

ADDENDUM # 02

Project: Kern Community College District
1801 Panorama Drive, Bakersfield, CA 93305 – Aquatics Center
Bakersfield College Combined Gym & Fieldhouse – Pool Equipment Building
19six #: 23024.02

DSA #: 03-124689 – Bakersfield College – Pool Building and Site Demolition
03-124690 – Bakersfield College – Pool Equipment Building

Date: October 15, 2025

To all bidders submitting proposals for the above captioned project. This Addendum is hereby included in the Contract Documents to the same extent as though it were originally included therein. The following items modify, add to, delete from, or explain the drawings and/or specifications. The contents of this Addendum shall take precedence over the original specifications and plans.

BID DEADLINE:

The bid time shall not change.

Bid due date: 2:00 PM Thursday, October 23, 2025

at: Facilities Department Conference Room
Kern Community College District Main Office
2100 Chester Ave.
Bakersfield, CA 93301

Item #1: **Project Start Date:** The project start date has been rescheduled from *Monday, October 20th, 2025*, to **Monday, December 15th, 2025**. The overall project duration remains unchanged and is consistent with the timeline outlined in the bid documents issued on **September 9, 2025**.

Item #2: **Utility Map:** In response to multiple concerns regarding the location of underground utilities at the existing pool building wings scheduled for demolition, an underground x-ray survey has been conducted. The results of this survey are included in this addendum for reference.

Item #3: **Hazardous Materials Report:** In response to a Pre-Bid RFI regarding hazardous materials, the report for the two existing pool building wings designated for demolition is included in this addendum. Please note that a significant portion of the interior of these buildings has already been demolished. Contractor(s) is responsible to field verify all remaining hazardous materials. Contractors may schedule an additional site walk with Bakersfield College M&O department before bids are due.

Item #4: **Soils Report:** In response to a Pre-Bid RFI referencing Keynote 03.00.I on sheet A-021, which pertains to the soils report, the complete soils report has been included in this addendum for reference.

- Item #5:** **Pool Drainage:** The intent is for the water to be maintained in both pools for as long as possible to preserve the integrity of the liners. Additionally, the existing pool covers shall remain in place over each pool to provide continued protection. Contractor(s) to confirm means/methods, schedules & sequencing prior to start of construction.
- Item #6:** **Shoring Clarification – Warm-Up Pool:** As referenced in Addendum Item #5, the water retained in the warm-up pool during demolition shall be considered the required shoring, as noted on Sheet A-021.
- Item #7:** **Electrical Drawings – Missing Information Clarification:** Several Pre-Bid RFI inquiries regarding missing information on the electrical drawings relate to content that was originally included in the DSA-approved documents. However, due to a printing error, certain details were inadvertently omitted from the issued set. The affected electrical drawings have been reprinted with the missing information restored. All revisions have been clouded for clarity, and the updated sheets are included in this addendum. Please refer to the attached RFI responses for additional context and clarification.
- Item #8:** **DSA #03-124690 – Gate Clarification (Sheet C-200):** On the DSA #03-124690 project, the southern gates were originally noted as “existing to remain” on Sheet C-200 – Demolition Plan. However, per Sheet A-012 – Enlarged Demolition Site Plan, these gates are to be demolished. The note on Sheet C-200 has been revised accordingly, with changes clouded for reference. The updated sheet is included in this addendum.
- Item #9:** **Addendum Acknowledgement:** Bidders shall complete and sign the attached Addendum Acknowledgement Form and submit it as part of their Bid package.

ATTACHMENTS:

PRE-BID RFIs

RFI-01 (S.C. Anderson) ITEMS 001-005, 8.5" x 11" Sheet
PB-001 (Black/Hall Construction) FEEDER SCHEDULE, 8.5" x 11" Sheet
PB-002 (Black/Hall Construction) POOL EQUIPMENT NOTES, 8.5" x 11" Sheet
PB-003 (Black/Hall Construction) POWER PLAN NOTS, 8.5" x 11" Sheet
PB-004 (Black/Hall Construction) CONCRETE WARNING PLANKS, 8.5" x 11" Sheet
PB-005 (Black/Hall Construction) CONCRETE ENCASEMENT, 8.5" x 11", Sheet
RFI (California Commercial Pools) PART 2 – PRODUCTS, 8.5" x 11", 20 Sheets
RFI-02 (S.C. Anderson) ITEMS 2.01-2.08, 8.5" x 11", 2 Sheets
RFI-03 (S.C. Anderson) ITEM 3.01, 8.5"x11", Sheet

SPECIFICATIONS

None

DRAWINGS

03-124689_DWG_A

- E-101 – Site Plan
- E-201 – Pool Equipment Building Floor Plan – Power
- E-202-P – Pool Equipment Building Photometrics Plan
- E-203 – Pool Equipment Building Floor Plan – Auxiliary
- E-501 – Single Line Diagram

03-124690_DWG_A

- C-200 – Demolition Plan

OTHER ATTACHMENTS

Utility Survey

Hazardous Materials Report

Soils Report

Addendum Acknowledgment

Prepared by: 19six Architects



S. C. ANDERSON INC.

11109 RIVER RUN BLVD. STE. 200

BAKERSFIELD, CA 93311

Phone: (661) 392-7000 Fax: (661) 391-9999

FROM:

PROJECT: Bakersfield College Combined Gym & Fieldhouse - Pool Equipment Building

DATE: October 3, 2025

ARCHITECT: 19six Architects

RFI: 01

ITEM #	QUESTIONS / COMMENTS
001	Electrical sheets E101, E201, E202-P and E-203 are missing the title block and page number. Please provide updated sheets with page name and number for reference.
002	Electrical Single Line Diagram sheet E501 is blank. Please provide updated sheet with missing information.
003	Specification section 05 12 00 - Structural Steel, Section 1.6 Quality Assurance, item A. requires steel fabricator to be an AISC certified shop (LA City Approved Shop). Please confirm if this requirement can be deleted as this currently limits our local contractor market in Kern County.
004	Article 58 Insurance Requirements, Section 5-A regarding Course of Construction (COC) Builders Risk Insurance states: "When required by Owner" Please confirm if General Contractors are to include Builders Risk Insurance for this project.
005	Structural plans call for all steel exposed to weather to be galvanized. Does this include all steel within the building that can still be considered exposed to weather? Please clarify what steel is to be galvanized.

Responses:

001 The missing information has been addressed and is included on the revised sheets provided in Addendum 2.

002 The missing information has been addressed and is included on the revised sheets provided in Addendum 2.

003 The AISC requirement may be waived if the proposed fabricator can demonstrate sufficient experience with DSA projects. Specifically, if the fabricator can provide documentation showing successful completion of five (5) or more DSA-approved projects of similar size and scope to the current project. In that case, the design team and Owner can make a judgment call to accept the substitution in lieu of AISC certification, submit the proposed fabricator's project list and relevant experience for review and consideration.

004 General Contractors are required to carry builder's risk insurance as part of the project requirements.

005 Yes, all the exposed steel is to be galvanized, including steel within the building. This is due to the interior environment being subject to weather exposure and moisture from the pool equipment.

19six Architects

10/07/2025

REQUEST FOR INFORMATION (RFI)

PROJECT:	Bakersfield College Combined Gym & Fieldhouse – Pool Equipment Building	RFI NO.:	PB-001
OWNER:	Kern Community College District	DATE:	10/03/2025
CONTRACTOR:	Black/Hall Construction, Inc. P.O. Box 445 Taft, CA 93268		

DRAWING REFERENCE:	SPECIFICATION REFERENCE:
BRIEF TITLE: feeder schedule	
DESCRIPTION OF CLARIFICATION REQUIRED (attach sheets as necessary): Please provide 1-line diagram & feeder schedule, none are shown on the electrical plans.	

CONTRACTOR'S PROPOSED SOLUTION:
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INITATOR: Black / Hall Construction Inc.	SIGNATURE:
DATE RESPONSE REQUIRED: ASAP	

The missing information has been addressed and is included on the revised sheets provided in Addendum 2.

19six Architects
10/07/2025

REQUEST FOR INFORMATION (RFI)

PROJECT: Bakersfield College Combined Gym &
Fieldhouse – Pool Equipment Building

RFI NO.: PB-002

OWNER: Kern Community College District

DATE: 10/03/2025

CONTRACTOR: Black/Hall Construction, Inc.
P.O. Box 445
Taft, CA 93268

DRAWING REFERENCE:

SPECIFICATION REFERENCE:

BRIEF TITLE: Pool
Equipment Notes

DESCRIPTION OF CLARIFICATION REQUIRED (attach sheets as necessary):

Please provide notes 1-11 on pool equipment building electrical site plan. Plans are showing note callouts, but no notes are shown.

CONTRACTOR'S PROPOSED SOLUTION:

INITIATOR: Black / Hall Construction Inc.

SIGNATURE:

DATE RESPONSE REQUIRED: ASAP

The missing information has been addressed and is included on the revised sheets provided in Addendum 2.

19six Architects
10/07/2025

REQUEST FOR INFORMATION (RFI)

PROJECT:	Bakersfield College Combined Gym & Fieldhouse – Pool Equipment Building	RFI NO.:	PB-003
OWNER:	Kern Community College District	DATE:	10/03/2025
CONTRACTOR:	Black/Hall Construction, Inc. P.O. Box 445 Taft, CA 93268		

DRAWING REFERENCE:	SPECIFICATION REFERENCE:
BRIEF TITLE: Power Plan Notes	

DESCRIPTION OF CLARIFICATION REQUIRED (attach sheets as necessary):

Please provide notes on Power plan for pool equipment building. None are shown

CONTRACTOR'S PROPOSED SOLUTION:

INITATOR: Black / Hall Construction Inc.	SIGNATURE:
DATE RESPONSE REQUIRED:	ASAP

The missing information has been addressed and is included on the revised sheets provided in Addendum 2.

19six Architects
10/07/2025

REQUEST FOR INFORMATION (RFI)

PROJECT:	Bakersfield College Combined Gym & Fieldhouse – Pool Equipment Building	RFI NO.:	PB-004
OWNER:	Kern Community College District	DATE:	10/03/2025
CONTRACTOR:	Black/Hall Construction, Inc. P.O. Box 445 Taft, CA 93268		

DRAWING REFERENCE:	SPECIFICATION REFERENCE:
BRIEF TITLE: Concrete Warning Planks	
DESCRIPTION OF CLARIFICATION REQUIRED (attach sheets as necessary):	
Specs call for concrete warning planks to be buried with underground conduits, the trench details shown on the electrical sheets do not call for that. Are concrete warning planks needed?	

CONTRACTOR'S PROPOSED SOLUTION:
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INITATOR: Black / Hall Construction Inc.	SIGNATURE:
DATE RESPONSE REQUIRED:	ASAP

Concrete planks are not required, however, warning tape is required.

P2S
10/06/2025

REQUEST FOR INFORMATION (RFI)

PROJECT: Bakersfield College Combined Gym &
Fieldhouse – Pool Equipment Building

RFI NO.: PB-005

OWNER: Kern Community College District

DATE: 10/03/2025

CONTRACTOR: Black/Hall Construction, Inc.
P.O. Box 445
Taft, CA 93268

DRAWING REFERENCE:

SPECIFICATION REFERENCE:

BRIEF TITLE: Concrete
Encasement

DESCRIPTION OF CLARIFICATION REQUIRED (attach sheets as necessary):

There is a discrepancy in the specs, please confirm that concrete encasement is not needed for any electrical and data conduits underground.

CONTRACTOR'S PROPOSED SOLUTION:

INITIATOR: Black / Hall Construction Inc.

SIGNATURE:

DATE RESPONSE REQUIRED: ASAP

Concrete encasement is required for the duct bank between the existing gym building and the new pool equipment building.

P2S
10/06/2025



October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.09, Deck Equipment, Inserts & Anchor Sockets

#A. 3. The specification here says: As required, new stanchion posts (backstroke and false start) must be provided as required.

Question: Is the College requiring new stanchion post? If so, please provide quantity.

The basis of design and plans note the intent is for the existing pool equipment to be removed/stored and reinstalled into new deck anchors.

Defer to KCCD aquatics staff confirmation if new posts are desired.

RJM - Counsilman-Hunsaker 10/6/2025

New stanchion posts are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.09, Deck Equipment, Inserts & Anchor Sockets

#A. 5. Starting Platforms

- a. Says if required – Dual post Starting platforms

Question: please clarify if the College is requiring starting platforms. If so, how many?

- b. Says if required – anchors for starting platforms.

Question: Please clarify if anchors for starting platforms anchors are needed. If so, how many?

- c. Says Starting platform safety covers – (if required)

Question: Please clarify if starting platform safety covers are required, and how many?

- d. Says if applicable – Starting block must be manufactured to receive individual timing system speakers for mounting to the starting block.

Question: is this required? If so, how many?

The basis of design and plans do not include new starting blocks. The specification sections above are noted and refer to the existing blocks at the competition pool and were included if new blocks were desired.

Defer to KCCD aquatics staff confirmation if new blocks or related accessories are desired.
RJM - Counsilman-Hunsaker 10/6/2025

Starting platforms are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.09, Deck Equipment, Inserts & Anchor Sockets

#A. 6. Backstroke start devices – says if required

Question: is this item required, if so, how many?

The basis of design and plans do not include new backstroke start devices. The specification sections above are noted and refer to the existing blocks at the competition pool and were included if new accessories were required.

Defer to KCCD aquatics staff confirmation if new backstroke devices are desired.
RJM - Counsilman-Hunsaker 10/6/2025

Backstroke start devices are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.09, Deck Equipment, Inserts & Anchor Sockets

#A. 7. Water polo goals – this says if applicable

Question: please clarify under this section, for (a.), (b.), (c.), (d.) Which all pertain to the water polo goals: Are these going to be required? If so, please specify quantity for all.

The basis of design and plans do not include new water polo goals or anchors. The specification sections above were included for consideration on the competition pool, though goals could also be used for practice in the warm-up pool. If deck goals were considered, the related deck anchors would need to be detailed/revise in the AQ plan set.

Defer to KCCD aquatics staff confirmation if new water polo equipment (floating vs. deck mounted) is desired.

RJM - Counsilman-Hunsaker 10/6/2025

Water polo goals are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.09, Deck Equipment, Inserts & Anchor Sockets

#A. 8. Lifeguard Chairs

- a. says if required

Question: are the lifeguard chairs required? If so, how many?

- b. Says lifeguard chairs, if required.

Question: is this lifeguard chair required? If so, how many?

- c. Lifeguard chairs

Question: are these lifeguard chairs required? If so, please specify how many are needed of:

- 1) 36" chair
- 2) 48" chair
- 3) 66" chair

The basis of design and plans do not include new lifeguard chairs. The facility has existing equipment on site to be stored/re-used after demolition/renovation.

Defer to KCCD aquatics staff confirmation if new lifeguard chairs for replacement or additions are desired.

RJM - Counsilman-Hunsaker 10/6/2025

New lifeguard chairs are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.09, Deck Equipment, Inserts & Anchor Sockets

#A. 13. Pool Lift

a. Pool lift says - if required

Question: is a pool lift required on this project, if so, how many?

The basis of design and plans call for the existing warm-up pool portable lift to remain and be reinstalled. A fixed deck anchor for the existing pool life must be installed per ADA/manufacture details.

New lift options were listed in the specification if the KCCD aquatics staff needed or wanted a new lift for either pool.

RJM - Counsilman-Hunsaker 10/6/2025

New pool lift is not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.09, Deck Equipment, Inserts & Anchor Sockets

#A. 14. Says: Provided a ship's ladder or Lapeyre Stair in the size and shape shown on the drawings.

Question: Please clarify where this is shown on the drawings, with plan sheet number and details. Also, please provide the quantity needed.

Tag 3A on AQ-500. Detail 1 on AQ-700. This is a single ladder in the pool mechanical room for access into the pump pit.
Defer to the new pool building architectural/structural plans for final elevation confirmations.

RJM - Counsilman-Hunsaker 10/6/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.10, Loose Equipment

#A. 1. Says if required – competition floating lane ropes

Question: Are floating lane ropes required? If so, please provide the quantity of all ropes that are needed per this section. Also, will need the quantity on extension hooks required for both the competition pool as well as the warm up pool.

The basis of design and plans do not include new lane ropes for either pool. The facility has existing equipment on site to be stored/re-used after demolition/renovation. CH would recommend new lane ropes at the warm-up pool. Provide line item cost for warm-up pool lane ropes (in-kind replacement & quantity to be verified with staff, 9 were installed).

Defer to KCCD aquatics staff confirmation if new lane ropes are desired. Color selections would also need to be provided.

RJM - Counsilman-Hunsaker 10/6/2025

Competition floating lane ropes are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.10, Loose Equipment

#A. 2. Says if required, Water polo floating ropes must be provided

Question: are the floating ropes required? If so, please provide the quantity needed.

The basis of design and plans do not include water polo ropes for either pool. The facility has existing equipment on site to be stored/re-used after demolition/renovation.

Defer to KCCD aquatics staff confirmation if any water polo ropes are desired. Existing course layouts/dimensions would need to be verified in the field.

RJM - Counsilman-Hunsaker 10/6/2025

Water polo floating ropes are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.10, Loose Equipment

#A.3. Says if required for the competition pool – Cup Anchors for floating lane ropes and water polo ropes.

Question: Are these required? If so, please provide quantity.

The basis of design and plans do not include new cup anchors (or ropes) for either pool. The facility has existing equipment on site to be stored/re-used after demolition/renovation.

Defer to KCCD aquatics staff confirmation if new lane ropes are desired. Color selections would also need to be provided.

RJM - Counsilman-Hunsaker 10/6/2025

Cup anchors for floating lane ropes and water polo ropes are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.10, Loose Equipment

#A.4. Says if required for the warm up pool – Cup Anchors for floating lane ropes and water polo ropes.

Question: Are these required? If so, please provide quantity.

The basis of design and plans do not include new cup anchors for either pool.

Defer to KCCD aquatics staff confirmation if any new or replacement anchors are needed.
RJM - Counsilman-Hunsaker 10/6/2025

Cup anchors for floating lane ropes and water polo ropes are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.10, Loose Equipment

#A. 5. Says if required for the competition pool – Threaded eyebolt for floating lane ropes and water polo floating ropes.

Question: Are these required? If so, please provide quantity.

The basis of design and plans do not include new anchors for the competition pool.

Defer to KCCD aquatics staff confirmation if any new or replacement anchors are needed.
RJM - Counsilman-Hunsaker 10/6/2025

Threaded eyebolt for floating lane ropes and water polo ropes are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.10, Loose Equipment

#A. 6. Water Polo Floating ball release

Question: is this required? Please provide qty if so.

The basis of design and plans do not include water polo ball release.

Defer to KCCD aquatics staff confirmation if any new or replacement polo equipment is needed.
RJM - Counsilman-Hunsaker 10/6/2025

Water polo floating ball release is not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.10, Loose Equipment

#A. 7. Water Polo Ejection Board

Question: is this required? Please provide qty if so.

The basis of design and plans do not include water polo ball ejection board.

Defer to KCCD aquatics staff confirmation if any new or replacement polo equipment is needed.
RJM - Counsilman-Hunsaker 10/6/2025

Water polo ejection board is not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.10, Loose Equipment

#A. 8. Backstroke Flags

Question: Are these required? And will you need backstroke flags at both pools?

The basis of design and plans do not include new flags for either pool. The facility has existing equipment on site to be stored/re-used after demolition/renovation. CH would recommend new lane ropes at both pools. Provide line item cost or budget for owner consideration.

Defer to KCCD aquatics staff confirmation if new flags are desired. Color selections would also need to be provided. Dimensions for the flags would need to be measured/confirmed in the field.
RJM - Counsilman-Hunsaker 10/6/2025

Backstroke flags are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.10, Loose Equipment

#A. 10. Lane Rope Storage Reel

Question: this says if required. Please clarify if this will be needed and how many?

The basis of design and plans do not include new lane rope storage reels for either pool. The facility has existing equipment on site to be stored/re-used after demolition/renovation.

Defer to KCCD aquatics staff confirmation if new lane rope storage reels are desired and for which courses/quantity of lanes.

RJM - Counsilman-Hunsaker 10/6/2025

Lane Rope Storage Reel is not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.10, Loose Equipment

#A. 12. Movable Stanchions and Swag Lines

This says if required

Question: please clarify if a., b. & c. under this section will be required, if so, how many of each?

The basis of design and plans do not include movable stanchions/swag lines. The specification sections above were included for consideration on the competition pool for consideration.

Defer to KCCD aquatics staff confirmation if new equipment would be desired.
RJM - Counsilman-Hunsaker 10/6/2025

Movable Stanchions and Sway Lines are not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.11, Maintenance Equipment

#A. 7. Robotic Pool Cleaner

- a. This says if required, to provide 1.
Question: Is this robotic pool cleaner required?
- b. This says if required, to provide 1.
Question: Will this be required?

Please provide a line item cost for each pool vacuum option for owner consideration. The robotic cleaners are not required, but are recommended.

Defer to KCCD aquatics staff confirmation if vacuums are desired.
RJM - Counsilman-Hunsaker 10/6/2025

Robotic Pool Cleaner is not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.12, Safety Equipment

- #A. 1. Ring buoy and extension rope – This says 2 required – confirm existing
Question: Do we need to provide this item?
- #A. 2. Life Hook and pole – This says 2 required, confirm existing
Question: Do we need to provide this item?
- #A. 3. Spineboards – This says as required
Question: Do we need to provide this? If so, please specify the qty.
- #A. 6. Rescue tube – This says 2 required, confirm existing
Question: Do we need to provide this?

Please provide items as line item cost(s) for the safety/rescue items for inclusion if existing equipment is no longer salvageable or missing. 1 spine-board. [These items are intended for the warm-up pool only]

Confirm with KCCD aquatics staff confirmation if new safety equipment is needed/desired.
RJM - Counsilman-Hunsaker 10/6/2025

New safety equipment is not required per college aquatics staff.

KCCD
10/07/2025

October 3, 2025

Project: Bakersfield College Pool Equipment Building

RFI for Specification section: 13 11 00

Part 2 – Products

Section 2.16, Underwater Lights

#A This says the underwater lights are if required, confirm to match existing.

Question: Are these required? How many will be needed if so? Will this only be for the Leisure pool? Or both the Leisure pool and competition pool?

#C Junction boxes for the lights

Question: are we to reuse existing? Or do we provide new on this item?

#D Transformers for 12v underwater lights

Question: are we to reuse existing? Or do we provide new on this item?

The basis of design and plans do not include new underwater pool lights.

The AQ plan set and scope should be coordinated closely with the as-built plan sets and with project electrical drawings to confirm the existing controls and conduits.

All underwater lights are intended to remain, as noted on the AQ drawings- and were functional to the knowledge of CH during design. A quantity of 10 is noted at the warm-up pool in the AQ drawings.

During demolition and depending on as-built installation, conduits may need replacement and routing.

The competition pool lighting was not included in this specification, but if lighting needs replacement- KCCD aquatics staff to confirm quantity and compatible replacement.

If any underwater lights are not operational- new replacement lamps or conduit, transformers/junction boxes will need to be confirmed and priced separately and provided as a line item repair.

RJM - Counsilman-Hunsaker 10/6/2025



S. C. ANDERSON INC.
11109 RIVER RUN BLVD. STE. 200
BAKERSFIELD, CA 93311
Phone: (661) 392-7000 Fax: (661) 391-9999

FROM: Joe Jannino
PROJECT: Bakersfield College Combined Gym & Fieldhouse - Pool Equipment Building
DATE: October 8, 2025
ARCHITECT: 19six Architects
RFI: 02

ITEM #	QUESTIONS / COMMENTS
2.01	Please provide the scales for sheets E-101 and E-201.
2.02	Please clarify and circuits going though E-021 and E-022 that will need to be rerouted and their sources of power. Also, please clarify the types and sizes of electrical equipment that are in these areas that need to be removed.
2.03	Please provide information pertaining to what the conduit tags shown on E-101 are referencing.
2.04	The 'KCCD Bid Package - BC COMBINED GYM AND FIELDHOUSE POOL BUILDING' project manual has two set of Division 0 / Contract documents. Refer to page 3 of 1628 and then to page 164 of 1628. Assuming the first set of Division 0 / Contract Documents are those the General Contractor are to respond to and are apart of this contract, please delete those documents that do not apply.
2.05	Is there a hazardous material report for this project? Please provide.
2.06	Keynote 03.00.1 on A-021 mentions a soils report. Please provide soils report.
2.07	Keynote 02.22.A on sheets A-022, A-023, and A-024 says to "Demo any existing remaining MEP equipment and systems inside building and on roof". How are we expected to quantify the equipment and systems to demolish, There is no additional information on the plumbing and electrical demolition plans.
2.08	Keynote a on sheets P-021, E-021, and E-022 is very vague. Please clarify extent of plumbing and electrical systems that are to be demolished.

Responses:

2.01 Scales have been provided on the referenced sheets included in the addendum drawings.

2.02 The entirety of the above-grade buildings are to be demolished and the basement is to be gutted out to the foundation walls and backfilled in accordance with the contract documents. Therefore, unless otherwise noted, all electrical, mechanical and plumbing systems in spaces shown in P-021, E-021 and E-022 shall be demolished.

Refer to the underground utilities map included in this addendum for additional information. Refer to AQ-101 for items to be removed with care for relocation and re-use. The Contractor is responsible for field verifying all existing conditions within the demolition areas to confirm the full scope of work prior to bidding. To do so, coordinate directly with the Maintenance & Operations (M&O) department to schedule any required site visits prior to bidding.

2.03 Please refer to the notes provided on the addendum drawings for clarification.

2.04 The bidders are required to submit only (1) one bid set for both DSA projects. Separate bids for each DSA project are not required.

2.05 The hazardous materials report has been included in this addendum for reference.

2.06 The soils report has been included in this addendum for reference.

2.07 Please refer to the response provided for RFI Item 2.02 for clarification regarding demolition scope and existing systems.

2.08 Please refer to the response provided for RFI Item 2.02 for clarification regarding demolition scope and existing systems.

19six Architects
10/10/2025



S. C. ANDERSON INC.

11109 RIVER RUN BLVD. STE. 200

BAKERSFIELD, CA 93311

Phone: (661) 392-7000 Fax: (661) 391-9999

FROM: Joe Jannino
PROJECT: Bakersfield College Combined Gym & Fieldhouse - Pool Equipment Building
DATE: October 8, 2025
ARCHITECT: 19six Architects
RFI: 03

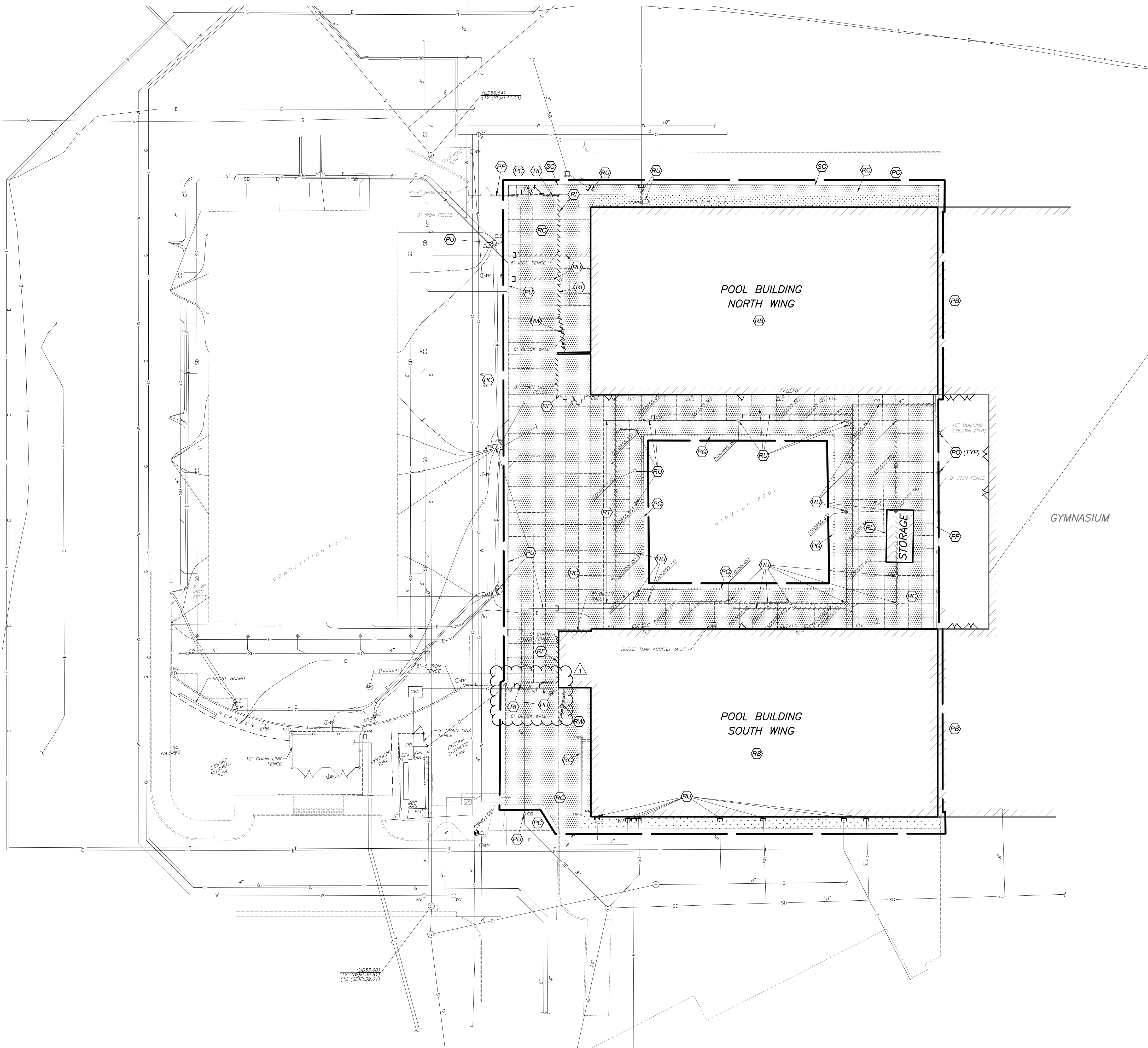
ITEM #	QUESTIONS / COMMENTS
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3.01	The Construction Period in 09-Construction Agreement states the project is to be completed within 100 consecutive calendar days. Considering demolition unknowns and material lead times, the District should consider additional time. Please revisit Construction Period duration.
------	--

3.01 The construction duration shall remain unchanged and is consistent with the timeline outlined in the contract documents.

19six Architects
10/09/2025

PLUT DATE: MAR 01, 2025 - 12:17PM
DRAWING NAME: P:\225-SOUTH STREET\PROJECT\DRAWINGS\225SALL_C200.DWG
PLUT BY: S.JUE

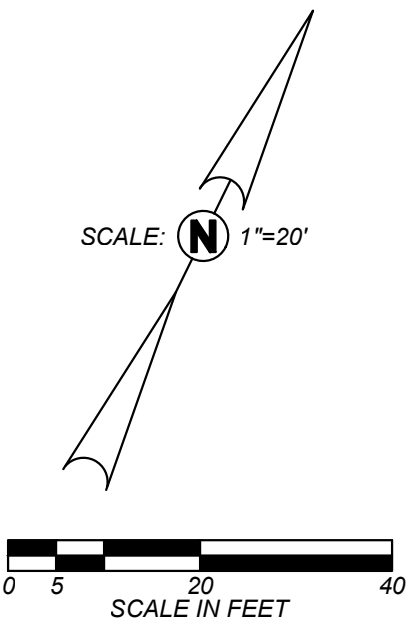


DEMOLITION LEGEND:

- REMOVE EXISTING IMPROVEMENTS AS NECESSARY TO CONSTRUCT NEW IMPROVEMENTS SHOWN ON THESE PLANS. UNLESS OTHERWISE NOTED ON THE PLAN, THE REMOVAL OF IMPROVEMENTS MUST BE COORDINATED WITH ALL PLAN SHEETS. CONTRACTOR MUST ALSO COORDINATE REMOVAL OF IMPROVEMENTS WITH UTILITY AGENCIES. PROTECT ALL IMPROVEMENTS NOT DESIGNATED FOR REMOVAL. SEE NOTE 1
- LIMITS OF VEGETATION REMOVAL. 4" MINIMUM DEPTH
- LIMITS OF CONCRETE IMPROVEMENT REMOVAL
- PROTECT BUILDING TO REMAIN
- PROTECT CONCRETE IMPROVEMENTS TO REMAIN
- PROTECT FENCE TO REMAIN
- PROTECT POOL OVERFLOW GUTTER, CONCRETE BASE, AND DRAIN PIPES TO REMAIN
- PROTECT BUILDING COLUMN TO REMAIN
- PROTECT UTILITY TO REMAIN
- REMOVE AND LAWFULLY DISPOSE OF BUILDING. SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION
- REMOVE AND LAWFULLY DISPOSE OF CONCRETE IMPROVEMENTS
- REMOVE AND LAWFULLY DISPOSE OF DECORATIVE METAL FENCE PICKETS, POSTS, AND FOOTINGS
- REMOVE AND LAWFULLY DISPOSE OF CHAIN LINK FENCE FABRIC, POSTS AND FOOTINGS
- SALVAGE AND RELOCATE STORAGE BUILDING. COORDINATE NEW LOCATION WITH OWNER
- DEMOLISH AND BACKFILL TUNNEL UNDER POOL DECK PER ARCHITECTURAL PLANS
- REMOVE AND LAWFULLY DISPOSE OF UTILITY, SEE NOTE 10
- REMOVE AND LAWFULLY DISPOSE OF BLOCK WALL AND FOOTING
- SAWCUT
- LIMIT OF CHAIN LINK FENCE REMOVAL
- LIMIT OF CONCRETE BLOCK WALL REMOVAL
- LIMIT OF DECORATIVE METAL FENCE REMOVAL
- LIMIT OF STORM DRAIN LINE REMOVAL
- LIMIT OF SEWER LINE REMOVAL
- LIMIT OF WATER LINE REMOVAL
- CAP END OF UTILITY LINE WITH WATER-TIGHT CONNECTION

GENERAL DEMOLITION NOTES:

- THE "LIMIT OF DEMOLITION" SHOWN IS APPROXIMATE AND IS GENERALLY CONSIDERED TO BE THE MINIMUM REMOVAL REQUIREMENTS. CONTRACTOR MUST COORDINATE AS NOTED IN THE LEGEND.
- CONTRACTOR SHALL LEGALLY DISPOSE OF ALL DEMOLISHED MATERIALS OFF-SITE.
- CONTRACTOR SHALL PROTECT ALL EXISTING UTILITY IMPROVEMENTS NOT SPECIFICALLY DESIGNATED FOR REMOVAL.
- THE ON-SITE UNDERGROUND UTILITIES SHOWN ON THIS SHEET ARE AT APPROXIMATE LOCATIONS. THE EXTENT, LOCATIONS AND SIZES ARE UNKNOWN. THE CONTRACTOR SHALL POT-HOLE TO LOCATE AND VERIFY THE UNDERGROUND UTILITY LINES PRIOR TO REMOVAL.
- CONTRACTOR TO PROTECT AND PRESERVE IN PLACE ANY FOUND SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE RESET BY A CALIFORNIA LICENSED SURVEYOR AND THE APPROPRIATE PAPERWORK FILED WITH THE CITY OR COUNTY, AT CONTRACTOR'S EXPENSE.
- ALL HAZARDOUS MATERIALS ENCOUNTERED DURING SITE DEMOLITION SHALL BE REMEDIATED AND DISPOSED OF PER STATE AND EPA REQUIREMENTS.
- CONTRACTOR SHALL CONTACT AND COORDINATE WITH ALL UTILITY AGENCIES PRIOR TO THE START OF ANY DEMOLITION OR CONSTRUCTION.
- ANY EXISTING UTILITIES AND/OR IMPROVEMENTS WHICH ARE TO REMAIN, THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED TO THE SATISFACTION OF THE OWNER AND AGENCY HAVING AUTHORITY, AT THE CONTRACTOR'S SOLE EXPENSE.
- REMOVE EXISTING IMPROVEMENTS AS NECESSARY TO CONSTRUCT NEW IMPROVEMENTS SHOWN ON THESE PLANS.
 - FOR CONCRETE REMOVAL, REMOVE TO THE NEXT NEAREST TOOLED JOINT OR EXPANSION JOINT OF IMPROVEMENTS DESIGNATED TO REMAIN.
- REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND ARCHITECTURAL PLANS FOR ADDITIONAL DEMOLITION AND COORDINATION.
- COMPLIANCE WITH FIRE SAFETY DURING CONSTRUCTION WILL BE ENFORCED.
- DURING DEMOLITION, DISCONNECT AND PROTECT POOL DECK BONDING WIRES WHERE FOUND. PROTECT IN PLACE FOR RE-CONNECTION TO NEW POOL DECK BONDING.



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Call before you dig.**

AGENCY APPROVAL DSA # 03-124690

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

APP: 03-124690 INC:

REVIEWED FOR
SS ☒ FLS ☒ ACS ☐

DATE: 04/01/2025

19.6

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ARCHITECT STAMP



REVISIONS

NO.	DATE	DESCRIPTION
1	10-15-2025	ADDENDUM 2

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PROJECT OWNER & TITLE
KERN COMMUNITY COLLEGE DISTRICT
2100 Chester Avenue,
Bakersfield, CA 93301

BAKERSFIELD COLLEGE POOL BUILDING AND SITE DEMOLITION
1801 Panorama Dr.
Bakersfield, CA 93305

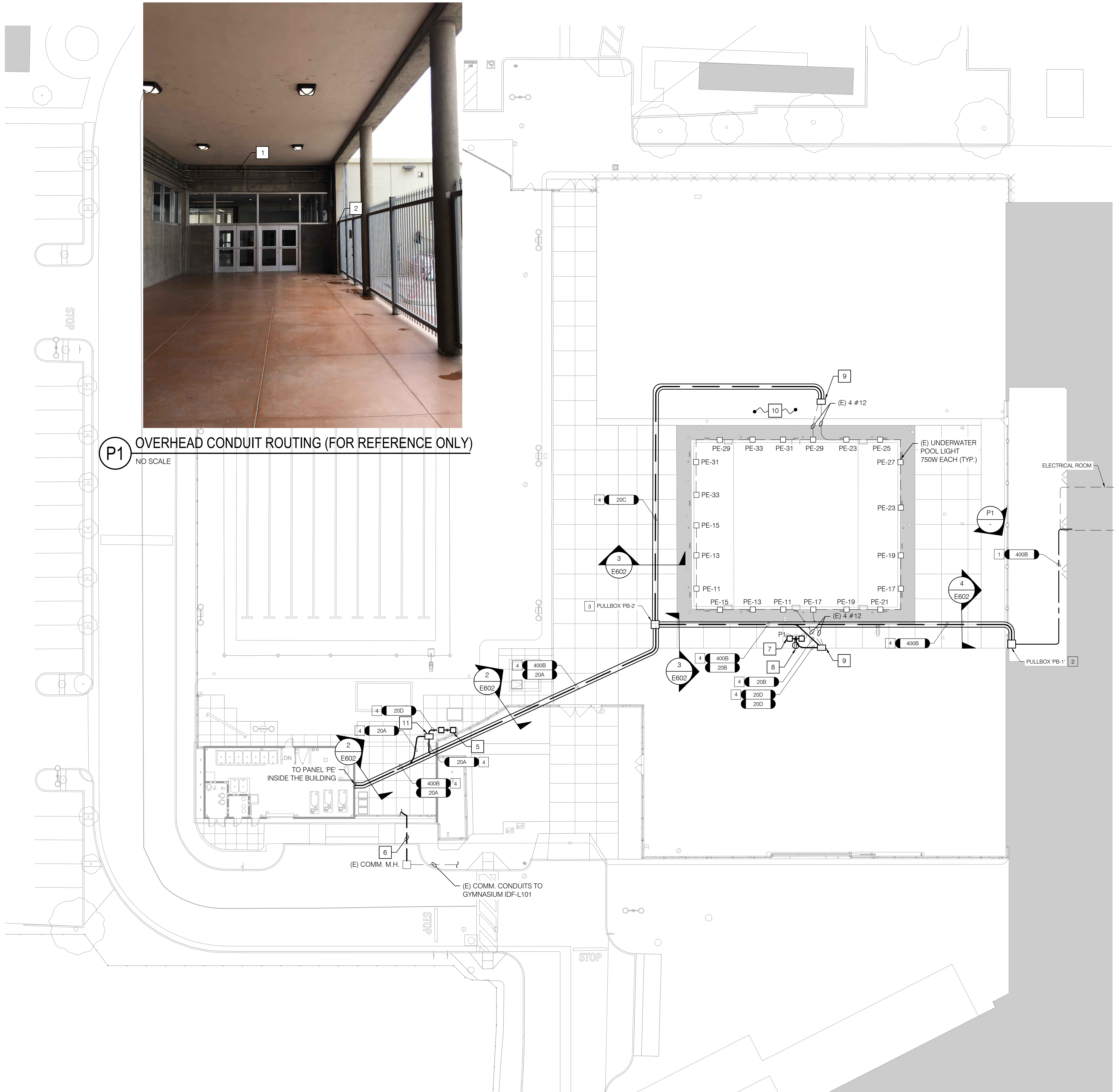
SHEET TITLE
DEMOLITION PLAN

DRAWN BY: S.JUE JOB NUMBER: 23024.01

SHEET NO.

C-200

DATE: MARCH 27, 2025

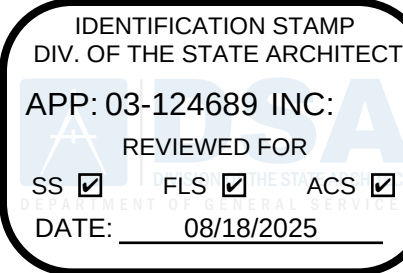


NOTES

- 1 PROVIDE FEEDER IN EXPOSED CONDUIT AS SHOWN. REFER TO THE FEEDER AND CONDUIT SCHEDULE ON SHEET E501 FOR FEEDER SIZE AND QUANTITIES.
- 2 PROVIDE 36" X 24" X 12" OVERHEAD PULLBOX PB-1 WITH REMOVABLE COVERS AND ALL ASSOCIATED ACCESSORIES AS SHOWN.
- 3 PROVIDE 3 X 3 X 3 UNDERGROUND PULLBOX PB-2 WITH ALL ASSOCIATED ACCESSORIES AS SHOWN.
- 4 PROVIDE FEEDER IN UNDERGROUND DUCTBANK AS SHOWN. REFER TO THE FEEDER AND CONDUIT SCHEDULE ON SHEET E501 FOR FEEDER SIZE AND QUANTITIES.
- 5 RELOCATED EXISTING POLE LIGHT FIXTURE AND POLE IN NEW LOCATION. PROVIDE POLE BASE AND ALL ASSOCIATED ACCESSORIES FOR A COMPLETE INSTALLATION.
- 6 PROVIDE (2) 2" CONDUITS FROM EXISTING COMMUNICATIONS MANHOLE TO DATA CABINET IN POOL EQUIPMENT ROOM 101.
- 7 PROVIDE POLE LIGHT FIXTURE AND POLE WITH ALL ASSOCIATED ACCESSORIES AS SHOWN. REFER TO PANEL PE SCHEDULE ON SHEET E-501 FOR POLE LIGHT CIRCUIT. REFER TO DETAIL 4 ON SHEET E501 FOR POLE LIGHT FOOTING DETAIL.
- 8 PROVIDE SURFACE MOUNTED WEATHERPROOF 520R GFCI RECEPTACLE ON LIGHTPOLE TO SERVE MAINTENANCE OF VACUUM. REFER TO PANEL PE SCHEDULE ON SHEET E-501 FOR POLE RECEPTACLE CIRCUIT.
- 9 INTERCEPT EXISTING UNDERWATER POOL LIGHT CIRCUITS IN 11" X 17" HANDHOLE AND EXTEND CIRCUITS TO PANEL PE. CONTRACTOR SHALL VERIFY THE EXISTING CONDUIT, FEEDERS AND CIRCUITS IN THE FIELD. NEW POLE LIGHT AND POLE OUTLET CIRCUITS SHALL ALSO BE ROUTED VIA HANDHOLE. SPLICE POOL LIFT CIRCUIT AND POLE OUTLET CIRCUIT IN HANDHOLE.
- 10 CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING FOR POOL ON CONSTRUCTION FENCE OF FUTURE ADMINISTRATION BUILDING.
- 11 PROVIDE 11" X 17" HANDHOLE. SPLICE POLE LIGHT CIRCUIT IN HANDHOLE.

GENERAL NOTES

- A REFER TO FEEDER AND CONDUIT SCHEDULE ON SHEET E501 FOR SIZES AND QUANTITIES.
- B ALL NEW WORK IS SHOWN ON BOLD.



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ARCHITECT STAMP

CONSULTANT STAMP



REVISIONS

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1	10-15-2025	ADDENDUM 2

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PROJECT OWNER & TITLE
KERN COMMUNITY COLLEGE
DISTRICT
1801 Panorama Dr.
Bakersfield, CA 93305

Bakersfield College - Pool Equipment Building

SHEET TITLE

SITE PLAN

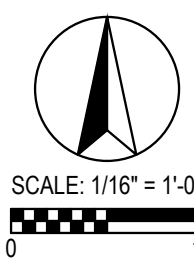
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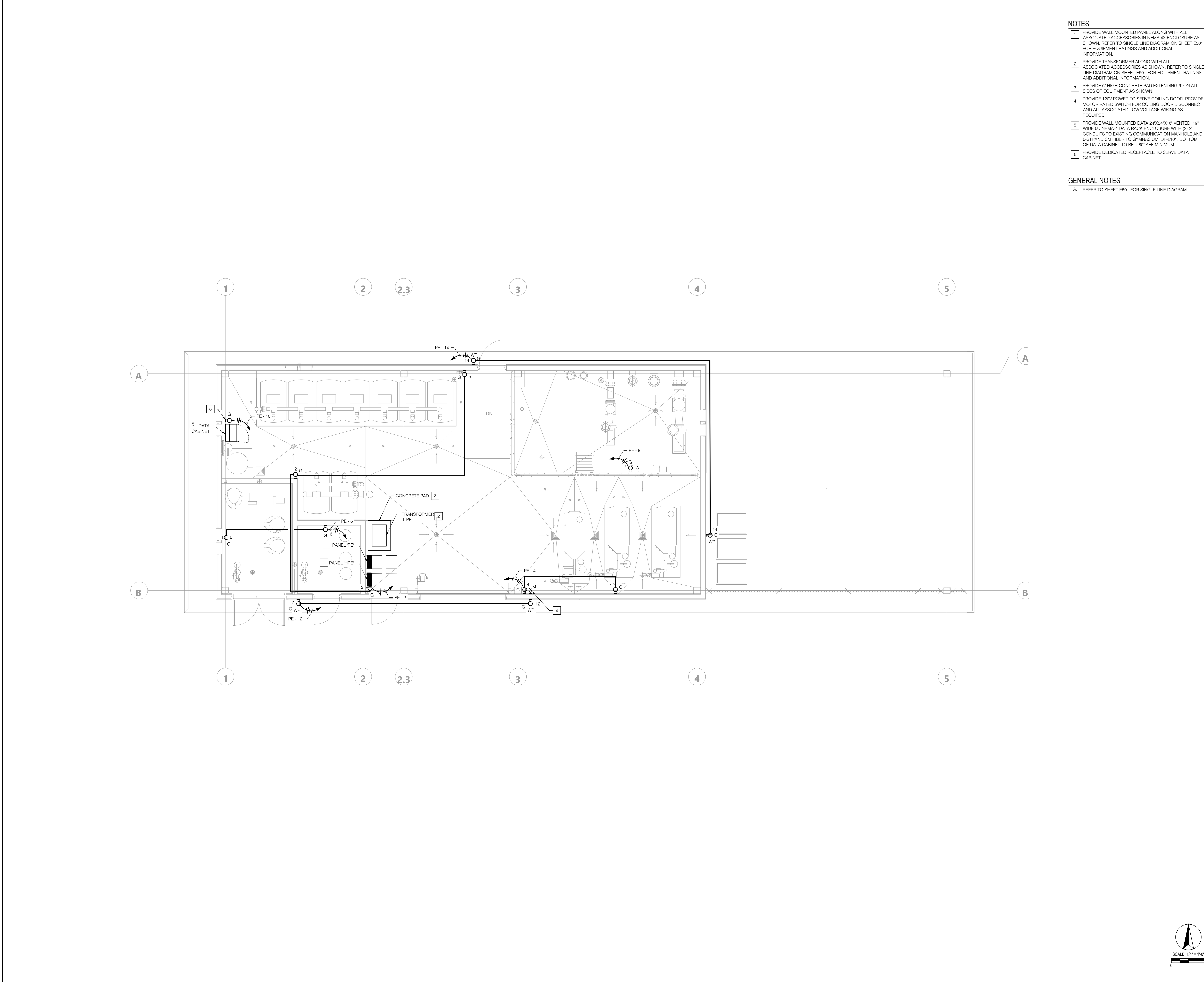
JOB NUMBER: 23024.02

SHEET NO.

E-101

DATE: MARCH 7, 2025



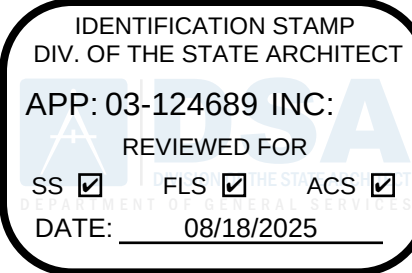


- NOTES
- 1 PROVIDE WALL MOUNTED PANEL ALONG WITH ALL ASSOCIATED ACCESSORIES IN NEMA 4X ENCLOSURE AS SHOWN. REFER TO SINGLE LINE DIAGRAM ON SHEET E501 FOR EQUIPMENT RATINGS AND ADDITIONAL INFORMATION.
 - 2 PROVIDE TRANSFORMER ALONG WITH ALL ASSOCIATED ACCESSORIES AS SHOWN. REFER TO SINGLE LINE DIAGRAM ON SHEET E501 FOR EQUIPMENT RATINGS AND ADDITIONAL INFORMATION.
 - 3 PROVIDE 6" HIGH CONCRETE PAD EXTENDING 6" ON ALL SIDES OF EQUIPMENT AS SHOWN.
 - 4 PROVIDE 120V POWER TO SERVE COILING DOOR. PROVIDE MOTOR RATED SWITCH FOR COILING DOOR DISCONNECT AND ALL ASSOCIATED LOW VOLTAGE WIRING AS REQUIRED.
 - 5 PROVIDE WALL MOUNTED DATA 24"X24"X16" VENTED 19" WIDE 6U NEMA-4 DATA RACK ENCLOSURE WITH (2) 2" CONDUITS TO EXISTING COMMUNICATION MANHOLE AND 6-STRAND SM FIBER TO GYMNASIUM IDF-L101. BOTTOM OF DATA CABINET TO BE +89' AFF MINIMUM.
 - 6 PROVIDE DEDICATED RECEPTACLE TO SERVE DATA CABINET.

GENERAL NOTES

A. REFER TO SHEET E501 FOR SINGLE LINE DIAGRAM.

AGENCY APPROVAL DSA# 03-124689



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PROJECT OWNER & TITLE
KERN COMMUNITY COLLEGE
DISTRICT
1801 Panorama Dr.
Bakersfield, CA 93305

Bakersfield College - Pool Equipment Building

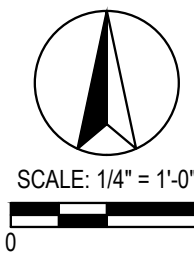
SHEET TITLE
POOL EQUIPMENT BUILDING FLOOR PLAN - POWER

DRAWN BY: XX JOB NUMBER: 23024.02

SHEET NO.

