Geotechnical Engineering Report

DAVIS MIGRANT CENTER - SETTLEMENT INVESTIGATIONS

Units 39, 40, And 63 Through 66

31150 County Road 105

Dixon, California

MPE No. 08011-01

MID PACIFIC ENGINEERING, INC.

December 23, 2025

MID PACIFIC ENGINEERING, INC.

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GEOTECHNICAL ENGINEERING | EARTHWORK TESTING | MATERIALS ENGINEERING AND TESTING | SPECIAL INSPECTIONS

December 23, 2025

Mr. Ian Evans – Executive Director
Yolo County Housing
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Geotechnical Engineering Report
DAVIS MIGRANT CENTER - SETTLEMENT INVESTIGATIONS
Units 39, 40, And 63 Through 66, 31150 County Road 105
Dixon, California
MPE No. 08011-01

Dear Mr. Evans:

Attached herewith is the *Geotechnical Engineering Report* for the Davis Migrant Center - Settlement Investigations located at Units 39, 40, And 63 Through 66, 31150 County Road 105, Dixon, California.

This report was based upon the scope of services generally outlined in MPE Proposal No. 25-0749, dated September 17, 2025, and other written and verbal communications.

We appreciate this opportunity to provide Geotechnical Engineering services for this project. If you have questions or comments concerning this report, please contact this firm at your convenience.

Respectfully submitted,
Mid Pacific Engineering, Inc.

Fred Yi, Ph.D., P.E., G.E., F. ASCE,
Chief Engineer

Geotechnical Engineering Report

DAVIS MIGRANT CENTER - SETTLEMENT INVESTIGATIONS

Dixon, California

MPE No. 08011-01

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INTRODUCTION

Mid Pacific Engineering, Inc. (MPE) has completed a Geotechnical Engineering investigation for the foundation settlement that occurred at Units 39, 40, and 63 Through 66 of Davis Migrant Center, located at 31150 County Road 105 in Dixon, California. The purposes of this study have been to explore and evaluate the Geotechnical Engineering conditions at the subject site, including subsurface soil and groundwater conditions, and to provide appropriate Geotechnical Engineering recommendations for the repair of the subject units.

Our work has been performed in general accordance with the scope of work included in our proposal to Yolo County Housing, dated September 17, 2025. The findings of our study, together with our conclusions and recommendations, are presented in this report.

SCOPE OF SERVICES

Our scope of services provided during this Geotechnical Investigation included the following:

1. Site reconnaissance.
2. Review of available historic aerial photographs, topographic and geologic maps and groundwater information of the area.
3. Subsurface exploration, including the drilling and sampling of 4 test borings to maximum depths of approximately 21½ to 51 ½ feet below the existing ground surface (bgs), and 2 hand auger borings to depths of approximately 4 to 4½ feet bgs.
4. Collection of bulk samples of near-surface soils.

5. Laboratory testing of selected soil samples.
6. Engineering analyses.
7. Preparation of this report.

To assist in the preparation of this report we have reviewed the following document.

- *Davis Migrant Center, Dixon, CA, Field Report, RSE Project: 25916,* prepared by Response Structural Engineers, undated.

FIGURES AND ATTACHMENTS

The following figures and attachments are included in this report.

- Figure 1 – Topographic Map.
- Figure 2 – Geologic Map.
- Figure 3 – Site Investigation Plan.
- Figures 4 through 9 – Logs of Soil Borings.
- Figure 10 – Unified Soil Classification System
- Figure 11 – General Notes.

Appended to this report are:

- Appendix A – General information regarding project concepts; exploratory methods used during our field investigation; and laboratory test results not included on the boring logs.

PROJECT DESCRIPTION

Based on our discussions with representatives of Yolo County Housing, review of the RSE's Field Report and our site visit, it is our understanding the existing units have experienced interior finish cracking along walls suspected of structural movement, as well as exterior wall separation. RSE's report indicated the likely presence of loose engineered fill or highly compressible native material.

FINDINGS

Site Description

The project site is located at Units 39, 40, And 63 Through 66, 31150 County Road 105 in Dixon, California. The center of the proposed improvements is located at approximately latitude 38.4849° north and longitude 121.6774° west. The site is bounded to the north and west by internal roads, to the south by other units to the west portion and vacant space to the east portion, and to the east by Road 105.

At the time of our investigation, on November 24 and 25, 2025, the residential units 39, 40, 63, 64, 65, and 66 experienced interior finish cracking along walls suspected of structural movement as well as exterior wall separation. Mature trees and landscape areas were observed in front of the units on the eastern portion. On the western boundary of the targeted units, a concrete sidewalk was observed. Continuing west along the sidewalk was a concrete trash enclosure. On the western portion of the site behind the targeted units was a vacant landscape area. Underground utilities were observed along on the western and eastern boundary of the site and passed through the internal road and continued along the northern boundary of the site, parallel with Road 105.

Topography across the site is relatively level. Based on Google Earth Pro, *the* average surface elevation across the site is approximately +27 feet msl.

Site Geology

The *Preliminary Geologic Map of the Lodi 30' X 60' Quadrangle, California* (2009) compiled by Dawson, T.E. and published by the California Geological Survey (CGS), indicates the project site is underlain by Holocene-age alluvial fan deposits, fine-grained (Map Symbol: Q_{hff}), consist of unconsolidated to weakly consolidated, fine-grained sediments like silt and clay, deposited by flowing water or debris flows on the gentler slopes of an alluvial fan (See Figure 2).

The soil conditions encountered in our borings were generally consistent with the soils typically mapped as the alluvial fan deposits.

SUBSURFACE SOIL CONDITIONS

The soil conditions encountered by our subsurface exploration varied between our test borings. The upper soils generally consisted of undocumented artificial fill comprised of soft moist lean clay that extended to depths of 1½ to 2 feet below existing site grades (bgs). The fill soils were underlain by stiff to hard lean clay that extended to maximum depth of 51½ feet bgs with clayey sand and silty sand layers in some of the borings.

Neither refusal nor bedrock were encountered during the drilling operations with the drill rig. Refusal to hand-augering was encountered in both hand-auger borings at depths between approximately 4 and 4½ feet bgs.

For more details regarding the soil conditions at a specific location, please refer to the Logs of Soil Borings on Figures 4 through 9.

Please note that subsurface conditions within the borings are representative of the soil conditions at the time of exploration and at the specific location. It should be expected that soil conditions across the site can and will vary laterally and vertically from the soil encountered during our investigation.

CONCLUSIONS

SEISMIC DESIGN CRITERIA

Seismic Site Class

The seismic design requirements for buildings and other structures are determined by the Seismic Design Category, which is based on Site Classification. Site Classification is established using the upper 100 feet of the site profile and is defined by a weighted average of shear wave velocity, standard penetration resistance, or undrained shear strength, in accordance with Section 20.4 of ASCE 7-16.

Subsurface explorations at this site were extended to a maximum depth of 51½ feet. The Average Field Standard Penetration Resistance, $\overline{N}$, calculated in accordance with Equation

20.4-2 of ASCE 7-16 indicates a value of 24. According to Table 20.3-1 of ASCE 7-16, the Seismic Site Classification is D.

Based on our experience and knowledge of the geologic conditions within the general vicinity of the site, we assumed that the soil properties below the boring depth to depths of 100 feet, are similar to that soil conditioned encountered at maximum boring depth explored during our investigation. Based on our knowledge and experience of the area, it is our opinion that no soft or weak layer should exist below the maximum boring depth to 100 feet.

Seismic Design Parameters

The 2022 CBC Seismic Design Parameters have been generated using the ASCE 7 Hazard Tool (https://asce7hazardtool.online/). This web-based software application calculates seismic design parameters in accordance with ASCE 7-16 and 2022 CBC. The results indicate a mapped S1 value of 0.303. Per Section 11.4.8, a site-specific ground motion study should be performed in accordance with Section 21.2 of ASCE 7-16 for Site Class D and E sites with S1 value greater than or equal 0.2.

Per Section 11.4.8, a site-specific ground motion study should be performed in accordance with Section 21.2 of ASCE 7-16 for Site Class D and E sites with S_1 value greater than or equal 0.2. However, Supplement 3 to Section 11.4.8 of ASCE 7-16 includes an exception from such analysis for specific structures on Site Class D sites.

> **EXCEPTION**: A ground motion hazard analysis is not required where the value of the parameters S_{M1} determined by Eq (11.4-2) is increased by 50% for all applications of S_{M1} in this Standard. The resulting value of the parameter S_{D1} determined by Eq. (11.4-4) shall be used for all applications of S_{D1}, in this Standard.

