| CITY OF LAS VEGAS<br>INTER-OFFICE MEMORANDUM | | | DATE:<br><br>March 25, 2025 |
|---|---|---|---|
| **TO:**<br>**Land Development Services**<br>Department of Community Development –<br>Building & Safety Division | | | **FROM:**<br>Albert Sung, P.E.<br>Flood Control Project Engineer<br>Department of Public Works |
| **SUBJECT:** | Drainage Study for:<br>**Iron Mountain and Puli (Shalestone)** | | **COPIES TO:**<br>Richmond American Homes |
| **Cross Streets:** | Iron Mountain Road and Iron Road | | Westwood Professional Services |
| **File Number:** | F:\Depot\DSMemos\DS5847A.doc | | Lucien Paet, P.E., DevCo |
| **Parcel Number:** | 126-01-401-007,-008,-009, 126-02-801-018, -019, -020, -021, 126-02-899-002 | | CCRFCD<br>CCPW |
| **Zoning Action:** | 24-0576-GPA, 24-0576-ZON, 24-0576-VAC, 24-0576-VAR, 24-0576-TMP | | |
| **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 | 2-24-2025 | 3-20-2025 | See Comments Below | $400.00 | 6128350: $400 |
| | | | **TOTAL FEES (LDDRS):** | **$400.00** | **----** |

**REMARKS:**

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

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| | 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. 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

3. The site is also adjacent to Clark County jurisdiction to the south. The engineer must coordinate with Clark County Public Works Department (CCPW) and incorporate any concerns for boundary conditions. CCPW concurrence is required prior to final approval of the study.

4. Sites with a grade difference of 2 feet above or below existing are required to have approval from the *City 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 Planning approval with the next submittal.

5. Provide an Existing Condition Drainage Map that shows all onsite subbasins depicted in the Interim condition as undeveloped. The referenced existing drainage map doesn't allow for comparison of flows generated from on-site development. Provide analysis of the existing condition as compared to the interim and ultimate conditions and the additional flows being conveyed downstream.
6. On Exhibit D & E
    a. The Q100 for DE1 & DE2 in the Drainage Easement Hydraulic Summary table do not match in the Interim Condition Flow Rate Table.
7. On Exhibit D, E, and F,
    a. Provide 10 year street flow analysis to show that all public streets meet HCDDM criteria in the Ultimate and Interim conditions.
    b. The Q100 for DE3 in the Drainage Easement Hydraulic Summary table do not match in the flow master calculation. Verify basin PULT2(a) is contributing for Section DE3.
    c. The velocities for DE3 in the Drainage Easement Hydraulic Summary table are both slightly off from the calculations provided. Update the table to match calculations.
8. On Exhibit D,
    a. Add "Phase 1" to the title of the Interim Condition Flow Rate Summary table.
    b. Update the flows for C2 to match the subbasins used in section R4.
    c. Add "Phase 1" to Drainage Easement Hydraulic Summary table title and update flows to be the phase 1 flows.
9. On Exhibit E,
    a. Add "Phase 2" to the title of the Interim Condition Flow Rate Summary table.
    b. Add "Phase 2" to Drainage Easement Hydraulic Summary table title and update flows to be the phase 2 flows.
10. On Exhibit F,
    a. Address the future extension of Iron Mountain Rd. Provide NOFA.
    b. Add "Ultimate" to Drainage Easement Hydraulic Summary table title.
11. The Soil Data & Curve Numbers Computation chart included curve numbers for the land uses for each soil category. Provide the reference tables that support these values.
12. On the Standard Form 4, many of the travel time lengths appear larger than what was measured based on scaling the subbasin maps. Reevaluate and update calculations as needed.
13. Provide Phase 1 Hec-1 model where basins ON1 and ON2 are undeveloped land.
14. For Facility N1, the nomograph uses a pipe size of 42". The plans show a 36" pipe. Update the nomograph with the correct pipe size.
15. The Pipe Culvert Outlet Protection Computation utilizes HCDDM Figure 712 and 714. Provide these figures with confirmation of the values used in the computation.
16. On the Finished Floor check tables on pages 178-179,
    a. The Lot 6 $FF_{Design}$ elevation does not match Phase 1 plan sheet G-3.
    b. Lots 73-114 do not match the phase 1 and phase 2 plan sheets. Update table.
17. Provide D load calculations for all RCP pipes within public right-of-way.
18. Provide plan and profile sheets with centerline profile for all public roads in phase 1 and phase 2.
19. On phase 1 plan sheet G-1,

a. At the downstream end of the 7’ drainage easement channel with 48 cfs there is a riprap pad with a low flow 3’ concrete valley gutter. Provide analysis that shows the riprap sizing is adequate given the 10% slope and 48 cfs of flow.

b. Per City of Las Vegas statute, 10’ drainage easements are acceptable for 100 year flows of less than 20 cfs. 100 year flows greater than 20 cfs require a 20’ drainage easement is required. Along the west side of the development, the 10’ drainage easement with a 7’ U-Channel conveys 48 cfs of flow in the 100 year storm. Provide a 20’ drainage easement for this U-channel and amount of flow.