E-201

DATE: MARCH 7, 2025



LIGHTING CONTROLS

DEVICE	ROOM NO	ROOM NAME	SWITCH ID	OCC SENSOR	PHOTOCELL	DAYLIGHTING ZONE	SWITCHING TYPE	PANEL	CIRCUIT	NOTES
rPP16-D-EFP	101	POOL EQUIPMENT ROOM	p1	CEILING O.S.	N/A	N/A	DIMMING	PE	3	-
rPP16-D-EFP	103	PH BUFFER ROOM	b1	WALL O.S.	N/A	N/A	ON/OFF	PE	3	-
rPP16-D-EFP	102	SANITIZER ROOM	s1	WALL O.S.	N/A	N/A	ON/OFF	PE	3	-
rPP16-D-EFP	N/A	EXTERIOR WALLS	e1	N/A	N/A	N/A	ON/OFF	PE	7	-
rPP16-D-EFP	101	EXTERIOR CANOPY	e2	N/A	YES	N/A	ON/OFF	PE	9	-

LIGHT FIXTURE SCHEDULE

TYPE	FIXTURE DESCRIPTION	MANUFACTURER & MODEL	TOTAL V-A	LAMP TYPE	LUMENS	COLOR TEMP	CRI	VOLTAGE	MTG	NOTES
L1	SUSPENDED STRIP LIGHT	METALUX #4APVTL-D-SL3C3-AYC-CHAIN/SET-U	32	LED	4452	3500K	82	120	P	3
L1E	SUSPENDED STRIP LIGHT WITH BATTERY PACK	METALUX #4APVTL-D-SL3C3-EL10W-AYC-CHAIN/SET-U	32	LED	4452	3500K	82	120	P	3
L2	SURFACED STRIP LIGHT	METALUX #4APVTL-D-SL3C3	32	LED	4452	3500K	82	120	S	
P1	POLE LIGHT	LITHONIA LIGHTING #DSX1 LED-P5-40K-80CRI-T4M-MVOLT-RPA-NLTAIR2-PIRHN-DWHKD	276	LED	35786	4000K	80	120	PO	1, 2
W1	WALL MOUNTED LIGHT	LITHONIA LIGHTING #WDGE1LED-P2-CCT-80CRI-VF-MVOLT-SRM-FINISH	15	LED	1806	3000K	80	120	W	

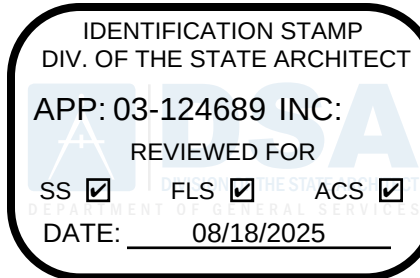
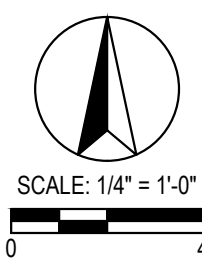
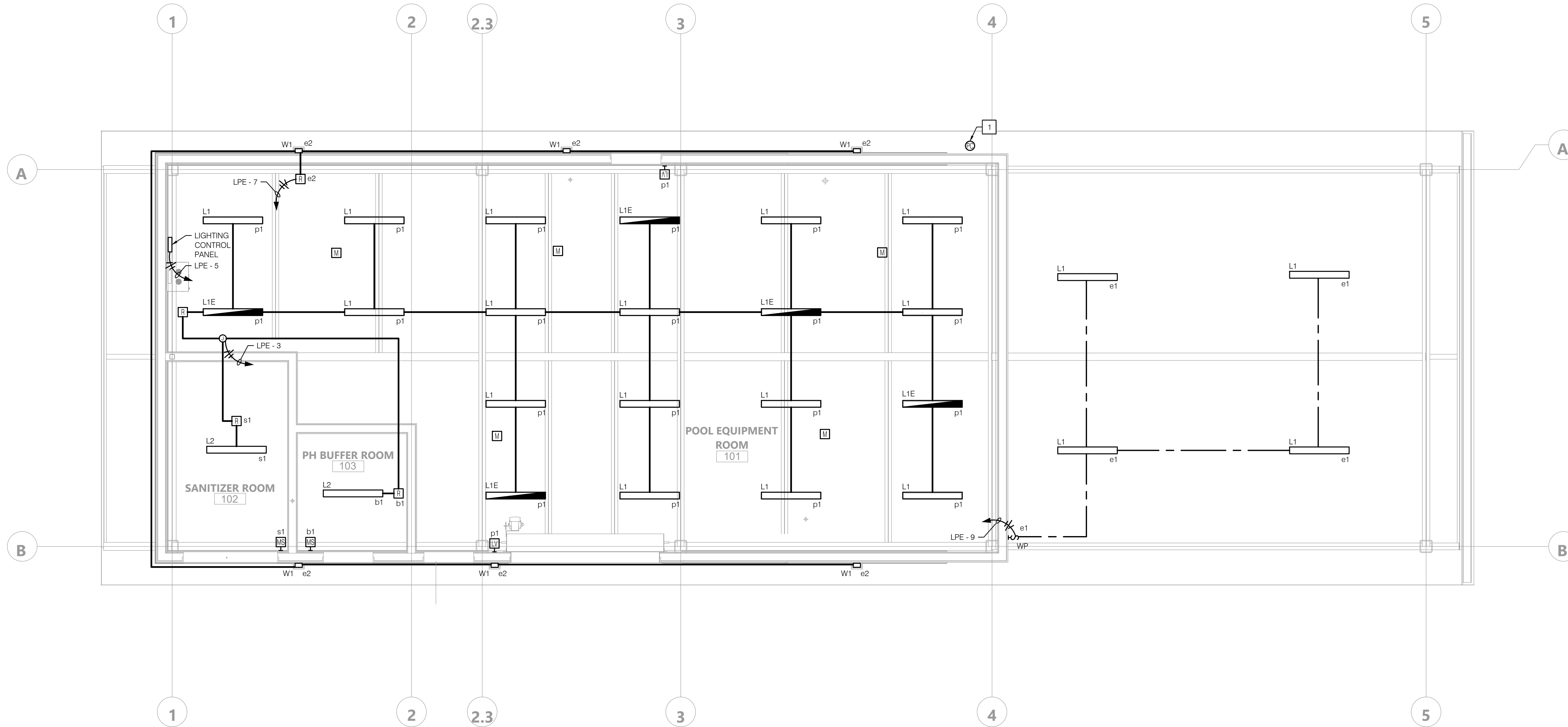
- NOTES:
- PROVIDE LITHONIA LIGHTING, #RSS 24 4-5B DWHKD STEEL 24" ROUND POLE.
 - REFER TO DETAIL 4/E-601 FOR LIGHT POLE FOOTING DETAIL.
 - MOUNT LIGHTS AT 11'-6" A.F.F.
- MOUNTING ABBREVIATIONS:
B = BOLLARD
P = PENDANT
PO = POLE
R = RECESSED
S = SURFACE
T = TAPE LIGHT
W = WALL

NOTES

- 1 PROVIDE DIGITAL OUTDOOR PHOTOSENSOR AS SHOWN/CAT. LSA-APS-OLJ MOUNTED IN JUNCTION BOX MINIMUM 6' HIGH ABOVE THE BUILDING HEIGHT. PHOTOSENSOR SHALL BE INSTALLED FACING NORTH. PHOTOSENSOR SHALL CONTROL ALL OUTDOOR LIGHT FIXTURES.

GENERAL NOTES

- A REFER TO LIGHTING FIXTURE SCHEDULE ON THIS SHEET FOR LIGHT FIXTURE AND LAMP DETAILS.



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PROJECT OWNER & TITLE
KERN COMMUNITY COLLEGE
DISTRICT
1801 Panorama Dr.
Bakersfield, CA 93305

Bakersfield College - Pool Equipment Building

SHEET TITLE

POOL EQUIPMENT BUILDING RCP PLAN - LIGHTING

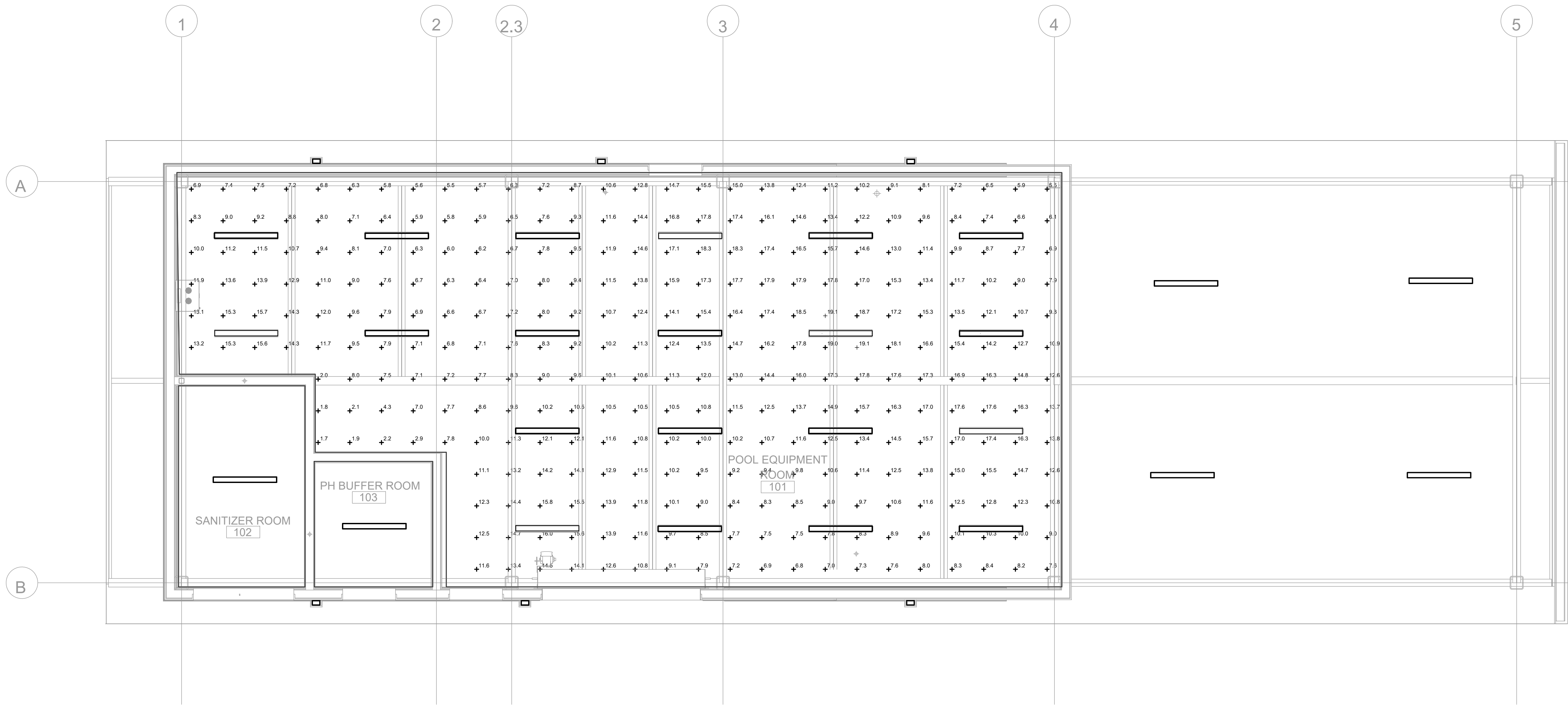
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SHEET NO.

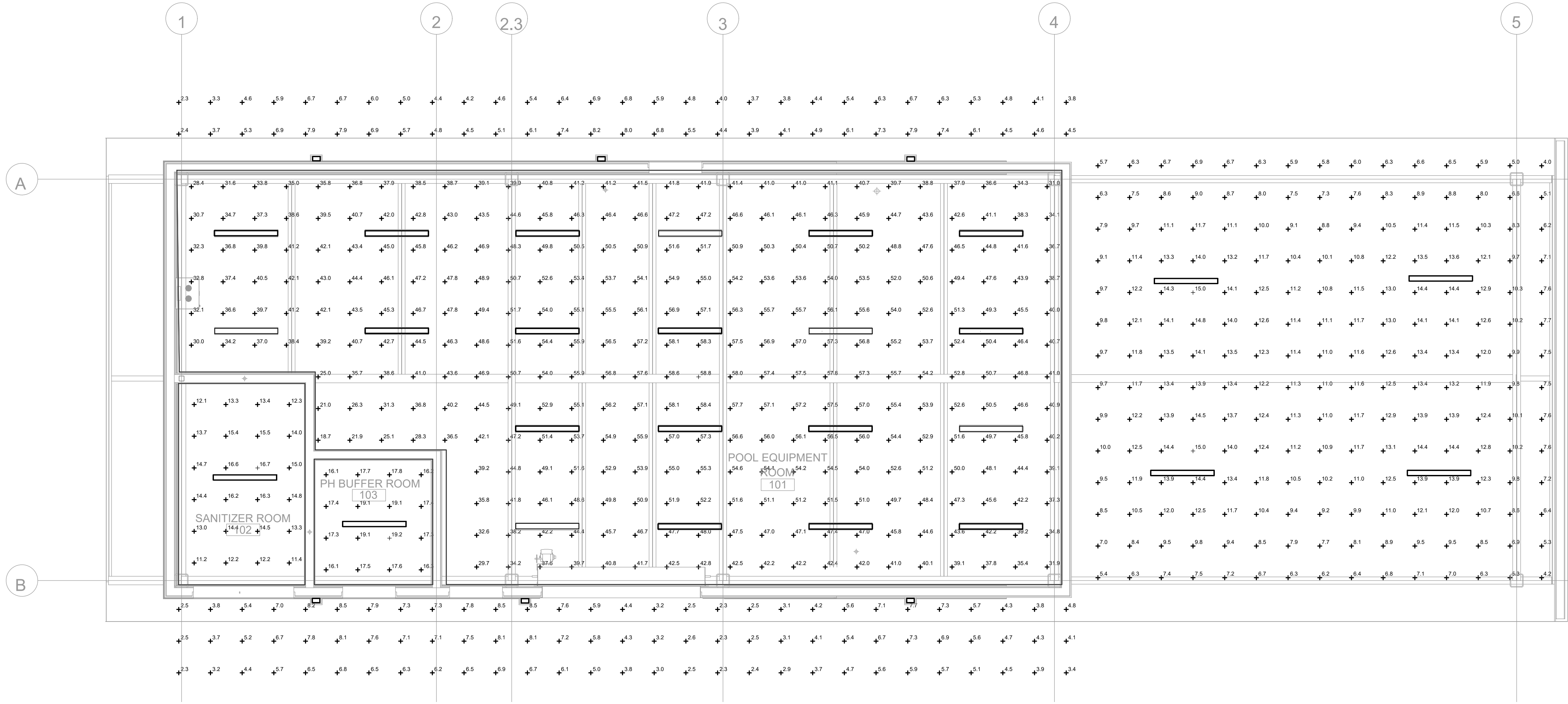
E-202

DATE: MARCH 7, 2025

DATE PLOTTED: 5/23/2024 2:31:27 PM FILE LOCATION: Autodesk Docs://2024.02_KCCD - Bakersfield College/2024.02_KCCD_BC POOL BUILDING PH1_A24_CD.rvt



2 EMERGENCY LIGHTING
1/4" = 1'-0"

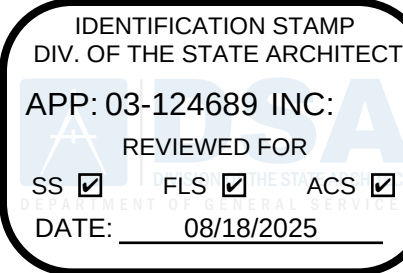


1 NORMAL LIGHTING
1/4" = 1'-0"

STATISTICS						
DESCRIPTION	SYMBOL	AVG	MAX	MIN	MAX/MIN	AVG/MIN
POOL EQUIPMENT ROOM	+	11.2 FC	19.1 FC	1.7 FC	11.2:1	6.6:1

STATISTICS						
DESCRIPTION	SYMBOL	AVG	MAX	MIN	MAX/MIN	AVG/MIN
POOL EQUIPMENT ROOM	+	46.3 FC	58.8 FC	18.7 FC	3.1:1	2.5:1
PH BUFFER ROOM	+	17.6 FC	19.2 FC	16.1 FC	1.2:1	1.1:1
SANITIZER ROOM	+	14.0 FC	16.7 FC	11.2 FC	1.5:1	1.3:1
OUTDOOR YARD STORAGE & N, E, S SIDES OF BLDG	+	8.3 FC	15.0 FC	2.3 FC	6.5:1	3.6:1

AGENCY APPROVAL DSA# 03-124689



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Bakersfield, CA 93305

Bakersfield College - Pool Equipment Building

SHEET TITLE
**POOL EQUIPMENT BUILDING
PHOTOMETRICS PLAN**

DRAWN BY: XX JOB NUMBER: 23024.02

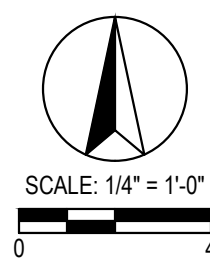
SHEET NO.

E-202-P

DATE: MARCH 7, 2025

CONSTRUCTION DOCUMENTS

MARK	DESCRIPTION	LOCATION	VOLTAGE	PHASE	HP	KW	FLA	DISCONNECT	CONDUIT	FEEDER	PANEL	CIRCUIT	REMARKS
PP-1	COMPETITION POOL RECIRCULATION PUMP	PUMP PIT	480	3	40	29.83	35.88	VFD	1"	4#6 & 1#10 GND	HPE	1.3.5	-
PP-2	WARM-UP POOL RECIRCULATION PUMP	PUMP PIT	480	3	15	11.19	13.46	VFD	3/4"	4#12 & 1#12 GND	HPE	2.4.6	-
H-1	EXISTING COMPETITION POOL HEATER	POOL EQUIPMENT ROOM	120	-	-	1.2	10	20A, 1P, 120VAC, MOTOR RATED TOGGLE SWITCH	3/4"	2#12 & 1#12 GND	PE	49	-
H-2	EXISTING COMPETITION POOL HEATER	POOL EQUIPMENT ROOM	120	-	-	1.2	10	20A, 1P, 120VAC, MOTOR RATED TOGGLE SWITCH	3/4"	2#12 & 1#12 GND	PE	51	-
H-3A	NEW WARM-UP POOL HEATER (BOILER)	POOL EQUIPMENT ROOM	120	1	-	1.56	13	20A, 1P, 120VAC, MOTOR RATED TOGGLE SWITCH	3/4"	2#12 & 1#12 GND	PE	53	-
H-3B	NEW WARM-UP POOL HEATER (PUMP)	POOL EQUIPMENT ROOM	120	-	-	1.08	9	20A, 1P, 120VAC, MOTOR RATED TOGGLE SWITCH	3/4"	2#12 & 1#12 GND	PE	55	-
EW4-1	ELECTRIC WATER HEATER	POOL EQUIPMENT ROOM	480	3	-	14	16.8	30A, 3P, 480VAC DISCONNECT SWITCH	3/4"	4#8 & 1#10GND	HPE	79.11	-



- 1 PROVIDE 120V POWER TO SERVE CHLORINATION BOOSTER PUMP AS SHOWN.
- 2 PROVIDE 120V POWER TO SERVIC EASE PUMP AS SHOWN.
- 3 PROVIDE RECEPTACLE TO SERVE CALCIUM HYPOCHLORITE SYSTEM CONTROL PANEL AS SHOWN. COORDINATE EXACT LOCATION IN THE FIELD.
- 4 PROVIDE RECEPTACLE TO SERVE SODIUM BISULFATE SYSTEM CONTROL PANEL AS SHOWN. COORDINATE EXACT LOCATION IN THE FIELD.
- 5 PROVIDE RECEPTACLE TO SERVE WATER CHEMISTRY CONTROLLER AS SHOWN. COORDINATE EXACT LOCATION IN THE FIELD.
- 6 PROVIDE RECEPTACLE TO SERVE WATER LEVEL CONTROLLER AS SHOWN. COORDINATE EXACT LOCATION IN THE FIELD.
- 7 PROVIDE 120V POWER TO SERVE MAIN FILTER CONTROLLER AS SHOWN. COORDINATE EXACT LOCATION IN THE FIELD.
- 8 PROVIDE 120V POWER TO SERVE PRESSURE AMPLIFICATION PUMP AS SHOWN. COORDINATE EXACT LOCATION IN THE FIELD.
- 9 PROVIDE 120V POWER TO SERVE WATER METER AS SHOWN. COORDINATE EXACT LOCATION IN THE FIELD.
- 10 PROVIDE 120V POWER TO SERVE ELECTRONIC TRAP ARMER AS SHOWN.
- 11 PROVIDE 120V POWER TO CHEMICAL CONTROLLER AS SHOWN.

- A. EQUIPMENT THAT REQUIRE 480/277V POWER SHALL BE SERVED FROM PANEL HPE.
- B. EQUIPMENT THAT REQUIRE 120/208V POWER SHALL BE SERVED FROM PANEL PE.
- C. ALL RECEPTACLES SHALL BE GFCI RATED.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-124689 INC:
REVIEWED FOR
SS ☒ FLS ☒ ACS ☒
DATE: 08/18/2025

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CONSULTANT STAMP

[illegible]

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PROJECT OWNER & TITLE
**KERN COMMUNITY
COLLEGE
DISTRICT**
1801 Panorama Dr.
Bakersfield, CA 93305

Bakersfield College - Pool Equipment Building

SHEET TITLE

**POOL EQUIPMENT
BUILDING FLOOR
PLAN - AUXILIARY**

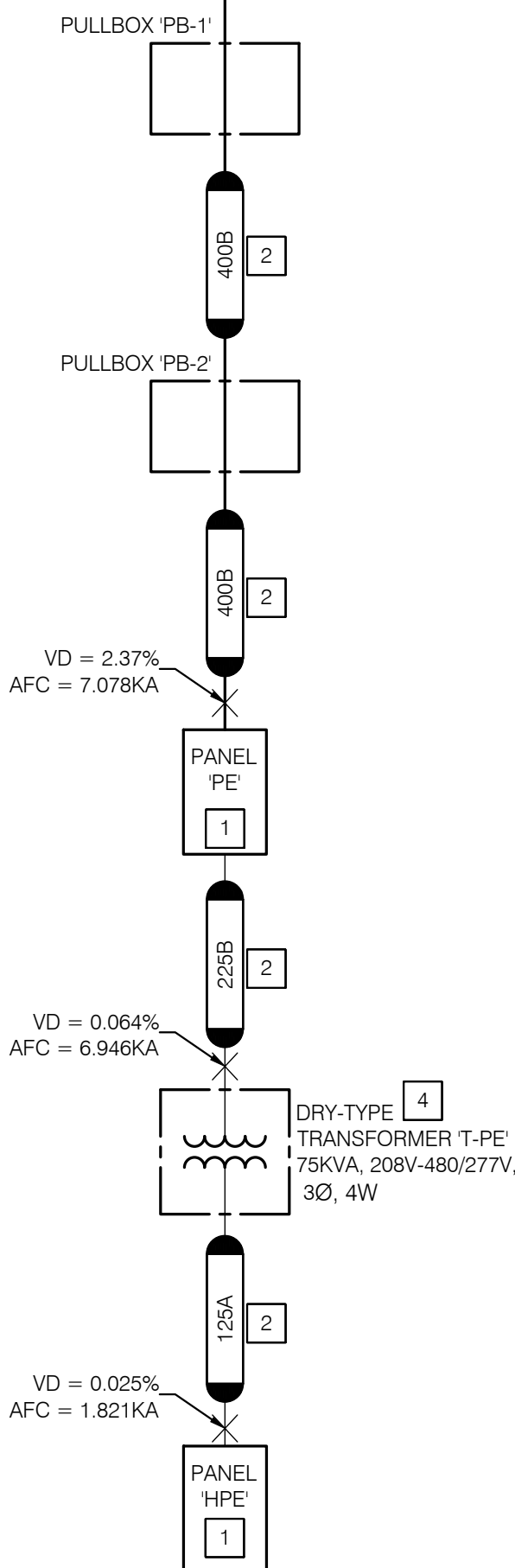
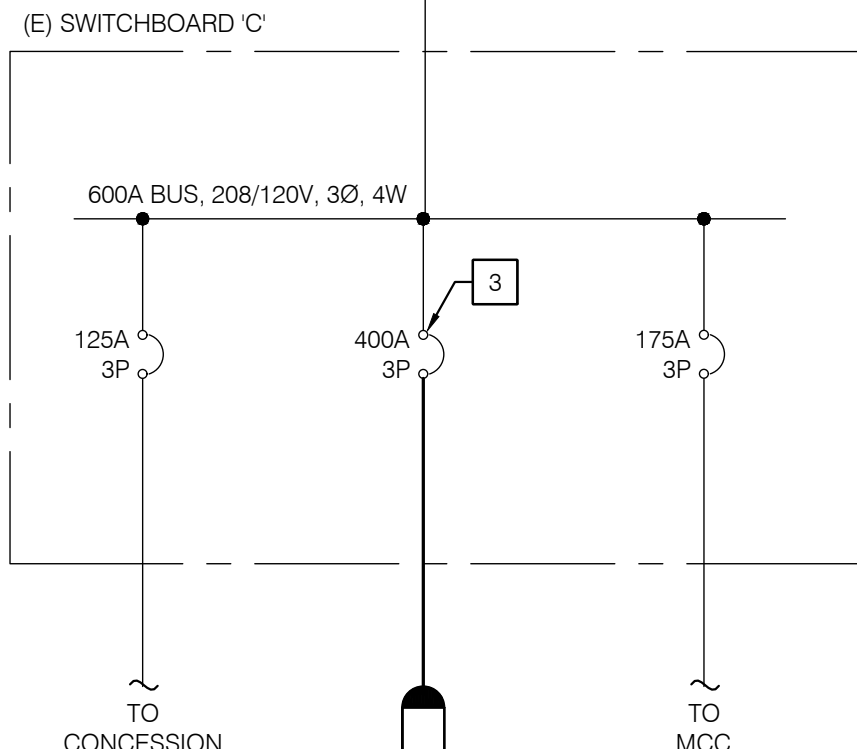
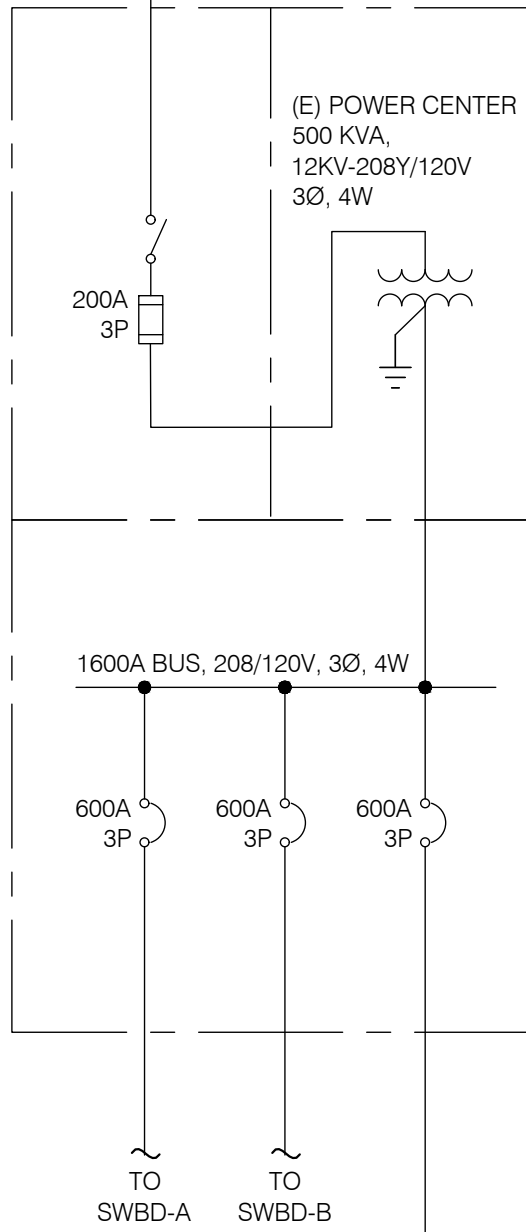
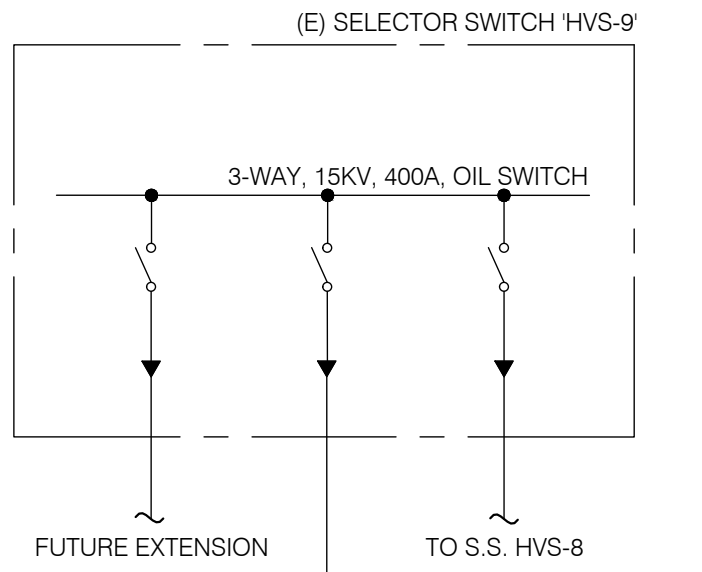
DRAWN BY: XX JOB NUMBER: 23024.02

SHEET NO.

E-203

DATE: MARCH 7, 2025

FEEDER AND CONDUIT SCHEDULE			
FEEDER CALLOUT	NUMBER AND SIZE OF CONDUITS	VOLTAGE	SETS OF CONDUCTORS PER CONDUIT
400B	4" C	600V	4#600 KCMIL & 1#3 GND
225B	2" C	600V	4#4/0 AWG & 1#6 GND
125A	1 1/2" C	600V	3#1 AWG & 1#8 GND
20A	2" C	600V	20#8 AWG & 1#8 GND
20B	2" C	600V	12#8 AWG & 1#8 GND
20C	1 1/2" C	600V	8#8 AWG & 1#8 GND
20D	1" C	600V	2#10 AWG & 1#10 GND



NOTES

- 1 PROVIDE PANELBOARD ALONG WITH ALL ASSOCIATED ACCESSORIES AS SHOWN.
- 2 PROVIDE FEEDER IN CONDUIT AS SHOWN. REFER TO THE FEEDER AND CONDUIT SCHEDULE ON THIS SHEET FOR SIZES AND QUANTITIES.
- 3 REUSE EXISTING SPARE BREAKER, PREVIOUSLY SERVING DEMOLISHED MCC IN DEMOLISHED POOL EQUIPMENT ROOM, TO SERVE NEW PANEL.

PANEL: 'PE'		VOLTAGE/PHASE : 120/208V, 3Ø, 4W										FED FROM : SWITCHBOARD "C"		
LOCATION : POOL EQUIPMENT ROOM		BUS AMPS : 400A										MINIMUM BUS BRACING : 10 KAIC		
FLOOR :		MAIN BREAKER : 400A/3P												
MOUNTING : WALL														
LOADS	SEE NOTE	* OUTLETS LTG REC MISC	VOLT-AMPS			BKR/ POLE	A B C	BKR/ POLE	VOLT-AMPS			OUTLETS LTG REC MISC	SEE NOTE	LOADS
LIGHT POLES		L		826		1	20A 1P	---	20A 1P	2	840		R	POOL EQ. ROOM R
POOL EQ. ROOM LTG		L		640		3	20A 1P	---	20A 1P	4	360		R	POOL EQ. ROOM R
LTG CONTROL PANEL				500		5	20A 1P	---	20A 1P	6			R	DAN & BUFF ROOM R
EXT. WALL LIGHTING		L		90		7	20A 1P	---	20A 1P	8	180		R	PUMP RT-R
EXT. CANOPY LTG		L		128		9	20A 1P	---	20A 1P	10	180		R	DATA CABINET R
UND. POOL LTG		L		1,500		11	20A 1P	---	20A 1P	12	360		R	EXTERIOR RECEPT
UND. POOL LTG		L		1,500		13	20A 1P	---	20A 1P	14	360		R	EXTERIOR RECEPT
UND. POOL LTG		L		1,500		15	20A 1P	---	20A 1P	16	500		R	CAL HYP. CTRL
UND. POOL LTG		L		1,500		17	20A 1P	---	20A 1P	18	500		R	CAL HYP. CTRL
UND. POOL LTG		L		1,500		19	20A 1P	---	20A 1P	20	500			CAL HYP. CTRL
UND. POOL LTG		L		750		21	20A 1P	---	20A 1P	22	500			CF-1
UND. POOL LTG		L		1,500		23	20A 1P	---	20A 1P	24	500			CF-2
UND. POOL LTG		L		750		25	20A 1P	---	20A 1P	26	500			CF-3
UND. POOL LTG		L		750		27	20A 1P	---	20A 1P	28	500			CF-4
UND. POOL LTG		L		1,500		29	20A 1P	---	20A 1P	30	500			CF-5
UND. POOL LTG		L		1,500		31	20A 1P	---	20A 1P	32	500			SOD. BI. CTRL
UND. POOL LTG		L		1,500		33	20A 1P	---	20A 1P	34	500			SOD. BI. CTRL
POOL RECEIPT & LIFT				380		35	20A 1P	---	20A 1P	36	18,340			T-FE
ETP-1				100		37	20A 1P	---	225A 3P	38	18,340			.
MAIN FILTER CTRL				500		39	20A 1P	---	40	18,340				.
WATER LEVEL CTRL				500		41	20A 1P	---	20A 1P	42	500			CHEMICAL CTRL 1A
WATER LEVEL CTRL				500		43	20A 1P	---	20A 1P	44	500			CHEMICAL CTRL 2A
WATER CHEM. CTRL				500		45	20A 1P	---	20A 1P	46	0			SPARE
WATER CHEM. CTRL				500		47	20A 1P	---	20A 1P	48	0			SPARE
HI				1,200		49	20A 1P	---	20A 1P	50	0			SPARE
H2				1,200		51	20A 1P	---	20A 1P	52	0			SPARE
HSA				1,560		53	20A 1P	---	20A 1P	54	0			SPARE
H5B				1,080		55	20A 1P	---	20A 1P	56	0			SPARE
PRESS. AMP PUMP				500		57	20A 1P	---	20A 1P	58	0			SPARE
WATER METER				500		59	20A 1P	---	20A 1P	60	0			SPARE
NOTES:														
* "L" DENOTES LONG CONTINUOUS LOAD														
1. PROVIDE NEW CIRCUIT BREAKER, TYPE AND RATING TO MATCH EXISTING.														
TOTAL PANEL = 83,254 VA @ 208V, 3Ø = 231 AMPS														

PANEL: 'HPE'

LOCATION : POOL EQUIPMENT ROOM

FLOOR :

MOUNTING : WALL

VOLTAGE/PHASE : 277/480V, 3Ø, 4W

BUS AMPS : 125A

MAIN BREAKER : 125A/3P

FED FROM : TRANSFORMER T-PE

MINIMUM BUS BRACING : 14 KAIC

LOADS	SEE NOTE	* OUTLETS LTG REC MISC	VOLT-AMPS			BKR/ POLE	A B C	BKR/ POLE	VOLT-AMPS			OUTLETS LTG REC MISC			SEE NOTE	LOADS
			A	B	C				CKT	A	B	C	CKT	A		
PP-1			9.943			1	---	---	2	3,730						PP-2
-				9.943		3	50A 3P	---	20A 3P	4		3,730				-
-					9.943	5	---	---	---	6			3,730			-
EW/H-1			4.667			7	---	---	---	8	0					SPARE
-				4.667		9	25A 3P	---	20A 3P	10	0					-
-					4.667	11	---	---	---	12			0			-
SPARE			0			13	---	---	---	14	0					SPACE
-				0		15	50A 3P	---	---	16	0					SPACE
SPARE					0	17	---	---	---	18	0					SPACE
SPARE			0			19	---	---	---	20	0					SPACE
-				0		21	25A 3P	---	---	22		0				SPACE
SPACE					0	23	---	---	---	24			0			SPACE
SPACE				0		25	---	---	---	26	0					SPACE
SPACE				0		27	---	---	---	28	0					SPACE
SPACE					0	29	---	---	---	30			0			SPACE
SPACE				0		31	---	---	---	32						SPACE
SPACE				0		33	---	---	---	34			0			SPACE
SPACE				0		35	---	---	---	36						SPACE
SPACE				0		37	---	---	---	38						SPACE
SPACE					0	39	---	---	---	40						SPACE
SPACE					0	41	---	---	---	42						SPACE

TOTAL OA = 18,340 VOLT-AMPS

TOTAL OB = 18,340 VOLT-AMPS

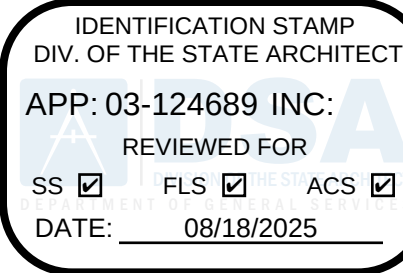
TOTAL OC = 18,340 VOLT-AMPS

LCL = 0 VOLT-AMPS

TOTAL PANEL = 55,020 VA @ 480V, 3Ø = 66 AMPS

NOTES:

* 'L' DEVOTES LONG CONTINUOUS LOAD



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ARCHITECT STAMP

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REVISIONS

NO.	DATE	DESCRIPTION
1	10-15-2025	ADDENDUM 2

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PROJECT OWNER & TITLE
KERN COMMUNITY COLLEGE
DISTRICT
1801 Panorama Dr.
Bakersfield, CA 93305

Bakersfield College - Pool Equipment Building

SHEET TITLE

SINGLE LINE DIAGRAM

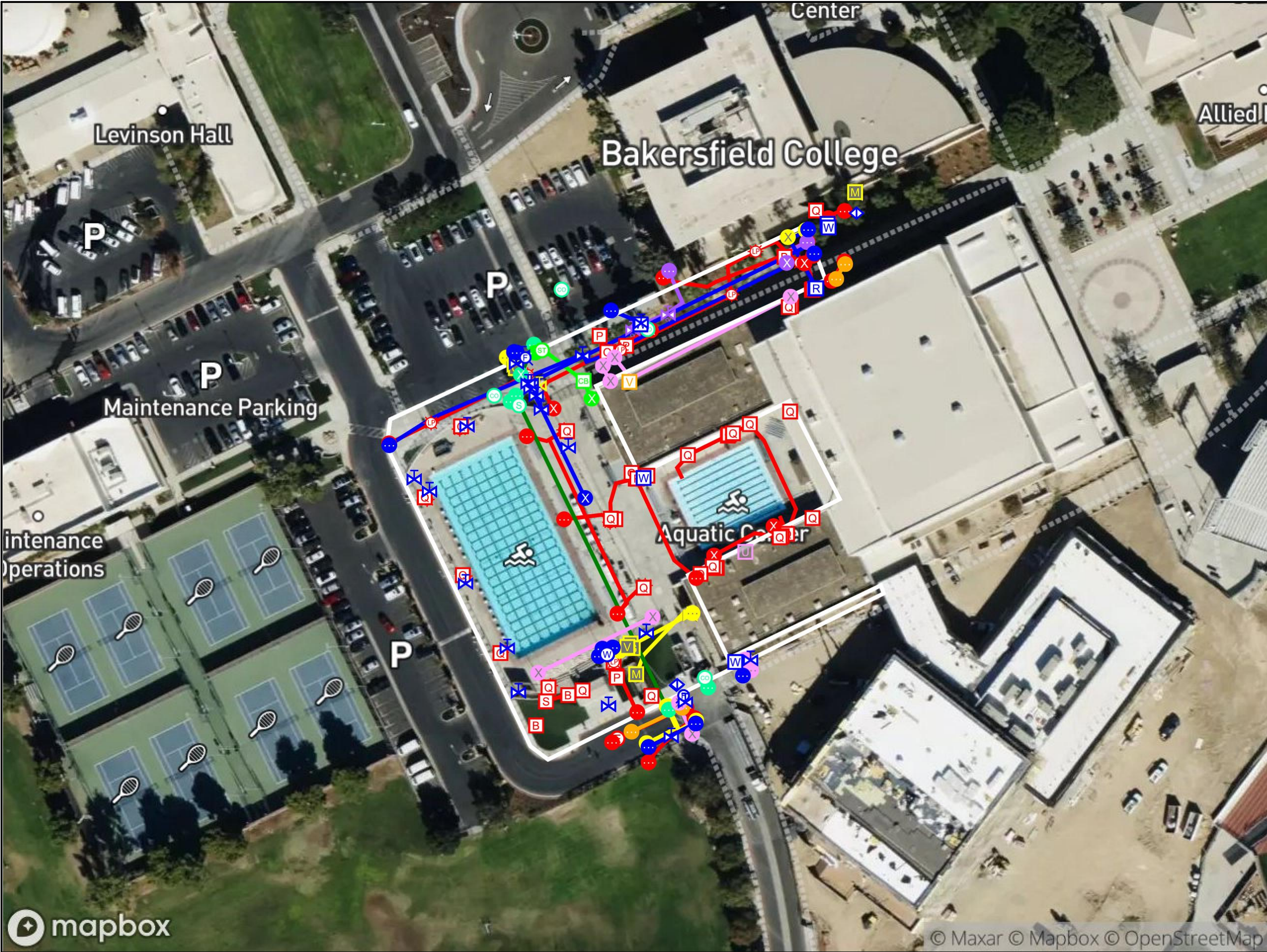
DRAWN BY: XX

JOB NUMBER: 23024.02

SHEET NO.

E-501

DATE: MARCH 7, 2025





MAP NOTES

1. SATELLITE IMAGERY IS OFTEN SHIFTED AND MAY NOT LINE UP WITH LINE AND POINT FEATURES COLLECTED. GPRS USES RTK WHEN POSSIBLE TO CORRECT GPS DATA WITH THE HIGHEST LEVEL OF ACCURACY. MARKINGS IN THE FIELD PROVIDE THE MOST ACCURATE LOCATIONS AND THIS MAP IS TO BE USED ONLY AS A REFERENCE. DO NOT DIG, EXCAVATE, ETC BASED SOLELY ON THIS MAP.

2. THIS MAP REPRESENTS GPRS' FINDINGS FROM THE DISPLAYED WORK ORDER NUMBER. FOR A LIST OF ALL LIMITATIONS AND EXPLANATIONS FROM THIS JOB, PLEASE CONSULT THE "JOB SUMMARY REPORT" OR OTHER DOCUMENTS THAT MAY HAVE BEEN PRODUCED FOR EACH JOB AND ARE SUBJECT TO THESE TERMS: <https://gpr-radar.com/terms-conditions>

LEGEND

- **ELECTRICAL**
- **FUEL/GAS/OIL**
- **IRRIGATION**
- **SANITARY**
- **STORM**
- **TELECOMM**
- **UNKNOWN**
- **WATER**
- **SCAN LIMIT**



0' 50' 100' 150' 200'

GPRS UTILITY FINDINGS MAP (NOT SURVEY GRADE)

PREPARED FOR:
KERN COMMUNITY COLLEGE DISTRICT

LOCATION:
**1801 PANORAMA DRIVE
1801 PANORAMA DRIVE
BAKERSFIELD, CA**

PROJECT MANAGER:
**JASON OSUNA
JASON.OSUNA@GPRSINC.COM**

DATE	2025 OCT 14		
DRAWING NO.	1	REV.	1

WO# 834699

ISSUED: OCTOBER 15, 2025

R

AIR RISER

P

AIR PUMP

M

AIR MISC

✕

AIR VALVE

A

AIR MANHOLE

C

AIR COMPRESSOR

✕

CHEM VALVE

T

CHEM TANK

T

CHEM AST

CH

CHEM MISC

P

CHEM PUMP

CH

CHEM MANHOLE

B

COMM BOX

P

COMM PEDESTAL

V

COMM VAULT

HH

COMM HANDHOLE

C

COMM MISC

C

COMM MANHOLE

♂

COMM POLE

CC

COMM CAMERA

◇

COMM CONDUIT

L

COMM LOOP

S

COMM SPLICE

B

ELEC BOX

C

ELEC CABINET

M

ELEC METER

P

ELEC PANEL

R

ELEC RISER

T

TRANSFORMER

E

ELEC MANHOLE

♂

UTILITYPOLE

♂

POWERPOLE

Q

ELEC EQUIPMENT

S

ELEC SIGN

V

ELEC VAULT

E

ELEC MISC

UL

LANDSCAPE LIGHT

RL

RUNWAY LIGHT

LP

SITE LIGHT

✕

FIRE VALVE

P.V

P.I. VALVE

R

FIRE RISER

F

FIRE MISC

M

FIRE METER

F

FIRE MANHOLE

F

HYDRANT

◇

BACKFLOW PREV

V

FUEL VENT

V

FUEL VAULT

✕

FUEL VALVE

T

FUEL UST

T

FUEL AST

R

FUEL RISER

P

FUEL PUMP

M

FUEL MISC

F

FUEL MANHOLE

R

GAS RISER

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GAS PUMP

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GAS MISC

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GAS METER

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GAS MANHOLE

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BACKFLOW PREV

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SAN CLEANOUT

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SEPTICTANK

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SAN VAULT

S

SAN MISC

M

SAN MARKER

LS

SAN LIFTSTATION

S

SAN LATERAL

S

SAN INVERT

G

SAN GREASETRAP

T

SEWER TRAP

CB

SEWER BASIN

CO

SEWER CLEANOUT

G

GREASETRAP

ST

STEAM MISC

CH

STEAM MANHOLE

✕

STEAM VALVE

CB

CATCH BASIN

CB

CATCH BASIN

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ENDPIPE

CI

CURBINLET

YB

YARDBASIN

V

STRM VENT

ST

STRM MISC

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STRM LIFTSTATION

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STRM MANHOLE

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TRENCHDRAIN

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ROOFDRAIN

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STRM CLEANOUT

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TRAF SIGNAL

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PARKINGMETER

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TRAF MISC

Ⓣ

TRAF MANHOLE

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TRAF CABINET

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TRAF BOX

P

TRAF PEDESTAL

SL

TRAF STREETLIGHT

✕

UNKN VALVE

U

UNKN MANHOLE

U

UNKN MISC

✕

WTR VALVE

F

HYDRANT

W

WTR MANHOLE

W

WELLHEAD

P.V

P.I. VALVE

◇

BACKFLOW PREV

V

WTR VAULT

R

WTR RISER

W

WTR MISC

M

WTR METER

✕

LD VALVE LEAK

LD

LD SERVICE LEAK

M

LD MAIN BREAK

LD

LD HYDRANT LEAK

•

POINT

MB

MAILBOX

•

SOIL BORING

•

SOIL BORING

S

SIGN

SAT

SATELLITE

FP

FLAGPOLE

○

BUILDING CORNER

●

BOULDER

●

BOLLARD

HD

HEADSTONE NO GRAVE

GW

GRAVE WITHOUT HEADSTONE

GH

GRAVE WITH HEADSTONE

TD

TREE DECIDUOUS

TC

TREE CONIFEROUS

MB

MAILBOX



MAP NOTES

1. SATELLITE IMAGERY IS OFTEN SHIFTED AND MAY NOT LINE UP WITH LINE AND POINT FEATURES COLLECTED. GPRS USES RTK WHEN POSSIBLE TO CORRECT GPS DATA WITH THE HIGHEST LEVEL OF ACCURACY. MARKINGS IN THE FIELD PROVIDE THE MOST ACCURATE LOCATIONS AND THIS MAP IS TO BE USED ONLY AS A REFERENCE. DO NOT DIG, EXCAVATE, ETC BASED SOLELY ON THIS MAP.

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LEGEND

ELECTRICAL

FUEL/GAS/OIL

IRRIGATION

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UNKNOWN

WATER

SCAN LIMIT



GPRS UTILITY FINDINGS MAP (NOT SURVEY GRADE)

PREPARED FOR:
KERN COMMUNITY COLLEGE DISTRICT

LOCATION:
1801 PANORAMA DRIVE
1801 PANORAMA DRIVE
BAKERSFIELD, CA

PROJECT MANAGER:
JASON OSUNA
JASON.OSUNA@GPRSINC.COM

DATE	2025 OCT 14		
DRAWING NO.	2	REV.	1

**ASBESTOS SURVEY
BAKERSFIELD COLLEGE
GYMNASIUM LOCKER ROOMS & FIELD HOUSE
1801 PANORAMA DRIVE
BAKERSFIELD, CALIFORNIA**

Project No. 024-18067
January 1, 2019

Prepared for:
Joe DeRosa
Kern Community College District
2100 Chester Avenue, Suite 201
Bakersfield, California 93301
(661) 336-5174

Prepared by:
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215 West Dakota Avenue
Clovis, California 93612
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TABLE OF CONTENTS
Project No. 024-18067

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3.0 BUILDING DESCRIPTION.....	1
4.0 INVESTIGATIVE METHODS	2
4.1 Sampling Protocols	2
4.2 Laboratory Analytical Methods	2
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Appendices

Field House Table I, Figure 1, and Analytical Results and Chain-of-Custody Record.....	A
Gymnasium Locker Room Table II, Figure 2, and Analytical Results and Chain-of-Custody Record.....	B
DOSH Certifications.....	C

January 1, 2019

Project No. 024-18067

**ASBESTOS SURVEY
BAKERSFIELD COLLEGE
GYMNASIUM LOCKER ROOMS & FIELD HOUSE
1801 PANORAMA DRIVE
BAKERSFIELD, CALIFORNIA**

1.0 INTRODUCTION

This report presents the results of our asbestos survey for the referenced structures located at 1801 Panorama Dr. in Bakersfield, California. The asbestos survey was conducted under the conditions of Krazan & Associates, Inc.'s (Krazan's) Proposal No. P18-329, dated October 8, 2018. Deborah Martin gave written authorization on October 16, 2018, for Krazan to proceed with the asbestos survey.

2.0 PURPOSE AND SCOPE OF WORK

The purpose of the asbestos survey was to identify and quantify the presence of potential asbestos-containing materials (ACMs) at the on-site structures. The scope of work for the asbestos survey included conducting a visual survey of the structures and conducting bulk sampling and analysis of materials suspected to contain asbestos. This survey was performed in accordance with applicable local, state, and federal regulations.

3.0 BUILDING DESCRIPTION

FIELD HOUSE

The site is located on the south side of Panorama, east of Haley in Bakersfield, California. The structure was a single-story structure with concrete slab-on-grade foundation, concrete and concrete block exterior walls, with mineral surface rolled roofing. Interior construction included plaster and suspended ceilings with two-foot by four-foot ceiling panels; plaster, wood, concrete, and ceramic-tiled walls; and concrete floors overlain (in areas) by wall-to-wall carpeting, floor tiles, and ceramic tiles.

GYMNASIUM LOCKER ROOMS & BASEMENT

The structure was a single-story structure interior construction included acoustic ceiling tiles, plaster, concrete, and suspended ceilings with two-foot by four-foot ceiling panels; gypsum board, plaster, wood, concrete, metal, brick, and ceramic-tiled walls; and concrete floors overlain (in areas) by wall-to-wall carpeting, floor tiles, ceramic tiles, and rubber mats.

4.0 INVESTIGATIVE METHODS**4.1 Sampling Protocols**

Fifty-nine (59) samples of suspected ACMs were collected from throughout the on-site structures. Sample locations for this survey were chosen in a semi-random fashion with emphasis placed on minimizing damage to the sampled materials. The samples were collected by carefully removing a small amount of the suspect material in a non-abrasive manner. If possible, samples were collected from existing damaged areas or loose pieces of materials. Each sample was placed in a separate sealed plastic bag, and labeled with the project number and sample number. Refer to the Floor Plans in the Appendices for the bulk sample locations.

4.2 Laboratory Analytical Methods

The bulk samples collected were analyzed by A.E.S.L. Environmental of Tempe, Arizona, to detect the presence, type, and percentage of asbestos by polarized light microscopy/dispersion staining, following the procedure described in 40 CFR 763, Subpart E, Appendix A (AHERA). Copies of the Analytical Results and Chain-of-Custody Record are included in the Appendices.

5.0 RESULTS OF INVESTIGATION

As stated previously, 59 samples of suspected ACMs were collected from throughout the structures. Analytical laboratory results and field observations of the materials sampled have been summarized on Tables I and II, in the Appendices of this report. Information presented within the table includes the sample number, the sample description, the location where the sample was obtained, the asbestos content, the volume of ACMs identified (typically expressed in square feet), the condition of the material sampled, and a listing of locations where similar (homogenous) ACMs were also noted (although not necessarily sampled in these areas). In addition, footnotes have been provided to convey pertinent information regarding the specific sample or homogenous material.

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2418067 Asbestos

The following materials were identified as containing at least one percent asbestos:

FIELD HOUSE

Floor tile mastic – equipment room and Office (Sample Nos. 13 and 19). This material would be considered a Category I non-friable ACM under the NESHAP Regulations.

Roof mastic – roof patch (Sample No. 25). This material would be considered a Category I non-friable ACM under the NESHAP Regulations.

GYMNASIUM LOCKER ROOMS & BASEMENT

9-in by 9-in Floor tile and mastic – men's locker room (Sample Nos. 20, 21, and 22). This material would be considered a Category I non-friable ACM under the NESHAP Regulations.

The following materials were identified as containing trace asbestos, point count results included.

FIELD HOUSE

Skim coat – throughout structure (Sample No. 8).

Roof mastic – roof penetrations (Sample No 24)

GYMNASIUM LOCKER ROOMS & BASEMENT

Skim coat – throughout structure (Sample Nos. 10, 12, 13, and 30).

6.0 CONCLUSIONS

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) defines regulated asbestos-containing materials (RACM) as the following: friable materials containing more than one percent asbestos as determined by polarized light microscopy; Category I non-friable materials (i.e., floor tiles, asphalt roofing products) containing more than one percent asbestos that have become friable, have been subjected to or will be subjected to sanding, grinding, cutting, or abrading; and Category II non-friable materials (i.e., non-friable asbestos-containing materials that are not Category I materials) containing more than one percent asbestos that have a high probability of becoming or have already been reduced to a friable condition by demolition or renovation activities. The above-noted samples that contain greater than one percent asbestos may meet the definition of a RACM under the NESHAP depending on the abatement method employed. In addition, the California Division of Occupational Safety and Health (Cal-OSHA) defines asbestos-containing construction material (ACCM) as greater than 0.1 percent asbestos. The above-noted samples that contain greater than 0.1 percent asbestos would meet the definition of an ACCM.

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If these asbestos-containing materials are left in place, the occupants of the structure should avoid buffing, sanding, grinding, or abrading these materials in any way. These activities could potentially release asbestos fibers. An Operations and Maintenance Program (O&M Program) could be developed for the management of asbestos-containing materials if left in place. The development and implementation of such a program would require the designation and training of an asbestos program manager. The asbestos program manager would be responsible for conducting periodic inspections of the asbestos-containing materials, record keeping requirements, and providing awareness training necessary for any maintenance or custodial personnel required to clean or repair these materials. Furthermore, it is recommended that the asbestos program manager notify all potentially affected individuals.

When building maintenance, repair, renovation, or other activities disturb or damage ACMs, asbestos fibers may be released creating a potential hazard. Therefore, removal of friable and non-friable ACMs that have the potential to become friable during demolition and/or renovation is federally regulated under the NESHAP. The San Joaquin Valley Air Pollution Control District (APCD) is the responsible agency on the local level to enforce the NESHAP. The APCD Regional Office requires that asbestos-containing materials (ACM) be removed prior to renovation or demolition activities. Additionally, the APCD must be notified prior to any demolition and/or renovation activities.

7.0 LIMITATIONS

This survey and review of the subject property has been limited in scope. This investigation is undertaken with the risk that visual observations and random sampling alone would not reveal the presence, full nature, and extent of asbestos-containing materials. Krazan makes no representation as to the asbestos content of materials not sampled or that were inaccessible to our inspector (i.e., between walls, beneath floors, in pipe chases, etc.). The asbestos sample locations and building dimensions were measured/located in the field by tape measurement from existing features. Therefore, the sample locations, building dimensions, and approximate square footage of asbestos-containing materials should be considered accurate only to the degree implied by the methods used.

The findings presented in this report were based on field observations, random sampling and analysis, review of available data, and discussions with local regulatory and advisory agencies. Therefore, the data obtained are clear and accurate only to the degree implied by the sources and methods used. The

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2418067 Asbestos

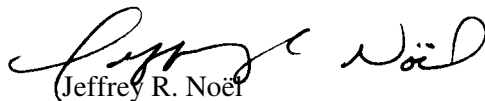
information presented herewith was based on professional interpretation using presently accepted methods with a degree of conservatism deemed proper as of the report date. We do not warrant that future technical developments cannot supersede such data.