The commentary for Section 11 of ASCE 7-16 Supplement 3 states that "The Item 1 exception is intended as an acceptable way to address the inaccuracy of the spectral shape observed in the velocity domain for Site Class D sites subject to high ground motions. Increasing S_{M1} by 50% in Eq. (11.4-2) results in an increase in the value of S_{D1} determined by Eq. (11.4-4) by 50 percent. These increased values of S_{M1} and S_{D1} are to be used for all applications of these parameters throughout the Standard, including for the formulation of the design response spectrum where a design response spectrum is needed per this standard. It should be noted that the 50% increase in S_{D1} also increases T_s by 50% resulting in an extension of the acceleration-controlled plateau of the design response spectrum."

Based on this exception, the spectral response accelerations presented below were calculated using the site coefficients (F_a and F_v) from Tables 1613.2.3(1) and 16132.3(2) presented in Section 1613.2.3 of the 2022 CBC.

Table 1 - 2022 CBC/ASCE 7-16 Seismic Design Parameters

Description	Value
Site Location	Latitude: 38.4849° / Longitude: -121.6774°
Site Classification	D
Mapped MCE_R ground motion [1)]	S_S =0.761 and S_1 = 0.303
Site Coefficients	F_a = 1.196 and F_v = 1.997 [2)]
Site-modified spectral acceleration	S_{MS} = 0.910 and S_{M1} = 0.908 [3)]
Numeric seismic design value	S_{DS} = 0.607 and S_{D1} = 0.605 [3)]
Seismic Design Category	D
Site modified peak ground acceleration	PGA_M = 0.408 g
Mode de-aggregated Magnitude [4)]	7.11
Closest Distance, r_{Rup} [4)]	30.96 km

1) These values were obtained using ASCE 7 Hazard Tool (https://asce7hazardtool.online/) accessed at 12/2/2025.
2) Per 2022 CBC Table 1613.2.3(2).
3) The value of the parameters, S_{M1}, determined by Eq. (11.4-2) of ASCE 7-16 is increased by 50% for all applications of S_{M1} per ASCE 7-16 Supplement 3.
4) This value was obtained using on-line Unified Hazard Tool by the USGS (https://earthquake.usgs.gov/hazards/interactive/) for return period of 2% in 50 years accessed at 12/2/2025.

Site-specific ground response and ground motion hazard analyses, and/or time history analyses were not part of our work scope.

Typically, a site-specific ground motion study will generate less conservative coefficients and acceleration values which may reduce construction costs. We recommend consulting with a structural engineer to evaluate the need for such a study and its potential impact on construction costs. MPE should be contacted if a site-specific ground motion study is desired.

LIQUEFACTION RELATED HAZARD

Liquefaction Potential

Liquefaction is a process in which strong ground shaking causes saturated soils to lose their strength and behave as a fluid. Ground failure associated with liquefaction can result in severe damage to structures. Soil types susceptible to liquefaction include sand, silty sand, sandy silt and silt, as well as soils having a plasticity index (PI) less than 7 (Boulanger and Idriss, 2006). Loose soils with a PI less than 12 and moisture content greater than 85 percent of the liquid limit are also susceptible to liquefaction (Bray and Sancio, 2006). For liquefiable soils, the geologic conditions for increased susceptibility to liquefaction are: 1) shallow groundwater (generally less than 50 feet in depth), 2) the presence of unconsolidated sandy alluvium, typically Holocene in age, and 3) strong ground shaking. All three of these conditions must be present for liquefaction to occur.

The site is not located within a State Designated Seismic Hazard Zone for liquefaction. A full liquefaction analysis was beyond the scope of work. However, Due to the existence of cohesive materials, it is our opinion that liquefaction potential at this site is low.

EXPANSIVE SOILS

The results of our subsurface exploration indicate the near-surface soils possess medium expansion potential when testing in accordance with ASTM D4829 (see Figure A-5).

FIELD DRY DENSITY AND MOISTURE CONTENTS OF NATIVE SOILS

Field dry densities (Υ_d) and moisture contents (ω) of subsurface soils were measured in the laboratory. The field dry densities were compared with the maximum dry density (Υ_{dmax}) measured in accordance with ASTM D1557. Field moisture contents were also compared with the optimum moisture content (ω_{opt}) obtained in accordance with ASTM D1557. The maximum dry density and optimum moisture contents are measured in accordance with

ASTM D1557 as 117.0 pounds per cubic feet (pcf) and 10.5 percent, respectively (see Figure A-2). The comparison is shown in the following table.

Table 2 – Comparison of Field Dry Density and Moisture Content

Sample No.	Depth (ft)	γ_d (pcf)	ω (%)	$RC=\gamma_d/\gamma_{dmax}$	ω/ω_{opt}
B-01-1	2.5	91	27.0	77.8%	257.1%
B-01-2	5	93	24.9	79.5%	237.1%
B-01-3	10	90	25.3	76.9%	241.0%
B-01-4	15	97	25.9	82.9%	246.7%
B-02-1	2.5	90	26.3	76.9%	250.5%
B-02-2	5	100	21.6	85.5%	205.7%
B-02-3	10	91	27.9	77.8%	265.7%
B-02-4	15	114	16.1	97.4%	153.3%

The results indicate that the field dry density of the near the surface native soils is slightly less than 80 percent of maximum dry density in accordance with ASTM D1557. This could result in some compression deformation under foundation loading.

Please note that our sampling was not performed directly underneath the footings. Loose or soft fill materials underneath the footings are anticipated. Since the subsidence were observed only in some of the units, we anticipate variable soil conditions underneath the affected building foundations.

The comparison of field moisture content with ASTM D1557 optimum moisture content indicates that the field moisture content is more than double the optimum moisture content near the surface. Although the expansion index measured shows medium expansion potential, it is our opinion that the observed settlement deformation of footings precluded the impact of expansion.

Bearing Capacity And Foundation Support

The site experienced previous settlement. Deep foundations such as helical piles, ground improvement or structural reinforcement are needed to support the building foundations and concrete slab-on-grade.

Excavation Conditions

Based on our field investigation, the on-site native soil should be readily excavatable with conventional earthmoving and trenching equipment typically used in the area. The on-site excavations may be subject to sloughing and caving if cohesionless or saturated soils are exposed, requiring sloped excavations to reduce the effects of sidewall stabilities.

Excavations likely will stand at a near-vertical inclination up to 5 feet in depth for short periods of time, unless zones or pockets of clean cohesionless sands are encountered or the construction is performed during the rainy season. Excavations encountering clean sands and perched water may slough or cave if left open for an extended period of time. Excavations entered by workers must conform to current Cal/OSHA requirements (i.e., sloped or braced/shored). The contractor must provide an adequately constructed and braced shoring system in accordance with federal, state and local safety regulations for individuals working in an excavation that may expose them to the danger of moving ground. If material is stored or heavy equipment is operated near an excavation, stronger shoring would be needed to resist the extra pressure due to the superimposed loads.

Soil Corrosion Potential

A representative soil sample was submitted to Sunland Analytical to determine soil pH, minimum resistivity, chloride and sulfate concentrations to help evaluate potential for corrosive attack upon reinforced concrete and exposed buried metal. The results of the corrosivity testing are summarized in table below.

Table 3 - Soil Corrosivity Testing

Analyte	**Test Method**	**Sample Identification**
		B-01 (0 – 2½’)
Soil pH	CA DOT 643 Modified [1)]	7.74
Minimum Resistivity	CA DOT 643 Modified [1)]	1,510 Ω-cm [2)]
Chloride	CA DOT 422	33.6 ppm [3)]
Sulfate	CA DOT 417	32.2 ppm

1) = Small cell method
2) Ω-cm = Ohm-centimeters

Analyte	Test Method	Sample Identification
		B-01 (0 – 2½')
3) ppm = Parts per million		

Reinforced Concrete Foundations

The California Department of Transportation Corrosion Technology Section, Office of Materials and Foundations, Corrosion Guidelines Version 3.2, May 2021, considers a site to be corrosive to foundation elements if one or more of the following conditions exist for the representative soil and/or water samples taken:

- A minimum resistivity value for soil of less 1,100 ohm-cm,
- *Chloride concentration is 500 ppm or greater,*
- *Sulfate concentration is 1500 ppm or greater, or*
- *The pH is 5.5 or less.*

Based on these criteria, the on-site soils are not considered corrosive to steel reinforcement properly embedded within Portland cement concrete for the samples tested.

