



February 28, 2025

Kleinfelder Project No.: 25000192.001A
CLV Project No.: DS5643F

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

RE: Las Vegas Academy
Addendum No. 1 to Update 2 for the Technical Drainage Study

Dear Mr. Sung:

Enclosed are one copy and one USB drive containing a PDF version of the Las Vegas Academy Addendum 1 for your review. All items on the USB drive match the paper versions bound into the study. The proposed 17.45+/- acre site is located on the east corner of 7th Street and Clark Avenue.

If there are any questions or additional information that is necessary, please contact our office at 702.255.8100

Sincerely,

A handwritten signature in blue ink that reads "Adam Black". The signature is fluid and cursive, with the first name and last name clearly distinguishable.

Adam Black, P.E.
Project Engineer
Kleinfelder



ADDENDUM 1
to the
UPDATE 2 FOR THE TECHNICAL
DRAIANGE STUDY
for
LAS VEGAS ACADEMY

Prepared for:

Simpson Coulter Studio

151 E. Warm Springs

Las Vegas, NV 89119

Prepared by:

Kleinfelder

6960 Smoke Ranch Road, Suite 110

Las Vegas, NV 89128

FEBRUARY 2025

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Las Vegas Academy Date: February 28, 2025

Location of Development: a) Descriptive (Cross Streets) North/South: 7th Street
 East/West: Clark Avenue

b) Section: 34 Township: 20S Range: 61E

c) APN : 139-34-710-038, 139-34-710-039, 139-34-701-010, and 139-34-712-018

Name of Owner: Clark County School District

Telephone No.: _____ Fax No.: _____ E-Mail Address: _____

Address: _____

Contact Person-Name: Adam Black, P.E. Telephone No.: 702-255-8100

* E-Mail Address: ablack@kleinfelder.com Fax No.: (702) 255-8375

Firm: Kleinfelder

Address: 6960 Smoke Ranch Road, Suite 110, Las Vegas, NV 89128

Type of Land Development/Land Disturbance Process:

| | | |
|---|---|---|
| <input type="checkbox"/> Rezoning | <input type="checkbox"/> Subdivision Map | <input type="checkbox"/> Clearing and Grading Only |
| <input type="checkbox"/> Parcel Map | <input type="checkbox"/> Planned Unit Development | <input type="checkbox"/> Other (Please specify below) |
| <input type="checkbox"/> Large Parcel Map | <input checked="" type="checkbox"/> Building Permit | |

1. Total Owned Land Area: At Site: 17.45 +/- Acres Being Developed/Disturbed: 11.5 +/- 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

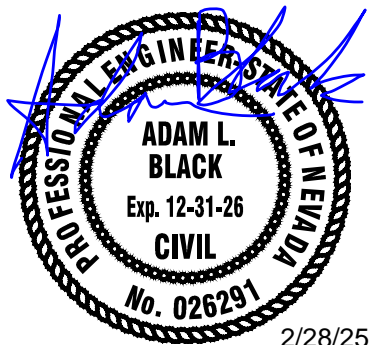
4. Proposed type of development (Residential, Commercial, Etc.): school facilities and buildings

5. Approximate upstream land area which drains to the subject site: 33.5 +/- Acres

6. Has the site drainage been evaluated in the past? YES NO If yes, please identify documentation: Previously the site evaluated under Las Vegas Central Neighborhood Flood Control MPU, TDS for Las Vegas Academy (June 2023, DS5643)

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: The site will drain via surface flows to Bridger Avenue, Clark Avenue, and towards the intersection of 10th Street and Lewis Avenue.

8. Briefly describe your proposed schedule for the subject project: ASAP



Engineer's Seal

2/28/25

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.**

| | Revision | Date |
|-------|----------|------|
| _____ | | |
| _____ | | |
| _____ | | |
| _____ | | |

Local Entity File No.

REFERENCE:

STANDARD FORM 1



February 28, 2025

Kleinfelder Project No.: 25000192.001A
CLV Project No.: DS5643F

Mr. 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: Las Vegas Academy
Addendum No. 1 to Update 2 for the Technical Drainage Study

Dear Mr. Sung:

We have received and incorporated your comments on our technical drainage study submittal for the above-mentioned project. Below are the comments received and our responses thereto:

-
- 1) Provide a proposed drainage condition map to clearly show the proposed ***Student Union Building(s)***. Figure 8 and Figure 8A provided in the last submittal did not show the footprint of the building(s) at all and is unacceptable.

