CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: February 9, 2023
TO: **Land Development Services** Department of Building & Safety				FROM: Caitlyn Alcantara, P.E. Flood Control, Engr. Associate Department of Public Works
SUBJECT:	Drainage Study for:			**COPIES TO:**
Red Rock Elementary School				Taney Engineering
Cross Streets:	Upland Blvd & Mayflower Lane			Clark County School Board of Trustees
File Number:	F:\Depot\DSMemos\DS05647A.doc			
Parcel Number:	138-36-201-001			
Zoning Action:				
FEMA Flood Zone	YES	NO	**X**	
Proposed Storm Drain	YES	NO	**X**	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	1/23/2023	2/9/2023	See Comments Below	$400	5113910: $400
			TOTAL FEES (LDDRS):	**$400**	**----**

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. Provide a copy of the zoning/planning conditions associated with this site 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. Include the area of Mayflower Lane and Upland Boulevard in your hydrologic and hydraulic analysis.
3. The standard size of drainage exhibits should be 24" X 36". Provide drainage figures that are 24" X 36" in size and extend the map view north and south of the basins so we may ensure that the proposed basins encompass the entirety of the area contributing to the streets adjacent to the project site.
4. From the provided Existing Condition Map, Figure 6, the contours on the southern boundary looks as if it is flowing east towards Falcon Lane and not north towards Mayflower Lane. Provide additional reference materials to show if the entirety of the existing project site is meant to flow north toward Mayflower Lane
5. For the above reasons, also provide additional reference to find how much flow was previously accepted in the downstream drainage easement at the end of Mayflower Lane.

6. **Existing Condition Map, Figure 6:** The figure shows Basin XON while Standard Form 4 lists Basin XON1. Review and revise accordingly.
7. **Developed Condition Map, Figure 7:** Add a slopes column for the Developed Condition cross section summary table.
8. **The following comments apply to Figure 8, Offsite Basins:**
    a. Provide flow arrows on the exhibit.
    b. Provide contours and contour labels on the exhibit so we may verify the basin lines.
    c. Fix the basin boundaries of all offsite basins. From the aerial provided the basins look misaligned. For example the western boundary of all basins bisects several homes and Basin XOF1A cuts off the northwestern portion of Wisteria Lane and does not consider the high point south of the intersection of Mallard Street and Wisteria Avenue. The street view of Upland Boulevard shows a valley gutter across Temple Drive at the intersection, and basin XOF1B is not accounting for the additional area.
    d. Extend the boundary of Basin XOF2B east along Mayflower Lane to align better with the eastern boundary of the project site.
    e. Show the computations for Sections Q and R on the table of cross sections.
9. It is difficult to believe that the entire flow turns ninety degrees without a cross gutter when Upland Boulevard looks to be evenly divided between the west and east half of the road. It is agreed that a majority of flow turns due to the high slope on Mayflower Lane and asymmetrical crown on Upland Boulevard, however some of the flow must continue south onto Upland Boulevard. Provide a capacity section on western half of Upland Boulevard at the intersection of Upland Boulevard and Mayflower Lane or prove the provided flow split is valid by providing an explanation or additional computations.
10. Show the existing finished floors of the project site so we may verify that the proposed finished floor is not higher than the existing.
11. In the grading plans, the proposed building does not meet the Regional Flood Control District minimum criteria of 6-inch minimum above the highest adjacent top of curb (CCRFCD Manual Section 1602 304.4.E.1) on either Upland Boulevard or Mayflower Lane.
12. Provide BMP design calculations and BMP facilities such as landscape swales or sand/oil interceptors for the proposed site parking lot and LIDs per Section 1500 from the Clark County Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual.
13. A recent site visit performed by flood control staff shows a retaining wall on the northern boundary of the project site. State whether this wall will be removed or will remain with the proposed design.
14. Provide cross sections at the property lines. Typical sections are to extend through a building finish floor, parking, drive isle, landscape area, perimeter wall, and property line. Show the existing and proposed improvements in the sections.
15. Provide a note on all grading plans: Post-Construction BMPs (PCBMPs) / Control Measures noted on the Grading Plans are mandatory permanent regulatory stormwater pollution controls. These PCBMPs must be installed per the approved plans and must be permanently maintained.
16. The following comments apply to the improvement plans in their entirety:
    a. Show proposed contours given on Figure 7 on improvement plans as well.
    b. Label the existing L-curb and asphalt on the east boundary of the site and clearly label the boundary between existing and proposed.
    c. Correct the construction notes on the grading plan. For example, construction note 6 labels the chain link fence however the southern parking lot is likely not filled with them, and construction note 12 states a curb transition but that is not shown northeast of the building.

d. **Sheet G2:** Show the existing flow line on the northeastern boundary of the project site.

e. **Sheet G4:** South of the proposed building where the L-curb breaks for a zero type curb, provide a 3-foot valley gutter through the entrance to mitigate nuisance flows.

f. Change the grading certification note on the improvement plans to state the CLV# not the HTE#.

g. Properly label all components in the grading plans (ex. Sidewalks, Landscape).

h. Large landscape areas are not permitted to drain over sidewalks. Wherever a large landscape area drains through a sidewalk, provide a sidewalk underdrain.

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.

END OF REMARKS
HDR/CAA

T/R/S: T20S/R60E/S36
AREA L-36