CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: February 22, 2022
TO: **Land Development Services** Department of Building & Safety				FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for:			**COPIES TO:**
Vue Apartments at Centennial Phase III				LR Nelson Consulting Engineers
Cross Streets:	NEC John Herbert Blvd. & Centennial Pkwy.			Blue Marble Development, LLC
File Number:	F:\Depot\DSMemos\DS5541A.doc			Bart Anderson, P.E., DevCo
Parcel Number:	125-22-401-016 & 125-22-401-009			CCRFCD
Zoning Action:	22-0031-TMP1			CCPW
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	1/25/2022	2/17/2022	See Comments Below	$400.00	4619890: $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. Provide a copy of the zoning/planning conditions associated with this site (**22-0031-TMP1**) 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. The site is adjacent to or crosses an existing or proposed *Clark County Regional Flood Control District* (CCRFCD) master planned facility. Therefore, CCRFCD concurrence is required prior to final approval of the drainage study.

   Please note that effective March 15, 2019, the CCRFCD adopted new requirements for drainage study concurrence submittal. Follow the link below for specific guidance.

   http://gustfront.ccrfcd.org/LandDev/LandDev.aspx

4. The site is also adjacent to the jurisdiction of *Clark County* to the north and the *Clark County Beltway 215* to the south. The engineer must coordinate with *Clark County Public Works Department* (CCPW) and incorporate any concerns for boundary conditions along the north and south borders. CCPW concurrence is required prior to final approval of the subject drainage study.
5. In the second paragraph under *Subchapter A (Existing Drainage Description)* on Page 6 of the subject study, it appears that Subbasin XN1 is considered to drain to *John Herbert Boulevard*, combine with CP5 and routed southerly in the street and combined with CP4. However, per the existing contour lines, Subbasin XN1 drains away from *John Herbert Boulevard*, not towards it?! Address and resolve in the next submittal. Revise all the pertinent hydrologic and the subsequent hydraulic calculations accordingly.
6. **Figure 6 and Figure 7 Existing Conditions Hydrology Maps**: Provide combination point C2 in *Existing Conditions Hydrology Summary Tables*.
7. **Figure 8 and Figure 9 Developed Conditions Hydrology Maps:** Provide C3 location on the basin maps.
8. **Developed Condition HEC-1:** input data for basin area, CN, and lag time for basin JHERB does not match the *Standard Form 4* data.
9. Provide hydraulic analysis for *Darling Road* in the existing and developed condition.
10. Provide inlet/lateral calculations for the proposed inlet and lateral on *Centennial Parkway* (grading sheet C2.03) including inlet capacity and lateral HGL. Also, provide verification that the existing system can handle the additional flow that will be collected by the inlet.
11. Lot to lot drainage swale along the back of the townhouses require a 5' drainage easement. The easement shall be PUBLIC but to be PRIVATELY maintained by the HOA. The 5'-easement must be concrete lined. Provide typical detail for the drainage in the next submittal.
12. **Sheet C2.02**: The anticipated 100-year flow depth at the driveway in *John Herbert Boulevard* is 1.14'. The proposed ridge line set at 95.18 TC/HP at the north side of the driveway island is not high enough. The 100-year flood flow will spill over through this location into the onsite parking area which is not acceptable. Review and revise accordingly.
13. **Sheet C2.02**: *Detail Section H/6.01* does not match the grading plans. The detail section shows the building's FF (townhouse Building 12 in this case) at an elevation above the roadway, however in this case the building FF is located at a lower elevation lower than the roadway.
14. **Sheet C2.03**: The proposed FF of *Retail Building 2* does not meet the twice-the-depth criteria. Raise the finished floor elevation accordingly.
15. **Sheet C2.04, Sheet C2.06 & Sheet C2.08**: It is not acceptable to have the BMP cross over the public right-of-way of *Darling Road*. *Darling Road* should be improved with concrete sidewalk and the BMP should be discharged through sidewalk underdrain. Address and resolve in the next submittal.
16. Total required stormwater treatment not determined. The BMP calculations provided were determined using 2 acres per BMP for a total of 12 acres of provided treatment. The proposed site is 20.3 acres. Provide clarification or calculation that justifies the treatment of 12 acres is sufficient.
17. Provide profile of proposed storm drain (shown on Sheet C2.03) in the grading sheets.
18. All provided garage finished floors do not meet the *Regional Flood Control District* minimum criteria of twice the Q_{100} depth of flow up to 18-inches above the water surface. Additionally, clarify why there are 2 GFF elevations provided in the garages, does this indicate the garage is sloped?

19. The following finish floors do not meet the *Regional Flood Control District* minimum criteria of twice the Q_{100} depth of flow up to 18-inches above the water surface (CCRFCD Manual Section 304.4.E.1) or 6-inch minimum above the highest adjacent top of curb (CCRFCD Manual Section 1602 304.4.E.1). The following finish floors should be revised or alternate flood protection provided.

LOT	**FF shown**	**Min FF**
TOWNHOUSE BUILDING 4	2380.46’	2380.63’
TOWNHOUSE BUILDING 5	2382.68’	2382.88’
TOWNHOUSE BUILDING 7	2387.59’	2387.73’
TOWNHOUSE BUILDING 8	2391.11’	2391.23’
TOWNHOUSE BUILDING 9	2392.48’	2392.64’
TOWNHOUSE BUILDING 11	2397.42’	2397.78’
TOWNHOUSE BUILDING 12	2394.77’	2395.77’

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/AYS

T/R/S: T19S/R60E/22
AREA G-22