Response: Building footprint of student union building added to Figure 8A and included in the appendix. Figure 8 was referenced from the original study and represents site conditions before development of the proposed student union building.

- 2) The *South Student Union Building* is lower than the north building and appears to be impacted by flows generated in the corridor between the buildings through the double doors at the north side. Address and resolve in the next submittal.

Response: Corridor between north and south student union buildings is to be a breezeway covered by a shared second floor that connects the two buildings. Finished grades will be sloped to drain away from the corridor area. Max depth of flow at the northwest entrance will be 0.19 feet per cross section X22B/I. Max depth of flow at the southeast entrance will be 0.49 feet per cross section X27/I. Elevation at the corridor entrances is set above twice the depth of flow within the adjacent flowline.

- 3) For both north and south buildings, it appears that the proposed finished floor elevations are lower than the outside finished grade along the west walls. Raise both buildings to be at least six inches above the adjacent finished grades along the west walls.

Response: Due to grading constraints, the building finished floor elevation cannot be adjusted to be 6 inches above the adjacent flowline at all locations along the building west wall. Flood protection will be added to walls at locations where flowline is not more than 6 inches below finished floor and/or where finished floor freeboard requirements are not met. Refer to Exhibit 1 included in appendix that shows where finished floor elevations are not met and proposed wall flood protection extents.

- 4) A trench drain is proposed along the west and south sides of the two *Student Union Buildings*. However, the invert elevations of the trench drain are not clear, ie, how and in what direction the trench drain is conveying the flow is not clear?! Also, how and where the trench drain discharge to is also not clear. Address and resolve in the next submittal.

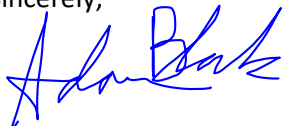
Response: Trench drain to north of the proposed student union building drains generally towards the southwest at 0.4% percent slope. Trench drain discharges to the curb and gutter between the proposed student union building and the existing visual arts building. Flows continue southeast within curb and gutter towards the intersection of Lewis Avenue and 9th street. Flowline elevations for the trench drain have been corrected to reference the correct surface elevation on the grading plans.

- 5) *City of Las Vegas* does not allow HDPE pipe in public right-of-ways or public drainage easements. Note that *City of Las Vegas* only allows the use of HDPE storm drain pipes for privately owned and privately maintained storm drain systems which serve and are located exclusively on private properties. Any proposed HDPE storm drain pipes must also meet all design criteria established by the *Clark County Regional Flood Control District* and must be installed per *Clark County Regional Transportation Commission Uniform Standard Drawings and Specifications*.

Response: Noted.

Included are revised plans for your review and approval; please feel free to contact us with any questions at (702) 255-8100.

Sincerely,



Adam Black, P.E.
Project Engineer
Kleinfelder

| | | |
|--|--|---|
| CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM | | DATE: January 21, 2025 |
| 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: |
| Las Vegas Academy – Update #2 for Phase 1A & 1B | | Kleinfelder |
| Cross Streets: | NEC of 7 th Street & Clark Avenue | Clark County School District |
| File Number: | F:\Depot\DSMemos\DS5643F.doc | Lucien Paet, P.E.; DevCo |
| Parcel Number: | 139-34-710-038, 139-34-710-039, 139-34-701-010, 139-34-712-018 | |
| Zoning Action: | 22-0593-SDR1 & 22-0593-VAC1 | |
| 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 | 1/17/2023 | 2/1/2023 | Not Approved | \$400.00 | 5109349: \$400 |
| 2 nd Submittal | 2/28/2023 | 3/20/2023 | Not Approved | \$400.00 | 5164109: \$400 |
| 3 rd Submittal | 4/26/2023 | 5/10/2023 | Not Approved | \$400.00 | 5248042: \$400 |
| 4 th Submittal | 5/18/2023 | 6/1/2023 | Approved | \$400.00 | 5280824: \$400 |
| 5 th Submittal | 8/21/2024 | 9/4/2024 | Approved | \$100.00 | 5912300: \$100 |
| 6 th Submittal | 1/8/2025 | 1/21/2025 | See Comments Below | \$100.00 | 6075400: \$100 |
| TOTAL FEES (LDDRS): | | | | \$1,800.00 | ---- |