Table 19.3.1.1 – Exposure Categories and Classes, American Concrete Institute (ACI) 318-19, Section 19.3, as referenced in Section 1904.1 of the 2022 CBC, indicates the severity of sulfate exposure for the samples tested is *not a concern*. Ordinary Type I-II Portland cement is considered suitable for use on this project, assuming a minimum concrete cover is maintained over the reinforcement.

Underground Metallic Pipelines

According to Pierre R. Roberge [1], the minimum resistivity values of the onsite soils are considered potentially "extremely corrosive" to ferrous metals including ductile/cast iron, steel, and dielectric coated steel.

[1] R. Roberge (2006), Corrosion Basics: An Introduction, 2nd Edition

MPE does not practice corrosion engineering. Therefore, to further define the soil corrosion potential at the site, a competent corrosion engineer could be consulted to determine the need for cathodic protection or grounding systems.

Import fills, if used for construction, should be sampled and tested to verify the materials have corrosion characteristics within acceptable limits and generally should be similar to the tested on-site soils.

RECOMMENDATIONS

General

On the basis of our research and field and laboratory investigations, it is the opinion of this firm that retrofit of the existing building foundations is feasible from a Geotechnical standpoint, provided the recommendations contained in this report are implemented during retrofit design and construction.

The final retrofit plans were not available at the time we prepared this report; therefore, it is essential that our office review final plans when they become available to verify the applicability of the recommendations of this report, or provide modified or revised recommendations, as needed.

Site Clearing

Prior to retrofit, the working areas should be cleared of all surface and subsurface structures designated for removal including but not limited to; existing footings, concrete slabs, underground utilities to be relocated or abandoned including demolition debris, rubble, deleterious material, vegetation and any other items designated for removal. Demolition debris should be hauled off site. Existing underground utilities and irrigation lines, located within the working areas, should be restored after the completion of retrofit. If existing underground utilities and irrigation lines are designated for removal, the removal should also include all associated trench backfill.

EXCAVATION NEAR EXISTING FOOTING

If helical pier or push pier is used for retrofitting, we anticipate localized subexcavation near the existing footings. It is the contractor's responsibility to prepare and submit the procedures of construction for review and approval. The procedures should include measures to prevent existing footings from additional movements during construction. These procedures should be strictly followed during the field construction process.

ENGINEERED FILL CONSTRUCTION

On-site soil is considered suitable for use in engineered fill construction, if free of rubble, rubbish, or concentrations of organics and are at a compactable moisture content. Imported fill materials, if required, should be granular with a Plasticity Index of 15 or less; Expansion Index of 20 or less; and free of particles greater than three inches in maximum dimension. Imported soil should be free of contamination with proper documentation to be provided by the contractor. Imported soil should be approved by the Geotechnical Engineer office prior to being transported to the site.

Engineered fill should be placed in horizontal lifts not exceeding six inches in compacted thickness. Each layer should be thoroughly moisture conditioned to at least two percent above the optimum moisture content (for on-site materials) and at least the optimum moisture content (for imported materials) and uniformly compacted to at least 90 percent of the ASTM D1557 maximum dry density. Fill materials should be uniformly and thoroughly moisture conditioned to the full depth of each lift. Compactive effort should be applied uniformly across the full width of the fill. Additional passes with the compactor shall be added, as required by the Geotechnical Engineer, to achieve a firm, stable and unyielding subgrade condition.

Site preparation should be accomplished in accordance with the recommendations of this section. A representative of the Geotechnical Engineer must be present during site preparation and grading operations to observe and test the fill to verify compliance with the recommendations of this report.

RETROFIT OF BUILDING SETTLEMENT

Building settlement retrofit methods include various forms of underpinning and grouting, which address different types of soil and structural conditions. The best method depends heavily on the specific cause of settlement, the soil type, and budget. The retrofit methods generally consist of underpinning and grouting methods. The following discusses the methods and their pros and cons.

Underpinning (Piles and Piers)

Underpinning involves extending the existing foundation deeper into the ground to reach more stable soil or rock layers. Common types include pushed piles and helical piers.

- **Pushed Piles (Resistance Piers)**: Steel pipe sections are hydraulically driven into the ground using the building's weight as resistance until they reach a stable strata.
    - **Pros**:
        - Can be used to lift the structure back toward its original level.
        - Installed quickly with minimal excavation.
        - Suitable for heavy structures and deep load-bearing layers.
    - **Cons**:
        - Requires significant weight from the structure for installation, making it unsuitable for lighter buildings.
        - Installation force can sometimes cause temporary stress on the foundation.
        - Requires access for heavy hydraulic equipment.
        - Requires additional retrofit for slab-on-grade.
- **Helical Piers (Screw Piles)**: These resemble large screws and are turned into the soil mechanically until the specified torque (indicating adequate soil strength) is achieved.
    - **Pros**:
        - Does not require the weight of the structure for installation, making them suitable for lighter foundations or new construction.
        - Can be installed in areas with limited access or tight spaces.
        - Installation is fast and produces minimal vibration.

- **Cons**:
  - May be less suitable for very rocky or dense soil conditions where they can't penetrate effectively.
  - Load capacity is determined by torque, which might be less precise than the direct load testing of pushed piles in some cases.
  - Requires additional retrofit for slab-on-grade.

Grouting

Grouting involves injecting a material (grout) into the soil beneath the foundation to fill voids, densify the soil, or create a solid mass to support the structure.

- **Compaction Grouting**: A stiff, low-slump grout is injected under high pressure in a confined area, pushing and compacting the adjacent soil without fracturing it.
  - **Pros**:
    - Can be used to improve the bearing capacity of loose soils effectively.
    - Precise control over the lifting or stabilization process is possible.
    - Relatively non-invasive compared to excavation for underpinning.
    - Retrofit both footings and slab-on-grade.
  - **Cons**:
    - Effectiveness depends heavily on soil type (works best in granular soils).
    - Requires specialized equipment and skilled operators to control the injection process and prevent unintended lifting or damage.
- **Chemical Grouting / Polyurethane Injection**: Polyurethane foam or other chemical agents are injected into the soil. The material expands and hardens rapidly, filling voids and stabilizing the ground.
  - **Pros**:
    - Fast-acting, often curing within minutes.
    - Material is lightweight, which avoids adding significant weight to potentially weak soil.
    - Requires very small injection holes, minimizing disruption to the property.

        - Retrofit both footings and slab-on-grade.
    - **Cons**:
        - Materials can be more expensive than traditional cement-based grouts.
        - Not suitable for all soil types or where high compressive strength is needed for extremely heavy loads.
        - Longevity and environmental impact of some chemical grouts can be a concern.

Each method has its advantages and disadvantages, and the best choice depends on specific project requirements, budget, and site conditions. Based on the type of structure and soil profile encountered, it is our opinion that **Helical Piers (Screw Piles)** or **Chemical Grouting / Polyurethane Injection** might be the most appropriate methods for the retrofit of the subject units. If the owner needs more detailed advice tailored to the situation, consulting with a structural engineer or foundation specialist would be beneficial.

Based on the soil profiles encountered, it is our recommendation that the piles/piers should be embedded to a minimum 15 ft below the bottom of the existing footing or design capacity of each pile/pier, whichever deeper, if underpinning method is selected. The designed capacity should be calculated by a licensed Structural Engineer and should include an appropriate factor of safety. In order to minimize the bending moment to the piers, piers should be installed at the location having as small as possible eccentricity to the wall center line.

Soil Expansion

The results of our subsurface exploration indicate the near-surface soils possess medium expansion potential when testing in accordance with ASTM D4829 (see Figure A-5). Since the field moisture contents are relatively high, we do not expect more future expansion deformation.

Building retrofit methods are proprietary systems designed by licensed contractors who could provide further information regarding support options. The owner should consult with the licensed contractor for details of each method. The owner should not only compare the cost of different methods but also compare other factors such as constructability. Detailed recommendations regarding retrofit are beyond the scope of the work of this report and should be provided by a competent contractor and reviewed by MPE.

CONSTRUCTION TESTING AND OBSERVATION

Site preparation should be accomplished in accordance with the recommendations of this report. Representatives of MPE must be present during site preparation and all grading operations to observe and test the fills to verify compliance with our recommendations and the job specifications. In the event that MPE is not retained to provide Geotechnical Engineering observation and testing services during construction, the Geotechnical Engineer retained to provide this service should accept the *Transfer of Responsibility of Geotechnical Engineer of the Record* and indicate in writing that they agree with the recommendations of this report and prepare supplemental recommendations as necessary.

