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| CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM | | DATE: May 28, 2024 |
| 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: |
| Duncan and Edwards Residential - Phase 1 | | Taney Engineering |
| Cross Streets: | SEC of Edwards Avenue & Duncan Drive | Michaels Development |
| File Number: | F:\Depot\DSMemos\DS5775A.doc | Bart Anderson, P.E., DevCo. |
| Parcel Number: | 138-12-210-021 | CCRFCFCD |
| Zoning Action: | 24-0067-GPA1; 24-0067-SDR1 & 24-0067-ZON1 | CCPW |
| 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 | 5/16/2024 & 5/22/2024 | 5/28/2024 | See Comments Below | \$400.00 | 5780526: \$400 |
| TOTAL FEES (LDDRS): | | | | \$400.00 | ---- |

REMARKS:

A portion of this site is located in a FEMA Special Flood Hazard Area, Zone AE. The subject Phase 1 Development proposes to match the existing grades in the flood zone area, ie, no mapping changes to the Flood Zone are proposed to be submitted to FEMA with this Phase 1 Development.

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. *City Flood Control* will not recommend FEMA review and approval based upon that no structures are proposed and the finished grade matches the existing grade within the FEMA Flood Zone, ie, no flood zone impacts during the Phase 1 Development.
2. The site is adjacent to or crosses an existing or proposed *Clark County Regional Flood Control District* (CCRFCFCD) master planned facility. Therefore, CCRFCFCD concurrence is required prior to final approval of the drainage study.

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

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

3. Provide a copy of the zoning/planning conditions associated with this site (**24-0067-GPA1; 24-0067-SDR1 & 24-0067-ZON1**) 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.
4. The site is adjacent to the jurisdiction of Clark County to the west. The engineer must coordinate with *Clark County Public Works Department (CCPW)* and incorporate any concerns for boundary conditions along the west border. CCPW concurrence is required prior to final approval of the subject study.
5. Explain why the *Existing HEC-1* model included basin DON2?
6. **Figure 7:** The reference for the FEMA Floodzone shows that there is 188 cfs within *Duncan Drive*, but the exhibits flows are shown to be 63 cfs in the same location. The WSE provided by the FEMA map must be addressed by both phases of this study.
7. **Figure 7:** The calculations for Section Q are a weir calculation which does not account for a slope, but the exhibit shows a slope of 0.6. Revise for consistency.
8. **Sheet G1:** Label the existing contours on the grading plans. This is to estimate how much fill or cut between the existing and proposed conditions.
9. **Sheet G1:** Identify the shaded area as FEMA Flood Zone AE and distinguish the rest as FEMA Flood Zone X in the next submittal.
10. **Sheet G1:** The hump at the entrance off *Edward Avenue* does not meet the requirement of 6"-minimum freeboard above the 100-year water surface in *Edward Avenue*. Review and revise accordingly.
11. **Sheet G1:** The anticipated 100-year flow depth in *Duncan Drive* is 0.9'. The proposed hump at the fire gate in *Duncan* does not provide a minimum freeboard of 6" above the 100-year water surface. Review and revise in the next submittal.
12. **Sheet G1:** What is the South East corner of the site in the enclosed area? How is this intended to drain?
13. **Sheet G1:** Provide sufficient finished grade elevations at the southeast tri-angular area to clarify drainage direction.
14. **Sheet G1:** Label the finished floor elevations of the adjacent properties to the north, east, south and west.
15. There are two *Detail Section N/GD1* along the east boundary line. On the grading plan, the north location shows L-curb in the parking space while the south location shows A-curb in the parking area. Provide one more detail section for the distinction in the next submittal.
16. **Sheet GD1: Detail Section S:** Show and identify the property line (or *Duncan* right-of-way line).
17. All solid grouted walls must be a minimum of 8"-thickness CMU or equivalent.
18. For parking lot LID and storm water quality, the engineer must provide calculations (per *Section 1500 of the CCRFCD Hydrologic Criteria and Drainage Design Manual*) to justify that the length, width and depth of the landscape swales are meeting the design guidelines in an effective disconnected impervious areas layout.

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.

| FF shown (BLDG #7) | Min FF |
|--------------------|---------|
| 2262.57 | 2262.84 |

As an alternate each lot must be discussed in the drainage study, shown to be flood protected, and any necessary flood improvements shown on the grading plan.

***** 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/AYS

T/R/S: T20S/R60E/12
AREA L-12