REMARKS:

6th Submittal: Update #2 to construct the Student Union Building

5th Submittal: Update #1 for minor revisions for the Parking Structure and the New Gymnasium

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 proposed drainage condition map to clearly show the proposed **Student Union Building(s)**. Figure 8 and Figure 8A provided in the last submittal did not show the footprint of the building(s) at all and is unacceptable.
2. The *South Student Union Building* is lower than the north building and appears to be impacted by flows generated in the corridor between the buildings through the double doors at the north side. Address and resolve in the next submittal.
3. For both north and south buildings, it appears that the proposed finished floor elevations are lower than the outside finished grade along the west walls. Raise both buildings to be at least six inches above the adjacent finished grades along the west walls.

4. A trench drain is proposed along the west and south sides of the two *Student Union Buildings*. However, the invert elevations of the trench drain are not clear, ie, how and in what direction the trench drain is conveying the flow is not clear?! Also, how and where the trench drain discharge to is also not clear. Address and resolve in the next submittal.
5. *City of Las Vegas* does not allow HDPE pipe in public right-of-ways or public drainage easements. Note that *City of Las Vegas* only allows the use of HDPE storm drain pipes for privately owned and privately maintained storm drain systems which serve and are located exclusively on private properties. Any proposed HDPE storm drain pipes must also meet all design criteria established by the *Clark County Regional Flood Control District* and must be installed per *Clark County Regional Transportation Commission Uniform Standard Drawings and Specifications*.

***** 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.

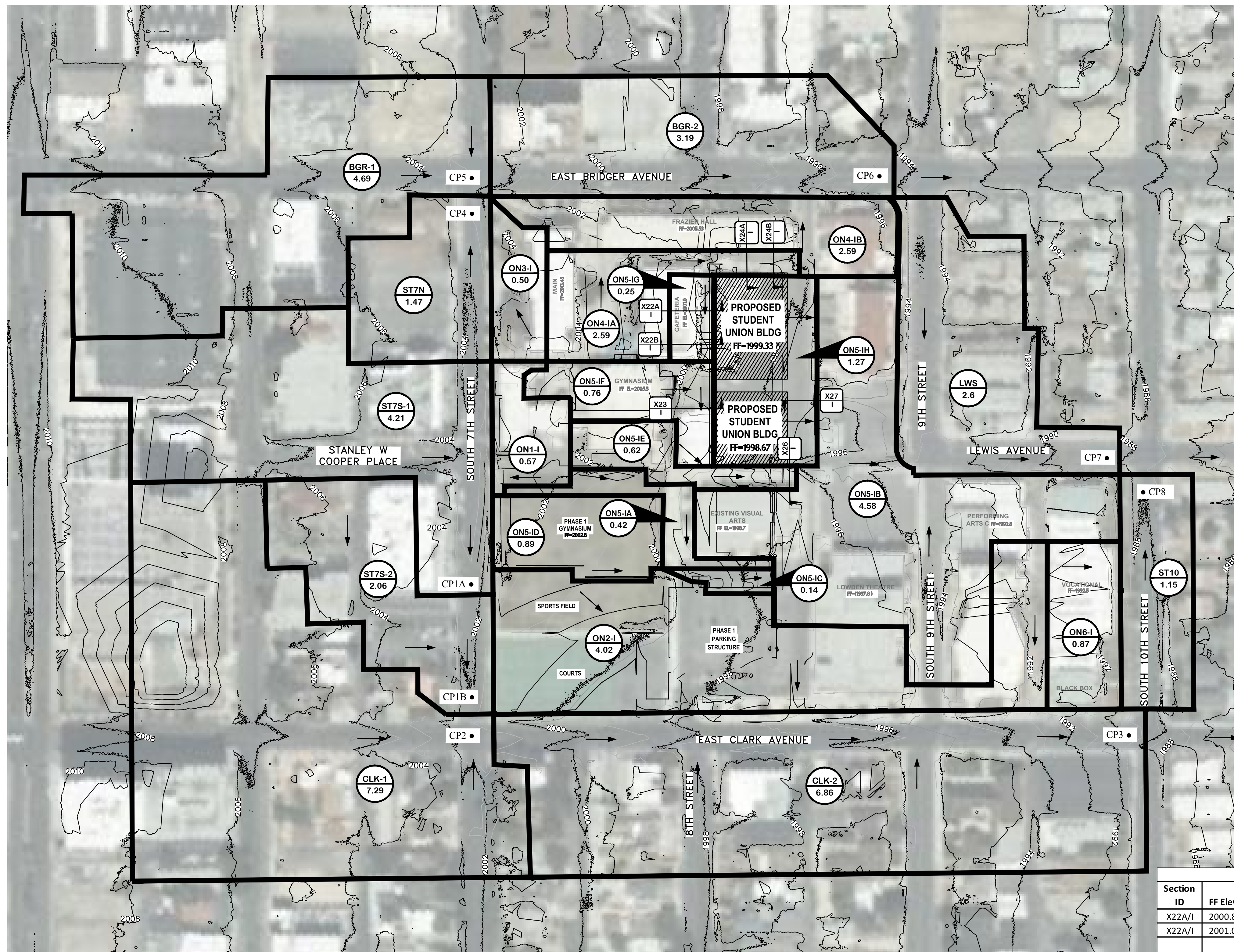
NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on 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, conditional acceptance 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
HDR/AYS