20. On phase 1 plan sheet G-3, Storm drain cannot be located under curb and sidewalk. Minimum clearance is 3-ft from lip of gutter to outside of pipe. Revise storm drain.

21. On phase 1 plan sheet G-6,

    a. Extend the 2’ U-channel to the curb on Iron Mountain Rd and add a curb opening. A portion of this will need to be removed for phase 2 but this will need to operate properly in the interim condition.

    b. The velocity for DE2 is 21.05 fps in the concrete channel is excessive and the discharge on Iron Mountain Road may not be safe for the pedestrian or properties during a 100 year storm event. Address to reduce the discharge velocity in the next submittal.

22. On phase 1 plan sheet D-2,

    a. Add material to sloped area adjacent to concrete valley gutter in section 20.

    b. Add “BL” as shown in section 29 to the abbreviation tables for both phase 1 and phase 2 plan sets.

    c. The proposed 12-ft valley gutter with a 2% side slope at the drainage easement has a max depth of 0.12’, this do not meet the 0.27’ flow depth per section DE3 to contain the 100-year flow.

23. On phase 1 plan sheet PP-1,

    a. Adjust storm drain outlet and riprap orientation to be in the same flow direction as the existing wash rather than entering at a near 90 degree angle.

    b. Proposed storm drain outlet is being constructed offsite. Approval letter required from property owner.

    c. Show riprap outlet in profile.

    d. Remove call outs indicating the total number of grates for each inlet?

24. On phase 1 plan sheet PP-2, on SD Lateral 3 profile,

    a. Show the water surface elevation for the sump condition.

    b. Provide an interim WSPGW for the pipe and extend the HGL to the inlet of the pipe.

    c. The ultimate condition HGL does not appear to meet the 1’ depth criteria at the proposed inlet.

    d. Remove call outs indicating the total number of grates for each inlet?

25. On phase 2 plan sheet G-3, add construction note 16 which appears to be labeling the fence behind the 20’ inlet to construction notes list.

26. On phase 2 plan sheet G-4 and G-5, add slope tags to the cul-de-sacs of Houston Moore Ct and Fiona Joyce St.

27. On phase 2 plan sheet PP-1,

a. Remove call outs indicating the total number of grates for each inlet?

28. On phase 2 plan sheet G-1,

    a. The velocity for DE1 is 13.06 fps in the drainage easement is excessive and the discharge on Radley Avenue may not be safe for the pedestrian or properties during a 100 year storm event. Address to reduce the discharge velocity in the next submittal.

    b. Per previous comment, provide a drop inlet about 50-ft away from the northwest corner of the site to recapture the flow from the drainage easement. Storm drain cannot be located under curb and sidewalk.

29. Plan and Profile Sheets

    a. Provide preliminary plan and profile sheets for all proposed perimeter streets. Plan and profile sheets must show existing and proposed grade at centerline, but may be preliminary in all other respects. These plans are necessary to determine the effect of the proposed development on the adjacent properties.

30. Private Streets

    a. Private streets must be public drainage easements. Provide a note on the grading plans "Note: All private streets are P.U.E., Public Sewer Easements, and Public Drainage Easements to be privately maintained by HOA."

31. Drainage Easement

    a. Label Document Number or Book and Page Number for all existing easements on the grading plan.

32. Offsite Easement

    a. Prior to approval of construction drawings a copy of the patent easement, sketch, and legal description must be submitted to Land Development in order to process a Declaration of Utilization across BLM Property.

33. Offsite Grading

    a. The grading plan indicates offsite grading. Secure a notarized letter of permission from the property owner allowing the grading. This letter is required prior to final acceptance of the drainage study.

34. Cul-de-sac 1% minimum

    a. The Regional Flood Control District Manual requires 1% minimum slope around the bulb of a cul-de-sac where storm water is drained through per Section 1602. Provide the required slope in (SUPPLY CUL-DE-SAC NAME) cul-de-sacs.

35. Callout of Drop Inlets

    a. Revise all callout of proposed drop inlets to include only the length of the inlets without adding the number of grates. There were projects constructed in which the contractors followed only the number of grates without double checking the total length whether matching the length callout. Shorter inlets were constructed as a result. Review and revise accordingly.

36. Phasing Construction Grading

    a. For development in two or more phases, City of Las Vegas does not allow rough grading (such as rough pad and interior street grading) in the future phases in conjunction with the present phase improvements. Contour grading (to balance cut & fill) is the only grading activity allowed in the future phases. The other option is to leave the future phases in a natural and undisturbed condition.

37. Provide a note on all grading plans (Standard Note No. 6): 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.

38. Add a note in all pertinent sheets for the construction of all storm drain drop inlets per a newly adopted USDCCA Drawing No. 421 (Stormwater Quality Management Stamp and Sign Detail).

39. All storm drain manholes must have a 30" ring and cover. Revise all construction notes accordingly.

40. Add to grading construction note "Drop inlet 10-ft in length or smaller, remove solid grate and replace it with regular grate".

***** 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**
CA/AYS/SF/JT

T/R/S: T19S/R59E/S02
AREA F-02