CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: July 28, 2025
TO: **Land Development Services** Department of Community Development – Building & Safety Division				FROM: Tyler Key Flood Control Engr. Associate Department of Public Works
SUBJECT:	Drainage Study for:			**COPIES TO:**
Summerlin Village 28A Phase 1 Roadway Improvements				The Howard Hughes Company, LLC
Cross Streets:	Crossbridge Dr. & Alta Dr.			GCW, Inc.
File Number:	F:\Depot\DSMemos\DS5881A.doc			Lucien Paet, P.E., DevCo
Parcel Number:	137-28-401-001, 137-33-101-008, 137-29-000-003, 132-000-011, 137-28-101-008, 137-28-201-003			CCRFCD
Zoning Action:				
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	6/24/2025	7/28/2025	See Comments Below	$400	6291506: $400
			TOTAL FEES (LDDRS):	**$400**	**----**

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. The project proposes flood control improvements adjacent and crossing alignments of the District's MPU. The District will require a Master Plan Amendment (MPA) or incorporation of the proposed facilities into the next MPU cycle and prior to public funding when the facilities are turned over to the City for public maintenance.

2. The project proposes to build a future MPU facility along the *Alta Drive, Grand Park Blvd.* and *Park Drift Trail*. Prior to final plan approval the developer must complete a maintenance and liability agreement for the interim drainage improvements (off-site berms or channels) and post a minimum maintenance bond of $50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facility and an exhibit that adequately shows the location and limits of the drainage facility to *City of Las Vegas Flood Control* for approval. Once the drainage study is conditionally approved, the engineer should contact the City's Land Development Section (229-6371) to begin the agreement process.

   In order for the maintenance bond to be released in the future, a drainage update / letter will be required to justify that the offsite berms / channels are no longer necessary and can be removed.

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. A review of the grading plan shows an elevation difference of approximately 10-feet of cut/fill adjacent to (un)developed properties. 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. 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

6. The project proposes to build a temporary drainage facility along the *Alta Drive, Grand Park Blvd.* and *Park Drift Trail*. Prior to final plan approval the developer must complete a maintenance and liability agreement for the interim drainage improvements (off-site berms or channels) and post a minimum maintenance bond of $50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facility and an exhibit that adequately shows the location and limits of the drainage facility to *City of Las Vegas Flood Control* for approval. Once the drainage study is conditionally approved, the engineer should contact the City's Land Development Section (229-6371) to begin the agreement process.

   In order for the maintenance bond to be released in the future, a drainage update / letter will be required to justify that the offsite berms / channels are no longer necessary and can be removed.

7. The provided WSPG analysis used an n-value of 0.013. Provide an additional WSPG model of the system utilizing an n-value of 0.015 to determine the impacts to the velocity. For segments of pipe with velocities between 25 and 35 feet per second, 6000-psi concrete with 2-inch additional (sacrificial) thickness is required. For segments of pipe with velocities in excess of 35 feet per second, added mitigation to reduce long term impacts is required. A Special Construction Note must be added to the Grading Plans and the Plan and Profile Sheet that calls out the special construction requirement for the additional sacrificial concrete.

8. All storm drain inlets that are more than 10'-deep require a special structural detail and calculations. Submit structural design and calculations to *City Building & Safety Department* for review and approval prior to the final approval of the drainage study.

9. ***Junction Structure*** is a special design facilities. Structural plans for the proposed reinforced concrete structures must be submitted for review. Provide soils report, structural calculations and specifications, two wet stamped structural sets, and a grading plan to the *Building Department* for processing. The engineer must provide a copy of *Building Department* approval of the structures to *Flood Control* prior to final approval of the subject improvement plans.

10. The proposed improvement plans show drainage facilities of a size that must be reviewed for Maintenance and Access concerns. The engineer must submit a separate set of improvement

plans to CLV Streets & Sanitation Department for their review. Streets & Sanitation approval must be secured prior to drainage study approval.

11. Show the RCB angle points and/or curved segments by station location and angle/degree change. Include the radius information and discuss how the curved sections are to be completed using curved forms or multiple angled segments. This needs to be explained within the Specifications. This information is needed to allow for the use of precast RCB's as well as cast in place construction.

12. The plan sheets note the use of two different thicknesses of sacrificial concrete within the RCBs. The 1" thickness is mentioned in the study but the 3" tines is not. Please note the rational for use of 1" vs 3" sacrificial concrete.

    a. Update WSPG with 3" reduction to RCB height do to 3" sacrificial concrete.

13. Any significant changes to any of the reference studies throughout the review process will require a drainage study update or will need to be addressed in future submittals of this study.