A final report by the "Geotechnical Engineer" should be prepared upon completion of the project indicating compliance with or deviations from this report and the project plans and specifications. Please be aware that the title Geotechnical Engineer is restricted in the State of California to a Civil Engineer authorized by the State of California to use the title "Geotechnical Engineer."

LIMITATIONS

Our recommendations are based upon the information provided regarding the proposed construction, combined with our analysis of site conditions revealed by the field exploration and laboratory testing programs. We have used our best engineering judgment based upon the information provided and the data generated from our investigation. This report has been prepared in accordance with generally accepted standards of practice existing in northern California at the time of the report. No warranty, either express or implied, is provided.

If the proposed construction is modified or re-sited; or, if it is found during construction that subsurface conditions differ from those we encountered at the boring locations, we should be afforded the opportunity to review the new information or changed conditions to determine if our conclusions and recommendations must be modified. Mid Pacific Engineering, Inc., should be retained to review the final plans and specifications to verify that the intent of our recommendations has been implemented in those documents.

We emphasize that this report is applicable only to the proposed construction and the investigated site and should not be utilized for construction on any other site. The conclusions and recommendations of this report are considered valid for a period of two years. If the design is not completed and construction has not started within two years of the date of this report, the report must be reviewed and updated, as necessary.

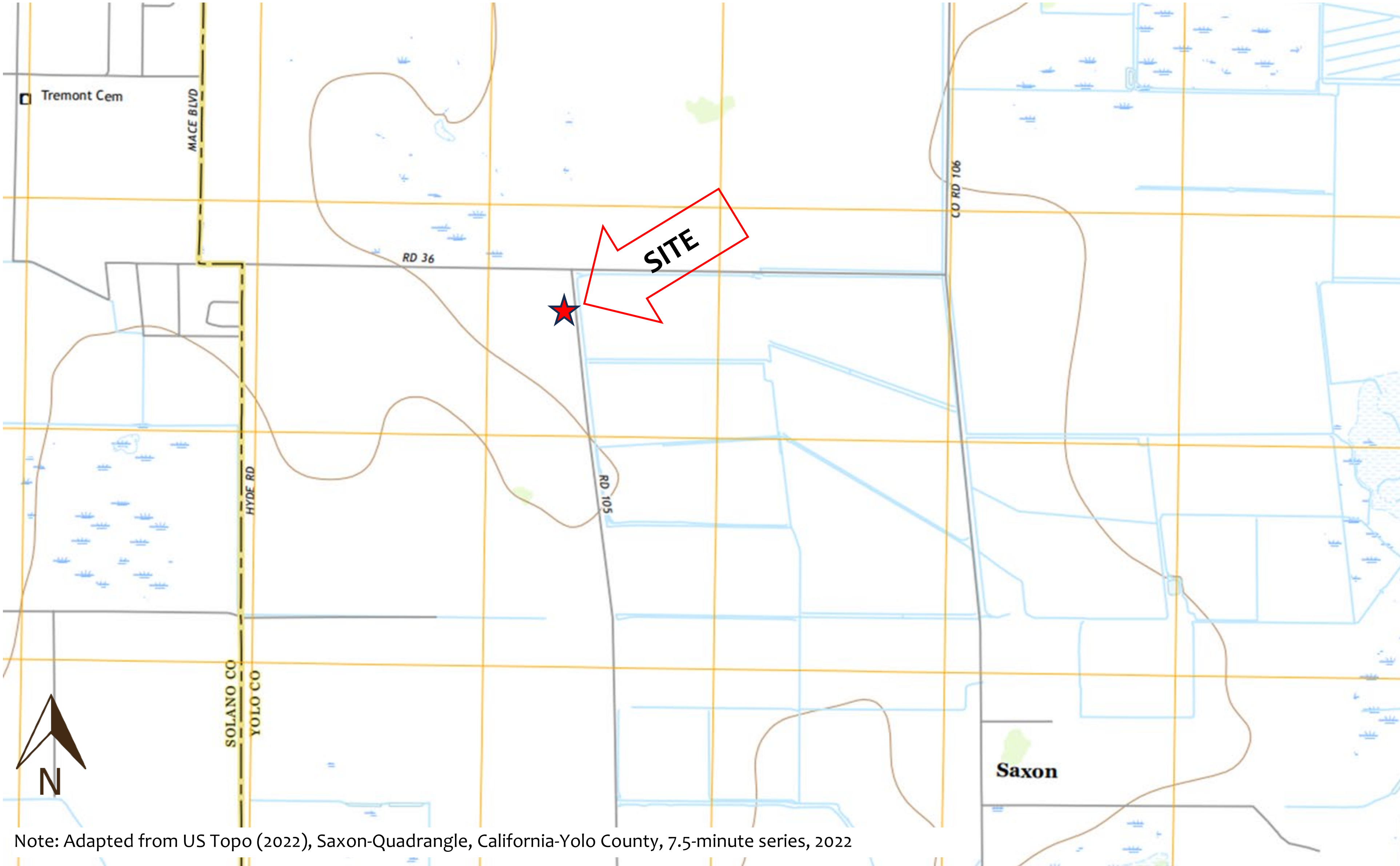
CLOSURE

We appreciate this opportunity to be of service and trust this report provides the information desired at this time. Should questions arise, please do not hesitate to contact this office.

Mid Pacific Engineering, Inc.

Fred Yi, Ph.D., P.E., G.E., F. ASCE
Chief Engineer

FIGURES



Note: Adapted from US Topo (2022), Saxon-Quadrangle, California-Yolo County, 7.5-minute series, 2022

MPE
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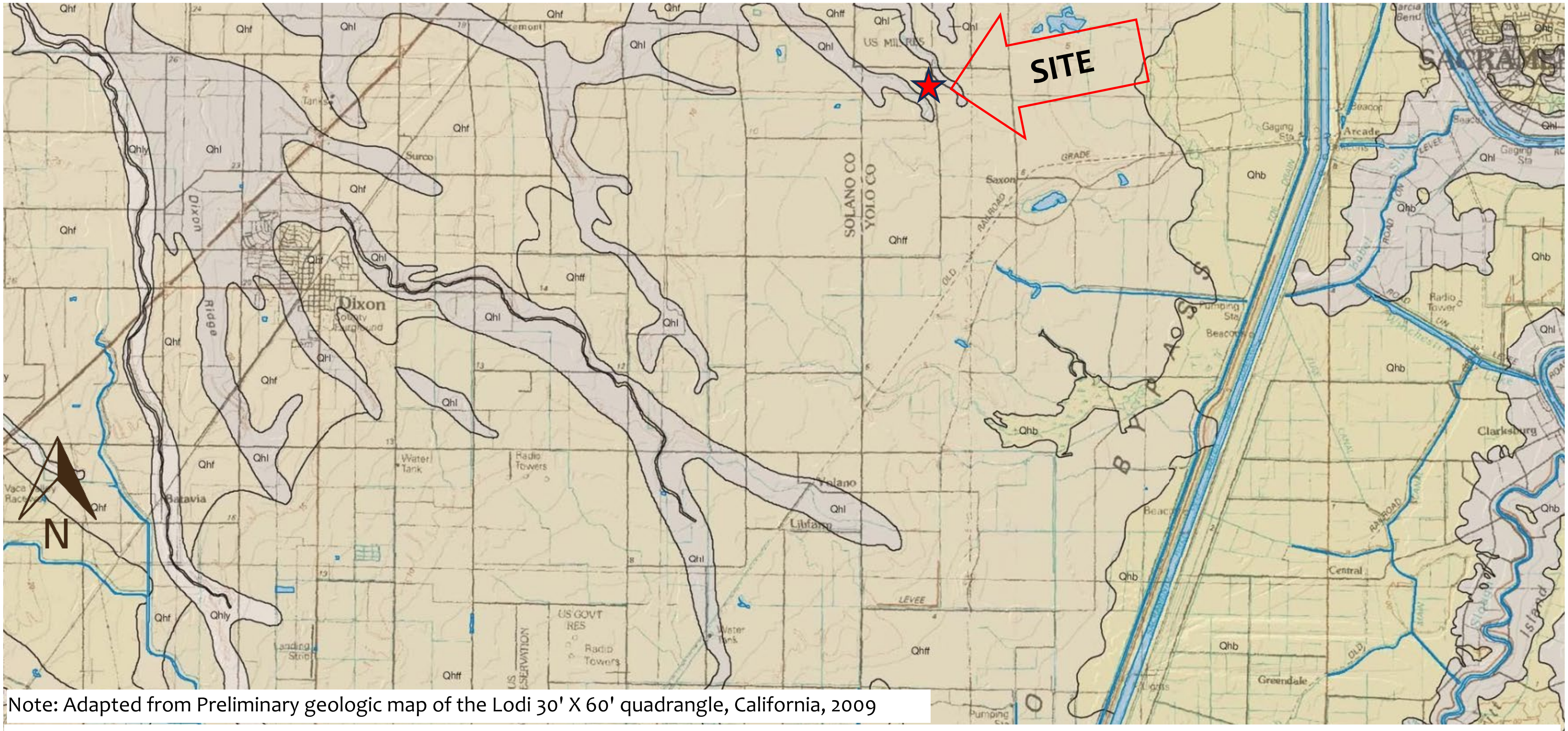
TOPOGRAPHIC MAP

