Address in next submittal.
16. SDDI #3 flow depth appears to be too high. A min 1-foot flow depth is recommended for onsite inlet.
17. Address flow ponding at northwest and southwest corners of the Summit Serrenity Ave and Montecito Cliff St intersection.
18. Provide a commercial subdivision map or drainage easement to show how flow from *DOF2 is conveyed through the site.
19. WSPG Exhibit vs Grading plans: Revise stationing and invert elevations in the grading plans to match WSPGs.
20. **Grading Plans**: Provide FF for the existing structure located on North and West of the site development.
21. **Grading Plans:** The location of the SDMH at the entrance driveway on Grand Montecito Pkwy will cause maintenance issues in the future. Consider relocating the proposed SD pipe connecting to existing SDDI away from the entrance driveway so that in the event of storm drain maintenance it will not block the entrance.
22. **Grading Plans**: Provide FF for the existing structure located on North and West of the site development.
23. **Grading Plans:** Add in the constructions notes “All private streets and drainage easements are to be privately owned and maintained by the homeowners association (HOA).
24. **Grading Plans, GD3:** Revise Dedication Note E2 “Private Landscape & Public Drainage Easement to be Privately Maintained PER OR”

***** 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:

1st Submittal DS and Plans (for first and original submittal);

2nd Submittal DS and Plans (for second submittal (addendum #1)) etc.

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

1st Submittal DS (for the report of the drainage study)

1st Submittal Plan 1 (could be the drainage condition maps)

1st 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
HDR/JRT

T/R/S: T19S/R60E/S29
AREA G-29

Kimley»Horn

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Technical Drainage Study

for

Durango and Grand Montecito

Date Prepared:
June 2024

Prepared for:
Lennar Corporation
5505 Waterford District Drive
Miami, FL 33126
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Prepared by:
Kimley-Horn and Associates, Inc.
6671 Las Vegas Boulevard South, Suite 320
Las Vegas, NV 89119
702.862.3600

June 2024
KH Project #092935040

Kimley»Horn

June 20, 2024

Jefferson Torrecampo, P.E.
Flood Control Engineer
Associate
Department of Public Works
City of Las Vegas
495 S. Main Street
Las Vegas, NV 89101

RE: Technical Drainage Study for Durango and Grand Montecito (Agency Application #DS05772)

The purpose of this letter is to provide satisfactory answers to the comments issued in the subject Comment Letter dated May 5, 2024. These comments have been reviewed and are addressed herein.

Comment 1: **A review of the grading plan shows an elevation difference of approximately 3-feet of cut/fill adjacent to (un)developed properties. Sites with a grade difference of 2 feet above or below existing grades are required to have approval from the City of Las Vegas Planning and Development Department. The engineer must submit copies of the grading plans and detail sheet with a letter justifying the grade difference to the City Planning Department (229-6301). The engineer must provide City Planning approval with the next submittal.**

Response: All of the existing finished floor elevations adjacent to the north and west side of the site are substantially higher than the proposed elevation. The proposed pad elevation near the undeveloped lot at the northeast corner of the site is 2482.80 compared to an existing elevation contour of 2481, or a difference of **1.80'**.

Comment 2: **Standard Form 4 Ultimate Condition: Basin ON Tlag does not match HEC-1 data.**

Response: The Tlag value in the HEC-1 has been updated to match the correct value in Standard Form 4. The onsite flow rate was reduced by **1 cfs** as a result. Prorate basins **ON5** and **ON21** were reduced from **0.5 cfs** to **<1 cfs** as they had the smallest areas. Pertinent hydraulic section calculations, drop inlet calculations, and WSPG models have been updated and included in **Appendix C**. It should be noted that the flow rate for the **DI#4** calculation was wrong by **0.5 cfs** in the previous submittal. Please refer to the revised HEC-1 model in **Appendix B**.

Comment 3: **HEC-1 Ultimate Condition: CP3 and CP1 Q100 and Q10 do not match HEC-1 data.**

Response: The table values for **CP3** and **CP1** Q100 and Q10 have been updated to match HEC-1 values.