T/R/S: T20S/R61E/34
AREA M-34

L:\Clark County School District\25000192.001A--SCS_Las Vegas Academy Phase 1\Working Documents\Studies\Drainage\Update 2 Ph1 Resubmit\ACAD\FIG8A_INT PH2_ADD1.cwg Feb 27 2025 - 11:22am



LEGEND

| | |
|--|-------------------------------|
| | BASIN ID./AREA (AC) |
| | CONCENTRATION POINT ID |
| | FLOW PATH |
| | BASIN BOUNDARY |
| | CROSS-SECTION ID CONDITION |

Onsite Drainage Swale/Trench Drain 100yr Analysis Interim

| Section ID | Channel Slope (%) | Flow Q ₁₀₀ (CFS) | Velocity V (FPS) | Depth D (FT) | COMMENTS |
|------------|-------------------|-----------------------------|------------------|--------------|------------------------------|
| X22A/I | 0.40 | 0.8 | 2.01 | 0.30 | Swale Flow Line w/ 2 ft Wall |
| X22B/I | 0.40 | 0.8 | 2.12 | 0.19 | Trench Drain Flow Line |
| X23/I | 0.40 | 3.2 | 3.39 | 0.47 | Trench Drain Flow Line |
| X24A/I | 0.70 | 3.5 | 2.15 | 0.27 | Swale Flow Line |
| X24B/I | 2.00 | 3.5 | 3.28 | 0.23 | Swale Flow Line |
| X26/I | 0.40 | 4.9 | 3.59 | 0.46 | Trench Drain Flow Line |
| X27/I | 0.40 | 4.2 | 1.99 | 0.49 | L Curb & Gutter |