This asbestos survey is not intended to be the sole basis for asbestos removal bids. Confirmation of the condition and volume of the ACMs should be conducted by prospective removal contractors prior to accepting removal bids. This report is provided for the exclusive use of the client noted on the cover page and is subject to the terms and conditions in the applicable contract between the Client and Krazan. The client is the only party to whom Krazan has explained the risks involved and has been involved in the shaping of the scope of services needed to satisfactorily manage those risks, if any, from the client's point of view. Any third-party use of this report, including use by the Client's lender, prospective purchaser, or lessee will be subject to the terms and conditions governing the contractual work between the Client and Krazan. The unauthorized use of, reliance on, or release of the information contained in this report, without the expressed written consent of Krazan, is strictly prohibited and will be without risk or liability to Krazan.

Asbestos analysis was conducted by a laboratory accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST). The results of the asbestos analyses are accurate only to the degree and care of ensuring the testing accuracy and the representative nature of the samples obtained.

If you have any questions or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.



Jeffrey R. Noël
DOSH Certified Asbestos Consultant
No. 00-2828

JRN/mlt

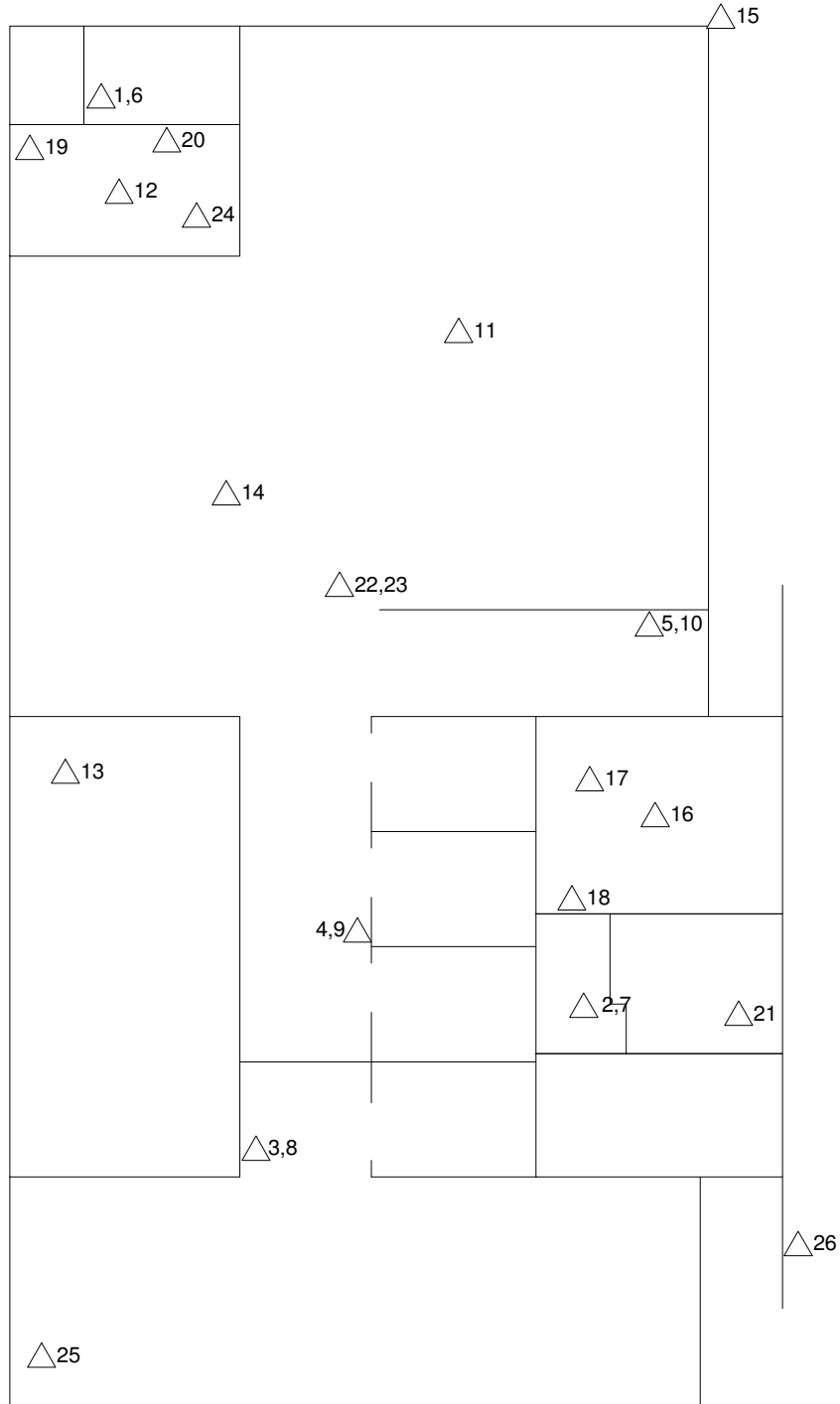
Appendix A

TABLE I
ASBESTOS ANALYSIS RESULTS
Bakersfield College - Field House
1801 Panorama Drive
Bakersfield, California
December 10, 2018 Sampling

Sample No.	Sample Description	Sample Location	Asbestos Content	Approx. Sq. Ft.	Condition / Friability	Notes/ Additional locations
1	Plaster	storage	ND	NC	NA	homogenous throughout
2	Plaster	janitor's closet	ND	NC	NA	homogenous throughout
3	Plaster	locker room	ND	NC	NA	homogenous throughout
4	Plaster	showers	ND	NC	NA	homogenous throughout
5	Plaster	locker room	ND	NC	NA	homogenous throughout
6	Skim coat	storage	ND	NC	NA	homogenous throughout
7	Skim coat	janitor's closet	ND	NC	NA	homogenous throughout
8	<i>Skim coat</i>	<i>locker room</i>	<i>Trace</i>	<i>3000</i>	<i>NA</i>	<i>homogenous throughout</i>
9	Skim coat	showers	ND	NC	NA	homogenous throughout
10	Skim coat	locker room	ND	NC	NA	homogenous throughout
11	2-ft by 4-ft Ceiling panel	locker room	ND	NC	NA	acoustic
12	2-ft by 4-ft Ceiling panel	office	ND	NC	NA	insulated
13	12-in by 12-in Floor tile / mastic	equipment room	ND / 2%	750	G/NF	
14	Concrete slab	locker room	ND	NC	NA	
15	Concrete wall	exterior	ND	NC	NA	
16	2-ft by 4-ft Ceiling panel	bathroom	ND	NC	NA	vinyl wrapped gypsum board
17	Pipe insulation wrap	office	ND	NC	NA	over fiberglass insulation
18	Gypsum board	office	ND	NC	NA	homogenous throughout
19	12-in by 12-in Floor tile / mastic	office	ND / 2%	200	G/NF	under carpet
20	Base cove mastic	office	ND	NC	NA	
21	Duct tape	mechanical room	ND	NC	NA	on metal ducting
22	Roof core	roof	ND	NC	NA	full depth core
23	Roof tar	roof	ND	NC	NA	between layers and seams
24	<i>Roof mastic</i>	<i>roof</i>	<i>Trace</i>	<i><50</i>	<i>NA</i>	<i>roof penetrations</i>
25	Roof mastic	roof	3%	<10	G/NF	roof patches
26	Concrete block	exterior	ND	NC	NA	

NA	= Not applicable	F	= Fair condition
NC	= Not calculated	G	= Good condition
ND	= None detected	NF	= Non-friable
Trace	= Less than one percent (<1%) chrysotile asbestos	FR	= Friable

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EXPLANATION

△ BUILDING MATERIAL SAMPLE LOCATION

FLOOR PLAN WITH BUILDING MATERIAL SAMPLE LOCATIONS

BAKERSFIELD COLLEGE - FIELD HOUSE
1801 PANORAMA DRIVE
BAKERSFIELD, CALIFORNIA

Scale:
NOT TO SCALE

Drawn by:
J. R. N.

Project No.
024-18067

Date:
1 / 19

Approved by:
J.R.N

Figure No.
1

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BULK ASBESTOS ANALYSIS SUMMARY REPORT

CLIENT NAME: Krazan & Associates, Inc
215 West Dakota Avenue
Clovis, California 93612

DATE OF RECEIPT: December 11, 2018
SAMPLE CONDITION: Good
DATE ANALYZED: December 11, 2018

A.E.S.L. LABORATORY #: 18-A2031

PROJECT: Field House
Project ID#: 024-18067

A.E.S.L. LAB SAMPLE ID #	CLIENT SAMPLE ID #	SAMPLE DESCRIPTION & COLOR	TEST RESULTS		OTHER MATERIALS
			Pos. / n.d.	% & Type	
A2031-1	1	Grey Plaster	n.d.	-----	100% Non-Fibrous
A2031-2	2	Grey Plaster	n.d.	-----	100% Non-Fibrous
A2031-3	3	Grey Plaster	n.d.	-----	100% Non-Fibrous
A2031-4	4	Grey Plaster	n.d.	-----	100% Non-Fibrous
A2031-5	5	Grey Plaster	n.d.	-----	100% Non-Fibrous
A2031-6	6	White Skim Coat	n.d.	-----	100% Non-Fibrous
A2031-7	7	White Skim Coat	n.d.	-----	100% Non-Fibrous
A2031-8	8	White Skim Coat	Trace	0.20% Chrysotile*	99% Non-Fibrous
A2031-9	9	White Skim Coat	n.d.	-----	100% Non-Fibrous
A2031-10	10	White Skim Coat	n.d.	-----	100% Non-Fibrous
A2031-11	11	White 2x4 Ceiling Panel	n.d.	-----	80% Cellulose 20% Non-Fibrous
A2031-12	12	White 2x4 Ceiling Panel	n.d.	-----	80% Cellulose 20% Non-Fibrous
A2031-13	13 a	Tan 12x12 Floor Tile	n.d.	-----	100% Non-Fibrous
	13 b	Black Mastic	Positive	2% Chrysotile	98% Non-Fibrous
A2031-14	14	Grey Concrete	n.d.	-----	100% Non-Fibrous
A2031-15	15	Grey Concrete	n.d.	-----	100% Non-Fibrous
A2031-16	16	White 2x4 Ceiling Panel	n.d.	-----	10% Cellulose 90% Non-Fibrous
A2031-17	17	Yellow Pipe Insulation	n.d.	-----	100% Fibrous Glass
A2031-18	18	White Gypsum	n.d.	-----	10% Cellulose 90% Non-Fibrous
A2031-19	19 a	12x12 Floor Tile	n.d.	-----	100% Non-Fibrous
	19 b	Yellow Mastic	n.d.	-----	100% Non-Fibrous
	19 c	Black Mastic	Positive	2% Chrysotile	98% Non-Fibrous
A2031-20	20	Brown Base Cove Mastic	n.d.	-----	100% Non-Fibrous
A2031-21	21	Tan Duct Tape	n.d.	-----	100% Non-Fibrous
A2031-22	22 a	White Coating	n.d.	-----	100% Non-Fibrous
	22 b	Black Tar	n.d.	-----	100% Non-Fibrous
	22 c	Grey Roofing	n.d.	-----	30% Cellulose 70% Non-Fibrous
	22 d	Black Tar	n.d.	-----	100% Non-Fibrous
	22 e	Black Felt	n.d.	-----	40% Cellulose 60% Non-Fibrous
	22 f	Black Tar	n.d.	-----	100% Non-Fibrous
	22 h	Black Felt	n.d.	-----	40% Cellulose 60% Non-Fibrous
A2031-23	23	Black Roof Tar	n.d.	-----	100% Non-Fibrous
A2031-24	24 a	White Coating	n.d.	-----	100% Non-Fibrous

A.E.S.L. LAB SAMPLE ID #	CLIENT SAMPLE ID #	SAMPLE DESCRIPTION & COLOR	TEST RESULTS		OTHER MATERIALS
			Pos. / n.d.	% & Type	
	24 b	Black Mastic	Trace	0.30% Chrysotile*	99% Non-Fibrous
A2031-25	25	Grey Roof Mastic	Positive	3% Chrysotile	97% Non-Fibrous
A2031-26	26	Grey Concrete	n.d.	-----	100% Non-Fibrous

n.d. = Non Detect

* PLM 1000 Point Count

Method: Polarized Light Microscopy, EPA Method 600/R-93/116

The result quantitations reported are an estimation based on the methods of visual microscopic estimation, which is considered only a semi-quantitative technique. Also, this report is indicative only of the sample material A.E.S.L. Laboratory received. Results do not necessarily reflect the makeup of the entire span of the material from which the samples were derived. Sampling techniques and/or sample handling may affect the integrity of the sample/s before submission to A.E.S.L. Laboratory and hence the outcome of the laboratory results. Samples not destroyed by testing are retained a minimum of thirty days. A.E.S.L. Laboratory, recommends re-analysis by point count or Transmission Electron Microscopy (TEM) for materials that are identified to contain less than ten percent (<10%) asbestos by PLM. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of A.E.S.L.

Review and QA/QC by: Jerry A. Denton, Laboratory Director

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(IF NOT SPECIFIED WILL AUTOMATICALLY BE DISPOSED OF AFTER 30 DAYS)

DATE: 12-11-18

Appendix B

TABLE II
ASBESTOS ANALYSIS RESULTS
Bakersfield College - Gymnasium Locker Rooms / Basement
1801 Panorama Drive
Bakersfield, California
December 10, 2018 Sampling

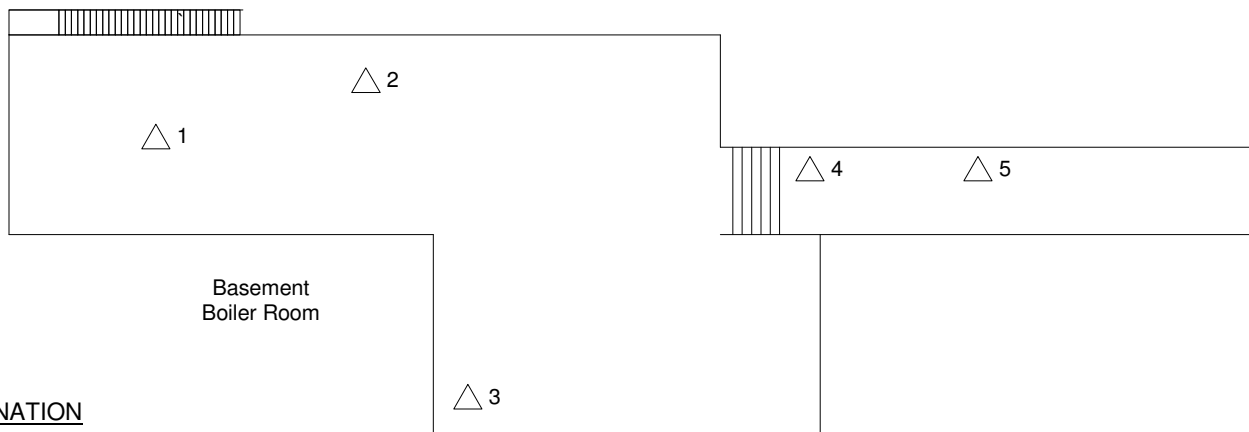
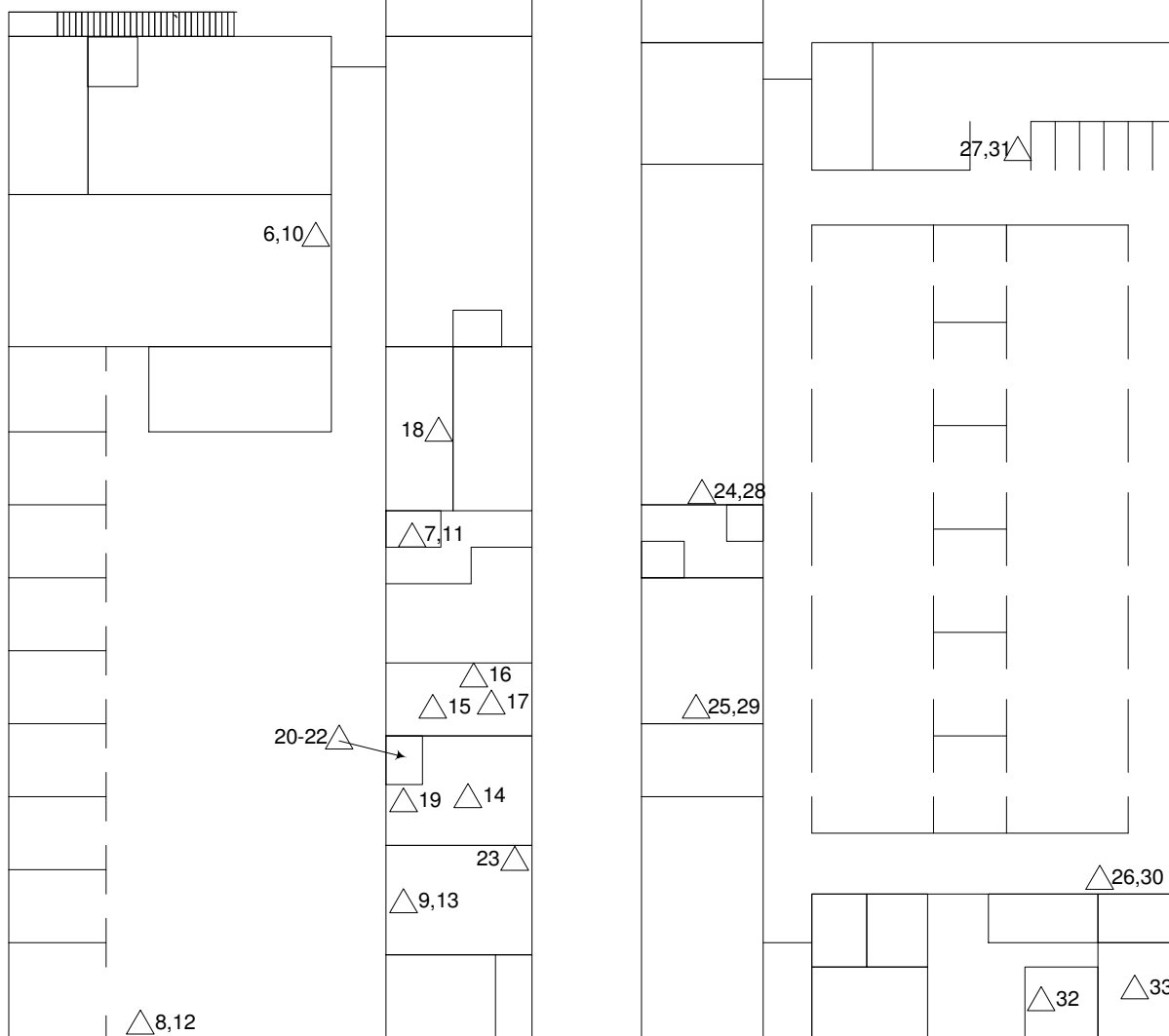
Sample No.	Sample Description	Sample Location	Asbestos Content	Approx. Sq. Ft.	Condition / Friability	Notes/ Additional locations
1	Insulation jacket	basement	ND	NC	NA	over fiberglass insulation
2	Insulation jacket	basement	ND	NC	NA	over fiberglass insulation
3	Insulation jacket	basement	ND	NC	NA	over fiberglass insulation
4	Pipe insulation wrap	basement	ND	NC	NA	over fiberglass insulation
5	Pipe insulation wrap	basement	ND	NC	NA	over fiberglass insulation
6	Plaster	men's locker room	ND	NC	NA	homogenous throughout
7	Plaster	men's locker room	ND	NC	NA	homogenous throughout
8	Plaster	men's locker room	ND	NC	NA	homogenous throughout
9	Plaster	men's locker room	ND	NC	NA	homogenous throughout
10	Skim coat	men's locker room	Trace	6000	NA	homogenous throughout
11	Skim coat	men's locker room	ND	NC	NA	homogenous throughout
12	Skim coat	men's locker room	Trace	see # 10	NA	homogenous throughout
13	Skim coat	men's locker room	Trace	see # 10	NA	homogenous throughout
14	2-ft by 4-ft Ceiling panel	men's locker room	ND	NC	NA	acoustic
15	12-in by 12-in Ceiling tile	men's locker room	ND	NC	NA	main
16	12-in by 12-in Ceiling tile	men's locker room	ND	NC	NA	patch
17	Ceiling tile mastic	men's locker room	ND	NC	NA	
NA	= Not applicable		F	= Fair condition		
NC	= Not calculated		G	= Good condition		
ND	= None detected		NF	= Non-friable		
Trace	= Less than one percent (<1%) chrysotile asbestos		FR	= Friable		

TABLE II (continued)
ASBESTOS ANALYSIS RESULTS
Bakersfield College - Gymnasium Locker Rooms / Basement
1801 Panorama Drive
Bakersfield, California
December 10, 2018 Sampling

Sample No.	Sample Description	Sample Location	Asbestos Content	Approx. Sq. Ft.	Condition / Friability	Notes/ Additional locations
18	Wallpaper	men's locker room	ND	NC	NA	
19	Gypsum board	men's locker room	ND	NC	NA	homogenous throughout
20	9-in by 9-in Floor tile / mastic	men's locker room	5% / 2%	<25	G/NF	red
21	9-in by 9-in Floor tile / mastic	men's locker room	5% / 2%	<25	G/NF	tan
22	9-in by 9-in Floor tile / mastic	men's locker room	5% / 2%	<25	G/NF	off-white
23	Gypsum board	men's locker room	ND	NC	NA	homogenous throughout
24	Plaster	women's locker room	ND	NC	NA	homogenous throughout
25	Plaster	women's locker room	ND	NC	NA	homogenous throughout
26	Plaster	women's locker room	ND	NC	NA	homogenous throughout
27	Plaster	women's locker room	ND	NC	NA	homogenous throughout
28	Skim coat	women's locker room	ND	NC	NA	homogenous throughout
29	Skim coat	women's locker room	ND	NC	NA	homogenous throughout
30	<i>Skim coat</i>	<i>women's locker room</i>	<i>Trace</i>	<i>see # 10</i>	<i>NA</i>	<i>homogenous throughout</i>
31	Skim coat	women's locker room	ND	NC	NA	homogenous throughout
32	Gypsum board	women's locker room	ND	NC	NA	homogenous throughout
33	2-ft by 4-ft Ceiling panel	women's locker room	ND	NC	NA	patch
NA	= Not applicable		F	= Fair condition		
NC	= Not calculated		G	= Good condition		
ND	= None detected		NF	= Non-friable		
Trace	= Less than one percent (<1%) chrysotile asbestos		FR	= Friable		

Men's Locker Room

Women's Locker Room



EXPLANATION

△ BUILDING MATERIAL SAMPLE LOCATION

FLOOR PLAN WITH BUILDING MATERIAL SAMPLE LOCATIONS

BAKERSFIELD COLLEGE - LOCKER ROOMS
1801 PANORAMA DRIVE
BAKERSFIELD, CALIFORNIA

Scale:
NOT TO SCALE

Drawn by:
J. R. N.

Project No.
024-18067

Date:
1 / 19

Approved by:
J.R.N

Figure No.
2

Krazan
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States

BULK ASBESTOS ANALYSIS SUMMARY REPORT

CLIENT NAME: Krazan & Associates, Inc
215 West Dakota Avenue
Clovis, California 93612

DATE OF RECEIPT: December 11, 2018
SAMPLE CONDITION: Good
DATE ANALYZED: December 11, 2018

A.E.S.L. LABORATORY #: 18-A2032

PROJECT: Gymnasium
Project ID#: 024-18067

A.E.S.L. LAB SAMPLE ID #	CLIENT SAMPLE ID #	SAMPLE DESCRIPTION & COLOR	TEST RESULTS		OTHER MATERIALS
			Pos. / n.d.	% & Type	
A2032-1	1 a	White Insulation Jacket	n.d.	-----	30% Fibrous Glass 70% Cellulose
	1 b	Yellow Adhesive	n.d.	-----	100% Non-Fibrous
	1 c	Yellow Insulation	n.d.	-----	100% Fibrous Glass
A2032-2	2 a	White Insulation Jacket	n.d.	-----	30% Fibrous Glass 70% Cellulose
	2 b	Yellow Adhesive	n.d.	-----	100% Non-Fibrous
	2 c	Yellow Insulation	n.d.	-----	100% Fibrous Glass
A2032-3	3 a	White Insulation Jacket	n.d.	-----	30% Fibrous Glass 70% Cellulose
	3 b	Yellow Adhesive	n.d.	-----	100% Non-Fibrous
	3 c	Yellow Insulation	n.d.	-----	100% Fibrous Glass
A2032-4	4 a	White Insulation Jacket	n.d.	-----	30% Fibrous Glass 70% Cellulose
	4 b	Yellow Adhesive	n.d.	-----	100% Non-Fibrous
	4 c	Yellow Insulation	n.d.	-----	100% Fibrous Glass
A2032-5	5 a	White Insulation Jacket	n.d.	-----	30% Fibrous Glass 70% Cellulose
	5 b	Yellow Adhesive	n.d.	-----	100% Non-Fibrous
	5 c	Yellow Insulation	n.d.	-----	100% Fibrous Glass
A2032-6	6 a	Grey Plaster	n.d.	-----	100% Non-Fibrous
	6 b	White Texture	n.d.	-----	100% Non-Fibrous
A2032-7	7 a	Grey Plaster	n.d.	-----	100% Non-Fibrous
	7 b	White Texture	n.d.	-----	100% Non-Fibrous
A2032-8	8 a	Grey Plaster	n.d.	-----	100% Non-Fibrous
	8 b	White Texture	n.d.	-----	100% Non-Fibrous
A2032-9	9 a	Grey Plaster	n.d.	-----	100% Non-Fibrous
	9 b	White Texture	n.d.	-----	100% Non-Fibrous
A2032-10	10	White Skim Coat	Trace	0.20% Chrysotile*	99% Non-Fibrous
A2032-11	11	White Skim Coat	n.d.	-----	100% Non-Fibrous
A2032-12	12	White Skim Coat	Trace	0.10% Chrysotile*	99% Non-Fibrous
A2032-13	13	White Skim Coat	Trace	0.20% Chrysotile*	99% Non-Fibrous
A2032-14	14 a	White 2x4 Ceiling Panel	n.d.	-----	100% Cellulose
	14 b	White Coating	n.d.	-----	100% Non-Fibrous
A2032-15	15 a	White 12x12 Ceiling Panel	n.d.	-----	100% Cellulose
	15 b	White Coating	n.d.	-----	100% Non-Fibrous
A2032-16	16 a	White 12x12 Ceiling Panel	n.d.	-----	100% Cellulose
	16 b	White Coating	n.d.	-----	100% Non-Fibrous
A2032-17	17	Brown Ceiling Tile Mastic	n.d.	-----	100% Non-Fibrous

A.E.S.L. LAB SAMPLE ID #	CLIENT SAMPLE ID #	SAMPLE DESCRIPTION & COLOR	TEST RESULTS		OTHER MATERIALS
			Pos. / n.d.	% & Type	
A2032-18	18 a	White Wallpaper	n.d.	-----	30% Cellulose 70% Non-Fibrous
	18 b	Tan Adhesive	n.d.	-----	100% Non-Fibrous
A2032-19	19 a	White Gypsum	n.d.	-----	10% Cellulose 90% Non-Fibrous
	19 b	Tan Wallpaper	n.d.	-----	30% Cellulose 70% Non-Fibrous
A2032-20	20 a	Red 9x9 Floor Tile	Positive	5% Chrysotile	95% Non-Fibrous
	20 b	Black Mastic	Positive	2% Chrysotile	98% Non-Fibrous
A2032-21	21 a	Tan 9x9 Floor Tile	Positive	5% Chrysotile	95% Non-Fibrous
	21 b	Black Mastic	Positive	2% Chrysotile	98% Non-Fibrous
A2032-22	22 a	Tan 9x9 Floor Tile	Positive	5% Chrysotile	95% Non-Fibrous
	22 b	Black Mastic	Positive	2% Chrysotile	98% Non-Fibrous
A2032-23	23	White Gypsum	n.d.	-----	10% Cellulose 90% Non-Fibrous
A2032-24	24	Grey Plaster	n.d.	-----	100% Non-Fibrous
A2032-25	25	Grey Plaster	n.d.	-----	100% Non-Fibrous
A2032-26	26	Grey Plaster	n.d.	-----	100% Non-Fibrous
A2032-27	27	Grey Plaster	n.d.	-----	100% Non-Fibrous
A2032-28	28	White Skim Coat	n.d.	-----	100% Non-Fibrous
A2032-29	29	White Skim Coat	n.d.	-----	100% Non-Fibrous
A2032-30	30	White Skim Coat	Trace	0.10% Chrysotile*	99% Non-Fibrous
A2032-31	31	White Skim Coat	n.d.	-----	100% Non-Fibrous
A2032-32	32	White Gypsum	n.d.	-----	10% Cellulose 90% Non-Fibrous
A2032-33	33	White 2x4 Ceiling Panel	n.d.	-----	100% Cellulose

n.d. = Non Detect

* PLM 1000 Point Count

Method: Polarized Light Microscopy, EPA Method 600/R-93/116

The result quantitations reported are an estimation based on the methods of visual microscopic estimation, which is considered only a semi-quantitative technique. Also, this report is indicative only of the sample material A.E.S.L. Laboratory received. Results do not necessarily reflect the makeup of the entire span of the material from which the samples were derived. Sampling techniques and/or sample handling may affect the integrity of the sample/s before submission to A.E.S.L. Laboratory and hence the outcome of the laboratory results. Samples not destroyed by testing are retained a minimum of thirty days. A.E.S.L. Laboratory, recommends re-analysis by point count or Transmission Electron Microscopy (TEM) for materials that are identified to contain less than ten percent (<10%) asbestos by PLM. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of A.E.S.L.

Review and QA/QC by: Jerry A. Denton, Laboratory Director

Z:\AESL\bulk\18-A000\18-A2032.doc

**A. E. S. L.
Environmental
LABORATORY**

**BULK ASBESTOS SAMPLE
CHAIN OF CUSTODY**

TURNAROUND TIME: _____ HR / Same Day / 24HR / 48HR

Client Name: Krazan & Associates, Inc.	Contact: Jeff Noël	Phone: (559) 348-2200	Fax: (559) 348-2201
Address: 215 West Dakota Avenue	City: Clovis	State: California	Zip: 93612

PROJECT NAME: Gymnasium PROJECT ID #: 024-18067 DATE SAMPLES TAKEN: 12/10/18

SAMPLES REC'D (#): _____ DATE REC'D: _____ CONDITION: _____ SAMPLES ACCEPTED (Y, N): _____ IF NO, WHY? _____

*** SAMPLES TO BE RETURNED TO CLIENT AFTER 30 DAYS OR DISPOSED OF BY A.E.S.L. (D R): D ***

(IF NOT SPECIFIED WILL AUTOMATICALLY BE DISPOSED OF AFTER 30 DAYS)

A.E.S.L. Sample #	Client ID#	Sample Location	Sample Description	A.E.S.L. Sample #	Client ID#	Sample Location	Sample Description
	1	1801 Panorama Drive	Insulation jacket		31	1801 Panorama Drive	Skim coat
	2		Insulation jacket		32	↓	Gypsum board
	3		Insulation jacket		33	↓	2-ft by 4-ft Ceiling panel
	4		Insulation jacket				
	5		Insulation jacket				
	6		Plaster				
	7		Plaster				
	8		Plaster				
	9		Plaster				
	10		Skim coat				
	11		Skim coat				
	12		Skim coat				
	13		Skim coat				
	14		2-ft by 4-ft Ceiling panel				
	15		12-in by 12-in Ceiling tile				
	16		12-in by 12-in Ceiling tile				
	17		Ceiling tile mastic				
	18		Wallpaper				
	19		Gypsum board				
	20		9-in by 9-in Floor tile				
	21		9-in by 9-in Floor tile				
	22		9-in by 9-in Floor tile				
	23		Gypsum board				
	24		Plaster				
	25		Plaster				
	26		Plaster				
	27		Plaster				
	28		Skim coat				
	29		Skim coat				
	30	↓	Skim coat				

A.E.S.L. ENVIRONMENTAL LABORATORY
500 EAST SOUTHERN AVENUE, Suite A
TEMPE, ARIZONA 85282
PHONE (480) 966-3714 FAX (480) 394-0188

RELINQUISHED BY: Jeff NoëlRECEIVED AT A.E.S.L. BY: ChenDATE: 12/10/18DATE: 12-11-18

Appendix C

DEPARTMENT OF INDUSTRIAL RELATIONS

Division of Occupational Safety and Health

Asbestos Unit

2424 Arden Way, Suite 495

Sacramento, CA 95825-2417

(916) 574-2993 Office (916) 483-0572 Fax

<http://www.dir.ca.gov/dirdatabases.html>actu@dir.ca.gov

009132828C

210

August 13, 2018

Jeffrey Ronald Noel
1055 Chennault Ave
Clovis CA 93611

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please contact our office at the above address, fax number or email; of any changes in your contact/mailling information within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Safety Engineer

Attachment: Certification Card

cc: File

Renewal – Card Attached (Revised 10/24/2012)

State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant

Jeffrey Ronald Noel

Name

Certification No. **00-2828**

Expires on **10/18/19**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7100 et seq. of the Business and Professions Code.



**LEAD-BASED PAINT SURVEY
BAKERSFIELD COLLEGE
GYMNASIUM LOCKER ROOMS & FIELD HOUSE
1801 PANORAMA DRIVE
BAKERSFIELD, CALIFORNIA**

Project No. 024-18067
January 1, 2019

Prepared for:
Joe DeRosa
Kern Community College District
2100 Chester Avenue, Suite 201
Bakersfield, California 93301
(661) 336-5174

Prepared by:
Krazan & Associates, Inc.
215 West Dakota Avenue
Clovis, California 93612
(559) 348-2200

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Project No. 024-18067

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January 1, 2019

Project No. 024-18067

**LEAD-BASED PAINT SURVEY
BAKERSFIELD COLLEGE
GYMNASIUM LOCKER ROOMS & FIELD HOUSE
1801 PANORAMA DRIVE
BAKERSFIELD, CALIFORNIA**

1.0 INTRODUCTION

This report presents the results of our lead-based paint survey for the s referenced structures located at 1801 Panorama Dr. in Bakersfield, California. The lead-based paint survey was conducted under the conditions of Krazan & Associates, Inc.'s (Krazan's) Proposal No. P18-329, dated October 8, 2018. Deborah Martin gave written authorization on October 16, 2018, for Krazan to proceed with the lead-based paint survey.

2.0 PURPOSE AND SCOPE OF WORK

The purpose of the lead-based paint survey was to identify and quantify the presence of potential lead-based paints (LBPs) at the on-site structures. The scope of work for the limited LBP survey included conducting a visual survey of the structures, conducting bulk sampling and analysis of materials suspected to contain lead.

3.0 BUILDING DESCRIPTION

FIELD HOUSE

The site is located on the south side of Panorama, east of Haley in Bakersfield, California. The structure was a single-story structure with concrete slab-on-grade foundation, concrete and concrete block exterior walls, with mineral surface rolled roofing. Interior construction included plaster and suspended ceilings with two-foot by four-foot ceiling panels; plaster, wood, concrete, and ceramic-tiled walls; and concrete floors overlain (in areas) by wall-to-wall carpeting, floor tiles, and ceramic tiles.

GYMNASIUM LOCKER ROOMS & BASEMENT

The structure was a single-story structure interior construction included acoustic ceiling tiles, plaster, concrete, and suspended ceilings with two-foot by four-foot ceiling panels; gypsum board, plaster, wood, concrete, metal, brick, and ceramic-tiled walls; and concrete floors overlain (in areas) by wall-to-wall carpeting, floor tiles, ceramic tiles, and rubber mats.

4.0 INVESTIGATIVE METHODS**4.1 Sampling Protocols**

Thirty-four (34) samples of suspected LBPs were collected from the on-site structures. Representative samples were collected from painted surfaces that visually appeared to contain various types of paint. Every attempt was made to identify unique paint and/or surface types. However, a chance exists that: 1) different paints are not visually distinct, 2) hidden surfaces exist, or 3) areas that were painted with different and distinct paint types are now covered by a single overlay. Sample locations for this survey were determined by the inspector and were selected in a random fashion after homogeneous areas were identified.

Sample locations for this survey were chosen in a semi-random fashion with emphasis placed on minimizing damage to the sampled materials. The samples were collected by carefully removing a small amount of the suspect material, with every attempt to separate the paint from the substrate. If possible, samples were collected from existing damaged areas or loose pieces of materials. Each sample was placed in a separate sealed plastic bag, and labeled with the project number and sample number.

4.2 Laboratory Analytical Methods

Paint chip samples were analyzed by Environmental Hazards Services of Richmond, Virginia, to detect the presence of total lead in accordance with EPA Method 7420. Copies of the analytical results and Chain-of-Custody Record are included in the Appendices.

5.0 RESULTS OF INVESTIGATION

As stated previously, 34 samples of suspected LBPs were collected from throughout the structures. Analytical laboratory results and field observations of the materials sampled have been summarized on Table I and II, in the appendices of this report. Information presented within the table includes the sample number, the room equivalent, building component, substrate, testing location, lead content, the volume of LBP identified (typically expressed in square feet), and the condition of the material sampled. In addition, footnotes have been provided to convey pertinent information regarding the specific sample.

The following paints contained 0.5% or greater total lead by weight and are defined as lead-based paint:

FIELD HOUSE

Brown wood door – office (Sample No. 4)

GYMNASIUM LOCKER ROOMS & BASEMENT

Green plaster wall – men’s locker room (Sample No. 11)

Pink ceramic-tiled wall – men’s locker room (Sample No. 12)

The following paints contained greater than 0.009% total lead by weight and are defined as lead-containing paint:

FIELD HOUSE

Tan concrete wall – locker room (Sample No. 1)

Tan plaster wall – storage (Sample No. 2)

Tan plaster ceiling – janitor’s closet (Sample No. 3)

Green ceramic-tiled wall – locker room (Sample No. 7)

Yellow ceramic-tiled floor – locker room (Sample No. 12)

Tan metal door frame – bathroom (Sample No. 13)

GYMNASIUM LOCKER ROOMS & BASEMENT

Beige concrete wall – men’s locker room (Sample No. 1)

Pink plaster wall – men’s locker room (Sample No. 3)

Yellow ceramic-tiled floor – men’s locker room (Sample No. 10)

Green plaster wall – women’s locker room (Sample No. 13)

Beige concrete wall – women’s locker room (Sample No. 14)

Beige plaster wall – women’s locker room (Sample No. 15)

Green concrete wall – women’s locker room (Sample No. 16)

Gray ceramic-tiled floor – women’s locker room (Sample No. 19)

The paints on the exterior and interior of the building surveyed were generally in good condition.

6.0 CONCLUSIONS

Occupational exposure to lead is regulated by both the Federal Occupational Safety and Health Administration (OSHA) (29 CFR 1926.62) and California OSHA (Title 8, GISO 5198 and CSO 1532.1). Based on Federal and California OSHA, when disturbing paints which contain lead (any amount of detectable lead), the above-noted OSHA and California OSHA regulations should be followed. Furthermore, the United States Department of Housing and Urban Development (HUD) publication entitled "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing," dated 1995, outlines specific guidelines for disrupting paint with lead in excess of 5,000 mg/kg (lead-based paint). These guidelines have been developed primarily to address conditions within buildings utilized for residential purposes. In addition, industry accepted standards also suggest that building owners notify occupants regarding the presence, location, and extent of lead-based paints. Records of all notifications and reports must be maintained for the duration of ownership and must be transferred to successive owners.

All construction work where an employee may be occupationally exposed to lead containing paint, including building renovation and demolition, must comply with OSHA Regulation 29 CFR 1926.62 and California OSHA Title 8, CSO 1532.1. This regulation requires initial employee exposure monitoring to evaluate worker exposure during work that disturbs lead containing paint. Krazan suggests that engineering controls and air monitoring for airborne lead be conducted at the start of projects in which worker exposure to lead containing paint is likely.

Demolition of buildings containing lead-based paint is not specifically regulated by the San Joaquin Valley Air Pollution Control District (APCD). General requirements for building demolition, however, such as dust control, must be strictly followed. Also, building components which have been identified as being coated with LBPs must be handled and disposed of as a Hazardous Waste and cannot be discarded as general construction debris.

7.0 LIMITATIONS

This survey and review of the subject property has been limited in scope. This investigation is undertaken with the calculated risk that the presence, full nature, and extent of lead-containing paints would not be revealed by visual observation and sampling alone. Krazan & Associates, Inc. makes no representation as to the lead content of paints not sampled or that were inaccessible to our inspector.

The findings of this report were based upon the results of our site inspection, paint chip sampling, along with the interpretation of paint chip analysis results. Lead-paint testing was done by a laboratory certified by the State of California Department of Public Health (DPH) and accredited as an AIHA Environmental Lead Laboratory Accreditation Program (ELLAP) laboratory. Therefore, the data are accurate only to the degree implied by review of the data obtained and by professional interpretation, and the degree of care of ensuring the testing accuracy and the representative nature of the samples obtained. The findings presented herewith are based on professional interpretation using state of the art methods and equipment and a degree of conservatism deemed proper as of this report date. It is not warranted that such data cannot be superseded by future environmental or technical developments.

This lead-based paint survey is not intended to be the sole basis of lead paint removal bids. Confirmation of specific lead-based paint and volumes should be conducted by prospective removal contractors prior to accepting removal bids. This report is provided for the exclusive use of the client noted on the cover page and is subject to the terms and conditions in the applicable contract between the client and Krazan. The client is the only party to whom Krazan has explained the risks involved and has been involved in the shaping of the scope of services needed to satisfactorily manage those risks, if any, from the client's point of view. Any third-party use of this report, including use by Client's lender, prospective purchaser, or lessee will be subject to the terms and conditions governing the contractual work in the contract between the client and Krazan. The unauthorized use of, release of, or reliance on the information contained in this report, without the expressed written consent of Krazan & Associates, Inc., is strictly prohibited and will be without risk or liability to Krazan.

If you have any questions or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Jeffrey R. Noël". The signature is fluid and cursive, with the first name "Jeffrey" written in a larger, more prominent script than the last name "Noël".

Jeffrey R. Noël
DPH Certified Lead Inspector/Assessor
No. 7028

JRN/mlt

Appendix A

TABLE I
LEAD-BASED PAINT SURVEY RESULTS
 Bakersfield College - Field House
 1801 Panorama Drive
 Bakersfield, California
 December 10, 2018 Sampling

Sample No.	Sample Location	Paint Sampled	Lead content % by weight	Volume est. in sq. ft.	Condition	Notes/ Additional locations
<i>1</i>	<i>locker room</i>	<i>concrete wall</i>	<i>0.015</i>	<i>NC</i>	<i>good</i>	<i>tan</i>
<i>2</i>	<i>storage</i>	<i>plaster wall</i>	<i>0.088</i>	<i>NC</i>	<i>good</i>	<i>tan</i>
<i>3</i>	<i>janitor's closet</i>	<i>plaster ceiling</i>	<i>0.071</i>	<i>NC</i>	<i>good</i>	<i>tan</i>
4	office	wood door	0.87	40	good	brown
5	bathroom	ceramic tile floor	<0.0050	NC	good	green
6	bathroom	ceramic tile floor	0.0048	NC	good	gray
7	<i>bathroom</i>	<i>ceramic tile wall</i>	<i>0.030</i>	<i>NC</i>	<i>good</i>	<i>green</i>
8	locker room	ceramic tile floor	<0.0050	NC	good	tan
9	locker room	ceramic tile floor	<0.0051	NC	good	brown
10	locker room	ceramic tile floor	<0.0054	NC	good	off-white
11	locker room	ceramic tile floor	<0.0038	NC	good	pink
<i>12</i>	<i>locker room</i>	<i>ceramic tile floor</i>	<i>0.013</i>	<i>NC</i>	<i>good</i>	<i>yellow</i>
<i>13</i>	<i>bathroom</i>	<i>metal door frame</i>	<i>0.014</i>	<i>NC</i>	<i>good</i>	<i>tan</i>

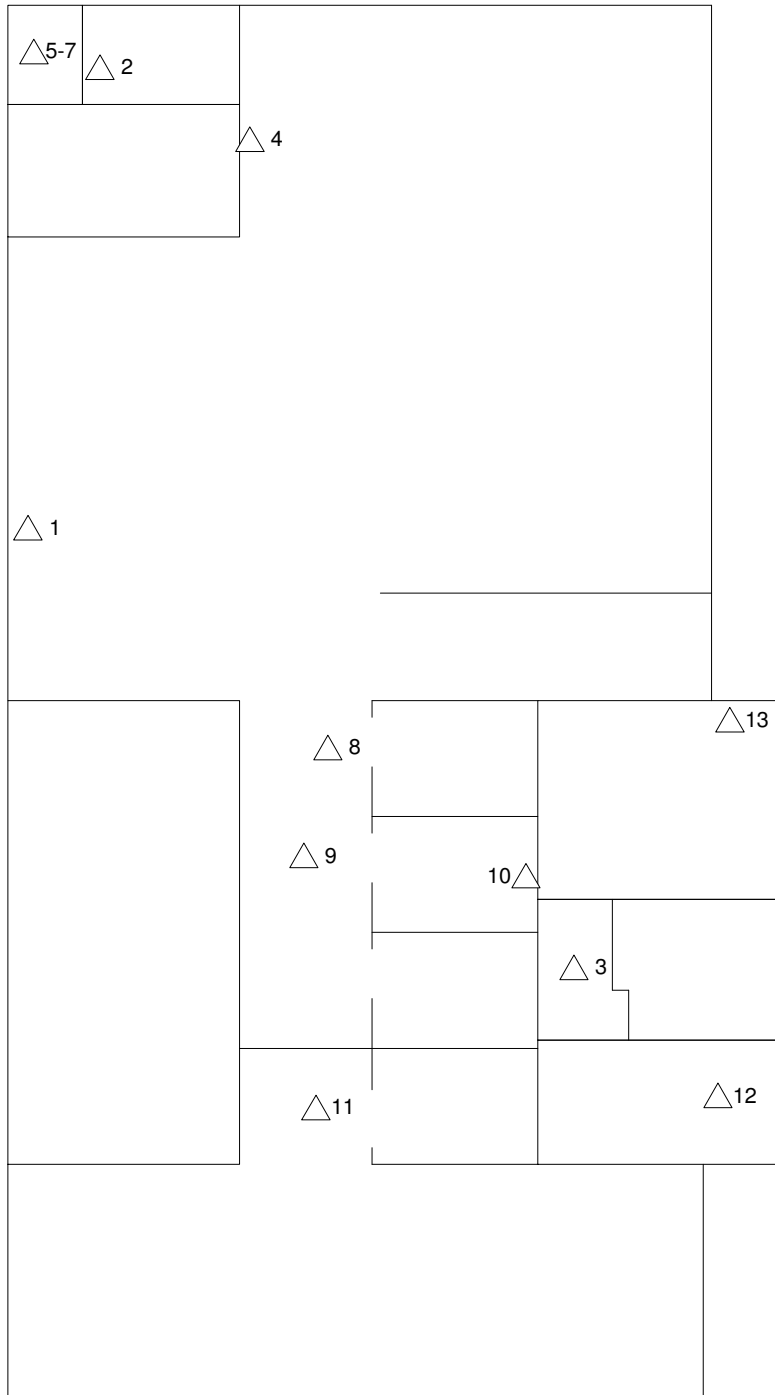
NOTE: Lead-based paint is defined as paint containing 0.5% or greater lead by weight.

NC = Not calculated

Lead containing paint is defined as paint containing greater than 0.009% lead by weight.

Bold text items are considered Lead-based paint

Italic text items are considered Lead-containing paint



EXPLANATION

△ PAINT SAMPLE LOCATION

FLOOR PLAN WITH PAINT SAMPLE LOCATIONS

BAKERSFIELD COLLEGE - FIELD HOUSE
1801 PANORAMA DRIVE
BAKERSFIELD, CALIFORNIA

Scale:
NOT TO SCALE

Drawn by:
J. R. N.

Project No.
024-18067

Date:
1 / 19

Approved by:
J.R.N

Figure No.
1

Krazan
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead Paint Chip Analysis Report

Report Number: 18-12-01542

Client: Krazan & Associates Inc.
215 West Dakota Ave
Clovis, CA 93612

Received Date: 12/12/2018
Analyzed Date: 12/17/2018
Reported Date: 12/17/2018

Project/Test Address: 024-18067; Field House; 1901 Panorama Drive
Collection Date: 12/10/2018

Client Number:
05-5650

Laboratory Results

Fax Number:
559-348-2201

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
18-12-01542-001	1		150	0.015	
18-12-01542-002	2		880	0.088	
18-12-01542-003	3		710	0.071	
18-12-01542-004	4		8700	0.87	
18-12-01542-005	5		<50	<0.0050	
18-12-01542-006	6		48	0.0048	
18-12-01542-007	7		300	0.030	
18-12-01542-008	8		<50	<0.0050	
18-12-01542-009	9		<51	<0.0051	
18-12-01542-010	10		<54	<0.0054	
18-12-01542-011	11		<38	<0.0038	

Environmental Hazards Services, L.L.C

Client Number: 05-5650

Report Number: 18-12-01542

Project/Test Address: 024-18067; Field House; 1901 Panorama Drive

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
18-12-01542-012	12		130	0.013	
18-12-01542-013	13		140	0.014	

Sample Narratives:

Preparation Method: ASTM E-1979-17

Analysis Method: EPA SW846 7000B

Reviewed By Authorized Signatory:



Deborah Britt

QA/QC Clerk

The HUD lead guidelines for lead paint chips are 0.50% by Weight, 5000 ppm, or 1.0 mg/cm². The Reporting Limit (RL) for samples prepared by ASTM E-1979-17 is 10.0 ug Total Pb. The RL for samples prepared by EPA SW846 3050B is 25.0 ug Total Pb. Paint chip area and results are calculated based on area measurements determined by the client. All internal quality control requirements associated with this batch were met, unless otherwise noted.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, etc., was provided by the client. Results reported above in mg/cm³ are calculated based on area supplied by client. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C.

ELLAP Accreditation through AIHA-LAP, LLC (100420), NY ELAP #11714.

LEGEND	Pb= lead	ug = microgram	ppm = parts per million
	ug/g = micrograms per gram	Wt. = weight	

CHAIN OF CUSTODY FORM

Date:	12/10/2018
Contact Name:	Jeff Noël
Sampler Name:	Jeff Noël
Project #:	024-18067
	Field House
	1901 Panorama Drive

[illegible]

Released By: Jeff Noel	Signature: 	Date/Time: 12/10/18 1815
Received By: 	Signature: 	Date/Time: 12/12/18 1:30

ISSUED: OCTOBER 15, 2025

Appendix B

TABLE II
LEAD-BASED PAINT SURVEY RESULTS
Bakersfield College - Gymnasium Locker Rooms
1801 Panorama Drive
Bakersfield, California
December 10, 2018 Sampling

Sample No.	Sample Location	Paint Sampled	Lead content % by weight	Volume est. in sq. ft.	Condition	Notes/ Additional locations
1	<i>men's locker room</i>	<i>concrete wall</i>	<i>0.16</i>	<i>NC</i>	<i>good</i>	<i>beige</i>
2	men's locker room	plaster wall	<0.0038	NC	good	yellow
3	<i>men's locker room</i>	<i>plaster wall</i>	<i>0.23</i>	<i>NC</i>	<i>good</i>	<i>pink</i>
4	men's locker room	ceramic tile floor	<0.0069	NC	good	tan
5	men's locker room	ceramic tile floor	<0.0041	NC	good	red
6	men's locker room	ceramic tile wall	<0.0072	NC	good	pink
7	men's locker room	ceramic tile floor	<0.0036	NC	good	tan
8	men's locker room	ceramic tile floor	<0.0087	NC	good	off-white
9	men's locker room	ceramic tile floor	<0.0050	NC	good	yellow
10	<i>men's locker room</i>	<i>ceramic tile floor</i>	<i>0.0098</i>	<i>NC</i>	<i>good</i>	<i>yellow</i>
11	men's locker room	plaster wall	0.66	300	good	green
12	men's locker room	ceramic tile wall	5.5	300	good	pink
13	<i>women's locker room</i>	<i>plaster wall</i>	<i>0.16</i>	<i>NC</i>	<i>good</i>	<i>green</i>
14	<i>women's locker room</i>	<i>concrete wall</i>	<i>0.10</i>	<i>NC</i>	<i>good</i>	<i>beige</i>
15	<i>women's locker room</i>	<i>plaster wall</i>	<i>0.15</i>	<i>NC</i>	<i>good</i>	<i>beige</i>
16	<i>women's locker room</i>	<i>concrete wall</i>	<i>0.21</i>	<i>NC</i>	<i>good</i>	<i>green</i>
17	women's locker room	ceramic tile wall	<0.0053	NC	good	yellow
18	women's locker room	ceramic tile floor	<0.0055	NC	good	green
19	<i>women's locker room</i>	<i>ceramic tile floor</i>	<i>0.25</i>	<i>NC</i>	<i>good</i>	<i>gray</i>
20	women's locker room	ceramic tile wall	<0.0041	NC	good	green
21	women's locker room	ceramic tile floor	<0.0055	NC	good	green

NOTE: Lead-based paint is defined as paint containing 0.5% or greater lead by weight. NC = Not calculated

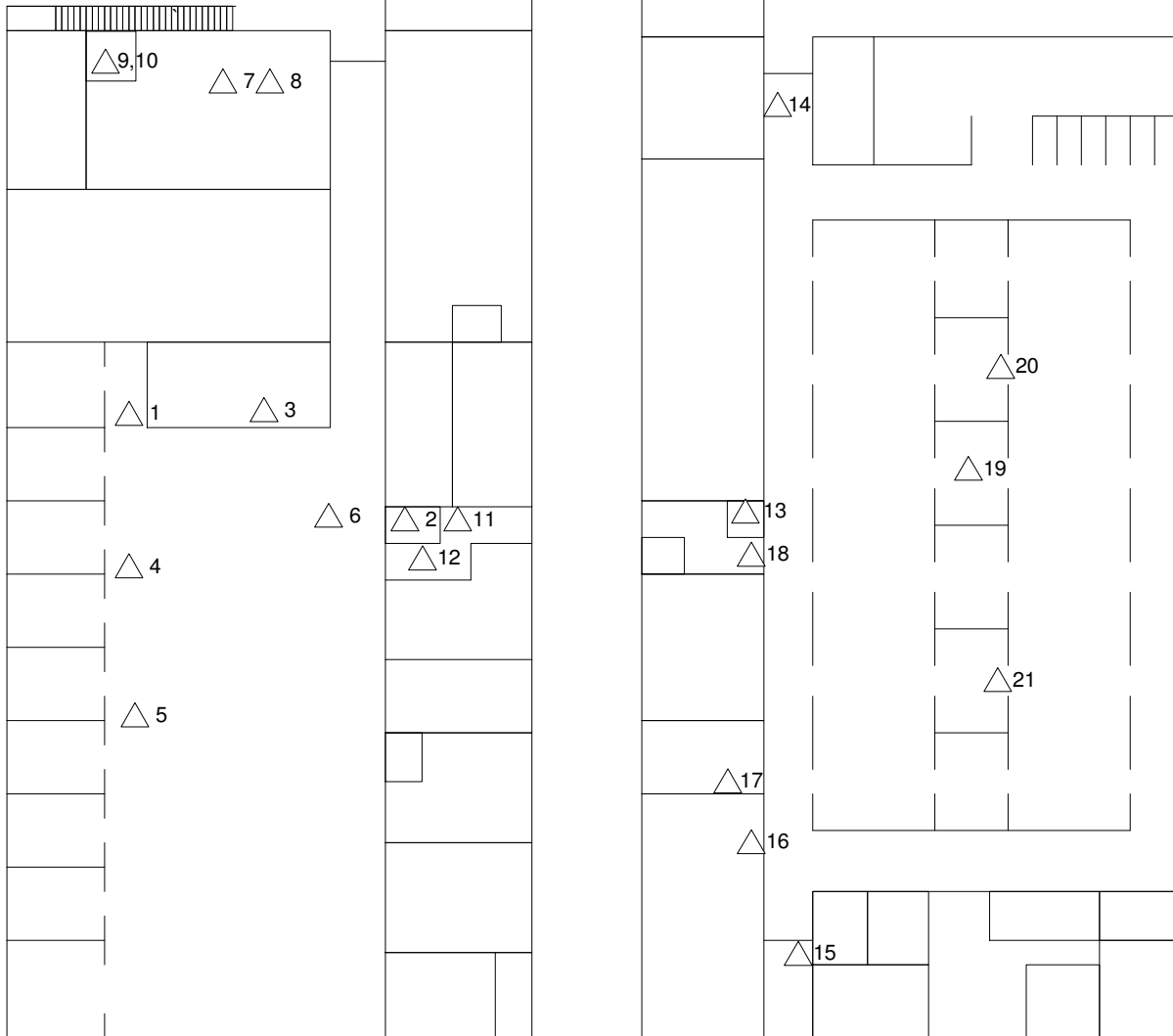
Lead containing paint is defined as paint containing greater than 0.009% lead by weight.