Comment 4: **Hydraulic Calculations, SW-ON2 does not match table on Sheet PRO-2.**

Response: The table values for **SW-ON2** have been updated to match the correct Hydraulic Calculation. Please refer to the revised Swale Hydraulics Sections Table on **Figure PRO-2** in **Appendix A**.

Comment 5: **Label and provide record number for the existing inlets along Durango Drive in all the exhibits and grading plans provided in this study.**

Response: The existing drop inlets located in Durango Drive have been labeled. Please refer to the revised figures in **Appendix A** and plans in **Appendix E**.

Comment 6: **Provide Existing Condition and Ultimate Condition drainage map in the next submittal.**

Response: The Existing and Ultimate Conditions have been referenced. Per email discussion with Jefferson Torrecampo on 6/11/2024, these referenced figures will be reincluded in the Addendum Submittal. Please refer to **Appendix D** for the referenced figures.

Comment 7: **Proposed Conditions: In the report it refers to Figure PRO, however exhibit is labeled as PRO-2.**

Response: The initial report should have referred to **Figure PRO-2**. Additionally, **Figure PRO-1** showing the overall hydrology should have been included in the original submittal. **Figure PRO-1** has been included in this submittal to show the overall hydrology of the project. Please refer to **Appendix A** for **Figure PRO-1.**

Comment 8: **Proposed Conditions: Explain why CP3 and CP1 Q100 and Q10 in Condition Flow Summary has two sets of number.**

Response: The values in parenthesis are values from the HEC-1, while the values outside of the parenthesis are the values from the referenced material added to the HEC-1 values. A note to clearly show the difference between the two has been added to the Proposed Condition Flow Summary Table. Please refer to the revised **PRO-1** and **PRO-2** figures in **Appendix A**.

Comment 9: **Proposed Conditions: Provide existing contour elevations.**

Response: Existing contour elevations have been added to the figures. Please refer to the revised **PRO-1** and **PRO-2** figures in **Appendix A**.

Comment 10: **Proposed Conditions: Basin *DOF5 flows does not matches the flows from the reference study.**

Response: Referenced flow values for *DOF5 do not match the reference study since the reference study used HEC-HMS. Since our study uses HEC1, the flow values are similar but will not match the decimal values that the reference material has. The same inputs used in the reference study were used in this study.

Comment 11: **Proposed Conditions: Referenced offsite basins **ON1-U and **ST1-U and Combination Point **CP-7 not listed on the Proposed Condition Flow Summary.**

Response: Referenced offsite basins ****ON1-U**, ****STU-U**, and ****CP-7** have been included in the proposed flow summary table. Please refer to the revised figures **PRO-1** and **PRO-2** in **Appendix A**.

Comment 12: **Proposed Conditions: Referenced *DOF3 not shown on onsite basin map.**

Response: Referenced basin ***DOF3** is now visible in the added Overall Proposed Condition Basin Map. Please refer to figure **PRO-1** in **Appendix A**.

Comment 13: **Drop Inlet Calculations: Inlets #3 and #6 total intercepted flows do not match the Drop Inlet Summary Table and WSPG map. For example, in the calculations Inlet #3 shows 18.4 cfs and the table shows 15.5 cfs. Revise accordingly.**

Response: Drop Inlet Calculations for **DI#3** and **DI#6** have been revised to show the correct flow depth corresponding to the intercepted flows. Please refer to the revised drop inlet calculations in **Appendix C**.

Comment 14: **The following garage finish floors do not meet the Regional Flood Control District minimum criteria of twice the Q100 depth of flow up to 18-inches above the water surface (CCRFCD Manual Section 304.4.E.1). The following garage finish floors should be revised or alternate flood protection provided.**

LOT	GFF Shown	Min GFF
4	82.25	82.28
5	82.50	82.51
10	84.10	84.14
12	85.15	85.22
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108	84.60	84.67
109	84.45	84.51
111	84.10	84.14
115	83.20	83.53
116	83.10	83.37
117	83.10	83.22

Response: The listed Garage Finished Floors have been raised to meet the minimum requirements. Please refer to the revised Improvement Plans in **Appendix E**.