Interim Condition Finish Floor 100yr Analysis

| Section ID | FF Elev. | FL Elev. | Depth, D (FT) | WSE | Freeboard (FT) | 2*D | FF > 2*D + FL | COMMENTS |
|------------|----------|----------|---------------|---------|----------------|------|---------------|---|
| X22A/I | 2000.83 | 1999.92 | 0.30 | 2000.22 | 0.61 | 0.6 | YES | Student Union (North) Stage |
| X22A/I | 2001.00 | 2000.95 | 0.30 | 2001.25 | - | 0.6 | NO* | Ex. Cafeteria - 2' Concrete Wall |
| X22A/I | 1999.33 | 1999.75 | 0.30 | 2000.05 | - | 0.6 | NO* | Student Union (North) Add Flood Protection (grouted CMU wall with flood proof membrane to minimum elevation = 2000.35) |
| X22B/I | 1999.33 | 1998.83 | 0.19 | 1999.02 | 0.31 | 0.38 | YES | Student Union (North) |
| X23/I | 1998.67 | 1998.34 | 0.47 | 1998.81 | - | 0.94 | NO* | Student Union (South) Trench drain and adjacent pavement provides 0.5 feet of minimum freeboard. |
| X23/I | 2005.50 | 1998.58 | 0.47 | 1999.05 | 6.45 | 0.94 | YES | Ex. Gymnasium |
| X24A/I | 1999.33 | 1999.35 | 0.27 | 1999.62 | - | 0.54 | NO* | Student Union (North) Add Flood Protection (grouted CMU wall with flood proof membrane to a minimum elevation = 1999.89') |
| X24A/I | 2005.53 | 2001.18 | 0.27 | 2001.45 | 4.08 | 0.54 | YES | Ex. Frazier Hall |
| X24B/I | 1999.33 | 1998.81 | 0.23 | 1999.04 | 0.29 | 0.46 | YES | Student Union (North) |
| X24B/I | 2005.53 | 1998.81 | 0.23 | 1999.04 | 6.49 | 0.46 | YES | Ex. Frazier Hall |
| X26/I | 1998.70 | 1997.77 | 0.46 | 1998.23 | 0.47 | 0.92 | YES | Ex. Visual Arts Bldg. |
| X26/I | 1998.67 | 1997.73 | 0.46 | 1998.19 | 0.48 | 0.92 | YES | Student Union (South) |
| X27/I | 1999.33 | 1997.56 | 0.49 | 1998.05 | 1.28 | 0.98 | YES | Student Union (North) |
| X27/I | 1998.67 | 1996.76 | 0.49 | 1997.25 | 1.42 | 0.98 | YES | Student Union (South) |

*Adjacent building wall will require additional flood protection.

Flow Table: Offsite Basins

| Basin ID | Area (ac) | Q10 (cfs) | Q100 (cfs) |
|----------|-----------|-----------|------------|
| ST7S-1 | 4.21 | 5 | 11 |
| ST7S-2 | 2.06 | 3 | 5 |
| CLK-1 | 7.29 | 9 | 19 |
| CLK-2 | 6.86 | 9 | 18 |
| ST7N | 1.47 | 2 | 4 |
| BGR-1 | 4.69 | 6 | 12 |
| BGR-2 | 3.19 | 4 | 8 |
| LWS | 2.6 | 3 | 7 |
| ST10 | 1.15 | 2 | 3 |

Flow Table: Interim Condition

| ID | Area/Description (ac) | Q10 (cfs) | Q100 (cfs) |
|--------|-----------------------|-----------|------------|
| ON1-I | 0.54 | 1 | 2 |
| ON2-I | 4.02 | 7 | 12 |
| ON3-I | 0.5 | 1 | 1 |
| ON4-I | 2.59 | 4 | 8 |
| ON4-IA | 1.13 | 1.7 | 3.5 |
| ON4-IB | 1.46 | 2.3 | 4.5 |
| ON5-I | 8.93 | 15 | 28 |
| ON5-IA | 0.42 | 0.7 | 1.3 |
| ON5-IB | 4.58 | 7.7 | 14.4 |
| ON5-IC | 0.14 | 0.2 | 0.4 |
| ON5-ID | 0.89 | 1.5 | 2.8 |
| ON5-IE | 0.55 | 0.9 | 1.7 |
| ON5-IF | 0.78 | 1.3 | 2.4 |
| ON5-IG | 0.25 | 0.4 | 0.8 |
| ON5-IH | 1.32 | 2.3 | 4.2 |
| ON6-I | 0.87 | 1 | 3 |
| CP1A | ST7S-1 and ON1-I | 6 | 12 |
| CP1B | CP1A and ST7-2 | 8 | 17 |
| CP2 | CP1B and CLK-1 | 17 | 36 |
| CP3 | CP2, CLK-2, and ON2-I | 32 | 65 |
| CP4 | ST7N and ON3-I | 3 | 6 |
| CP5 | CP4 and BGR-1 | 8 | 17 |
| CP6 | CP5, BGR-2, and ON4-I | 16 | 33 |
| CP7 | LWS and ON5-I | 18 | 34 |
| CP8 | ST10 and ON6-I | 3 | 6 |

6960 Smoke Ranch Suite 110
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SCALE: 1"=100'
JOB#: 20232298
DATE: FEB 2025
DRAWING NO: **FIG-8A**

LAS VEGAS ACADEMY
FIGURE 8A
INTERIM 2 ONSITE:
PHASE 1 BASIN MAP