Bold text items are considered Lead-based paint

Italic text items are considered Lead-containing paint

Men's Locker Room

Women's Locker Room



EXPLANATION

△ PAINT SAMPLE LOCATION

**FLOOR PLAN WITH
PAINT SAMPLE LOCATIONS**

BAKERSFIELD COLLEGE - LOCKER ROOMS
1801 PANORAMA DRIVE
BAKERSFIELD, CALIFORNIA

Scale:
NOT TO SCALE

Drawn by:
J. R. N.

Project No.
024-18067

Date:
1 / 19

Approved by:
J.R.N

Figure No.
2

Krazan
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead Paint Chip Analysis Report

Report Number: 18-12-01538

Client: Krazan & Associates Inc.
215 West Dakota Ave
Clovis, CA 93612

Received Date: 12/12/2018
Analyzed Date: 12/14/2018
Reported Date: 12/17/2018

Project/Test Address: 024-18067; Gymnasium; 1901 Panorama Drive
Collection Date: 12/10/2018

Client Number:
05-5650

Laboratory Results

Fax Number:
559-348-2201

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
18-12-01538-001	1		1600	0.16	
18-12-01538-002	2		<38	<0.0038	
18-12-01538-003	3		2300	0.23	
18-12-01538-004	4		<69	<0.0069	
18-12-01538-005	5		<41	<0.0041	
18-12-01538-006	6		<72	<0.0072	
18-12-01538-007	7		<36	<0.0036	
18-12-01538-008	8		<87	<0.0087	
18-12-01538-009	9		<50	<0.0050	
18-12-01538-010	10		98	0.0098	
18-12-01538-011	11		6600	0.66	

Environmental Hazards Services, L.L.C

Client Number: 05-5650

Report Number: 18-12-01538

Project/Test Address: 024-18067; Gymnasium; 1901 Panorama Drive

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
18-12-01538-012	12		55000	5.5	
18-12-01538-013	13		1600	0.16	
18-12-01538-014	14		1000	0.10	
18-12-01538-015	15		1500	0.15	
18-12-01538-016	16		2100	0.21	
18-12-01538-017	17		<53	<0.0053	
18-12-01538-018	18		<55	<0.0055	
18-12-01538-019	19		2500	0.25	
18-12-01538-020	20		<41	<0.0041	
18-12-01538-021	21		<55	<0.0055	

Environmental Hazards Services, L.L.C

Client Number: 05-5650

Report Number: 18-12-01538

Project/Test Address: 024-18067; Gymnasium; 1901 Panorama Drive

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
Sample Narratives:					

Preparation Method: ASTM E-1979-17

Analysis Method: EPA SW846 7000B

Reviewed By Authorized Signatory:



Deborah Britt
QA/QC Clerk

The HUD lead guidelines for lead paint chips are 0.50% by Weight, 5000 ppm, or 1.0 mg/cm². The Reporting Limit (RL) for samples prepared by ASTM E-1979-17 is 10.0 ug Total Pb. The RL for samples prepared by EPA SW846 3050B is 25.0 ug Total Pb. Paint chip area and results are calculated based on area measurements determined by the client. All internal quality control requirements associated with this batch were met, unless otherwise noted.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, etc., was provided by the client. Results reported above in mg/cm³ are calculated based on area supplied by client. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C.

ELLAP Accreditation through AIHA-LAP, LLC (100420), NY ELAP #11714.

LEGEND	Pb= lead	ug = microgram	ppm = parts per million
	ug/g = micrograms per gram	Wt. = weight	

CHAIN OF CUSTODY FORM

1082

Company Name:	Krazan & Associates, Inc.	Date:	12/10/2018
Address:	215 West Dakota Avenue	Contact Name:	Jeff Noël
City, State, Zip:	Clovis, CA 93612	Sampler Name:	Jeff Noël
EHS Client Account #:	5-5650 D	Project #:	024-18067
Phone #:	(559) 348-2200	FAX:	(559) 348-2201
P.O. #:			Gymnasium 1901 Panorama Drive

Sample Number	Sample Date & Time	Asbestos						Lead						Other Metals (Specify metals below)		Particulate:	Total Nuisance (NIOSH 0500) ☐ Respirable (NIOSH 0600) ☐	Comments	
		Bulk ID by PLM	(PCM) Fiber Count	PLM Point Count	PLM Gravimetric	TEM AHERA (Air)	TEM Chatfield (Bulk)	Air	Paint (%)	Paint (PPM)	Paint (mg/cm ²)	Soil	Wipe * (See Note)	TCLP (Pb)	Waste Water				TCLP RCRA 8
1	12/10/18							X	X										
2	12/10/18							X	X										
3	12/10/18							X	X										
4	12/10/18							X	X										
5	12/10/18							X	X										
6	12/10/18							X	X										
7	12/10/18							X	X										
8	12/10/18							X	X										
9	12/10/18							X	X										
10	12/10/18							X	X										
11	12/10/18							X	X										
12	12/10/18							X	X										
13	12/10/18							X	X										
14	12/10/18							X	X										
15	12/10/18							X	X										
16	12/10/18							X	X										
17	12/10/18							X	X										
18	12/10/18							X	X										
19	12/10/18							X	X										
20	12/10/18							X	X										

18-12-01538



Due Date:
12/17/2018
(Monday)
EL

[Handwritten signature]

* Do wipe samples submitted meet ASTM E1792 requirements?

Yes ☐ No ☐

Released By: Jeff Noel	Signature: <i>[Signature]</i>	Date/Time: 12/10/18 1815
Received By: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Date/Time: 12/12/18 1:30

CHAIN OF CUSTODY FORM

1532

Company Name:	Krazan & Associates, Inc.	Date:	12/10/2018
Address:	215 West Dakota Avenue	Contact Name:	Jeff Noël
City, State, Zip:	Clovis, CA 93612	Sampler Name:	Jeff Noël
EHS Client Account #:	5-5650 D	Project #:	024-18067
Phone #:	(559) 348-2200	FAX:	(559) 348-2201
P.O. #:			Gymnasium
			1901 Panorama Drive

[illegible]

* Do wipe samples submitted meet ASTM E1792 requirements?

Yes ☒ No ☐

Released By: Jeff Noel	Signature: 	Date/Time: 12/10/18 1815
Received By: 	Signature: 	Date/Time: 12/12/18 1.30p

Appendix C

Mr. Jeffrey R. Noel
Krazan & Associates, Inc.
215 W. Dakota Ave
Clovis, California 93612





GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

April 26, 2022

Project No. 024-21074

Caryn L. Cowin
AECOM Parsons
Project Management Team
Bakersfield College
Levinson Hall, Room 39
1801 Panorama Drive
Bakersfield, California 93305

RE: Results of Limited Asbestos Analysis and
Limited Lead Analysis
Bakersfield College Combined Gym (28F790)
1801 Panorama Drive
Bakersfield, California

Dear Ms. Cowin:

In accordance with your request, we are providing analytical results of window putty and 12-in by 12-in acoustic ceiling tile and mastic sampled from the above-referenced location on April 19, 2022. The asbestos (ASB) samples were collected and delivered to E.H.S. Laboratories of Richmond, Virginia (EHS) for analysis. The ASB samples were analyzed to detect the presence and concentration of asbestos by EPA Method 600 polarized light microscopy (PLM). The lead samples were also delivered to EHS for analysis. The lead samples were analyzed to detect the presence and concentration of lead by EPA Method SW846 7000B.

Window putty samples were collected from the men's and women's locker rooms and from the windows on the roof of both structures. The acoustic ceiling tile and mastic was sampled from a hallway on the first floor of the gymnasium east of the men's locker room in an area showing water damage.

Asbestos Findings

As noted on the attached analytical reports, analysis of the building material, sample numbers 1-6, revealed no detectable asbestos.

Lead Findings

As noted on the attached analytical report, analysis of the window putty samples, sample numbers 1-4, contained 40, 34, 36, and 45 micrograms per gram (ug/g) lead respectively. These materials can be disposed of at any non-hazardous waste disposal facility that's allowed to accept lead, no further analysis required.

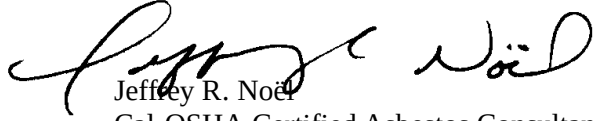
215 West Dakota Avenue • Clovis, California 93612 • (559) 348-2200 • FAX (559) 348-2190
Offices Serving the Western United States

2421074 BC Combined Gym ASB_LBP Sample 4-19-22

ISSUED: OCTOBER 15, 2025

If you have any questions or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Jeffrey R. Noël", is written over the printed name.

Jeffrey R. Noël
Cal-OSHA Certified Asbestos Consultant
No. 00-2828
CA-DPH Certified Lead Inspector/Assessor
No. LRC-00003853

Attachments

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health
Asbestos Certification & Training Unit

1750 Howe Avenue, Suite 460

Sacramento, CA 95825

(916) 574-2993 Office <http://www.dir.ca.gov/dosh/asbestos.html> acru@dir.ca.gov



009132828C

210

August 16, 2021

Jeffrey Ronald Noel
1055 Chennault Avenue
Clovis CA 93611

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please notify our office via U.S. Postal Service or other carrier of any changes in your mailing or work address within 15 days of the change.

Sincerely,

Jeff Ferrell
Senior Safety Engineer

Attachment: Certification Card

cc: File



Renewal – Card Attached (Revised 06/2020)



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH



LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:



Jeffrey Noel

CERTIFICATE TYPE:

Lead Inspector/Assessor
Lead Project Designer
Lead Supervisor

NUMBER:

LRC-00003853
LRC-00003854
LRC-00003852

EXPIRATION DATE:

1/4/2023
1/4/2023
1/4/2023

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clppb or calling (800) 597-LEAD

TABLE I
ASBESTOS ANALYSIS RESULTS
 Bakersfield College Combined Gym (28F790)
 1801 Panorama Drive
 Bakersfield, California
 April 19, 2022 Sampling

Sample No.	Sample Description	Sample Location	Asbestos Content	Approx. Sq. Ft.	Condition / Friability	Notes/ Additional locations
1	Window putty	women's locker room	ND	NC	NA	homogenous throughout
2	Window putty	women's locker room roof	ND	NC	NA	homogenous throughout
3	Window putty	men's locker room roof	ND	NC	NA	homogenous throughout
4	Window putty	men's locker room	ND	NC	NA	homogenous throughout
5	12-in by 12-in Ceiling tile	gym 1st floor hallway	ND	NC	NA	homogenous throughout
6	Ceiling tile mastic	gym 1st floor hallway	ND	NC	NA	homogenous throughout
NA	= Not applicable		F	= Fair condition		
NC	= Not calculated		G	= Good condition		
ND	= None detected		NF	= Non-friable		
Trace	= Less than one percent (<1%) chrysotile asbestos		FR	= Friable		



Environmental Hazards Services, L.L.C.

7469 Whitepine Rd

Richmond, VA 23237

Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 22-04-04534

Client: Krazan & Associates Inc.
215 West Dakota Ave
Clovis, CA 93612

Received Date: 04/21/2022

Analyzed Date: 04/25/2022

Reported Date: 04/25/2022

Project/Test Address: 024-21074; BC Combined Gym 28F790; 1801 Panama Drive

Client Number:

05-5650

Fax Number:

559-348-2201

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
22-04-04534-001	1	--	Gray Granular; Homogeneous	NAD	100% Non-Fibrous
22-04-04534-002	2	--	Gray Granular; Homogeneous	NAD	100% Non-Fibrous
22-04-04534-003	3	--	Gray Granular; Homogeneous	NAD	100% Non-Fibrous
22-04-04534-004	4	--	Gray Granular; Homogeneous	NAD	100% Non-Fibrous
22-04-04534-005	5	--	Brown Fibrous; White Paint-Like; Inhomogeneous	NAD	99% Cellulose 1% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 05-5650

Report Number: 22-04-04534

Project/Test Address: 024-21074; BC Combined Gym 28F790;
1801 Panama Drive

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
22-04-04534-006	6	--	Brown Brittle Adhesive; Homogeneous	NAD	3% Cellulose 97% Non-Fibrous

QC Sample: 41-M22019-2

QC Blank: SRM 1866 Fiberglass

Reporting Limit: 1% Asbestos

Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020

Analyst: Kathy Fletcher

Reviewed By Authorized Signatory:



Melissa Kanode

QA/QC Clerk

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. California Certification #2319 NY ELAP #11714 NVLAP #101882-0 VELAP 460172. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND: NAD = no asbestos detected

EPA 600 PLM ASBESTOS SAMPLE CHAIN OF CUSTODY

Page 1 of 1

TURNAROUND TIME: Same Day / 1-DAY / 2-DAY / 3-DAY

Client Name: Krazan & Associates, Inc.	Contact: Jeff Noël	Phone: (559) 348-2200	Fax: (559) 348-2201
Address: 215 West Dakota Avenue	City: Clovis	State: California	Zip: 93612

PROJECT NAME: BC Combined Gym (28F790) PROJECT ID #: 024-21074 DATE SAMPLES TAKEN: 4/19/2022

SAMPLES REC'D (#): _____ DATE REC'D: _____ CONDITION: _____ SAMPLES ACCEPTED (Y , N): _____ IF NO, WHY? _____

[illegible]

ENVIRONMENTAL HAZARD SERVICES, L.L.C.
7469 WHITE PINE ROAD
RICHMOND, VA 23237
PHONE (804) 275-4788 FAX (804) 275-4907

RELINQUISHED BY: [Signature]

DATE: 4/19/22

RECEIVED AT E.H.S. BY: [Signature]

DATE: 9/21/22 1:14 PM

TABLE II
LEAD SURVEY RESULTS
 Bakersfield College Combined Gym (28F790)
 1801 Panorama Drive
 Bakersfield, California
 April 19, 2022 Sampling

Sample No.	Sample Location	Paint Sampled	Lead content % by weight	Volume est. in sq. ft.	Condition	Notes/ Additional locations
1	women's locker room	window putty	0.0040	NC	good	
2	women's locker room roof	window putty	0.0034	NC	good	
3	men's locker room roof	window putty	0.0036	NC	good	
4	men's locker room	window putty	0.0045	NC	good	

NC = Not calculated



Environmental Hazards Services, L.L.C.
7469 Whitepine Rd
Richmond, VA 23237
Telephone: 800.347.4010

Lead Bulk Analysis Report

Report Number: 22-04-04535

Client: Krazan & Associates Inc.
215 West Dakota Ave
Clovis, CA 93612

Collection Date: 04/19/2022

Received Date: 04/21/2022

Analyzed Date: 04/25/2022

Reported Date: 04/25/2022

Project/Test Address: 024-21074; BC Combined Gym 28F790; 1801 Panorama Drive

Client Number:
05-5650

Laboratory Results

Fax Number:
559-348-2201

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
22-04-04535-001	1	WINDOW PUTTY	40	0.0040	
22-04-04535-002	2	WINDOW PUTTY	34	0.0034	
22-04-04535-003	3	WINDOW PUTTY	36	0.0036	
22-04-04535-004	4	WINDOW PUTTY	45	0.0045	

Environmental Hazards Services, L.L.C

Client Number: 05-5650

Report Number: 22-04-04535

Project/Test Address: 024-21074; BC Combined Gym 28F790; 1801
Panorama Drive

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
----------------------	-------------------------	---------------------	------------------	----------------	-----------------

Method: EPA SW846 7000B

Reviewed By Authorized Signatory: Melissa Kanode

Melissa Kanode
QA/QC Clerk

The Reporting Limit (RL) is 10.0 ug Total Pb. All internal quality control requirements associated with this batch were met, unless otherwise noted.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. If the report does not contain the result for a field blank, it is due to the fact that the client did not include a field blank with their samples. These sample results do not reflect blank correction. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C.

LEGEND	Pb= lead	ug = microgram	ppm = parts per million
	ug/g = micrograms per gram	Wt. = weight	

Date: 4/19/2022

Contact Name: Jeff Noël

Sampler Name: Jeff Noël

Project #: 024-21074

BC Combined Gym (28F790)

1801 Panorama Drive

BC Combined Gym (28F790)
1801 Panorama Drive

22-04-04535



Due Date:
04/26/2022
(Tuesday)
EL

AD

Released By: Jeff Noel	Signature: 	Date/Time: 4/19/22 1600
Received By: Amy Villar	Signature: 	Date/Time: 4/21/22 1:22 PM

**GEOTECHNICAL ENGINEERING/GEOLOGIC
HAZARDS INVESTIGATION
PROPOSED BAKERSFIELD COLLEGE
POOL EQUIPMENT BUILDING
1801 PANORAMA DRIVE
BAKERSFIELD, KERN COUNTY, CALIFORNIA**

**PROJECT NO. 022-24092
SEPTEMBER 18, 2024**

Prepared for:

**MR. CHRISTIAN BELTRAMO
KERN COMMUNITY COLLEGE DISTRICT
2100 CHESTER AVENUE, SUITE 201
BAKERSFIELD, CALIFORNIA 93301**

Prepared by:

**KRAZAN & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING DIVISION
2205 COY AVENUE
BAKERSFIELD, CALIFORNIA 93307
(661) 837-9200**

September 18, 2024

KA Project No. 022-24092

Mr. Christian Beltramo
Kern Community College District
2100 Chester Avenue, Suite 201
Bakersfield, California 93301

**RE: Geotechnical Engineering/Geologic Hazards Investigation
Proposed Bakersfield College Pool Equipment Building
1801 Panorama Drive
Bakersfield, Kern County, California**

Dear Mr. Beltramo:

In accordance with your request, we have completed a Geotechnical Engineering/Geologic Hazards Investigation for the above-referenced site. The results of our investigation are presented in the attached report.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (661) 837-9200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.



David R. Jarosz, II
Managing Engineer
RGE No. 2698 / RCE No. 60185

DRJ:wa

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September 18, 2024

KA Project No. 022-24092

**GEOTECHNICAL ENGINEERING/GEOLOGIC HAZARDS INVESTIGATION
BAKERSFIELD COLLEGE POOL EQUIPMENT BUILDING
1801 PANORAMA DRIVE
BAKERSFIELD, KERN COUNTY, CALIFORNIA**

INTRODUCTION

This report presents the results of our Geotechnical Engineering/Geologic Hazards Investigation for the proposed Bakersfield College pool equipment building, located at 1801 Panorama Drive in Bakersfield, Kern County, California. Discussions regarding site conditions are presented herein, together with conclusions and recommendations pertaining to site preparation, Engineered Fill, utility trench backfill, drainage and landscaping, foundations, concrete floor slabs and exterior flatwork, retaining walls, and soil cement reactivity.

A site plan showing the approximate boring locations is presented following the text of this report. A description of the field investigation, boring logs, and the boring log legend are presented in Appendix A. Appendix A contains a description of the laboratory testing phase of this study, along with the laboratory test results. Appendix B contains a guide to earthwork specifications. When conflicts in the text of the report occur with the general specifications in the appendices, the recommendations in the text of the report have precedence.

PURPOSE AND SCOPE

This investigation was conducted to evaluate the soil and groundwater conditions at the site, to make geotechnical engineering recommendations for use in design of specific construction elements, and to provide criteria for site preparation and Engineered Fill construction.

Our scope of services included the following:

- A site reconnaissance by a member of our engineering staff to evaluate the surface conditions at the project site.
- A review of available data for evaluation of subsurface conditions at the project site.
- Aerial photograph interpretation.
- A search of geologic and seismologic literature pertaining to the area of the site.
- Evaluation of potential geologic hazards.

- A field investigation consisting of drilling 2 borings to depths of approximately 8 to 8½ feet for evaluation of the subsurface conditions at the project site. The borings were terminated due to auger refusal in cobble.
- Performing laboratory tests on representative soil samples obtained from the borings to evaluate the physical and index properties of the subsurface soils.
- Evaluation of the data obtained from the investigation and an engineering analysis to provide recommendations for use in the project design and preparation of construction specifications.
- Preparation of this report summarizing the results, conclusions, recommendations, and findings of our investigation.

PROPOSED CONSTRUCTION

We understand that design of the proposed development is currently underway. Some of the final details pertaining to the structure is unavailable. It is understood the Bakersfield College pool equipment building will be a single-story structure within an approximately 1,600 square foot area. The project area is located just south of the west pool in the south-central portion of the campus. The structure is anticipated to utilize concrete slab-on-grade construction with continuous footings and stemwalls. Footing loads are anticipated to be light to moderate. Modifications to on site landscaping and paved areas are also planned.

In the event these structural or grading details are inconsistent with the final design criteria, the Soils Engineer should be notified so that we may update this writing as applicable.

SITE LOCATION, SITE HISTORY AND SITE DESCRIPTION

The Bakersfield College campus is located within the southern portion of the San Joaquin Valley, within the northeastern portion of the City of Bakersfield, in Kern County, California (see Vicinity Map, Figure 1). The campus is irregular in shape and encompasses approximately 135 acres. Northeast of the project area is comprised of a swimming complex and more than 25 college related buildings; two gymnasiums, a football stadium, and asphaltic concrete parking lots are located to the east/southeast; lawn practice fields, asphaltic concrete parking lots with solar carports, and baseball and softball fields are located to the southwest; and tennis courts, college related buildings, sports fields, and maintenance areas are located to the northwest of the site. Bakersfield College has a street address of 1801 Panorama Drive. The center of the project area is located at longitude 118.972192° West and latitude 35.340700° North. The US Geological Survey, Gosford, California 7.5-minute Quadrangle, dated 1992, indicates that surface elevations in the vicinity of the site are on the order of 695 feet above mean sea level. Two earthen-lined watercourses identified as the Carrier/Eastside Canal and the Kern River are located approximately 0.47 and 0.67 miles northwest of the subject site. Both of these watercourses are located within the bottom of the Kern River Basin at an elevation of approximately 430 feet above mean sea level.

Site history was obtained by reviewing historical aerial photographs taken in 1937, 1942, 1952, 1956, 1968, 1973, 1984, 1992, 2005, 2009, 2012, 2016 and 2020. Review of the 1937 aerial photograph indicates that the site was utilized as grazing land. Seasonal creek channels appeared to be generally running northeast to southwest in the vicinity of the site. No structures were visible within the project area. Numerous cattle grazing trails or farm access roads were visible and oriented in multiple directions across the site. The Kern River Basin was located to the northwest with the remaining land surrounding the site consisting of vacant grazing land.

Review of the 1942 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 1937 aerial photograph.

Review of the 1952 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 1942 aerial photograph, with the appearance of the Carrier/Eastside Canal within the Kern River Basin located to the northwest of the site.

Review of the 1956 aerial photograph indicates that the project site was an asphaltic concrete parking lot with a college campus, swimming complex, tennis courts, and football stadium in the vicinity. Approximately 13 to 15 college campus related buildings were visible mainly to the north/northeast of the project area. A baseball field and asphaltic concrete parking lots were located in the southeast portion of the campus and the site was bound by Mount Vernon Avenue to the east; University Avenue to the south; Haley Street to the west; and Panorama Drive to the north. Multiple new or under construction residential or commercial developments were located to the south, east, and west of the college campus.

Review of the 1968 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 1956 aerial photograph with a set of tennis courts appearing just west of the site.

Review of the 1973 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 1968 aerial photograph.

Review of the 1984 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 1973 aerial photograph, with a softball field appearing west of the tennis courts. A building also appeared to the south of the existing pool area.

Review of the 1992 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 1984 aerial photograph.

Review of the 2005 aerial photograph indicates that the project site was converted from an asphaltic concrete parking lot into a second swimming pool. The immediate project site consisted of a fairly small dirt surface area surrounded by a concrete pool deck, pool pump, concrete sidewalk, metal fence, swimming pools to the north and east, and an asphaltic concrete access road to the south and west.

Review of the 2009 to 2020 aerial photographs indicate that the project site conditions appeared to be relatively similar to that noted in the 2005 aerial photograph.

The conditions shown on the aerial photographs indicate the site predominately consisted of grazing and agricultural land prior to the college construction around 1955. With the exception of several lineal features identified as animal trails, drainage channels, vehicle trails, and streets, no distinct lineaments, tonal variations, or other potential fault related features are shown on or adjacent to the property in the aerial photographs.

The Bakersfield College campus is presently occupied by numerous college related buildings with associated stadiums, gymnasiums, swimming pools, courts, play fields, asphaltic concrete parking areas, and landscaping. Solar arrays are also located in the asphaltic concrete parking lot located in the northeast and southwest portions of the site. Buried utility lines are associated with the existing development. The area of the proposed pool equipment building is presently covered by artificial turf surface and surrounded by concrete sidewalks, a metal fence, pool decking, a score board, pool pump house, and an asphaltic concrete access road. The project area is relatively level with no major changes in grade.

No evidence of surface faulting was observed on the property during our reconnaissance. No evidence of slope failures or instabilities were observed on the subject property or adjoining properties.

GEOLOGIC SETTING

General

The subject property is located along the southeastern margin of the San Joaquin Valley portion of the Great Valley Geomorphic Province of California. The San Joaquin Valley is bordered to the north by the Sacramento Valley portion of the Great Valley, to the east by the Sierra Nevada, to the west by the Coast Ranges, and to the south by the Transverse Ranges. The San Joaquin sedimentary basin is separated from the Sacramento basin to the north by the buried Stockton arch and associated Stockton Fault. The buried Bakersfield arch near the south end of the valley separates the relatively small Maricopa-Tejon subbasin at the south end of the San Joaquin basin from the remainder of the basin. The 450-mile long Great Valley is an asymmetric structural trough that has been filled with a prism of Mesozoic and Cenozoic sediments up to 5 miles thick.

The Sierra Nevada, located east of the San Joaquin Valley, is a gently southwesterly tilted fault block comprised of igneous and metamorphic rocks of pre-Tertiary age that comprise the basement beneath the San Joaquin Valley. The Coast Ranges, located west of the San Joaquin Valley, are comprised of folded and faulted sedimentary and metasedimentary rocks of Mesozoic and Cenozoic age.

The Kern River is the principal river in the area. Alluvial fans formed by this river are the predominant geomorphic features in the Bakersfield area. The area of the subject site is characterized by alluvial fans, and plains, which constitute a belt of coalescing alluvial fans of low relief between the dissected uplands, adjacent to the Sierra Nevada and the valley trough. This has resulted in a rather gentle east to west trending topography in the vicinity of the project site. The site is comprised of alluvial deposits which are mostly cohesionless sands and silts with fair amounts of gravel and cobbles.

Lithology

The thick accumulation of deposits within the San Joaquin Valley range in age from Jurassic to Holocene and include both marine and continental rocks and deposits. The 1984 Geologic Map and Cross Sections of the Southern Margin of the San Joaquin Valley, California (Alan Bartow, 1984) indicates that the near-surface deposits in area of the subject site are identified as Pleistocene age underlying higher terraces and in extensive older alluvial fans (Qoa2) and Plio-Pleistocene to upper Miocene Kern River Formation (QTkr). This older alluvial fan unit is a younger unit than the Kern River unit, but both consist of similar depositional makeup. The older alluvial fan unit is located on the central and northern section of the college campus and covers the entire site area while the Kern River unit is located along the southern portion of the campus and are presented on the Site Geologic Map and Site Map- Figures 2 and 2.1, respectively. The Kern River Formation consists of nonmarine, coarse-grained, pebbly arkosic sandstone and conglomerate, containing thin interbeds of drab-colored siltstone and mudstone; thicker lenticular bodies of siltstone or claystone locally and beds of unsorted to fairly well sorted clay, silt, sand, and gravel. These two formations found across the campus along with many other older sedimentary formations are underlain at depth by basement rock consisting of Pre-Upper Cretaceous granite rock (gr). These observed deposits are consistent with those mapped in the area, and are further described in the Soil Profile and Subsurface Conditions section of this report. A Regional Geologic Map, Regional Geologic Cross-Section, and Local Geologic Map are presented on Figures 4, 5, and 6, respectively.

Structure and Faults

The general area of the subject site is underlain by a homoclinal series of Cenozoic deposits dipping 4 degrees to 6 degrees to the southwest toward the center of the San Joaquin Valley. The contact between the Cenozoic and basement rocks dips nearly 8 degrees southwest, or at a slightly greater inclination than does the on-lapping homoclinal Cenozoic sequence. A slightly elevated basement structure, the Bakersfield Arch is located in the vicinity of the site. This structure is considered to have controlled sedimentation within the far southern portion of the valley.

The south end of the San Joaquin Valley is bordered on the west, south, and east by three major fault systems: the San Andreas, Garlock, and Breckenridge-Kern Canyon faults, respectively. All three of these faults zone appear to be directly related to the uplifting of the mountain ranges in which they are located and the downwarping of the intermediate land mass which constitutes the San Joaquin Valley portion of the Great Valley Geosyncline. The forces which have resulted in the formation of these major fault zones and the continuing movements along them have had great influence locally in the valley floor in the form of folding and faulting of the thick section of sedimentary beds and the underlying basement complex. Deformation of the sedimentary rocks in the area has not been restricted to faulting. Localized folding had also occurred within the geosyncline forming entrapments for oil and gas accumulations.

Adjacent to the San Joaquin Valley, the Sierra Nevada and Coast Ranges are geologically young mountain ranges that possess active and potentially active fault zones. Major active faults and fault zones occur at some distance to the east, west, and south of the project site. The Sierra Nevada and

Owens Valley Fault Zones bound the eastern edge of the Sierra Nevada block approximately 52 and 93 miles east/northeast of the site, respectively. Numerous active faults are present within the San Joaquin Valley, San Emigdio Mountains, and Tehachapi Mountains southeast of the site including the White Wolf, Pleito Thrust and Garlock Faults. These faults are located approximately 19, 27.9, and 37 miles from the site, respectively.

The White Wolf Fault (responsible for a 1952 earthquake that caused extensive damage in the Bakersfield area) is located in the tectonically active Tehachapi Mountains as the southerly terminus of the valley, approximately 19 miles southeast of the subject site.

Numerous active faults are present within the central Coast Ranges west of the site including the San Andreas Fault located approximately 39.5 miles west of the subject site. The fault is considered active and is of primary concern in evaluating seismic hazards throughout western Kern County. The 684-mile-long San Andreas Fault Zone is the principal element of the San Andreas Fault system, a network of faults with predominately dextral strike-slip displacement that collectively accommodates the majority of relative north-south motion between the North America and Pacific plates. The San Andreas Fault zone is the most extensively studied fault in California, and perhaps the world. The San Andreas Fault Zone is considered to be the Holocene and historically active dextral strike-slip fault that extends along most of coastal California from its complex junction with the Mendocino Fault zone on the north, southwest to the northern Transverse Range and inland to the Salton Sea, where a well-defined zone of seismicity transfers the slip to the Imperial fault along a right-releasing step.

Two major surface-rupturing earthquakes have occurred on the San Andreas Fault in historic time: the 1857 Fort Tejon and 1906 San Francisco earthquakes. Additional historic surface rupturing earthquakes include the unnamed 1812 earthquake along the Mojave section and the northern part of the San Bernardino Mountains section, and a large earthquake in the San Francisco Bay area that occurred in 1838 that was probably on the Peninsula section. Historic fault creep rates are as high as 32 millimeters per year for the 82-mile-long creeping section in central California with creep rates gradually tapering to zero at the northwestern and southeastern ends of the section.

One of the nearest seismotectonic sources is the Great Valley Fault Zone (Coast Ranges-Central Valley boundary zone), located approximately 67.5 miles west of the site. The Great Valley Fault zone is the geomorphic boundary of the Coast Ranges and the Central Valley and is underlain by a 300-mile long seismically active fold and thrust belt that has been the source of recent earthquakes, such as the 1983 magnitude 6.5 Coalinga and the 1985 magnitude 6.1 Kettleman Hills earthquakes. Nearly the entire thrust system is concealed or "blind". The basal detachment of this thrust system dips at a shallow angle to the west. East-directed thrusting over ramps in the detachment and west-directed thrusting on backthrusts are responsible for the uplift along the eastern range front of the Coast Ranges. Based on earthquake focal mechanisms, movement on the thrust zone is generally perpendicular to the strike of the geomorphic boundary and trend of the San Andreas Fault system. Shortening along the geomorphic boundary is driven by a component of the Pacific-North American Plate motion that is normal to the plate boundary. The Great Valley Fault Zone is considered a dominant seismic feature with potential for affecting the subject site.

Tensional forces resulting in normal faults are reported to be related to crustal stress relief in the southeast portion of the San Joaquin Valley. Numerous relatively short, normal faults traverse this region. Creep activity is the prominent mode of slip on those faults in this region that are active. These movements have continued on an intermittent basis from the early Miocene to Recent time. This faulting is directly related to and controls the accumulation of oil in several oil fields within the easterly portion of the valley. Most authors agree that current creep movements can be ascribed to subsidence promoted by extensive withdrawal of petroleum, and in some cases, groundwater. Those faults considered to be active in the southern valley are the Kern Front, Premier, New Hope and Pond Faults located approximately 4.4, 7.3, 11.8 and 26.7 miles northwest of the subject site, respectively.

The Kern Front, Premier and New Hope Faults, are actively creeping westerly-dipping normal faults in oil-producing areas. The Buena Vista Fault, also located within a nearby oil producing area, is indicated to be a north-dipping thrust fault. Recent aseismic movement along these pre-existing faults is considered to be related to oil field fluid withdrawal. In addition, numerous unnamed faults are mapped within the oil fields in the vicinity of the site. The majority of the mapped faults associated with the oil fields, do not extend through the Kern River Formation to the surface and have been mapped based on extensive subsurface exploration associated with the oil industry. The Pond Fault is a relatively minor, actively creeping west-dipping to vertical normal fault which is considered to be due to differential subsidence caused by groundwater withdrawal.

Another active fault area to the site is the unnamed ground break of the 1952 earthquake. This fault area consists of a series of active zoned faults trending roughly northwest to southeast approximately 8 miles long with the closest segment being approximately 4.75 miles east of the site. Surface rupture was observed in the eastern section of Bakersfield after the 1952 earthquake.

As noted above, several dominant faults with seismogenic structures are located in the vicinity of the subject site. Table I is a listing of active faults or seismogenic structures within 100 miles of the site, and a Fault Map is provided on Figure 7.

GEOLOGIC HAZARDS

Fault Rupture Hazard Zones in California

The Alquist-Priolo Geologic Hazards Zones Act went into effect in March, 1973. Since that time, the act has been amended 10 times (Hart, 1994). The purpose of the Act, as provided in DMG Special Publication 42 (SP 42), is to prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture." The act was renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994, and at that time, the originally designated "Special Studies Zones" was renamed the "Earthquake Fault Zones."

The subject site is located on the Oil Center Fault Rupture Hazard Zones Map. However, the site is not within a Fault-Rupture Hazard Zone. The two closest zoned faults to the site are the Kern Front Fault (located approximately 4.4 miles northeast) and portions of the unnamed ground break of the 1952 earthquake (located approximately 4.75 miles east of the subject site).

Seismic Hazard Zones in California

In 1990, the California State Legislature passed the Seismic Hazard Mapping Act to protect public safety from the effects of strong shaking, liquefaction, landslides, or other ground failure, and other hazards caused by earthquakes. The Act requires that the State Geologist delineate various seismic hazards zones on Seismic Hazards Zones Maps. Specifically, the maps identify areas where soil liquefaction and earthquake-induced landslides are most likely to occur. A site-specific geotechnical evaluation is required prior to permitting most urban developments within the mapped zones. The Act also requires sellers of real property within the zones to disclose this fact to potential buyers. The area of the subject site is not included on any of the maps released to date. The subject site is located on the Kern County Seismic Hazard Atlas, for the Oil Center Quadrangle, dated November 1975. The site is not located within an identified seismic hazard zone.

Historic Seismicity/Earthquake Epicenter Distribution

The Bakersfield area has historically experienced a low to moderate degree of seismicity. A listing of historic earthquakes with magnitudes greater than 4.0 within approximately 50 miles (80 kilometers) of the subject site was obtained from the comprehensive California Geological Survey computerized earthquake catalog for the State of California, the Townley and Allen (1939) catalog and the U.S. Geological Survey Earthquake Data Base System. In addition, a listing was obtained for all historic earthquakes with magnitudes greater than 5.0 within approximately 100 miles of the site. The listings include the date, time, location, depth, magnitude, and intensity all recorded events within the search radius between 1800 and 2023. A review of the literature for pre-1900 earthquakes (Toppozada, 1991) does not reveal any significant recorded seismic events in the vicinity of the subject site prior to the period covered by the above listing.

The historic earthquake listings are included in Appendix D. A plot of epicenters associated with historic earthquakes in the region of the site with magnitudes greater than 5 is shown on Figure 8, Epicenter Map. The earthquake data indicates that 326 events with magnitudes greater than 4.0 occurred within 50 miles of the subject site between 1800 and 2023. Forty of the listed events occurred within 20 miles of the site. The data indicates that 144 events exceeded magnitudes 5.0 within 100 miles of the subject site. The nearest listed event occurred approximately 3.9 miles of the site in 1954 with an estimated magnitude of 4.0. Forty-one of the listed earthquakes with magnitudes greater than 5.0 occurred within 50 miles of the site. Numerous earthquakes are listed with magnitudes between 5.0 and 6.0 beyond about 30 miles of the site. Eight events were recorded with magnitudes greater than 6.0 within 50 miles of the site. The largest magnitude found in the search radius was 7.9 occurring January 9, 1857.

The geologic literature indicates that groundshaking of VIII intensity (Modified Mercalli Scale) was felt in Bakersfield from the 1857 Fort Tejon Earthquake and the 1952 Arvin-Tehachapi Earthquake. These are the largest known earthquake events to have affected the Bakersfield area. The most recent earthquake significant to the site area was the seismic event which occurred on July 21, 1952. A significant number of the listed historic earthquakes occurred in 1952 and are considered related to the Arvin-Tehachapi earthquake of July 21, 1952. This magnitude 7.7 event affected all of Kern County as

well as parts of Los Angeles and Santa Barbara Counties. The earthquake took place near Wheeler Ridge on the White Wolf Fault, located approximately 4.75 miles east of the subject site. Vertical displacements of as much as three feet occurred at the fault line. Destruction in the communities of Arvin and Tehachapi was extensive; the quake caused numerous landslides and damaged highways, bridges, and railroads. Damage to Bakersfield from the main shock was slight, however, on July 29 and August 5, 1952, aftershocks generated just east of Bakersfield produced a great deal of damage to older buildings. Estimated average value of the maximum bedrock accelerations from the 1952 events are about 0.14 gravity (g) at the subject site.

Geologic Subgrade

Information obtained from the geologic literature, as well as data from the above-described site exploration, indicate the general soil profile at the site consists predominately of medium dense to very dense silty sands and clayey sands with gravels. The Pleistocene age older alluvial fans (Qoa2) and Pleistocene to Miocene Kern River Formation nonmarine, coarse-grained pebbly arkosic sandstone and conglomerate deposits (QTkr) are found at the surface across the college campus property. According to the cross sections by Bartow, 1984, the Kern River Formation is approximately 1,500 to 1,700-foot thick in the project vicinity and is underlain by multiple other older sedimentary formations. These other primarily sedimentary formations extend down more than 3,500 feet in the project area before granitic basement rock is encountered.

Assuming that any loose surface soil and fill materials on the site are removed and recompact as recommended in our Geotechnical Engineering Investigation, the geologic subgrade of the site can be conservatively approximated as “stiff soil”. A Joyner-Boore Class C subgrade classification is considered appropriate for the soil profile and corresponds with a National Earthquake Hazard Reduction Program (NEHRP) (BSSC, 1994) Site Class D. The site class definition from the 2022 California Building Code that is most consistent with the site conditions is Site Class D.

Soil Liquefaction

Soil liquefaction is a state of soil particles suspension caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs in soils such as sand in which the strength is purely friction. However, liquefaction has occurred in soils other than clean sand. Liquefaction usually occurs under vibratory conditions such as those induced by seismic event.

To evaluate the liquefaction potential of the site, the following items were evaluated:

- 1) Groundwater depth;
- 2) Soil type;
- 3) Relative density;
- 4) Initial confining pressure;

5) Intensity and duration of groundshaking.

The soils encountered within the project site predominately consist of medium dense to very dense silty sand and clayey sand with varying amounts of gravels and trace cobbles. Groundwater was not encountered within the borings advanced during subsurface exploration. According to the 1950 water reading from well site code 354002N1189888W001, available groundwater data indicates that groundwater depth has been as shallow as 186 feet within approximately 1.0 mile southwest of the site.

The potential for soil liquefaction during a seismic event was evaluated using the LIQUEFYPRO computer program (Version 5.8h) developed by CivilTech Software. For the analysis, a maximum earthquake magnitude of 6.3 was used. A peak horizontal ground surface acceleration of 0.473g was considered conservative and appropriate for the liquefaction analysis. A groundwater depth of 186 feet was used for the analysis. The analysis indicates that the total and differential seismic induced settlement is not anticipated to exceed ¼ inch, respectively. The differential settlement is estimated over a horizontal distance of 100 feet. Based on the depth to groundwater, it is not anticipated that liquefaction will have a significant effect on the proposed development. Accordingly, the liquefaction potential at the site is considered low and measures to mitigate liquefaction potential are not recommended.

Seismic Settlement

One of the most common phenomena during seismic shaking accompanying any earthquake is the induced settlement of loose unconsolidated soils. The estimated seismic settlement was determined at the site using the settlement analysis method by Tokimatsu/Seed, Stark/Olsen (1987). The results of the settlement analysis are included as follows:

Location	Seismic Settlement (inches)				
	Saturated Settlement	Unsaturated Settlement	Total Settlement	Range of Differential Settlement	Design for Differential Settlement
B-1	0.00	0.05	0.05	0.026 to 0.034	¼ Inch in 100 Feet

The above settlement values were determined at a specific boring location. The consolidated settlement (under static load of specific structures) and differential settlement (per specified length in building area) are indicated in the Foundations section of this report. However, the project's Structural Engineer should consider the estimated settlements when designing the foundations for the proposed structures.

The native soils within the project site are conducive to hydrocollapse. Any loose fill material at the site could also be vulnerable to hydrocollapse. However, the proposed structures are planned to be supported on engineered fill. Therefore, the structures will not be vulnerable to hydrocollapse. In addition, this hazard can be mitigated by following the design and construction recommendations of current and future Geotechnical Engineering Investigations (over-excavation and rework of any loose soils and/or uncertified fill materials).

The potential for lateral spreading was evaluated using the “Revised Multilinear Regression Equations for Predication of Lateral Spread Displacement” by Youd, Hansen, Corbett and Bartlett (2002). Based on a lack of shallow liquefiable soils within the subject site, distance of proposed structures from the Carrier Canal and Kern River, and a lack of saturated cohesionless sediments with $(N1)_{60}$ less than 13, the site is not likely subject to lateral spreading hazards.

Subsidence Due to Fluid Withdrawal

Portions of the San Joaquin Valley have been subject to land subsidence due to fluid withdrawal (groundwater and petroleum). However, the area of the subject site is not known to be subject to significant subsidence hazards.

Expansive Soils

The surface and near-surface soils observed on the site surface consist of silty sands and clayey sands with gravels. These materials are considered to have a low expansion potential.

Inundation Hazards

A review of Federal Emergency Management Agency (FEMA) Flood Insurance Mapping for the area of the subject site (Community Panel Number 06029C1840E, dated September 26, 2008, indicates that the subject site is within “Zone X”, “Areas determined to be outside the 0.2% annual chance floodplain.” Portions of the very southeast corner of the college property in the asphaltic concrete parking lot and along University Avenue show that a 0.2% annual chance of flood is likely.

A review of the Army Corps of Engineers Dam Inundation Mapping for the area of the subject site indicates that the subject site is not within an “Inundation Area” should a failure occur at the Isabella Dam-Lake Isabella, located 32 miles northeast of the project site.

Tsunamis and Seiches

A tsunami is a series of ocean waves generated in the ocean by an impulsive disturbance. Due to the inland location of the subject site, tsunamis are not considered a threat to the site. Seiches are standing waves in a body of water such as a lake or reservoir. Because such a body of water is not located near the site, seiches are not anticipated to affect the subject site.

Slope Stability and Potential for Slope Failure

Due to the generally flat-lying nature of the site and immediately surrounding areas, as well as the plan to grade a relatively level site, problems from landslides are not anticipated to affect this site.

Volcanic Hazards

The subject site is not within an area known to be affected by volcanic hazards (Miller, 1989, USGS Bulletin, 1847).

County Seismic Safety Element

Documentation and mapping included in the Health and Safety Element of the Kern County General Plan, dated March 2007, and the City of Bakersfield General Plan, dated December 2007, were reviewed. The seismic information contained within the Safety Elements is somewhat dated and or generalized and is superseded by more recent information and analyses described herein. The referenced documents generally indicate that the site area is subject to relatively low to moderate seismicity and related hazards.

FIELD AND LABORATORY INVESTIGATIONS

A subsurface soil investigation consisting of exploratory drilling was performed at the site on July 24, 2024. Subsurface soil conditions were explored by drilling 2 borings to depths of approximately 8 to 8½ feet below existing site grade, using a truck-mounted drill rig. The borings were terminated due to refusal in gravels and cobbles. The approximate boring sample locations are shown on the site geologic map, Figure No. 2. During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency and to obtain information regarding the engineering properties of the subsoils. Soil samples were retained for laboratory testing. The soils encountered were continuously examined and visually classified in accordance with the Unified Soil Classification System. A site geologic cross section based on the exploratory drilling data is provided on Figure No. 3.

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory testing program was formulated with emphasis on the evaluation of natural moisture, density, gradation, shear strength, consolidation potential, expansion potential and moisture density relationships of the materials encountered. In addition, chemical tests were performed to evaluate the soil cement reactivity. Details of the laboratory test program and results of the laboratory tests are summarized in Appendix A. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

SOIL PROFILE AND SUBSURFACE CONDITIONS

Based on our findings, the subsurface conditions encountered appear typical of those found in the geologic region of the site. In general, the upper soils beneath the artificial turf consisted of approximately 6 to 12 inches of crushed or decomposed granite rock fill.

Below the artificial turf and fill material, approximately 2 to 3 feet of medium dense to very dense silty sand and clayey sand with gravel and cobble was encountered. Field and laboratory tests suggest that these soils are moderately strong and moderately compressible. Penetration resistance ranged from 20 blows per foot to greater than 50 blows per 6 inches. Dry densities ranged from 120 to 124 pcf. A representative soil sample consolidated approximately 5½ percent under a 2 ksf load when saturated. A representative soil sample had an angle of internal friction of 44 degrees. A representative soil sample had a fines content of 15 percent.

Below 3 to 4 feet, layers of predominately medium dense silty sand and clayey sand with gravel and cobble were encountered. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance ranged from 20 to 30 blows per foot. Dry densities ranged from 114 to 122 pcf. A representative soil sample consolidated approximately 3½ percent under a 2 ksf load when saturated. A representative soil sample had a fines content of 28 percent. A representative sample of the clayey soil had an expansion index of 24. These soils had similar strength characteristics as the upper soils and extended to the termination depth of our borings.

For additional information about the soils encountered, please refer to the boring logs in Appendix A.

GROUNDWATER

Test boring locations were checked for the presence of groundwater during and immediately following the drilling operations. Free groundwater was not encountered within the depths explored. Review of the Department of Water Resources groundwater level reading from well site code 354002N1189888W001 indicates that historic high groundwater within the project site was approximately 186 feet below site grade during a 1950 reading. Groundwater information was obtained from 1 groundwater well located 1.0 mile southwest of the subject site.

It should be recognized that water table elevations may fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use and climatic conditions, as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our field and laboratory investigations, along with previous geotechnical experience in the project area, the following is a summary of our evaluations, conclusions, and recommendations.

Administrative Summary

In brief, the subject site and soil conditions, with the exception of the fill material, expansion potential of the clayey soils, moderately compressible upper native soils, and existing development, appear to be conducive to the development of the project. The surface soils have a loose consistency. These soils are disturbed, have low strength characteristics and are highly compressible when saturated. Accordingly, it is recommended that the surface soils be recompacted. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation.

Approximately 6 to 12 inches of fill material was encountered at the site. The fill material predominately consisted of crushed granite/decomposed granite. The thickness and extent of fill material was determined based on limited test borings and visual observation. Thicker fill may be present at the site. Limited testing was performed on the fill soils during the time of our field and laboratory investigations. The limited testing indicates that the fill soils ranged from loosely placed to

compacted. It is recommended fill soils that have not been properly compacted and certified be excavated and stockpiled so that the native soils can be prepared properly. Prior to fill placement, Krazan & Associates, Inc. should inspect the bottom of the excavation to verify no additional removal will be required.

The site consists of an open, artificial turf surface area located on the south portion of the Bakersfield College swimming complex. Associated with this development are buried structures, such as utility lines and landscape irrigation lines that may extend into the project site. Any buried structures, including utilities or loosely backfilled excavations, encountered during construction should be properly removed and the resulting excavations backfilled. It is suspected that demolition activities of the existing structures will disturb the upper soils. After demolition activities, it is recommended that these disturbed soils be removed and/or recompacted.

In order to provide uniform support and reduce the potential for differential settlement, it is recommended that following stripping, fill removal operations, and demolition activities, the upper 36 inches of native subgrade or to a depth of at least 24 inches below the bottom of foundations, whichever is deeper, be excavated within the proposed project area, worked until uniform and free from large clods, moisture-conditioned to a minimum of 2 percent above optimum moisture content, and compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Except where constrained by existing structures, the over excavation should extend to a minimum of 5 feet beyond proposed footing lines. For footings or piers that extend to a minimum depth of 6 feet below finished pad grade, the footings or piers can be supported on undisturbed native soils. Prior to backfilling, the subgrade should be proofrolled and observed by Krazan & Associates, Inc. to verify stability. Soft or pliant areas should be excavated to firm native ground. The resulting excavation should be backfilled with Engineered Fill, compacted to a minimum of 90 percent of maximum density based on ASTM Test Method 1557.

Clayey soils were encountered within the site. These clayey soils have a low shrink/swell potential. The estimated swell pressure of the clayey material may cause movement affecting slabs and brittle exterior finishes. To reduce the potential soil movement, it is recommended that the upper 12 inches of soil within slab-on-grade and exterior flatwork areas consist of non-expansive fill. The fill material should be a well-graded silty sand or sandy silt soil. A clean sand or very sandy soil is not acceptable for this purpose. A sandy soil will allow the surface water to drain into the expansive clayey soils below, which may result in swelling. The replacement soil and/or the upper 12 inches of Imported Fill soils should meet the specifications as described under the subheading Engineered Fill. Except where constrained by existing structures, the replacement soils should extend 5 feet beyond the perimeter of the building. The non-expansive replacement soil should be compacted to at least 90 percent relative compaction based on ASTM Test Method D1557. The exposed native soils in the excavation should not be allowed to dry out and should be kept continuously moist prior to backfilling. In addition, it is recommended that slabs-on-grade continuous footings and slabs be nominally reinforced to reduce cracking and vertical off-set.

As an alternative to the use of non-expansive soils, the upper 12 inches of soil supporting the slab areas can consist of lime-treated clayey soils. The lime-treated soils should be recompact to a minimum of 90 percent of maximum density. Preliminary application rate of lime should be 5 percent by dry weight. The lime material should be calcium oxide, commonly known as quick-lime. The clayey soils should be above optimum moisture during the mixing operations.

Sandy, gravelly, and cobbly soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy, gravelly, and cobbly soils.

After completion of the recommended site preparation, the site should be suitable for shallow footing support. The proposed structure footings may be designed utilizing an allowable bearing pressure of 2,500 psf for dead-plus-live loads. Footings should have a minimum embedment of 18 inches.

Groundwater Influence on Structures/Construction

Groundwater was not encountered during our investigation. Based on our findings and historical records, it is not anticipated that groundwater will not rise within the zone of structural influence or affect the construction of foundations for the project. However, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, "pump," or not respond to densification techniques. Typical remedial measures include: discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

Site Preparation

General site clearing should include removal of vegetation; artificial turf; existing utilities; structures including foundations; basement walls and floors; existing stockpiled soil; trees and associated root systems; rubble; rubbish; and any loose and/or saturated materials. Site stripping should extend to a minimum depth of 2 to 4 inches, or until all organics in excess of 3 percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for reuse as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.

