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 WEST VILLAGE 29 & 32-PARK DRIFT TRAIL & LOOP ROAD ROUGH GRADING AND UPDATE (DS5741E) (RFCD No. 25-14731)**

Dear Mr. Kwon:

Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated February 13, 2024, Addendum No. 1 dated April 9, 2024, Addendum No. 2 dated May 20, 2024, Addendum No. 3 dated August 13, 2024, Addendum No. 4 dated November 27, 2024, and Supplement No. 1 dated December 16, 2024, for above-mentioned project as submitted by ATKINSRÉALIS. In addition, District is in receipt of the Conditional Letter of Acceptance from City of Las Vegas Department of Public Works dated December 17, 2024.

District has the following comment(s):

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. In lieu of a MPA for each infrastructure project, the District recommends the City to coordinate with Howard Hughes to track planned changes of intended flood control improvements for future parcel development to ensure all proposed improvement intended to be a part of the ultimate Regional Master Planned system will be reviewed for regional significance and meet all applicable criteria.

2. The project proposes multiple lateral connections to mainline flood control facilities with an angle of confluence at 90°. Where the lateral inflows are greater than 10 percent of the mainline, District recommends revising the proposed laterals for the connection to the mainline facility to an angle of confluence of not greater than 30° to reduce mainline turbulence from lateral inflows and better hydraulic efficiency. Refer to Section 802.6 of the District's Hydrologic Criteria and Drainage Design Manual (HCDDM) for specific criteria. Clarify and address with the City of Las Vegas as required.

3. The project proposes multiple lateral connections for future development, however, these improvements extend beyond the proposed ROW per profiles on Sheet 33 through 35 and it is unclear if public drainage easements are provided for these improvements. Coordinate with the City of Las Vegas and clearly delineate all necessary easement as these facilities are shown as public on the profile sheets.

4. Clearly delineate the public drainage easement for the four (4) 14'x7' RCB, 10'x6' RCB, 9'x7' RCB, and all related maintenance and access improvements. Theses flood control facilities are shown outside of the ROW on the improvement plans and must be clarified.

5. The proposed manhole and ladder steps for the mainline 5'x5' RCB on Sheet 14 through 16 with lateral inflows does not appear to be constructable per Construction Note #3. Note the elevated lateral inflows would prohibit the ladder steps and access to the invert of the manhole. The District recommends relocating the manhole and ladder step access slightly upstream for constructability and adhere to all maximum manhole spacing criteria in the revised design. Additionally, coordinate with the City of Las Vegas to specify the manhole design at the 5'x5' RCB or if a custom manhole design will be required as it was not provided on the structural plans.

6. The project notes plywood and backfill for the 9'x6' RCB as shown on Sheet 16. However, per CN#10 on profile sheet 32, it is shown to be a plug per manufacturer or approved equal. Clarify the discrepancy and revise as required. Verify construction timing as plywood with significant backfill tend to fail over time and the District recommends manufacturer plug unless construction timing for the future development is shown to be very limited. Additionally, clarify the type of SDMH #6A along the 9'x6' RCB as shown on Sheet 16 or provide custom design as required.

7. The project notes plywood and backfill for the 6'x6' RCB as shown on Sheet 18. However, per CN#10 on profile sheet 34, it is shown to be a plug per manufacturer or approved equal. Clarify the discrepancy and revise as required. Additionally, the plug detail provided on Sheet 49 is for round pipe and not applicable for the proposed RCB's. Verify and provide additional details as required.

8. District recommends relocating the manhole access locations from the currently proposed to slightly upstream for SDMH #7 through SDMH #12 to address constructability. Note that several of the proposed manhole's locations and ladder steps will be obstructed by the lateral connection at the same side of the proposed box. District also has concerns with ladders placed directly in the flow path of lateral connections due to nuisance water and debris buildup at the ladders that may be mitigated by relocating the manhole slightly upstream. Additionally, coordinate with the City of Las Vegas to specify the manhole design at the 10'x6' RCB or if a custom manhole design will be required as it was not provided on the structural plans.

9. The project calls out plug per manufacturer or approved equal for the 5'x5' RCB per CN#10 as shown on Sheet 27. However, the plug detail provided on Sheet 49 is for round pipe and not applicable for the proposed RCB's. Verify and provide additional details as required. Additionally, clarify the type of SDMH #10 along the 5'x5' RCB as shown on Sheet 27 or provide custom design as required.

10. The project is proposing lateral RCB to mainline 10'x6' RCB connections and called out as precast per NDOT Standard 502 and 503. Clarify structural connection at the point of

connection or detail manufacturer recommendations or accommodations in the precast boxes for the connection. Revise and provide structural details for review.

11. The District recommends relocating SDMH #13 slightly upstream and out of the angle point for constructability and clarify the type manhole along one side of the 10'x6' RCB or provide custom design as required.

12. Clarify the use of CN #14 for watertight drop inlet for the SDMH #14 as shown on the proposed 9'x7' RCB on Sheet 24. Additionally, the plans and CN #12 calls for connecting to the existing per CCAUSD #509.03.06 but appears the intention is to reference the Standard Specifications for extending culverts with headwall and may still require separate structural plan and detail for the connection to the existing RCB. Coordinate with the City of Las Vegas and revise as required.