DAVIS MIGRANT CENTER - SETTLEMENT INVESTIGATIONS
Units 39, 40, And 63 Through 66, 31150 County Road 105
Dixon, California

FIGURE 1
Date: 12/25
MPE No. 08011-01



Note: Adapted from Preliminary geologic map of the Lodi 30' X 60' quadrangle, California, 2009

Holocene

af	Artificial fill	afbm	Artificial fill placed over bay mud	alf	Artificial levee fill	ads	Dredge spoils	ac	Artificial stream channel	gq	Gravel quarry
Qhc	Latest Holocene stream channel deposits	Qhay	Latest Holocene alluvial deposits, undivided	Qhly	Latest Holocene fan levee deposits	Qhty	Latest Holocene stream terrace deposits	Qhl	Holocene fan levee deposits		
Qhbm	Holocene estuarine deposits, (bay mud)	Qhdm	Holocene Delta mud	Qht	Holocene stream terrace deposits	Qhb	Holocene basin deposits				
Qha	Holocene alluvium, undivided	Chf	Holocene alluvial fan deposits	Qhff	Holocene alluvial fan deposits, fine-grained						
Qa	Alluvium, undivided	Qds	Dune sand	Qf	Alluvial fan deposits	Qt	Stream terrace deposits	Qls	Landslide deposits		

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REGIONAL GEOLOGIC MAP

DAVIS MIGRANT CENTER - SETTLEMENT INVESTIGATIONS
Units 39, 40, And 63 Through 66, 31150 County Road 105
Dixon, California

FIGURE 2
Date: 12/25
MPE No. 08011-01

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SITE INVESTIGATION MAP

DAVIS MIGRANT CENTER - SETTLEMENT INVESTIGATIONS

Units 39, 40, And 63 Through 66, 31150 County Road 105
Dixon, California

FIGURE 3

Date: 12/25

MPE No. 08011-01

EXPLORATORY BORING LOG NO. B-01

Date Drilled: 11/24/2025	Logged by: JMM	Checked by: FY
Driller: West Coast Drilling	Drill Rig: Mobile B-24	Auger Type: Solid Flight Auger
Borehole Dia. (in): 4	Hammer Type: Cathead	Hammer Weight (lb): 140
Drop Distance (in): 30	SPT O.D./I.D. (in): 2.00/1.38	M. CAL O.D./I.D. (in): 3.00/2.50
Surface Elevation (ft): 32.0	Latitude: 38.4849	Longitude: -121.6777

ELEVATION (ft)	DEPTH (ft)	LITHOLOGY	ENGINEERING CLASSIFICATION AND DESCRIPTION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6"	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	FIELD/LAB TESTS
			(CL) Lean clay, with sand, dark brown, moist	Fill		X				FC=76.8% LL/PL=49/20 EI=75
30			(CL) Lean clay, brown, moist stiff	Native	X		6 7 8	91	27.0	
	5		very stiff		X		8 10 15	93	24.9	
25										
	10		stiff, olive brown		X		6 8 6	90	25.3	
20										
	15		very stiff		X		9 14 22	97	25.9	
15										
	20		hard, white mottling		X		18 50/5"			
10										
	25		hard, white streaking, gray streaking, black mottling, decrease in fine gravel		X		19 26 29			
5										

MID PACIFIC ENGINEERING, INC.

Davis Migrant Center Units 39; 40; 63; 64; 65; 66

Location:	31150 Road 105, Dixon, California 95620		
Client:	Yolo County Housing		
Project No.: 08011-01	Boring No.: B-01	Figure:	4 (1 of 2)

EXPLORATORY BORING LOG NO. B-01

Date Drilled: 11/24/2025	Logged by: JMM	Checked by: FY
Driller: West Coast Drilling	Drill Rig: Mobile B-24	Auger Type: Solid Flight Auger
Borehole Dia. (in): 4	Hammer Type: Cathead	Hammer Weight (lb): 140
Drop Distance (in): 30	SPT O.D./I.D. (in): 2.00/1.38	M. CAL O.D./I.D. (in): 3.00/2.50
Surface Elevation (ft): 32.0	Latitude: 38.4849	Longitude: -121.6777

ELEVATION (ft)	DEPTH (ft)	LITHOLOGY	ENGINEERING CLASSIFICATION AND DESCRIPTION	REMARKS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/6"	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	FIELD/LAB TESTS
		CL	(CL) Lean clay, brown, moist		Drive		18 29 34			
0										
	35		hard		Drive		24 35 42			
-5				Groundwater (▼)						
	40		hard, light brown, wet	Groundwater (▽)	Drive		19 32 41			
-10										
	45		hard		Drive		16 19 27			
-15										
	50		hard		Drive		18 24 34			
-20			GROUNDWATER AT 37 FT, NO BEDROCK NO REFUSAL, NO CAVING BACKFILLED WITH NEAT CEMENT GROUT							
	55									
-25										

MID PACIFIC ENGINEERING, INC.

Davis Migrant Center Units 39; 40; 63; 64; 65; 66					
Location:	31150 Road 105, Dixon, California 95620				
Client:	Yolo County Housing				
Project No.:	08011-01	Boring No.:	B-01	Figure:	4 (2 of 2)

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EXPLORATORY BORING LOG NO. B-02

Date Drilled: 11/24/2025	Logged by: JMM	Checked by: FY
Driller: West Coast Drilling	Drill Rig: Mobile B-24	Auger Type: Solid Flight Auger
Borehole Dia. (in): 4	Hammer Type: Cathead	Hammer Weight (lb): 140
Drop Distance (in): 30	SPT O.D./I.D. (in): 2.00/1.38	M. CAL O.D./I.D. (in): 3.00/2.50
Surface Elevation (ft): 28.0	Latitude: 38.4849	Longitude: -121.6771

ELEVATION (ft)	DEPTH (ft)	LITHOLOGY	ENGINEERING CLASSIFICATION AND DESCRIPTION	REMARKS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/6"	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	FIELD/LAB TESTS
			(CL) Lean clay, with sand, dark brown, moist	Fill		Bulk				MDC
25			(CL) Lean clay, brown, moist	Native	Drive		7 10 10	90	26.3	
	5		very stiff		Drive		10 14 22	100	21.6	
20	10		very stiff, olive brown		Drive		10 11 12	91	27.9	
15	15		very stiff		Drive		7 14 18	114	16.1	
10	20		hard, olive gray, white mottling		Drive		15 26 44			
5	25		very stiff, decrease in fine gravel		Drive		12 19 25			
0										

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MID PACIFIC ENGINEERING, INC.

Davis Migrant Center Units 39; 40; 63; 64; 65; 66					
Location:	31150 Road 105, Dixon, California 95620				
Client:	Yolo County Housing				
Project No.:	08011-01	Boring No.:	B-02	Figure:	5 (1 of 2)

EXPLORATORY BORING LOG NO. B-02

Date Drilled: 11/24/2025	Logged by: JMM	Checked by: FY
Driller: West Coast Drilling	Drill Rig: Mobile B-24	Auger Type: Solid Flight Auger
Borehole Dia. (in): 4	Hammer Type: Cathead	Hammer Weight (lb): 140
Drop Distance (in): 30	SPT O.D./I.D. (in): 2.00/1.38	M. CAL O.D./I.D. (in): 3.00/2.50
Surface Elevation (ft): 28.0	Latitude: 38.4849	Longitude: -121.6771

ELEVATION (ft)	DEPTH (ft)	LITHOLOGY	ENGINEERING CLASSIFICATION AND DESCRIPTION	REMARKS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/6"	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	FIELD/LAB TESTS
		CL	(CL) Lean clay, brown, moist		Drive		15 17 26			
-5										
	35	SC	(SC) Clayey sand, fine, olive brown, brown, gray streaking	Groundwater symbols	Drive		10 12 20			
-10										
	40		medium dense		Drive		10 12 16			
-15		CL	(CL) Sandy lean clay, olive brown, brown, wet							
	45		very stiff, orange streaking, gray, black mottling		Drive		14 17 25			
-20										
	50		very stiff, white streaking		Drive		17 23 22			
			GROUNDWATER AT 35 FT, NO BEDROCK NO REFUSAL, NO CAVING BACKFILLED WITH NEAT CEMENT GROUT							
-25										
	55									
-30										

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MID PACIFIC ENGINEERING, INC.