Approximately 6 to 12 inches of fill material was encountered at the site. The fill material predominately consisted of crushed granite/decomposed granite. The thickness and extent of fill material was determined based on limited test borings and visual observation. Thicker fill may be present at the site. Limited testing was performed on the fill soils during the time of our field and laboratory investigations. The limited testing indicates that the fill soils ranged from loosely placed to compacted. Fill soils that have not been properly compacted and certified should be excavated and stockpiled so that the native soils can be prepared properly. Prior to fill placement, Krazan & Associates, Inc. should inspect the bottom of the excavation to verify no additional removal will be required.

Existing structures are located in the project site vicinity. Associated with these developments are buried structures, such as utilities that may extend into the site. Any surface or buried structures encountered during construction should be properly removed and/or relocated. It is suspected that demolition activities of the existing structures will disturb the upper soils. Areas disturbed by demolition activities should be excavated to firm native ground. The resulting excavations should be backfilled with Engineered Fill. It is understood a basement will be abandoned and backfilled as part of construction. It is recommended at a minimum the floor slab have 12-inch by 12-inch concrete sections removed at a spacing of 6 feet on center each way to allow for drainage of water that gets into the backfill. Excavations, depressions, or soft and pliant areas extending below planned, finished subgrade levels should be cleaned to firm, undisturbed soil and backfilled with Engineered Fill. In general, any septic tanks, debris pits, cesspools, or similar structures should be entirely removed. Oil wells should be abandoned in accordance with state and federal guidelines. Concrete footings and basement walls should be removed to an equivalent depth of at least 3 feet below proposed footing elevations or as recommended by the Soils Engineer. Any other buried structures should be removed in accordance with the recommendations of the Soils Engineer. The resulting excavations should be backfilled with Engineered Fill.

In order to provide uniform support and reduce the potential for differential settlement, it is recommended that following stripping, fill removal operations, and demolition activities, the upper 36 inches of native subgrade or to a depth of at least 24 inches below the bottom of foundations, whichever is deeper, be excavated within the proposed project area, worked until uniform and free from large clods, moisture-conditioned to a minimum of 2 percent above optimum moisture content, and compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Except where constrained by existing structures, the over excavation should extend to a minimum of 5 feet beyond proposed footing lines. For footings or piers that extend to a minimum depth of 6 feet below finished pad grade, the footings or piers can be supported on undisturbed native soils. Prior to backfilling, the subgrade should be proofrolled and observed by Krazan & Associates, Inc. to verify stability. Soft or pliant areas should be excavated to firm native ground. The resulting excavation should be backfilled with Engineered Fill, compacted to a minimum of 90 percent of maximum density based on ASTM Test Method 1557.

Following stripping, fill removal, and demolition activities, the exposed subgrade within the planned exterior flatwork and pavement areas should be excavated/scarified to a minimum depth of 12 inches, worked until uniform and free from large clods, moisture-conditioned to a minimum of 2 percent above optimum moisture content and compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Soft or pliant areas should be excavated to firm native ground. If not constrained by existing structures, limits of recompaction should extend a minimum of 2 feet beyond flatwork and pavements.

It is recommended that the upper 12 inches of soil within proposed slab-on-grade and exterior flatwork areas consist of non-expansive or lime-treated Engineered Fill. The intent is to support slab-on-grade and exterior flatwork areas with 12 inches of non-expansive or lime-treated fill. The fill placement serves two functions: 1) it provides a uniform amount of soil, which will more evenly distribute the soil pressures and 2) it reduces moisture content fluctuation in the clayey material beneath the building area.

The non-expansive fill material should be a well-graded silty sand or sandy silt soil. A clean sand or very sandy soil is not acceptable for this purpose. A sandy soil will allow the surface water to drain into the expansive clayey soil below, which may result in soil swelling. Imported Fill should be approved by the Soils Engineer prior to placement. The fill should be placed as specified as Engineered Fill.

The upper soils, during wet winter months, become very moist due to the absorptive characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils, which may require removal to grade a stable building foundation. Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase should be performed.

A representative of our firm should be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observation is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction and stability of the material. The Soils Engineer may reject any material that does not meet compaction and stability requirements. Further recommendations of this report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in this section and the Engineered Fill section.

Engineered Fill

The on-site, upper native soils are predominately silty sands and clayey sands. These soils are intermixed with varying amounts of gravels and cobbles. Clayey soils with an expansion index of 20 or greater will not be suitable for reuse as non-expansive Engineered Fill. These clayey soils will be suitable for reuse for fill placement within the upper 12 inches of slab-on-grade and exterior flatwork areas, provided they are cleansed of excessive organics, debris, fragments greater than 4 inches in maximum dimension, moisture-conditioned to a minimum of 2 percent above optimum moisture content, and lime treated. The preliminary application rate of lime should be 5 percent by dry weight. The lime material should be calcium oxide, commonly known as quick-lime. The clayey soils should be at or above optimum moisture-condition during mixing operations. Additional testing is recommended to determine the appropriate application rate of lime prior to placement. These clayey soils will be suitable for reuse as General Engineered Fill, provided they are cleansed of excessive organics, debris and moisture-conditioned to at least 2 percent above optimum moisture. The on-site silty sand soils that do not contain clay will be suitable for reuse as non-expansive Engineered Fill, provided they are cleansed of excessive organics, debris and fragments greater than 4 inches in maximum dimension. However, it may be difficult for the grading contractor to separate these materials during grading operations.

The preferred materials specified for Engineered Fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the Contractor, since he has complete control of the project site at that time.

Imported Fill material should be predominately non-expansive granular material with a plasticity index less than 10, an expansion index less than 15, and containing 20 to 50 percent fines. Imported Fill should be free from rocks and clods greater than 4 inches in diameter. All Imported Fill material should be submitted to the Soils Engineer for approval at least 48 hours prior to delivery at the site.

Fill soils should be placed in lifts approximately 6 inches thick, moisture-conditioned as necessary, and compacted to achieve at least 90 percent maximum density as based on ASTM Test Method D1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

Drainage and Landscaping

The ground surface should slope away from building pad and pavement areas toward appropriate drop inlets or other surface drainage devices. In accordance with Section 1804 of the 2022 California Building Code, it is recommended that the ground surface adjacent to foundations be sloped a minimum of 5 percent for a minimum distance of 10 feet away from structures, or to an approved alternative means of drainage conveyance. Swales used for conveyance of drainage and located within 10 feet of foundations should be sloped a minimum of 2 percent. Impervious surfaces, such as pavement and exterior concrete flatwork, within 10 feet of building foundations should be sloped a minimum of 1 percent away from the structure. Drainage gradients should be maintained to carry all surface water to collection facilities and off-site. These grades should be maintained for the life of the project.

Utility Trench Backfill

Utility trenches should be excavated according to accepted engineering practices following OSHA (Occupational Safety and Health Administration) standards by a Contractor experienced in such work. The responsibility for the safety of open trenches should be borne by the Contractor. Traffic and vibration adjacent to trench walls should be minimized; cyclic wetting and drying of excavation side slopes should be avoided. Depending upon the location and depth of some utility trenches, groundwater flow into open excavations could be experienced; especially during or following periods of precipitation.

Sandy, gravelly, and cobbly soils conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy, gravelly, and cobbly soils.

Utility trench backfill placed in or adjacent to buildings and exterior slabs should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. Utility trench backfill placed in pavement areas should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. Pipe bedding should be in accordance with pipe manufacturer's recommendations.

The Contractor is responsible for removing all water-sensitive soils from the trench regardless of the backfill location and compaction requirements. The Contractor should use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction.

Foundations

After completion of the recommended site preparation, the site should be suitable for shallow footing support. The proposed structure may be supported on a shallow foundation system bearing on a minimum of 24 inches of Engineered Fill. For footings or piers that extend to a minimum depth of 6 feet below finished pad grade, the footings or piers can be supported on undisturbed native soils. Spread and continuous footings can be designed for the following maximum allowable soil bearing pressures:

Load	Allowable Loading
Dead Load Only	1,875 psf
Dead-Plus-Live Load	2,500 psf
Total Load, including wind or seismic loads	3,325 psf

The footings should have a minimum depth of 18 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. Footings should have a minimum width of 12 inches, regardless of load. Ultimate design of foundations and reinforcement should be performed by the project Structural Engineer.

The total static settlement is not expected to exceed 1 inch. Differential static settlement should be less than ½ inch. Most of the settlement is expected to occur during construction as the loads are applied. However, additional post-construction settlement may occur if the foundation soils are flooded or saturated. The total seismic-induced settlement is not expected to exceed ¼ inch. Differential settlement caused by a seismic event should be less than ¼ inch. The anticipated differential settlement is estimated over a horizontal distance of 100 feet.

Resistance to lateral footing displacement can be computed using an allowable friction factor of 0.35 acting between the base of foundations and the supporting subgrade. Lateral resistance for footings can alternatively be developed using an allowable equivalent fluid passive pressure of 325 pounds per cubic foot, up to a maximum of 2,600 psf, acting against the appropriate vertical footing faces. The frictional and passive resistance of the soil may be combined without reduction in determining the total lateral resistance. A ½ increase in the above value may be used for short duration, wind, or seismic loads.

Excavation Stability

Temporary excavations planned for the construction of the building and other associated structures may be excavated, according to the accepted engineering practices following Occupational Safety and Health Administration (OSHA) standards by a Contractor experienced in such work. Open, unbraced excavations in undisturbed soils should be made according to the table below.

Recommended Excavation Slopes	
Depth of Excavation (ft)	Slope (Horizontal:Vertical)
	Temporary
0-5	1½:1
5-10	1½:1
10-15	1¾:1
15+	2:1

If, due to space limitation, excavation near existing structures or roads is performed in a vertical position, braced shorings or shields may be used for supporting vertical excavations. Therefore, in order to comply with the local and state safety regulations, a properly designed and installed shoring system would be required to accomplish planned excavation and installation. A specialty Shoring Contractor should be responsible for the design and installation of such a shoring system during construction. The lateral pressures provided below may be used in the design of a braced-type shoring system.

Recommended Lateral Earth Pressure for Braced Shoring	
Depth of Excavation Below Ground Surface (feet)	Lateral Soil Pressure (psf)
0	35 H
0.25 H	35 H
H	35 H
Where H is the total depth of the excavation in feet.	

The foregoing does not include excess hydrostatic pressure or surcharge loading. Fifty percent of any surcharge load, such as construction equipment weight, should be added to the lateral load given above.

Since the Contractor has the ultimate responsibility for excavation stability, he may design a different shoring system for the excavation.

The excavation/shoring recommendations provided herein are based on soil characteristics derived from limited test borings within the site. Variations in soil conditions will likely be encountered during the excavations. Krazan & Associates, Inc. should be afforded the opportunity to provide field review to evaluate the actual conditions and account for field condition variations not otherwise anticipated in the preparation of this recommendation.

Lateral Earth Pressures and Retaining Walls

Walls retaining horizontal backfill and capable of deflecting a minimum of 0.1 percent of its height at the top may be designed using an equivalent fluid active pressure of 40 pounds per square foot per foot of depth. Walls that are incapable of this deflection or walls that are fully constrained against deflection may be designed for an equivalent fluid at-rest pressure of 60 pounds per square foot per foot per depth. Expansive soils should not be used for backfill against walls. The wedge of non-expansive backfill

material should extend from the bottom of each retaining wall outward and upward at a slope of 2:1 (horizontal to vertical) or flatter. The stated lateral earth pressures do not include the effects of hydrostatic water pressures generated by infiltrating surface water that may accumulate behind the retaining walls; or loads imposed by construction equipment, foundations, or roadways.

The 2022 CBC requires determination of dynamic seismic lateral earth pressures on foundation walls and retaining walls supporting more than 6 feet of backfill height due to design earthquake ground motions. The Site Modified Peak Ground Acceleration (PGAM), based on ASCE7-16 and information from the SEAOC and OSHPD Seismic Design Maps website (<https://seismicmaps.org>), is 0.503. We recommend an incremental seismic lateral pressure of 23 pcf be included in the stability analyses for retaining walls supporting more than 6 feet of backfill height. The incremental seismic lateral pressure should be applied in a reverse triangular distribution at the back side of the wall.

Retaining and/or below grade walls should be drained with either perforated pipe encased in free-draining gravel or a prefabricated drainage system. The gravel zone should have a minimum width of 12 inches and should extend upward to within 12 inches of the top of the wall. The upper 12 inches of backfill should consist of native soils, concrete, asphaltic concrete, or other suitable backfill to reduce surface drainage into the wall drain system. The aggregate should conform to Class 2 permeable materials graded in accordance with CalTrans Standard Specifications (2018). Prefabricated drainage systems, such as Miradrain®, Enkadrain®, or an equivalent substitute, are acceptable alternatives in lieu of gravel, provided they are installed in accordance with the manufacturer's recommendations. If a prefabricated drainage system is proposed, our firm should review the system for final acceptance prior to installation.

Drainage pipes should be placed with perforations down and should discharge in a non-erosive manner away from foundations and other improvements. The pipes should be placed no higher than 6 inches above the heel of the wall, in the center line of the drainage blanket and should have a minimum diameter of four inches. Collector pipes may be either slotted or perforated. Slots should be no wider than 1/8 inch in diameter, while perforations should be no more than 1/4 inch in diameter. If retaining walls are less than 6 feet in height, the perforated pipe may be omitted in lieu of weep holes on 4 feet maximum spacing. The weep holes should consist of 4-inch diameter holes (concrete walls) or unmortared head joints (masonry walls) and not be higher than 18 inches above the lowest adjacent grade. Two 8-inch square overlapping patches of geotextile fabric (conforming to CalTrans Standard Specifications for "edge drains") should be affixed to the rear wall opening of each weep hole to retard soil piping.

During grading and backfilling operations adjacent to any walls, heavy equipment should not be allowed to operate within a lateral distance of 5 feet from the wall or within a lateral distance equal to the wall height, whichever is greater, to avoid developing excessive lateral pressures. Within this zone, only hand operated equipment ("whackers," vibratory plates, or pneumatic compactors) should be used to compact the backfill soils.

Seismic Parameters – 2022 California Building Code

The Site Class per Section 1613A of the 2022 California Building Code (2022 CBC) and ASCE 7-16, Chapter 20 is based upon the site soil conditions. It is our opinion that a Site Class D is most consistent with the subject site soil conditions. A site modified peak ground acceleration (PGA_M) of 0.503 may be used for seismic analysis. If the project is being designed based on the 2022 CBC and the exception to Item 1 from Section 11.4.8 given in Supplement 3 of ASCE 7-16 is utilized, the value of S_{M1} (and the resulting values of S_{D1} and T_S) should be increased by 50 percent.

Seismic Item	Value	CBC Reference
Site Class	D	Section 1613A.2.2
Site Coefficient F_a	1.138	Table 1613A.2.3 (1)
S_s	0.905	Section 1613A.2.1
S_{MS}	1.030	Section 1613A.2.3
S_{DS}	0.686	Section 1613A.2.4
Site Coefficient F_v	1.974	Table 1613A.2.3 (2)
S_1	0.326	Section 1613A.2.1
S_{M1}	0.644	Section 1613A.2.3
S_{D1}	0.429	Section 1613A.2.4
T_S	0.625	Section 1613A.2

* Based on Equivalent Lateral Force (ELF) Design Procedure being used.

Soil Cement Reactivity

Excessive sulfate in either the soil or native water may result in an adverse reaction between the cement in concrete (or stucco) and the soil. HUD/FHA and CBC have developed criteria for evaluation of sulfate levels and how they relate to cement reactivity with soil and/or water.

Soil samples were obtained from the site and tested in accordance with State of California Materials Manual Test Designation 417. The sulfate concentrations detected from these soil samples were greater than 150 ppm (201 ppm) and are above the maximum allowable values established by HUD/FHA and CBC. Therefore, it is recommended that a Type II cement be used within the concrete to compensate for sulfate reactivity with the cement. A representative soil sample had a chloride concentration of 27.0 ppm and a pH of 7.6.

Compacted Material Acceptance

Compaction specifications are not the only criteria for acceptance of the site grading or other such activities. However, the compaction test is the most universally recognized test method for assessing the performance of the Grading Contractor. The numerical test results from the compaction test cannot be used to predict the engineering performance of the compacted material. Therefore, the acceptance of compacted materials will also be dependent on the stability of that material. The Soils Engineer has the

option of rejecting any compacted material regardless of the degree of compaction if that material is considered to be unstable or if future instability is suspected. A specific example of rejection of fill material passing the required percent compaction is a fill which has been compacted with an in-situ moisture content significantly less than optimum moisture. This type of dry fill (brittle fill) is susceptible to future settlement if it becomes saturated or flooded.

Testing and Inspection

A representative of Krazan & Associates, Inc., should be present at the site during the earthwork activities to confirm that actual subsurface conditions are consistent with the exploratory fieldwork. This activity is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction testing and stability of the material. This representative can also verify that the intent of these recommendations is incorporated into the project design and construction. Krazan & Associates, Inc., will not be responsible for grades or staking, since this is the responsibility of the Prime Contractor.

LIMITATIONS

Soils Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using the most appropriate and most current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Soils Engineering, physical changes in the site, either due to excavation or fill placement, new agency regulations, or possible changes in the proposed structure after the soils report is completed may require the soils report to be professionally reviewed. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that 2 years be considered a reasonable time for the usefulness of this report.

Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions do not vary significantly from those disclosed during our field investigation. If any variations or undesirable conditions are encountered during construction, the Soils Engineer should be notified so that supplemental recommendations may be made.

The conclusions of this report are based on the information provided regarding the proposed construction. If the proposed construction is relocated or redesigned, the conclusions in this report may not be valid. The Soils Engineer should be notified of any changes so the recommendations may be reviewed and re-evaluated.

This report is a Geotechnical Engineering Investigation with the purpose of evaluating the soil conditions in terms of foundation design. The scope of our services did not include any Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands. Any statements, or absence of statements, in this report or

on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices and a degree of conservatism deemed proper for this project. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (661) 837-9200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.



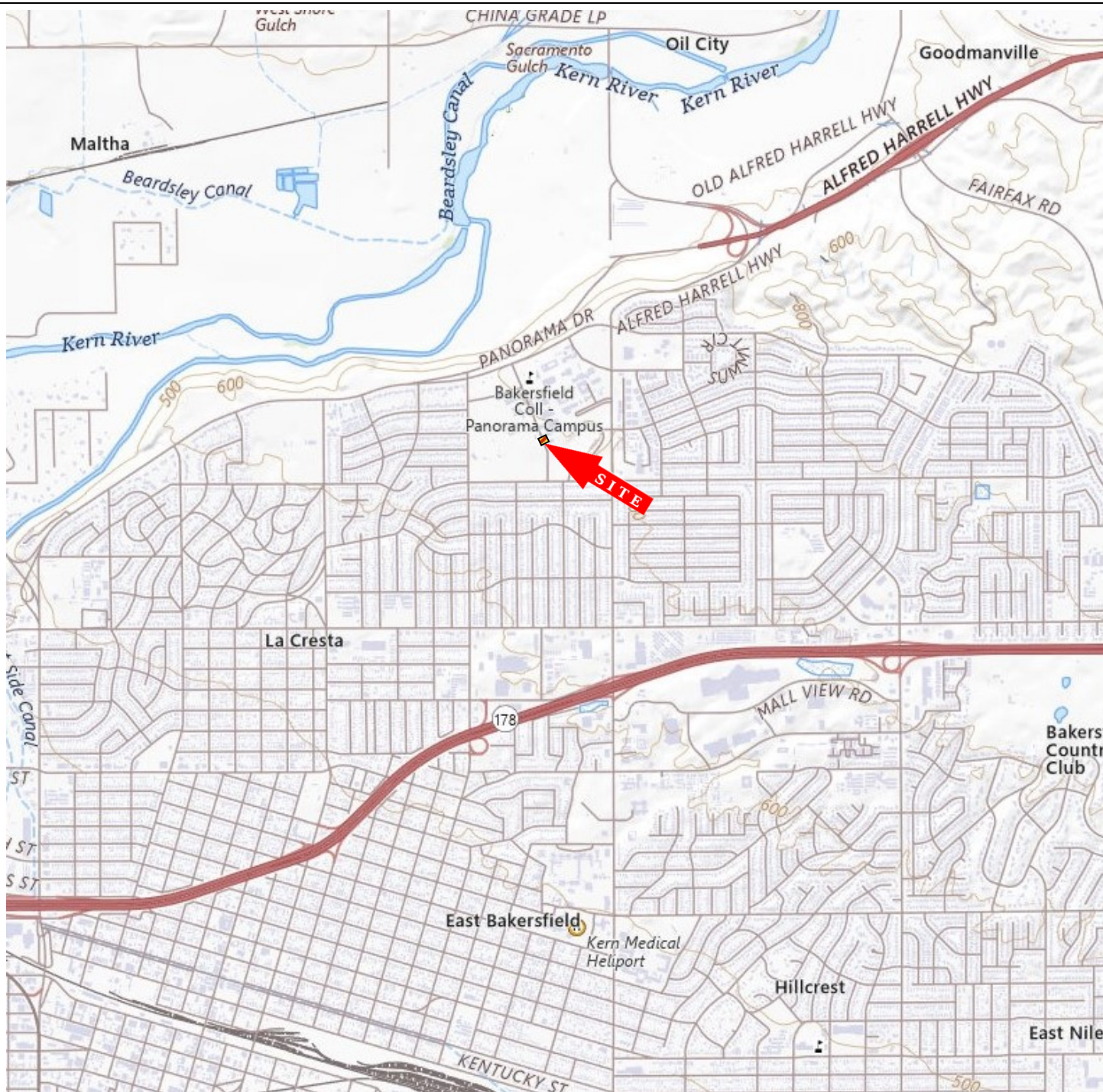
Stephen J. Nelson
Certified Engineering Geologist
CEG No. 2146



David R. Jarosz, II
Managing Engineer
RGE No. 2698/RCE No. 60185

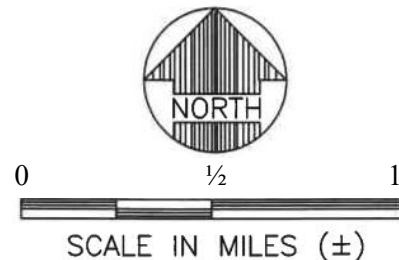


SJN/DRJ:wa



VICINITY MAP

MAP SOURCE:
United States Geological Survey; Topo Zone Maps;
<https://www.topozone.com/California/>

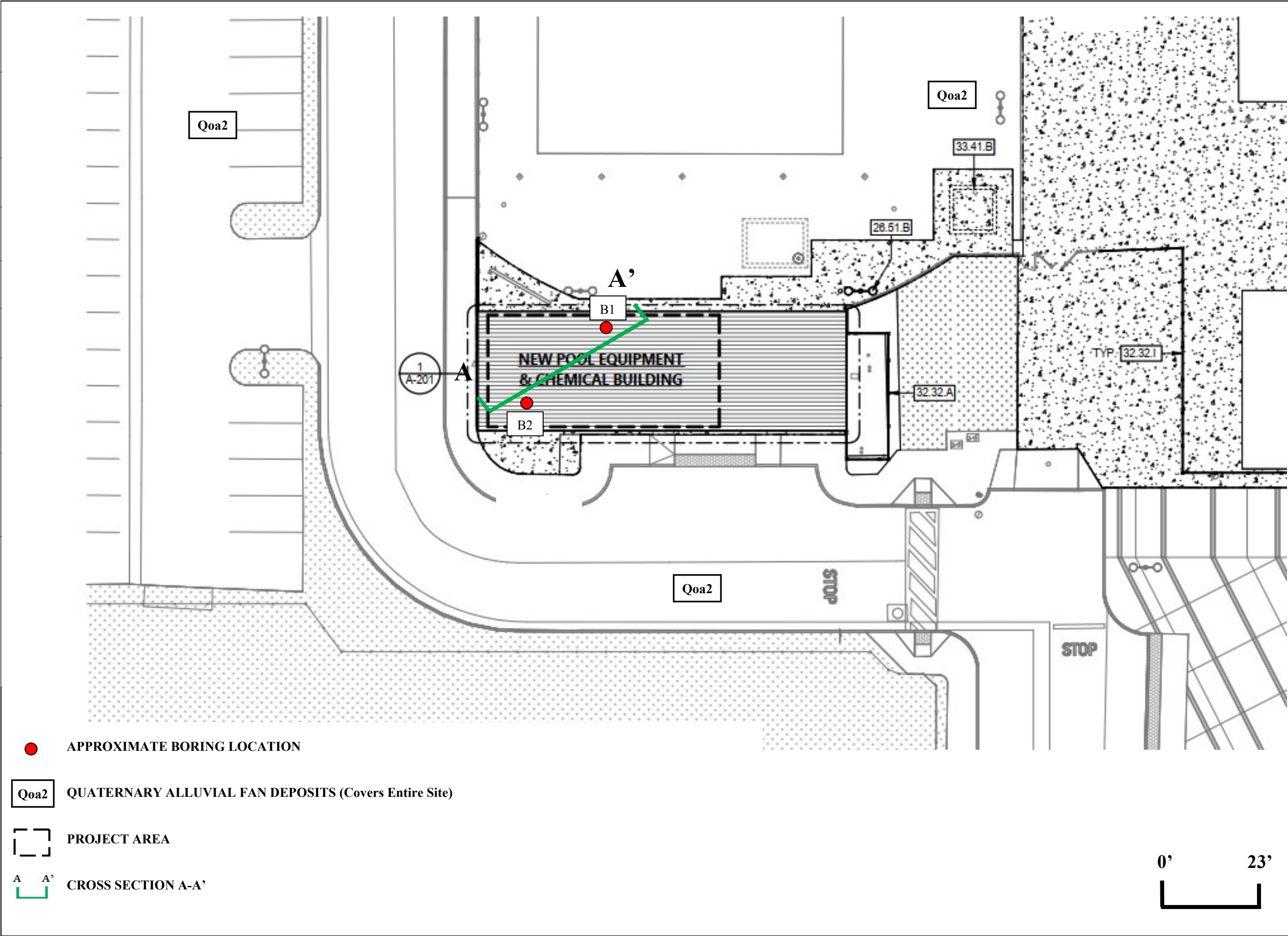


**GEOTECHNICAL ENGINEERING
INVESTIGATION
BAKERSFIELD COLLEGE POOL
EQUIPMENT BUILDING**
1801 Panorama Drive
Bakersfield, California

Scale:
As Shown
Drawn by:
WA
Project No.
022-24092

Date:
September 2024
Approved by:
SN
Figure No.
1

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GEOTECHNICAL ENGINEERING



SITE GEOLOGIC MAP
GEOTECHNICAL ENGINEERING INVESTIGATION BAKERSFIELD COLLEGE POOL EQUIPMENT BUILDING 1801 Panorama Drive Bakersfield, California
Scale: As Shown
Date: September 2024
Project No. 022-24092
Drawn by: WA
Approved by: DJ
Figure No. 2




Qoa2

QUATERNARY OLDER ALLUVIAL FAN DEPOSITS (Covers entire project area)

QTkr

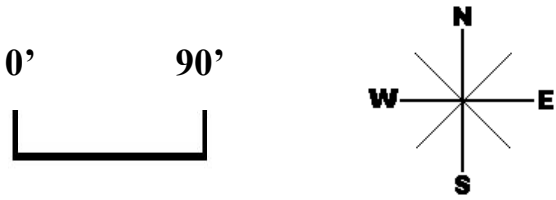
PLIO-PLEISTOCENE TO UPPER MIOCENE KERN RIVER FORMATION



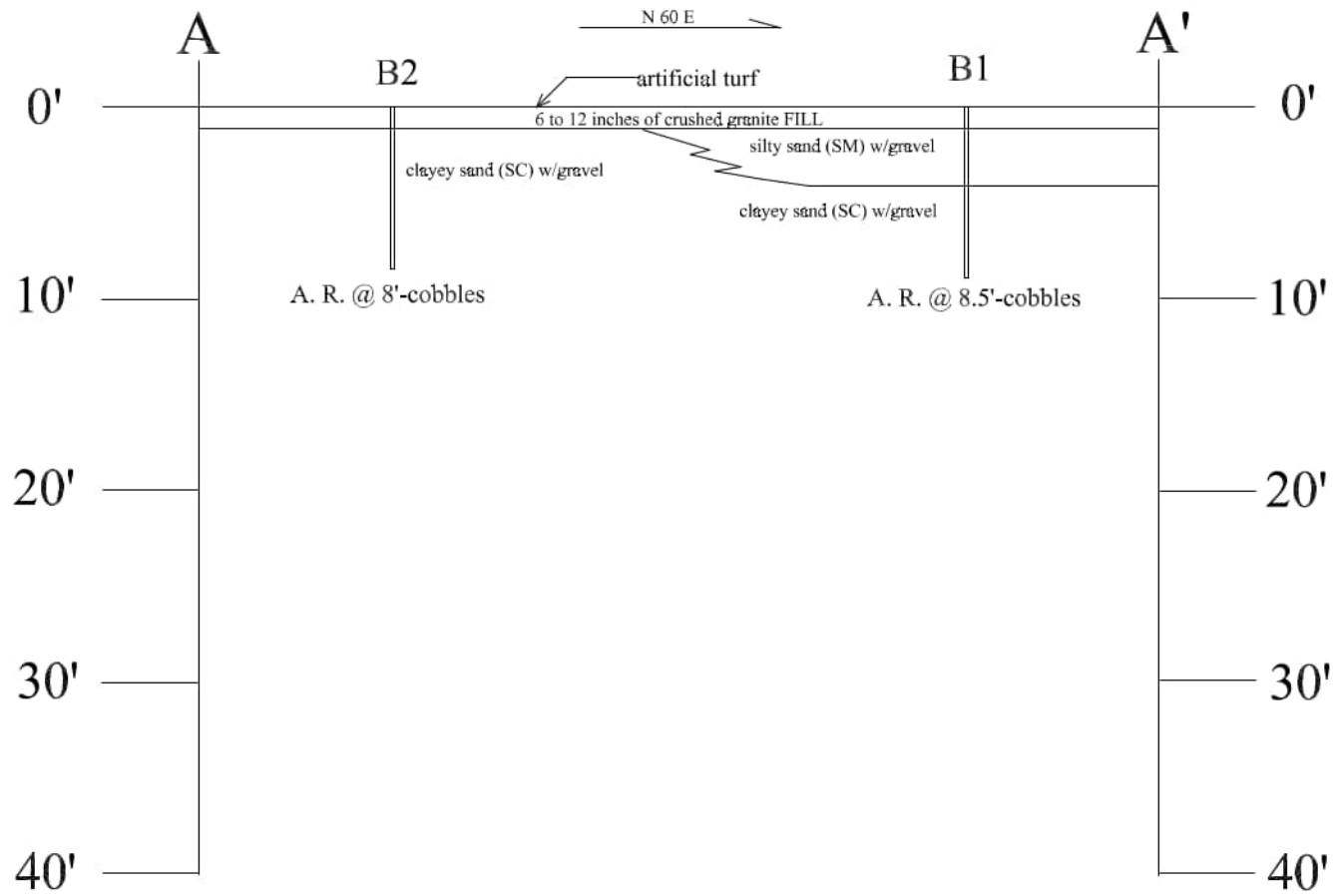
PROJECT AREA



GEOLOGIC CONTACT



SITE MAP GEOTECHNICAL ENGINEERING INVESTIGATION BAKERSFIELD COLLEGE POOL EQUIPMENT BUILDING 1801 Panorama Drive Bakersfield, California	Scale:	As Shown	Date:	September 2024	
	Drawn by:	WA	Approved by:	DJ	
	Project No.	022-24092	Figure No.	2.1	

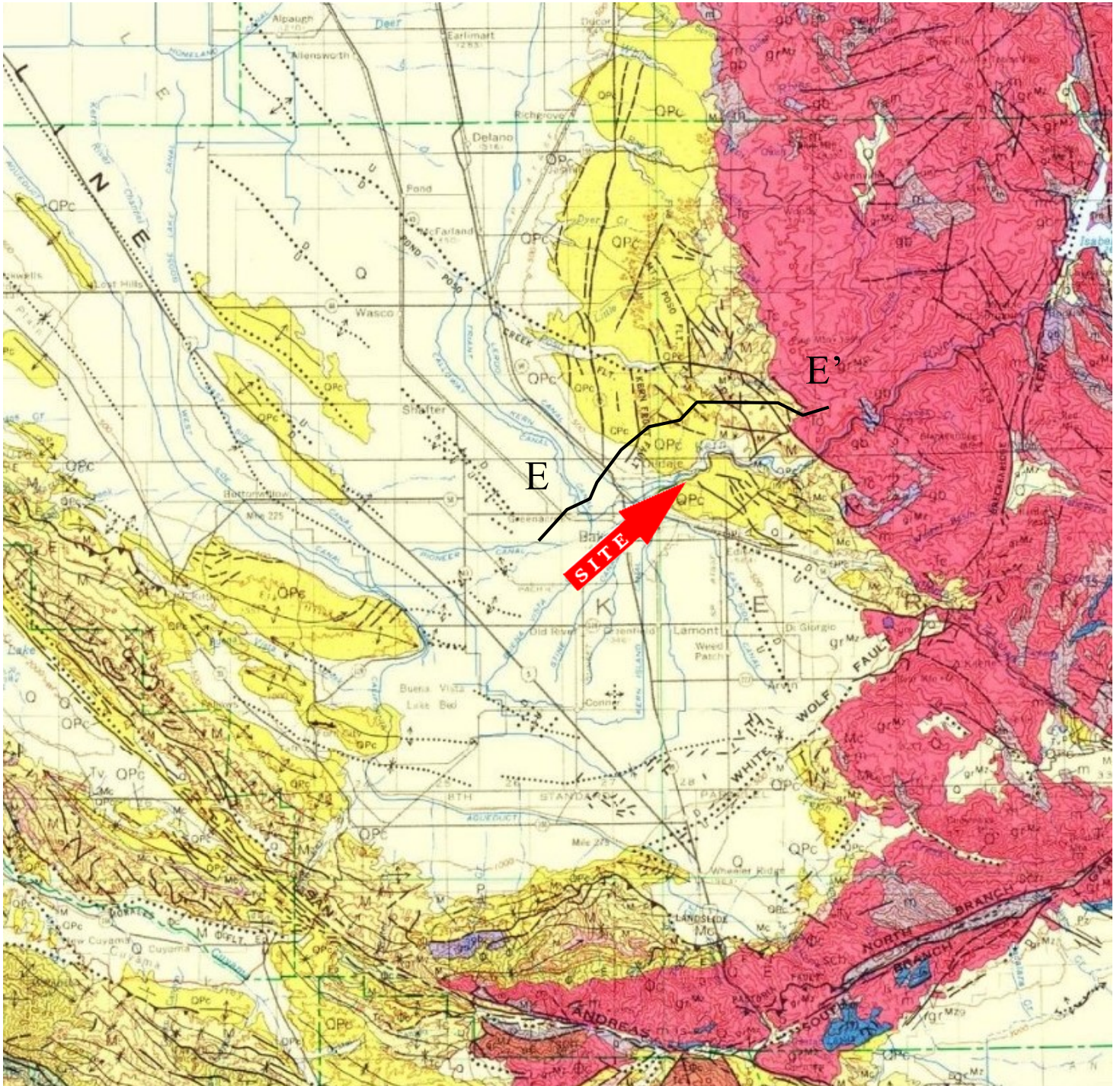


SITE GEOLOGIC CROSS SECTION A—A'



Scale: Vertical and Horizontal the same

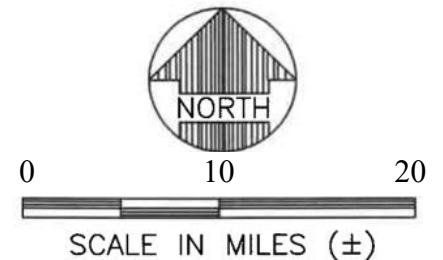
GEOTECHNICAL ENGINEERING INVESTIGATION BAKERSFIELD COLLEGE POOL EQUIPMENT BUILDING 1801 Panorama Drive Bakersfield, California	Scale: As Shown	Date: September 2024	
	Drawn by: WA	Approved by: SN	
	Project No. 022-24092	Figure No. 3	



REGIONAL GEOLOGIC MAP

FROM:
GEOLOGIC MAP OF CALIFORNIA
COMPILATION BY: CHARLES W. JENNINGS
WITH ASSISTANCE FROM R.G. STRAND AND
T.H. ROGERS 1977

E ——— E'
REGIONAL CROSS SECTION

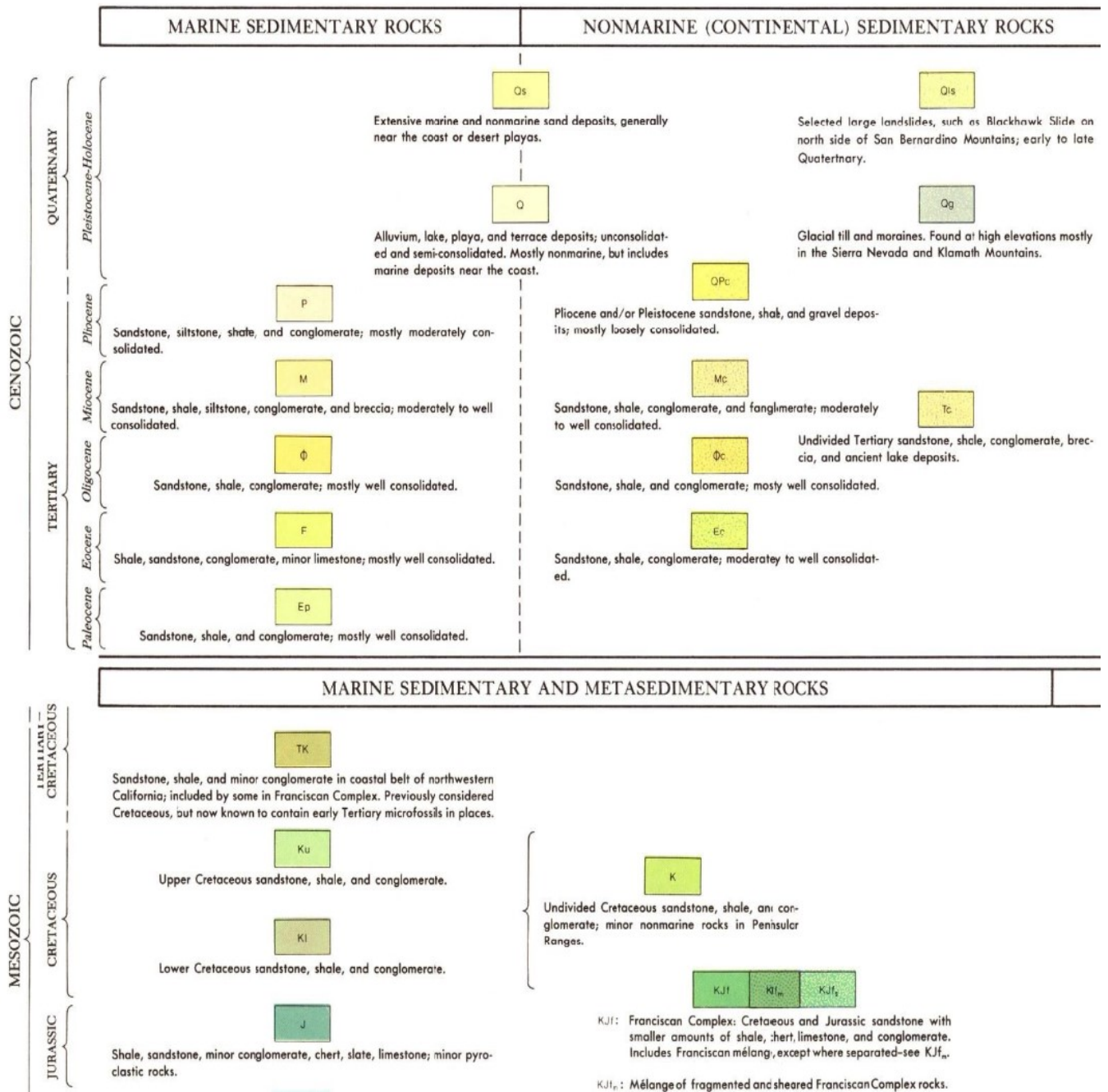


**GEOTECHNICAL ENGINEERING
INVESTIGATION
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EQUIPMENT BUILDING**
1801 Panorama Drive
Bakersfield, California

Scale:
As Shown
Drawn by:
WA
Project No.
022-24092

Date:
September 2024
Approved by:
SN
Figure No.
4

Krazan
GEOTECHNICAL ENGINEERING



REGIONAL GEOLOGIC MAP EXPLANATION

FROM:
GEOLOGIC MAP OF CALIFORNIA
COMPILATION BY: CHARLES W. JENNINGS WITH
ASSISTANCE FROM R.G. STRAND AND T.H. ROGERS. 1977

**GEOTECHNICAL ENGINEERING
INVESTIGATION
BAKERSFIELD COLLEGE POOL
EQUIPMENT BUILDING**
1801 Panorama Drive
Bakersfield, California

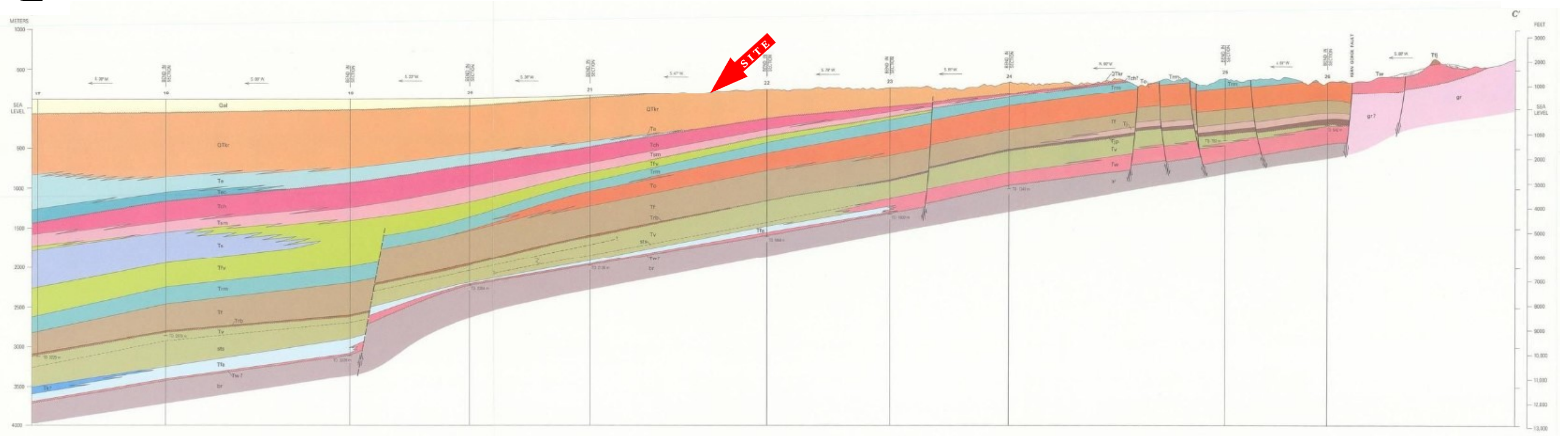
Scale:
As Shown
Drawn by:
WA
Project No.
022-24092

Date:
September 2024
Approved by:
SN
Figure No.
4a



E

E'



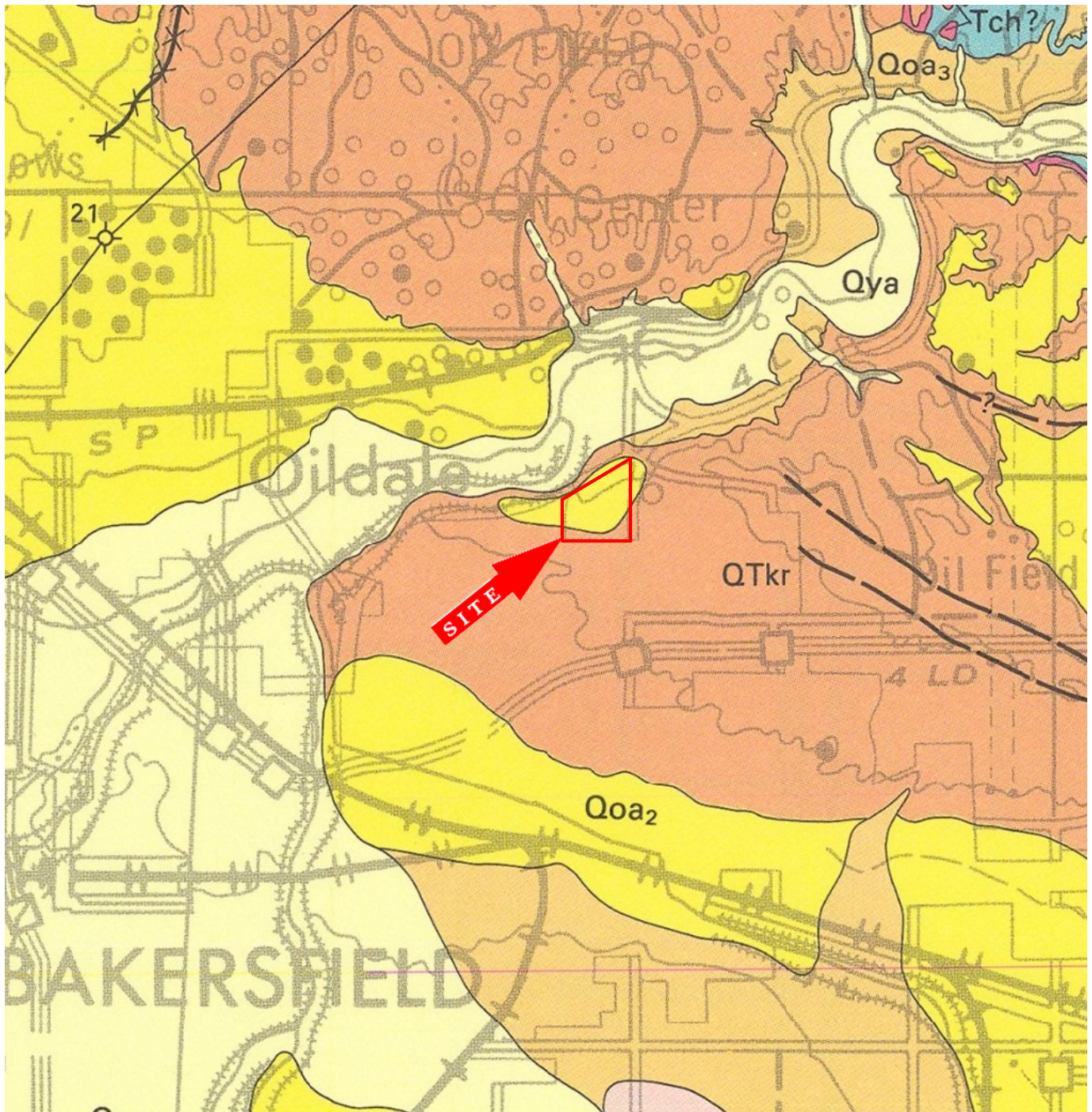
REGIONAL GEOLOGIC CROSS SECTION E-E'

SCALE

HORIZONTAL	1" = 7,500'
VERTICAL	1" = 1,300'

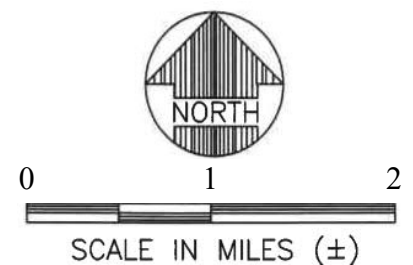
Scale: As Shown	Date: September 2024
Drawn by: WA	Approved by: SN
Project No. 022-24092	Figure No. 5





LOCAL GEOLOGIC MAP

FROM:
GEOLOGIC MAP AND CROSS SECTIONS OF THE SOUTHEASTERN
MARGIN OF THE SAN JOAQUIN VALLEY, CALIFORNIA.
CROSS SECTION C-C'
BY: J. ALAN BARTOW, 1984



**GEOTECHNICAL ENGINEERING
INVESTIGATION
BAKERSFIELD COLLEGE POOL
EQUIPMENT BUILDING**
1801 Panorama Drive
Bakersfield, California

Scale: As Shown	Date: September 2024
Drawn by: WA	Approved by: SN
Project No. 022-24092	Figure No. 6

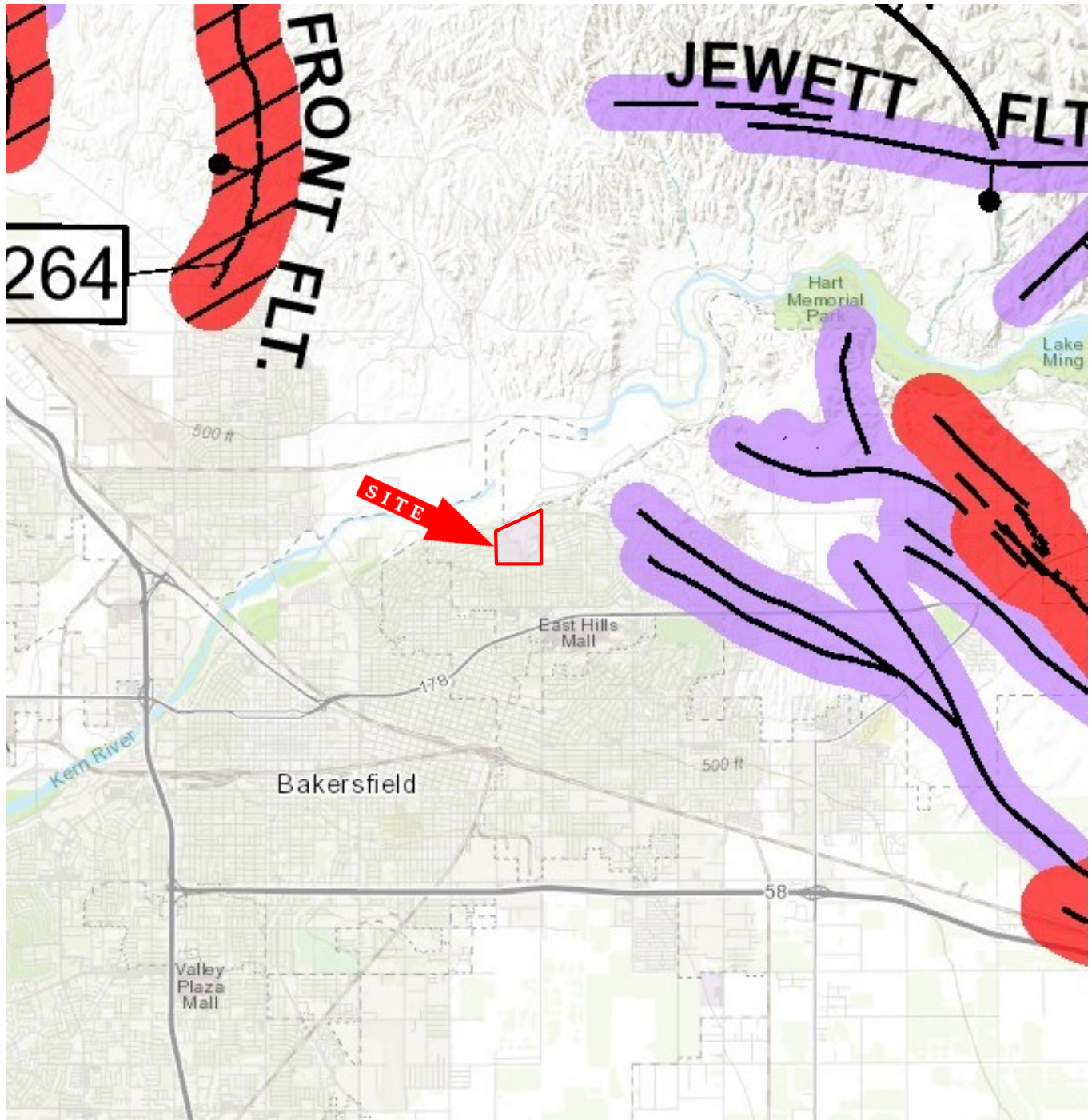
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GEOTECHNICAL ENGINEERING

Qal	ALLUVIUM, UNDIVIDED (HOLOCENE AND PLEISTOCENE)—Sand, silt, and gravel ¹
Qya	YOUNGER ALLUVIUM (HOLOCENE AND UPPER PLEISTOCENE)—Sand, gravel, silt, and clay in modern channels and underlying modern flood plains, abandoned channels, lowest terraces along streams, and undissected alluvial fans; includes boulder gravels near mouth of Kern River gorge
Qb	BASIN DEPOSITS (HOLOCENE AND UPPER PLEISTOCENE)—Clay, silt, and fine sand deposited in the troughs between adjacent alluvial fans
Qac	ALLUVIUM AND COLLUVIUM (HOLOCENE AND PLEISTOCENE)—Undivided alluvial and colluvial deposits, mostly in small isolated basins or filled valleys
Qt	TALUS DEPOSITS (HOLOCENE AND PLEISTOCENE)—Granitic debris along Kern River gorge fault-line scarp
Qd	DUNE DEPOSITS (HOLOCENE AND PLEISTOCENE)—Well-sorted sand and silt, transported and deposited by wind
	OLDER ALLUVIUM (PLEISTOCENE)—Sand, gravel, silt, and clay underlying terraces along modern streams or in isolated higher terraces removed from modern streams, and in dissected alluvial fans. Relative age of alluvial units inferred from relative topographic position, degree of soil development, and degree of erosional modification
Qoa ₃	Underlying low to medium-high terraces along modern streams and in undissected old alluvial fans
Qoa ₂	Underlying higher terraces and in extensive older alluvial fans
Qoa ₁	Underlying dissected remnants of oldest alluvial fans
QTKr	KERN RIVER FORMATION (PLEISTOCENE?, PLEISTOCENE, AND UPPER MIOCENE)—Nonmarine, coarse-grained pebbly arkosic sandstone and conglomerate, containing thin interbeds of drab-colored siltstone and mudstone; thicker lenticular bodies of siltstone or claystone locally in lower part; coarsens upward and eastward. Generally crudely bedded and semiconsolidated; sandstone commonly crossbedded. Remnants of a lithified paleosol forms prominent ledges near base of unit from vicinity of Poso Creek northward. Contains continental vertebrate fossils of early Hemphillian age near base (Savage and others, 1954, p. 53)
Te	ETCHEGOIN FORMATION (UPPER MIOCENE)—Marine, fine- to coarse-grained, poorly sorted, friable sandstone, and interbedded micaceous siltstone; locally pebbly at base
Tec	Claystone and siltstone—Micaceous, carbonaceous silty claystone and clayey siltstone; contains abundant marine mollusks. Informally termed the Macoma claystone in local oil-field terminology
Trr	REEF RIDGE SHALE (UPPER MIOCENE)—Marine, brown or greenish-gray siltstone or shale
Tsm	"SANTA MARGARITA" FORMATION ² (UPPER MIOCENE)—Marine, light-gray to white, fine-, medium-, and coarse-grained, friable to locally calcareous sandstone and pebbly sandstone. Contains marine mollusks of late Miocene age (Addicott, 1970)
Tch	CHANAC FORMATION (UPPER MIOCENE)—Nonmarine, light-gray, friable, coarse-grained pebbly arkosic sandstone, brown clayey sandstone, and brown or greenish-gray sandy claystone or mudstone. Contains continental vertebrate fossils of late Clarendonian age (Wood and others, 1941)

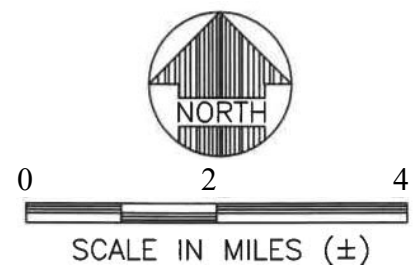
LOCAL GEOLOGIC MAP EXPLANATION

FROM:
FROM: GEOLOGIC MAP OF CALIFORNIA-BAKERSFIELD SHEET
BY: OLAF P. JENKINS EDITION
COMPILATION BY: ARTHUR R. SMITH, 1964

GEOTECHNICAL ENGINEERING INVESTIGATION BAKERSFIELD COLLEGE POOL EQUIPMENT BUILDING 1801 Panorama Drive Bakersfield, California	Scale: As Shown	Date: September 2024	 Krazan GEOTECHNICAL ENGINEERING
	Drawn by: WA	Approved by: SN	
	Project No. 022-24092	Figure No. 6a	



FROM:
 PREPARED FROM THE C.G.S. "FAULT ACTIVITY MAP OF
 CALIFORNIA" JENNINGS AND BRYANT, 2010
 FAULT TRACES ON LAND ARE INDICATED BY SOLID
 LINES WHERE WELL LOCATED, BY DASHED LINES WHERE
 CONCEALED BY YOUNGER ROCKS OR BY LAKES OR
 BAYS. FAULT TRACES ARE QUERIED WHERE
 CONTINUATION OR EXISTENCE IS UNCERTAIN.



