Addendum to Technical Drainage Study for the Mater Academy East Phase III

October 2021

Prepared for:

TA LAS VEGAS 3900 BE LLC – Tomas Bilinski
3000 Olympic Blvd., Suite 2120
Santa Monica, CA 90404
(818) 522-7300

Prepared by:

Lochsa Engineering
6345 South Jones Boulevard, Suite 100
Las Vegas, Nevada 89118
(702) 365-9312

Lochsa Job No. 211066

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: MATER ACADEMY EAST PHASE III Date: OCTOBER 11, 2021

Location of Development: a) Descriptive (Cross Streets) North/South: Sandhill Rd.

East/West: Bonanza Rd.

b) Section: 30 Township: 20 SOUTH Range: 62 EAST

c) APN : 140-30-401-011

Name of Owner: TA Las Vegas 3900 BE LLC - Tomas Bilinski

Telephone No.: (818) 522-7300 Fax No.: E-Mail Address: N/A

Address: 3000 Olympic Blvd., Suite 2120 Santa Monica, CA 90404

Contact Person-Name: CHRIS BLAKE, EI **Telephone No.:** 702-365-9312

* **E-Mail Address:** CHRIS.BLAKE@LOCHSA.COM **Fax No.:** 702-365-9317

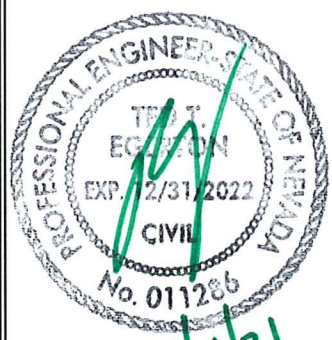
Firm: LOCHSA ENGINEERING

Address: 6345 S JONES BLVD STE 100 LAS VEGAS NV 89118

Type of Land Development/Land Disturbance Process:

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

1. Total Owned Land Area: At Site: 20.04 +/- ACRES Being Developed/Disturbed: 20.04 +/- 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.): COMMERCIAL (school building and parking lot additions)
5. Approximate upstream land area which drains to the subject site: 0+/- ACRES
6. Has the site drainage been evaluated in the past? ☐ **YES** ☑ **NO** If yes, please identify documentation:
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Minimal flow north to Harris Street, some flow east to Hernford Lane and Wingedfoot Lane, and also south to Bonanza Road
8. Briefly describe your proposed schedule for the subject project: ASAP



10/11/21

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

Updated 05/01/2008

COMMENT LETTER

CITY OF LAS VEGAS **INTER-OFFICE MEMORANDUM**				**DATE:** **October 7, 2021**
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: **Mater Academy East Phase III**			**COPIES TO:** Lochsa Engineering
Cross Streets:	NWC of Bonanza Road & Sandhill Drive			TA Las Vegas 3900 BE LLC
File Number:	F:\Depot\DSMemos\DS5500A.doc			Bart Anderson, P.E., DevCo
Parcel Number:	140-30-401-011			CCRFCD
Zoning Action:	21-0418-SDR1			
FEMA Flood Zone	YES	NO	**X**	
Proposed Storm Drain	YES	NO	**X**	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	9/23/2021	10/7/2021	See Comments Below	$400.00	4461672: $400
			TOTAL FEES (LDDRS):	**$400.00**	**----**

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 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

2. **Sheet C4.01:** The anticipated100-year flow depth in *Bonanza Road* is 2.14'. Per the proposed grading design, the proposed parking lot in front of the new building will be inundated about 80' into the development which is not acceptable. The engineer may consider to construct a flood wall at the back of the landscape strip for onsite flood protection. Review and address in the next submittal. Revise all pertinent detail sections and construction note accordingly.

3. **Sheet C4.01**: At the BCR of the west side of an existing driveway entrance in *Bonanza Road*, the grade is shown at (85.72)TC, however, the flow line elevation to the east showed (85.99)FL, ie, creating a local low point in the street. Review and revise accordingly.

4. **Sheet C4.04**: Note that the hump in a driveway must provide a minimum of 6" freeboard against the corresponding street flow depth. The 100-year flow in *Harris Avenue* is 0.77'. The proposed high point in the driveway did not meet the criteria. Review and revise accordingly.

5. Per **Planning Action 21-0418-SDR1**, Condition #10, quote: "Construct a sand/oil interceptor where the proposed automotive shop is draining. Coordinate with the Environmental Compliance & Enforcement staff of the Department of Public Works to locate any required grease interceptor and sand/oil interceptors in acceptable locations prior to submittal of sewer-related plans. Comply with the recommendations and requirements of the Environmental Compliance & Enforcement staff prior to issuance of permits. The team may be contacted at 702-229-2338 or emailed at ece@lasvegasnevada.gov".

