DOCKETED

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Project Title:	Vaca Dixon Power Center Project
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Document Title:	Appendix H Geotechnical Report_VDPC
Description:	The Geotechnical Report provides site-specific geotechnical data and recommendations for earthwork, foundation design, and pavement construction for the proposed Project. H.A Guide Specifications For Earthwork; H.B Field Investigation; H.C Soils Test Data; H.D Seismic Design Data
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Appendix H

Geotechnical Investigation

SOILS ENGINEERING, INC.

GEOTECHNICAL INVESTIGATION

FOR THE

VACA DIXON POWER CENTER

38.396085, -121.921605

VACAVILLE, SOLANO COUNTY, CA

Prepared for:
Middle River Power
4350 Executive Drive, Suite 320
San Diego, CA 92121

By:

SOILS ENGINEERING, INC.
SEI File No. 25-20447
December 1, 2025

REGISTERED PROFESSIONAL ENGINEER
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EXP. 12-31-2025
GEOTECHNICAL
STATE OF CALIFORNIA

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Engineering Manager

TABLE OF CONTENTS

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INTRODUCTION

At your request, Soils Engineering, Inc. has prepared this Geotechnical Investigation for the subject site. This report includes recommendations for the site preparation and grading and for foundation design.

Appendix A, "Guide Specifications for Earthwork," is provided as a supplement to section “Earthwork Recommendations” found in the report.

Appendix B, “Field Investigation,” contains a boring location map, Figure 1, and Logs of Test Borings, Figures 2 through 17.

Appendix C, “Soils Test Data,” contains tabulations of laboratory test data.

Appendix D, “Seismic Investigation,” contains information provided by EQFAULT, and the SEAOC.

Appendix E, “Drilled Pier Skin Friction,” contains skin friction charts.

We hope this provides the information you require. If you have any questions regarding the contents of our report, or if we can be of further assistance, please contact us.

Respectfully submitted,
SOILS ENGINEERING, INC.

SITE INFORMATION

A. SITE LOCATION AND CONDITIONS

The Vaca Dixon Power Center Project is located at the northeast corner of the intersection of Kilkenny Rd and Willow Rd in Vacaville, CA. The site location approximate GPS coordinates are 38.396043, -121.921533. The proposed site is currently an active agriculture field. Currently, the proposed improvements for the subject project are to construct a battery storage facility with a switchyard. The batteries will be supported on a mat foundation, grade beam foundation, or drilled piers. Access roads will consist of an all-weather aggregate base road. The site appears to be bordered by Kilkenny Rd to the south, a transmission line to the east, and an irrigation canal to the north & west.

The surface of the site appears to be relatively flat.

B. GEOLOGIC SETTING

According to the California Department of Conservation's Geologic Atlas of California, Sacramento Sheet, and the 2010 Geologic Map of California, the project site is situated on Pleistocene marine and nonmarine (continental) sedimentary rocks (Qoa). Based on the California Department of Conservation's Geological Survey maps, the site is not located in an Alquist-Priolo (earthquake fault) Special Study Zone. Nearby active earthquake faults include the following:

Great Valley 4	0.8 miles/	1.3 kilometers
Great Valley 5	6.5 miles/	10.5 kilometers
Concord/GV (GVN) and other segments	13.9 miles/	22.3 kilometers
Concord/GV (GVS) and other segments	15.4 miles/	24.8 kilometers
Hunting Creek - Berryessa	15.4 miles/	24.8 kilometers
Great Valley 3	19.1 miles/	30.8 kilometers
West Napa	22.5 miles/	36.2 kilometers
Concord/GV (CON)	26.0 miles/	41.9 kilometers
Mount Diablo (MTD)	31.1 miles/	50.1 kilometers
Hayward (HN+RC) and other segments	34.7 miles/	55.8 kilometers
Hayward (HS+HN) and other segments	35.0 miles/	56.3 kilometers
Greenville (GN)	35.7 miles/	57.5 kilometers
Calaveras (CN) and other segments	40.3 miles/	64.8 kilometers
Hayward (HS)	42.3 miles/	68.1 kilometers
MAACAMA - Gerberville	43.6 miles/	70.1 kilometers
Foothills Fault System 1	47.8 miles/	77.0 kilometers
Bartlett Springs Fault System	48.7 miles/	78.4 kilometers
Collayomi	49.0 miles/	78.8 kilometers

Major fault systems and their distances from the site are given in the EQFault Summary attached in Appendix D. The largest estimated peak site acceleration, based on deterministic methods, is 0.5948-g from a magnitude 6.6 earthquake on the Great Valley 4 fault located approximately 0.8 miles from the site.

C. SUBSURFACE CONDITIONS

Subsurface soils encountered in our field investigation consisted mainly of loose to dense sands and stiff to hard high plasticity clays in the upper 10 feet. Below 10 feet, layers of medium dense to dense sands and stiff to hard low to high plasticity clays were encountered to maximum explored depth of 51.5 feet below ground surface (bgs). These soils are classified as CH, CL, SC, and SM respectively in the unified Soil Classification System (USCS).

The on-site soil is considered to have very low to medium expansion potential with Expansion Indices (EI) ranging from 2 to 59. Expansive soils are defined in the 2022 California Building Code (CBC), Section 1803A.5.3. Soils are considered to be expansive when the EI result is greater than 20, per ASTM D4829, Expansion Index of Soils. Design of foundations for structures shall be designed in accordance with the 2022 CBC, Sections 1808A.6.1, & 1808A.6.2.

Detailed descriptions of the various soils encountered during our field investigation are shown on Figures 2 through 17 in Appendix B, “Field Investigation.” A “Key to Symbols” legend describing the symbols in the boring logs is also attached.

D. GROUNDWATER

Groundwater was encountered during the field investigation in all borings at depths ranging from 14 to 26 feet below ground surface. According to the SGMA Data Viewer utilizing DWR data the depth to groundwater in the vicinity of the site was approximately 28 feet bgs in the Spring of 2024.

E. SEISMIC DESIGN VALUES

The seismic design values tabulated below are based on the 2022 California Building Code (CBC). The Site Class for the proposed project was determined using standard penetration test data obtained at the site and documented in the attached Logs of Borings. The site is not in an Alquist-Priolo (earthquake fault) Special Study Zone.

SEISMIC DESIGN CRITERIA		VALUE	SOURCE
Risk Category		**III**	2022 CBC Table 1604.5 or 1604*A*.5
Site Class		**D**	2022 CBC § 1613.2.2 or 1613*A*.2.2; ASCE 7-16 Table. 20.3-1; Site Specific Soils Report
Mapped MCE$_R$ Spectral Response Acceleration, short period	**S_S**	**1.215g**	SEAOC-OSHPD software; 2022 CBC Figure 1613.2.1(1)
Mapped MCE$_R$ Spectral Response Acceleration, at 1-sec. Period	**S_1**	**0.436g**	SEAOC-OSHPD software; 2022 CBC Figure 1613.2.1(2)
Site Coefficient	**F_a**	**1.014**	SEAOC- OSHPD software; 2022 CBC Table 1613.2.3(1) or 1613*A*.2.3(1)
Site Coefficient	**F_v***	**1.864***	2022 CBC Table 1613.2.3(2) or 1613*A*.2.3(2)
Adjusted MCE$_R$ Spectral Response Acceleration, short period, $F_a * S_s$	**S_{MS}**	**1.232g**	SEAOC- OSHPD software; 2022 CBC § 1613.2.3 or 1613*A*.2.3

SEISMIC DESIGN CRITERIA		VALUE	SOURCE
Adjusted MCE_R Spectral Response Acceleration, 1-sec. period, F_v * S_{1*} * 1.5	**S_{M1}***	**1.219g***	2022 CBC § 1613.2.3 or 1613*A*.2.3, ASCE 7-16, Supplement 3, § 11.4.8
Design Spectral Response Acceleration, short period, 2/3 * S_{MS}	**S_{DS}**	**0.821g**	SEAOC- OSHPD software; 2022 CBC § 1613.2.4 or 1613*A*.2.4
Design Spectral Response Acceleration, 1-sec. period, 2/3 * S_{MI}	**S_{D1}***	**0.813g***	2022 CBC § 1613.2.4 or 1613*A*.2.4
Peak Ground Acceleration for Max. Considered Earthquake (MCE_G)	**PGA**	**0.507g**	SEAOC- OSHPD software; ASCE 7-16 Fig 22-9
Site Coefficient, F_{PGA} = 1.1, F_{PGA}* PGA	**PGA_M**	**0.557g**	SEAOC- OSHPD software; ASCE 7-16 § 11.8.3.2
Seismic Design Category, short period		**D**	2022 CBC § 1613.2.5
Seismic Design Category, 1second period *		**D***	2022 CBC § 1613.2.5
*See requirements for site-specific ground motions in Section 11.4.8. The values tabulated above for SM1, SD1, and the Seismic Design Category/1-second period are based on the site coefficient, Fv, interpolated from 2022 CBC Table 1613.2.3(2) or 1613A.2.3(2) and Supplement 3, § 11.4.8			
MCE_R = Maximum Considered Earthquake (risk targeted) MCE_G = Maximum Considered Earthquake (geometric mean)			

F. LIQUEFACTION POTENTIAL

The on-site soil at the upper approximately 51.5 feet consist of mainly of sandy clay and clayey sand. Based on the soil conditions, liquefaction potential at the upper 51.5 feet is considered to be low.

G. PERCOLATION TEST RESULTS

Based on the percolation test results, the percolation is considered very low with percolation rates range from 43 min/in to >150 min/in. The soil encountered at the test depth of 5 feet was sandy clay and clayey sand. Test results are provided in Appendix B. Percolation test locations are shown on the Boring Location Map, Figure 1.

H. FIELD ELECTRICAL RESISTIVITY

Field resistivity testing will be completed after the removal of existing trees.

I. THERMAL RESISTIVITY

Two (2) laboratory thermal resistivity tests were performed on remolded samples (85% of maximum dry density) to determine the soil's thermal conductivity (K) and resistivity (RHO) values using a Thermtest TLS-100 in accordance with ASTM D5334. Results are presented in Table 1 in Appendix C, Soil Test Data.

EARTHWORK RECOMMENDATIONS

A. COMPACTION AND OPTIMUM MOISTURE

Unless otherwise specified herein, the terms "compaction" or "compacted", wherever used or implied in this report, should be interpreted as compaction to ninety percent (90%), or greater, of the laboratory maximum density (as determined in accordance with ASTM Test Method D1557). The term, “Optimum Moisture,” wherever use or implied within this report, should be interpreted as that obtained by the above-described test method.

B. STRIPPING

Prior to soil compaction, existing ground surfaces should be stripped of surface vegetation. A stripping depth of one inch should be adequate. In no instance should material which has been stripped be used as engineered fill or blended with and compacted in original ground.

C. GROUND SURFACE PREPARATION

Proposed Structure Areas:

Ground surfaces in the proposed structure areas shall be compacted in accordance with the following procedures:

1. Excavate earth material to a minimum depth of two (2) feet below existing grade in the proposed structure area or one (1) foot below bottom of proposed foundations, whichever is deeper.
2. The bottom of the excavation shall be reviewed by the soil engineer or his or her representative prior to any backfill operations.
3. Moisten excavated and imported soils to near optimum moisture consistent with effective compaction and soil stability. Compact moistened soils to a minimum of 90 percent of the maximum density obtained by ASTM Test Method D1557.
4. Work to lines at least five (5) feet beyond the outside edges of the foundations.
5. SEI recommends one foot of non-expansive (EI < 20) engineered fill below shallow foundations. Shallow concrete slab should be underlain with two feet of non-expansive (EI < 20) engineered fill.

Review of Excavation Bottoms

Prior to placement of backfill, excavation bottoms shall be reviewed for indications of loose-fill, discoloration, or loose, compressible, native materials. Where these are encountered, they should be excavated and removed, or excavated and compacted as directed by the geotechnical engineer.

Fill placement in excavations shall not proceed until the geotechnical engineer or his or her representative on the site has reviewed, tested as described above and accepted materials exposed at the bottom of the excavation.

Utility Lines:

Backfill for utility lines traversing areas proposed for facilities, pavements, concrete slabs-on-grade, or areas to receive engineered fill for future construction should be compacted in accordance with the same requirements for adjacent and/or overlying fill materials. Compaction should include haunch area, spring line, and from top of pipe to finished subgrade. The haunch area up to one foot above the top of the pipe should be backfilled with "cohesionless" material.

Cohesionless native materials may be used for trench and pipe or conduit backfill. The term "cohesionless," as used herein, is defined as material which when dry, will flow readily in the haunch areas of the pipe trench. Pipe backfill materials should not contain rocks larger than two inches in maximum dimension. Where adjacent native materials exposed on the trench bottoms contain protruding rock fragments larger than two inches in maximum dimension, conduits and pipelines should be laid on bedding consisting of clean, cohesionless sand (SP), in the Unified Soils Classification System.

D. ENGINEERED FILL

Earth materials obtained on-site are acceptable for use as engineered fill provided that all grasses, weeds and other deleterious debris are first removed. Engineered fill materials should be placed in thin layers (less than ten inches uncompacted thickness), brought to near the optimum moisture content or to a moisture content commensurate with effective compaction and soil stability, and compacted to a minimum of 90 percent of the maximum density obtainable by ASTM Test Method D1557, "Placing, Spreading and Compacting Fill Materials," in Appendix A.

E. IMPORTED FILL

The table shown below provides general guidelines for acceptance of import engineered fill. Materials of equal or better quality than on-site material could be reviewed by the Geotechnical Engineer of Record (GEOR) on a case-by-case basis. No soil materials shall be imported onto the project site without prior approval by the GEOR. Any deviation from the specifications given below shall be approved by the GEOR prior to import operations.

Maximum Percent Passing #200 Sieve	40
Maximum Percent Retained 3" Sieve	0
Maximum Percent Retained 1½" Sieve for *Building Areas*	15
Maximum Percent Retained ¾" Sieve for *Landscape Areas*	5
Maximum Percent Retained ½" Sieve for *Play Fields*	0
Maximum Liquid Limit	40
Maximum Plasticity Index	14
Minimum R-Value for *Pavement Areas*	50

Furthermore, the soils proposed for import shall be generally homogenous and shall not contain cemented and/or clayey and/or silty lumps larger than one inch. When such lumps are present, they shall not represent more than ten percent (10%) of the material by dry weight. Where a proposed import source contains obviously variable soils, such as clay and/or silt layers, the soils which do not meet the above requirements shall be segregated and not used for this project or the various layers shall be thoroughly mixed prior to sampling and testing by the Geotechnical Engineer. The contractor shall provide sufficient notice, prior to import operations, to allow sampling, testing, and evaluation of the proposed import material(s). Because of the time needed to perform the above tests, the contractor shall provide a means by which the Geotechnical Engineer, or others, can verify that the material which was sampled and tested is the same material which is being imported to the project.

F. DRAINAGE

Finished ground grades adjacent to the proposed structures should be sloped to provide positive free drainage away from the foundations. No areas should be constructed that would allow drainage generated on the site, or water impinging upon the site from outside sources, to pond near footings and slabs or behind curbs. Where ground surfaces adjacent to subsurface walls are to be landscaped, walls should be waterproofed.

FOUNDATIONS

SPREAD FOOTINGS

The proposed foundation could be supported on continuous footings, isolated footings, and mat foundations in accordance with the following Table A:

TABLE A
FOUNDATION DESIGN CRITERIA

Footing Type	**Minimum Width (ft.)**	**Minimum Depth Below Lowest Adjacent Subgrade (ft.)**	**Maximum Allowable Soil Bearing Pressure (lbs. / sq. ft.)**
Continuous	1	1	2500
Isolated	1	1	2500
Mat	5	1	2500

Bearing pressures given are for the minimum widths and depths shown above. Bearing pressures given above are for dead and sustained (loads acting most of the time) live loads; they may be increase by one-third for wind and/or seismic loading conditions. The proposed foundations shall be reinforced in accordance with the structural engineer’s recommendations.

Settlement:
Provided maximum allowable soil bearing pressures given above are not exceeded, total settlement should not exceed one inch. A major portion, two-thirds to one-half, of total settlement should occur before the end of construction. Differential settlements should occur before the end of construction. Differential settlements should, accordingly, be less than one-half of an inch for a horizontal span of thirty feet.

DEEP FOUNDATIONS

For 96 and 120 inch diameter drilled pier (CIDH), allowable capacity in compression for skin friction in tons are given in Appendix E. A Safety Factor of 2.5 was applied for the Skin-Friction. These values are plotted versus depth below the pile-head. A ground water depth of 20 feet was used for calculations. Values given for Allowable Capacity in compression may be increased by 1/3 for Wind and Seismic loading conditions. No pile capacity reduction if the pile spacing is at or greater than 3 pile diameters. Down drag is not anticipated and reducing allowable capacity for deep foundation design is not required.

For the 120" diameter CIDH pile and maximum depth of 40 feet with allowable capacity of 240 tons, the total settlement should be less than ½ inch and the final settlement should be less than ¼ inch after the final electrical connections are made.

Following are the criteria of the proposed drilled Cast-In Place Piers:

- Groundwater is expected. Drilling mud will be needed during the drilling process to prevent the hole from collapsing prior to the placement of the rebar cage and concrete. SEI recommends using a pump driven tremie pipe to place the concrete.

- Concrete Placement: All concrete should be placed in one continuous operation. Vibration to consolidate concrete should be provided.

- Concrete should be placed immediately following completion of drilling and review of completed shaft. The Geotechnical Engineer or his or her representative shall review and approve the drilled hole prior to placing concrete. The excavation should not be permitted to remain open overnight.

- In the event the construction of drilled piers is not completed on the same day, the holes shall be viewed by the Geotechnical Engineer prior to pouring concrete to determine if holes require any additional modifications (e.g. if the soil is allowed to dry out, the pier holes should be reamed to remove any cracked, desiccated soil).

- Construction Review and Observations: The Geotechnical Engineer should provide continuous review of pier drilling and concrete placement.

LPILE LATERAL INPUT PARAMETERS

It is anticipated that the structures will be supported on drilled pier (CIDH). For drilled pile foundations, the following Lpile input parameters can be used for analysis:

Table B
LPILE Input Parameters

Layer	1	2	3	4
Depth below subgrade, ft	0 to 10	10 to 20	20 to 30	30 to 40
Soil Type	Stiff Clay without free groundwater	Stiff Clay without free groundwater	Stiff Clay with free groundwater	Stiff Clay with free groundwater
p-y curve model	Reese, et. al., 1974	Reese, et. al., 1974	Reese, et. al., 1974	Reese, et. al., 1974
Effective Unit Weight, pcf	125	125	125	125
Subgrade k, pci	200	400	400	800
Cohesion, psf	500	1000	2000	2000

MODULUS OF SUBGRADE REACTION

Modulus of subgrade reaction for use in design of foundations is based on ranges of values for soil types provided by Foundation Analysis and Design by Joseph E Bowles.[1] Equation 1 should be used for footings on sandy soils. Foundations on clay soils should employ Equation 2. Equation 3 is for rectangular footings having dimensions w= **b** (width) and l = **mb** (length) the variable "m" being the ratio of the length to the width of the foundation**. $\mathbf{K_s1}$** is the modulus of subgrade reaction from the source referenced above based on a 1-foot x 1-foot square plate. For general guidance K_s1 of 150 kcf may be used for the subsurface soils.

Equation (1) $$k_{sf} = K_{s1} \times \left(\frac{B+1}{2B}\right)^2$$

Equation (2) $$k_{sf} = K_{s1} \times B$$

Equation (3) $$k_{sf} = K_{s1} \times \frac{m+.5}{1.5 \times m}$$

Values given above should be used for guidance. Local values may be higher or lower and should be based on results of in-situ plate bearing tests performed in accordance with ASTM Test Method D1194.

LATERAL EARTH PRESSURES

Lateral earth pressures and friction coefficients for determining the passive lateral resistance of foundations against lateral movement and the active lateral forces against retaining walls and subsurface walls, expressed as equivalent fluid pressures, are given below in Table C. Lateral earth pressures were computed assuming that backfill materials are essentially free draining and level; and that no surcharge loads, or sloping backfills are present within a distance from the wall equal to or less than the height (H)* of the wall.

(H)* = the height of backfill above the lowest adjacent ground surface.

TABLE C
LATERAL EARTH PRESSURE

Case	Lateral Earth Pressures
Active	50 P.C. F.
Passive	285 P.C.F.
At-Rest	65 P.C.F.

Active Case: Active lateral earth pressures should be used when computing forces against free standing retaining walls, unrestrained at the tops. Active pressures should not be used where tilting outward of the walls is greater than .002H would not be desirable.

Passive Case: Passive lateral earth pressures should be used when computing the lateral resistance provided by undisturbed or compacted native soils against the movement of footing.

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[1] Bowles, Joseph E; FOUNDATION ANALYSIS AND DESIGN; McGraw-Hill Book Company (1977); Table 9-1 pg. 269

When computing passive resistance, the upper one foot of embedment depth should be discounted.
At-Rest Case: At-rest pressures should be used for subsurface walls restrained at their tops by floor diaphragms or tie-backs and for retaining walls where tilting outward greater than .002 H would not be desirable.

Frictional Resistance: A friction coefficient of **0.30** may be used when computing the frictional resistance to sliding of footings, grade beams, and slabs-on-grade. Frictional resistance and passive lateral soil resistance may be combined without reduction.

SOIL CORROSIVITY

Soluble Sulfates (SO_4)

The Sulfate (SO_4) concentration ranged from 63 to 260 ppm.

Based on Table 19.3.1.1 “Exposure categories and classes” of ACI 318-19 “Building Code Requirements for Structural Concrete” the soil exposure is classified as S1. Per Table 19.3.2.1 “Requirement for Concrete by Exposure Class” of the same reference, Type II applies to the cement type or mix design.

Chlorides (Cl)

The Chloride (Cl) concentration measured ranged from 2.2 to 41 ppm. Generally, chloride concentrations greater than 500 ppm are considered to be corrosive to foundation elements. (Ref: Caltrans Corrosion Guidelines / Version 1.0)

pH

The soil pH result ranged from 6.34 to 7.61. Generally, a pH level less than 5.5 are considered to be corrosive to foundation elements. (Ref: Caltrans Corrosion Guidelines / Version 1.0)

Minimum Resistivity

The Minimum Resistivity ranged 364 to 4,385 ohm-cm. Based on this result, the on-site soil is considered to be **corrosive** to buried metals. Other factors, including soil pH, soluble salts (type and concentration), soil types, and aerobic versus anaerobic conditions are expected to affect buried metals. Soils Engineering, Inc. does not practice in the specific field of corrosion engineering or electrical engineering. For specific recommendations regarding corrosion and/or earth grounding, it is recommended that an engineer practicing in the field for which there is concern be consulted.

