GCW

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Response to CCRFCD Comments on the

Technical Drainage Study for Summerlin Village 29 Phase 3 Infrastructure (Grand Park Boulevard)

62029-207

December 2024

12/12/24

Prepared for:
The Howard Hughes Company, LLC
1700 S Pavilion Center Dr, Suite 250
Las Vegas, NV 89135
Phone: (702) 791-4518

Prepared by GCW, Inc.

1555 South Rainbow Blvd
Las Vegas, NV 89146

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HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Summerlin Village 29 Phase 3 Infrastructure (Grand Park Boulevard) Date: December 2024

Location of Development: a) Descriptive (Cross Streets) North/South: Grand Park Boulevard

East/West: Spring Run Drive

b) Section: 28 Township: 20S Range: 59E

c) APN : 137-28-201-003

Name of Owner: The Howard Hughes Company, LLC

Telephone No.: (702) 791-4300 Fax No.: (702) 791-4518 E-Mail Address: April.Chapman@howardhuges.com

Address: 1700 S Pavilion Center Dr, Suite 250; Las Vegas NV, 89135

Contact Person-Name: Lee Gong PhD, P.E, CFM **Telephone No.:** (702) 804-2134

* **E-Mail Address:** LGong@gcwengineering.com **Fax No.:** (702) 804-2229

Firm: GCW, Inc.

Address: 1555 South Rainbow Blvd, Las Vegas, Nevada, 89146

Type of Land Development/Land Disturbance Process:

	Rezoning		Subdivision Map		Clearing and Grading Only
	Parcel Map		Planned Unit Development	X	Other (Please specify below)
	Large Parcel Map		Building Permit	Roadway Improvements	

1. Total Owned Land Area: At Site: +/- 362.28 acres Being Developed/Disturbed: +/- 5.6 acres
2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? ☐ **Yes**** ☒ **No**
3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☒ **Yes**** ☐ **No**
4. Proposed type of development (Residential, Commercial, Etc.): Roadway.
5. Approximate upstream land area which drains to the subject site: +/- 37.7 acres
6. Has the site drainage been evaluated in the past? ☒ **YES** ☐ **NO** If yes, please identify documentation: Master Drainage Study - Summerlin West V29, GCW, Inc, January 2022; Summerlin Village 29 COS-3/COS-4 Wash Improvements, GCW, INC., August 2022; Summerlin West Village 29 Phase 2 Infrastructure, GCW, INC., August 2022.
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: North through storm drain toward Spring Run Drive. South through storm drain toward exsiting natural wash (COS-2).
8. Briefly describe your proposed schedule for the subject project: As Soon As Possible.

12/12/24

Engineer's Seal

Submit this form as part of the required drainage study to the local entity which has jurisdiction over the subject property. This form may provide sufficient information to serve as the Conceptual Drainage Study.

***New Required Field**

****Review and concurrence of the Clark County Regional Flood Control District is required.**

Local Entity File No.

Revision	Date

REFERENCE:

STANDARD FORM 1

62029-207

December 2024

Albert Sung, P.E.
City of Las Vegas, Public Works
495 S. Main St. Las Vegas, NV 89101

Re: **Response to CCRFCD Comments on the Technical Drainage Study for Summerlin Village 29 Phase 3 Infrastructure (Grand Park Boulevard)**

Dear Mr. Sung,

This letter is to certify that all documents provided on electronic submittal (CD) match the hardcopy version of the study.

Respectfully submitted,

Lee Gong, PhD, P.E, CFM
Flood Control Division

12/12/24

1555 South Rainbow Boulevard
Las Vegas, Nevada 89146
O 702.804.2000
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62029-207

December 11, 2024

Re: Response to CCRFCD Comments for Summerlin Village 29 Phase 3 Infrastructure (Grand Park Boulevard) (DS5758B) (RFCD No. 24-14704)

This report addresses the CCRFCD review comments dated December 2, 2024. Below are individual responses to each comment included in the review letter.

Comment 1:

Sheet GD1 of the Master Grading Plan shows 77'x14' riprap proposed at the downstream of the temporary interim storm drain, however, there is no detail called out in the civil plan sheets or structural plans sheets. Provide a structural detail on the location shown for the proposed riprap to include if the riprap is grouted due to high velocity profiles shown on the WSPG. Be sure to include the invert of the terminating end of the RCP/beginning at the riprap and terminating end of the riprap/beginning at the RCP before reaching the headwall.

a. Sheet LP4 calls out NDOT detail CH-5A/DT4, however the detail is for an RCB and not RCP. Provide a correct detail for the proposed 54" RCP headwall and concrete apron. Also show the headwall and concrete apron on sheet PP6.

b. Show easements for private or public access. Who will be maintaining the storm drain? There is a note on sheet LP4 stating interim pipe will be removed in the future, however there is a call out for Q-ultimate at 111 cfs. Include time frame of removing the storm drain and re-routing the flows by the future storm drain.

