

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		February 27, 2019
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:
Conceptual Drainage Study - Grand Park Detention Basin		VTN Nevada
Cross Streets:	I-215 / Summerlin Parkway	Howard Hughes Corporation
File Number:	F:\Depot\DSMemos\DS5089A.doc	Bart Anderson, P.E., DevCo
Parcel Number:	137-22-101-001	CCRFCD
Zoning Action:	N/A	
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	1/23/2019	2/7/2019 & 2/19/2019	See Comments Below	\$400.00	502617: \$400
TOTAL FEES (LDDRS):				\$400.00	----

REMARKS: The Conceptual Drainage Study sets the parameters for the detailed Technical Drainage Study for the proposed MPU Facility incorporated into the Summerlin Park improvements.

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.

- The site is proposed as a *Clark County Regional Flood Control District (CCRFCD)* master planned facility and is also 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 conceptual drainage study.
- The proposed Grand Park Detention Basin (*Multi-Use Detention Basin Facility*) must be approved by the *State of Nevada, Division of Water Resources Dam Safety* prior to the issuance of any construction permits. Coordinate State submittal with the technical drainage study and improvement plans.
- The approval of this *Conceptual Drainage Study* is limited to the scope of the hydrologic aspects such as the conceptual basin delineation and the quantifications of the inflows and outflows to the detention basin. Hydraulic analysis at the conceptual stage is preliminary and has not been reviewed by the City staff. In the future technical drainage study to support the final design of the detention basin, a detailed hydraulic analysis shall be included to verify the proposed facilities providing the capacity to capture and carry the design flows as stated in the study. A detailed review will be provided with the technical submittal that includes complete plans and details of all collection facilities, spillway, walls, inlet, and outlet structure components, etc. per the manual requirements.

4. FIG 12 (*Grand Park Detention Basin Exhibit*) and FIG 13 (*Grand Park Detention Basin Profile Exhibit*) show conceptual layout and design of the detention basin. The conceptual design uses a maximum slope of 5:1 to allow for a safe and easy exit from the basin. The concept for the Basin as a Multi-Use Park Facility is acknowledged and shall be supported by the future technical drainage study and the detailed improvement plans. Update Figure 12 to label the access route around the detention basin for maintenance access.
5. Provide further clarification as to why the "interim condition PMF" is the controlling PMF value. The report states that this value is the worst-case scenario when compared to the ultimate condition PMF or a back to back 100-year event. Provide comparison Table and documentation to support this claim.
6. Revise the inlet and outlet structure locations. The current design parameters for Grand Park Detention Basin requires the modification of the detention basin to adjust the outfall facility away from the major inlet facility. The close proximity of the inflow/outfall structures does not allow the detention basin to function as intended and does not adequately address the impacts from debris and sedimentation that must be considered. Revise the detention basin configuration to place the outfall as far as possible from the inlet structures.
7. The technical drainage study submittal hydrology shall include a more detailed hydrologic analysis (HEC-1) of the ultimate condition including the modeling and routing of the subbasins within each basin that was modeled for the conceptual level design.
8. Provide a detailed *Ultimate Condition Basin Map*, like the *Interim Condition Basin Map (FIG 8)* that is specific to the detention basin including subbasins delineation.
9. The preliminary analysis of the Detention Basin outfall shows that the pipe is nearly full. Revise the detention basin outlet pipe size as part of the technical drainage study to convey the flow "free flow" at a maximum flow depth of $\frac{1}{2}$ full. Use ASTM 361 gasketed joints for all pipe within the detention basin. Detention basin design uses the orifice plate to insure that the basin outfall remains under inlet control parameters.
10. The technical drainage study shall incorporate the necessary Storm Water Quality features.
11. The City of Las Vegas requires that the minimum height of RCB's shall be 5-foot to meet access and maintenance requirements. Revise a proposed box size from 5'x4' to 5'x5'.
12. The City of Las Vegas understands that the Detention Basin will be dedicated as a Public Drainage Easement with the City responsible for the maintenance of the Regional Drainage Facilities. However, it shall also be noted that this is a Multi-Use facility with all Park improvements being maintained by the Master Developer/HOA. Per Section 304.8 of the HCDDM, non-drainage related facilities are not eligible for RFCD maintenance funding. As an example, park improvements proposed to advance park usage shall be privately maintained as they are not necessary for the detention basin construction. A Maintenance Agreement & Bond shall be provided for the Privately Maintained Park improvements including but not limited to; park features, access trails/road, landscaping, irrigation, lighting, etc. The Maintenance Agreement shall be submitted and approved through the Flood Control Section prior to requesting acceptance of the regional drainage facilities.
13. Revise Section 1 of the report to discuss that the 10-year, 25-year and 100-year analysis is provided to set the design parameters for development of the Multi-Use Detention Basin
14. A separate technical drainage study will be required for the proposed mixed-use detention basin park improvements. The 10-year, 25-year and 100-year water surface elevations (WSE) will be evaluated per Section 300 of the HCDDM requirements to provide the level of protection based upon the park use and proposed amenities. This shall be clearly identified within the technical study and the park study.

15. The concept of a reinforced turf spillway **is not approved** at this time. The spillway shall be designed to convey the entire PMF flow rate. Spillway design with supporting calculations shall be provided with the technical study.
16. Verify Street Name Labels on Exhibits. *FIG 8 (Interim Condition Basin Map)*: It appears that there is a "**Street O**" wrongly labeled as "**Street Q**" causing two "**Street Q**" parallel to each other shown on the map. Review and revise accordingly.

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
WSP/PBJ/AYS

T/R/S: T20S/R59E/22
AREA K-22