PAVEMENT SECTION

Hot Mix Asphalt (HMA) pavement shall be designed based on the lowest Resistant (R) Value test result of R=15. The laboratory test report is provided as Figures D-1 through D-3.

HMA Pavement Sections:

TI of 5	0.25 feet of HMA and 0.75 feet of Class 2 Aggregate Base
TI of 6	0.30 feet of HMA and 0.95 feet of Class 2 Aggregate Base
TI of 7	0.35 feet of HMA and 1.10 feet of Class 2 Aggregate Base

All Weather Pavement Sections:

TI of 5	1.25 feet of Class 2 Aggregate Base
TI of 6	1.55 feet of Class 2 Aggregate Base
TI of 7	1.80 feet of Class 2 Aggregate Base

HMA design should meet the requirements of the 2010 or newer, State of California, Standard Specifications Manual (SSM), Section 39. Aggregate Base should also meet the Class 2 requirements of the SSM, Section 26.

Ground surfaces to receive HMA pavement should be scarified and compacted to a minimum depth of 12 inches below the grading plane in cut areas or to 12 inches in areas to receive fill. Engineered fill placed in proposed pavement areas should conform to the requirements of section 5.4, “Placing, Spreading and Compacting Fill Materials,” of Appendix A.

Compaction in proposed pavement areas should be a minimum of 90 percent of the maximum density as obtained to ASTM Test Method D1557 and should extend to a minimum of two feet beyond the outside edges of pavements.

These recommendations are valid only if the pavement is properly drained and shoulder areas are graded to prevent water ponding at pavement edges. All construction should be subject to adequate tests and observations to verify conformance with these recommendations.

LIMITATIONS, OBSERVATION, AND TESTING

Conclusions and recommendations in this report are given for the Vaca Dixon Power Center Project located at GPS Coordinates: 38.396085, -121.921605 | Vacaville, Solano County, CA based on the following:

a. The information retrieved from sixteen (16) exploratory borings drilled at the subject site to a maximum depth of 51.5 feet below the existing ground surface;
b. Our laboratory testing program results;
c. Our engineering analysis based on the information defined in this report;
d. Our experience in the Solano County area.

Variations in soil type, strength and consistency may exist between specific boring locations. These variations may not become evident until after the start of construction.

If such variations appear, a re-evaluation of the soils test data and recommendations may be necessary. Unless a Geotechnical Engineer of this firm is afforded the opportunity to review plans and specifications, we accept no responsibility for compliance with design concepts or interpretations made by others about foundation support, fill selection, fill placement or other recommendations presented in this report. Changes in conditions of the subject property can occur with time because of natural processes or the works of man on the subject site or on adjacent properties. Changes in applicable engineering and construction standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the finding of this report may be invalidated, wholly or in part, by changes beyond our control. Therefore, this report is subject to review and should not be relied upon without review after a period of two years or after any modifications to the site.

REVIEW OF EARTHWORK OPERATIONS

Review of earthwork operations relating to site clearing, ground stabilization, placement and compaction of fill materials, and finished grading is critical to the structural integrity of building foundation and floor systems. While the preliminary Geotechnical investigation and report provide guidelines, which are used by the design team, i.e., architects, grading engineers, structural engineers, landscape engineers, etc., in completing their respective tasks, review of plans and site review and testing during earthwork operations are vital adjuncts to the completion of the Geotechnical engineer's tasks.

The most prevalent cause of failure of a structure foundation system is lack of adequate review and testing during the earthwork phase of the project. Projects rarely reach completion without some alteration being required such as may result from a change in subsurface conditions, an amendment in the size and scope of the project, a revision of the grading plans or a variation in structural details. Occasionally, even minor changes can significantly affect the performance of foundations. The most prevalent secondary cause for foundation failure is inadequate implementation of Geotechnical recommendations during the formulation of foundation designs and grading plans. The error in a foundation design or an omission of a key element from a grading plan occurs most often as a result of inadequate communication between the various project consultants and -- when a change in consultants occurs -- improper transfer of authority and responsibility.

It is imperative, therefore, that any revisions to the project scope, any change in structural detail, or change in consultant, be brought to the attention of Soils Engineering, Inc. to allow for timely review and revision of recommendations and for an orderly transfer of responsibility and approval. It is the responsibility of the owner or his or her representative to ensure that a representative of our firm is present at all times during earthwork operations relating to site preparation and grading, so that relative compaction tests can be performed, earthwork operations can be observed and compliance with the recommendations provided herein can be established.

This engineering report has been prepared within the limits prescribed to us by the client or his or her representative, in accordance with the generally accepted principles and practices of Geotechnical engineering. No other warranty, expressed or implied, is included or intended in this report.

Respectfully submitted,
SOILS ENGINEERING, INC.

APPENDIX A

GENERAL GUIDE SPECIFICATIONS FOR EARTHWORK

1. GENERAL

1.1 Scope

These specifications and plans include all earthwork pertaining to site rough grading including, but not limited to, furnishing all labor and equipment necessary for clearing and grubbing; stripping; preparation of ground surfaces to receive fill; excavation; placement and compaction of structural and non-structural fill; disposal of excess materials and products of clearing, grubbing, and stripping; and any other work necessary to bring ground elevations to the lines and grades shown on the project plans. Wherever exists discrepancies between these guide-specifications and the earthwork recommendations in Section I of the above geotechnical report, the most stringent recommendations shall supersede.

1.2 Performance:

It shall be the responsibility of the contractor to complete all earthwork in accordance with project plans and specifications. No variance from plans and specifications shall be permitted without written approval of the Engineer-of-Record, hereinafter referred to as the “Engineer” or his or her designated representative, hereinafter referred to as the “Soils Engineer.” Earthwork shall not be considered complete until the “engineer” has issued a written statement confirming substantial compliance of earthwork operations to these specifications and to the project plans. The contractor shall assume sole responsibility for job site conditions during earthwork operations on the project, including safety of all persons and preservation of all property. This requirement shall apply continuously and not be limited to normal working hours. The contractor shall defend, indemnify, and hold harmless the owners, engineer, and soils engineer from all liability and claims, real or alleged, arising out of performance of earthwork on this project, except from liability incurred through sole negligence of the owner, engineers, or soils engineers.

2. DEFINITIONS

2.1 Excavations:

Excavation shall be defined within the content of these specifications as earth material excavated for constructing fill embankment; grading the site to elevations shown on project plans; or placing underground pipelines, conduits, or other subsurface utilities or minor structures. Excavations shall be made true to the lines shown on project plans and to within plus or minus one-tenth (0.1) of a foot, of grades shown on the accepted site grading plans.

2.2 Engineered Fill:

Engineered fill shall be construed within the body of these specifications as earth materials conforming to specifications provided in the soils or geotechnical report placed to raise the grade of the site, to backfill excavations, or to construct asphaltic concrete or Portland cement concrete pavement; and upon which the soils engineer has performed sufficient tests and has made sufficient observation during placement and compaction to enable him to issue a written statement confirming substantial conformance of the work to project earthwork specifications.

2.3 On-Site Material:

On-site material is earth material obtained in excavation made on the project site.

2.4 Imported Material:

Imported materials are earth materials obtained off the site, hauled in, and placed as fill.

2.5 "Compaction" or "Compacted:"

Wherever expressed or implied within the context of these specifications shall be interpreted as compaction to ninety (90) percent of the maximum density obtainable by ASTM Test Method D1557.

2.6 Grading Plane:

The grading Plane is the surface of the basement material upon which the lowest layer of subbase, base, asphaltic or Portland cement concrete, surfacing, or another specified layer is placed.

3. SITE CONDITIONS

The contractor shall visit the site, prior to bid submittal, to explore existing subsurface conditions; to survey site topographic, and to define the nature of materials that may be encountered while performing its work under this contract. Moreover, the contractor shall make his or her own interpretation of the contents of the Geotechnical Report, as they pertain to said conditions. The contractor shall assume all liability under the contract for any loss sustained as a result of variations which may exist between specific soil boring locations or changed conditions resulting from natural or man-made circumstances occurring after the date of the Preliminary Field Investigations.

4. CLEARING AND GRUBBING

4.1 Clearing and Grubbing

Clearing and grubbing shall consist of removing all debris such as metal, broken concrete, trash, vegetation growth and other biodegradable substances, from all areas to be graded. Existing obstructions below shall be removed in accordance with the following procedures:

4.1.1 Slabs and Pavements - Shall be completely removed. Asphaltic or Portland Cement, concrete fragments may be used in engineered fills provided they are broken down to a maximum dimension of six (6.0) inches and thoroughly dispersed within a friable soil matrix. Engineered fill containing said fragments should not be placed above the elevation of the bottom of the lowest structure footing.

4.1.2 Foundations - Existing at the time of grading shall be removed to a depth not less than two (2.0) feet below the bottom of the lowest structure footing.

4.1.3 Basements, Septic Tanks – Buried concrete containers of similar construction located within areas destined to receive pavements, structures, or engineered fills should be completely removed and disposed of off the site. Basements, septic tanks, etc., situated outside structures, or structural fill areas shall be disposed of by breaking an opening in bottoms to permit drainage, and by breaking walls down to not less than two (2.0) feet below finished subgrade.

4.1.4 Buried Utilities – Such as sewer, water and gas lines or electrical conduits to remain in service shall be re-routed to pass no closer than four (4.0) feet to the outside edge of proposed exterior footings of structures. Lines to be abandoned shall be completely removed to a minimum depth of two (2.0) feet below finished building pad grade. Concrete lines deeper than two (2.0) feet below finished building pad grade and having diameters less than six (6.0) inches can be crushed in place.

4.1.5 Root Systems – Shall be completely removed to a minimum depth of two (2.0) feet below the bottom of the lowest proposed structure footing or to two (2.0) feet below finished subgrade, whichever depth is lower. Root systems deeper than the elevation indicated above shall be excavated to allow no roots larger than two (2.0) inches in diameter.

4.1.6 Cavities – Resulting from clearing and grubbing or cavities existing on the site because of man-made or natural activity shall be backfilled with earth materials placed and compacted in accordance with Sections 5.3 and 5.4 of these specifications.

4.1.7 Preservation or Monuments, Construction Stakes, Property Corner Stakes, or other temporary or permanent horizontal or vertical control reference points shall be the responsibility of the contractor. Where these markers are disturbed, they shall be replaced at the contractor’s expense.

5. SITE GRADING

Site grading shall consist of excavation and placement of fills to lines and grades shown on the project plans and in accordance with project specifications and recommendations of the Preliminary Soils Report, whichever is more stringent. The following are recommendations issued in this report:

5.1 Areas to Receive Fill:

5.1.1 Surfaces to receive fill shall be scarified to a depth of at least six (6.0) inches, or as recommended in this report, whichever is greater, until the surface is free from ruts, hummocks or other uneven features which would tend to prevent uniform compaction by the equipment to be used.

5.1.2 After the area to receive fill has been cleared and scarified, it shall be moistened and compacted to a depth of at least six (6.0) inches in accordance with specifications for compacting fill material in paragraph 5.4, below.

5.2 Excavation:

5.2.1 Excavations shall be cut to elevations plus or minus 0.1 foot of the grades shown on the accepted plans.

5.2.2 When excavated materials are to be used in engineered fill, the excavation shall be made in a manner to produce as much mixing of the excavated materials as practicable.

5.2.3 When excavations are to be backfilled, and where surfaces exposed by excavation are to support structures or concrete floor slabs, the exposed surfaces shall be scarified, moistened and compacted, as stated above, for areas to receive fill. Over excavation below specified depths will not eliminate the requirement for exposed surface compaction.

5.3 Fill Materials:

5.3.1 Materials obtained from on-site excavations will be considered satisfactory for construction of on-site engineered fills, unless otherwise stated in the Soils Report or Foundation Investigation. If unexpected pockets of poor or weak materials are encountered in excavations, and they cannot be upgraded by mixing with other materials or by other means, they may be rejected by the soils engineer for use in engineered fill. Rocks larger than 12 inches in size in any dimension shall not be allowed in the proposed building area. If a large amount of rocks greater than 12 inches in size in any dimension is encountered, a rock disposal area shall be located on the grading plan. Rocks shall be mixed with well-graded soils to assure that the voids in these areas will fill properly.

5.3.2 When imported fill materials are necessary to bring the site up to planned grades, no material shall be imported prior to its approval and acceptance by the soils engineer.

5.3.2 The soils engineer shall be given notice of the proposed source of imported materials with adequate time allowance for his or her testing of the proposed materials. The time required for testing will vary with different types of materials, job conditions, and ultimate function of filled areas. Under best conditions the time requirement will not be less than 48 hours.

5.4 Placing, Spreading, and Compacting Fill Material:

5.4.1 The fill materials shall be placed in layers which, when compacted, shall not exceed six (6.0) inches in thickness. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to insure uniformity of material in each layer. Increased thickness of layers may be approved by the soils engineer when conditions warrant.

5.4.2 All fills shall be placed in level layers; layers shall be continuous over the area of any structural unit, and all portions of the fill shall be brought up simultaneously within the area of any structural unit. When imported material is used, it must be placed so that its thickness is as uniform as possible within the area of any structural unit.

5.4.3 When materials are to be excavated and replaced in a compacted condition, segmented, or leap-frogging of cut-fill operations within the area of any structural unit will not be permitted unless the method is specifically described by the soils engineer.

5.4.4 When the moisture content of fill material is below the lower limit specified by the Soils Engineer, water shall be added until the moisture content is as specified; and when it is above the upper limit specified, the material shall be aerated by blading or other satisfactory methods until the moisture content is as specified.

5.4.5 After each layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted to not less than ninety (90) percent of maximum density in accordance with ASTM Density Test Method D1557. Compaction shall be by equipment of such design that it will be able to compact the fill to specified density. When the soils engineer specifies a specific type of compaction equipment to be used, such equipment shall be used as specified.

5.4.6 Compaction of each layer shall be continuous over its entire area and the equipment shall make sufficient trips to ensure that the desired density has been obtained.

5.4.7 Field density tests shall be made by the soils engineer. The compaction of each layer of fill shall be subject to testing. Where sheepsfoot rollers are used, the soil may be disturbed to a depth of several inches.
Density tests shall be taken in the compacted material below the disturbed surface. When tests indicate the density of any layer of fill or portion thereof is below the required ninety (90) percent density, the layer or portion shall be re-worked until the required density has been obtained.

5.4.8 When the soils engineer specifies compaction to other standards or to percentages other than ninety (90) percent, such specification, with respect to the items, shall supersede these specifications.

5.4.9 The fill operation shall be continued in six (6) inch compacted layers, as specified above, until the fill has been brought to within 0.1 foot, plus or minus, of the finished slopes and grades, as shown on the accepted plans. The finished surface of fill areas shall be graded or bladed to a smooth and uniform surface and no loose material shall be left on the surface.

5.4.10 No fill materials shall be placed, spread, or compacted while it is frozen or thawing or during unfavorable weather conditions. When work is interrupted by weather conditions, fill operations shall not be resumed until the soils engineer indicates that moisture content and density of previously placed fill are satisfactory.

5.5 Observations and Testing:

The soils engineer shall be provided with a 48-hour notice, in order that he may be present at the site during all earthwork activities related to excavation, tree root removal, stripping, backfill, and compaction and filling of the site and to perform periodic compaction tests so that substantial conformance to these recommendations can be established.

APPENDIX B

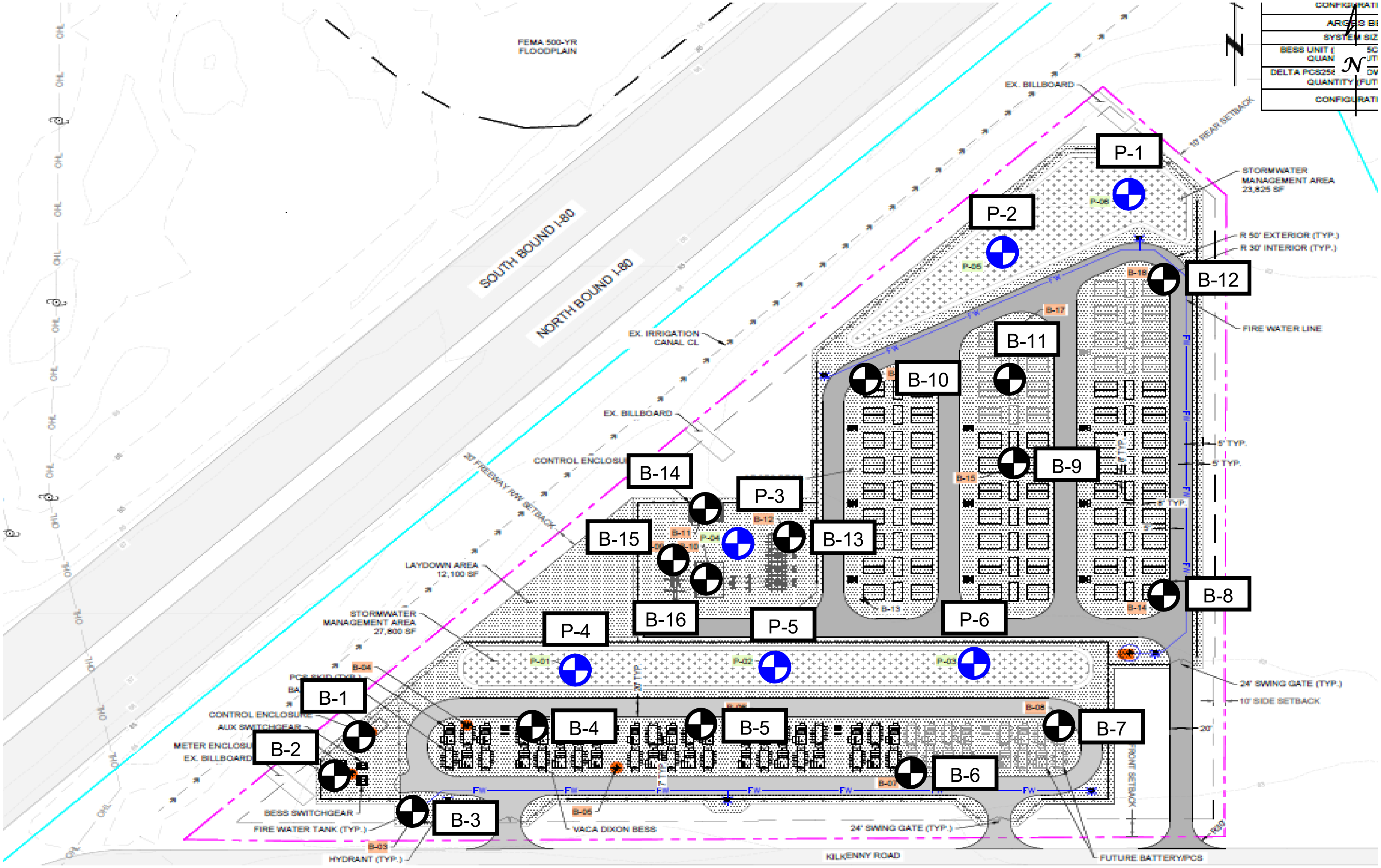
FIELD INVESTIGATION

Sixteen (16) test borings were drilled at the subject site and terminated at a maximum depth of 51.5 feet below the existing ground surface. Borings were advanced using an eight (8.0) inch hollow-stem auger. Test data and descriptions from these holes form the basis of the conclusions and recommendations contained in this report.

Undisturbed samples and disturbed bulk samples were obtained. Undisturbed samples were taken using either a 2-3/8" (inside diameter) split-barrel sampler or a 1-3/8" (inside diameter), 2" (outside diameter) Standard Penetration Sampler (SPT). Penetration resistance of undisturbed soils was obtained by driving the above-described sampler using a one-hundred-forty-pound hammer falling thirty inches (30"). Blow counts for each six inch (6") driven increment was recorded and are reported on the Test Borings Logs. In addition, bulk soil samples, selected as most representative of near surface soils encountered, were taken for laboratory testing.

As drilling progressed, earth materials encountered were logged and classified in accordance with the Unified Soils Classification System and presented graphically on Logs of Test Borings, Figures 2 through 17, along with the Legend. Approximate locations of test borings are shown on the Boring Location Map, Figure 1.

In addition to the borings, field percolation tests were performed at six (6) separate locations. Tests were performed at approximately five feet below the existing ground surface. Percolation test results can be found in Appendix B.