Davis Migrant Center Units 39; 40; 63; 64; 65; 66			
Location:	31150 Road 105, Dixon, California 95620		
Client:	Yolo County Housing		
Project No.: 08011-01	Boring No.: B-02	Figure: 5 (2 of 2)	

EXPLORATORY BORING LOG NO. B-03

Date Drilled: 11/25/2025	Logged by: JMM	Checked by: FY
Driller: West Coast Drilling	Drill Rig: Mobile B-24	Auger Type: Solid Flight Auger
Borehole Dia. (in): 4.5	Hammer Type: Cathead	Hammer Weight (lb): 140
Drop Distance (in): 30	SPT O.D./I.D. (in): 2.00/1.38	M. CAL O.D./I.D. (in): 3.00/2.50
Surface Elevation (ft): 25.0	Latitude: 38.4848	Longitude: -121.6777

ELEVATION (ft)	DEPTH (ft)	LITHOLOGY	ENGINEERING CLASSIFICATION AND DESCRIPTION	REMARKS	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS/6"	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	FIELD/LAB TESTS
	0		(CL) Lean clay, with gravel(≤3in), brown, moist	Fill		Bulk				
	2		(CL) Lean clay, brown, gray, moist	Native	Drive		11 16 20	108	13.6	
20	5		hard, moderate brown		Drive		14 40 50/5"			
15	10		hard, olive brown		Drive		16 34 39			
10	15		hard		Drive		17 25 31			
5	20		hard		Drive		17 24 32			
	21.5		NO GROUNDWATER, NO BEDROCK NO REFUSAL, NO CAVING BACKFILLED WITH NEAT CEMENT GROUT							
0	25									

MID PACIFIC ENGINEERING, INC.

Davis Migrant Center Units 39; 40; 63; 64; 65; 66					
Location:	31150 Road 105, Dixon, California 95620				
Client:	Yolo County Housing				
Project No.:	08011-01	Boring No.:	B-03	Figure:	6

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EXPLORATORY BORING LOG NO. B-04

Date Drilled: 11/25/2025	Logged by: JMM	Checked by: FY
Driller: West Coast Drilling	Drill Rig: Mobile B-24	Auger Type: Solid Flight Auger
Borehole Dia. (in): 4.5	Hammer Type: Cathead	Hammer Weight (lb): 140
Drop Distance (in): 30	SPT O.D./I.D. (in): 2.00/1.38	M. CAL O.D./I.D. (in): 3.00/2.50
Surface Elevation (ft): 29.0	Latitude: 38.4851	Longitude: -121.6773

ELEVATION (ft)	DEPTH (ft)	LITHOLOGY	ENGINEERING CLASSIFICATION AND DESCRIPTION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6"	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	FIELD/LAB TESTS
	0		(CL) Lean clay, dark brown, moist	Fill		Bulk				
	2		(CL) Lean clay, brown, moist	Native	Drive		14 20 27	105	17.4	
25	5		hard, moderate brown		Drive		19 26 28			
20	10		stiff, olive brown		Drive		8 9 12	87	25.6	
15	15		(SC) Clayey sand, fine, moderate brown, black streaking, moist		Drive		23 50/5"			
10	20		(SM) Silty sand, fine, with clay, moderate brown, black streaking, dense, moist		Drive		18 19 25			
5	25		NO GROUNDWATER, NO BEDROCK NO REFUSAL, NO CAVING BACKFILLED WITH NEAT CEMENT GROUT							
0										

MID PACIFIC ENGINEERING, INC.

Davis Migrant Center Units 39; 40; 63; 64; 65; 66					
Location:	31150 Road 105, Dixon, California 95620				
Client:	Yolo County Housing				
Project No.:	08011-01	Boring No.:	B-04	Figure:	7

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HAND AUGER BORING LOG NO. HA-01

Date Drilled:	11/24/2025	Logged by:	DR	Checked by:	FY
Driller:	MPE	Equipment	Hand Auger	Model	
Borehole Dia. (in):	3	Test Type	Hand Auger	Hammer Weight (lb):	NA
Drop Distance (in):	NA	SPT O.D./I.D. (in):	NA	M. CAL O.D./I.D. (in):	NA
Surface Elevation (ft):	26.0	Latitude:	38.4848	Longitude:	-121.6777

ELEVATION (ft)	DEPTH (ft)	LITHOLOGY	ENGINEERING CLASSIFICATION AND DESCRIPTION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6"	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	FIELD/LAB TESTS
25			(CL) Lean clay, with gravel(≤3in), brown, moist	Fill						
			(CL) Lean clay, dark brown, moist	Native						
	5		NO GROUNDWATER, NO BEDROCK REFUSAL AT 4.5 FT, NO CAVING BACKFILLED WITH CUTTING							
20										
	10									
15										

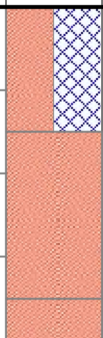
MID PACIFIC ENGINEERING, INC.

Davis Migrant Center Units 39; 40; 63; 64; 65; 66					
Location:	31150 Road 105, Dixon, California				
Client:	Yolo County Housing				
Project No.:	08011-01	HA No.	HA-01	Figure:	8

HAND AUGER BORING LOG NO. HA-02

Date Drilled:	11/24/2025	Logged by:	DR	Checked by:	FY
Driller:	MPE	Equipment	Hand Auger	Model	
Borehole Dia. (in):	3	Test Type	Hand Auger	Hammer Weight (lb):	NA
Drop Distance (in):	NA	SPT O.D./I.D. (in):	NA	M. CAL O.D./I.D. (in):	2.50/2.00
Surface Elevation (ft):	26.0	Latitude:	38.4849	Longitude:	-121.6770

ELEVATION (ft)	DEPTH (ft)	LITHOLOGY	ENGINEERING CLASSIFICATION AND DESCRIPTION	REMARKS	SAMPLES DRIVE	SAMPLES BULK	BLOWS/6"	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	FIELD/LAB TESTS
25			(CL) Lean clay, with gravel(≤3in), brown, moist	Fill						
			(CL) Lean clay, dark brown/gray, moist	Native						
			(CL) Lean clay, light brown, moist							
			NO GROUNDWATER, NO BEDROCK REFUSAL AT 4 FT, NO CAVING BACKFILLED WITH CUTTING							
	5									
20										
	10									
15										



MPE MID PACIFIC ENGINEERING, INC.

Davis Migrant Center Units 39; 40; 63; 64; 65; 66

Location:	31150 Road 105, Dixon, California				
Client:	Yolo County Housing				
Project No.:	08011-01	HA No.	HA-02	Figure:	9

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UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

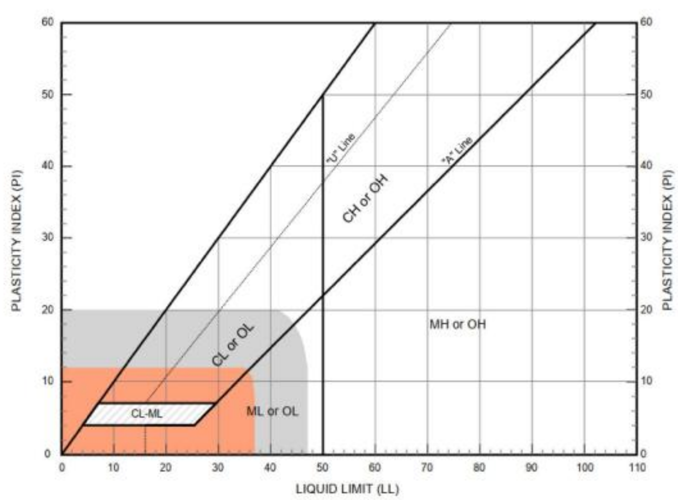
COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)		
	Clean Gravels (Less than 5% fines)	
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, 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
	Clean Sands (Less than 5% fines)	
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	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
	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

LABORATORY CLASSIFICATION CRITERIA

Important Note: Soil classifications provided in the boring logs are primarily based on field and laboratory visual classification with modifications when laboratory test results are available.