13. The proposed headwall at the terminus of the 9'x7' RCB on Sheet 24 is shown to be a NDOT headwall per Structural Sheet S1.4. However, the required NDOT detail does not appear to be provided on the grading or structural plans. Provide corresponding CN on the grading plans to match the structural plans along with NDOT detail CH-5A and any other required details as part of the improvement plans.

14. The structural design for the maintenance access at the terminus of the 9'x7' RCB on Sheet 24 is noted to be structurally design per Sheet S1.3. However, it does not appear bedding material or compaction is specified for these maintenance sections on the grading plan details to ensure constructability. The District recommends coordinating with the City of Las Vegas and provide clarifications to details to ensure constructability and adequate inspection.

15. The District recommends rounded pier nose or tapered debris fin at the upstream section of the proposed four (4) 14'x7' RCB culvert to reduce debris collection and impacts to hydraulic efficiency in the provided analysis.

16. It appears the upstream tributary area for flow being conveyed in the proposed four (4) 14'x7' RCB may have high sediment potential. Coordinate with the City of Las Vegas and clarify any sediment bulking to ensure the proposed flood control improvements accounts for all upstream tributary features for public safety.

17. It does not appear the upstream and downstream concrete apron of the proposed four (4) 14'x7' RCB culverts are adequately dimensioned for constructability and adequate inspection. No dimensions and width seems to be detail on the grading plans, details sheets, or structural plans. Verify and revise as required.

18. Clarify the use of CN #14 for watertight drop inlet for the proposed headwall as shown on Sheet 26.

19. Provide trench detail for the proposed four (4) 14'x7' RCB culverts to address constructability and the proposed means and methods of construction on the grading plans. It is noted the Structural Sheet S1.3 calls out cement stabilized backfill but should specifications

should be called out for approved material. Provide detail for any proposed grout or approved material in the spacing between the boxes throughout the culvert facilities or specify standard drawings and details and the detail for the trench, bedding, and backfill to ensure adequate inspection.

20. The project proposed four (4) 14'x7' RCB culverts with each individual RCB called out as precast per NDOT Standards. However, NDOT has alternatives for multi-cell boxes and should be utilized if intent is to conform to NDOT standards. Clarify and coordinate with the City of Las Vegas and revise as required.

21. Ensure fall protection for all proposed vertical drops greater than 48". Clarify and show the guardrail to be at the upstream and downstream sections of the proposed four (4) 14'x7' RCB culverts on all relevant details on the grading plans and structural details (i.e. 12/S2.5) to match Structural Sheet S2.3 and Detail 8/S2.5. This should avoid confusion when all details match the intended design.

22. Clarify joint and spacing design between the proposed four (4) 14'x7' RCB culverts and concrete apron per 12/S2.5.

23. Address fall protection from the proposed laterals with vertical drops greater than 48". For example, the 54" RCP as shown on D/33. Additionally, clarify and complete the "X CFS" for the lateral on detail D/33.

24. It is noted the structural plan and detailed are outsourced to Horrocks and included in the improvement plan set for certain structures. However, many flood control facilities being proposed with the project are shown on "RCB by other" and should be clarified. Specify the depth of the dowel for connecting the proposed RCB's to the junction structures on Sheets S2.1 and S2.2. Clarify all discrepancies to ensure the improvement plans will be adequate for inspection and constructability.

25. Provide structural detail for the connection to the upstream RCB to the structurally designed members as shown on Sheet 4/S2/5 and 12/S2.5. As noted above, the same project proposes the entirely of these improvements, and all relevant details must be provided to ensure adequate inspection and constructability.

26. It is noted that the grading plans calls out CN #2 as precast RCB per NDOT Standards and is shown to be connecting to the junction structures on Sheets S2.1 and S2.2. Address the haunch in precast RCB that would obstruct flow existing the junction structure. Typically, the upstream structure will be flared to account for the haunch and mitigate obstructions to the flow in these areas. Provide additional details to the grading plans, details, and structural plans to ensure adequate inspection.

27. Clarify length of apron and joint connection to proposed upstream RCB and headwall as shown on Sheet 14/S2.5.

28. It appears the provided submittal may be missing updated hydraulic analysis as the mainline only appears to analyzed in WSPG in the original Technical Drainage Study and not updated in subsequent submittals. Provide the latest WSPG analysis for review with the next submittal and ensure all angle bend and manhole losses are accounted for.

29. The District requests to be invited for the final walk-through by the City of Las Vegas for the proposed improvements intended to be part of the ultimate Regional Master Planned system, prior to acceptance of public maintenance by the City of Las Vegas.

30. Note that per District's Policies and Procedures Manual, Section VIII.D.13 Uniform Regulations for the Control of Drainage, the Lead Entity shall provide As-Built plans or record drawings to the District after completion and final inspection of such privately installed flood control facilities that have a regional flood control significance.

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CCW:rm

c: MOLLY ANDERSON, PE, ATKINSRÉALIS

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