Center of Site GPS: 38.396085, -121.921605 ● Approximate Boring Location ● Approximate Percolation Test Location

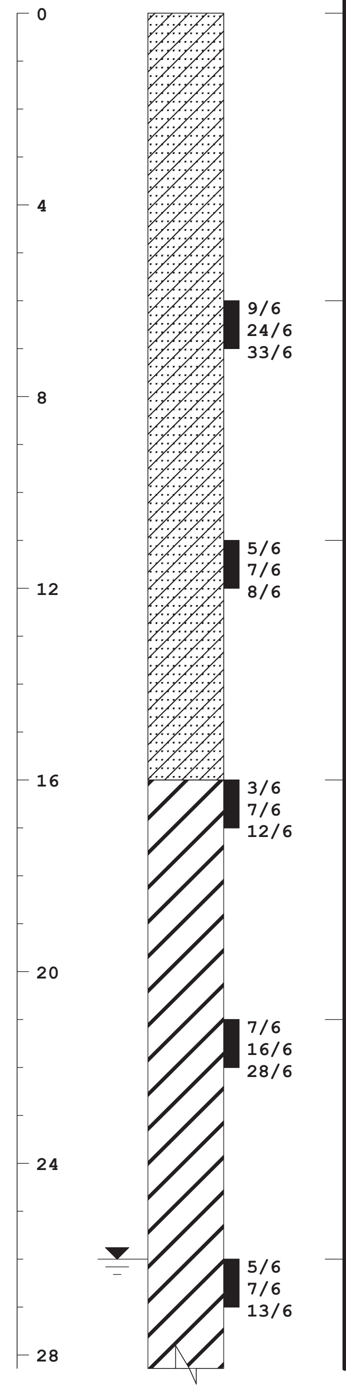
Boring Locations

Project: Vaca Dixon Power Center Project
Vacaville, Solano County, CA

LOG OF TEST BORING
BORING B-1

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/08/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *26*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/08/2025*
FINISH: *09/08/2025*
LOGGER: *SC*



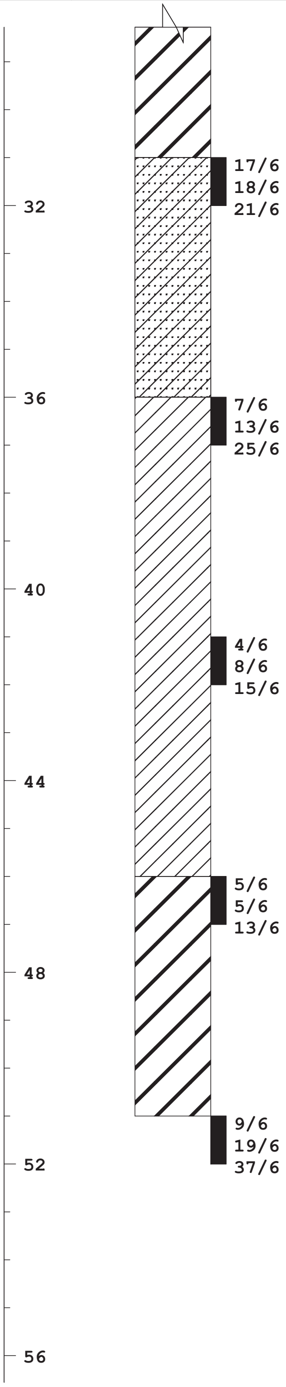
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SC	CLAYEY SAND: Dark yellowish brown, dry to damp.			
	9/6 24/6 33/6		Damp, dense.		120.9	14.5
	5/6 7/6 8/6		Medium dense.		114.7	19.4
	3/6 7/6 12/6	CH	SANDY CLAY: Dark brown, damp, stiff, high plasticity.		120.6	15.9
	7/6 16/6 28/6		Very stiff		107.3	22.0
	5/6 7/6 13/6		Saturated, stiff		118.9	16.1

Figure Number 2

LOG OF TEST BORING
BORING B-1

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/08/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *26*
CAVING - ▶ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/08/2025*
FINISH: *09/08/2025*
LOGGER: *SC*



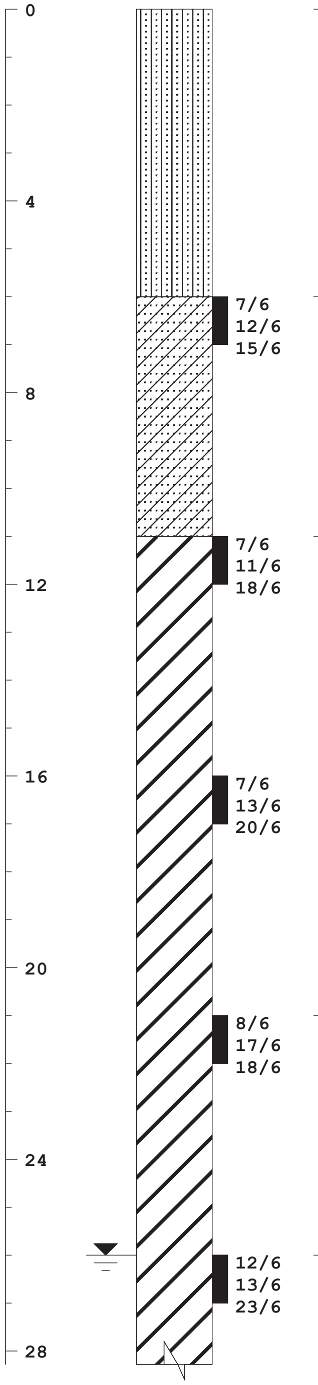
SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
17/6 18/6 21/6	SC	CLAYEY SAND: dark yellowish brown, moist, medium dense.		121.0	16.0
7/6 13/6 25/6	CL	SANDY CLAY: Dark yellowish brown, moist, very stiff, low plasticity.		105.5	23.2
4/6 8/6 15/6		Olive brown, moist, stiff		106.0	23.0
5/6 5/6 13/6	CH	SANDY CLAY: olive brown, moist, stiff, high plasticity.		104.8	28.0
9/6 19/6 37/6		Grayish brown, hard. BOTTOM		90.4	31.9

Figure Number 2

LOG OF TEST BORING
BORING B-2

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/08/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *26*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/08/2025*
FINISH: *09/08/2025*
LOGGER: *SC*



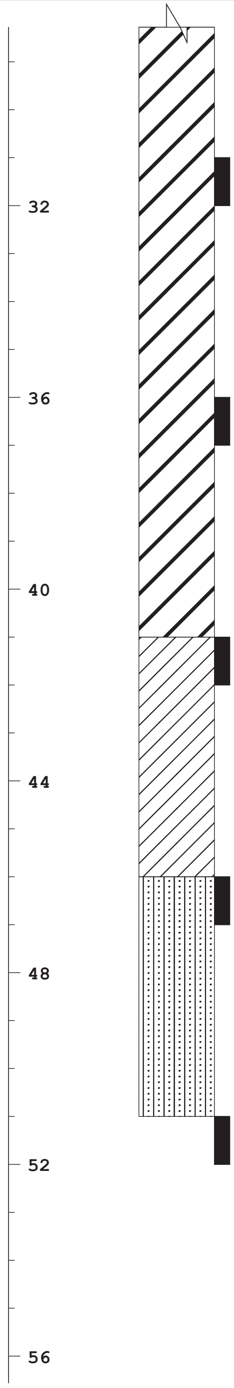
SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	SM	SILTY SAND: Dark yellowish brown, dry to damp.			
7/6 12/6 15/6	SC	CLAYEY SAND: Dark yellowish brown, damp, medium dense.		125.2	12.9
7/6 11/6 18/6	CH	SANDY CLAY: Dark yellowish brown, damp, very stiff, high plasticity.		99.5	30.3
7/6 13/6 20/6				108.9	27.4
8/6 17/6 18/6		Moist.		116.1	18.2
12/6 13/6 23/6		Olive brown, saturated, very stiff.		121.4	15.1

Figure Number 3

LOG OF TEST BORING
BORING B-2

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/08/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ : *26*
CAVING - ➤ : *N/A*

FILE NO: *20447*
ELEV.:
START: *09/08/2025*
FINISH: *09/08/2025*
LOGGER: *SC*

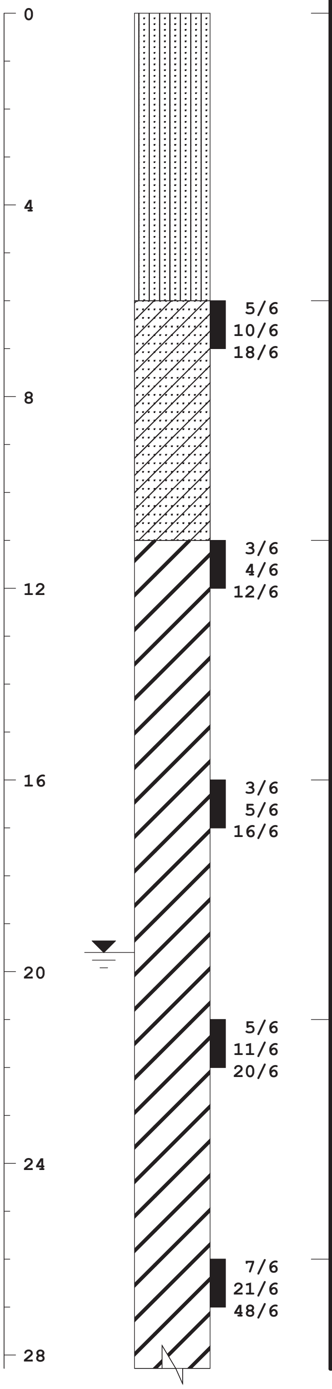


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	7/6 15/6 22/6		Increase in sand.		112.4	19.2
	10/6 21/6 33/6		Moist, hard.		117.9	16.7
	11/6 17/6 22/6	CL	Very stiff, low plasticity.		110.9	17.5
	6/6 8/6 26/6	SM	SILTY SAND: Dark yellowish brown, moist, medium dense, cohesive.		103.7	27.1
	7/6 8/6 18/6		BOTTOM.		83.3	41.4

LOG OF TEST BORING
BORING B-3

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/09/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *19.6*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/09/2025*
FINISH: *09/09/2025*
LOGGER: *SC*

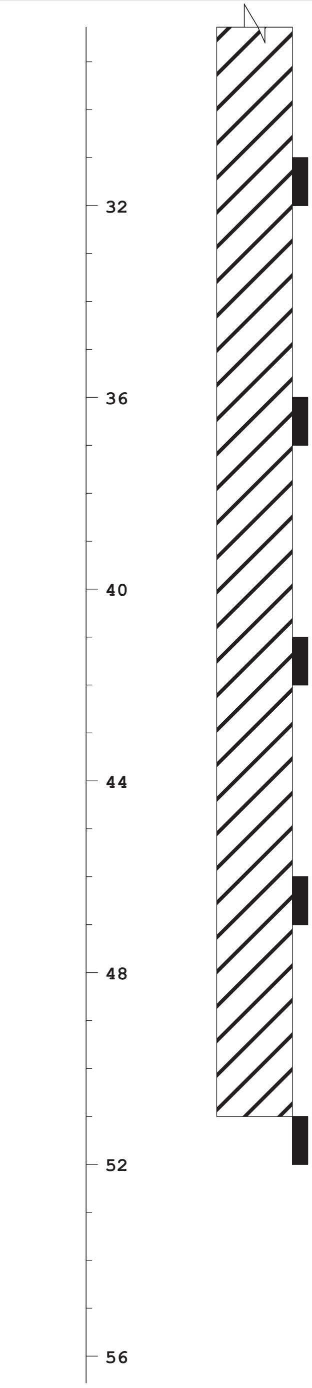


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SM	SILTY SAND: Dark yellowish brown, damp, cohesive.			
	5/6 10/6 18/6	SC	CLAYEY SAND: Dark yellowish brown, damp, medium dense, cohesive.		110.5	19.9
	3/6 4/6 12/6	CH	SANDY CLAY: Dark yellowish brown, damp, stiff, high plasticity.		109.4	19.5
	3/6 5/6 16/6		Moist, stiff.		118.7	16.7
	5/6 11/6 20/6		Very stiff.		111.2	19.1
	7/6 21/6 48/6		Hard.		122.6	16.0

Figure Number 4

LOG OF TEST BORING
BORING B-3

PROJECT: *Vaca Dixon Power Center*
FILE NO: *20447*
BORING DATE: *09/09/2025*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *09/09/2025*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *09/09/2025*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ⊽ **:** *19.6*
CAVING - ➧ **:** *N/A*
LOGGER: *SC*

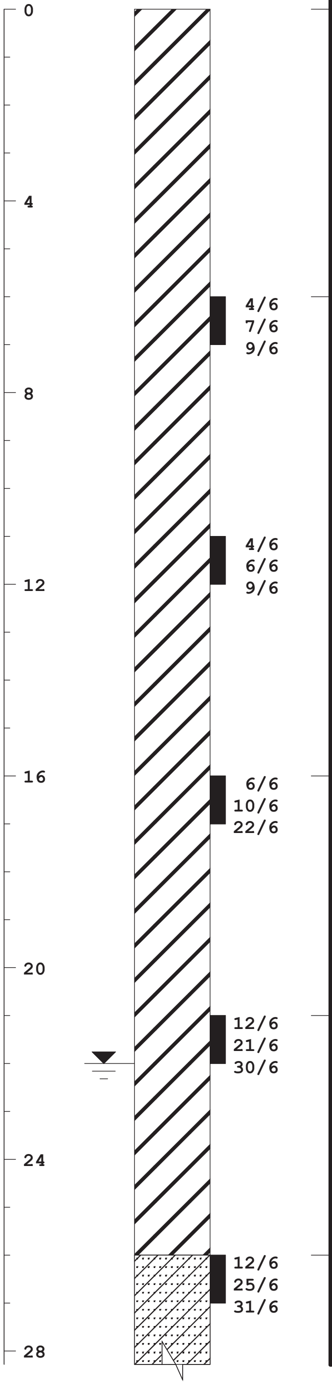


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	10/6 18/6 42/6				120.8	16.4
	11/6 16/6 27/6		Increase in sand, very stiff.		108.5	20.2
	5/6 11/6 25/6				110.3	17.3
	8/6 13/6 38/6		Hard.		91.0	32.5
	9/6 16/6 20/6		Very Stiff. BOTTOM.		89.2	34.8

Figure Number 4

LOG OF TEST BORING
BORING B-4

PROJECT: *Vaca Dixon Power Center*
FILE NO: *20447*
BORING DATE: *09/09/2025*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *09/09/2025*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *09/09/2025*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *22*
CAVING - ➤ **:** *N/A*
LOGGER: *SC*



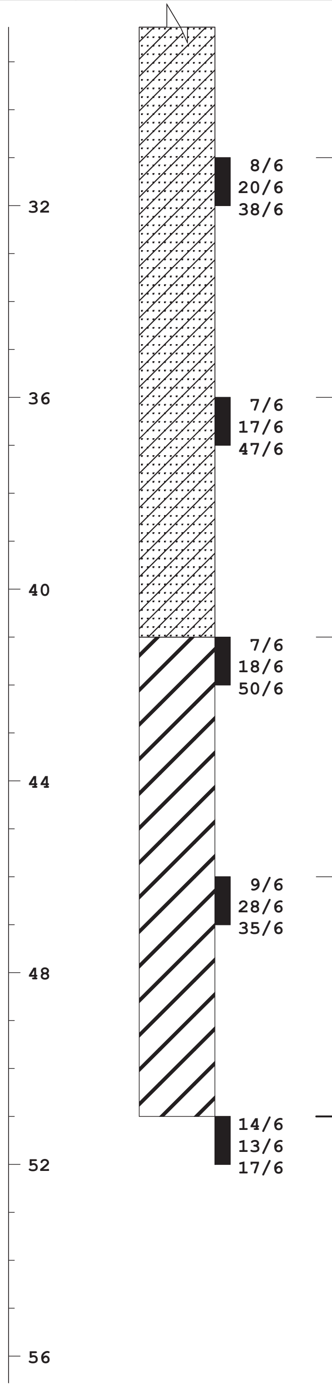
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		CH	SANDY CLAY: Dark yellowish brown, moist, high plasticity.			
	4/6 7/6 9/6		Stiff.		106.8	21.6
	4/6 6/6 9/6				109.1	17.6
	6/6 10/6 22/6		Very stiff.		118.5	16.2
	12/6 21/6 30/6		Damp, hard.		116.1	15.2
	12/6 25/6 31/6	SC	CLAYEY SAND: Dark Yellowish brown, moist, dense, low plasticity, poorly graded.		110.4	19.8

Figure Number 5

LOG OF TEST BORING
BORING B-4

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/09/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *22*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/09/2025*
FINISH: *09/09/2025*
LOGGER: *SC*



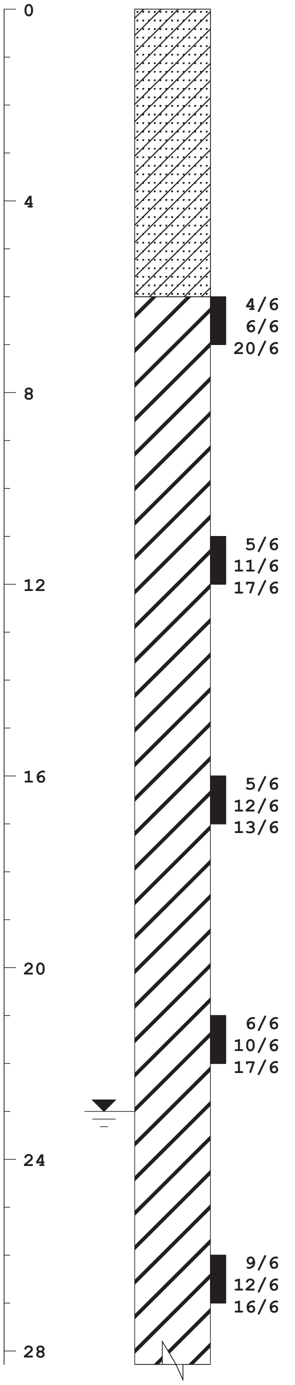
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	8/6 20/6 38/6		Olive brown, dense.		122.3	15.3
	7/6 17/6 47/6		Dark yellowish brown, dense.		118.2	16.3
	7/6 18/6 50/6	CH	SANDY CLAY: Dark yellowish brown, damp, high plasticity.		111.4	19.0
	9/6 28/6 35/6		Hard.		93.9	31.3
	14/6 13/6 17/6		Very stiff. BOTTOM.		87.3	37.7

Figure Number 5

LOG OF TEST BORING
BORING B-5

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/09/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *23*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/09/2025*
FINISH: *09/09/2025*
LOGGER: *SC*

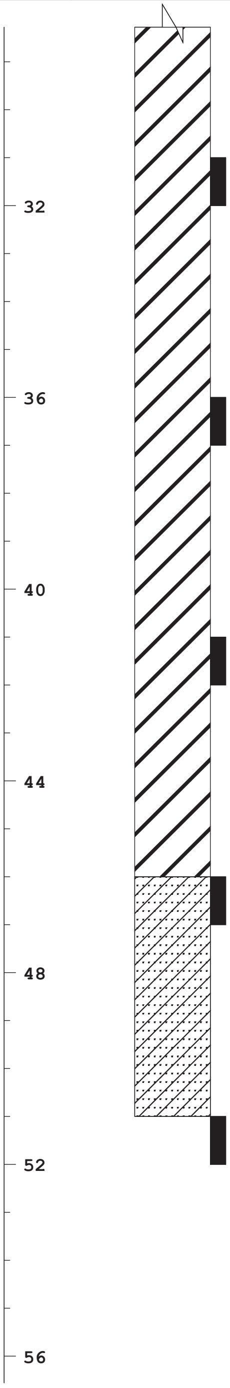


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SC	CLAYEY SAND: Dark Yellowish brown, damp, low plasticity.			
	4/6 6/6 20/6	CH	SANDY CLAY: Dark yellowish brown, damp, very stiff, high plasticity.		112.3	20.7
	5/6 11/6 17/6				110.2	19.9
	5/6 12/6 13/6				119.2	16.2
	6/6 10/6 17/6				122.8	16.6
	9/6 12/6 16/6		Decrease in sand, olive brown.		112.4	16.4

Figure Number 6

LOG OF TEST BORING
BORING B-5

PROJECT: *Vaca Dixon Power Center*
FILE NO: *20447*
BORING DATE: *09/09/2025*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *09/09/2025*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *09/09/2025*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *23*
CAVING - ➤ **:** *N/A*
LOGGER: *SC*



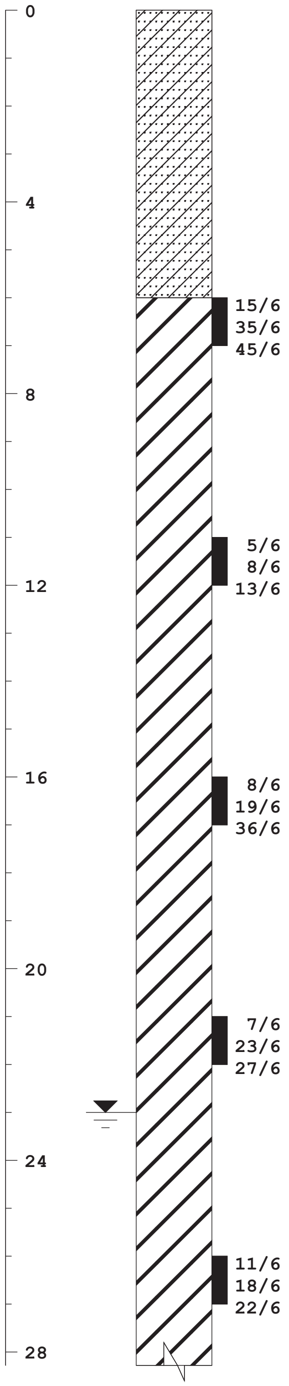
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	16/6 33/6 36/6		Hard.		121.2	14.7
	25/6 36/6 43/6				115.1	19.4
	12/6 15/6 15/6		Dark yellowish brown, very stiff.		97.1	30.7
	7/6 13/6 28/6	SC	CLAYEY SAND: Dark yellowish brown, damp, medium dense, low plasticity.		97.3	30.7
	8/6 11/6 24/6		Medium dense. BOTTOM.		88.7	38.5

Figure Number 6

LOG OF TEST BORING
BORING B-6

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/10/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *23*
CAVING - ➤ **:** *N/A*

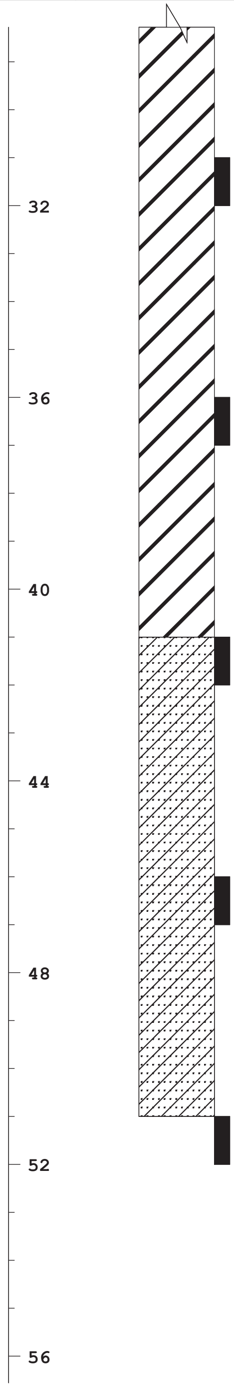
FILE NO: *20447*
ELEV.:
START: *09/10/2025*
FINISH: *09/10/2025*
LOGGER: *SC*



SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	SC	CLAYEY SAND: Dark yellowish brown, damp, low plasticity.			
15/6 35/6 45/6	CH	SANDY CLAY: Dark yellowish brown, damp, hard, high plasticity.		113.5	18.4
5/6 8/6 13/6		Stiff.		109.2	20.2
8/6 19/6 36/6		Very stiff.		121.1	15.3
7/6 23/6 27/6		SANDY CLAY: Dark yellowish brown, damp, hard, high platicity.		114.0	17.3
11/6 18/6 22/6		Decrease in sand, moist, very stiff.		117.8	14.2

LOG OF TEST BORING
BORING B-6

PROJECT: *Vaca Dixon Power Center*
FILE NO: *20447*
BORING DATE: *09/10/2025*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *09/10/2025*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *09/10/2025*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ≚ : *23*
CAVING - ➧ : *N/A*
LOGGER: *SC*



SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
14/6 50/6 6/6		Hard, damp.		118.8	15.9
15/6 19/6 23/6		Very stiff.		114.5	16.2
15/6 19/6 25/6	SC	CLAYEY SAND: Dark yellowish brown, damp, medium dense, high plasticity.		100.6	25.4
12/6 30/6 34/6		Low plasticity.		105.0	21.5
19/6 23/6 23/6		Dense. BOTTOM.		87.8	30.2