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_u = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or PI less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with PI greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_u = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or PI less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
GC	Atterberg limits above "A" line with PI greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:
Less than 5 percent .... GW, GP, SW, SP
More than 12 percent .... GM, GC, SM, SC
5 to 12 percent .... Borderline cases requiring dual symbols



Davis Migrant Center Units 39; 40; 63; 64; 65; 66					
Location:	31150 Road 105, Dixon, California				
Client:	Yolo County Housing				
Project No.:	08011-01	HA No.	USCS	Figure:	10

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GENERAL NOTES (SOILS)

SAMPLING / WATER LEVEL		FIELD & LABOPRATORY TESTS	
Standard Penetration Tests	Shelby tube sampler	N — Standard Penetration Test Resistance (Blows/ft)	PI — Plasticity Index
Modified California Sampler (6" Tube)	Perched groundwater	Dist. — Disturbed sample	EI — Expansive Index
Modified California Sampler (1" Rings)	Water encountered during drilling	N.R. — No recovery of sample	MDC — Max. Density Curve-D1557
Bulk Samples	Water measured after drilling	PP — Pocket Penetrometer	UC — Unconfined Compression
		DCP — Dynamic Cone Penetrometer	DS — Direct Shear Test
		P200 — Pass #200 screen wash	TX — Triaxial Compression Test
		SA — Sieve Analysis (Gradation)	Consol. — Consolidation
		Hydro. — Hydrometer Analysis	RV — R-Value (CT 301)
		Att. — Atterberg limits	K — Permeability Test
			Cor. — Chemical/Corrosivity Tests
			SE — Sand Equivalent
			RC — Relative Compaction

SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve classified as boulders, cobbles, gravel, or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve typically classified as silts if they are slightly plastic or non-plastic or clays if they are plastic. Major constituents may be added as modifiers, and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined based on their in-place relative density and fine-grained soils based on their consistency.

COORDINATES AND ELEVATION

Latitude and Longitude are approximately determined using a cellphone or hand-held GPS device. The accuracy of such devices is variable. Surface elevation was approximately determined from topographic maps of the area or Google Earth [1]. Typically, surface elevation data was not based on actual topographical survey. 1) Copyright of Google.

ENGINEERING PROPERTIES FROM SPT BLOWS [2]

SAND & GRAVEL [1]			SILT & CLAY [1]		
Number of SPT Blows (N_{60})	Descriptive Relative Density	Approximate Relative Density (%)	Number of SPT Blows (N_{60})	Approximate Soil Consistency	Unconfined Compressive Strength, q_u (tsf)
0 – 4	Very Loose	0 – 15	< 2	Very Soft	Less than 0.25
4 – 10	Loose	15 – 35	2 – 4	Soft	0.25 – 0.50
10 – 30	Medium Dense	35 – 65	4 – 8	Medium Stiff	0.50 – 1.00
30 – 50	Dense	65 – 85	8 – 15	Stiff	1.00 – 2.00
> 50	Very Dense	85 – 100	15 – 30	Very Stiff	2.00 – 4.00
			> 30	Hard	More than 4.00

1) Terzaghi and Peck (1996), Soil Mechanics in Engineering Practice, 3rd Ed

2) Number of blows of 140 lb hammer falling 30 inches to drive a 2-inch O.D. (1-3/8-inch I.D.) split-barrel sampler the last 12 inches of an 18-inch drive (ASTM-1586 standard penetration test).

RELATIVE PROPORTIONS OF SAND AND GRAVEL		RELATIVE PORTIONS OF FINES	
Descriptive Term(s) of other Constituents	Percent of Dry Weight	Descriptive Term(s) of other Constituents	Percent of Dry Weight
Trace	< 15	Trace	< 5
With	15 – 29	With	5 – 12
Modifier	> 30	Modifier	> 12

GRAIN SIZE TERMINOLOGY		PLASTICITY DESCRIPTION	
Major Component of Sample	Particle Size	Term	Plasticity Index
Silt or Clay	Passing #200 sieve (0.075mm)	Non-plastic	0
Sand	#4 to #200 sieve (4.75mm to 0.075mm	Low	1 – 10
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)	Medium	11 – 30
Cobbles	12 in. to 3 in. (300mm to 75mm)	High	> 30
Boulders	Over 12 in. (300 mm)		

MID PACIFIC ENGINEERING, INC.

Davis Migrant Center Units 39; 40; 63; 64; 65; 66					
Location:	31150 Road 105, Dixon, California				
Client:	Yolo County Housing				
Project No.:	08011-01	HA No.	NOTES	Figure:	11

APPENDICES

APPENDIX A

APPENDIX A

A. GENERAL INFORMATION

The performance of a *Geotechnical Engineering* investigation for the proposed Davis Migrant Center - Settlement Investigations to be located at Units 39, 40, And 63 Through 66, 31150 County Road 105 in Dixon, California, was authorized by Ian Evans on November 13, 2025. The authorization was for an investigation as described in our proposal dated September 17, 2025, sent to our client, Yolo County Housing, whose mailing address is 147 W. Main Street, Woodland, California 95695; telephone (530) 669-2227; email address ievans@ych.ca.gov.

B. FIELD EXPLORATION

Four soil borings were drilled on November 24 and 25, 2025, at the approximate locations indicated on Figure 3, utilizing a Mobile B-24 truck-mounted drill rig equipped with four-inch diameter, solid-stem helical flight augers. The borings were drilled to maximum depths of approximately 21½ to 51½ feet below existing site grades.

At various intervals, Modified California sampler with a 3-inch O.D., 2½ -inch I.D. and 1-inch-long rings or 2½-inch O.D., 2-inch I.D. and 6-inch-long tubes (ASTM D3550) were driven by an automatic 140-pound hammer freely falling 30 inches. The number of blows of the hammer required to drive the 18-inch-long sampler each 6-inch interval was recorded with the sum of the blows required to drive the sampler the lower 12-inch interval being designated the penetration resistance or "blow count" for that particular drive. Relatively undisturbed soil samples were recovered with Modified California sampler.

The samples obtained with the modified California sampler were retained in 2½-inch diameter by 6-inch-long plastic canister or 2-inch diameter by 6-inch-long, thin-walled tubes contained within the sampler.

Immediately after recovery, the field engineer visually classified the soil in the tubes/rings and the ends of the tubes/rings were sealed to preserve the natural moisture contents. Disturbed bulk samples of the surface materials were also obtained at various locations and depths. Soil samples were taken to our laboratory for additional classification (ASTM D2488) and selection of samples for testing.

The Logs of Soil Borings, Figures 4 through 8, contain descriptions of the soils encountered in each boring. A Boring Legend explaining the Unified Soil Classification System and the symbols used on the logs is contained in Figure 9. A General Notes is included in Figure 11.