**GEOTECHNICAL ENGINEERING
 INVESTIGATION
 BAKERSFIELD COLLEGE POOL
 EQUIPMENT BUILDING**
 1801 Panorama Drive
 Bakersfield, California

Scale:
 As Shown
 Drawn by:
 WA
 Project No.
 022-24092

Date:
 September 2024
 Approved by:
 SN
 Figure No.
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Fault along which historic (last 200 years) displacement has occurred and is associated with one or more of the following:

(a) a recorded earthquake with surface rupture. (Also included are some well-defined surface breaks caused by ground shaking during earthquakes, e.g. extensive ground breakage, not on the White Wolf fault, caused by the Arvin-Tehachapi earthquake of 1952). The date of the associated earthquake is indicated. Where repeated surface ruptures on the same fault have occurred, only the date of the latest movement may be indicated, especially if earlier reports are not well documented as to location of ground breaks.

(b) fault creep slippage - slow ground displacement usually without accompanying earthquakes.

(c) displaced survey lines.



A triangle to the right or left of the date indicates termination point of observed surface displacement. Solid red triangle indicates known location of rupture termination point. Open black triangle indicates uncertain or estimated location of rupture termination point.



Date bracketed by triangles indicates local fault break.



No triangle by date indicates an intermediate point along fault break.



Fault that exhibits fault creep slippage. Hachures indicate linear extent of fault creep. Annotation (creep with leader) indicates representative locations where fault creep has been observed and recorded.



Square on fault indicates where fault creep slippage has occurred that has been triggered by an earthquake on some other fault. Date of causative earthquake indicated. Squares to right and left of date indicate terminal points between which triggered creep slippage has occurred (creep either continuous or intermittent between these end points).



Holocene fault displacement (during past 11,700 years) without historic record. Geomorphic evidence for Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holocene age deposits: offset stream courses, linear scarps, shutter ridges, and triangular faceted spurs. Recency of faulting offshore is based on the interpreted age of the youngest strata displaced by faulting.



Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to that described for Holocene faults except features are less distinct. Faulting may be younger, but lack of younger overlying deposits precludes more accurate age classification.



Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement sometime during the past 1.6 million years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age. Unnumbered Quaternary faults were based on Fault Map of California, 1975. See Bulletin 201, Appendix D for source data.



Pre-Quaternary fault (older than 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissance nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

FAULT ACTIVITY MAP EXPLANATION

FROM:

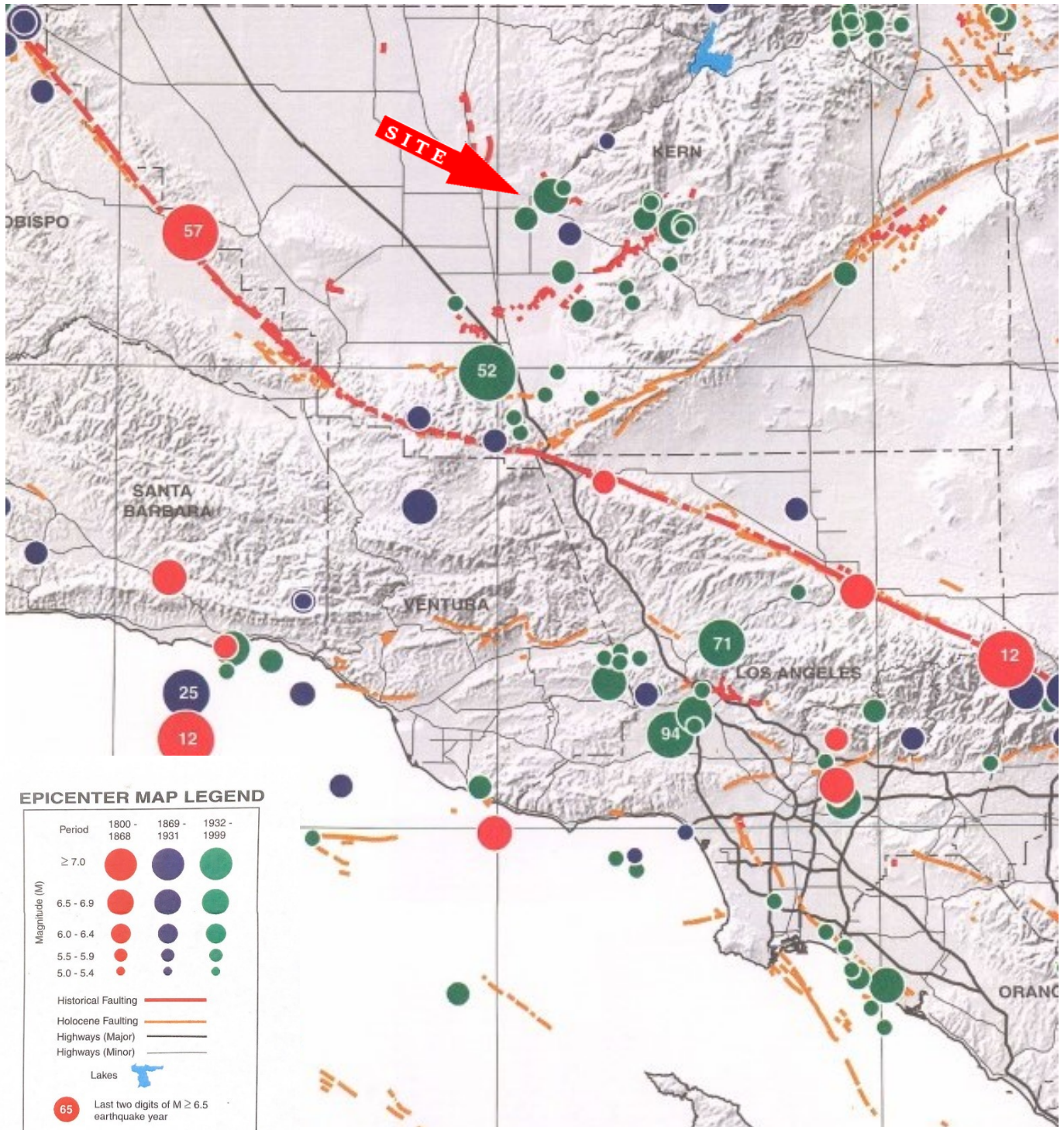
PREPARED FROM THE C.G.S. "FAULT ACTIVITY MAP OF CALIFORNIA" JENNINGS AND BRYANT, 2010
FAULT TRACES ON LAND ARE INDICATED BY SOLID LINES WHERE WELL LOCATED, BY DASHED LINES WHERE CONCEALED BY YOUNGER ROCKS OR BY LAKES OR BAYS. FAULT TRACES ARE QUERIED WHERE CONTINUATION OR EXISTENCE IS UNCERTAIN.

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BAKERSFIELD COLLEGE POOL
EQUIPMENT BUILDING
1801 Panorama Drive
Bakersfield, California**

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Figure No.
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EPICENTER MAP

NOTES:
 MAP SOURCE:
 CGS MAP SHEET 49
 EPICENTERS OF AND AREAS
 DAMAGED BY M > 5 CALIFORNIA
 EARTHQUAKES, 1800-1999
 BY TOPPOZADA, BRANUM, PETERSEN,
 HALLSTROM, CRAMER & REICHLER, 2000



0 20 40
 SCALE IN MILES (±)

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 BAKERSFIELD COLLEGE POOL
 EQUIPMENT BUILDING
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 Bakersfield, California**

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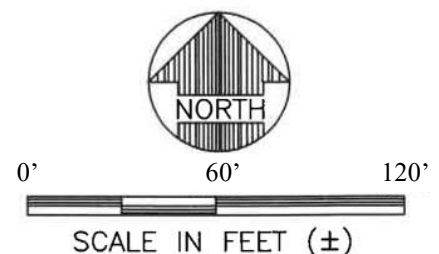
Date:
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 8

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AERIAL PHOTO

FROM:
GOOGLE EARTH PRO, 2023

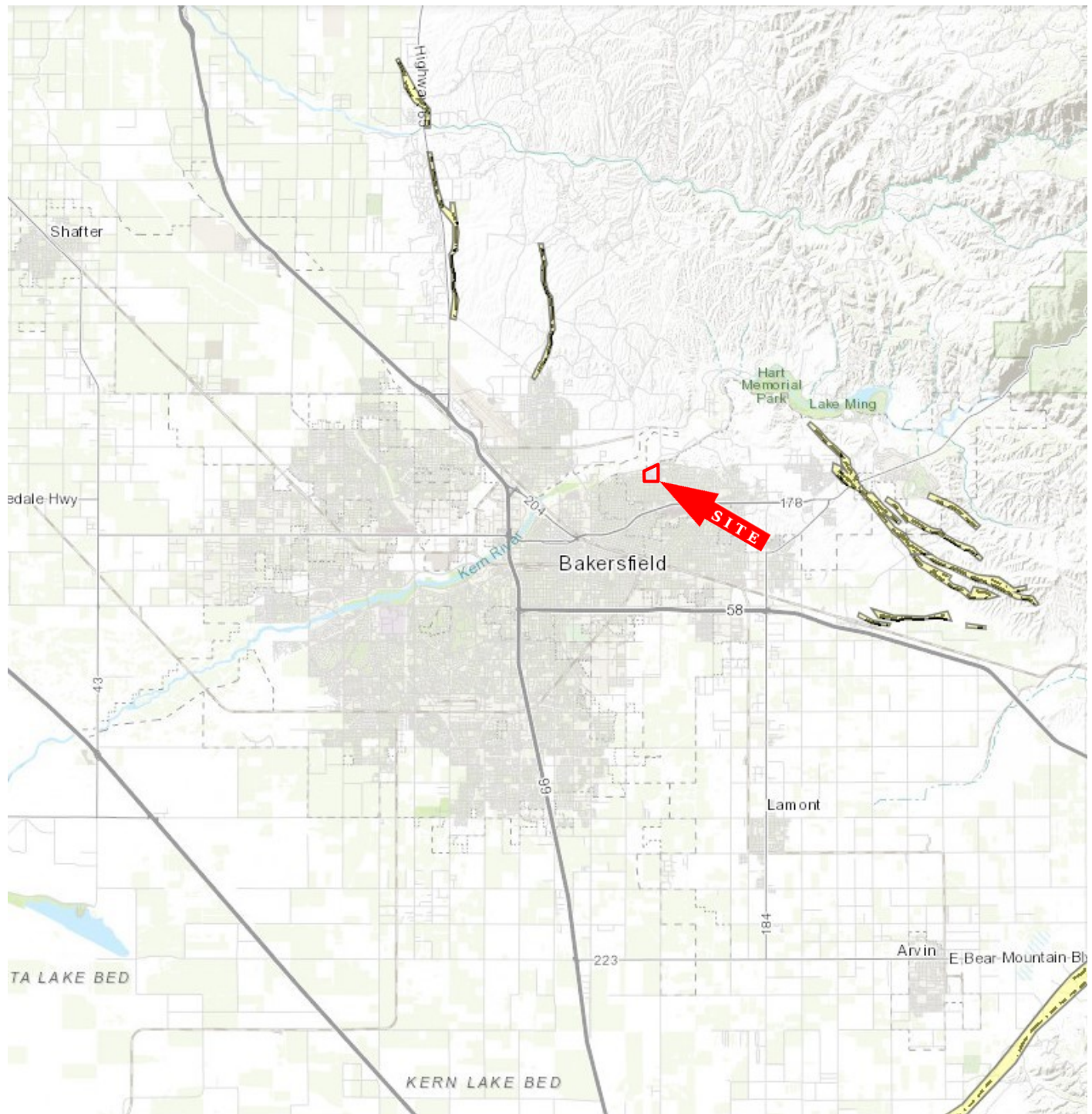


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**EARTHQUAKE ZONES OF
REQUIRED INVESTIGATION**
**FAULTS, LIQUEFACTION, AND
LANDSLIDES**

MAP SOURCE:
California Geologic Survey-Earthquake Zones of
Required Investigation, 2023



0 4 8
SCALE IN MILES (±)

**GEOTECHNICAL ENGINEERING
INVESTIGATION
BAKERSFIELD COLLEGE POOL
EQUIPMENT BUILDING**
1801 Panorama Drive
Bakersfield, California

Scale: As Shown	Date: September 2024
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Project No. 022-24092	Figure No. 10

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Earthquake Zones of Required Investigation

This Map Shows Both Alquist-Priolo Earthquake Fault Zones and Seismic Hazard Zones

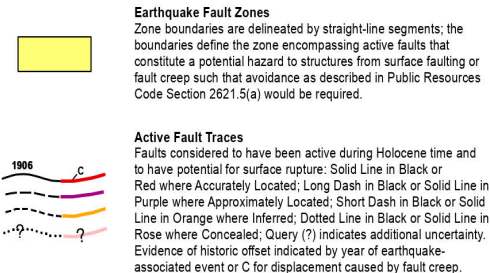
This map shows the location of Alquist-Priolo (AP) Earthquake Fault Zones and Seismic Hazard Zones, collectively referred to here as Earthquake Zones of Required Investigation. The Geographic Information System (GIS) digital files of these regulatory zones released by the California Geological Survey (CGS) are the "Official Maps." GIS files are available at the CGS website <http://maps.conservation.ca.gov/cgs/informationwarehouse/>. These zones will assist cities and counties in fulfilling their responsibilities for protecting the public from the effects of surface fault rupture and earthquake-triggered ground failure as required by the AP Earthquake Fault Zoning Act (Public Resources Code Sections 2621-2630) and the Seismic Hazards Mapping Act (Public Resources Code Sections 2690-2699.6). For information regarding the general approach and recommended methods for preparing these zones,

see CGS Special Publication 42, *Earthquake Fault Zones, a Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California*, Appendix C, and CGS Special Publication 118, *Recommended Criteria for Delineating Seismic Hazard Zones in California*.

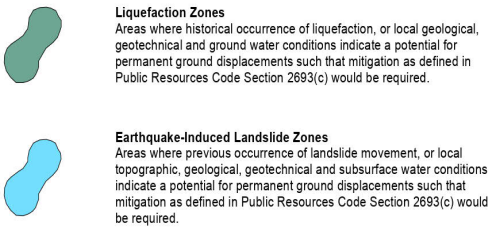
For information regarding the scope and recommended methods to be used in conducting required site investigations refer to CGS Special Publication 42, and CGS Special Publication 117A, *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. For a general description of the AP and Seismic Hazards Mapping acts, the zoning programs, and related information, please refer to the website at www.conservation.ca.gov/cgs/.

MAP EXPLANATION

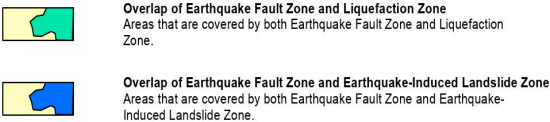
EARTHQUAKE FAULT ZONES



SEISMIC HAZARD ZONES



OVERLAPPING EARTHQUAKE FAULT AND SEISMIC HAZARD ZONES



Note: Mitigation methods differ for each zone – AP Act only allows avoidance; Seismic Hazard Mapping Act allows mitigation by engineering/geotechnical design as well as avoidance.

EARTHQUAKE ZONES OF REQUIRED INVESTIGATION EXPLANATION

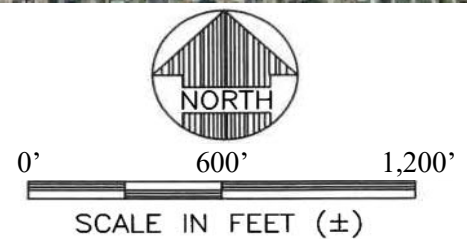
MAP SOURCE:
Earthquake Fault Zones and Seismic Hazard Zones.
By John Parrish, PHD., State Geologist, 2003

GEOTECHNICAL ENGINEERING INVESTIGATION BAKERSFIELD COLLEGE POOL EQUIPMENT BUILDING 1801 Panorama Drive Bakersfield, California	Scale: As Shown	Date: September 2024	
	Drawn by: WA	Approved by: SN	
	Project No. 022-24092	Figure No. 10a	



FLOOD MAP

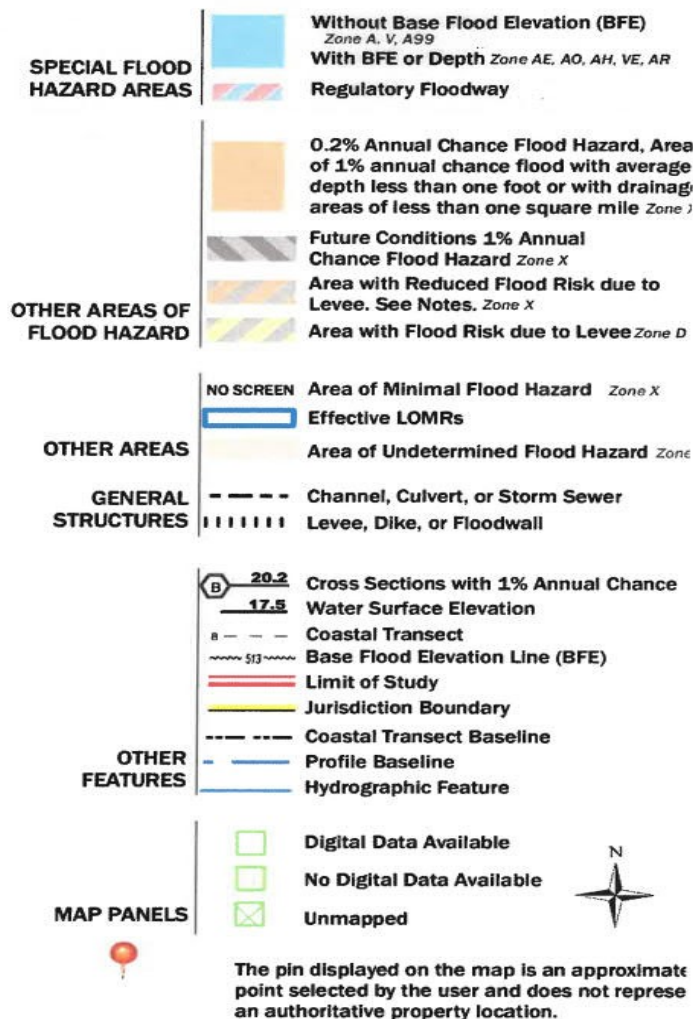
NOTE:
FEMA FLOOD INSURANCE MAP
EFFECTIVE 9/26/2008



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This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/1/2021 at 1:53 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

FLOOD MAP EXPLANATION

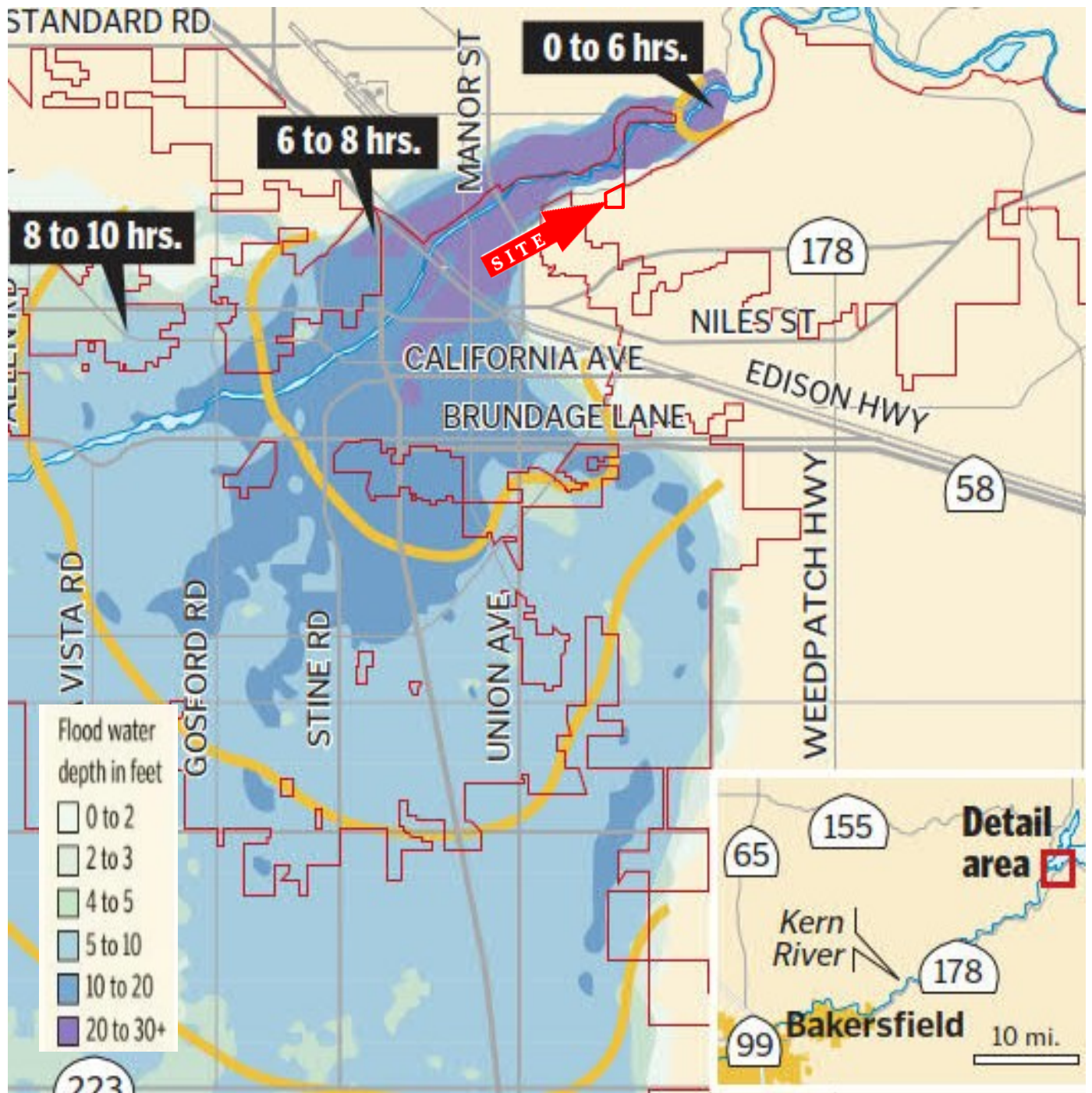
NOTE:
FEMA FLOOD INSURANCE MAP
EFFECTIVE 9/26/08

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022-24092

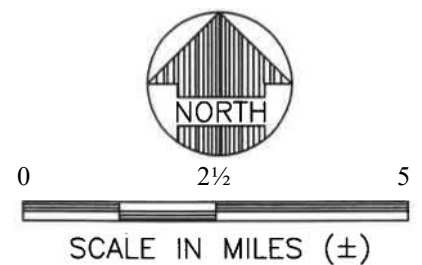
Date:
September 2024
Approved by:
SN
Figure No.
11a

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DAM INUNDATION MAP
(Isabella Dam – Lake Isabella)

FROM:
U.S. ARMY CORPS OF ENGINEERS/THE
BAKERSFIELD CALIFORNIAN
JANUARY 14, 2017



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2008 National Seismic Hazard Maps – Source Parameters

[New Search](#)

Distance in Miles	Name	State	Pref Slip Rate (mm/yr)	Dip (degrees)	Dip Dir	Slip Sense	Rupture Top (km)	Rupture Bottom (km)	Length (km)
19.04	White Wolf	CA	2	75	S	reverse	0	14	63
27.90	Pleito	CA	2	46	S	reverse	0	14	44
37.03	Garlock;GC+GW	CA	n/a	90	V	strike slip	0.4	12	210
37.03	Garlock;GE+GC+GW	CA	n/a	90	V	strike slip	0.3	12	256
37.03	Garlock;GW	CA	6	90	V	strike slip	0.7	14	98
39.54	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13	548
39.54	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	86		strike slip	0.1	13	479
39.54	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0.1	13	421
39.54	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0.1	13	377
39.54	S. San Andreas;PK+CH+CC+BB+NM+SM	CA	n/a	90	V	strike slip	0.1	13	342
39.54	S. San Andreas;PK+CH+CC+BB+NM	CA	n/a	90	V	strike slip	0.1	12	245
39.54	S. San Andreas;PK+CH+CC+BB	CA	n/a	90	V	strike slip	0.1	12	208
39.54	S. San Andreas;CC+BB	CA	n/a	90	V	strike slip	0	15	109
39.54	S. San Andreas;BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	85		strike slip	0.1	13	390
39.54	S. San Andreas;BB+NM+SM+NSB+SSB+BG	CA	n/a	84		strike slip	0	14	321
39.54	S. San Andreas;BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14	263
39.54	S. San Andreas;BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14	220

39.54	S. San Andreas;BB+NM+SM	CA	n/a	90	V	strike slip	0	14	184
39.54	S. San Andreas;BB+NM	CA	n/a	90	V	strike slip	0	15	87
39.54	S. San Andreas;CH+CC+BB+NM+SM	CA	n/a	90	V	strike slip	0	14	306
39.54	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13	512
39.54	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	86		strike slip	0	14	442
39.54	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14	384
39.54	S. San Andreas;CH+CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14	341
39.54	S. San Andreas;CH+CC+BB+NM	CA	n/a	90	V	strike slip	0	14	208
39.54	S. San Andreas;CH+CC+BB	CA	n/a	90	V	strike slip	0	14	171
39.54	S. San Andreas;BB	CA	34	90	V	strike slip	0	15	50
39.54	S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13	449
39.54	S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	85		strike slip	0	14	380
39.54	S. San Andreas;CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14	322
39.54	S. San Andreas;CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14	279
39.54	S. San Andreas;CC+BB+NM+SM	CA	n/a	90	V	strike slip	0	14	243
39.54	S. San Andreas;CC+BB+NM	CA	n/a	90	V	strike slip	0	15	146
40.19	S. San Andreas;PK+CH+CC	CA	n/a	90	V	strike slip	0.2	11	158
40.19	S. San Andreas;CC	CA	34	90	V	strike slip	0	15	59
40.19	S. San Andreas;CH+CC	CA	n/a	90	V	strike slip	0	14	122
41.57	S. San Andreas;NM+SM+NSB	CA	n/a	90	V	strike slip	0	13	170

41.57	S. San Andreas;NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	13	213
41.57	S. San Andreas;NM+SM+NSB+SSB+BG	CA	n/a	83		strike slip	0	14	271
41.57	S. San Andreas;NM+SM+NSB+SSB+BG+CO	CA	n/a	84		strike slip	0.1	13	340
41.57	S. San Andreas;NM	CA	27	90	V	strike slip	0	15	37
41.57	S. San Andreas;NM+SM	CA	n/a	90	V	strike slip	0	14	134
48.08	San Gabriel	CA	1	61	N	strike slip	0	15	71
50.93	S. San Andreas;CH	CA	34	90	V	strike slip	0	12	63
50.93	S. San Andreas;PK+CH	CA	n/a	90	V	strike slip	0.4	8	99
51.95	So Sierra Nevada	CA	0.1	50	E	normal	0	14	112
54.18	Garlock;GC	CA	7	90	V	strike slip	0	12	111
54.18	Garlock;GE+GC	CA	n/a	90	V	strike slip	0	12	156
55.43	S. San Andreas;SM+NSB+SSB+BG	CA	n/a	81		strike slip	0	13	234
55.43	S. San Andreas;SM+NSB	CA	n/a	90	V	strike slip	0	13	133
55.43	S. San Andreas;SM+NSB+SSB	CA	n/a	90	V	strike slip	0	13	176
55.43	S. San Andreas;SM	CA	29	90	V	strike slip	0	13	98
55.43	S. San Andreas;SM+NSB+SSB+BG+CO	CA	n/a	83		strike slip	0.1	13	303
56.87	Santa Ynez Connected	CA	2	70		strike slip	0	11	132
56.87	Santa Ynez (East)	CA	2	70	S	strike slip	0	13	68
58.71	San Juan	CA	1	90	V	strike slip	0	13	68
65.52	Mission Ridge-Arroyo Parida-Santa Ana	CA	0.4	70	S	reverse	0	8	69
66.05	San Cayetano	CA	6	42	N	thrust	0	16	42

67.55	Great Valley 14 (Kettleman Hills)	CA	1.5	22	W	thrust	8.1	22	24
67.89	Holser, alt 1	CA	0.4	58	S	reverse	0	19	20
68.82	Lenwood-Lockhart-Old Woman Springs	CA	0.9	90	V	strike slip	0	13	145
69.80	Northridge	CA	1.5	35	S	thrust	7.4	17	33
70.22	Oak Ridge (Onshore)	CA	4	65	S	reverse	1	19	49
70.23	Oak Ridge Connected	CA	3.6	53		reverse	0.6	15	94
70.24	Little Lake	CA	0.7	90	V	strike slip	0	13	40
73.05	Santa Ynez (West)	CA	2	70	S	strike slip	0	9	63
73.13	Santa Susana, alt 1	CA	5	55	N	reverse	0	16	27
73.94	Ventura-Pitas Point	CA	1	64	N	reverse	1	15	44
73.94	Pitas Point Connected	CA	1	55		reverse	1.2	13	78
76.03	Red Mountain	CA	2	56	N	reverse	0	14	101
77.63	Simi-Santa Rosa	CA	1	60		strike slip	1	12	39
78.53	S. San Andreas;PK	CA	34	90	V	strike slip	4	6	36
79.32	North Channel	CA	1	26	N	thrust	1.1	5	51
80.39	Helendale-So Lockhart	CA	0.6	90	V	strike slip	0	13	114
81.13	Sierra Madre Connected	CA	2	51		reverse	0	14	76
81.13	Sierra Madre (San Fernando)	CA	2	45	N	thrust	0	13	18
81.36	San Luis Range (So Margin)	CA	0.2	45	N	thrust	0	10	64
81.48	Oak Ridge (Offshore)	CA	3	32	S	thrust	0	8	38
81.87	Los Alamos-West Baseline	CA	0.7	30	S	thrust	0	10	28
82.13	Great Valley 13 (Coalinga)	CA	1.5	15	W	thrust	9.1	15	32
84.52	Pitas Point (Upper)	CA	1	42	N	thrust	1.4	10	35
84.96	Verdugo	CA	0.5	55	NE	reverse	0	15	29
86.27	Los Osos	CA	0.5	45	SW	thrust	0	10	44
86.34	Gravel Hills-Harper Lk	CA	0.7	90	V	strike slip	0	11	65
86.74	Lions Head	CA	0.02	75	NE	reverse	0	10	41

87.11	Sierra Madre	CA	2	53	N	reverse	0	14	57
87.55	Rinconada	CA	1	90	V	strike slip	0	10	191
87.98	Blackwater	CA	0.5	90	V	strike slip	0	12	60
88.91	Casmalia (Orcutt Frontal)	CA	0.3	75	SW	reverse	0	10	29
89.89	Pitas Point (Lower)-Montalvo	CA	2.5	16	N	thrust	0.4	13	30
90.13	Independence	CA	0.2	50	E	normal	0	15	48
92.58	Owens Valley	CA	1.5	90	V	strike slip	0	14	86
92.65	Pitas Point (Lower, West)	CA	2.5	13	N	thrust	1.5	9	35
93.81	Malibu Coast, alt 1	CA	0.3	75	N	strike slip	0	8	38
93.81	Malibu Coast, alt 2	CA	0.3	74	N	strike slip	0	16	38
96.38	Hollywood	CA	1	70	N	strike slip	0	17	17
96.64	Channel Islands Thrust	CA	1.5	20	N	thrust	5	12	59
97.12	Elysian Park (Upper)	CA	1.3	50	NE	reverse	3	15	20
97.57	Santa Monica Connected alt 1	CA	2.6	51		strike slip	0	16	79
97.57	Santa Monica, alt 1	CA	1	75	N	strike slip	0	18	14
97.62	Santa Monica Connected alt 2	CA	2.4	44		strike slip	0.8	11	93
98.20	Tank Canyon	CA	1	50	W	normal	0	8	16
98.29	Raymond	CA	1.5	79	N	strike slip	0	16	22
98.37	San Andreas fault - creeping segment	CA	34	90	V	strike slip	0		125
98.52	Anacapa-Dume, alt 2	CA	3	41	N	thrust	1.2	12	65
99.08	Anacapa-Dume, alt 1	CA	3	45	N	thrust	0	16	51
99.53	Santa Cruz Island	CA	1	90	V	strike slip	0	13	69
99.66	Newport Inglewood Connected alt 2	CA	1.3	90	V	strike slip	0	11	208

99.66	Newport Inglewood Connected alt 1	CA	1.3	89	strike slip	0	11	208
99.66	Newport-Inglewood, alt 1	CA	1	88	strike slip	0	15	65

APPENDIX A
FIELD AND LABORATORY INVESTIGATIONS

Field Investigation

The field investigation consisted of a surface reconnaissance and a subsurface exploratory program. Two exploratory borings were advanced. The boring locations are shown on the site plan.

The soils encountered were logged in the field during the exploration and with supplementary laboratory test data are described in accordance with the Unified Soil Classification System.

Modified standard penetration tests were performed at selected depths. This test represents the resistance to driving a 2½-inch diameter split barrel sampler. The driving energy was provided by a hammer weighing 140 pounds, falling 30 inches. Relatively undisturbed soil samples were obtained while performing this test. Bag samples of the disturbed soil were obtained from the auger cuttings. All samples were returned to our Clovis laboratory for evaluation.

Laboratory Investigation

The laboratory investigation was programmed to determine the physical and mechanical properties of the foundation soil underlying the site. Test results were used as criteria for determining the engineering suitability of the surface and subsurface materials encountered.

In-situ moisture content, dry density, consolidation, direct shear, and sieve analysis tests were completed for the undisturbed samples representative of the subsurface material. Expansion index tests were completed for select bag samples obtained from the auger cuttings. These tests, supplemented by visual observation, comprised the basis for our evaluation of the site material.

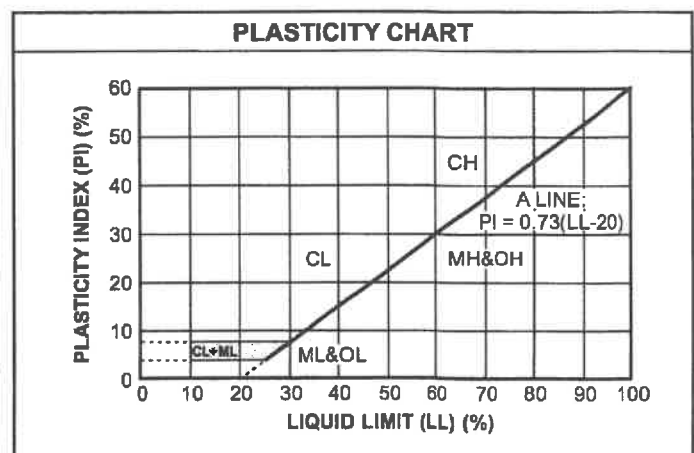
The logs of the exploratory borings and laboratory determinations are presented in this Appendix.

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART		
COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)		
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	
	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

CONSISTENCY CLASSIFICATION	
Description	Blows per Foot
<i>Granular Soils</i>	
Very Loose	< 5
Loose	5 – 15
Medium Dense	16 – 40
Dense	41 – 65
Very Dense	> 65
<i>Cohesive Soils</i>	
Very Soft	< 3
Soft	3 – 5
Firm	6 – 10
Stiff	11 – 20
Very Stiff	21 – 40
Hard	> 40

GRAIN SIZE CLASSIFICATION		
Grain Type	Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12 inches	Above 305
Cobbles	12 to 13 inches	305 to 76.2
Gravel	3 inches to No. 4	76.2 to 4.76
Coarse-grained	3 to ¾ inches	76.2 to 19.1
Fine-grained	¾ inches to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
Coarse-grained	No. 4 to No. 10	4.76 to 2.00
Medium-grained	No. 10 to No. 40	2.00 to 0.42
Fine-grained	No. 40 to No. 200	0.42 to 0.074
Silt and Clay	Below No. 200	Below 0.074



Log of Boring B1

Project: Bakersfield College Pool Equipment Building

Project No: 022-24092

Client: Kern Community College District

Figure No.: A-1

Location: 1801 Panorama Drive, Bakersfield, California

Logged By: Dave Adams

Depth to Water>

Initial: None

At Completion: None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft			Water Content (%)			
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.							
0		Ground Surface											
		DECOMPOSED GRANITE FILL											
2		SILTY SAND (SM) Medium dense, fine- to coarse-grained with GRAVEL and COBBLE; brown, damp, drills easily	120.1	5.6		20							
4		CLAYEY SAND (SC) Medium dense, fine- to coarse-grained with GRAVEL and COBBLE; brown, moist, drills easily	122.1	10.7		20							
6		Drills very hard below 7 feet											
8		Auger refusal at 8½ feet											
		End of Borehole											
10													
12													
14													
16													
18													
20													

Drill Method: Solid Flight

Drill Date: 7-24-24

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

Driller: Jim Watts

Elevation: 8½ Feet

Sheet: 1 of 1

Log of Boring B2

Project: Bakersfield College Pool Equipment Building

Project No: 022-24092

Client: Kern Community College District

Figure No.: A-2

Location: 1801 Panorama Drive, Bakersfield, California

Logged By: Dave Adams

Depth to Water>

Initial: None

At Completion: None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)			
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.					
		Ground Surface					20 40 60	10 20 30 40			
0		DECOMPOSED GRANITE FILL									
2		CLAYEY SAND (SC) Very dense, fine- to coarse-grained with GRAVEL and COBBLE; brown, moist, drills firmly	124.2	7.0		50+					
4		Medium dense below 4 feet									
6		Drills very hard below 6 feet	113.5	8.6		30					
8		Auger refusal at 8 feet									
		End of Borehole									
10											
12											
14											
16											
18											
20											

Drill Method: Solid Flight

Drill Date: 7-24-24

Drill Rig: CME 45C-4

Krazan and Associates

Hole Size: 4½ Inches

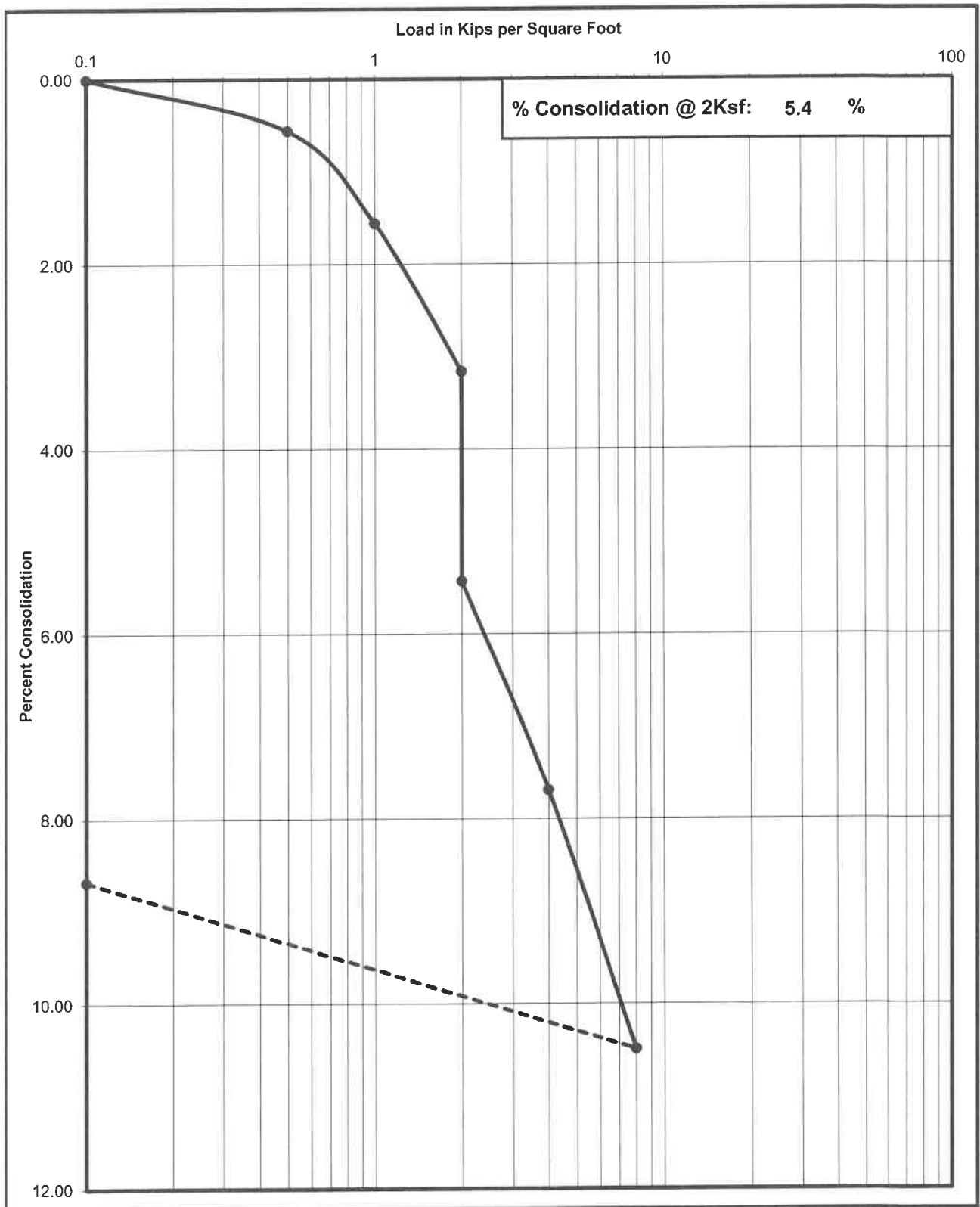
Driller: Jim Watts

Elevation: 8 Feet

Sheet: 1 of 1

Consolidation Test

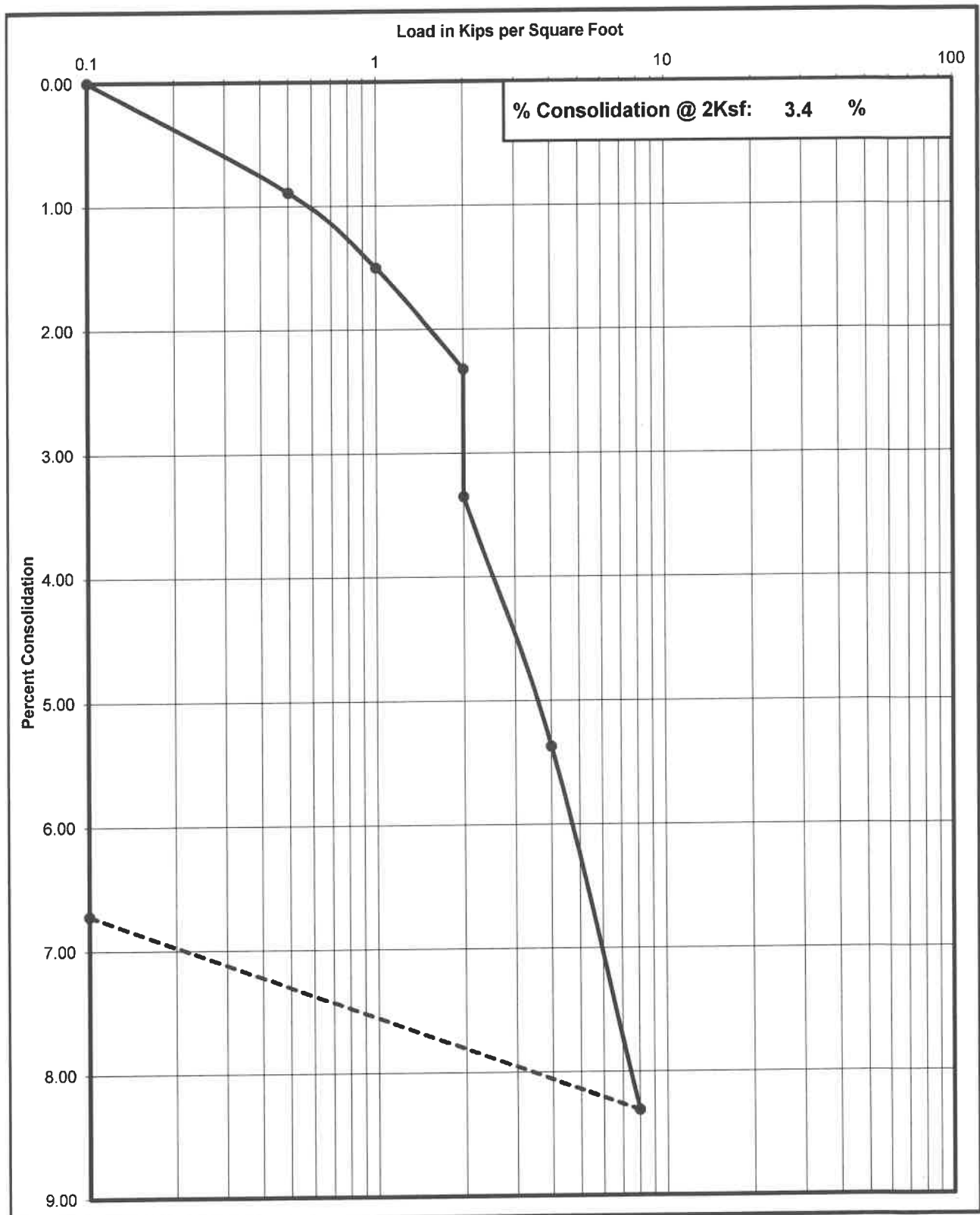
Project No	Boring No. & Depth	Date	Soil Classification
022-24092	B1 @ 2-3'	8/2/2024	SM w/ grvl



Krazan Testing Laboratory

Consolidation Test

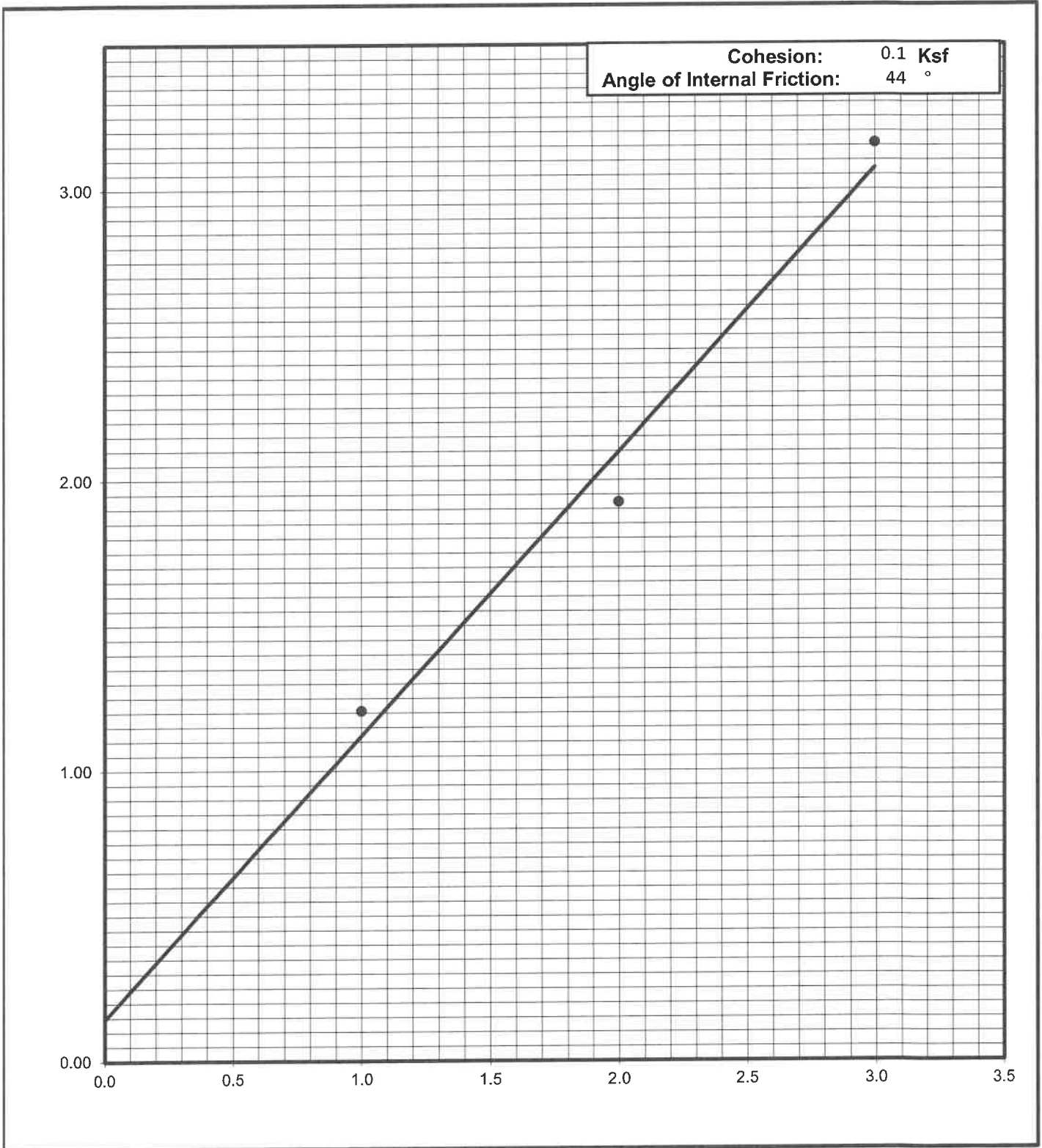
Project No	Boring No. & Depth	Date	Soil Classification
022-24092	B1 @ 5-6'	8/2/2024	SC w/ grvl



Krazan Testing Laboratory

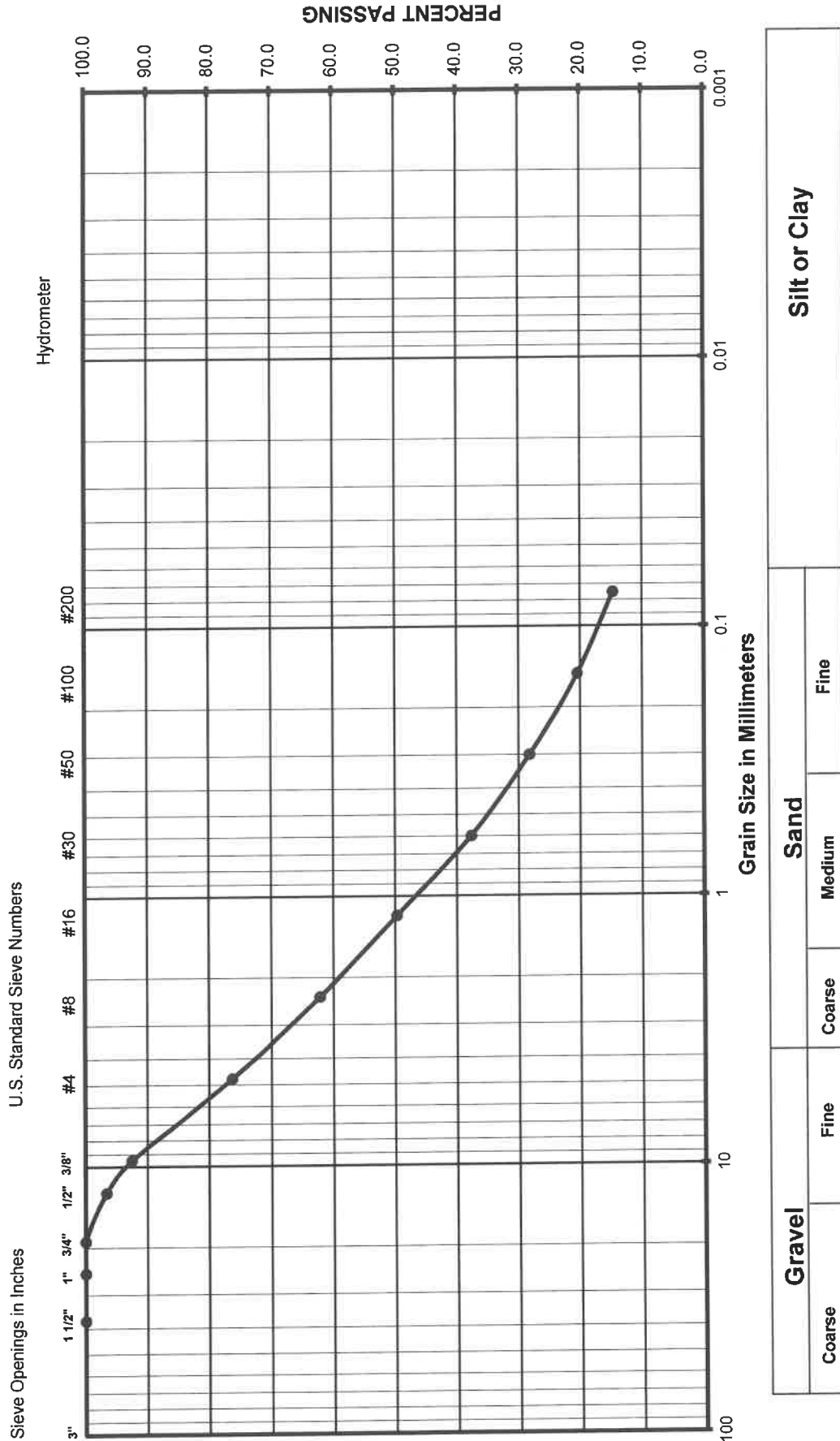
Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

Project Number	Boring No. & Depth	Soil Type	Date
022-24092	B2 @ 2-3'	SC w/ grvl	8/2/2024



Krazan Testing Laboratory

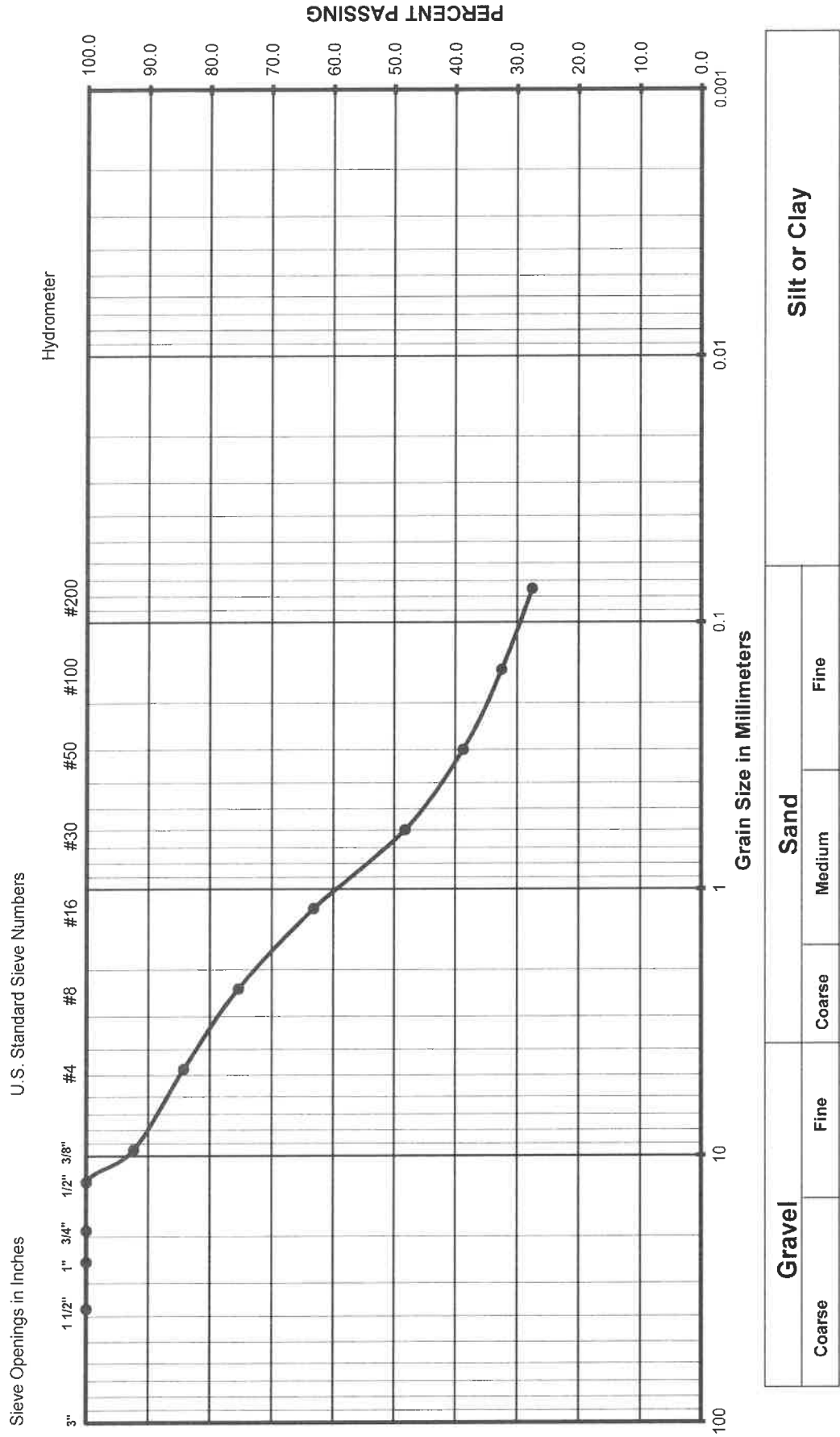
Grain Size Analysis



(Unified Soils Classification)

Project Name: Bakersfield College Pool Equipment Building
 Project Number: 022-24092
 Soil Classification: SM w/ grvl
 Sample Number: B1 @ 2-3'

Grain Size Analysis



(Unified Soils Classification)

Project Name: Bakersfield College Pool Equipment Building
 Project Number: 022-24092
 Soil Classification: SC w/ grvl
 Sample Number: B1 @ 5-6'

Expansion Index Test

ASTM D - 4829

Project Number : 022-24092
Project Name : Bakersfield College Pool Equipment Building
Date : 8/2/2024
Sample location/ Depth : B1 @ 4-5'
Sample Number : X1
Soil Classification : SC

Trial #	1	2	3
Weight of Soil & Mold, gms	779.3		
Weight of Mold, gms	367.0		
Weight of Soil, gms	412.3		
Wet Density, Lbs/cu.ft.	124.3		
Weight of Moisture Sample (Wet), gms	200.0		
Weight of Moisture Sample (Dry), gms	183.8		
Moisture Content, %	8.8		
Dry Density, Lbs/cu.ft.	114.3		
Specific Gravity of Soil	2.7		
Degree of Saturation, %	50.2		

Time	Initial	30 min	1 hr	6hrs	12 hrs	24 hrs
Dial Reading	0	--	--	--	--	0.0243

Expansion Index_{measured} = 24.3

Expansion Index = **24**

Expansion Potential Table	
Exp. Index	Potential Exp.
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Krazan Testing Laboratory

APPENDIX B

EARTHWORK SPECIFICATIONS

GENERAL

When the text of the report conflicts with the general specifications in this appendix, the recommendations in the report have precedence.