Response:

The proposed 77'x14' riprap pad is not associated with the temporary storm drain. Instead, it is designed to prevent erosion caused by interim street flows conveyed from the proposed channel CH2 at the low point of the roadway. Note flow in the proposed channel CH2 is not erosive. A concrete pad is provided at the outlet of the interim storm drain to mitigate erosion at this location.

a. **The details have been updated to reference DS-19A for the proposed 54" RCP. The headwall and concrete apron have been added to sheet PP6 as requested.**

b. The easements for the interim storm drain are public and private maintained by the owner and have been included in the updated plans. The timeline for removing the interim storm drain and re-routing flows through the future storm drain is being developed (possibly less than 2 years) and will be provided in subsequent TDS updates.

Comment 2:

10'x10' riprap is proposed at the upstream end of the RCP, however the appropriate civil sheets do not call out the riprap.

a. Fall protection is required for any elevation constructed greater than 4-ft. Existing grade on the said sheet is at an approximate elevation 3632-ft with approximate structural fill of 18-ft from the bottom of the invert at the upstream storm drain. Provide details to include fall protection at the upstream reinforced concrete pipe storm drain.

b. Provide a clear profile on approximate 18-ft of structural fill from existing grade to invert of RCP and how flow is collected at the RCP opening. Sheet LP4 shows the pipe is in the air 18-ft from the existing grade. Show and label on the civil plans the existing contours to show the existing grade at daylight is at elevation of the proposed RCP. Sheet LP4 shows riprap proposed at the invert of the upstream RCP, however sheet PP6 shows

c. There is a discrepancy in the invert shown; 46.20 on sheet LP4 and 46.30 on sheet PP6 and on WSPG.

Response:

Noted. The 10'X10' riprap pad was designed as a sediment basin and has been called out on the appropriate civil sheets.

a. A chain-link fence was proposed for fall protection and its details have been included to address the elevation differences exceeding 4 feet.

b. The grading and contours on sheet LP4 have been revised to show the existing grade at the proposed daylight elevation. The profile now includes the approximate 18 feet of structural fill from the existing grade to the RCP invert.

c. The invert elevations on sheets LP4 and PP6 have been corrected for consistency. The invert elevation in the WSPG model remains unchanged and now matches the updated plans.

Comment 3:

Sheet PP6 shows the future storm drain facilities in the CH2 channel. Provide the hydraulic calculations of the facilities, to include the re-routed flows from the interim pipe. Show details and discuss whether the CH2 channel will be replaced by the future storm drain facilities.

Response:

The future storm drain facilities were referenced from the approved drainage study for Summerlin West Village 29 – Master Drainage Study. The hydraulic calculations of the facilities #17 and #52 were already provided in the Master Drainage Study. In addition, since the future storm drain facilities are still under the planning stage and the detailed sizes, slope inverts information is not available at this time, detailed hydraulic calculations are usually not required and cannot be provided at this time. The detailed hydraulic calculations will be provided by a separate TDS in the future when the detailed design for these future storm drain facilities have been completed and are ready for construction. However, in order to avoid any confusion, the future storm drain facilities shown on Sheet PP6 were removed from the plans for this study. Note the CH2 channel will be removed and probably will be replaced by the future storm drain facilities. Again, this will be

addressed by a separate TDS in the future.

Comment 4:

Sheet PP6 and detail H/DT1 shows the CH2 channel and sheet GD1 shows 77'x14' riprap proposed at the downstream end of the temporary interim storm drain. Show the 77'x14' riprap and the type of lining for the channel on said sheets and fix the discrepancy between the sheets to show there is erosion and scour protection.

Response:

The 77'x14' riprap pad has been added to sheet PP6. As noted previously, this riprap pad is designed to prevent erosion at the embankment from flows conveyed from channel CH2 at the low point of the interim roadway. The channel is currently unlined as the velocity is calculated to be non-erosive (<5 ft/s).

Comment 5:

Sheet PP6 shows daylight at the upstream side of the proposed 54" RCP, and it is unclear whether the upstream watershed or soil has a high sediment potential conveying the storm water downstream to the CH2 channel. Coordinate with the City of Las Vegas on sediment bulking requirements for the inflow.

Response:

A sediment basin has been proposed at the upstream side of the proposed 54" RCP.

If you have any questions or require additional information, please do not hesitate to contact me at 804-2127.

Respectfully,
GCW, INC.

