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| CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM | | DATE: December 16, 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: |
| Vitality Resort Mixed Use | | DRC Surveying Nevada, Inc. |
| Cross Streets: | Grand Central Pkwy & W. Charleston Blvd | Union Pacific Railroad Company |
| File Number: | F:\Depot\DSMemos\DS05821A.doc | Bart Anderson, P.E., DevCo |
| Parcel Number: | 139-33-810-003, -004 | NDOT |
| Zoning Action: | 23-0661-SUP1, 23-0661-VAC1, 23-0661-SDR1 | |
| FEMA Flood Zone | YES NO X | |
| Proposed Storm Drain | YES X NO | |

| HISTORY | DATE RECEIVED | DATE REVIEWED | COMMENTS | REVIEW FEES | FEES PAID Payment Trn # |
|----------------------------|---------------|---------------|--------------------|--------------|-------------------------|
| 1 st Submittal | 11/21/2024 | 12/16/2024 | See Comments Below | \$400 | 6020787: \$400 |
| TOTAL FEES (LDDRS): | | | | \$400 | ---- |

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. |

- Per Item #24 of 23-0661-SDR1 condition, Contact the City Engineer's Office at 702-229-6272 to coordinate the development of this project with the Charleston Underpass Project – Grand Central Parkway to Commerce Street project (MWA936) and any other public improvement projects adjacent to this site. The developer shall construct a retaining wall along Charleston Boulevard right-of-way, to facilitate the future elimination of the slope paving including a dedicated right-turn lane if required in the approved Traffic Impact Analysis, to meet the approval of the City Engineer and City Traffic Engineer respectively, and the Nevada Department of Transportation (NDOT). In addition, the Owner shall coordinate the provision of a Temporary Construction Easement overlying a portion of the eastern parking lot and landscape area (excluding the fire lane pathway) as part of the future construction of the Charleston Underpass Project. In addition, there are three (3) gas lines operated by Kinder Morgan currently attached to the Union Pacific Railroad bridge that will need to be relocated. The owner shall coordinate and grant the provision of an appropriate easement so to allow these gas lines to be placed underground to connect into the existing gas facilities as part of the future construction of the Charleston Underpass Project, unless an alternative arrangement is approved by the Department of Public Works. Comply with the recommendations of the City Engineer.
- Per Item #25 of 23-0661-SDR1 condition, Obtain an Occupancy Permit from the Nevada Department of Transportation (NDOT) for all improvements in the Charleston Boulevard public right-of-way adjacent to this site prior to constructing any improvements within NDOT jurisdiction.

3. The proposed development consist of two parcels; clarify in the next submittal whether the site will be converted into one parcel.
4. 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.
5. Clark County Regional Flood Control District has adopted the "2023 Las Vegas Valley Flood Control Master Plan Update". The engineer must reference all the pertinent figures in the most recent Master Plan Update. Provide all latest figures in the next submittal. Address if there are any impacts to the subject development since the latest update.
6. 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 the proposed cul-de-sacs.
7. Label Document Number or Book and Page Number for all existing drainage easements on the grading plan. The notable easements not marked are on the northern and eastern boundary of the project site. What is happening to the temporary drainage easement along the east side?
8. The drainage study needs to reference the 2005 CLV Central Neighborhood Flood Control Master Plan and identify any flow impacts. Per the Central Neighborhood Master Plan Figure E10 shows an adopted flow of 2457 cfs during the 100-yr event at Charleston Boulevard and I-15 going east. Provide hydraulic calculations to justify the proposed finish floor elevation meets the minimum requirement.
9. Figure 3: Blow up the plan view and submit in 24" x 36" paper. Clearly label the contours or add spot elevations to ensure the basins are delineated correctly. It seem more areas to the north and the west may impact the project site.
10. In the Time of Concentration computation there lists a basin IRNHRS2 that is not used.
11. Hydraulic Calculations: The 100-year flow for cross section 3 must be CPD1 + DON3. Correct in the next submittal.
12. Verify and correct the flow for hydraulic cross section 4. It should include basin DON5.
13. Correct the flow going to hydraulic cross sections A and 8.
14. Slope for Hydraulic Cross Section D should match the plans 4.61% but it is steeper at 5.40%.
15. Provide sections for the minimum and maximum slopes of every cross-section.
16. Correct hydraulic cross sections 3, 5 and 7 to match the grading plan sections.
17. 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.
18. The LID BMPs of the project site are not meeting the criteria set by Clark County Regional Flood Control District Hydrologic Criteria and Drainage Design Manual (CCRFCD HCDDM). Section 1500 of the CCRFCD HCDDM states the area that needs that to be treated, the minimum length of the swale, the slope of the swale, and the dimensions of the swale.

The BMP on the east side of the site, do not have the proper dimensions of the swale nor the proper lining of a BMP swale. Additionally, Section 1500 state that 75% of the parking area must be treated, while the area being treated is 50%.

19. The 'U' channel is designed at 0.20% slope. The minimum slope allowed is 0.40%, without a nuisance storm drain system and is difficult to construct. The engineer and developer is advised that ponding in proposed improvements is not allowed. Sections of substandard improvements may have to be removed and replaced during the inspection process.
20. Storm drain may be considered private when the construction of the storm is on the properties APN solely. However, when connecting to an existing drop inlet within the right-of-way, the engineer must provide a profile view and computations of the proposed storm drain and meet all criteria set forth within the Hydrologic Criteria and Drainage Design Manual provided by Clark County Regional Flood District.
21. Show the existing local storm drain located in Charleston Boulevard in the plans. Label all existing storm drains with the CLV drawing numbers.
22. Upsize all sidewalk underdrain PVC pipes to 4"-diameter minimum.
23. Sheet GP1: In southwestern corner of the project site, it states that the Existing Decorative Wall is to be cut back. Clarify in what manner it will be cut back and how it will be stabilized once it is cut.
24. Sheet GP2: Provide an emergency overflow path for the pipe inlet between building #1 and #2. It can become clogged since there is only one inlet area. Verify if there is enough cover for the three pipes near the outlet at the curb?
25. Sheet DT2: Cross section HH: revise and show proposed swale on the south side.

***** 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: 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, conditional acceptance 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.

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
AYS/SF/JT

T/R/S: T20S/R61E/S33
AREA M-33