SCOPE OF WORK: These specifications and applicable plans pertain to and include all earthwork associated with the site rough grading, including but not limited to the furnishing of all labor, tools, and equipment necessary for site clearing and grubbing, stripping, preparation of foundation materials for receiving fill, excavation, processing, placement and compaction of fill and backfill materials to the lines and grades shown on the project grading plans, and disposal of excess materials.

PERFORMANCE: The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications. This work shall be inspected and tested by a representative of Krazan and Associates, Inc., hereinafter known as the Soils Engineer and/or Testing Agency. Attainment of design grades when achieved shall be certified by the project Civil Engineer. Both the Soils Engineer and the Civil Engineer are the Owner's representatives. If the Contractor should fail to meet the technical or design requirements embodied in this document and on the applicable plans, he shall make the necessary readjustments until all work is deemed satisfactory as determined by both the Soils Engineer and the Civil Engineer. No deviation from these specifications shall be made except upon written approval of the Soils Engineer, Civil Engineer or project Architect.

No earthwork shall be performed without the physical presence or approval of the Soils Engineer. The Contractor shall notify the Soils Engineer at least 2 working days prior to the commencement of any aspect of the site earthwork.

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineers harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of the Owner or the Engineers.

TECHNICAL REQUIREMENTS: All compacted materials shall be densified to a density not less than 90 percent relative compaction based on ASTM Test Method D1557 or CAL-216, as specified in the technical portion of the Soil Engineer's report. The location and frequency of field density tests shall be as determined by the Soils Engineer. The results of these tests and compliance with these specifications shall be the basis upon which satisfactory completion of work will be judged by the Soils Engineer.

SOILS AND FOUNDATION CONDITIONS: The Contractor is presumed to have visited the site and to have familiarized himself with existing site conditions and the contents of the data presented in the soil report.

The Contractor shall make his own interpretation of the data contained in said report, and the Contractor shall not be relieved of liability under the Contract documents for any loss sustained as a result of any variance between conditions indicated by or deduced from said report and the actual conditions encountered during the progress of the work.

DUST CONTROL: The work includes dust control as required for the alleviation or prevention of any dust nuisance on or about the site or the borrow area, or off-site if caused by the Contractor's operation either during the performance of the earthwork or resulting from the conditions in which the Contractor leaves the site. The Contractor shall assume all liability, including court costs of codefendants, for all claims related to dust or windblown materials attributable to his work.

SITE PREPARATION

Site preparation shall consist of site clearing and grubbing and the preparations of foundation materials for receiving fill.

CLEARING AND GRUBBING: The Contractor shall accept the site in this present condition and shall demolish and/or remove from the area of designated project earthwork all structures, both surface and subsurface, trees, brush, roots, debris, organic matter, and all other matter determined by the Soils Engineer to be deleterious or otherwise unsuitable. Such materials shall become the property of the Contractor and shall be removed from the site.

Tree root systems in proposed building areas should be removed to a minimum depth of 3 feet and to such an extent which would permit removal of all roots larger than 1 inch. Tree roots removed in parking areas may be limited to the upper 1½ feet of the ground surface. Backfill of tree root excavations should not be permitted until all exposed surfaces have been inspected and the Soils Engineer is present for the proper control of backfill placement and compaction. Burning in areas which are to receive fill materials shall not be permitted.

SUBGRADE PREPARATION: Surfaces to receive Engineered Fill, building or slab loads shall be prepared as outlined above, excavated/scarified to a depth of 12 inches, moisture-conditioned as necessary, and compacted to 90 percent relative compaction.

Loose soil areas, areas of uncertified fill, and/or areas of disturbed soils shall be moisture-conditioned as necessary and recompacted to 90 percent relative compaction. All ruts, hummocks, or other uneven surface features shall be removed by surface grading prior to placement of any fill materials. All areas which are to receive fill materials shall be approved by the Soils Engineer prior to the placement of any of the fill material.

EXCAVATION: All excavation shall be accomplished to the tolerance normally defined by the Civil Engineer as shown on the project grading plans. All over-excavation below the grades specified shall be backfilled at the Contractor's expense and shall be compacted in accordance with the applicable technical requirements.

FILL AND BACKFILL MATERIAL: No material shall be moved or compacted without the presence of the Soils Engineer. Material from the required site excavation may be utilized for construction site fills provided prior approval is given by the Soils Engineer. All materials utilized for constructing site fills shall be free from vegetation or other deleterious matter as determined by the Soils Engineer.

PLACEMENT, SPREADING AND COMPACTION: The placement and spreading of approved fill materials and the processing and compaction of approved fill and native materials shall be the responsibility of the Contractor. However, compaction of fill materials by flooding, ponding, or jetting shall not be permitted unless specifically approved by local code, as well as the Soils Engineer.

Both cut and fill areas shall be surface-compacted to the satisfaction of the Soils Engineer prior to final acceptance.

SEASONAL LIMITS: No fill material shall be placed, spread, or rolled while it is frozen or thawing or during unfavorable wet weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until the Soils Engineer indicates that the moisture content and density of previously placed fill are as specified.

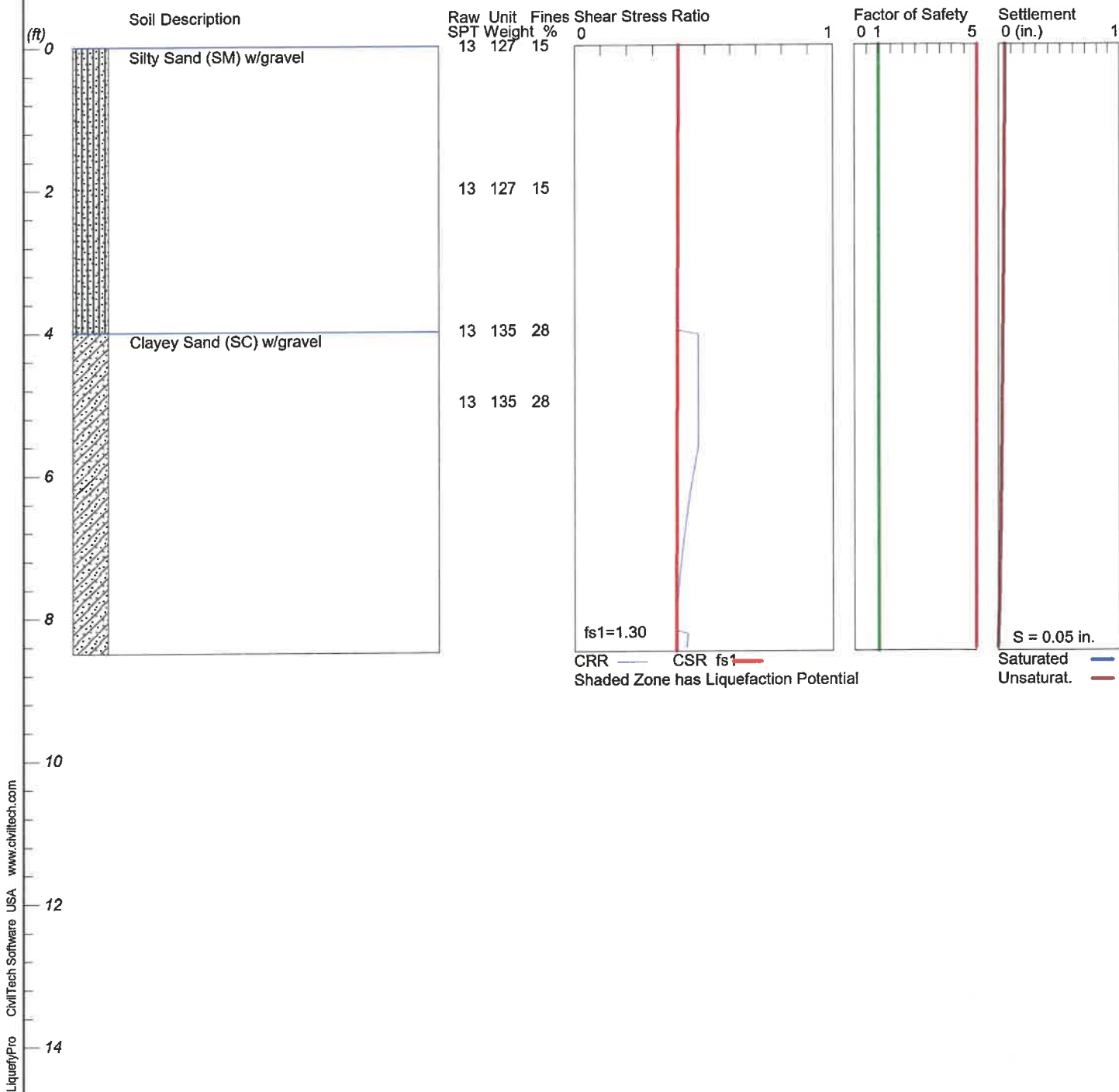
APPENDIX C
EARTHQUAKE DATA FILE AND LIQUEFACTION ANALYSIS

LIQUEFACTION ANALYSIS

Bakersfield College Pool Equipment Building

Hole No.=B-1 Water Depth=186 ft

Magnitude=6.3
Acceleration=0.473g



022-24092

Plate A-1

LIQUEFACTION ANALYSIS SUMMARY
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Font: Courier New, Regular, Size 8 is recommended for this report.
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Input File Name: UNTITLED
Title: Bakersfield College Pool Equipment Building
Subtitle: 022-24092

Surface Elev.=
Hole No.=B-1
Depth of Hole= 8.50 ft
Water Table during Earthquake= 186.00 ft
Water Table during In-Situ Testing= 186.00 ft
Max. Acceleration= 0.47 g
Earthquake Magnitude= 6.30

Input Data:

Surface Elev.=
Hole No.=B-1
Depth of Hole=8.50 ft
Water Table during Earthquake= 186.00 ft
Water Table during In-Situ Testing= 186.00 ft
Max. Acceleration=0.47 g
Earthquake Magnitude=6.30
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
 2. Settlement Analysis Method: Tokimatsu/Seed
 3. Fines Correction for Liquefaction: Modify Stark/Olson
 4. Fine Correction for Settlement: During Liquefaction*
 5. Settlement Calculation in: All zones*
 6. Hammer Energy Ratio, $C_e = 1.25$
 7. Borehole Diameter, $C_b = 1$
 8. Sampling Method, $C_s = 1$
 9. User request factor of safety (apply to CSR) , User= 1.3
Plot one CSR curve (fs1=User)
 10. Use Curve Smoothing: No
- * Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	13.00	127.00	15.00
2.00	13.00	127.00	15.00
4.00	13.00	135.00	28.00
5.00	13.00	135.00	28.00

Output Results:

Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.05 in.
Total Settlement of Saturated and Unsaturated Sands=0.05 in.
Differential Settlement=0.026 to 0.034 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	0.40	0.40	5.00	0.00	0.05	0.05
0.05	0.40	0.40	5.00	0.00	0.05	0.05
0.10	0.40	0.40	5.00	0.00	0.05	0.05
0.15	0.40	0.40	5.00	0.00	0.05	0.05
0.20	0.40	0.40	5.00	0.00	0.05	0.05
0.25	0.40	0.40	5.00	0.00	0.05	0.05
0.30	0.40	0.40	5.00	0.00	0.05	0.05

[illegible]

3.80	0.40	0.40	5.00	0.00	0.04	0.04
3.85	0.40	0.40	5.00	0.00	0.04	0.04
3.90	0.40	0.40	5.00	0.00	0.04	0.04
3.95	0.40	0.40	5.00	0.00	0.04	0.04
4.00	0.40	0.40	5.00	0.00	0.04	0.04
4.05	0.48	0.40	5.00	0.00	0.04	0.04
4.10	0.48	0.40	5.00	0.00	0.04	0.04
4.15	0.48	0.40	5.00	0.00	0.04	0.04
4.20	0.48	0.40	5.00	0.00	0.04	0.04
4.25	0.48	0.40	5.00	0.00	0.04	0.04
4.30	0.48	0.40	5.00	0.00	0.04	0.04
4.35	0.48	0.40	5.00	0.00	0.04	0.04
4.40	0.48	0.40	5.00	0.00	0.04	0.04
4.45	0.48	0.40	5.00	0.00	0.04	0.04
4.50	0.48	0.40	5.00	0.00	0.04	0.04
4.55	0.48	0.40	5.00	0.00	0.04	0.04
4.60	0.48	0.40	5.00	0.00	0.04	0.04
4.65	0.48	0.40	5.00	0.00	0.03	0.03
4.70	0.48	0.40	5.00	0.00	0.03	0.03
4.75	0.48	0.40	5.00	0.00	0.03	0.03
4.80	0.48	0.40	5.00	0.00	0.03	0.03
4.85	0.48	0.40	5.00	0.00	0.03	0.03
4.90	0.48	0.40	5.00	0.00	0.03	0.03
4.95	0.48	0.40	5.00	0.00	0.03	0.03
5.00	0.48	0.40	5.00	0.00	0.03	0.03
5.05	0.48	0.39	5.00	0.00	0.03	0.03
5.10	0.48	0.39	5.00	0.00	0.03	0.03
5.15	0.48	0.39	5.00	0.00	0.03	0.03
5.20	0.48	0.39	5.00	0.00	0.03	0.03
5.25	0.48	0.39	5.00	0.00	0.03	0.03
5.30	0.48	0.39	5.00	0.00	0.03	0.03
5.35	0.48	0.39	5.00	0.00	0.03	0.03
5.40	0.48	0.39	5.00	0.00	0.03	0.03
5.45	0.48	0.39	5.00	0.00	0.03	0.03
5.50	0.48	0.39	5.00	0.00	0.03	0.03
5.55	0.48	0.39	5.00	0.00	0.03	0.03
5.60	0.48	0.39	5.00	0.00	0.03	0.03
5.65	0.48	0.39	5.00	0.00	0.03	0.03
5.70	0.47	0.39	5.00	0.00	0.03	0.03
5.75	0.47	0.39	5.00	0.00	0.03	0.03
5.80	0.47	0.39	5.00	0.00	0.03	0.03
5.85	0.47	0.39	5.00	0.00	0.03	0.03
5.90	0.46	0.39	5.00	0.00	0.03	0.03
5.95	0.46	0.39	5.00	0.00	0.03	0.03
6.00	0.46	0.39	5.00	0.00	0.03	0.03
6.05	0.46	0.39	5.00	0.00	0.03	0.03
6.10	0.45	0.39	5.00	0.00	0.03	0.03
6.15	0.45	0.39	5.00	0.00	0.03	0.03
6.20	0.45	0.39	5.00	0.00	0.03	0.03
6.25	0.45	0.39	5.00	0.00	0.03	0.03
6.30	0.44	0.39	5.00	0.00	0.03	0.03
6.35	0.44	0.39	5.00	0.00	0.03	0.03
6.40	0.44	0.39	5.00	0.00	0.03	0.03
6.45	0.44	0.39	5.00	0.00	0.03	0.03
6.50	0.44	0.39	5.00	0.00	0.03	0.03
6.55	0.43	0.39	5.00	0.00	0.02	0.02
6.60	0.43	0.39	5.00	0.00	0.02	0.02
6.65	0.43	0.39	5.00	0.00	0.02	0.02
6.70	0.43	0.39	5.00	0.00	0.02	0.02
6.75	0.43	0.39	5.00	0.00	0.02	0.02
6.80	0.43	0.39	5.00	0.00	0.02	0.02
6.85	0.42	0.39	5.00	0.00	0.02	0.02
6.90	0.42	0.39	5.00	0.00	0.02	0.02
6.95	0.42	0.39	5.00	0.00	0.02	0.02
7.00	0.42	0.39	5.00	0.00	0.02	0.02
7.05	0.42	0.39	5.00	0.00	0.02	0.02
7.10	0.42	0.39	5.00	0.00	0.02	0.02
7.15	0.41	0.39	5.00	0.00	0.02	0.02
7.20	0.41	0.39	5.00	0.00	0.02	0.02

7.25	0.41	0.39	5.00	0.00	0.02	0.02
7.30	0.41	0.39	5.00	0.00	0.02	0.02
7.35	0.41	0.39	5.00	0.00	0.02	0.02
7.40	0.41	0.39	5.00	0.00	0.02	0.02
7.45	0.41	0.39	5.00	0.00	0.02	0.02
7.50	0.40	0.39	5.00	0.00	0.02	0.02
7.55	0.40	0.39	5.00	0.00	0.01	0.01
7.60	0.40	0.39	5.00	0.00	0.01	0.01
7.65	0.40	0.39	5.00	0.00	0.01	0.01
7.70	0.40	0.39	5.00	0.00	0.01	0.01
7.75	0.40	0.39	5.00	0.00	0.01	0.01
7.80	0.40	0.39	5.00	0.00	0.01	0.01
7.85	0.40	0.39	5.00	0.00	0.01	0.01
7.90	0.39	0.39	5.00	0.00	0.01	0.01
7.95	0.39	0.39	5.00	0.00	0.01	0.01
8.00	0.39	0.39	5.00	0.00	0.01	0.01
8.05	0.39	0.39	5.00	0.00	0.01	0.01
8.10	0.39	0.39	5.00	0.00	0.01	0.01
8.15	0.39	0.39	5.00	0.00	0.01	0.01
8.20	0.39	0.39	5.00	0.00	0.00	0.00
8.25	0.44	0.39	5.00	0.00	0.00	0.00
8.30	0.44	0.39	5.00	0.00	0.00	0.00
8.35	0.43	0.39	5.00	0.00	0.00	0.00
8.40	0.43	0.39	5.00	0.00	0.00	0.00
8.45	0.43	0.39	5.00	0.00	0.00	0.00
8.50	0.43	0.39	5.00	0.00	0.00	0.00

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

1 atm (atmosphere) = 1 tsf (ton/ft2)

CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the [U.S. Seismic Design Maps web tools](#) (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Please also see the new [USGS Earthquake Hazard Toolbox](#) for access to the most recent NSHMs for the conterminous U.S. and Hawaii.

^ Input

Edition

Dynamic: Conterminous U.S. 2014 (u...

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

35.407

Time Horizon

Return period in years

2475

Longitude

Decimal degrees, negative values for western longitudes

-118.972192

Site Class

259 m/s (Site class D)

^ Hazard Curve

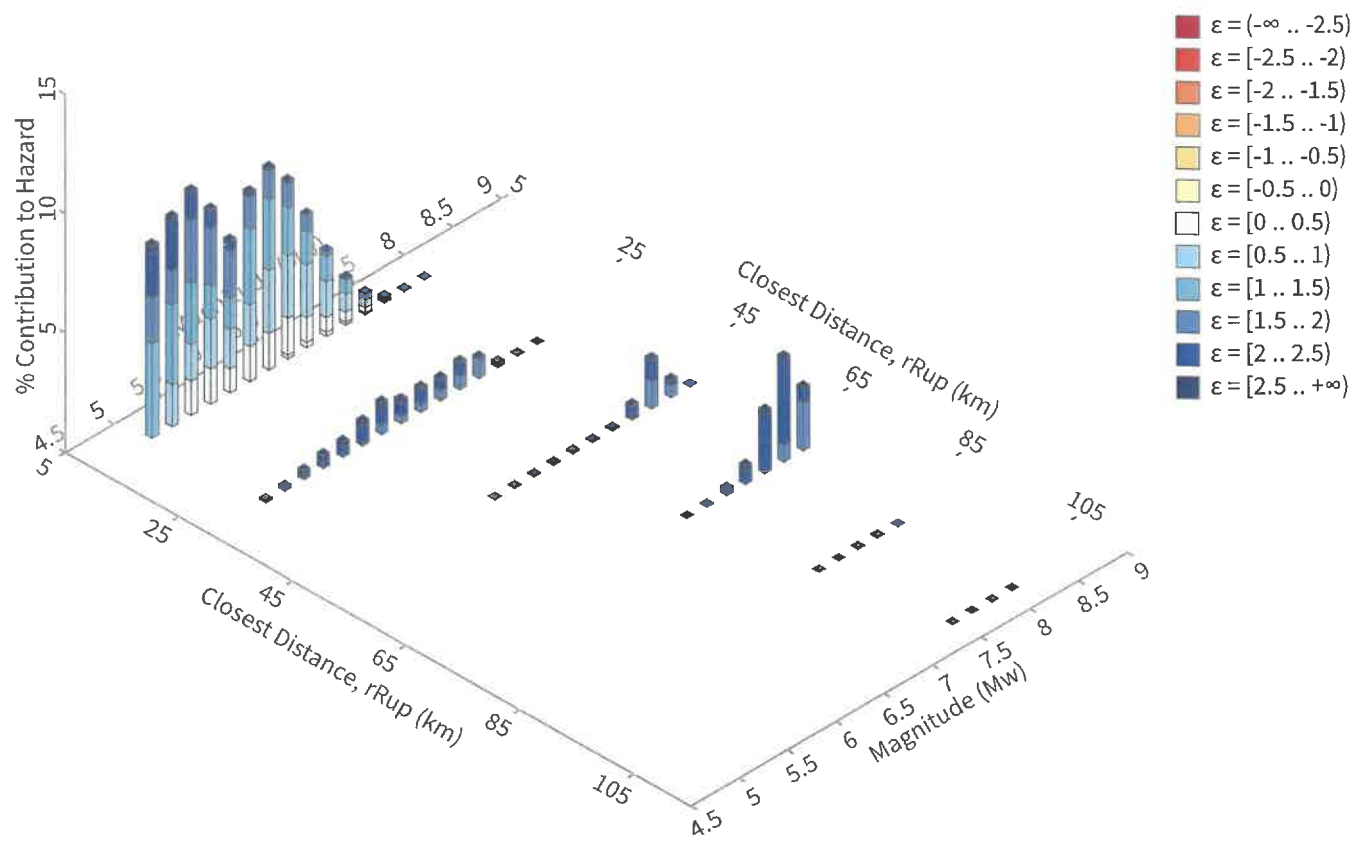
Please select "Edition", "Location" & "Site Class" above to compute a hazard curve.

Compute Hazard Curve

^ Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr⁻¹
PGA ground motion: 0.51334709 g

Recovered targets

Return period: 2808.6945 yrs
Exceedance rate: 0.0003560373 yr⁻¹

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.15 %

Mean (over all sources)

m: 6.3
r: 18.48 km
ε₀: 1.4 σ

Mode (largest m-r bin)

m: 5.5
r: 9.35 km
ε₀: 1.31 σ
Contribution: 9.37 %

Mode (largest m-r-ε₀ bin)

m: 5.1
r: 5.64 km
ε₀: 1.22 σ
Contribution: 3.94 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set	Source	Type	r	m	ϵ_0	lon	lat	az	%
UC33brAvg_FM31 (opt)		Grid							42.04
	PointSourceFinite: -118.972, 35.429		5.57	5.71	0.76	118.972°W	35.429°N	0.00	6.01
	PointSourceFinite: -118.972, 35.429		5.57	5.71	0.76	118.972°W	35.429°N	0.00	6.00
	PointSourceFinite: -118.972, 35.465		7.77	5.83	1.05	118.972°W	35.465°N	0.00	3.45
	PointSourceFinite: -118.972, 35.465		7.77	5.83	1.05	118.972°W	35.465°N	0.00	3.44
	PointSourceFinite: -118.972, 35.519		11.76	6.05	1.43	118.972°W	35.519°N	0.00	2.37
	PointSourceFinite: -118.972, 35.519		11.76	6.05	1.43	118.972°W	35.519°N	0.00	2.36
	PointSourceFinite: -118.972, 35.501		10.38	5.97	1.31	118.972°W	35.501°N	0.00	1.39
	PointSourceFinite: -118.972, 35.501		10.38	5.97	1.31	118.972°W	35.501°N	0.00	1.39
	PointSourceFinite: -118.972, 35.510		11.06	6.01	1.37	118.972°W	35.510°N	0.00	1.28
	PointSourceFinite: -118.972, 35.510		11.06	6.01	1.37	118.972°W	35.510°N	0.00	1.27
	PointSourceFinite: -118.972, 35.546		13.88	6.16	1.58	118.972°W	35.546°N	0.00	1.24
	PointSourceFinite: -118.972, 35.546		13.88	6.16	1.58	118.972°W	35.546°N	0.00	1.23
	PointSourceFinite: -118.972, 35.528		12.46	6.08	1.48	118.972°W	35.528°N	0.00	1.14
	PointSourceFinite: -118.972, 35.528		12.46	6.08	1.48	118.972°W	35.528°N	0.00	1.14
UC33brAvg_FM32 (opt)		Grid							41.99
	PointSourceFinite: -118.972, 35.429		5.57	5.70	0.76	118.972°W	35.429°N	0.00	6.01
	PointSourceFinite: -118.972, 35.429		5.57	5.70	0.76	118.972°W	35.429°N	0.00	6.00
	PointSourceFinite: -118.972, 35.465		7.78	5.83	1.06	118.972°W	35.465°N	0.00	3.45
	PointSourceFinite: -118.972, 35.465		7.78	5.83	1.06	118.972°W	35.465°N	0.00	3.44
	PointSourceFinite: -118.972, 35.519		11.76	6.05	1.43	118.972°W	35.519°N	0.00	2.36
	PointSourceFinite: -118.972, 35.519		11.76	6.05	1.43	118.972°W	35.519°N	0.00	2.35
	PointSourceFinite: -118.972, 35.501		10.38	5.97	1.32	118.972°W	35.501°N	0.00	1.39
	PointSourceFinite: -118.972, 35.501		10.38	5.97	1.32	118.972°W	35.501°N	0.00	1.39
	PointSourceFinite: -118.972, 35.510		11.06	6.01	1.37	118.972°W	35.510°N	0.00	1.27
	PointSourceFinite: -118.972, 35.510		11.06	6.01	1.37	118.972°W	35.510°N	0.00	1.27
	PointSourceFinite: -118.972, 35.546		13.88	6.15	1.58	118.972°W	35.546°N	0.00	1.24
	PointSourceFinite: -118.972, 35.546		13.88	6.15	1.58	118.972°W	35.546°N	0.00	1.23
	PointSourceFinite: -118.972, 35.528		12.46	6.08	1.48	118.972°W	35.528°N	0.00	1.14
	PointSourceFinite: -118.972, 35.528		12.46	6.08	1.48	118.972°W	35.528°N	0.00	1.14
UC33brAvg_FM31		System							8.01
	San Andreas (Big Bend) [3]		63.75	8.07	2.13	119.138°W	34.850°N	193.72	4.98
UC33brAvg_FM32		System							7.96
	San Andreas (Big Bend) [3]		63.75	8.08	2.13	119.138°W	34.850°N	193.72	4.96

02224092.OUT

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*****  
*                                     *  
*   E Q S E A R C H                 *  
*                                     *  
*   version 3.00                     *  
*                                     *  
*****
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ESTIMATION OF
PEAK ACCELERATION FROM
CALIFORNIA EARTHQUAKE CATALOGS

JOB NUMBER: 02224092

DATE: 08-14-2024

JOB NAME: 02224092

EARTHQUAKE-CATALOG-FILE NAME: ALLQUAKE.DAT

MAGNITUDE RANGE:

MINIMUM MAGNITUDE: 4.00
MAXIMUM MAGNITUDE: 9.00

SITE COORDINATES:

SITE LATITUDE: 35.4070
SITE LONGITUDE: 118.9721

SEARCH DATES:

START DATE: 1800
END DATE: 2023

SEARCH RADIUS:

50.0 mi
80.5 km

ATTENUATION RELATION: 3) Boore et al. (1997) Horiz. - NEHRP D (250)

UNCERTAINTY (M=Median, S=Sigma): M Number of Sigmas: 0.0

ASSUMED SOURCE TYPE: DS [SS=Strike-slip, DS=Reverse-slip, BT=Blind-thrust]

SCOND: 0 Depth Source: A

Basement Depth: 5.00 km Campbell SSR: Campbell SHR:

COMPUTE PEAK HORIZONTAL ACCELERATION

MINIMUM DEPTH VALUE (km): 0.0

EARTHQUAKE SEARCH RESULTS

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	35.3500	118.9670	02/04/1954	204841.0	0.0	4.00	0.112	VII	3.9(6.3)
PAS	35.4520	118.8990	02/08/1985	65816.9	11.1	4.60	0.134	VIII	5.1(8.3)
T-A	35.3300	119.0000	01/04/1870	7 0 0.0	0.0	4.30	0.110	VII	5.5(8.9)
DMG	35.3670	118.8830	09/12/1953	64116.0	0.0	4.10	0.097	VII	5.7(9.2)
DMG	35.3330	118.9170	07/31/1952	195314.0	0.0	4.50	0.117	VII	6.0(9.6)
DMG	35.3330	118.9170	08/07/1952	1919 7.0	0.0	4.20	0.100	VII	6.0(9.6)
DMG	35.3330	118.9170	07/29/1952	195132.0	0.0	4.50	0.117	VII	6.0(9.6)
DMG	35.3330	118.9170	08/22/1952	224124.0	0.0	5.80	0.233	IX	6.0(9.6)
DMG	35.3170	118.9500	09/01/1952	1039 0.0	0.0	4.10	0.092	VII	6.3(10.2)
DMG	35.5000	118.9670	09/29/1948	4 648.0	0.0	4.20	0.096	VII	6.4(10.3)
DMG	35.3830	118.8500	10/13/1952	222035.0	0.0	4.00	0.081	VII	7.1(11.4)
DMG	35.3830	118.8500	07/29/1952	7 347.0	0.0	6.10	0.246	IX	7.1(11.4)
GSP	35.3700	118.8500	12/18/1990	165643.0	6.0	4.20	0.088	VII	7.3(11.8)
MGI	35.3000	119.0000	01/08/1903	030 0.0	0.0	4.60	0.107	VII	7.5(12.1)
MGI	35.3000	119.0000	09/04/1908	0 0 0.0	0.0	4.60	0.107	VII	7.5(12.1)
DMG	35.3670	118.8330	03/17/1935	2026 0.0	0.0	4.00	0.073	VII	8.3(13.4)
DMG	35.4000	118.8170	07/29/1952	8 146.0	0.0	5.10	0.127	VIII	8.7(14.1)
PAS	35.3720	118.7740	12/15/1987	182346.1	3.2	4.10	0.062	VI	11.4(18.4)
DMG	35.3000	118.8000	12/23/1905	2223 0.0	0.0	5.00	0.095	VII	12.2(19.6)
DMG	35.3330	118.7330	08/05/1952	65010.0	0.0	4.40	0.061	VI	14.4(23.2)
DMG	35.4330	118.7000	05/01/1954	22 439.0	0.0	4.20	0.053	VI	15.4(24.8)
DMG	35.2170	118.8170	12/15/1953	124436.0	0.0	4.60	0.064	VI	15.8(25.4)
DMG	35.2170	118.8170	07/23/1952	1317 5.0	0.0	5.70	0.114	VII	15.8(25.4)
DMG	35.4500	119.2500	01/23/1935	1352 0.0	0.0	4.00	0.046	VI	15.9(25.6)
DMG	35.3330	119.2500	01/20/1941	135816.0	0.0	4.00	0.045	VI	16.5(26.5)
DMG	35.6000	118.8000	06/30/1926	1331 0.0	0.0	5.00	0.076	VII	16.5(26.5)
DMG	35.5000	118.7000	01/06/1905	1430 0.0	0.0	5.00	0.076	VII	16.6(26.7)
DMG	35.1840	119.0990	07/01/1959	234923.4	9.0	4.70	0.064	VI	17.0(27.3)
DMG	35.3790	118.6680	11/21/1955	205527.6	5.3	4.30	0.051	VI	17.2(27.7)
DMG	35.4320	118.6640	09/30/1964	175125.8	7.4	4.00	0.043	VI	17.4(28.0)
DMG	35.4650	118.6680	02/07/1964	221052.0	-0.5	4.20	0.048	VI	17.6(28.3)
DMG	35.1500	119.0500	11/11/1952	1722 8.0	0.0	4.20	0.046	VI	18.3(29.4)
DMG	35.4170	119.3000	06/04/1941	84719.0	0.0	4.00	0.041	V	18.5(29.7)
DMG	35.3000	118.6670	08/13/1952	212548.0	0.0	4.10	0.043	VI	18.7(30.1)
GSP	35.3180	118.6540	01/25/2003	091610.2	5.0	4.50	0.053	VI	18.9(30.5)
DMG	35.4000	118.6330	10/02/1952	231021.0	0.0	4.20	0.045	VI	19.1(30.7)
DMG	35.1830	119.1740	06/04/1956	83319.3	14.3	4.00	0.040	V	19.2(30.9)
GSP	35.1490	119.1040	05/28/1993	044740.6	21.0	5.20	0.075	VII	19.3(31.1)
GSP	35.3900	118.6230	09/29/2004	225454.2	3.0	5.00	0.067	VI	19.7(31.7)
DMG	35.3950	118.6200	08/08/1955	32150.5	4.1	4.70	0.057	VI	19.8(31.9)
DMG	35.3580	118.6160	08/24/1955	17 540.9	7.2	4.00	0.038	V	20.3(32.7)
DMG	35.4540	118.6050	02/07/1964	22 750.3	-2.0	4.40	0.047	VI	20.9(33.6)
DMG	35.3830	118.6000	09/05/1953	192436.0	0.0	4.10	0.040	V	21.0(33.8)
DMG	35.1000	118.9670	08/25/1952	62026.0	0.0	4.70	0.054	VI	21.2(34.1)
DMG	35.1000	119.0000	07/22/1952	14 511.0	0.0	4.30	0.044	VI	21.3(34.2)
DMG	35.1000	119.0000	07/24/1952	311 7.0	0.0	4.10	0.039	V	21.3(34.2)
DMG	35.3330	118.6000	09/16/1952	142454.0	0.0	4.00	0.037	V	21.6(34.7)
DMG	35.3330	118.6000	08/10/1952	6 118.0	0.0	4.00	0.037	V	21.6(34.7)
DMG	35.3330	118.6000	07/31/1952	12 9 9.0	0.0	5.80	0.095	VII	21.6(34.7)
DMG	35.3330	118.6000	07/23/1952	164853.0	0.0	4.50	0.048	VI	21.6(34.7)
DMG	35.3330	118.6000	07/23/1952	161838.0	0.0	4.50	0.048	VI	21.6(34.7)
DMG	35.2170	118.6670	09/14/1952	204324.0	0.0	4.10	0.039	V	21.6(34.8)
DMG	35.4000	118.5830	07/25/1952	7 351.0	0.0	4.10	0.038	V	21.9(35.2)

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EARTHQUAKE SEARCH RESULTS

Page 2

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	35.4000	118.5830	07/24/1952	114756.0	0.0	4.40	0.045	VI	21.9(35.2)
DMG	35.3670	118.5830	07/23/1952	65342.0	0.0	4.20	0.040	V	22.1(35.5)
DMG	35.3670	118.5830	07/23/1952	04738.0	0.0	4.60	0.050	VI	22.1(35.5)
DMG	35.3670	118.5830	07/23/1952	4 140.0	0.0	4.70	0.052	VI	22.1(35.5)
DMG	35.3670	118.5830	09/16/1952	1521 8.0	0.0	4.30	0.042	VI	22.1(35.5)
DMG	35.3670	118.5830	07/23/1952	03832.0	0.0	6.10	0.109	VII	22.1(35.5)
DMG	35.3670	118.5830	07/27/1952	73539.0	0.0	4.20	0.040	V	22.1(35.5)
DMG	35.3670	118.5830	07/23/1952	31923.0	0.0	5.00	0.061	VI	22.1(35.5)
DMG	35.3670	118.5830	07/23/1952	62628.0	0.0	4.00	0.036	V	22.1(35.5)
DMG	35.3670	118.5830	07/28/1952	154120.0	0.0	4.00	0.036	V	22.1(35.5)
DMG	35.1000	119.0830	12/06/1934	743 0.0	0.0	4.00	0.036	V	22.1(35.6)
DMG	35.1000	119.0830	07/24/1946	019 8.0	0.0	4.00	0.036	V	22.1(35.6)
DMG	35.1330	118.7670	07/25/1952	143442.0	0.0	4.40	0.044	VI	22.2(35.7)
DMG	35.1330	118.7670	07/21/1952	194122.0	0.0	5.50	0.079	VII	22.2(35.7)
PAS	35.2970	119.3460	05/06/1985	231433.0	24.4	4.40	0.044	VI	22.4(36.0)
DMG	35.3830	118.5670	07/23/1952	546 3.0	0.0	4.70	0.051	VI	22.9(36.8)
DMG	35.3330	118.5670	08/08/1952	51718.0	0.0	4.00	0.035	V	23.4(37.6)
DMG	35.0670	118.9830	08/04/1952	194750.0	0.0	4.00	0.034	V	23.5(37.8)
DMG	35.2830	118.5830	07/31/1952	1719 8.0	0.0	4.50	0.045	VI	23.5(37.9)
DMG	35.0670	118.9330	07/23/1952	223220.0	0.0	4.10	0.036	V	23.6(37.9)
DMG	35.0670	119.0330	07/27/1952	113438.0	0.0	4.10	0.036	V	23.7(38.2)
DMG	35.0670	119.0330	07/23/1952	175329.0	0.0	4.10	0.036	V	23.7(38.2)
DMG	35.1830	118.6500	07/21/1952	151358.0	0.0	5.10	0.061	VI	23.8(38.4)
DMG	35.2000	118.6330	07/22/1952	321 5.0	0.0	4.40	0.042	VI	23.9(38.4)
DMG	35.0660	119.0490	01/24/1974	5 2 0.8	6.4	4.30	0.040	V	23.9(38.5)
DMG	35.0670	118.8830	08/17/1952	21 442.0	0.0	4.30	0.040	V	24.0(38.6)
DMG	35.0670	118.8830	08/14/1952	114146.0	0.0	4.20	0.038	V	24.0(38.6)
DMG	35.0670	119.0670	02/24/1954	223022.0	0.0	4.50	0.044	VI	24.1(38.7)
DMG	35.1500	118.6830	08/13/1952	173925.0	0.0	4.70	0.049	VI	24.1(38.8)
DMG	35.2330	118.6000	07/22/1952	91025.0	0.0	4.50	0.044	VI	24.2(38.9)
DMG	35.2330	118.6000	01/10/1953	221738.0	0.0	4.00	0.034	V	24.2(38.9)
DMG	35.1330	118.7000	09/02/1952	124132.0	0.0	4.60	0.046	VI	24.4(39.2)
GSP	35.5423	119.3728	02/24/2016	000223.6	22.1	4.87	0.053	VI	24.4(39.2)
DMG	35.0500	118.9500	08/17/1952	614 4.0	0.0	4.00	0.033	V	24.7(39.7)
DMG	35.0500	118.9500	11/14/1952	2334 1.4	0.0	4.00	0.033	V	24.7(39.7)
DMG	35.3560	118.5380	07/19/1955	2 425.5	6.4	4.10	0.035	V	24.7(39.7)
DMG	35.3670	118.5330	07/23/1952	195134.0	0.0	4.20	0.037	V	24.9(40.0)
DMG	35.3370	118.5370	08/30/1952	45954.8	3.5	4.00	0.033	V	25.0(40.2)
PAS	35.0460	119.0010	06/05/1975	144645.3	9.0	4.10	0.035	V	25.0(40.2)
DMG	35.0500	118.9000	09/25/1952	162136.0	0.0	4.10	0.035	V	25.0(40.2)
DMG	35.3210	118.5400	07/24/1952	141012.2	9.5	4.00	0.033	V	25.0(40.3)
DMG	35.0450	119.0040	03/23/1956	212327.1	12.1	4.30	0.038	V	25.1(40.3)
GSP	35.0430	119.0130	09/22/2005	202448.6	11.0	4.70	0.047	VI	25.2(40.6)
DMG	35.3330	118.5330	08/01/1952	103556.0	0.0	4.00	0.033	V	25.2(40.6)
DMG	35.2830	118.5500	07/23/1952	34928.0	0.0	4.70	0.047	VI	25.3(40.7)
DMG	35.2830	118.5500	07/31/1952	41022.0	0.0	4.20	0.036	V	25.3(40.7)
DMG	35.2830	118.5500	07/23/1952	737 0.0	0.0	4.80	0.050	VI	25.3(40.7)
DMG	35.2830	118.5500	07/22/1952	15151.0	0.0	4.40	0.040	V	25.3(40.7)
DMG	35.2830	118.5500	08/01/1952	31611.6	0.0	4.50	0.042	VI	25.3(40.7)
DMG	35.2830	118.5500	07/26/1952	922 6.0	0.0	4.30	0.038	V	25.3(40.7)
DMG	35.3510	118.5270	08/11/1952	132149.2	-2.0	4.40	0.040	V	25.3(40.8)
DMG	35.0830	118.7500	07/26/1952	18 244.0	0.0	4.00	0.032	V	25.6(41.3)
DMG	35.0830	118.7500	07/26/1952	15 831.0	0.0	4.40	0.040	V	25.6(41.3)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	35.0830	118.7500	07/22/1952	84734.0	0.0	4.70	0.047	VI	25.6(41.3)
GSP	35.4663	118.5210	04/19/2014	121513.0	-0.8	4.24	0.037	V	25.7(41.4)
DMG	35.3140	118.5300	07/26/1952	225856.1	6.8	4.30	0.038	V	25.7(41.4)
DMG	35.3380	118.5230	08/06/1952	34624.2	12.6	4.30	0.038	V	25.7(41.4)
DMG	35.3000	118.5330	07/21/1952	182628.0	0.0	4.10	0.034	V	25.8(41.5)
DMG	35.3000	118.5330	07/30/1952	95929.0	0.0	4.00	0.032	V	25.8(41.5)
DMG	35.3000	118.5330	09/02/1952	1638 9.0	0.0	4.00	0.032	V	25.8(41.5)
DMG	35.3000	118.5330	07/21/1952	182338.0	0.0	4.50	0.042	VI	25.8(41.5)
DMG	35.0330	119.0000	07/22/1952	101939.0	0.0	4.10	0.034	V	25.9(41.6)
DMG	35.2410	118.5600	07/21/1952	1912 7.4	5.8	4.30	0.038	V	25.9(41.7)
DMG	35.0330	118.9330	07/22/1952	223133.0	0.0	4.70	0.046	VI	25.9(41.7)
PAS	35.2700	119.4020	09/26/1980	131841.1	5.0	4.10	0.034	V	26.0(41.8)
DMG	35.0330	118.9170	07/23/1952	211658.0	0.0	4.10	0.034	V	26.0(41.8)
DMG	35.1830	118.6000	07/26/1952	63850.0	0.0	4.00	0.032	V	26.1(41.9)
DMG	35.1830	118.6000	07/26/1952	2241 3.0	0.0	4.60	0.044	VI	26.1(41.9)
DMG	35.1830	118.6000	07/29/1952	154950.0	0.0	4.90	0.051	VI	26.1(41.9)
DMG	35.1500	118.6330	01/27/1954	141948.0	0.0	5.00	0.054	VI	26.1(42.0)
DMG	35.0670	118.7670	07/22/1952	21 211.0	0.0	4.20	0.035	V	26.2(42.1)
DMG	35.0330	119.0500	08/07/1952	163151.0	0.0	4.90	0.051	VI	26.2(42.1)
DMG	35.0330	119.0500	08/18/1952	44010.0	0.0	4.70	0.046	VI	26.2(42.1)
DMG	35.0330	119.0500	07/27/1952	71611.0	0.0	4.10	0.033	V	26.2(42.1)
DMG	35.3200	118.5180	07/27/1952	0 915.6	6.5	4.20	0.035	V	26.3(42.3)
DMG	35.0500	119.1330	08/06/1953	1120 4.0	0.0	4.40	0.039	V	26.3(42.3)
DMG	35.0500	119.1330	05/23/1953	75255.0	0.0	4.20	0.035	V	26.3(42.3)
DMG	35.3150	118.5160	07/25/1952	194323.7	11.2	5.70	0.077	VII	26.5(42.6)
DMG	35.3450	118.5070	07/23/1952	18 328.3	10.4	4.00	0.031	V	26.5(42.7)
DMG	35.3160	118.5140	07/24/1952	14 525.9	5.4	4.30	0.037	V	26.5(42.7)
DMG	35.3080	118.5160	07/31/1952	19 515.4	7.3	4.00	0.031	V	26.6(42.8)
DMG	35.2350	118.5480	03/03/1973	181449.5	8.0	4.00	0.031	V	26.7(42.9)
DMG	35.3670	118.5000	06/20/1953	231852.0	0.0	4.40	0.039	V	26.7(43.0)
DMG	35.3300	118.5070	05/29/1968	22938.7	3.1	4.00	0.031	V	26.7(43.0)
DMG	35.0330	118.8500	10/07/1953	145921.0	0.0	4.90	0.050	VI	26.7(43.0)
DMG	35.0830	119.2330	03/03/1956	62412.0	0.0	4.20	0.035	V	26.8(43.1)
DMG	35.0330	119.1000	02/07/1954	0 953.0	0.0	4.40	0.038	V	26.8(43.1)
DMG	35.0330	119.1000	01/12/1954	234037.0	0.0	4.10	0.033	V	26.8(43.1)
DMG	35.0330	119.1000	09/02/1953	152756.0	0.0	4.00	0.031	V	26.8(43.1)
DMG	35.0330	119.1000	01/13/1954	14531.0	0.0	4.40	0.038	V	26.8(43.1)
DMG	35.0170	118.9830	08/17/1952	9 9 7.0	0.0	4.10	0.033	V	26.9(43.3)
DMG	35.0500	119.1670	12/14/1950	135623.0	0.0	4.40	0.038	V	27.0(43.4)
GSB	35.0380	119.1300	02/14/2004	124311.4	12.0	4.60	0.043	VI	27.0(43.4)
DMG	35.3050	118.5070	08/09/1952	10 732.1	-2.0	4.20	0.034	V	27.1(43.6)
DMG	35.0170	119.0500	08/05/1953	122059.0	0.0	4.30	0.036	V	27.3(43.9)
PAS	35.0350	119.1370	06/16/1978	42131.6	1.8	4.30	0.036	V	27.3(44.0)
DMG	35.5000	118.5000	07/27/1952	24912.0	0.0	4.00	0.031	V	27.3(44.0)
DMG	35.3110	118.4990	07/25/1952	1313 8.2	2.8	5.00	0.052	VI	27.4(44.2)
DMG	35.2330	118.5330	07/24/1952	1735 6.0	0.0	4.20	0.034	V	27.5(44.2)
DMG	35.2330	118.5330	03/17/1953	161517.0	0.0	4.00	0.031	V	27.5(44.2)
DMG	35.2330	118.5330	07/22/1952	15 314.0	0.0	4.20	0.034	V	27.5(44.2)
DMG	35.2330	118.5330	07/30/1952	144650.0	0.0	4.10	0.032	V	27.5(44.2)
DMG	35.2330	118.5330	07/29/1952	173643.0	0.0	4.40	0.038	V	27.5(44.2)
DMG	35.2330	118.5330	07/21/1952	174244.0	0.0	5.10	0.055	VI	27.5(44.2)
DMG	35.3210	118.4940	02/11/1955	194431.5	14.7	4.50	0.040	V	27.6(44.4)
DMG	35.3000	118.5000	02/19/1953	812 6.0	0.0	4.40	0.038	V	27.6(44.4)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	35.3170	118.4940	07/25/1952	19 944.6	5.5	5.70	0.075	VII	27.6(44.5)
DMG	35.3240	118.4860	01/20/1953	81322.8	7.2	4.00	0.030	V	28.0(45.0)
DMG	35.3130	118.4890	10/20/1952	181443.6	14.0	4.30	0.035	V	28.0(45.0)
DMG	35.3160	118.4870	09/15/1952	44013.2	4.2	4.90	0.048	VI	28.0(45.1)
DMG	35.2390	118.5180	07/21/1952	2021 5.1	-2.0	4.20	0.033	V	28.1(45.2)
DMG	35.4540	118.4760	11/23/1953	2039 0.9	5.9	4.40	0.037	V	28.1(45.2)
DMG	35.0000	119.0000	08/10/1952	194424.0	0.0	4.10	0.032	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1359 0.0	0.0	4.60	0.041	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1239 0.0	0.0	4.20	0.033	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1617 0.0	0.0	4.10	0.032	V	28.1(45.3)
DMG	35.0000	119.0000	07/22/1952	82122.0	0.0	4.10	0.032	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1228 0.0	0.0	4.20	0.033	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	18 0 0.0	0.0	4.50	0.039	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	13 8 0.0	0.0	4.50	0.039	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1442 0.0	0.0	4.20	0.033	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1225 0.0	0.0	4.70	0.043	VI	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1415 0.0	0.0	4.40	0.037	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	12 531.0	0.0	6.40	0.106	VII	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1240 0.0	0.0	4.90	0.048	VI	28.1(45.3)
DMG	35.0000	119.0000	07/22/1952	133143.0	0.0	4.80	0.046	VI	28.1(45.3)
DMG	35.0000	119.0000	02/16/1919	1557 0.0	0.0	5.00	0.051	VI	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1451 0.0	0.0	4.20	0.033	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	132512.0	0.0	4.50	0.039	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1212 0.0	0.0	4.60	0.041	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1222 0.0	0.0	4.90	0.048	VI	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1313 0.0	0.0	4.50	0.039	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1336 0.0	0.0	4.10	0.032	V	28.1(45.3)
DMG	35.0000	119.0000	07/22/1952	191024.0	0.0	4.10	0.032	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1210 0.0	0.0	4.50	0.039	V	28.1(45.3)
DMG	35.0000	119.0000	07/25/1952	0 3 0.0	0.0	4.00	0.030	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1417 0.0	0.0	4.10	0.032	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1311 0.0	0.0	4.10	0.032	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1542 0.0	0.0	4.20	0.033	V	28.1(45.3)
DMG	35.0000	119.0000	03/13/1929	228 0.0	0.0	4.50	0.039	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	14 6 0.0	0.0	4.20	0.033	V	28.1(45.3)
DMG	35.0000	119.0000	07/22/1952	175236.0	0.0	4.10	0.032	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	12 7 0.0	0.0	4.70	0.043	VI	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1536 0.0	0.0	4.20	0.033	V	28.1(45.3)
DMG	35.0000	119.0000	01/25/1919	2229 0.0	0.0	4.00	0.030	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	12 6 0.0	0.0	4.80	0.046	VI	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1638 0.0	0.0	4.50	0.039	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1218 0.0	0.0	4.40	0.037	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1317 0.0	0.0	4.00	0.030	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1259 0.0	0.0	4.20	0.033	V	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	1553 0.0	0.0	4.50	0.039	V	28.1(45.3)
DMG	35.0000	119.0000	07/23/1952	043 8.0	0.0	4.40	0.037	V	28.1(45.3)
DMG	35.0000	119.0170	05/25/1953	324 1.0	0.0	4.80	0.046	VI	28.2(45.4)
DMG	35.0000	119.0170	07/21/1952	115214.0	0.0	7.70	0.211	VIII	28.2(45.4)
DMG	35.0000	119.0170	01/12/1954	233349.0	0.0	5.90	0.082	VII	28.2(45.4)
DMG	35.0000	119.0330	07/21/1952	12 2 0.0	0.0	5.60	0.069	VI	28.3(45.6)
DMG	35.0000	119.0330	07/21/1952	1157 0.0	0.0	4.50	0.039	V	28.3(45.6)
DMG	35.0000	119.0330	07/21/1952	1158 0.0	0.0	4.60	0.041	V	28.3(45.6)
DMG	35.0000	119.0330	07/21/1952	1155 0.0	0.0	4.50	0.039	V	28.3(45.6)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	35.0000	119.0330	07/21/1952	1159 0.0	0.0	4.50	0.039	V	28.3(45.6)
DMG	35.0000	119.0330	07/21/1952	1154 0.0	0.0	4.50	0.039	V	28.3(45.6)
DMG	35.3140	118.4820	08/30/1952	45559.8	5.5	4.70	0.043	VI	28.3(45.6)
DMG	35.0000	119.0500	09/12/1952	103525.0	0.0	4.50	0.039	V	28.4(45.8)
DMG	35.3400	118.4730	07/24/1952	5 249.6	2.1	4.50	0.039	V	28.5(45.8)
DMG	35.3350	118.4740	07/23/1952	172224.0	6.6	4.50	0.039	V	28.5(45.8)
GSP	35.0310	119.1800	05/06/2005	022909.5	11.0	4.10	0.031	V	28.5(45.8)
PAS	35.0180	119.1410	11/10/1981	223435.5	3.1	4.50	0.039	V	28.5(45.9)
DMG	35.3030	118.4810	09/04/1952	18 649.1	5.8	4.40	0.037	V	28.6(46.0)
DMG	35.3360	118.4720	07/23/1952	105413.5	19.7	4.10	0.031	V	28.6(46.0)
DMG	35.2290	118.5130	06/28/1957	1132 0.8	1.6	4.10	0.031	V	28.6(46.1)
GSB	35.0270	119.1780	04/16/2005	191813.0	10.0	4.60	0.041	V	28.7(46.2)
DMG	35.1990	118.5310	09/01/1961	165148.9	4.5	4.00	0.030	V	28.7(46.2)
DMG	35.0500	119.2330	08/19/1952	191226.0	0.0	4.50	0.039	V	28.7(46.2)
DMG	35.0000	119.0830	11/07/1952	85535.0	0.0	4.60	0.041	V	28.8(46.3)
DMG	35.3460	118.4650	12/25/1952	55633.0	4.6	4.10	0.031	V	28.9(46.4)
DMG	35.3030	118.4730	08/01/1952	213522.4	4.2	4.00	0.029	V	29.0(46.7)
PAS	35.0000	119.1030	05/13/1975	02135.6	19.1	4.50	0.038	V	29.1(46.8)
DMG	35.1000	118.6170	09/26/1952	202120.0	0.0	4.00	0.029	V	29.2(46.9)
DMG	35.0000	118.8330	12/01/1952	52610.0	0.0	4.40	0.036	V	29.2(46.9)
DMG	35.0000	118.8330	07/23/1952	75319.0	0.0	5.40	0.061	VI	29.2(46.9)
DMG	35.0000	118.8330	07/23/1952	181351.0	0.0	5.20	0.055	VI	29.2(46.9)
DMG	34.9830	118.9830	05/23/1954	235243.0	0.0	5.10	0.052	VI	29.3(47.1)
DMG	35.2900	118.4700	07/24/1952	12 757.6	14.1	4.10	0.031	V	29.4(47.3)
DMG	34.9830	119.0330	07/21/1952	235328.0	0.0	4.50	0.038	V	29.5(47.4)
DMG	34.9830	118.9000	03/23/1953	17 637.0	0.0	4.00	0.029	V	29.6(47.6)
DMG	34.9830	118.9000	07/24/1952	95032.0	0.0	4.30	0.034	V	29.6(47.6)
DMG	35.2500	118.4830	07/23/1952	93842.0	0.0	4.20	0.032	V	29.6(47.6)
DMG	35.2500	118.4830	07/23/1952	1330 4.0	0.0	4.40	0.036	V	29.6(47.6)
PAS	35.0120	119.1790	11/10/1981	2237 5.0	9.4	4.20	0.032	V	29.7(47.7)
DMG	35.2890	118.4600	07/26/1952	1 221.3	10.8	4.20	0.032	V	30.0(48.2)
DMG	35.3600	118.4380	08/03/1952	15156.1	7.0	4.10	0.030	V	30.2(48.7)
DMG	34.9670	118.9500	07/30/1952	11 255.0	0.0	4.10	0.030	V	30.4(48.9)
DMG	34.9670	118.9500	11/27/1952	153641.0	0.0	4.00	0.028	V	30.4(48.9)
DMG	34.9670	119.0000	09/02/1952	204556.0	0.0	4.70	0.041	V	30.4(48.9)
GSP	35.4530	118.4310	05/06/1997	191253.8	6.0	4.50	0.037	V	30.6(49.2)
DMG	35.0670	118.6170	07/23/1952	235136.0	0.0	4.00	0.028	V	30.9(49.6)
GSP	35.0220	119.2530	05/08/2010	192306.6	15.0	4.30	0.033	V	30.9(49.8)
DMG	35.2670	118.4500	07/21/1952	191619.0	0.0	4.30	0.033	V	31.0(49.8)
GSP	35.4730	118.4250	05/01/2008	081143.2	6.0	4.40	0.034	V	31.1(50.1)
DMG	35.2990	118.4350	07/25/1952	20 6 6.1	-1.4	4.80	0.042	VI	31.1(50.1)
DMG	35.0000	118.7330	08/23/1952	6 3 3.0	0.0	4.30	0.033	V	31.2(50.2)
DMG	35.0000	118.7330	04/29/1953	124745.0	0.0	4.70	0.040	V	31.2(50.2)
DMG	35.3000	118.4320	07/23/1952	61045.9	14.5	4.20	0.031	V	31.3(50.4)
DMG	35.0830	118.5830	07/22/1952	81624.0	0.0	4.40	0.034	V	31.3(50.4)
DMG	35.0830	118.5830	08/04/1952	535 0.0	0.0	4.00	0.028	V	31.3(50.4)
DMG	34.9500	118.9500	10/16/1952	1222 7.0	0.0	4.30	0.032	V	31.6(50.8)
DMG	34.9500	119.0170	11/11/1952	181225.0	0.0	4.10	0.029	V	31.7(50.9)
DMG	35.1330	118.5170	07/28/1952	54554.0	0.0	4.20	0.030	V	31.9(51.3)
DMG	35.1330	118.5170	08/14/1952	72822.0	0.0	4.10	0.029	V	31.9(51.3)
DMG	35.1330	118.5170	07/23/1952	152524.0	0.0	4.00	0.027	V	31.9(51.3)
DMG	35.1330	118.5170	07/22/1952	141 2.0	0.0	4.50	0.036	V	31.9(51.3)
DMG	34.9450	118.9680	03/04/1963	201042.3	8.5	4.00	0.027	V	31.9(51.3)