14. Provide D load calculation or explanation of determination of RCP pipe class as utilized in the plan set.

15. Provide Public Drainage Easements for all flow through common lots.

16. Show the CLV drawing number for all existing storm drains shown on the plans.

17. Provide the stationing offset for the proposed storm drain through the roundabout of Park Drift Trail.

18. Provide all structural plans referenced in the construction notes.

19. Check all construction notes to ensure they are referencing the correct details or cross sections.

20. Provide all NDOT standard details on the detail sheets.

21. Move SDMH #5 and 19 slightly downstream of the lateral connections to ensure proper constructability of the Type II manholes.

22. Where manholes are proposed on RCB, shift manhole to be aligned with the side of the box to allow for step access to the bottom of the RCB.

23. Explain where the flow line just north of DI #1.2 is intended to discharge. Clearly show this on the plans.

24. In the inlet calculation, there are two calculations for DI #3.1. The 20' Type CM2 inlet appears to be mislabeled and should be labeled as DI #3.2. Check and updated.

25. Provide inlet calculation for inlet 7.1.

26. On Figure 5,

    a. For INTERIM/ULTIMATE CONDITION DRAINAGE BASIN FLOW RATE SUMMARY table, the reference material COS-14 notes a flow of 10 cfs where 4 cfs is noted in the table on the figure. Check and update as needed.

    b. For 100-YEAR DROP INLET SUMMARY table, provide a row for the total 100 year flow.

    c. In 100-YEAR DROP INLET SUMMARY table, Inlets 8.1 and 8.2 should have a source of C/2 not J/2. Verify and update as needed.

27. **Sheet G2:** Show line type for 3” Tines sacrificial concrete in Legend. Also, consider adding the line type to Detail 1 on sheet DT3.

28. **Sheet PP1:** Provide a connection detail for the proposed storm drain connecting to the existing 8’x6’ RCB.

29. **Sheet PP2**:

    a. Extending sacrificial concrete one length of RCB beyond grade break of RCB at station 267+73.

    b. The HGL doesn’t appear to match the HGL starting around 267+73. It looks like there is a hydraulic jump at the lateral. Also, check to verify that everything is correct in the WSPG as it seems like there should be a hydraulic jump near the grade break.

30. **Sheet PP3:** Move the Off-Site Flood Control Note so that it is not overlapping with other notes on the page.

31. **Sheet PP4:** Fix the overlap of the invert call out for the junction structure and the Basis of Bearing and Coordinates notes.

32. **Sheet PP4:**

    a. The 7’x6’ RCB has a bend that appear to exceed the HCDDM maximum of 22.5°. Provide angle on plan and update with angle or radius to meet HCDDM.

    b. The 7’x6’ RCB confluence angle into the 8’x6’ RCB does not appear to meet HCDDM criteria.

33. **Sheet PP7:** The HGL starting around station 289+50 doesn’t appear to match the WSPG. Double check and update as needed.

34. **Sheet PP7:** A junction structure is required for the lateral connection of DI #5.1 as the lateral is the same size as the main line structure.

35. **Sheet PP10:**

    a. The water valve at station 300+00 appears to not meet clearance from the proposed storm drain.

    b. The storm drain has less than 10’ of clearance from the waterline so there will need to be 4” of CLSM II around the storm drain.

36. **Sheet PP12:**

    a. Add grade tag to high point in roundabout.

    b. Extend FG surface to end of profile similar to EG surface.

37. **Sheet PP15:** DI #15.1 references Detail 3/LP7 for the profile view of the lateral, but Detail 3/LP7 shows the lateral for DI #9.1. Review and revise accordingly.

38. **Sheet PP16:** The direction of the outlet pipe through the corner of the drop inlet appears to be a constructability issue.

39. **Sheet PP19:** Specify manhole type of SDMH #23.

40. **Sheet PP20:** Show the entirety of the lateral connection on the plan sheets.

41. **Sheet PP20:** Provide an additional flow line to connect the proposed flow line within Village 28A Parcel B, APN 137-28-401-001, and the proposed sump inlet.

42. For all applicable lateral profiles, note MOD “CM2” inlet to clarify that there is a special detail for the inlets that have a depth greater than 10’.

43. **Sheet LP5:**

    a. On profile 2 and 3, the elevation at the RCB connection does not match the corresponding PP sheet profile.

    b. On profile 5, the flow for the pipe between inlet 4.1 and SDMH 7 should be 53 cfs to match the WSPG and Figures.

44. **Sheet DT1-DT3**:

    a. Many of the cross sections so what appears to be existing sidewalk with a note that it is constructed by others. If this is existing at the time of construction of this project, show it in the plan sheets as existing.

    b. All of the cross sections appear to have two lifts of the Type 2 base. Are they both 4” or is the 4” Type II tag labeling the entire base section?

    c. On sheet DT2, sections C though H show a berm and swale graded as existing; however, the plans make it appear as though this being graded as part of this project.

45. There are two sheets designated as DT3.

46. On TR sheets, add the proposed sewer and storm drain manholes to the plans to demonstrate where the manholes fall within the lane.

***** 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
TJK

T/R/S: T20S/R59E/S28
AREA K28