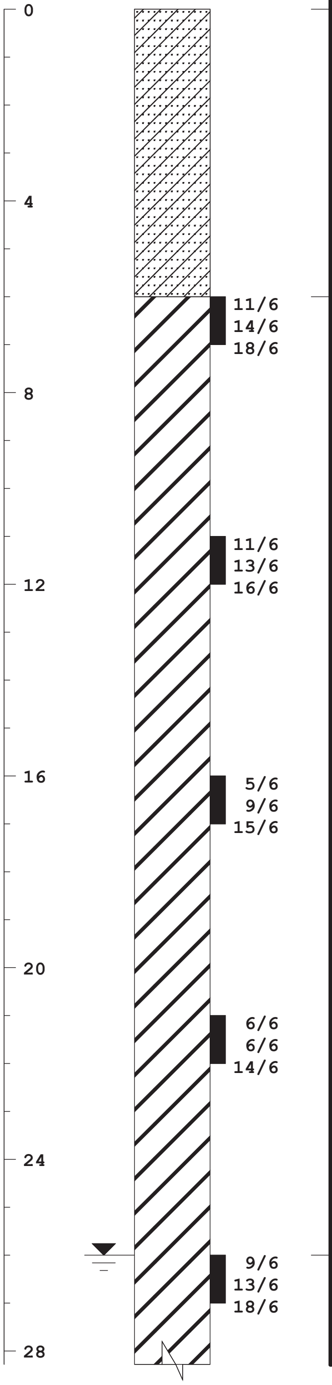
LOG OF TEST BORING

BORING B-7

Page 1 of 2

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/11/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *26*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/11/2025*
FINISH: *09/11/2025*
LOGGER: *SC*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SC	CLAYEY SAND: Dark brown, damp, low plasticity.			
	11/6 14/6 18/6	CH	SANDY CLAY: Dark yellowish brown, damp, very stiff, high plasticity.		115.6	17.6
	11/6 13/6 16/6				108.3	23.2
	5/6 9/6 15/6				116.9	16.2
	6/6 6/6 14/6				110.7	20.2
	9/6 13/6 18/6		Very stiff, moist.		117.3	17.5

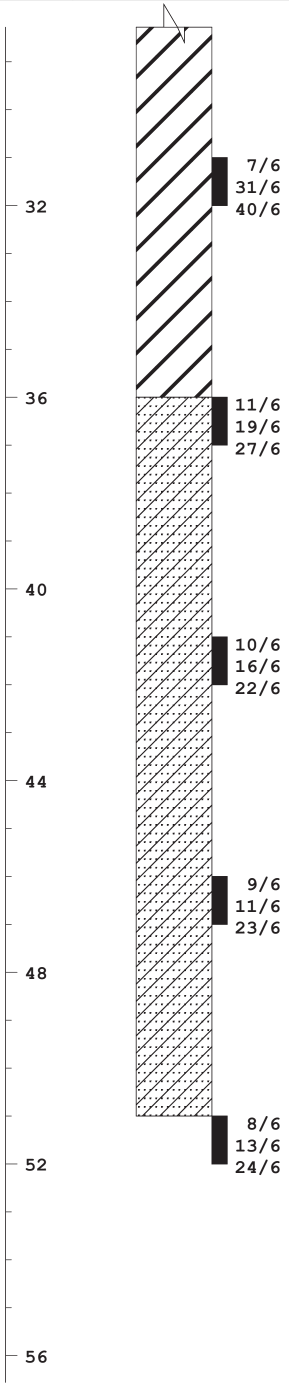
Figure Number 8

LOG OF TEST BORING

BORING B-7

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/11/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ : *26*
CAVING - ➤ : *N/A*

FILE NO: *20447*
ELEV.:
START: *09/11/2025*
FINISH: *09/11/2025*
LOGGER: *SC*

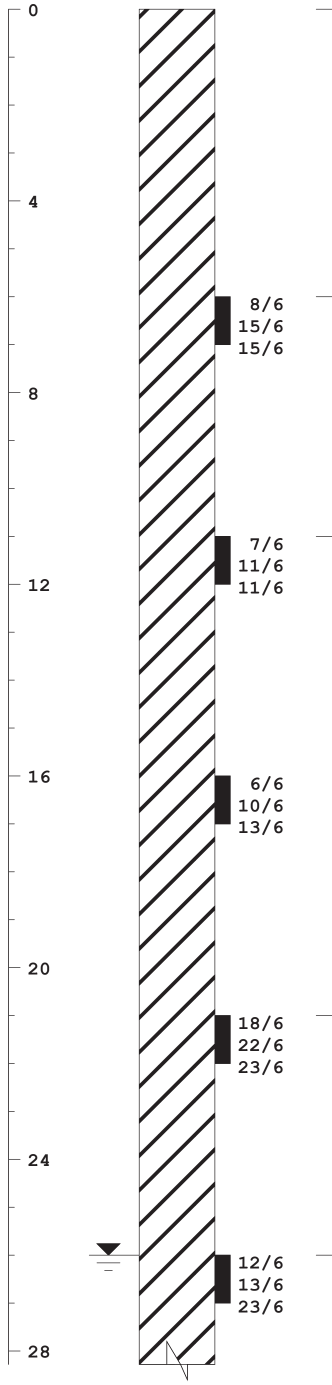


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	7/6 31/6 40/6		Hard.		118.6	14.8
	11/6 19/6 27/6	SC	CLAYEY SAND: Dark yellowish brown, damp, dense, low plasticity.		117.0	16.5
	10/6 16/6 22/6		Medium dense.		113.1	17.8
	9/6 11/6 23/6				98.4	28.0
	8/6 13/6 24/6		BOTTOM.		102.0	25.1

LOG OF TEST BORING
BORING B-8

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/11/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *26*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/11/2025*
FINISH: *09/11/2025*
LOGGER: *SC*



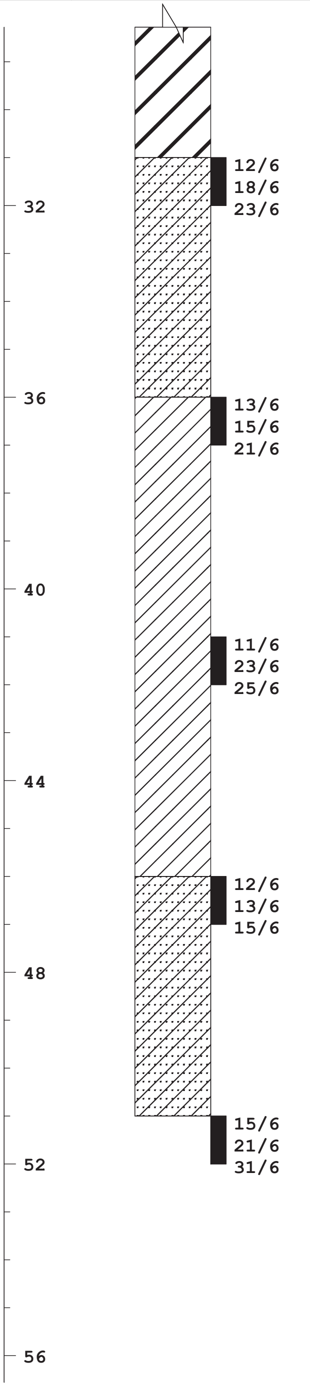
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		CH	SANDY CLAY: Dark yellowish brown, damp, high plasticity.			
	8/6 15/6 15/6		Very stiff.		112.7	18.3
	7/6 11/6 11/6		Stiff.		103.7	24.5
	6/6 10/6 13/6				115.8	16.7
	18/6 22/6 23/6		Hard.		115.3	18.6
	12/6 13/6 23/6		Very stiff.		114.3	17.0

Figure Number 9

LOG OF TEST BORING
BORING B-8

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/11/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *26*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/11/2025*
FINISH: *09/11/2025*
LOGGER: *SC*



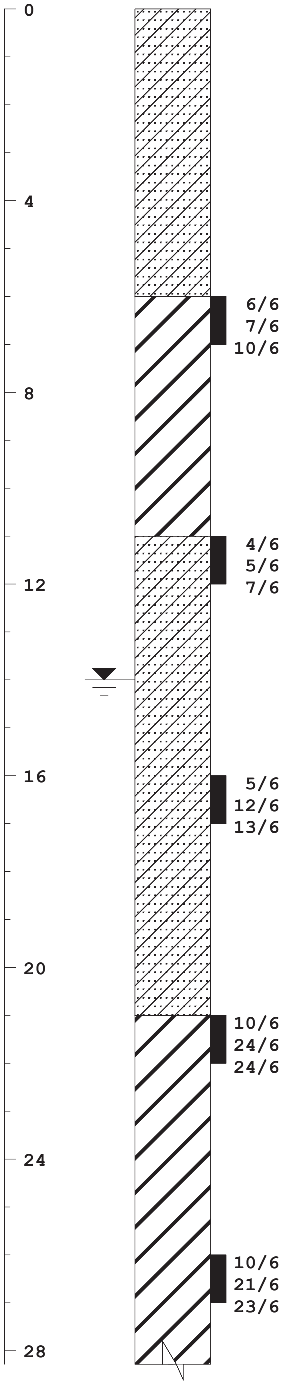
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	12/6 18/6 23/6	SC	CLAYEY SAND: Dark yellowish brown, damp, medium dense, low plasticity.		112.4	20.7
	13/6 15/6 21/6	CL	SANDY CLAY: Dark yellowish brown, damp, very stiff, low plasticity.		116.2	15.9
	11/6 23/6 25/6		Hard.		106.6	23.0
	12/6 13/6 15/6	SC	CLAYEY SAND: Dark yellowish brown, damp, medium dense, low plasticity, poorly graded.		107.6	21.7
	15/6 21/6 31/6		Dense. BOTTOM.		127.4	15.9

LOG OF TEST BORING
BORING B-9

Page 1 of 2

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/10/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *14*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/10/2025*
FINISH: *09/10/2025*
LOGGER: *SC*



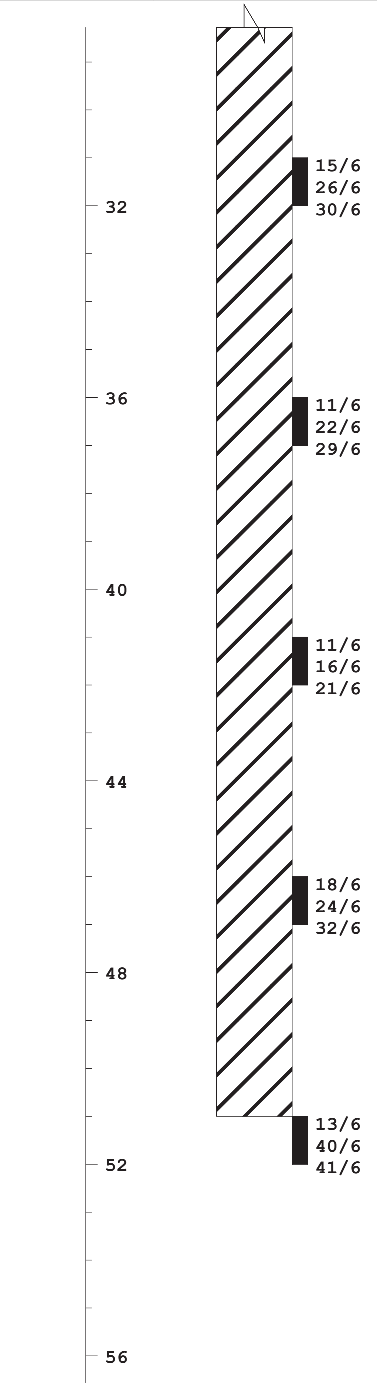
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SC	CLAYEY SAND: Dark yellowish brown, damp, high plasticity.			
6	6/6 7/6 10/6	CH	SANDY CLAY: Dark yellowsih brown, damp, stiff, high plasticity.		115.9	15.7
11	4/6 5/6 7/6	SC	CLAYEY SAND: Dark yellowish brown, damp, loose, high plasticity.		113.2	17.8
16	5/6 12/6 13/6		Medium dense.		114.4	18.0
21	10/6 24/6 24/6	CH	SANDY CLAY: Dark yellowish brown, damp, hard, high plasticity.		111.7	18.7
26	10/6 21/6 23/6		Very stiff.		118.5	15.2

Figure Number 10

LOG OF TEST BORING
BORING B-9

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/10/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *14*
CAVING - ➤ **:** *N/A*

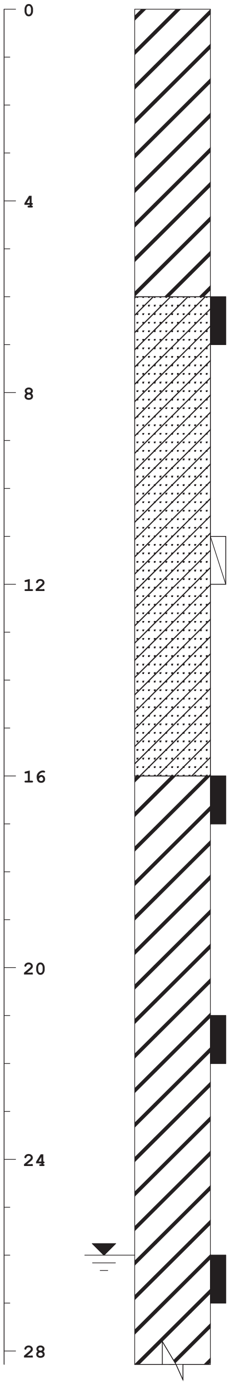
FILE NO: *20447*
ELEV.:
START: *09/10/2025*
FINISH: *09/10/2025*
LOGGER: *SC*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	15/6 26/6 30/6		Hard.		116.9	18.8
	11/6 22/6 29/6				106.1	20.9
	11/6 16/6 21/6		Olive brown, very stiff.		111.1	20.0
	18/6 24/6 32/6		Hard, moist.		113.9	20.6
	13/6 40/6 41/6		BOTTOM.		86.8	32.7

LOG OF TEST BORING
BORING B-10

PROJECT: *Vaca Dixon Power Center*
FILE NO: *20447*
BORING DATE: *09/11/2025*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *09/11/2025*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *09/11/2025*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ⊽ : *26*
CAVING - ➧ : *N/A*
LOGGER: *SC*

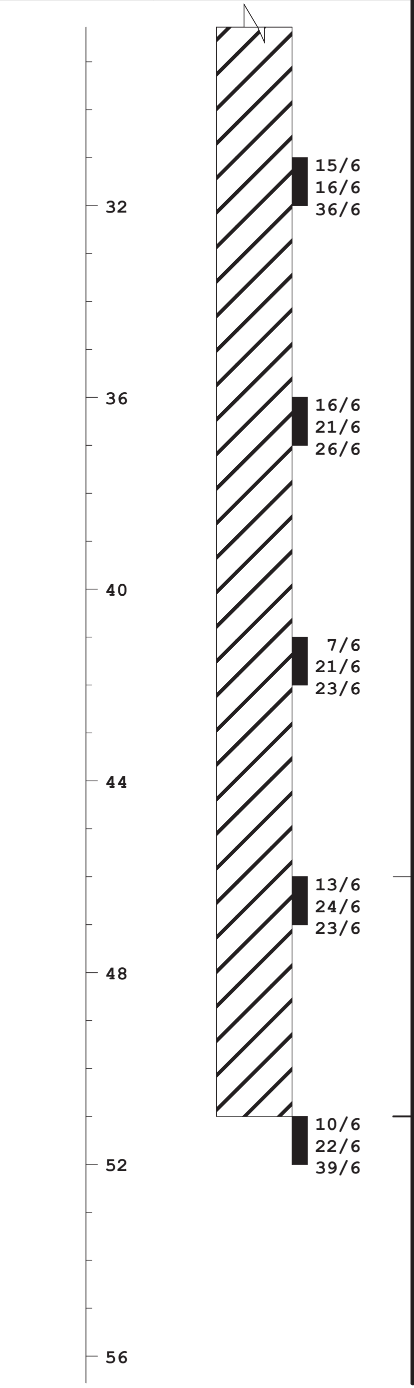


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		CH	SANDY CLAY: Dark yellowish brown, damp, high plasticity.			
	9/6 11/6 13/6	SC	CLAYEY SAND: Dark yellowish brown, damp, medium dense, low plasticity.		118.6	16.4
	5/6 8/6 13/6		Medium dense.		110.9	19.3
	7/6 17/6 21/6	CH	SANDY CLAY: Olive brown, damp, very stiff, high plasticity.		122.2	15.5
	4/6 11/6 16/6		Dark yellowish brown.		113.6	18.1
	7/6 10/6 17/6				123.9	14.6

LOG OF TEST BORING
BORING B-10

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/11/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *26*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/11/2025*
FINISH: *09/11/2025*
LOGGER: *SC*

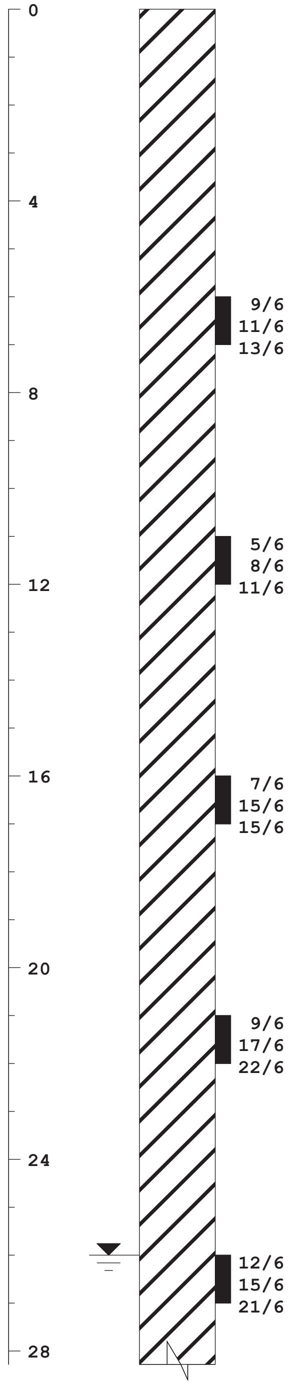


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	15/6 16/6 36/6				117.1	16.6
	16/6 21/6 26/6				106.9	23.0
	7/6 21/6 23/6				118.3	15.8
	13/6 24/6 23/6		Hard.		112.0	22.4
	10/6 22/6 39/6		BOTTOM.		90.1	34.1

LOG OF TEST BORING

BORING B-11

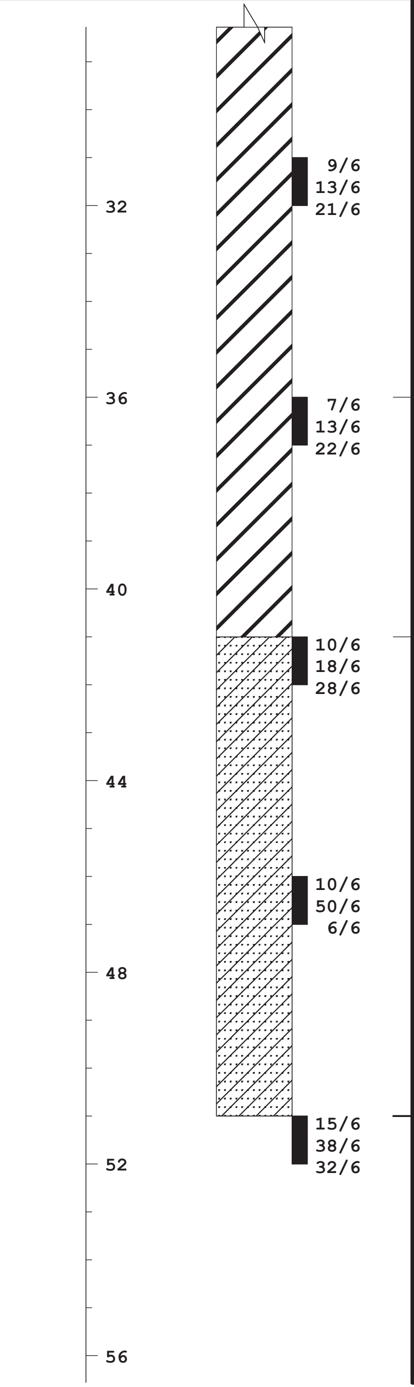
PROJECT: *Vaca Dixon Power Center*
FILE NO: *20447*
BORING DATE: *09/11/2025*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *09/11/2025*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *09/11/2025*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ≚ **:** *26*
CAVING - ➧ **:** *N/A*
LOGGER: *SC*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		CH	SANDY CLAY: Dark yellowish brown, damp, high plasticity.			
	9/6 11/6 13/6		Very stiff.		107.8	20.3
	5/6 8/6 11/6		Moist.		113.5	19.6
	7/6 15/6 15/6				114.2	18.1
	9/6 17/6 22/6				116.5	17.9
	12/6 15/6 21/6				113.5	20.3

LOG OF TEST BORING
BORING B-11

PROJECT: *Vaca Dixon Power Center*
FILE NO: *20447*
BORING DATE: *09/11/2025*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *09/11/2025*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *09/11/2025*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ : *26*
CAVING - ➤ : *N/A*
LOGGER: *SC*

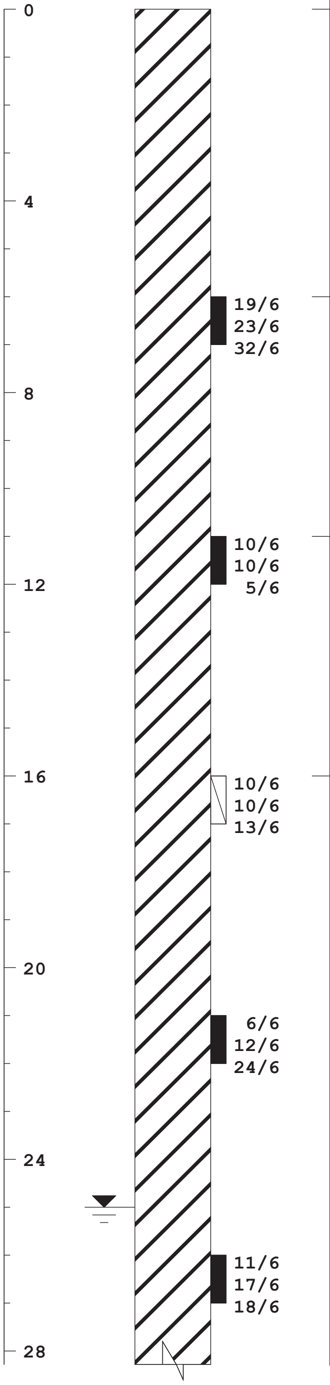


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
32	9/6 13/6 21/6				98.6	29.7
36	7/6 13/6 22/6		Decrease in sand.		110.4	20.3
	10/6 18/6 28/6	SC	CLAYEY SAND: Dark yellowish brown, damp, dense, low plasticity, traces of fine gravel.		124.9	15.0
	10/6 50/6 6/6				126.6	12.0
	15/6 38/6 32/6		BOTTOM.		103.4	27.4

