

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: July 11, 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:
Village 27 Parcel M & E Drainage Improvement			The Howard Hughes Company
Cross Streets:	Lake Mead Blvd		GCW, Inc.
File Number:	F:\PW_Flood\1. Development Review\1. DS Memo\DS05586A.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-15-401-003, 137-21-501-001		
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 #
1 st Submittal	06/28/2022	07/11/2022	Not approved	\$400.00	4845731: \$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.

- Please note that Final Approval of Improvement Plan will not be issued until the downstream debris basin is approved.
- The site 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>

When it's applicable, structural calculations of facilities must be approved by the City prior to submittal to the Clark County Regional Flood Control District for their review and concurrence.

***** The Conditional Approval of this Drainage Study is to allow the engineer/developer to submit the Improvement Plans to City Land Development Only**

***** Do not submit the Drainage Study to Clark County Regional Flood Control District (CCRFCD) prior to the Structural Design and Calculations being approved by the City Building & Safety Department**

3. 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.
4. The proposed CCRFCD Channel must be dedicated and recorded as Flood Control Right-of-Way prior to City of Las Vegas taking ownership and maintenance responsibility. Clearly identify the Flood Control Right-of-Way limits on the cross-sections and grading plan.
5. Figure 5 – Prorated flows do not add up to the Total flow for the sub-basin. Flow is 157-cfs while Prorated adds up to 146-cfs. Revise discrepancy.
6. Proposed 3-foot valley gutters crossing the access road need to be enlarged to convey the anticipated flows. Provide depressed concrete section that conveys the sub-basin flows. Provide cutoff walls at end of depressed sections. Show notch in channel wall to accept flows.
7. Sheet PP1 – Provide tie-in detail from Channel to the Proposed RCB & Headwall.
8. Sheet PP4 – Show 36” RCP storm drain connection point into south wall. Reference needed to Structural Sheet.
9. Sheet DT1 – Reference cutoff walls to the corresponding Structural Detail, 6/S1. Revise valley gutter detail to show variable size per flow collected. Provide depressed concrete section that conveys the sub-basin flows. Show cutoff wall. Concrete surface needs to match back into access road grades.
10. Sheet S1 – Detail 7/S1: The 3-foot cutoff wall needs to be extended 3-feet below the 10-inch thickened slab. Total depth is 3-ft 10-inch. With the steep slopes, provide scour calculation to verify cutoff wall depth. Specify minimum 6,000 psi concrete for Channel improvements.
11. Sheet S3 – Channel Wall Details needs to show the Construction Joint a minimum of 3-inches above the channel invert at the Wall.
12. Sheet S4 – Provide pipe penetration Detail for the 36” connection.
13. Provide freeboard calculation for the proposed channel including super-elevation.
14. Address following comments regarding HEC-RAS:
 - a. Match cross-sections shown on detail sheet. It appears that cross-sections used in HEC-RAS have additional points.
 - b. Add station to the cross-sectional view of the report.
15. Provide a vehicle turn-around at the upstream end of north access road. Provide a connection to the existing utility easement for the south access road at the upstream of channel and add drainage easement to the utility easement. Add maintenance access ramp to the south access road at the upstream end of channel. Relocate north access ramp to the downstream end of the channel.
16. Extend erosion protection along the south access road up to storm drain station 13+40 and tie into existing channel wall.
17. Revise access ramp direction to the same direction as the channel flow. Refer to Figure 710 of the CCRFCD Drainage Design Manual.
18. Provide a safety ladder at every 600-ft per 707.3 of the CCRFCD Drainage Design Manual. Provide an opening for post and cable railing at the location of ladders as shown on sheet S1.
19. Extend cut-off wall to the south 20-ft section of channel at the upstream end on sheet PP4.

- 20. Add cross-section for cut-off wall.
- 21. Add channel half width dimension on all cross-sections on sheets DT1 and DT2
- 22. Revise DS number on the DS compliance note to reflect current DS number.

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
OSK

T/R/S: T20S/R59E/S15, 21
AREA K-15