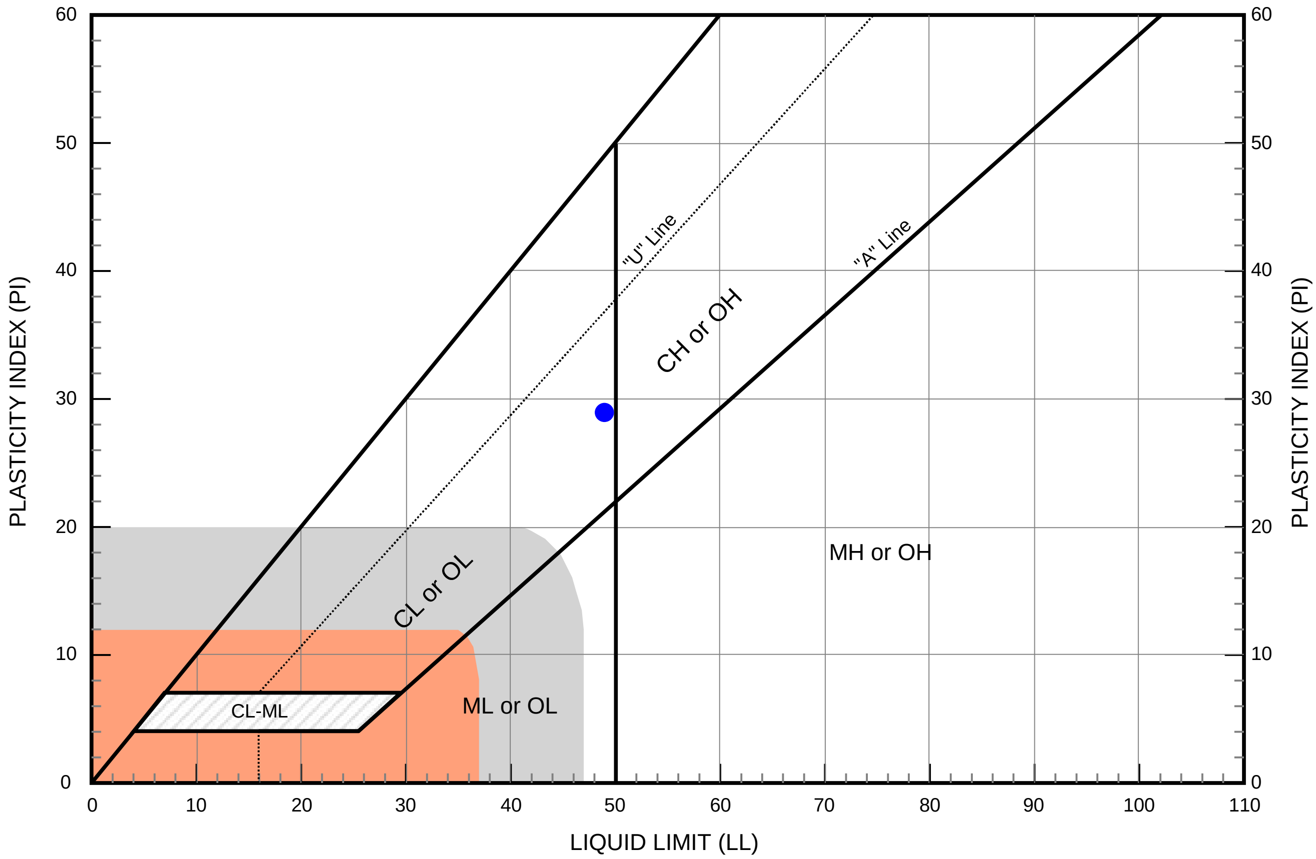
In addition, 2 hand auger borings were drilled at locations where gas lines presented. Hand auger borings were advanced to maximum depths of approximately 4½ feet bgs.

C. LABORATORY TESTING

Representative samples of soils including relatively undisturbed samples and bulk samples are selected by project engineer and assigned for laboratory testing. Laboratory tests performed for this project are as follows:

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil by Mass
- ASTM D2937 Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D1140 Standard Test Methods for Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing
- ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
- ASTM D4829 – Standard Test Method for Expansion Index of Soils
- Soil Resistivity and Chemical Analysis testing in accordance with No. 643 (Modified Small Cell), CT 532, CT 422, and CT 417, etc.

The results of these tests are included on the boring logs at the depth each sample was obtained and/or attached figures. Corrosivity testing was performed by our subconsultant Sunland Analytical in Rancho Cordova, California.



	Sample No.	USCS Classification	LL	PL	PI	G%	S%	F%
●	B-01 (0 - 2.5 ft)	(CL) Lean clay with sand	49	20	29		23.2	76.8

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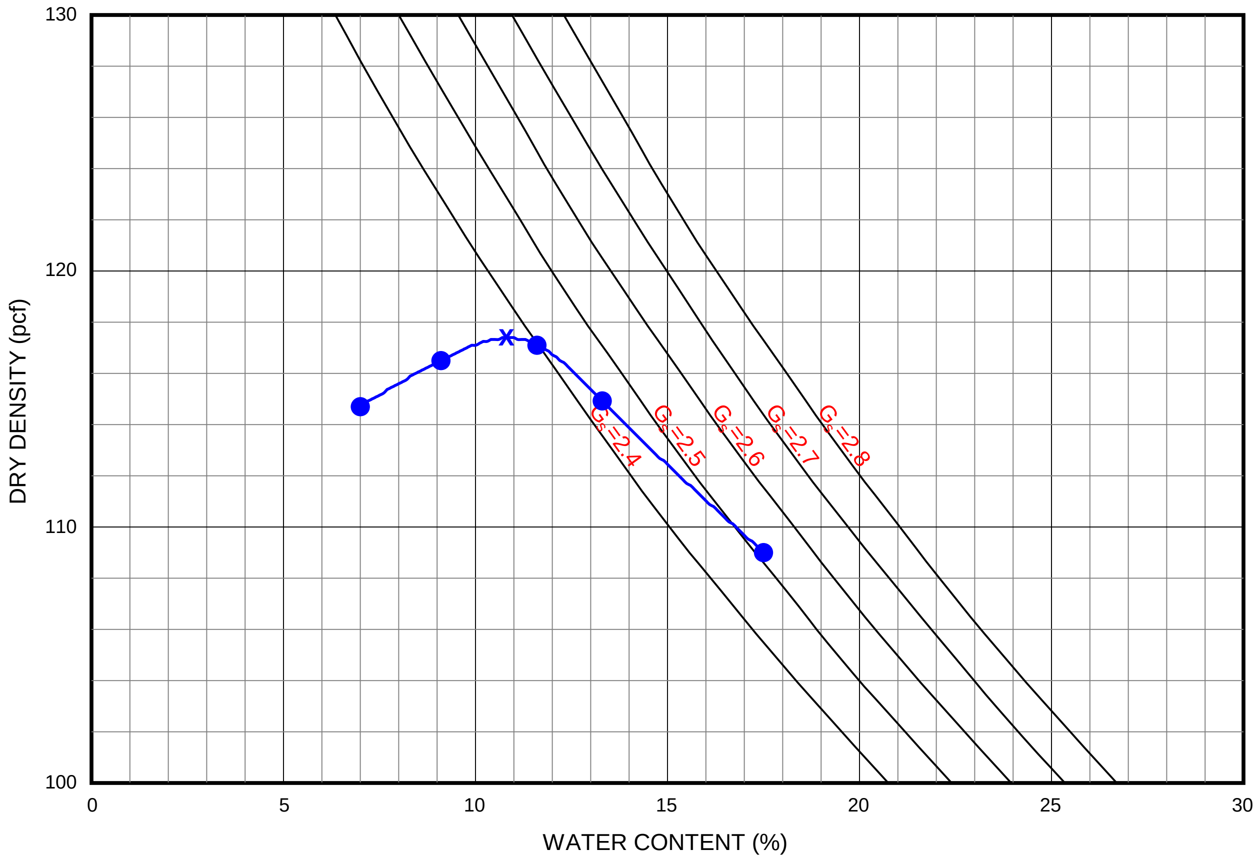
MID PACIFIC ENGINEERING, INC.

PLASTICITY CHART (ASTM D4318)					
Project:	DAVIS MIGRANT CENTER - SETTLEMENT INVESTIGATIONS				
Location:	31150 County Road 105, Dixon, California				
Project No.:	08011-01	Engineer:		Figure:	A-1



	Sample No.	USCS Classification	γ_{dmax} (pcf)	w_o (%)
●	B-02 (0 - 3 ft)	(CL) Lean clay with sand	117.0	10.5

R:\08000-00 through 08099-00\08011-01 Davis Migrant Center Units 39 40 63 64 65 66 GER\4 - GER & Correspondence\MPE Drafting\LabSuite_08011-01.csv

MID PACIFIC ENGINEERING, INC.

COMPACTION CURVES (ASTM D1557)

Project:	DAVIS MIGRANT CENTER - SETTLEMENT INVESTIGATIONS				
Location:	31150 County Road 105, Dixon, California				
Project No.:	08011-01	Engineer:		Figure:	A-2

Prepared at 12/15/2025 1:20:26 PM

NO. 200 WASH TEST RESULTS

(ASTM D422)

Sample Number	Depth (ft)	Particles Passing No. 200	Clay Particles Passing 0.002µm)
B-01	0 – 2½	76.8%	—

EXPANSION INDEX TEST RESULTS

(ASTM D4829-03)

(UBC 18-2)

Sample Number	Material Description	Pre-Test Moisture (%)	Post-Test Moisture (%)	Dry Density (pcf)	Expansion Index
B-01 Bulk	Lean Clay with sand (CL)	13.6	94.5	94	75

CLASSIFICATION OF EXPANSIVE SOIL

EXPANSION INDEX	POTENTIAL EXPANSION
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
Above 130	Very High

MPE

MID PACIFIC ENGINEERING, INC.

EXPANSION INDEX TEST RESULTS

DAVIS MIGRANT CENTER - SETTLEMENT INVESTIGATIONS

Units 39, 40, And 63 Through 66, 31150 County Road 105

Dixon, California

FIGURE A-4

Date: 12/25

MPE No. 08011-01