LOG OF TEST BORING
BORING B-12

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/16/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *25*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/16/2025*
FINISH: *09/16/2025*
LOGGER: *SC*



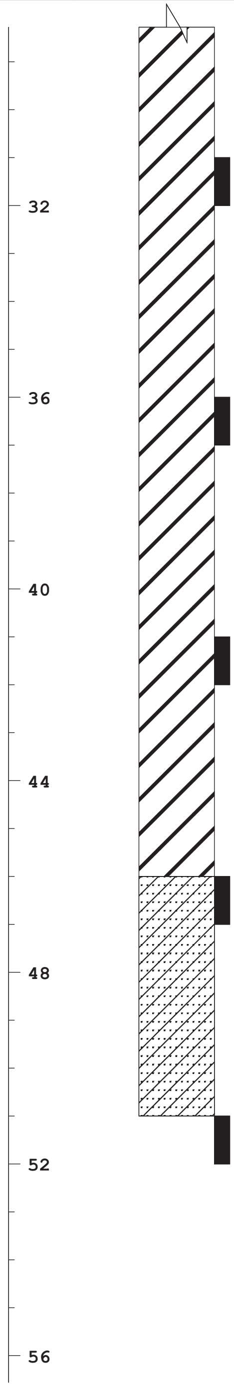
SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	CH	SANDY CLAY: Dark Yellowish brown, damp, high plasticity.			
19/6 23/6 32/6		Hard.		114.2	16.9
10/6 10/6 5/6		Stiff.		114.2	18.2
10/6 10/6 13/6		Very stiff.		116.3	18.2
6/6 12/6 24/6				111.4	19.7
11/6 17/6 18/6				114.6	16.8

Figure Number 13

LOG OF TEST BORING
BORING B-12

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/16/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *25*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/16/2025*
FINISH: *09/16/2025*
LOGGER: *SC*

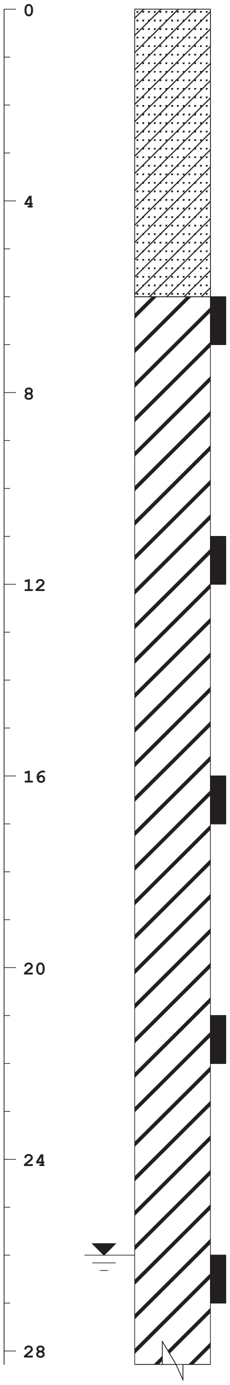


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	13/6 22/6 25/6		Decrease in sand. Hard.		115.2	17.3
	8/6 21/6 27/6				114.6	16.4
	9/6 50/6 6/6				108.1	19.2
	12/6 15/6 21/6	SC	CLAYEY SAND: Dark yellowish brown, damp, low plasticity.		113.1	17.6
	12/6 15/6 15/6		Very stiff. BOTTOM.		109.0	22.8

LOG OF TEST BORING
BORING B-13

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/12/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ⊽ **:** *26*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/12/2025*
FINISH: *09/12/2025*
LOGGER: *SC*

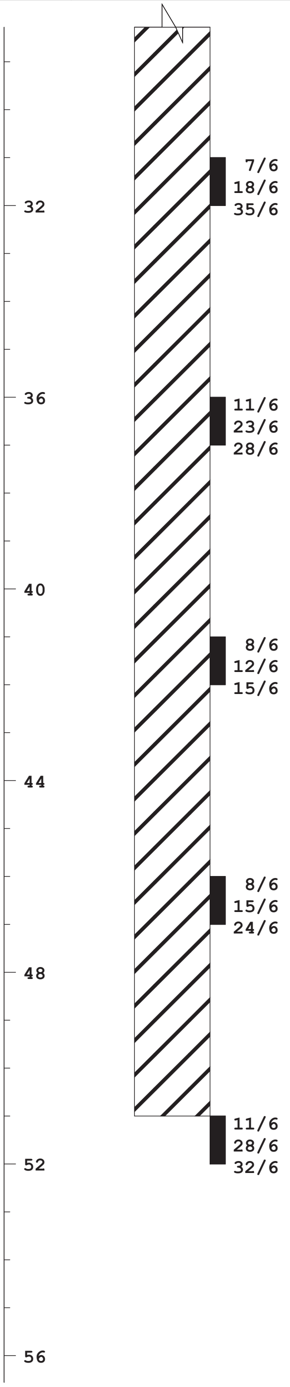


ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		SC	CLAYEY SAND: Dark yellowish brown, dry to damp, low plasticity.			
	10/6 13/6 13/6	CH	SANDY CLAY: Dark yellowish brown, damp, very stiff, high plasticity.		110.6	21.6
	11/6 11/6 13/6		Decrease in sand.		110.7	21.4
	6/6 10/6 17/6		Damp.		124.6	15.0
	7/6 9/6 10/6		Stiff.		116.6	18.2
	8/6 13/6 20/6		Very stiff.		127.3	16.8

LOG OF TEST BORING
BORING B-13

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/12/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *26*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/12/2025*
FINISH: *09/12/2025*
LOGGER: *SC*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	7/6 18/6 35/6		Hard.		123.2	13.8
	11/6 23/6 28/6				120.5	18.7
	8/6 12/6 15/6		Very stiff.		103.6	23.9
	8/6 15/6 24/6				105.3	22.3
	11/6 28/6 32/6		Hard. BOTTOM.		93.2	34.0

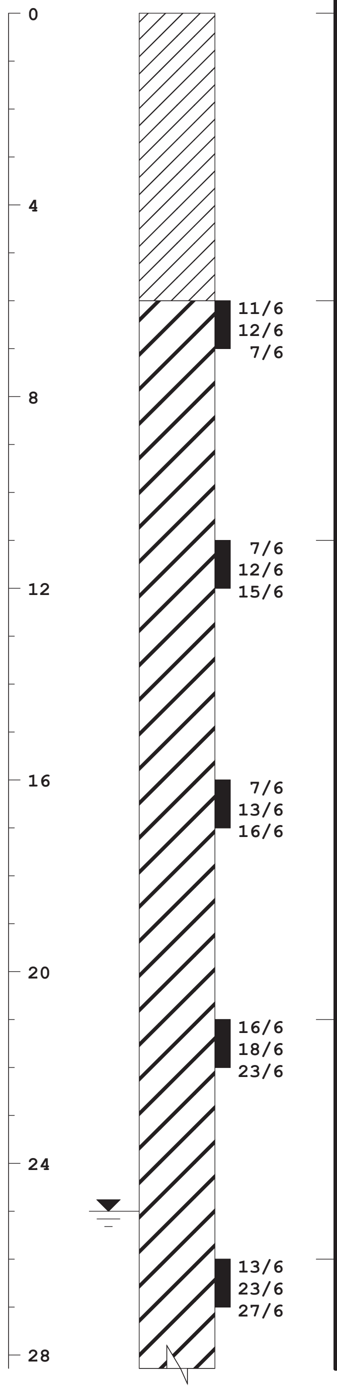
LOG OF TEST BORING
BORING B-14

Page 1 of 2

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/15/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ : *25*
CAVING - ► : *N/A*

FILE NO: *20447*
ELEV.:
START: *09/15/2025*
FINISH: *09/15/2025*
LOGGER: *SC*

ELEVATION/ DEPTH (feet) | SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA



USCS	Description	Remarks	Density pcf	Moisture %
CL	CLAYEY SAND: Dark yellowish brown, damp, low plasticity.			
CH	SANDY CLAY: Dark yellowsih brown, damp, stiff, high plasticity.		105.6	22.2
	Very stiff.		112.0	19.1
			116.4	16.4
	Decrease in sand.		122.6	15.7
	Hard.		123.3	15.4

Figure Number 15

LOG OF TEST BORING
BORING B-14

PROJECT: *Vaca Dixon Power Center*
FILE NO: *20447*
BORING DATE: *09/15/2025*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *09/15/2025*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *09/15/2025*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ≚ **:** *25*
CAVING - ➧ **:** *N/A*
LOGGER: *SC*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
32	11/6 25/6 25/6				117.4	16.7
36	9/6 16/6 19/6		Very stiff.		103.0	22.2
40						
	7/6 21/6 25/6				105.5	23.6
44						
	7/6 11/6 21/6				88.6	36.1
48						
	11/6 16/6 18/6		BOTTOM.		91.8	33.1
52						
56						

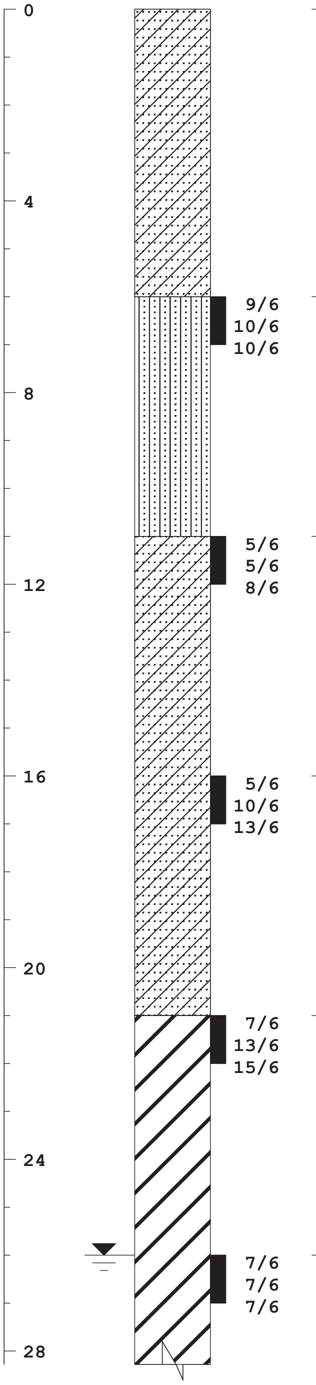
Figure Number 15

LOG OF TEST BORING
BORING B-15

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/12/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ : *26*
CAVING - ➤ : *N/A*

FILE NO: *20447*
ELEV.:
START: *09/12/2025*
FINISH: *09/12/2025*
LOGGER: *SC*

ELEVATION/ DEPTH (feet) | SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA



USCS	Description	Remarks	Density pcf	Moisture %
SC	CLAYEY SAND: Dark yellowish brown, damp, low plasticity.			
SM	SILTY SAND: Dark yellowish brown, damp, medium dense.		111.7	18.9
SC	CLAYEY SAND: Dark yellowish brown, damp, loose, low plasticity.		107.2	22.0
	Increase in clay, medium dense.		116.2	18.0
CH	SANDY CLAY: Dark yellowish brown, damp, very stiff, high plasticity.		120.2	18.3
	Stiff.		115.0	17.4

Figure Number 16

LOG OF TEST BORING
BORING B-15

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/12/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▼ **:** *26*
CAVING - ➤ **:** *N/A*

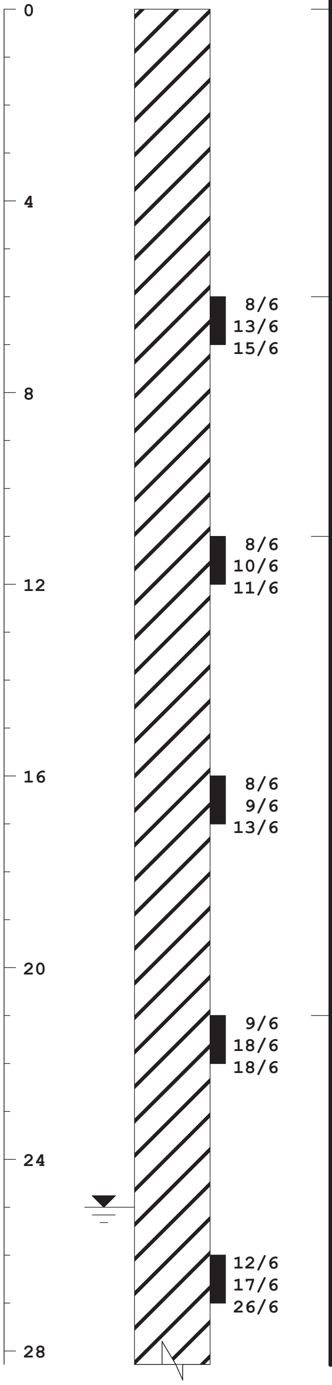
FILE NO: *20447*
ELEV.:
START: *09/12/2025*
FINISH: *09/12/2025*
LOGGER: *SC*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	18/6 37/6 37/6		Decrease in sand, Hard.		120.1	14.7
32						
36	19/6 50/6 6/6				121.2	16.0
40						
	15/6 50/6 6/6				118.4	14.9
44						
	11/6 20/6 35/6				92.0	32.1
48						
	8/6 17/6 23/6		Very stiff. BOTTOM.		92.2	34.5
52						
56						

LOG OF TEST BORING
BORING B-16

Page 1 of 2

PROJECT: *Vaca Dixon Power Center*
FILE NO: *20447*
BORING DATE: *09/15/2025*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *09/15/2025*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *09/15/2025*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ : *25*
CAVING - ➤ : *N/A*
LOGGER: *SC*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
		CH	SANDY CLAY: Light brown, dry to damp, medium to high plasticity.			
	8/6 13/6 15/6		Olive brown, damp, very stiff, high plasticity.		113.4	18.4
	8/6 10/6 11/6		Stiff.		101.5	26.9
	8/6 9/6 13/6				115.3	18.8
	9/6 18/6 18/6		CLAY with Sand: Olive brown, damp, very stiff, high plasticity.		111.3	19.2
	12/6 17/6 26/6				115.5	19.1

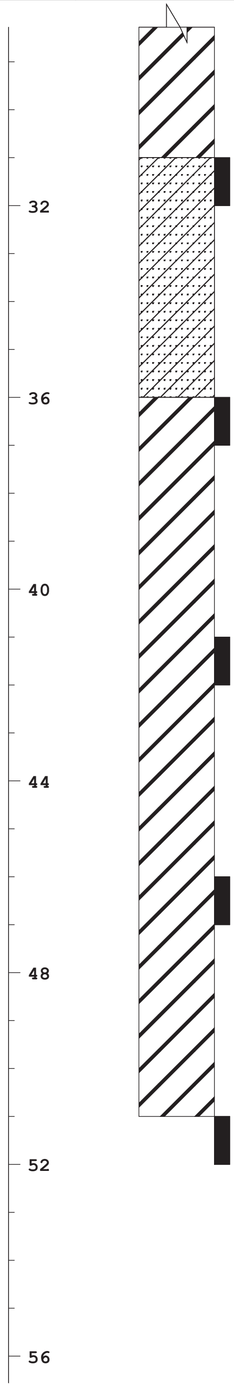
Figure Number 17

LOG OF TEST BORING

BORING B-16

PROJECT: *Vaca Dixon Power Center*
BORING DATE: *09/15/2025*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - ▽ **:** *25*
CAVING - ➤ **:** *N/A*

FILE NO: *20447*
ELEV.:
START: *09/15/2025*
FINISH: *09/15/2025*
LOGGER: *SC*



ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	11/6 17/6 22/6	SC	CLAYEY SAND: Olive brown, damp, medium dense, high plasticity.		114.3	17.7
	13/6 23/6 26/6	CH	SANDY CLAY: Olive brown, damp, hard, high plasticity.		115.5	15.5
	17/6 21/6 26/6				112.0	19.2
	7/6 25/6 27/6				98.7	28.9
	19/6 15/6 32/6		BOTTOM.		85.1	38.8

Figure Number 17

KEY TO SYMBOLS

Symbol	Description
Strata symbols	
▩	Clayey sand
▨	High plasticity clay
▨	Low plasticity clay
▥	Silty sand
Misc. Symbols	
▼	Water table at boring completion
⌁	Boring continues
Soil Samplers	
■	California sampler
⧄	No recovery

Notes:

1. Sixteen (16) exploratory borings were drilled from 09/08/25 through 09/16/25 using an 8-inch outside diameter hollow-stem auger.

2. Groundwater was encountered in all borings ranging from 14 to 26 feet bgs.

3. Boring locations are shown on the Boring Location Map, Figure 1.

4. These logs are subject to the limitations, conclusions, and recommendations in this report.

5. Results of tests conducted on samples recovered are reported on the logs.

TABLE B-1 - PERCOLATION TEST DATA LOG

SEI File No. 25-20447

SITE ADDRESS: 38.396085, -121.921605 | Vacaville, Solano County, CA

TEST PERFORMED BY: Soils Engineering, Inc. (SEI)

TEST DATE: September 9, 10, & 11, 2025

HOLE #	Percolation # 1 (P-1)				Percolation # 2 (P-2)				Percolation # 3 (P-3)			
DEPTH	5 FEET				5 FEET				5 FEET			
	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)
	INITIAL	FINAL			INITIAL	FINAL			INITIAL	FINAL		
	TEST # 1				**TEST # 1**				**TEST # 1**			
	0	--	13.3		0	--	12.6		0	--	12.5	
	0	30	0.5	60	0	30	0	>60	0	30	0	>60
	TEST # 2				**TEST # 2**				**TEST # 2**			
	0	--	12.8		0	--	12.6		0	--	12.5	
	0	30	0.5	60	0	30	0	>60	0	30	0	>60
	TEST # 3				**TEST # 3**				**TEST # 3**			
	0	--	12.3		0	--	12.6		0	--	12.5	
	0	30	0.7	43	0	30	0	>60	0	30	0	>60
	TEST # 4				**TEST # 4**				**TEST # 4**			
	0	--	12.5		0	--	12.6		0	--	12.5	
	0	30	0.5	60	0	30	0	>60	0	30	0	>60

A MINIMUM OF TWO [2] TEST HOLES ARE REQUIRED. THE AVERAGE PERC RATE MAY BE USED IF 5 OR MORE TESTS PER HOLE ARE PERFORMED, OTHERWISE SLOWEST PERC RATE SHALL BE USED.

FINAL RATE TO BE USED IN DESIGN: >60 MINUTES PER INCH. SOIL TYPE

1	2	3	4	5

SIGNATURE OF QUALIFIED PROFESSIONAL: ____________________________

TABLE B-2 - PERCOLATION TEST DATA LOG SEI File No. 25-20447

SITE ADDRESS: 38.396085, -121.921605 | Vacaville, Solano County, CA

TEST PERFORMED BY: Soils Engineering, Inc. (SEI)

TEST DATE: September 9, 10, & 11, 2025

HOLE #	Percolation # 4 (P-4)				Percolation # 5 (P-5)				Percolation # 6 (P-6)			
DEPTH	5 FEET				5 FEET				5 FEET			
	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)
	INITIAL	FINAL			INITIAL	FINAL			INITIAL	FINAL		
	TEST # 1				**TEST # 1**				**TEST # 1**			
	0	--	15.8		0	--	13.3		0	--	12.5	
	0	30	0	>60	0	30	0	>60	0	30	0.2	150
	TEST # 2				**TEST # 2**				**TEST # 2**			
	0	--	15.8		0	--	13.3		0	--	12.3	
	0	30	0	>60	0	30	0	>60	0	30	0.3	100
	TEST # 3				**TEST # 3**				**TEST # 3**			
	0	--	15.8		0	--	13.3		0	--	12.0	
	0	30	0.2	150	0	30	0	>60	0	30	0.2	150
	TEST # 4				**TEST # 4**				**TEST # 4**			
	0	--	15.6		0	--	13.3		0	--	14.5	
	0	30	0.2	150	0	30	0	>60	0	30	0.5	60

A MINIMUM OF TWO [2] TEST HOLES ARE REQUIRED. THE AVERAGE PERC RATE MAY BE USED IF 5 OR MORE TESTS PER HOLE ARE PERFORMED, OTHERWISE SLOWEST PERC RATE SHALL BE USED.

FINAL RATE TO BE USED IN DESIGN: __>60__ MINUTES PER INCH. SOIL TYPE

1	2	3	4	5

SIGNATURE OF QUALIFIED PROFESSIONAL: __________________________

APPENDIX C

SOIL TEST DATA

SIEVE ANALYSES (ASTM D422 and/or ASTM D1140)

Grain size distributions for specimens retrieved from various subsurface elevations were tested to classify the materials. Test results are presented on Figures A-1 through A-3.

IN-SITU DENSITY & MOISTURE RELATIONSHIPS (ASTM D2216 & D2937)

Moisture & density data for undisturbed native soils was obtained by use of a 2-3/8-inch (inside diameter) split-barrel sampler. Test results are given on the Logs of Test Borings, Figures 2 through 17.

CONSOLIDATION TESTS (ASTM D2435)

Compressibility of soils was determined on saturated, undisturbed samples of native materials. Consolidation Test Diagrams, Figures B-1 through B-3, graphically express the relationship of vertical strain vs. applied vertical (normal) load for earth materials selected as most representative of the soil strata within the anticipated zone of influence of foundation loads.

DIRECT SHEAR TESTS (ASTM D3080)

A quick-consolidated direct shear test was performed on an undisturbed, saturated sample of native earth materials. This test provides information on soil shear strength vs. normal load and is used to determine the angle of internal friction and cohesion of earth materials under essentially drained conditions. Test results are presented on Figures C-1 through C-5.

R-VALUE TESTS (CTM-301)

R-Value tests were performed to obtain flexible pavement design data. Test results are presented on Figures D-1 through D-3.

MAXIMUM DENSITY - OPTIMUM MOISTURE RELATIONSHIPS (ASTM D1557)

Maximum density - optimum moisture test results provide a relationship between soil moisture content at compaction vs. dry density for a fixed compactive effort. Test results are presented on Figures E-1 and E-2.

UNCONFINED COMPRESSIVE STRENGTH OF COHESIVE SOIL (ASTM D2166)

This test method tests unconfined compressive strength of cohesive soil in the intact, remolded, or reconstituted condition, using strain-controlled application of the axial load. Test results are presented on Figures F-1 through F-3.