EARTHQUAKE SEARCH RESULTS

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	34.9500	118.8670	07/21/1952	121936.0	0.0	5.30	0.054	VI	32.1(51.7)
DMG	35.1940	118.4650	07/22/1952	19 858.2	3.7	4.30	0.032	V	32.1(51.7)
DMG	34.9410	118.9870	11/15/1961	53855.5	10.7	5.00	0.046	VI	32.2(51.8)
DMG	35.2890	118.4110	08/10/1952	122318.0	4.0	4.60	0.037	V	32.6(52.5)
DMG	34.9320	118.9760	03/01/1963	02557.9	13.9	5.00	0.045	VI	32.8(52.8)
DMG	35.2000	119.5000	06/09/1928	822 0.0	0.0	4.00	0.027	V	33.0(53.1)
MGI	35.2000	119.5000	12/01/1920	130 0.0	0.0	4.60	0.036	V	33.0(53.1)
DMG	34.9280	118.9700	01/15/1955	1 3 6.7	9.1	4.30	0.031	V	33.1(53.2)
DMG	35.2940	118.4010	08/13/1952	42940.6	14.5	4.60	0.036	V	33.1(53.3)
DMG	34.9330	119.0670	02/10/1954	235838.0	0.0	4.50	0.034	V	33.2(53.4)
PAS	35.0950	118.5190	06/22/1981	45747.3	5.0	4.00	0.026	V	33.4(53.8)
T-A	34.9200	118.9200	05/23/1857	0 0 0.0	0.0	5.00	0.044	VI	33.7(54.3)
T-A	34.9200	118.9200	08/29/1857	0 0 0.0	0.0	4.30	0.031	V	33.7(54.3)
T-A	34.9200	118.9200	01/20/1857	0 0 0.0	0.0	5.00	0.044	VI	33.7(54.3)
GSP	34.9180	119.0200	12/24/2000	010421.9	14.0	4.40	0.032	V	33.9(54.5)
PAS	35.7550	118.5420	04/17/1975	91833.8	9.6	4.00	0.026	V	34.1(54.8)
DMG	35.1170	118.4810	05/01/1953	64820.9	2.4	4.10	0.027	V	34.2(55.0)
DMG	34.9110	118.9730	02/23/1939	84551.7	10.0	4.50	0.034	V	34.2(55.1)
DMG	34.9220	119.1030	01/09/1963	6 4 3.8	8.7	4.00	0.026	V	34.3(55.2)
PAS	34.9430	118.7430	06/10/1988	23 643.0	6.8	5.40	0.054	VI	34.5(55.6)
DMG	34.9030	119.0380	05/08/1939	248 5.3	10.0	4.50	0.033	V	35.0(56.3)
DMG	34.9000	118.9500	08/01/1952	13 430.0	0.0	5.10	0.045	VI	35.0(56.4)
DMG	34.9000	118.9000	10/23/1916	244 0.0	0.0	6.00	0.073	VII	35.2(56.7)
DMG	35.4400	118.3470	01/02/1964	194841.0	6.3	4.20	0.028	V	35.2(56.7)
DMG	34.9000	119.0500	07/22/1952	143018.0	0.0	4.30	0.030	V	35.3(56.8)
GSP	35.7310	118.4790	07/11/1999	182046.8	4.0	4.40	0.031	V	35.6(57.3)
GSP	35.6800	118.4300	11/11/1991	045327.0	4.0	4.00	0.025	V	35.8(57.6)
DMG	34.8850	119.0020	02/23/1939	91846.7	10.0	4.50	0.032	V	36.1(58.1)
DMG	34.8830	119.0330	08/20/1952	84747.0	0.0	4.20	0.027	V	36.3(58.5)
DMG	35.6670	118.4040	03/08/1971	23 8 7.7	5.9	4.10	0.026	V	36.6(58.9)
DMG	35.8000	118.5330	07/26/1932	65158.3	0.0	4.50	0.032	V	36.7(59.0)
DMG	34.8670	118.9330	09/21/1941	1953 7.2	0.0	5.20	0.045	VI	37.3(60.1)
DMG	34.8670	119.0170	07/21/1952	2153 9.0	0.0	4.30	0.028	V	37.4(60.1)
DMG	35.6590	118.3780	03/03/1971	12 516.0	4.1	4.00	0.024	V	37.6(60.6)
DMG	34.8670	118.8670	07/22/1952	74455.0	0.0	4.10	0.025	V	37.7(60.7)
GSP	35.4860	118.2875	07/24/2013	164602.6	5.5	4.29	0.027	V	38.9(62.6)
DMG	35.6470	118.3450	06/05/1946	215932.4	0.0	4.30	0.027	V	38.9(62.7)
GSP	35.4803	118.2853	08/25/2013	185028.7	1.2	4.20	0.026	V	39.0(62.7)
DMG	35.0630	118.4230	08/26/1952	205640.6	-0.8	4.40	0.029	V	39.0(62.8)
DMG	34.8430	119.0260	03/07/1939	195331.8	10.0	4.00	0.023	IV	39.1(62.9)
DMG	34.8350	118.9880	11/29/1936	55445.3	10.0	4.00	0.023	IV	39.5(63.6)
DMG	35.5340	118.2640	05/28/1955	194420.0	12.3	4.50	0.029	V	40.8(65.6)
T-A	34.8300	118.7500	11/27/1852	0 0 0.0	0.0	7.00	0.108	VII	41.8(67.2)
DMG	34.8410	119.2400	01/11/1958	23 847.4	10.8	4.00	0.022	IV	41.9(67.4)
DMG	35.6320	118.2680	03/17/1946	81636.0	-2.0	4.60	0.030	V	42.5(68.4)
DMG	34.8000	119.1000	09/05/1883	1230 0.0	0.0	6.00	0.063	VI	42.5(68.4)
GSP	35.0980	118.3060	12/31/1995	214823.1	7.0	4.00	0.022	IV	43.2(69.5)
DMG	34.7840	118.9020	07/27/1972	03117.4	8.0	4.40	0.027	V	43.2(69.5)
DMG	35.7500	119.6170	04/15/1950	115632.0	0.0	4.60	0.030	V	43.3(69.6)
DMG	35.6870	118.2630	05/03/1936	1421 1.8	10.0	4.00	0.021	IV	44.3(71.2)
DMG	35.6770	118.2050	06/11/1935	162046.3	-1.4	4.00	0.020	IV	47.0(75.6)
DMG	36.0800	118.8300	05/29/1915	830 0.0	0.0	4.50	0.026	V	47.1(75.9)
DMG	35.6480	118.1870	01/19/1937	235738.5	10.0	4.00	0.020	IV	47.1(75.9)

EARTHQUAKE SEARCH RESULTS

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
GSG	35.9280	118.4280	07/13/1992	095305.9	5.0	4.00	0.020	IV	47.2(75.9)
DMG	35.3000	119.8000	01/09/1857	16 0 0.0	0.0	7.90	0.157	VIII	47.2(76.0)
DMG	35.7330	118.2330	07/10/1943	31233.0	0.0	4.00	0.020	IV	47.2(76.0)
DMG	36.0800	118.8200	05/29/1915	646 0.0	0.0	5.00	0.034	V	47.2(76.0)
DMG	35.5820	118.1590	07/26/1948	1750 1.4	4.6	4.50	0.026	V	47.3(76.1)
DMG	36.0900	118.8700	02/11/1948	32928.3	11.7	4.60	0.028	V	47.5(76.4)
DMG	34.7170	118.9670	06/11/1935	1810 0.0	0.0	4.00	0.020	IV	47.6(76.7)
DMG	34.7000	119.0000	10/23/1916	254 0.0	0.0	5.50	0.043	VI	48.8(78.6)

 -END OF SEARCH- 326 EARTHQUAKES FOUND WITHIN THE SPECIFIED SEARCH AREA.

TIME PERIOD OF SEARCH: 1800 TO 2023

LENGTH OF SEARCH TIME: 224 years

THE EARTHQUAKE CLOSEST TO THE SITE IS ABOUT 3.9 MILES (6.3 km) AWAY.

LARGEST EARTHQUAKE MAGNITUDE FOUND IN THE SEARCH RADIUS: 7.9

LARGEST EARTHQUAKE SITE ACCELERATION FROM THIS SEARCH: 0.246 g

COEFFICIENTS FOR GUTENBERG & RICHTER RECURRENCE RELATION:

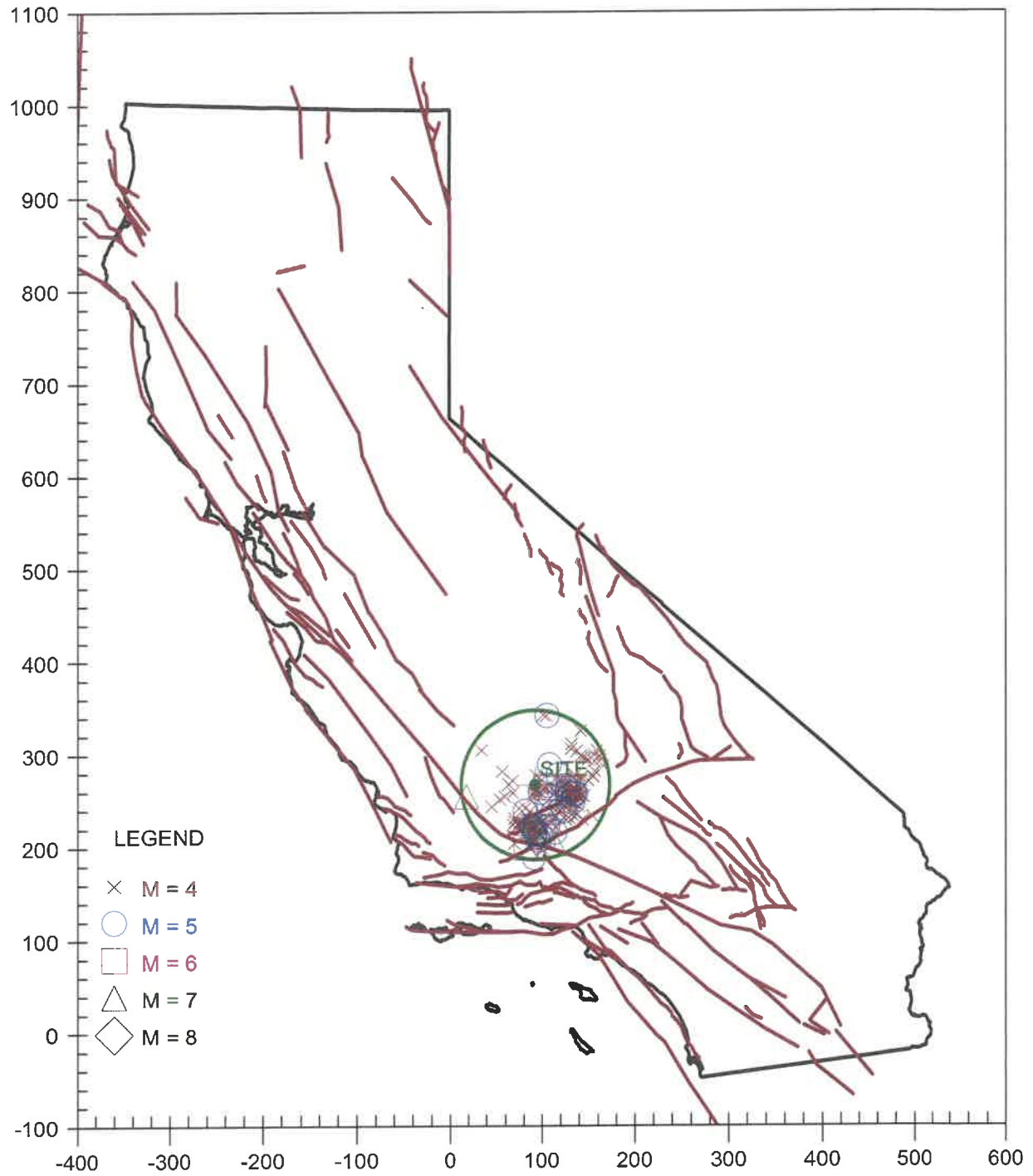
a-value= 3.420
 b-value= 0.819
 beta-value= 1.887

TABLE OF MAGNITUDES AND EXCEEDANCES:

Earthquake Magnitude	Number of Times Exceeded	Cumulative No. / Year
4.0	326	1.46188
4.5	128	0.57399
5.0	41	0.18386
5.5	17	0.07623
6.0	8	0.03587
6.5	3	0.01345
7.0	3	0.01345
7.5	2	0.00897

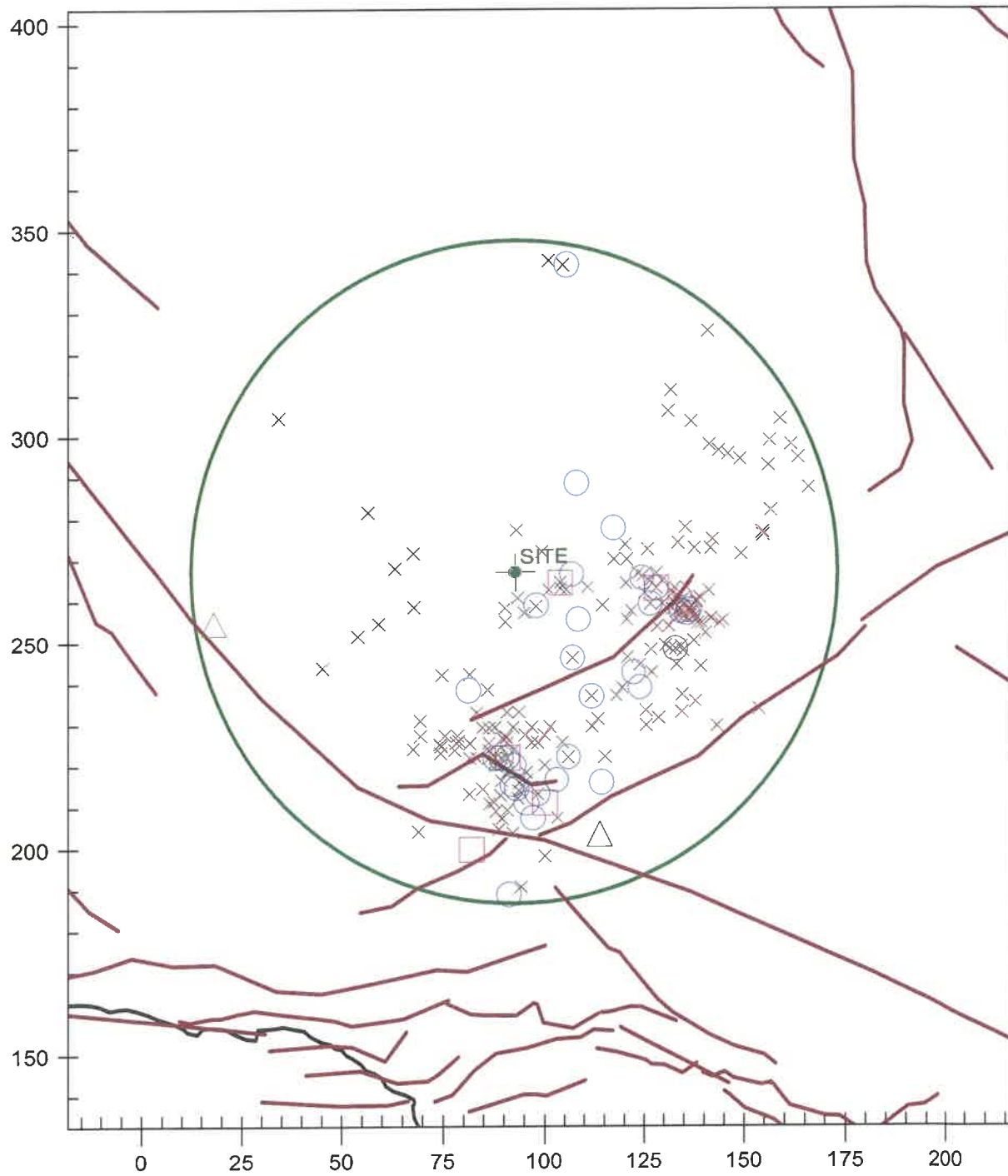
EARTHQUAKE EPICENTER MAP

02224092



EARTHQUAKE EPICENTER MAP

02224092



02224092.OUT

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*****  
*                                     *  
*   E Q S E A R C H               *  
*   Version 3.00                   *  
*                                     *  
*****
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ESTIMATION OF
PEAK ACCELERATION FROM
CALIFORNIA EARTHQUAKE CATALOGS

JOB NUMBER: 02224092

DATE: 08-14-2024

JOB NAME: 02224092

EARTHQUAKE-CATALOG-FILE NAME: ALLQUAKE.DAT

MAGNITUDE RANGE:

MINIMUM MAGNITUDE: 5.00
MAXIMUM MAGNITUDE: 9.00

SITE COORDINATES:

SITE LATITUDE: 35.4070
SITE LONGITUDE: 118.9721

SEARCH DATES:

START DATE: 1800
END DATE: 2023

SEARCH RADIUS:

100.0 mi
160.9 km

ATTENUATION RELATION: 3) Boore et al. (1997) Horiz. - NEHRP D (250)

UNCERTAINTY (M=Median, S=Sigma): M Number of Sigmas: 0.0

ASSUMED SOURCE TYPE: DS [SS=Strike-slip, DS=Reverse-slip, BT=Blind-thrust]

SCOND: 0 Depth Source: A

Basement Depth: 5.00 km Campbell SSR: Campbell SHR:

COMPUTE PEAK HORIZONTAL ACCELERATION

MINIMUM DEPTH VALUE (km): 0.0

EARTHQUAKE SEARCH RESULTS

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	35.3330	118.9170	08/22/1952	224124.0	0.0	5.80	0.233	IX	6.0(9.6)
DMG	35.3830	118.8500	07/29/1952	7 347.0	0.0	6.10	0.246	IX	7.1(11.4)
DMG	35.4000	118.8170	07/29/1952	8 146.0	0.0	5.10	0.127	VIII	8.7(14.1)
DMG	35.3000	118.8000	12/23/1905	2223 0.0	0.0	5.00	0.095	VII	12.2(19.6)
DMG	35.2170	118.8170	07/23/1952	1317 5.0	0.0	5.70	0.114	VII	15.8(25.4)
DMG	35.6000	118.8000	06/30/1926	1331 0.0	0.0	5.00	0.076	VII	16.5(26.5)
DMG	35.5000	118.7000	01/06/1905	1430 0.0	0.0	5.00	0.076	VII	16.6(26.7)
GSP	35.1490	119.1040	05/28/1993	044740.6	21.0	5.20	0.075	VII	19.3(31.1)
GSP	35.3900	118.6230	09/29/2004	225454.2	3.0	5.00	0.067	VI	19.7(31.7)
DMG	35.3330	118.6000	07/31/1952	12 9 9.0	0.0	5.80	0.095	VII	21.6(34.7)
DMG	35.3670	118.5830	07/23/1952	31923.0	0.0	5.00	0.061	VI	22.1(35.5)
DMG	35.3670	118.5830	07/23/1952	03832.0	0.0	6.10	0.109	VII	22.1(35.5)
DMG	35.1330	118.7670	07/21/1952	194122.0	0.0	5.50	0.079	VII	22.2(35.7)
DMG	35.1830	118.6500	07/21/1952	151358.0	0.0	5.10	0.061	VI	23.8(38.4)
DMG	35.1500	118.6330	01/27/1954	141948.0	0.0	5.00	0.054	VI	26.1(42.0)
DMG	35.3150	118.5160	07/25/1952	194323.7	11.2	5.70	0.077	VII	26.5(42.6)
DMG	35.3110	118.4990	07/25/1952	1313 8.2	2.8	5.00	0.052	VI	27.4(44.2)
DMG	35.2330	118.5330	07/21/1952	174244.0	0.0	5.10	0.055	VI	27.5(44.2)
DMG	35.3170	118.4940	07/25/1952	19 944.6	5.5	5.70	0.075	VII	27.6(44.5)
DMG	35.0000	119.0000	02/16/1919	1557 0.0	0.0	5.00	0.051	VI	28.1(45.3)
DMG	35.0000	119.0000	07/21/1952	12 531.0	0.0	6.40	0.106	VII	28.1(45.3)
DMG	35.0000	119.0170	01/12/1954	233349.0	0.0	5.90	0.082	VII	28.2(45.4)
DMG	35.0000	119.0170	07/21/1952	115214.0	0.0	7.70	0.211	VIII	28.2(45.4)
DMG	35.0000	119.0330	07/21/1952	12 2 0.0	0.0	5.60	0.069	VI	28.3(45.6)
DMG	35.0000	118.8330	07/23/1952	181351.0	0.0	5.20	0.055	VI	29.2(46.9)
DMG	35.0000	118.8330	07/23/1952	75319.0	0.0	5.40	0.061	VI	29.2(46.9)
DMG	34.9830	118.9830	05/23/1954	235243.0	0.0	5.10	0.052	VI	29.3(47.1)
DMG	34.9500	118.8670	07/21/1952	121936.0	0.0	5.30	0.054	VI	32.1(51.7)
DMG	34.9410	118.9870	11/15/1961	53855.5	10.7	5.00	0.046	VI	32.2(51.8)
DMG	34.9320	118.9760	03/01/1963	02557.9	13.9	5.00	0.045	VI	32.8(52.8)
T-A	34.9200	118.9200	05/23/1857	0 0 0.0	0.0	5.00	0.044	VI	33.7(54.3)
T-A	34.9200	118.9200	01/20/1857	0 0 0.0	0.0	5.00	0.044	VI	33.7(54.3)
PAS	34.9430	118.7430	06/10/1988	23 643.0	6.8	5.40	0.054	VI	34.5(55.6)
DMG	34.9000	118.9500	08/01/1952	13 430.0	0.0	5.10	0.045	VI	35.0(56.4)
DMG	34.9000	118.9000	10/23/1916	244 0.0	0.0	6.00	0.073	VII	35.2(56.7)
DMG	34.8670	118.9330	09/21/1941	1953 7.2	0.0	5.20	0.045	VI	37.3(60.1)
T-A	34.8300	118.7500	11/27/1852	0 0 0.0	0.0	7.00	0.108	VII	41.8(67.2)
DMG	34.8000	119.1000	09/05/1883	1230 0.0	0.0	6.00	0.063	VI	42.5(68.4)
DMG	35.3000	119.8000	01/09/1857	16 0 0.0	0.0	7.90	0.157	VIII	47.2(76.0)
DMG	36.0800	118.8200	05/29/1915	646 0.0	0.0	5.00	0.034	V	47.2(76.0)
DMG	34.7000	119.0000	10/23/1916	254 0.0	0.0	5.50	0.043	VI	48.8(78.6)
GSP	35.2100	118.0660	07/11/1992	181416.2	10.0	5.70	0.045	VI	52.8(85.0)
DMG	35.7150	118.0740	03/15/1946	14 035.4	0.0	5.30	0.036	V	54.7(88.1)
DMG	35.7250	118.0550	03/15/1946	134935.9	22.0	6.30	0.059	VI	56.0(90.1)
T-A	36.1700	119.3200	07/25/1868	230 0.0	0.0	5.00	0.030	V	56.2(90.4)
DMG	35.7450	118.0390	03/16/1946	94617.9	0.0	5.10	0.031	V	57.4(92.3)
DMG	35.7780	118.0490	01/28/1961	81246.2	5.5	5.30	0.034	V	57.8(93.0)
DMG	35.7510	118.0290	03/15/1946	215433.4	0.0	5.20	0.032	V	58.0(93.4)
DMG	35.7140	117.9770	03/15/1946	191853.6	0.0	5.40	0.035	V	59.8(96.2)
DMG	35.7530	117.9860	03/15/1946	1321 0.9	0.0	5.20	0.031	V	60.3(97.0)
DMG	35.7470	117.9080	03/18/1946	155042.6	4.4	5.30	0.032	V	64.2(103.3)
DMG	34.5000	119.5000	06/29/1926	2321 0.0	0.0	5.50	0.033	V	69.4(111.7)
DMG	34.5000	119.5000	08/05/1930	1125 0.0	0.0	5.00	0.025	V	69.4(111.7)

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EARTHQUAKE SEARCH RESULTS

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
GSP	34.3940	118.6690	06/26/1995	084028.9	13.0	5.00	0.025	V	72.0(115.9)
GSB	34.3790	118.7110	01/19/1994	210928.6	14.0	5.50	0.032	V	72.5(116.7)
GSP	34.3770	118.6980	01/18/1994	004308.9	11.0	5.20	0.027	V	72.8(117.1)
GSP	34.3690	118.6720	04/26/1997	103730.7	16.0	5.10	0.025	V	73.7(118.5)
GSP	34.3780	118.6180	01/19/1994	211144.9	11.0	5.10	0.025	V	73.8(118.8)
DMG	35.8310	117.7610	10/19/1961	5 943.9	-2.0	5.20	0.027	V	74.0(119.1)
T-A	34.5000	119.6700	06/01/1893	12 0 0.0	0.0	5.00	0.024	V	74.0(119.1)
DMG	34.5190	118.1980	08/23/1952	10 9 7.1	13.1	5.00	0.024	IV	75.3(121.3)
DMG	35.7500	120.2500	03/10/1922	112120.0	0.0	6.50	0.052	VI	75.6(121.6)
DMG	34.4110	118.4010	02/09/1971	14 1 8.0	8.0	5.80	0.036	V	76.0(122.3)
DMG	34.4110	118.4010	02/09/1971	14 244.0	8.0	5.80	0.036	V	76.0(122.3)
DMG	34.4110	118.4010	02/09/1971	14 041.8	8.4	6.40	0.049	VI	76.0(122.3)
DMG	34.4110	118.4010	02/09/1971	141028.0	8.0	5.30	0.028	V	76.0(122.3)
GSP	34.3260	118.6980	01/17/1994	233330.7	9.0	5.60	0.032	V	76.2(122.7)
GSP	35.7760	117.6620	08/17/1995	223959.0	5.0	5.40	0.029	V	77.8(125.3)
GSP	35.7660	117.6490	01/07/1996	143253.1	5.0	5.20	0.026	V	78.3(126.0)
GSB	35.7610	117.6390	09/20/1995	232736.3	5.0	6.10	0.041	V	78.7(126.7)
PAS	36.1510	120.0490	08/04/1985	12 156.0	6.0	5.80	0.035	V	79.2(127.5)
GSP	34.3050	118.5790	01/29/1994	112036.0	1.0	5.10	0.024	V	79.3(127.6)
DMG	34.3000	118.6000	04/04/1893	1940 0.0	0.0	6.00	0.039	V	79.3(127.6)
DMG	34.3670	119.5830	07/01/1941	75054.8	0.0	5.90	0.037	V	79.7(128.3)
GSB	34.3010	118.5650	01/17/1994	204602.4	9.0	5.20	0.025	V	79.8(128.4)
DMG	35.7500	120.3300	08/18/1922	512 0.0	0.0	5.00	0.023	IV	79.8(128.5)
MGI	34.4000	119.7000	03/25/1806	8 0 0.0	0.0	5.00	0.023	IV	80.8(130.1)
DMG	35.8000	120.3300	12/28/1939	121538.0	0.0	5.00	0.022	IV	80.9(130.2)
DMG	35.8000	120.3300	06/08/1934	447 0.0	0.0	6.00	0.038	V	80.9(130.2)
DMG	35.8000	120.3300	06/05/1934	2148 0.0	0.0	5.00	0.022	IV	80.9(130.2)
DMG	35.8000	120.3300	06/08/1934	430 0.0	0.0	5.00	0.022	IV	80.9(130.2)
DMG	34.3080	118.4540	02/09/1971	144346.7	6.2	5.20	0.025	V	81.4(130.9)
GSB	35.8190	120.3640	09/28/2004	171524.2	8.0	6.00	0.037	V	83.1(133.8)
T-A	34.4200	119.8200	00/00/1862	0 0 0.0	0.0	5.70	0.032	V	83.4(134.1)
DMG	35.6310	117.5130	09/17/1938	1423 4.1	-2.0	5.00	0.022	IV	83.4(134.3)
PAS	34.3470	119.6960	08/13/1978	225453.4	12.8	5.10	0.023	IV	83.9(135.0)
GSP	34.2310	118.4750	03/20/1994	212012.3	13.0	5.30	0.025	V	85.9(138.3)
GSP	34.2130	118.5370	01/17/1994	123055.4	18.0	6.70	0.053	VI	86.0(138.5)
MGI	35.2500	120.5000	07/10/1917	043 0.0	0.0	5.30	0.025	V	86.7(139.6)
MGI	35.2500	120.5000	07/09/1917	2238 0.0	0.0	5.30	0.025	V	86.7(139.6)
MGI	35.2500	120.5000	07/10/1917	045 0.0	0.0	5.30	0.025	V	86.7(139.6)
MGI	35.2500	120.5000	07/09/1917	2222 0.0	0.0	5.00	0.021	IV	86.7(139.6)
GSP	36.0750	117.6500	11/27/1996	201724.1	1.0	5.30	0.025	V	87.3(140.4)
DMG	36.4000	118.0000	07/05/1871	21 6 0.0	0.0	5.20	0.024	IV	87.5(140.8)
GSP	36.0670	117.6380	03/06/1998	054740.3	1.0	5.20	0.024	IV	87.6(140.9)
MGI	34.9000	120.4000	03/29/1928	625 0.0	0.0	5.30	0.025	V	87.9(141.4)
MGI	36.6000	118.4000	09/04/1868	0 0 0.0	0.0	5.00	0.021	IV	88.3(142.2)
GSP	36.0760	117.6180	03/07/1998	003646.8	1.0	5.00	0.021	IV	88.8(143.0)
DMG	34.7000	120.3000	01/12/1915	431 0.0	0.0	5.50	0.027	V	89.5(144.1)
DMG	34.7000	120.3000	07/31/1902	920 0.0	0.0	5.50	0.027	V	89.5(144.1)
MGI	34.3000	119.8000	07/03/1925	1638 0.0	0.0	5.30	0.024	V	89.7(144.3)
DMG	34.3000	119.8000	06/29/1925	144216.0	0.0	6.25	0.040	V	89.7(144.3)
MGI	34.3000	119.8000	07/03/1925	1821 0.0	0.0	5.30	0.024	V	89.7(144.3)
PAS	36.1820	120.2680	02/14/1987	72650.8	6.0	5.10	0.022	IV	90.2(145.1)
MGI	35.0000	120.5000	11/19/1927	332 0.0	0.0	5.00	0.021	IV	90.7(145.9)
GSB	35.9170	120.4650	12/20/1994	102747.2	8.0	5.00	0.021	IV	90.8(146.2)

EARTHQUAKE SEARCH RESULTS

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
MGI	34.8000	120.4000	12/12/1902	0 0 0.0	0.0	5.70	0.030	V	90.9(146.3)
BRK	36.2200	120.2600	09/09/1983	91614.0	0.0	5.40	0.025	V	91.4(147.1)
MGI	35.5000	120.6000	01/01/1830	0 0 0.0	0.0	5.00	0.020	IV	91.8(147.7)
DMG	35.9300	120.4800	12/24/1934	1626 0.0	0.0	5.00	0.020	IV	92.0(148.0)
DMG	35.9500	120.4700	11/16/1956	323 9.0	0.0	5.00	0.020	IV	92.0(148.0)
GSP	36.3880	117.8580	10/01/2009	100124.7	5.0	5.00	0.020	IV	92.0(148.1)
DMG	36.1700	120.3200	12/27/1926	919 0.0	0.0	5.00	0.020	IV	92.1(148.1)
GSP	36.3910	117.8610	10/03/2009	011600.3	0.0	5.20	0.023	IV	92.1(148.2)
BRK	36.2200	120.2900	05/02/1983	2346 6.0	0.0	5.60	0.028	V	92.7(149.2)
BRK	36.2200	120.2900	05/02/1983	234239.0	0.0	6.70	0.050	VI	92.7(149.2)
DMG	34.0650	119.0350	02/21/1973	144557.3	8.0	5.90	0.033	V	92.7(149.2)
DMG	34.1000	119.4000	05/19/1893	035 0.0	0.0	5.50	0.026	V	93.4(150.4)
DMG	35.9500	120.5000	06/28/1966	42613.4	0.0	5.50	0.026	V	93.5(150.5)
BRK	36.2400	120.2900	05/09/1983	24912.0	0.0	5.20	0.022	IV	93.5(150.5)
GSB	35.9530	120.5020	09/29/2004	171004.0	11.0	5.10	0.021	IV	93.7(150.8)
DMG	35.9700	120.5000	06/28/1966	4 856.2	0.0	5.10	0.021	IV	94.1(151.4)
DMG	36.0000	120.5000	03/03/1901	745 0.0	0.0	5.50	0.026	V	94.9(152.8)
DMG	36.0000	120.5000	02/02/1881	011 0.0	0.0	5.60	0.027	V	94.9(152.8)
DMG	35.9500	120.5300	06/29/1966	195325.9	0.0	5.00	0.020	IV	95.1(153.0)
MGI	36.5800	118.0800	07/06/1917	11 1 0.0	0.0	5.70	0.029	V	95.1(153.0)
T-A	36.5800	118.0700	08/13/1882	0 0 0.0	0.0	5.00	0.020	IV	95.4(153.5)
T-A	36.5800	118.0700	04/18/1872	0 0 0.0	0.0	5.00	0.020	IV	95.4(153.5)
DMG	34.2000	119.8000	12/21/1812	19 0 0.0	0.0	7.00	0.057	VI	95.6(153.9)
MGI	36.6000	118.1000	05/17/1872	21 0 0.0	0.0	5.00	0.020	IV	95.7(154.0)
T-A	35.2500	120.6700	00/00/1830	0 0 0.0	0.0	5.70	0.028	V	96.3(154.9)
T-A	35.2500	120.6700	12/17/1852	0 0 0.0	0.0	5.70	0.028	V	96.3(154.9)
GSP	34.2620	118.0020	06/28/1991	144354.5	11.0	5.40	0.024	V	96.3(155.0)
BRK	36.2100	120.3800	07/25/1983	223140.0	0.0	5.10	0.021	IV	96.4(155.1)
DMG	36.7000	118.3000	08/17/1896	1130 0.0	0.0	5.90	0.031	V	96.8(155.8)
BRK	36.2000	120.4000	07/22/1983	343 2.0	0.0	5.00	0.020	IV	96.9(155.9)
DMG	34.0000	119.0000	09/24/1827	4 0 0.0	0.0	7.00	0.056	VI	97.2(156.4)
MGI	34.0000	119.0000	12/14/1912	0 0 0.0	0.0	5.70	0.028	V	97.2(156.4)
MGI	35.3000	120.7000	12/07/1906	640 0.0	0.0	5.90	0.031	V	97.6(157.0)
BRK	36.2200	120.4000	07/22/1983	23955.0	0.0	6.00	0.033	V	97.7(157.2)
MGI	34.6000	120.4000	07/28/1902	657 0.0	0.0	6.30	0.038	V	98.1(157.9)
MGI	34.6000	120.4000	08/01/1902	330 0.0	0.0	6.30	0.038	V	98.1(157.9)
DMG	34.1180	119.7020	07/05/1968	04517.2	5.9	5.20	0.022	IV	98.2(158.0)
BRK	36.2600	120.4000	07/09/1983	74052.0	0.0	5.30	0.022	IV	99.3(159.8)

-END OF SEARCH- 144 EARTHQUAKES FOUND WITHIN THE SPECIFIED SEARCH AREA.

TIME PERIOD OF SEARCH: 1800 TO 2023

LENGTH OF SEARCH TIME: 224 years

THE EARTHQUAKE CLOSEST TO THE SITE IS ABOUT 6.0 MILES (9.6 km) AWAY.

LARGEST EARTHQUAKE MAGNITUDE FOUND IN THE SEARCH RADIUS: 7.9

LARGEST EARTHQUAKE SITE ACCELERATION FROM THIS SEARCH: 0.246 g

COEFFICIENTS FOR GUTENBERG & RICHTER RECURRENCE RELATION:

a-value= 1.570

b-value= 0.401

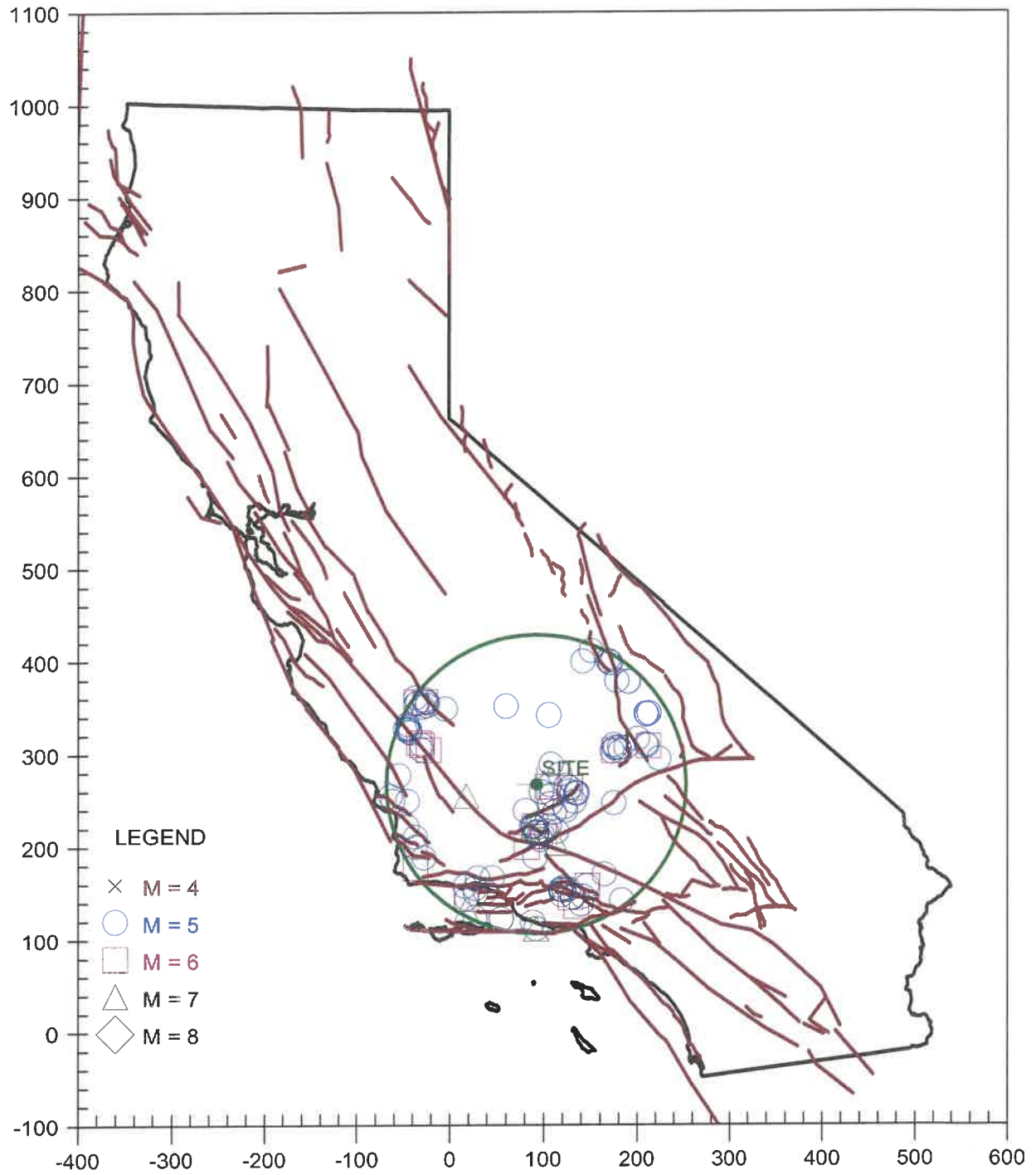
beta-value= 0.923

TABLE OF MAGNITUDES AND EXCEEDANCES:

Earthquake Magnitude	Number of Times Exceeded	Cumulative No. / Year
4.0	144	0.64574
4.5	144	0.64574
5.0	144	0.64574
5.5	56	0.25112
6.0	23	0.10314
6.5	8	0.03587
7.0	5	0.02242
7.5	2	0.00897

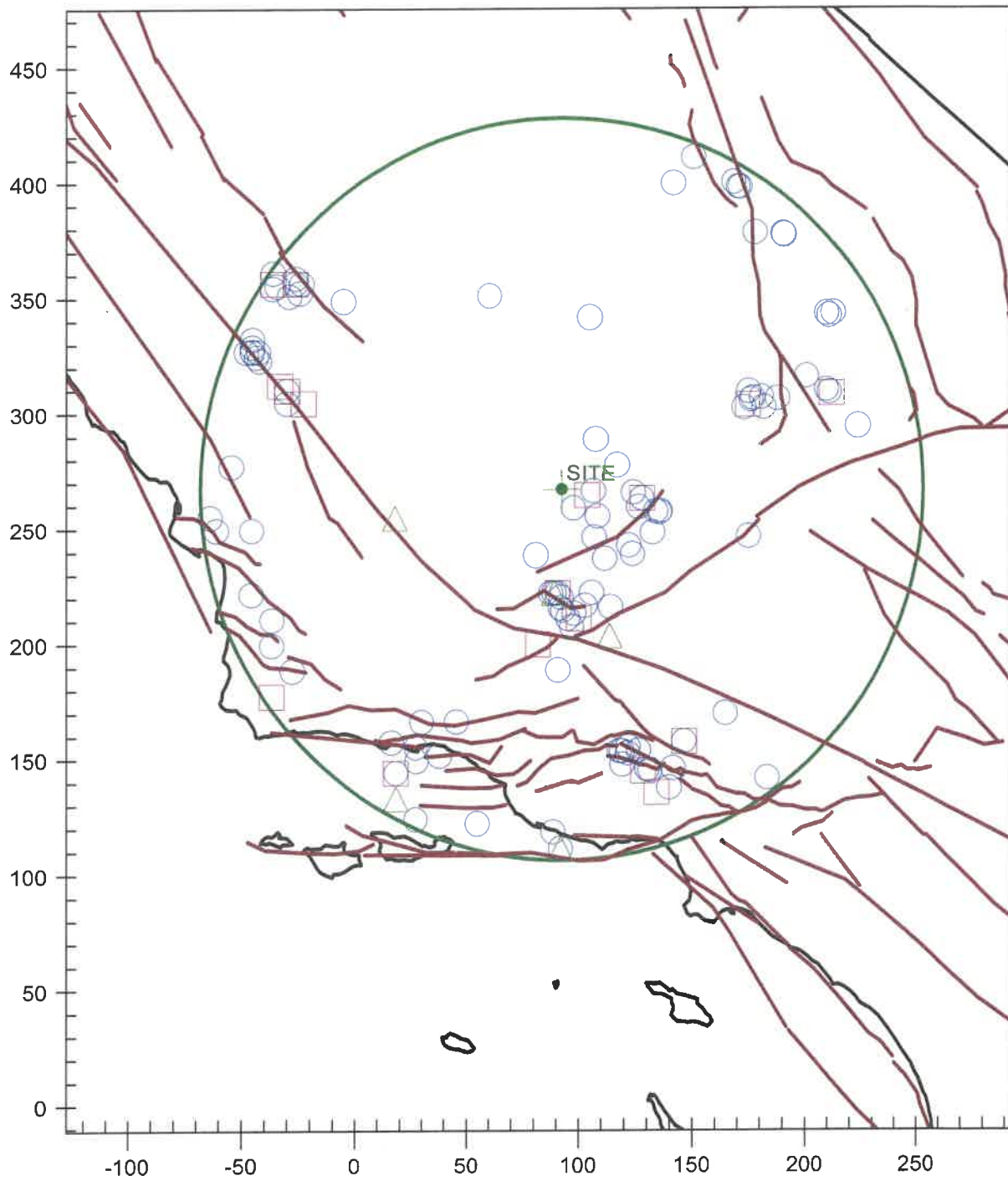
EARTHQUAKE EPICENTER MAP

02224092



EARTHQUAKE EPICENTER MAP

02224092



**REFERENCES
AND BACKGROUND SOURCES
022-24092-Bakersfield College Pool Equipment Building**

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ADDENDUM ACKNOWLEDGEMENT

The bidder or proposer must complete and sign this form and submit it with each bid or proposal.

Project Name: **Bakersfield College Combined Gym & Fieldhouse – Pool Equipment Building**

The undersigned hereby acknowledges receipt of the Addendum and has taken the information contained therein into full consideration in the formulation of each bid or proposal.

Company Name: _____

Printed Name: _____

Signature: _____ Date: _____