CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: 12/13/2023
TO: **Land Development Services** Department of Building & Safety				**FROM:** Tyler Key Flood Control Engineering Associate Department of Public Works
SUBJECT:	Drainage Study for:			**COPIES TO:**
Tavern at Oso Blanca				Reitz Consulting Inc.
Cross Streets:	Oso Blanca & Kyle Canyon			Ligkyle LLC
File Number:	F:\Depot\DSMemos\DS05720A.doc			NDOT
Parcel Number:	126-01-601-016			CCPW
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	11/27/2023	12/12/2023	See Comments Below	$400	5531905: $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. 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.
2. The project proposes to construct facilities and/or increase flows within *Nevada Department of Transportation* (NDOT) right-of-way. The engineer must contact NDOT for encroachment permit for the proposed project. NDOT permit is required for all work within NDOT Right-of-Way.
3. The City of Las Vegas will maintain the Public Storm Drain facilities within Oso Blanca and NDOT will maintain the open channel improvements within NDOT R/W. The Plans must clearly show who is responsible for the maintenance.
4. The site is also adjacent to Clark County jurisdiction. The engineer must coordinate with *Clark County Public Works Department* (CCPW) and incorporate any concerns for boundary conditions along the eastern border with US-95, an NDOT facility. CCPW concurrence is required prior to final approval of the study.
5. The HEC-1 uses CN 77 for Basin OB5, but it should be CN 98.

6. Provide onsite cross section for flow depth and velocity.
7. For parking lot LID and storm water quality, the engineer must provide calculations (per Section 1500 of the CCRFCD Hydrologic Criteria and Drainage Design Manual) to justify that the length, width and depth of the landscape swales are meeting the design guidelines in an effective disconnected impervious areas layout. Provide riprap calculations for the proposed BMP.
8. Provide the *City of Las Vegas* Stormwater Management Notes of the General Notes sheet, or on each sheet of the Grading Plan.
9. Provide the Grading Certification Note on each sheet of the Grading Plan.
10. The following finish floors do not meet the Regional Flood Control District minimum criteria of twice the Q_{100} depth of flow up to 18-inches above the water surface (CCRFCD Manual Section 304.4.E.1) or 6-inch minimum above the highest adjacent top of curb (CCRFCD Manual Section 1602 304.4.E.1). The following finish floors should be revised or alternate flood protection provided.

BUILDING	FF shown	Min FF
Building 1	2836.50	2840.98
Building 2	2837.60	2839.31

    As an alternate each building must be discussed in the drainage study, shown to be flood protected, and any necessary flood improvements shown on the grading plan. The grading plans and cross sections need to call out the appropriate flood protection. Provide reference details as part of the plans.
11. The grading plan indicates offsite grading within NDOT Right-of-Way. The NDOT encroachment permit needs to include the offsite grading.
12. Provide a profile sheet for the roadway improvements of Oso Blanco Road.
13. Provide HGLs on storm drain profiles and supporting calculations.
14. **Sheet C3:** The flow depth at the sag inlet is greater than the flowline elevation at the end of the curb, therefore flow will bypass the inlet and cause erosion. Provide inlet on grade calculations to show capture calculations.
15. **Sheet C3:** The existing storm drain does not match the approved drawings for Kyle Canyon Gateway – Offsite Frontage Road (L21-02433). Flood Control understands the intent is to provide coordinated storm drain improvements between the two projects. Either show the proposed facility extensions or provide plans to extend the facilities as shown on the civil plans.
16. **Sheet C3:** Provide the CLV drawing number for all existing storm drain along Oso Blanca Rd.
17. **Sheet C3:** Call out the rip-rap channel to be maintained by NDOT on the east side of the subject site.
18. **Sheet C3:** Include the slope of the curb along Oso Blanca Rd.
19. **Sheet C3:** Provide construction note callouts for the figure on the north end of the subject site.
20. **Sheet C4:** Show the NDOT maintained rip-rap channel on the east side of the subject site.
21. **Sheet C4 and C6:** Provide maintenance access to the discharge point of the 24” storm drain.
22. **Sheet C4:** Provide the inverts of the 24” storm drain end section and the adjacent riprap channel.
23. **Sheet C4:** Provide a detail of the storm drain crossing underneath the retaining wall and footing on the north end of the subject site.
24. **Sheet C4:** On the northwest corner of Building 2, a 2’ valley gutter is called out going across a sidewalk, this should be a sidewalk under drain.

25. **Sheet C4:** Clearly show where the flow travels after exiting the sidewalk under drain at the northwest corner of Building 2.
26. **Sheet C5:** Provide a construction note callout to describe the enclosure on the southwest corner of Building 1. Provide cross sections in both directions for this area as well.
27. **Sheet C5:** Connect the flow from the BMP rip-rap swale to the NDOT channel on the east side of the site.
28. **Sheet C4 and C5:** Detail cross sections are called out to be on sheet C6, but are on sheet C7.
29. **Sheet C5:** On the south side of the parking lot, flow is conveyed along A-curb. L-curb is required in areas where flow is conveyed. Review and revise accordingly
30. **Sheet C5:** In the southeast corner of the parking lot, there is a callout for an NDOT Type 3 curb inlet. Provide a modified detail that reflects the discharge of the inlet through the back wall of the inlet that daylights into the swale. Provide a rip-rap pad at the outlet.
31. **Sheet C6:** The storm drain profiles need to reference the street centerline information at each inlet location. Inlets need to include TC, grate, and invert information.
32. **Sheet C6:** The new drop inlet shown connecting to the existing storm drain profile needs to revise the cross section to match the proposed design. The current design appears to show ponding.
33. **Sheet C6:** Provide a detail to show the limits of rip-rap that is to be removed or replaced.
34. **Sheet C6:** Show the retaining wall in the profile of the 24" storm drain with the clearance between them.
35. **Sheet C6:** The invert of the end section needs to be a minimum of 6" above the rip-rap channel.
36. **Sheet C7:** On cross section 4, revise the section to show the high point a minimum of 2 times the depth of flow in Oso Blanca Rd.
37. **Sheet C7:** The cross sections need to call out the appropriate flood protection. Provide reference details as part of the plans.
38. **Sheet C7:** The proposed wrought iron fencing shown on Detail 6 needs to reference CLV standard 421.S1.
39. **Sheet C7:** Detail 3 needs to be revised to reflect a grade difference between the landscaping and the building finish floor.
40. **Sheet C8:** Show the existing rip rap channel and the end section with the associated inverts on the End Section detail.

***** 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: T19S/R59E/01
AREA F-01