EXPANSION INDEX (ASTM D4829)

The Expansion Index test is designed to measure a basic index property of soil and in this respect is comparable to other index tests such as the Atterberg Limits. In formulating the test procedures, no attempt has been made to duplicate any particular moisture or loading conditions which may occur in the field. Rather, an attempt has been made to control all variables which influence the expansive characteristics of a particular soil and still retain a practical test for general engineering usage. Near surface soils were obtained and tested for expansiveness. Test results are presented on the Laboratory Testing Recap Table 1.

SOIL CORROSIVITY (SO4 / pH / Chlorides)

Tests for Soluble Sulfates (SO4), Soluble Chlorides (Cl), and pH values were performed on seven (7) composite samples taken from the upper 5 feet to determine the corrosion potential of the soils. Corrosion prevention measures and the extent to which measures should be taken (if any) should be addressed with the corrosion engineer. Soluble Sulfates and Soluble Chlorides values were determined according to EPA 300.0M. The pH values were determined according to EPA 9045C. Results of all the constituent(s) are discussed in the Soil Corrosivity section.

THERMAL RESISTIVITY (TR) (ASTM D 5334)

Tests were performed on remolded samples (85% relative compaction of ASTM D1557).

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Middle River Power

Geotechnical Engineering Services
Vaca Dixon Power Center
38.396085, -121.921605 | Vacaville, Solano County, CA

SEI File No. 25-20447
November 21, 2025

TABLE 1

TEST LOCATION	USCS	% < # 200	CONSOLIDATION				DIRECT SHEAR		E.I.	MINIMUM RESISITIVITY	UNCONFINED COMPRESSION		THERMAL CONDUCTIVITY & RESISTIVITY					R-VALUE @ 300 psi		MAXIMUM DENSITY	
			C_C	C_S	S.P. (psf)	HV %	C, (ksf)	F.A.			Q_u (ksf)	C (ksf)	K W/(m·K)	RHO °C·cm/W	Temp °C	Density lb/ft^3	Moisture	R.V.	E.P. (psi)	MDD (pcf)	O.M.
B-3 @ 0-5'	SM	26							2	4,385											
B-3 @ 6'	SC		0.04	0	-	0															
B-4 @ 0-5'	CH	60								1,351								15	0.04	117.5	11.3%
B-4 @ 0-5' (85%) Initial	CH												1.149	87	27.0	99.9	0				
B-4 @ 0-5' (85%) Saturated	CH												1.427	70	24.5	99..9	11.3				
B-4 @ 0-5' (85%) Dry	CH												0.953	104.8	22.2	99.9	15.2				
B-4 @ 6'	CL						0.74	24.2													
B-7 @ 0-5'	CL	53							17	1,475											
B-7 @ 6'	CH						0.77	29.3													
B-8 @ 0-5'	CH	54								1,422								19	0.17	123.9	10.6%
B-8 @ 0-5' (85%) Initial	CH												1.422	70.3	22.6	105.3	0				
B-8 @ 0-5' (85%) Saturated	CH												1.448	69	23.8	105.3	10.6				
B-8 @ 0-5' (85%) Dry	CH												0.623	160.4	20.2	105.3	17.1				
B-8 @ 6'	CH		0.05	0.02	997	0.3															
B-10 @ 0-5'	SC	41							19	1,389								19	0.16		
B-10 @ 6'	SC						0.71	37.7													
B-11 @ 0-5'	CH	56							65	1,017											
B-11 @ 6'	CH						0.68	31.7													
B-15 @ 6'	SM		0.02	0	-	-0.2															
B-16 @ 0-5'	CH	53							59	364											
B-16 @ 6'	CH						0.74	27.5													
B-16 @ 11'	CH	59									8.47	4.23									
B-16 @ 21'	CH	82									11.7	5.85									
B-16 @ 31'	SC	40																			
B-16 @ 41'	CH	64									6.4	3.2									

CONSOLIDATION
Cc - Compression Index
Cs - Swell Index
S.P. (psf) - Swell Pressure
HV % - Heave Percentage / Collapse

E.I. - EXPANSION INDEX
ATTERBERG LIMITS
LL - Liquid Limit
PL - Plastic Limit
PI - Plasticity Index

DIRECT SHEAR
C (ksf) - Cohesion
F.A. - Friction Angle

MINIMUM RESISITIVITY -
(ohm-cm)

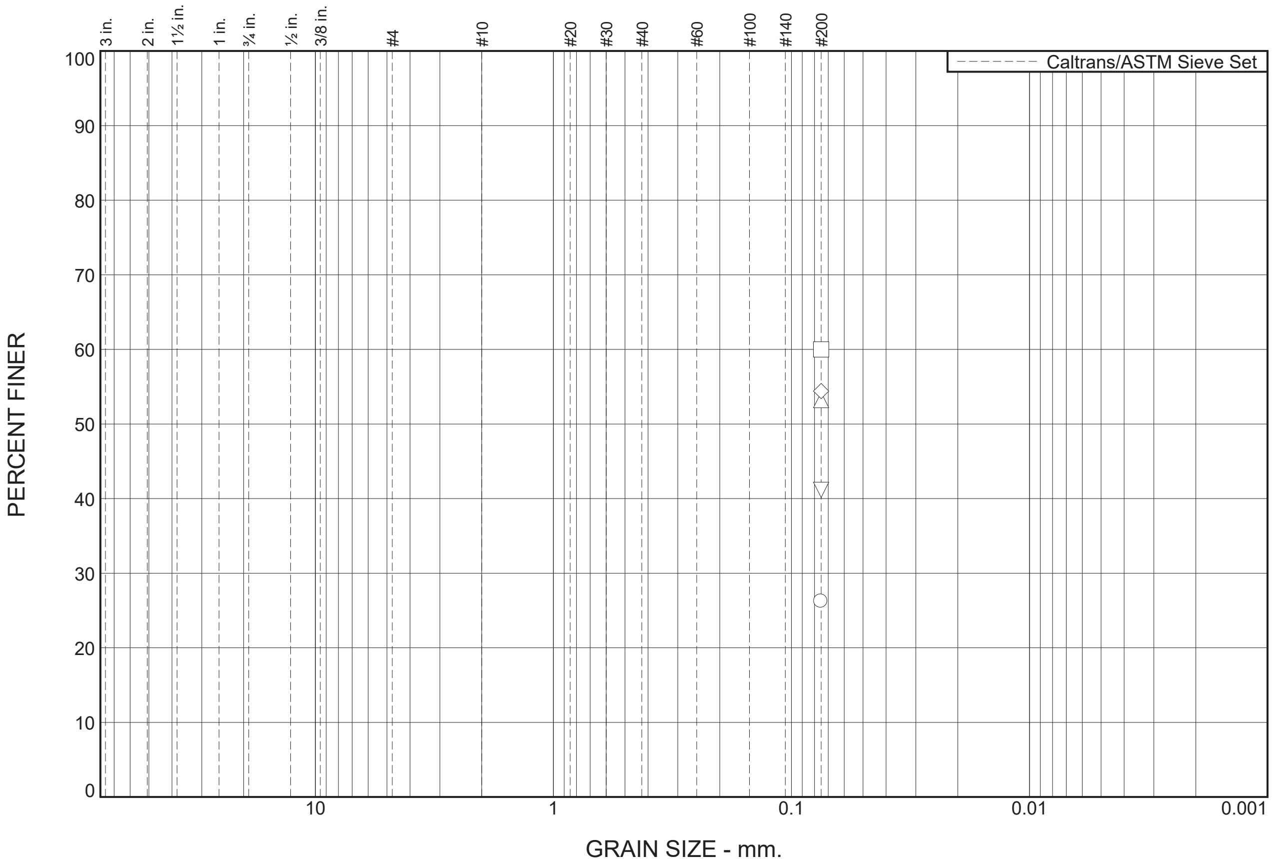
UNCONFINED COMPRESSION
Unconfined Compressive strength - Qu (ksf)
Cohesion - C (ksf)

THERMAL CONDUCTIVITY & RESISTIVITY
K - Thermal Conductivity in Watts per Meter Kelvin
RHO - Centimeter - Degree C per Watt
Temp oC - Temperature of Specimen in Celcius
Density - Remolded Specimen Density
Moisture - Remolded Specimen Moisture

RESISTANCE VALUE (R-VALUE)
RV - R-Value @ 300 psi
EP - Expansion Press @ 300 psi

MAXIMUM DENSITY
MDD (pcf) - Max Dry Density
O.M. - Optimum Moisture

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							26	
□							60	
△							53	
◇							54	
▽							41	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○			0-5'	SILTY SAND (B-3)	SM
□			0-5'	SANDY CLAY (B-4)	CH
△			0-5'	SANDY CLAY (B-7)	CL
◇			0-5'	SANDY CLAY (B-8)	CH
▽			0-5'	CLAYEY SAND (B-10)	SC

SOILS ENGINEERING, INC.

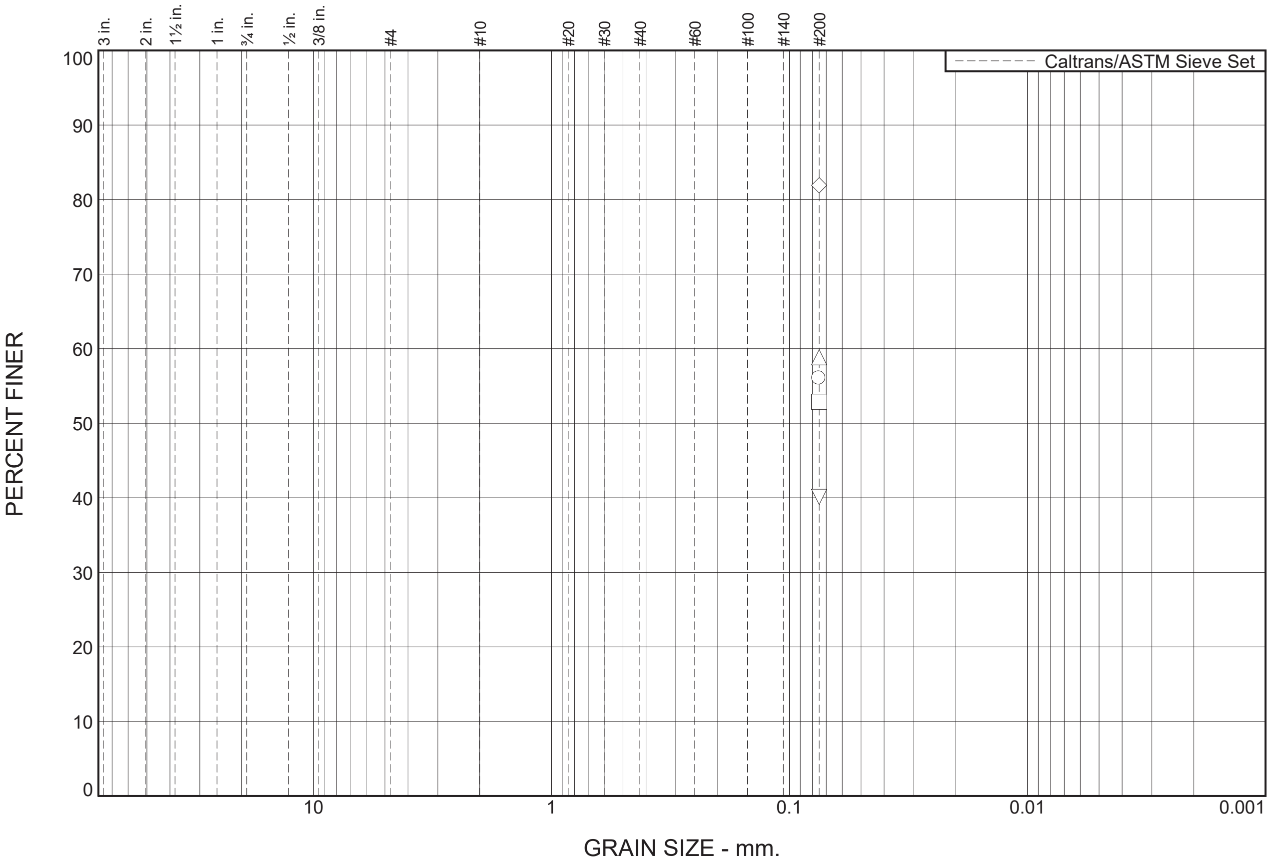
Client: Middle River Power

Project: Vaca Dixon Power Center

Project No.: 20447 **Figure** A-1

Tested By: ○ MY □ RC △ MY ◇ RC ▽ RC

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							56	
□							53	
△							59	
◇							82	
▽							40	

SOIL DATA

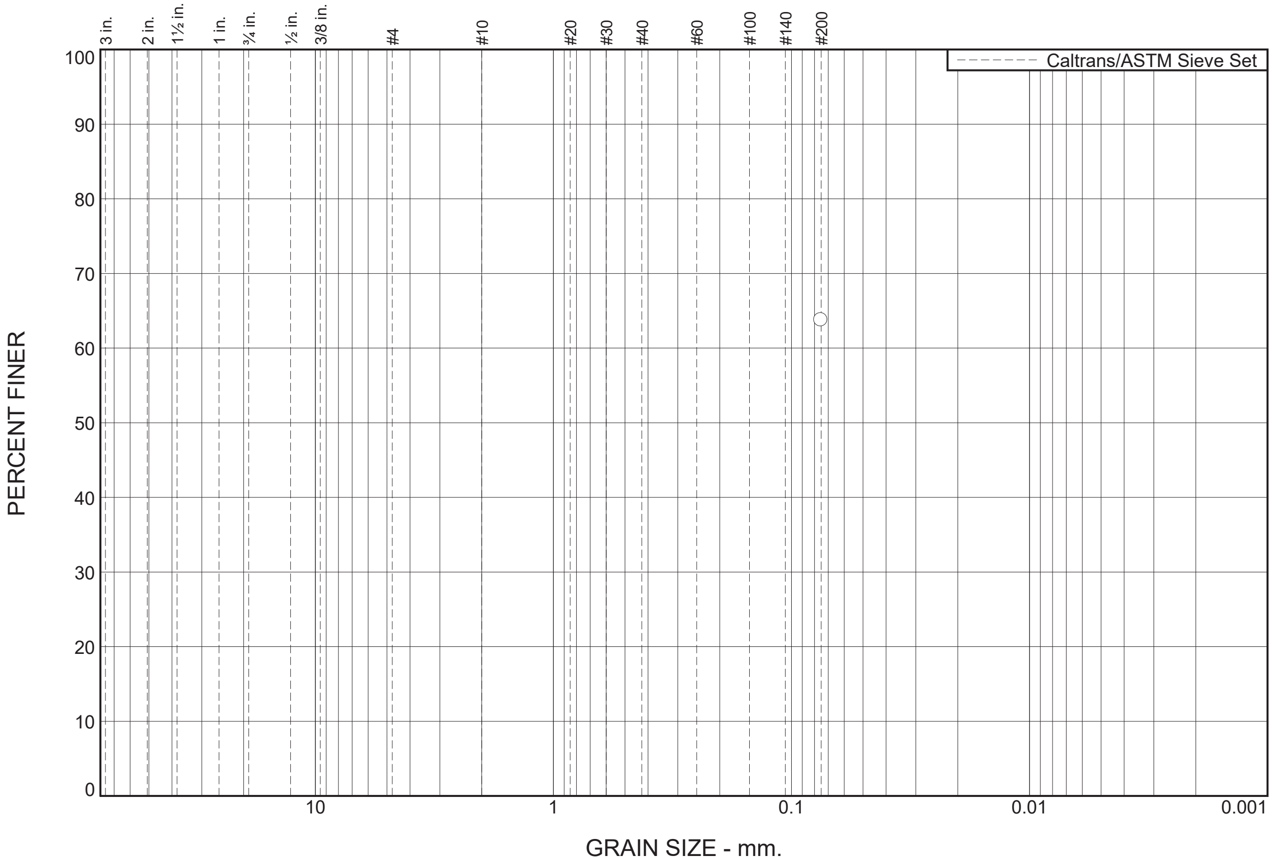
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○			0-5'	SANDY CLAY (B-11)	CH
□			0-5'	SANDY CLAY (B-16)	CH
△	B-16		11'	SANDY CLAY	CH
◇	B-16		21'	CLAY with Sand	CH
▽	B-16		31'	CLAYEY SAND	SC

SOILS ENGINEERING, INC.

Client: Middle River Power
Project: Vaca Dixon Power Center
Project No.: 20447
Figure A-2

Tested By: ○ MY □ SC △ SC ◇ SC ▽ SC

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							64	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-16		41'	SANDY CLAY	CH

SOILS ENGINEERING, INC.

Client: Middle River Power

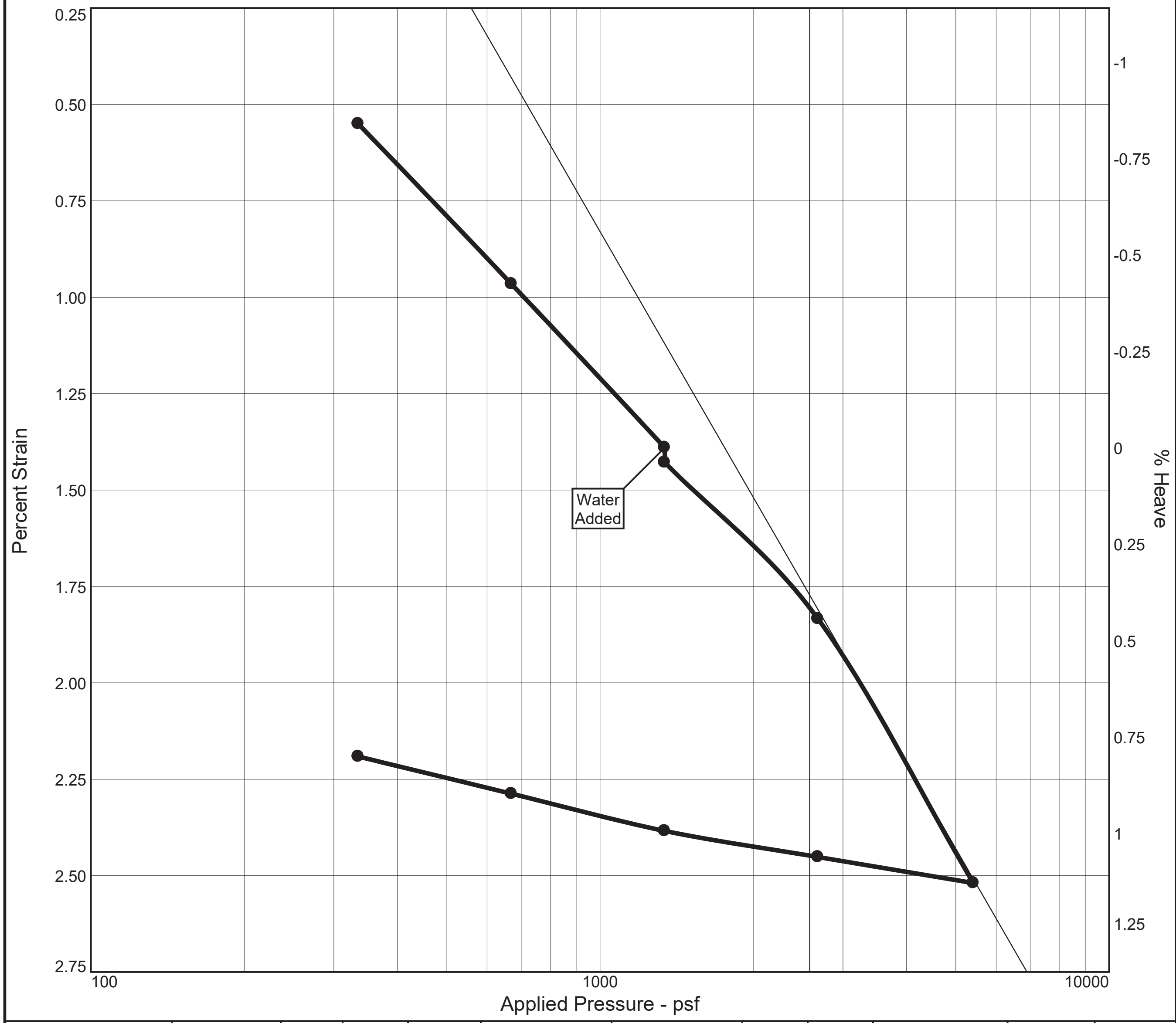
Project: Vaca Dixon Power Center

Project No.: 20447

Figure A-3

Tested By: SC

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_s	Swell Press. (psf)	Heave %	e_o
Sat.	Moist.											
81.3 %	16.7 %	107.1	N/A	N/A	2.65	336	2721	0.04	0.00		0.0	0.545

MATERIAL DESCRIPTION	USCS	AASHTO
CLAYEY SAND	SC	

Project No. 20447 **Client:** Middle River Power

Project: Vaca Dixon Power Center

Source of Sample: B-3 **Depth:** 6'

SOILS ENGINEERING, INC.