   Clearly identify the location of the required sand/oil interceptor on the grading plan in the next submittal.

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
AYS

T/R/S: T20S/R62E/30
AREA N-30

Civil
Flood Control
Structural
Surveying
Traffic

Lochsa engineering

October 11, 2021

Albert Sung, P.E.
Flood Control Project Engineer
Department of Public Works
City of Las Vegas
495 S. Main Street
Las Vegas, NV 89101

Subject: Addendum to the Technical Drainage Study for Mater Academy East Phase III
APN: 140-30-401-011
DS5500A
(Lochsa Engineering Project No. 211066)

Dear Mr. Sung,

Lochsa Engineering is in receipt of your comment letter, dated: October 7, 2021, for the above referenced project.

In response to your comments, the following responses are being offered:

1. 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

Response 1: Noted.

2. **Sheet C4.01:** The anticipated100-year flow depth in *Bonanza Road* is 2.14'. Per the proposed grading design, the proposed parking lot in front of the new building will be inundated about 80' into the development which is not acceptable. The engineer may consider to construct a flood wall at the back of the landscape strip for onsite flood protection. Review and address in the next submittal. Revise all pertinent detail sections and construction note accordingly.

Response 2: We have provided a landscape berm behind the back of sidewalk along Bonanza Rd. and west of the westernmost driveway for onsite flood protection. We have added additional FG tags between the back of sidewalk and the onsite TC elevations to show the berm height along Bonanza Rd. Also, an armor of 6-inch riprap has been provided for erosion control along the embankment of the berm. The included riprap calculation shows 4-inch riprap will suffice but we are conservatively using 6-inch riprap for erosion control.

3. **Sheet C4.01**: At the BCR of the west side of an existing driveway entrance in *Bonanza Road*, the grade is shown at (85.72)TC, however, the flow line elevation to the east showed (85.99)FL, ie, creating a local low point in the street. Review and revise accordingly.

Response 3: Noted. We originally had this area flown for topography and the issue with that is there can be a discrepancy up to 0.40ft. with aerial topo. However, we got this surveyed by our Crew and got true hard shots for the existing grades in these areas. This area has been revised and there is now positive flow to the east along Bonanza Rd. See revised Plans.

4. **Sheet C4.04**: Note that the hump in a driveway must provide a minimum of 6" freeboard against the corresponding street flow depth. The 100-year flow in *Harris Avenue* is 0.77'. The proposed high point in the driveway did not meet the criteria. Review and revise accordingly.

Response 4: Noted. The grading for the driveway off of Harris Avenue has been revised. Both of the TC/HP elevations are now providing 6-inch freeboards above the 100yr depth of flow (0.77ft). See revised Plans.

5. Per **Planning Action 21-0418-SDR1**, Condition #10, quote: "Construct a sand/oil interceptor where the proposed automotive shop is draining. Coordinate with the Environmental Compliance & Enforcement staff of the Department of Public Works to locate any required grease interceptor and sand/oil interceptors in acceptable locations prior to submittal of sewer-related plans. Comply with the recommendations and requirements of the Environmental Compliance & Enforcement staff prior to issuance of permits. The team may be contacted at 702-229-2338 or emailed at ece@lasvegasnevada.gov".

   Clearly identify the location of the required sand/oil interceptor on the grading plan in the next submittal.

Response 5: Noted. The location for the Sand/Oil Interceptor has been added on the Grading Plan just west of the two existing portables that are remaining. This will also be shown on the Utility Plans. See revised Plans.

If you have any questions or further comments, please contact our office at your convenience.

Sincerely,
Lochsa Engineering

Chris Blake, EI
Hydrologist

PROFESSIONAL ENGINEER-STATE OF NEVADA
TED T. EGERTON
EXP. 12/31/2022
CIVIL
No. 011286
10/11/21

COMMENT #2

Calculated By: CB

Equation 734, Section 405.4.6 of the 1999 Hydrologic Criteria and Drainage Design Manual

V=3(d50^0.5)(Ss-1)/(S^0.17)

V=Mean channel velocity in fps;
S=Longitudinal channel slope in feet per foot
Ss=Specific gravity of rock (minimum Ss=2.50)
d50 = Mean stone size in ft, rock size in for which 50% (by weight) of the riprap is smaller

Solve for d50:

d50=[V(S^0.17)/(3(Ss-1))]^2

V=	7.02	fps	<<<< From FlowMaster @ Section A, ultimate Q 100 = 1044 cfs
S=	0.0040	ft/ft	
Ss=	2.65		
d50=	0.31	ft	
	3.69	inches	

MIN. 4" For Erosion control

*** d50=6-inch loose Riprap is conservatively being proposed along the propsoed LS Berm along E**

utilize 6" to be conservative