

<b>CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM</b>		<b>DATE:</b> November 21, 2023
<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>COPIES TO:</b>
<b>Rainbow Crossing</b>		Actus
<b>Cross Streets:</b>	NEQ of Rainbow Boulevard & Azure Drive	Beazer Homes
<b>File Number:</b>	F:\Depot\DSMemos\DS5716A.doc	Bart Anderson, P.E., DevCo
<b>Parcel Number:</b>	125-26-101-004	CCRFC
<b>Zoning Action:</b>	23-0466-TMP1; 23-0466-ZON1 & 23-0466-VAR1 to 23-0466-VAR8	
<b>FEMA Flood Zone</b>	YES NO <b>X</b>	
<b>Proposed Storm Drain</b>	YES <b>X</b> NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 <sup>st</sup> Submittal	11/9/2023	11/21/2023	See Comments Below	\$400.00	5519545: \$400
<b>TOTAL FEES (LDDRS):</b>				<b>\$400.00</b>	----

**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:
<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. Provide a copy of the zoning/planning conditions associated with this site (**23-0466-TMP1; 23-0466-ZON1 & 23-0466-VAR1 to 23-0466-VAR8**) with the next submittal to verify compliance with conditions. *Flood Control* will not issue conditional approval of the drainage study without the associated zoning/planning conditions (issued by the *City Council*). Any associated conditions of approval that revise the site drainage parameters will require that the drainage study be revised and resubmitted.
2. 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.
3. **Figure 7:** Flow arrows are shown but no flow rates are provided. For example, at the discharge point at the southeast corner of the site, a flow rate should be provided. Also, a flow arrow north of *Basin OFF1-X* is shown without any flow rates. Provide as such with justification, for example, delineate the offsite basin limit in the next submittal.

4. **Figure 7:** A concentration point should be provided at the discharge location.
5. **Figure 7 & Figure 8:** Provide flow summary table with pertinent information such as basin names, areas and  $Q_{10}/Q_{100}$  on the exhibit.
6. **Figure 8:** Include flow analysis for *Section EZ* in the exhibit table (Table 3).
7. **Figure 8:** *Table 4* shows Section names as “Lot 1”, “Lot 2-7”, “Lot 8-13” etc. However, this naming is confusing: For example, where the section is exactly within Lot 8 to 13? The engineer shall re-name the sections to such as A-A, B-B or I-I, II-II etc. Clearly show and identify the hydraulic sections on the exhibit in the next submittal.
8. Flow calculated in HEC-1 does not equate or is less than flows used for calculations and shown on the exhibit. For example, the outfall flow at **CP1** per the HEC-1 is 4/8 cfs, while the flow shown at **CP1** is 3.8/7.6 cfs. Review and revise to match all data.
9. The *Study* stated that the discharge flow will be increased to the adjacent neighborhood. Provide a subchapter in the next submittal to verify that the existing finished floor elevation of the houses along *Red Pine Court* in the adjacent community will still maintain the twice-the-depth criteria.  
  
If the twice-the-depth criteria cannot be satisfied, the engineer shall consider revising the site grading to drain more towards *Rainbow Boulevard*.
10. **Sheet C2:** Replace the “*Stormwater Management Notes*” with *City of Las Vegas* standard stormwater management notes.
11. **Sheet C3:** A hump is proposed in *Nimbus Avenue*. Note that the hump must provide a freeboard of six inches minimum above the 100-year water surface in the adjacent *Rainbow Boulevard*. Verify that the proposed high point in *Nimbus Avenue* has adequate freeboard in the next submittal.
12. **Sheet C3 to Sheet C5:** The common elements throughout the development has been designated with just one name: **C.E. “A”**. Shouldn’t the common elements be designated with different names at different locations?
13. Provide an exhibit in the next submittal to show and identify the proposed public drainage easement (privately maintained by the HOA) within the proposed development. Note that the 5’-strip along the north boundary conveys drainage from the individual lots and therefore must be dedicated as a public drainage easement and fully concrete lined.  
  
The drainage easements must also be shown on the grading plans and all pertinent section details.
14. **Sheet C5:** The proposed drainage discharge at the southeast corner of the site appears to be not efficient. The 100-year outflow has to make a couple turns in order to get into the existing drainage easement in the adjacent community.  
  
It appears that the southern curb return at the east end of *Nimbus Avenue* should be opened up and concrete lined to meet the adjacent concrete easement to convey a smooth outfall. Address and revise in the next submittal.
15. The engineer must provide a table on the grading plans that shows a quantity estimate of all drainage improvements within Public Drainage Easements. All drainage improvements within Public Drainage Easements must be bonded and inspected.

**\*\*\* 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**  
HDR/AYS

T/R/S: T19S/R60E/26  
AREA G-26