Remarks:
Test Date: 09/26/2025

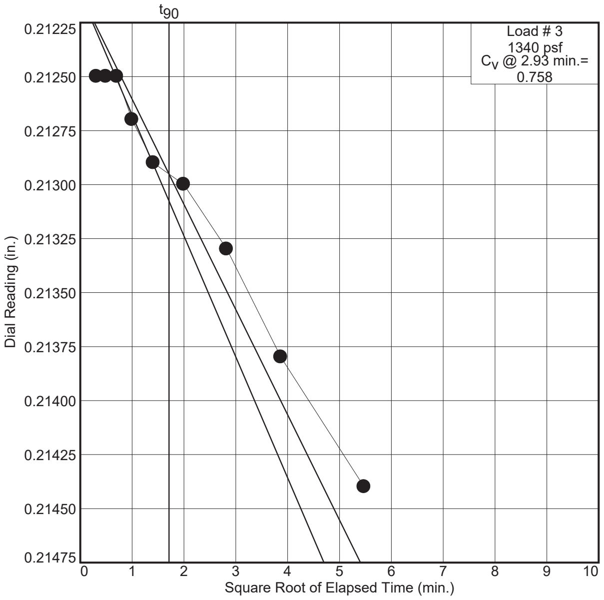
Figure B-1

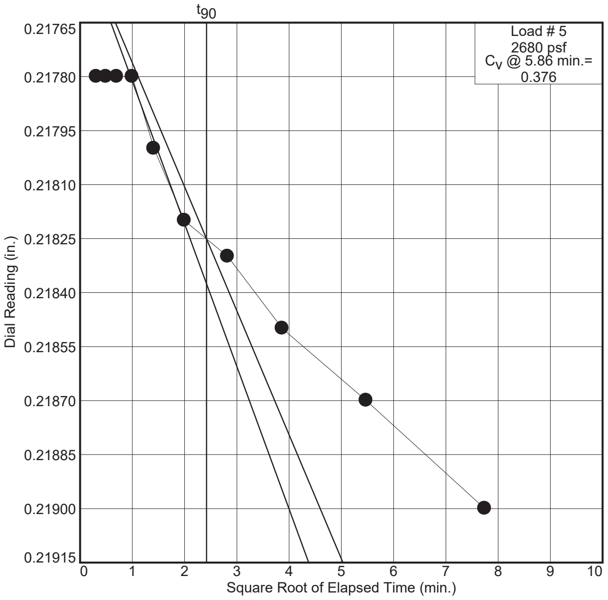
Tested By: SC

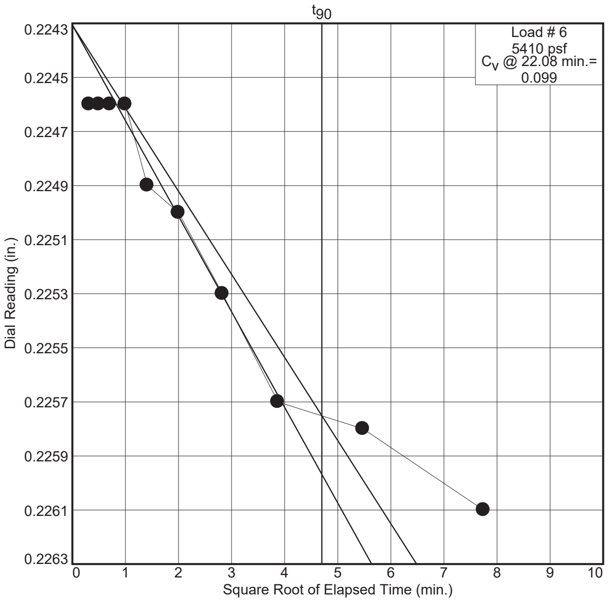
Dial Reading vs. Time

Project No.: 20447
Project: Vaca Dixon Power Center

Source of Sample: B-3 Depth: 6'



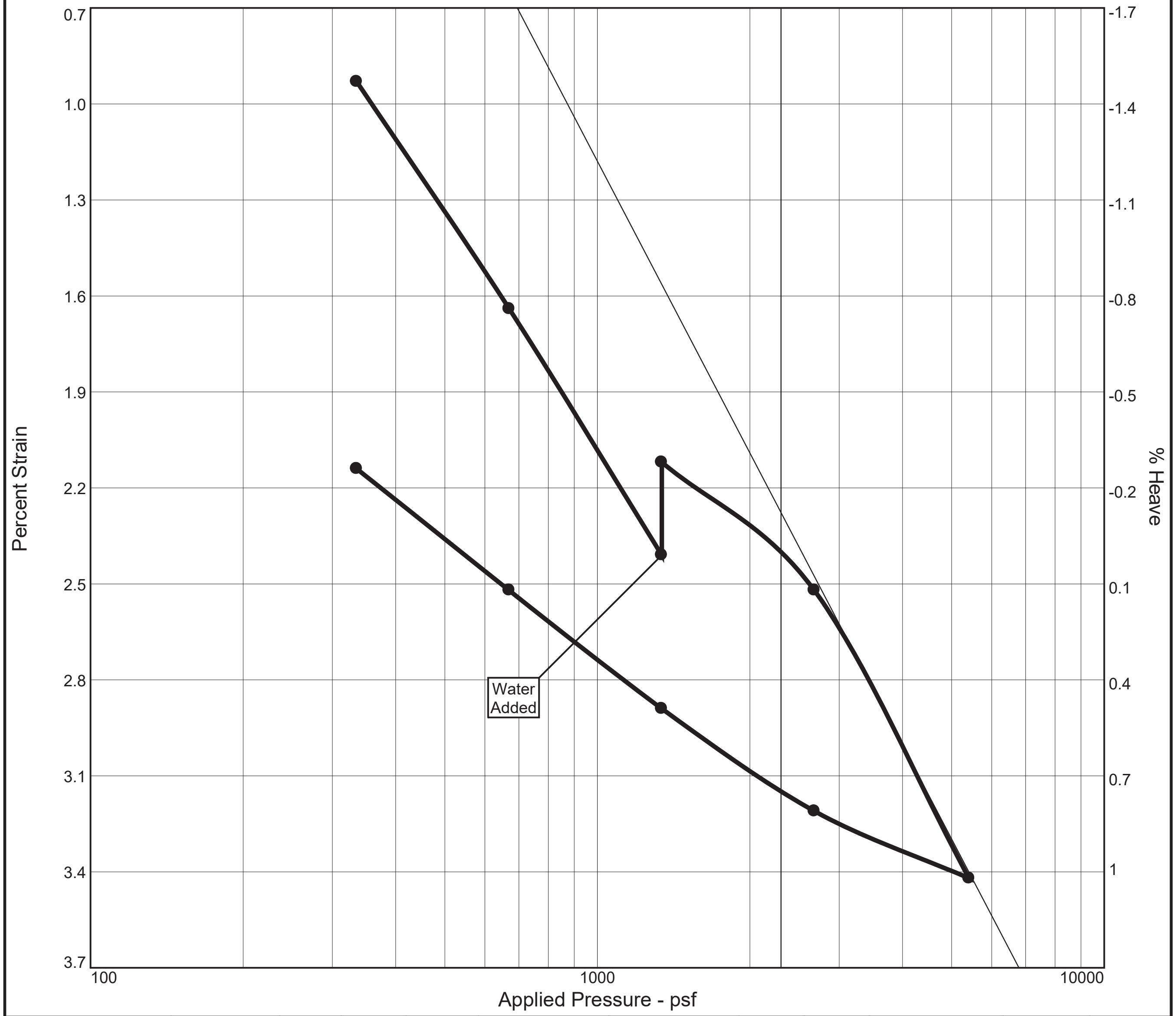




SOILS ENGINEERING, INC.

Figure B-1

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_s	Swell Press. (psf)	Heave %	e_o
Sat.	Moist.											
85.9 %	18.4 %	105.5	N/A	N/A	2.65	336	2607	0.05	0.02	997	0.3	0.568

MATERIAL DESCRIPTION	USCS	AASHTO
SANDY CLAY	CL	

Project No. 20447 **Client:** Middle River Power

Project: Vaca Dixon Power Center

Source of Sample: B-8 **Depth:** 6'

Remarks:

Test Date: 09/25/2025

SOILS ENGINEERING, INC.

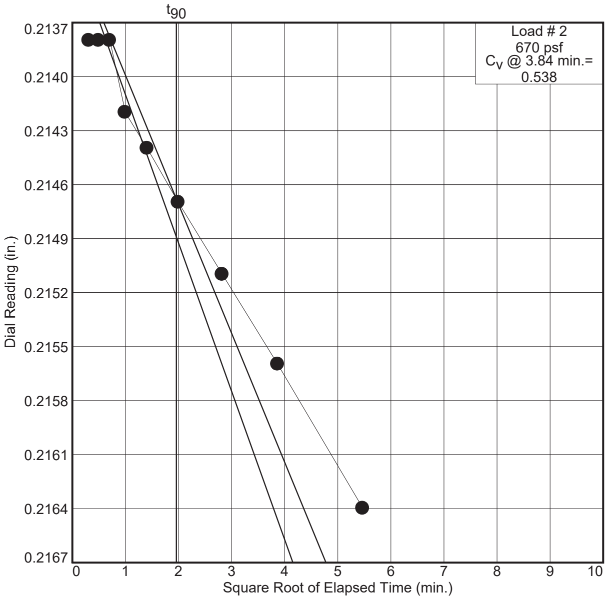
Figure B-2

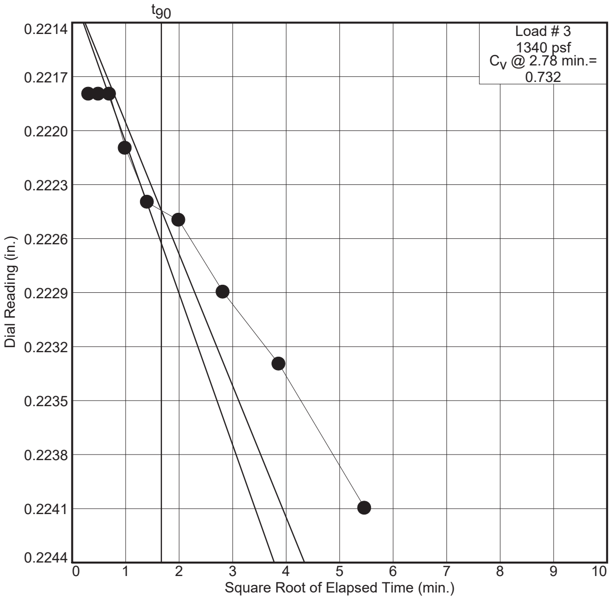
Tested By: SC

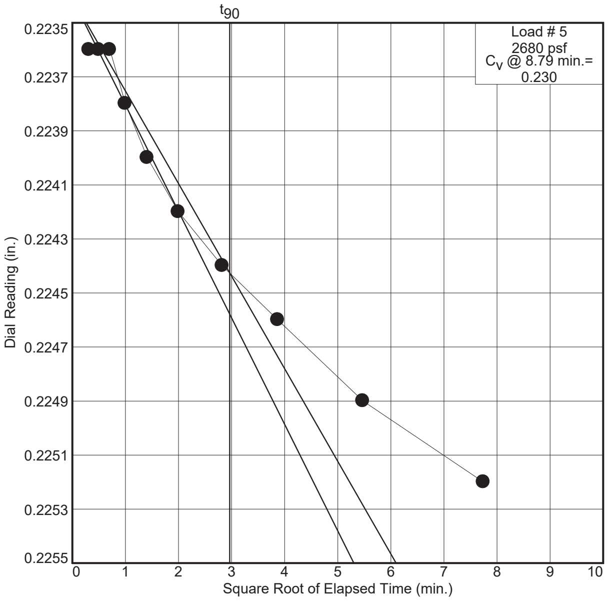
Dial Reading vs. Time

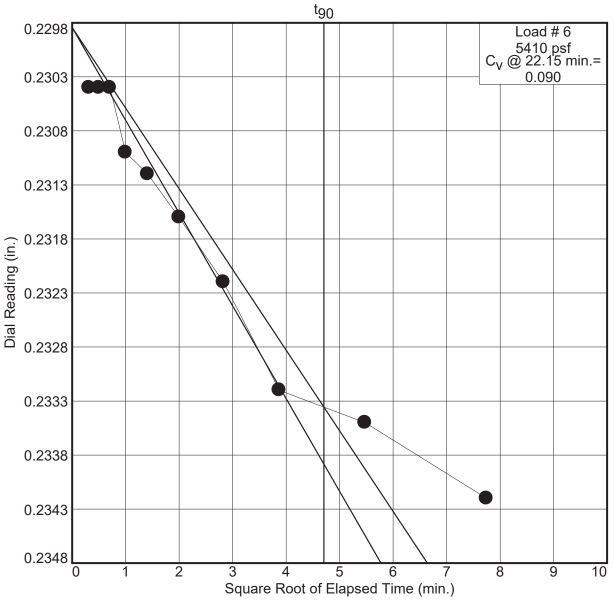
Project No.: 20447
Project: Vaca Dixon Power Center

Source of Sample: B-8 Depth: 6'





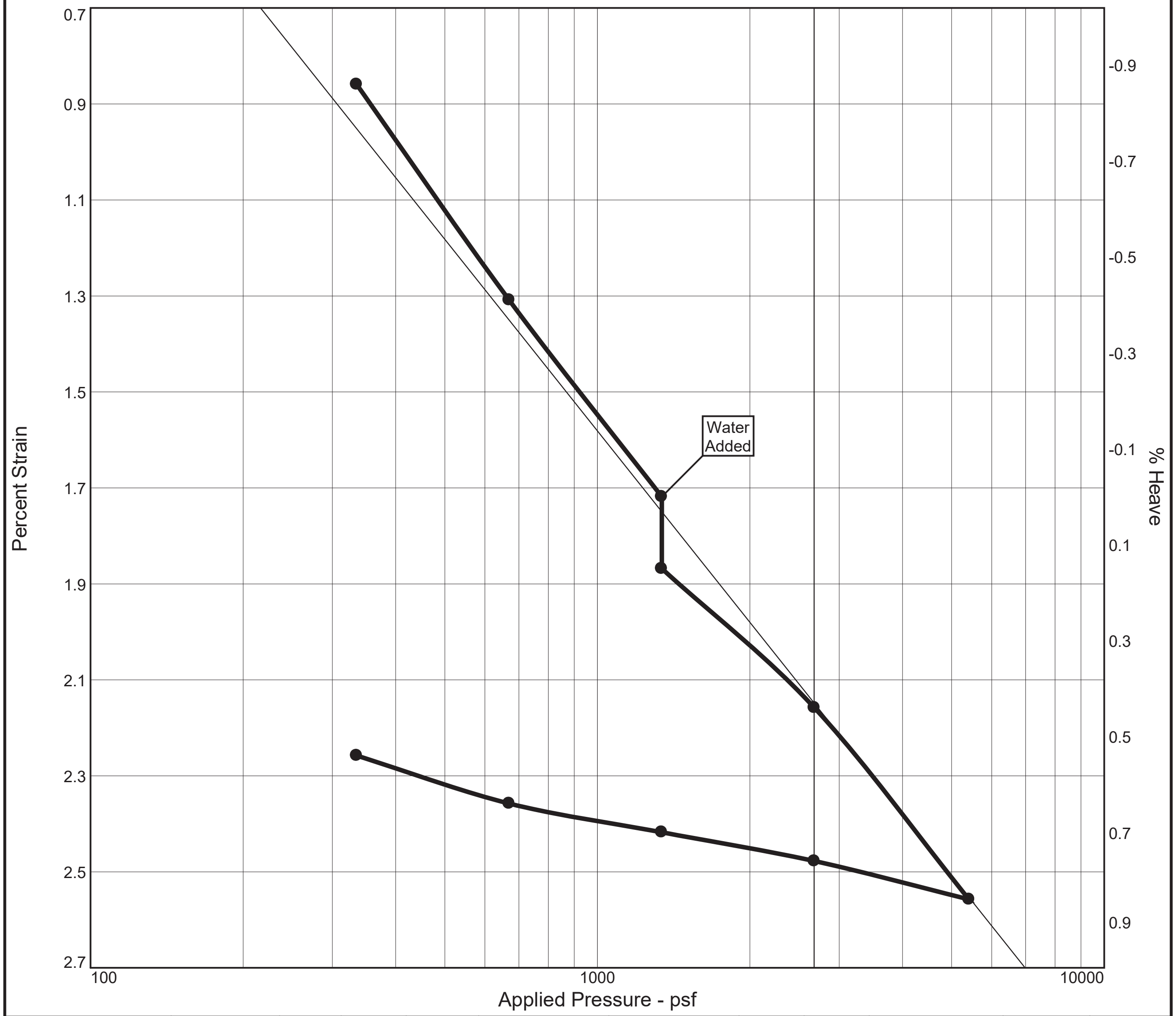




SOILS ENGINEERING, INC.

Figure B-2

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_s	Swell Press. (psf)	Heave %	e_o
Sat.	Moist.											
75.3 %	16.5 %	104.7	N/A	N/A	2.65	336	2753	0.02	0.00		-0.2	0.579

MATERIAL DESCRIPTION	USCS	AASHTO
SILTY SAND	SM	

Project No. 20447 **Client:** Middle River Power

Project: Vaca Dixon Power Center

Source of Sample: B-15 **Depth:** 6'

Remarks:

Test Date: 09/29/2025

SOILS ENGINEERING, INC.

Figure B-3

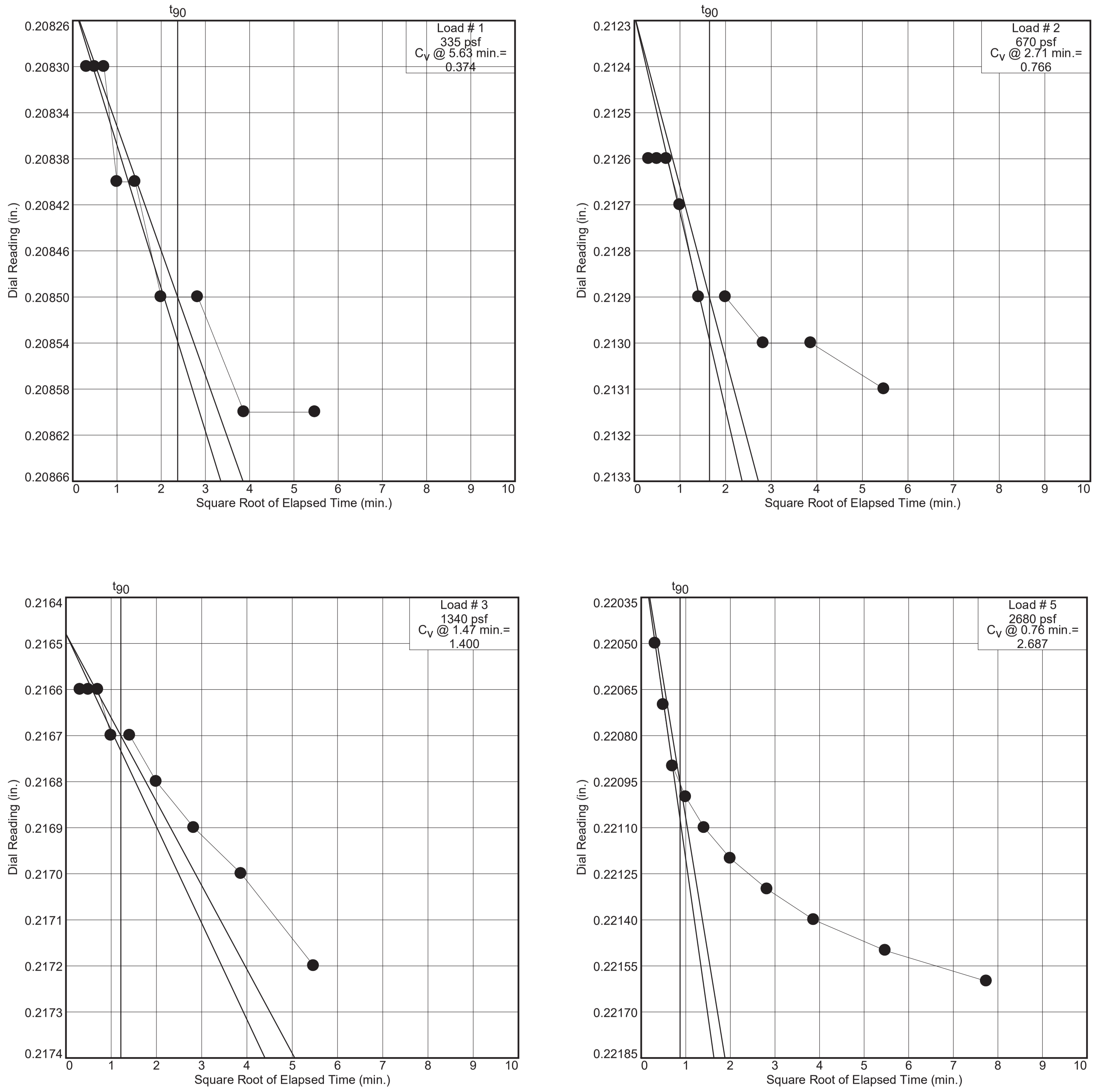
Tested By: SC

Dial Reading vs. Time

Project No.: 20447

Project: Vaca Dixon Power Center

Source of Sample: B-15 Depth: 6'



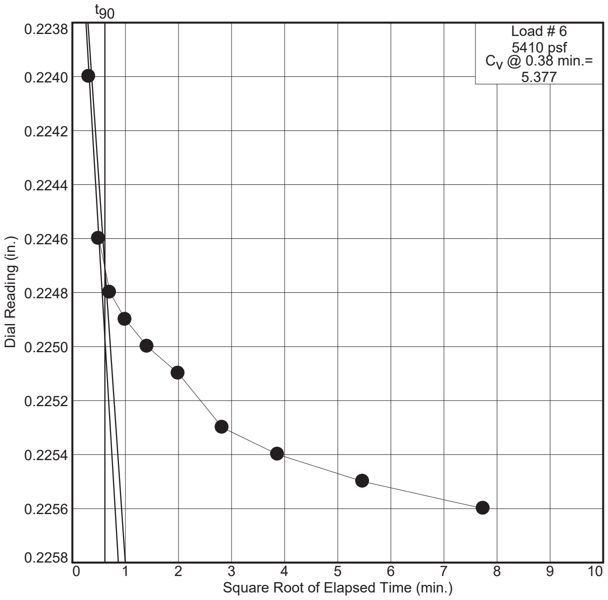
SOILS ENGINEERING, INC.

Figure B-3

Dial Reading vs. Time

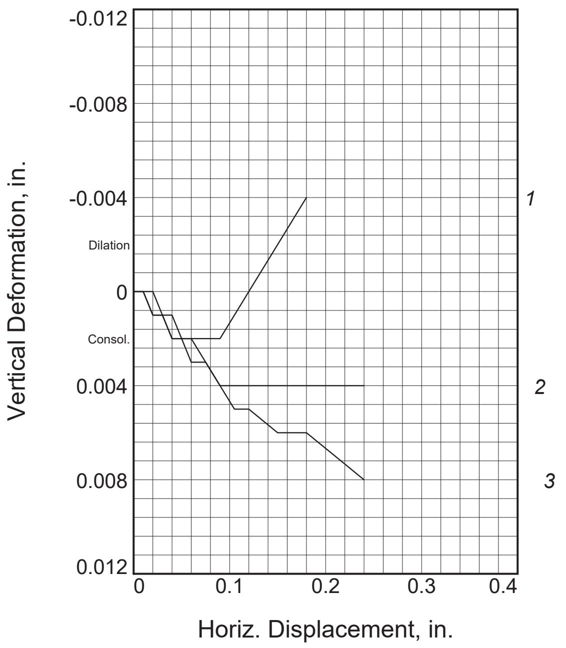
Project No.: 20447
Project: Vaca Dixon Power Center

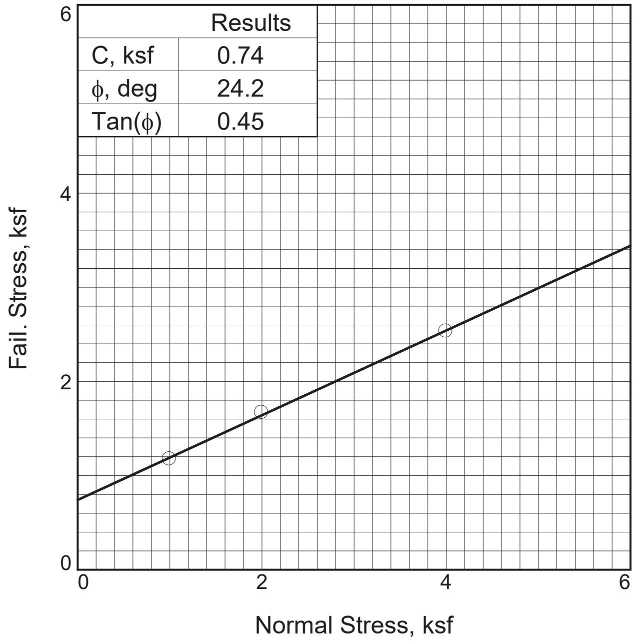
Source of Sample: B-15 Depth: 6'



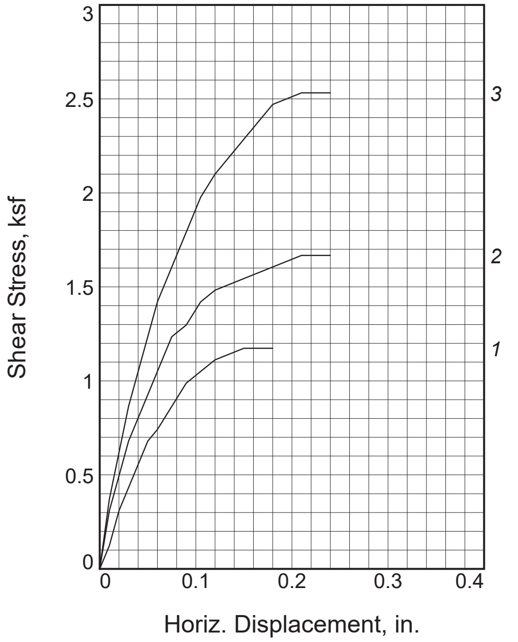
SOILS ENGINEERING, INC.