Comment 15: **SDDI #6 is at a low point, and it appears there is no emergency overflow being proposed in case the inlet gets clogged. Address in next submittal.**

Response: Per email discussion with Jefferson Torrecampo on 6/12/2024, a 10-ft flanker inlet will be added north of **SDDI#6**. Please refer to the email correspondence in **Appendix A**, and the revised Improvement Plans in **Appendix E**.

Comment 16: **SDDI #3 flow depth appears to be too high. A min 1-foot flow depth is recommended for onsite inlet.**

Response: The previous calculation for **SDDI #3** used a ponding depth of 0.38 feet to represent the top of roll curb which resulted in a total flow interception of **18.4 cfs**. However, the actual flow getting to this inlet is only 15 cfs. The calculation for SDDI #3 has been reincluded in **Appendix C** to show the correct ponding depth corresponding to the 15 cfs captured.

Comment 17: **Address flow ponding at northwest and southwest corners of the Summit Serrenity Ave and Montecito Cliff St intersection.**

Response: Grading has been revised in the northwest and southwest corners of the Summit Serenity Ave and Montecito Cliff St intersection. Positive drainage now occurs towards Proposed Drop Inlet #3 north of the two intersections. Please refer to the revised Improvement Plans in **Appendix D**.

Comment 18: **Provide a commercial subdivision map or drainage easement to show how flow from *DOF2 is conveyed through the site.**

Response: A drainage easement is now shown on the improvement plans which follows the flow path of flows generated by basin ***DOF2**.

Comment 19: **WSPG Exhibit vs Grading plans: Revise stationing and invert elevations in the grading plans to match WSPGs.**

Response: Stationing in the WSPG model has not been updated to match the stationing in the plans since the plan alignments are street alignments and not storm drain alignments. This was discussed with Jefferson Torrecampo on 6/11/2024, and the email correspondence is included in **Appendix A**.

Comment 20: **Grading Plans: Provide FF for the existing structure located on North and West of the site development.**

Response: FF elevations for the existing structures are now shown on the plans.

Comment 21: **Grading Plans: The location of the SDMH at the entrance driveway on Grand Montecito Pkwy will cause maintenance issues in the future. Consider relocating the proposed SD pipe connecting to existing SDDI away from the entrance driveway so that in the event of storm drain maintenance it will not block the entrance.**

Response: Although having a manhole in the driveway is not ideal, it is the only location we can place it due structure and utility conflicts. The utilities are shown in a pothole exhibit which has been included in **Appendix A**.

Comment 22: **Grading Plans: Provide FF for the existing structure located on North and West of the site development.**

Response: Please refer to the response for Comment 20.

Comment 23: **Grading Plans: Add in the construction notes "All private streets and drainage easements are to be privately owned and maintained by the homeowners association (HOA).**

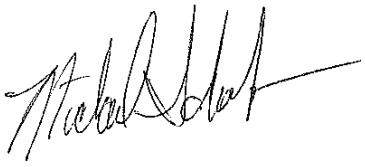
Response: This note is the Cover sheet as Note 4 under the General Notes.

Comment 24: **Grading Plans, GD3: Revise Dedication Note E2 "Private Landscape & Public Drainage Easement to be Privately Maintained PER OR"**

Response: The plans have been updated and are included in Appendix E.

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 need any additional information.

Sincerely,



Michael Schwab, PE

Sean Schofield, Analyst

LIST OF APPENDICES

Appendix A – Documents & Figures

- Figure PRO-1 Overall Proposed Condition Basin Map
- Figure PRO-2 Onsite Proposed Condition Basin Map
- Figure WSPG WSPG Exhibit
- Pothole Exhibit
- CLV Emails

Appendix B – Hydrologic Parameters & HEC-1 Analyses

- Proposed Condition Standard Form 4
- Proposed Condition HEC-1

Appendix C – Hydraulic Calculations

- Normal Depth Calculations – Onsite Streets
- Drop Inlet Calculations
- WSPG Models

Appendix D – Reference Materials

- Technical Drainage Study, Durango & Grand Montecito Multi-Family Residential; Prepared by Taney Engineering. August 2022 (DS5570)
- Technical Drainage Study, Centennial Hills Commercial Park; Prepared by Stantec. September 2006 (DS3941).

Appendix E – Improvement Plans