Lee Gong, PhD, PE
Flood Control Division

APPENDIX

REGIONAL FLOOD CONTROL DISTRICT

Mr. Oh Sang Kwon, P.E.
City of Las Vegas Department of Public Works
495 S Main Street, 5th Floor
Las Vegas, NV 89101

DISTRICT COMMENT(S): **SUMMERLIN VILLAGE 29 PHASE 3 INFRASTRUCTURE (GRAND PARK BOULEVARD) (DS5758B) (RFCD No. 24-14704)**

Dear Mr. Kwon:

Clark County Regional Flood Control District (District) reviewed Conceptual Drainage Study dated March 21, 2024, and Addendum No. 1 dated April 23, 2024, for above-mentioned project as submitted by GCW, INC. In addition, District is in receipt of the Conditional Letter of Acceptance from City of Las Vegas Department of Public Works dated May 7, 2024.

District has the following comment(s):

1. Sheet GD1 of the Master Grading Plan shows 77'x14' riprap proposed at the downstream of the temporary interim storm drain, however, there is no detail called out in the civil plan sheets or structural plans sheets. Provide a structural detail on the location shown for the proposed riprap to include if the riprap is grouted due to high velocity profiles shown on the WSPG. Be sure to include the invert of the terminating end of the RCP/beginning at the riprap and terminating end of the riprap/beginning at the RCP before reaching the headwall.

    a. Sheet LP4 calls out NDOT detail CH-5A/DT4, however the detail is for an RCB and not RCP. Provide a correct detail for the proposed 54" RCP headwall and concrete apron. Also show the headwall and concrete apron on sheet PP6.

    b. Show easements for private or public access. Who will be maintaining the storm drain? There is a note on sheet LP4 stating interim pipe will be removed in the future, however there is a call out for Q-ultimate at 111 cfs. Include time frame of removing the storm drain and re-routing the flows by the future storm drain.

2. 10'x10' riprap is proposed at the upstream end of the RCP, however the appropriate civil sheets do not call out the riprap.

    a. Fall protection is required for any elevation constructed greater than 4-ft. Existing grade on the said sheet is at an approximate elevation 3632-ft with approximate structural fill of 18-ft from the bottom of the invert at the upstream storm drain. Provide details to include fall protection at the upstream reinforced concrete pipe storm drain.

    b. Provide a clear profile on approximate 18-ft of structural fill from existing grade to invert of RCP and how flow is collected at the RCP opening. Sheet LP4 shows the pipe is in the air 18-ft from the existing grade. Show and label on the civil plans the existing contours to show the existing grade at daylight is at elevation of the proposed RCP. Sheet LP4 shows riprap proposed at the invert of the upstream RCP, however sheet PP6 shows

daylight at the invert of the RCP with no proposed riprap. Include direction of flow from the upstream of proposed grading and structural fill to the drainage crossing on sheet PP6. Darken or show the flow arrows to be more visible on sheet GD1 at the proposed 2.5-ft deep riprap.

c. There is a discrepancy in the invert shown; 46.20 on sheet LP4 and 46.30 on sheet PP6 and on WSPG.

3. Sheet PP6 shows the future storm drain facilities in the CH2 channel. Provide the hydraulic calculations of the facilities, to include the re-routed flows from the interim pipe. Show details and discuss whether the CH2 channel will be replaced by the future storm drain facilities.

4. Sheet PP6 and detail H/DT1 shows the CH2 channel and sheet GD1 shows 77'x14' riprap proposed at the downstream end of the temporary interim storm drain. Show the 77'x14' riprap and the type of lining for the channel on said sheets and fix the discrepancy between the sheets to show there is erosion and scour protection.

5. Sheet PP6 shows daylight at the upstream side of the proposed 54" RCP, and it is unclear whether the upstream watershed or soil has a high sediment potential conveying the storm water downstream to the CH2 channel. Coordinate with the City of Las Vegas on sediment bulking requirements for the inflow.

District's review of this project was limited to issues of Regional Flood Control Significance as defined in *Uniform Regulations for the Control of Drainage*.

The consultant must be advised to submit any revisions to the Technical Drainage Study and Improvement Plans to City of Las Vegas Department of Public Works for review/re-approval. District review of any such revisions will commence upon acceptance by City of Las Vegas Department of Public Works.

Please be aware that as additional information becomes available and/or restudies of Flood Insurance Studies are performed, information submitted by GCW, INC. may be superseded. Compliance with regulatory elements and design standards specified in *Uniform Regulations for the Control of Drainage* does not imply a guarantee that properties will be free from flooding or flood damage.

The District, its officials, or employees assume no liability for information, data, or conclusions presented by consulting engineers. We, therefore, make no warranties, either expressed or implied, in conducting this review.

STEVEN C. PARRISH, P.E.
General Manager/Chief Engineer

By: Brittney Duncan
Brittney Duncan (Dec 2, 2024 11:21 PST)

Brittney L. Duncan
Assistant Engineer

By: Ching C. Wang
Ching C. Wang (Dec 2, 2024 11:23 PST)

Ching C. Wang, P.E.
Principal Civil Engineer

CCW:rm

c: LEE GONG, GCW, INC.

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