Figure B-3





Results	
C, ksf	0.74
ϕ, deg	24.2
Tan(ϕ)	0.45



	Sample No.	1	2	3
Initial	Water Content, %	17.6	14.5	18.8
	Dry Density, pcf	105.9	109.6	105.8
	Saturation, %	83.0	75.6	88.2
	Void Ratio	0.5628	0.5089	0.5641
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	21.1	19.1	21.2
	Dry Density, pcf	105.9	109.6	105.8
	Saturation, %	99.4	99.2	99.7
	Void Ratio	0.5628	0.5089	0.5641
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
	Normal Stress, ksf	1.00	2.00	4.00
	Fail. Stress, ksf	1.17	1.67	2.53
	Displacement, in.	0.15	0.21	0.21
	Ult. Stress, ksf			
	Displacement, in.			
	Strain rate, in./min.	N/A	N/A	N/A

Sample Type: 2.5"x6" steel tube
Description: SANDY CLAY

LL= N/A **PI=** N/A
Assumed Specific Gravity= 2.65
Remarks: Test Date: 09/26/2025

Figure C-1

Client: Middle River Power

Project: Vaca Dixon Power Center

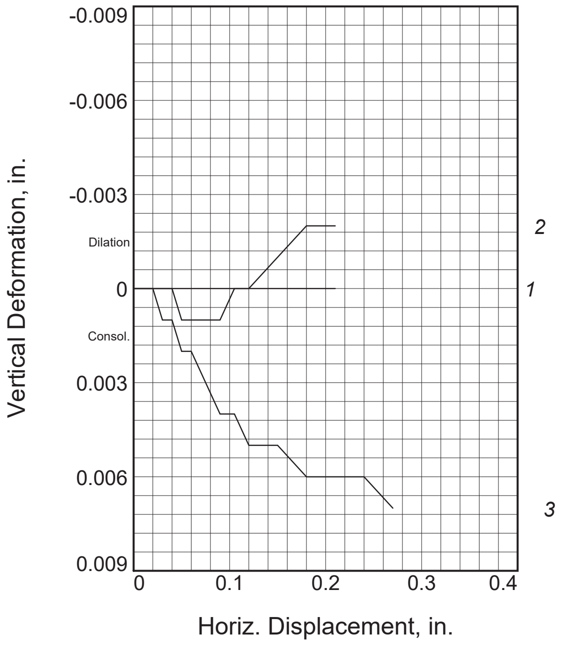
Source of Sample: B-4 **Depth:** 6'

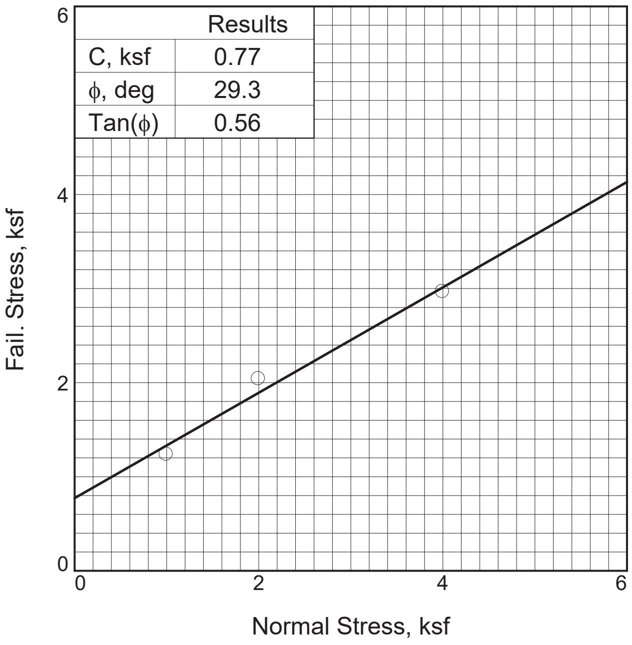
Proj. No.: 20447 **Date Sampled:** 09/09/2025

DIRECT SHEAR TEST REPORT

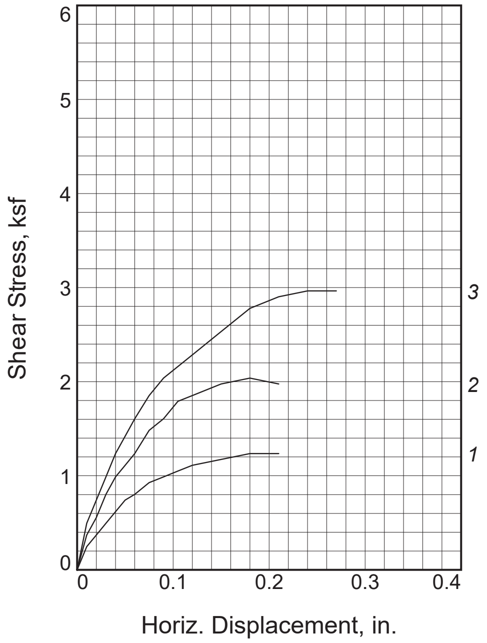
SOILS ENGINEERING, INC.

Tested By: MY





	Results
C, ksf	0.77
ϕ, deg	29.3
Tan(ϕ)	0.56



	Sample No.	1	2	3
Initial	Water Content, %	19.9	20.3	19.9
	Dry Density, pcf	100.0	101.0	102.6
	Saturation, %	80.8	84.2	86.3
	Void Ratio	0.6542	0.6373	0.6126
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	22.7	23.0	21.9
	Dry Density, pcf	100.0	101.0	102.6
	Saturation, %	92.0	95.6	94.6
	Void Ratio	0.6542	0.6373	0.6126
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
	Normal Stress, ksf	1.00	2.00	4.00
	Fail. Stress, ksf	1.24	2.04	2.96
	Displacement, in.	0.18	0.18	0.24
	Ult. Stress, ksf			
	Displacement, in.			
	Strain rate, in./min.	N/A	N/A	N/A

Sample Type: 2.5"x6" steel tube

Description: SANDY CLAY

LL= N/A **PI=** N/A

Assumed Specific Gravity= 2.65

Remarks: Test Date: 09/26/2025

Figure C-2

Client: Middle River Power

Project: Vaca Dixon Power Center

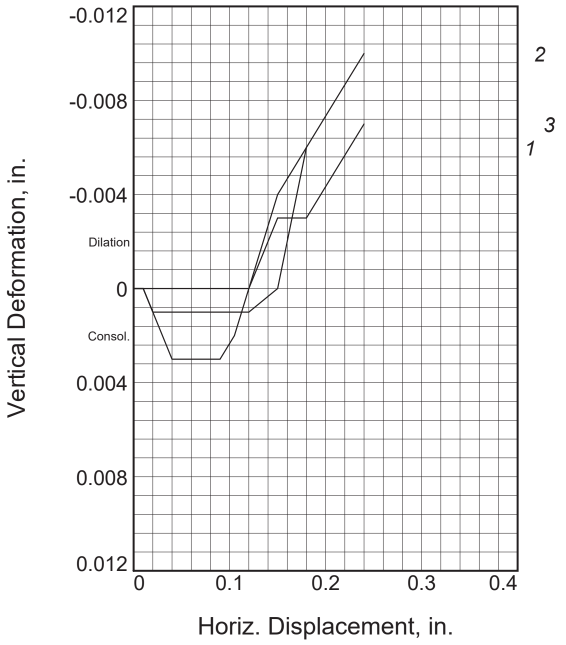
Source of Sample: B-7 **Depth:** 6'

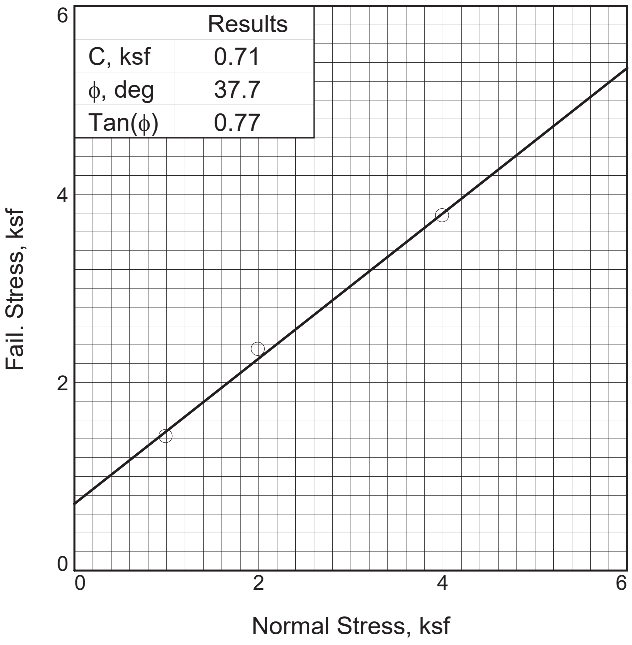
Proj. No.: 20447 **Date Sampled:** 09/11/2025

DIRECT SHEAR TEST REPORT

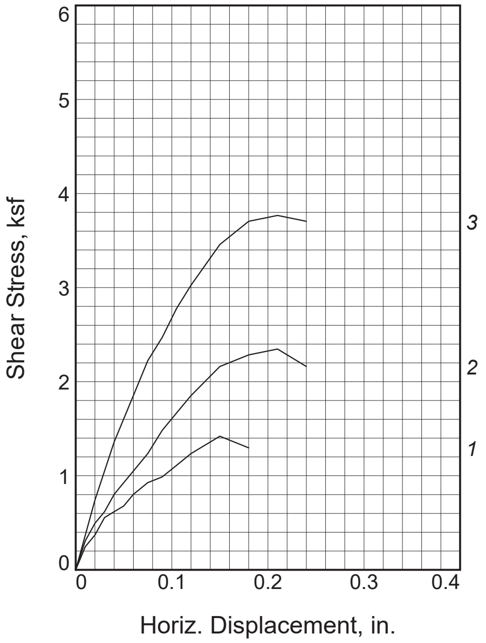
SOILS ENGINEERING, INC.

Tested By: MY





	Results
C, ksf	0.71
ϕ, deg	37.7
Tan(ϕ)	0.77



	Sample No.	1	2	3
Initial	Water Content, %	12.1	10.6	15.1
	Dry Density, pcf	118.8	123.9	113.3
	Saturation, %	81.5	84.0	87.0
	Void Ratio	0.3931	0.3351	0.4596
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	14.5	12.4	17.1
	Dry Density, pcf	118.8	123.9	113.3
	Saturation, %	97.6	97.7	98.9
	Void Ratio	0.3931	0.3351	0.4596
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
	Normal Stress, ksf	1.00	2.00	4.00
	Fail. Stress, ksf	1.42	2.35	3.77
	Displacement, in.	0.15	0.21	0.21
	Ult. Stress, ksf			
	Displacement, in.			
	Strain rate, in./min.	N/A	N/A	N/A

Sample Type: 2.5"x6" steel tube

Description: CLAYEY SAND

LL= N/A **PI=** N/A

Assumed Specific Gravity= 2.65

Remarks: Test Date: 09/26/2025

Figure C-3

Client: Middle River Power

Project: Vaca Dixon Power Center

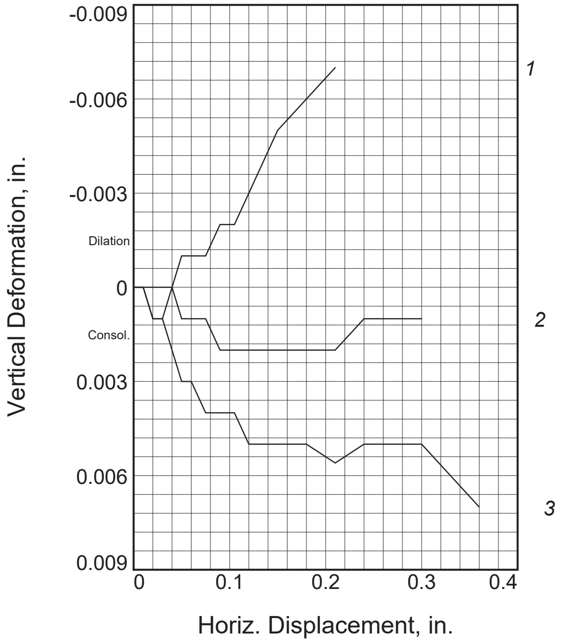
Source of Sample: B-10 **Depth:** 6'

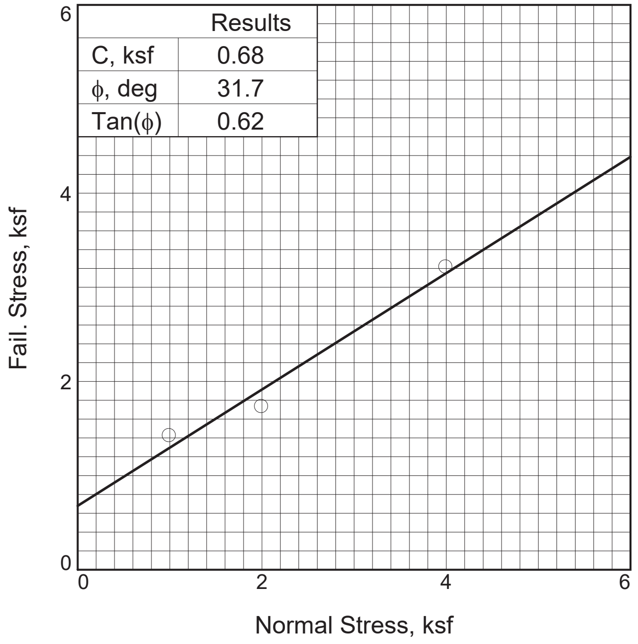
Proj. No.: 20447 **Date Sampled:** 09/11/2025

DIRECT SHEAR TEST REPORT

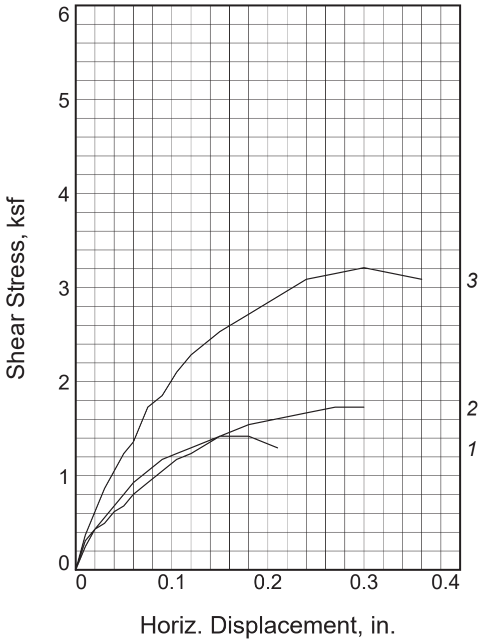
SOILS ENGINEERING, INC.

Tested By: MY





	Results
C, ksf	0.68
ϕ, deg	31.7
Tan(ϕ)	0.62



Sample No.		1	2	3
Initial	Water Content, %	19.1	26.1	20.1
	Dry Density, pcf	102.8	97.7	103.7
	Saturation, %	83.0	99.9	89.3
	Void Ratio	0.6085	0.6935	0.5952
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	22.6	23.1	21.2
	Dry Density, pcf	102.8	97.7	103.7
	Saturation, %	98.3	88.1	94.5
	Void Ratio	0.6085	0.6935	0.5952
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
Normal Stress, ksf		1.00	2.00	4.00
Fail. Stress, ksf		1.42	1.73	3.21
Displacement, in.		0.15	0.27	0.30
Ult. Stress, ksf				
Displacement, in.				
Strain rate, in./min.		N/A	N/A	N/A

Sample Type: 2.5"x6" steel tube
Description: SANDY CLAY

LL= N/A **PI=** N/A
Assumed Specific Gravity= 2.65
Remarks: Test Date: 09/29/2025

Figure C-4

Client: Middle River Power

Project: Vaca Dixon Power Center

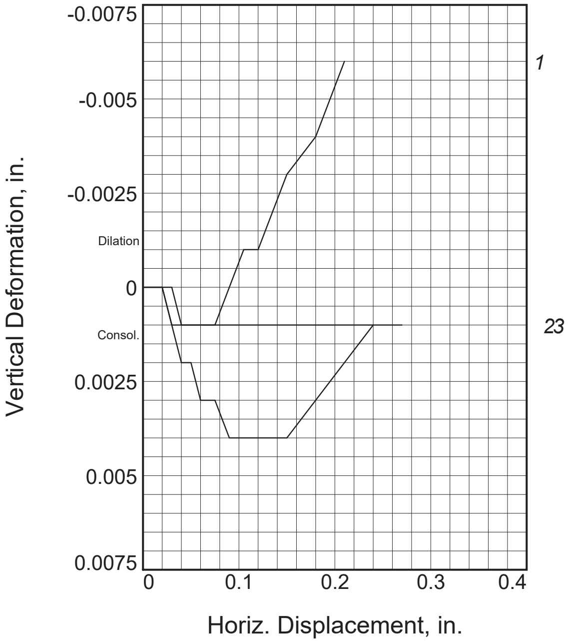
Source of Sample: B-11 **Depth:** 6'

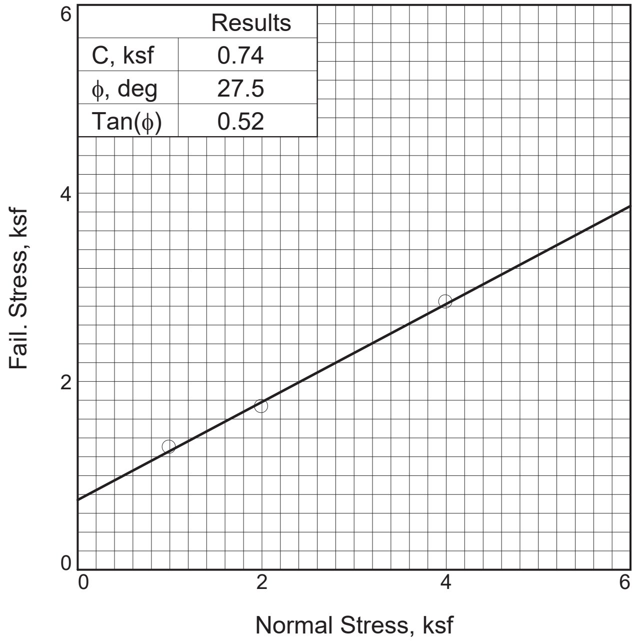
Proj. No.: 20447 **Date Sampled:** 09/11/2025

DIRECT SHEAR TEST REPORT

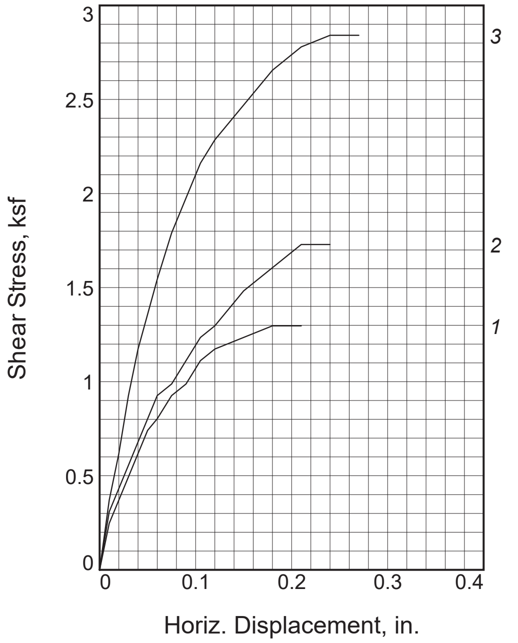
SOILS ENGINEERING, INC.

Tested By: MY





Results	
C, ksf	0.74
ϕ, deg	27.5
Tan(ϕ)	0.52



	Sample No.	1	2	3
Initial	Water Content, %	17.1	17.9	19.5
	Dry Density, pcf	106.6	105.5	103.1
	Saturation, %	82.2	83.7	85.6
	Void Ratio	0.5515	0.5679	0.6045
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	20.6	20.9	21.2
	Dry Density, pcf	106.6	105.5	103.1
	Saturation, %	98.8	97.7	92.9
	Void Ratio	0.5515	0.5679	0.6045
	Diameter, in.	2.38	2.38	2.38
	Height, in.	1.00	1.00	1.00
	Normal Stress, ksf	1.00	2.00	4.00
	Fail. Stress, ksf	1.30	1.73	2.84
	Displacement, in.	0.18	0.21	0.24
	Ult. Stress, ksf			
	Displacement, in.			
	Strain rate, in./min.	N/A	N/A	N/A

Sample Type: 2.5"x6" steel tube
Description: SANDY CLAY

LL= N/A **PI=** N/A
Assumed Specific Gravity= 2.65
Remarks: Test Date: 09/29/2025

Figure C-5

Client: Middle River Power

Project: Vaca Dixon Power Center

Source of Sample: B-16 **Depth:** 6'

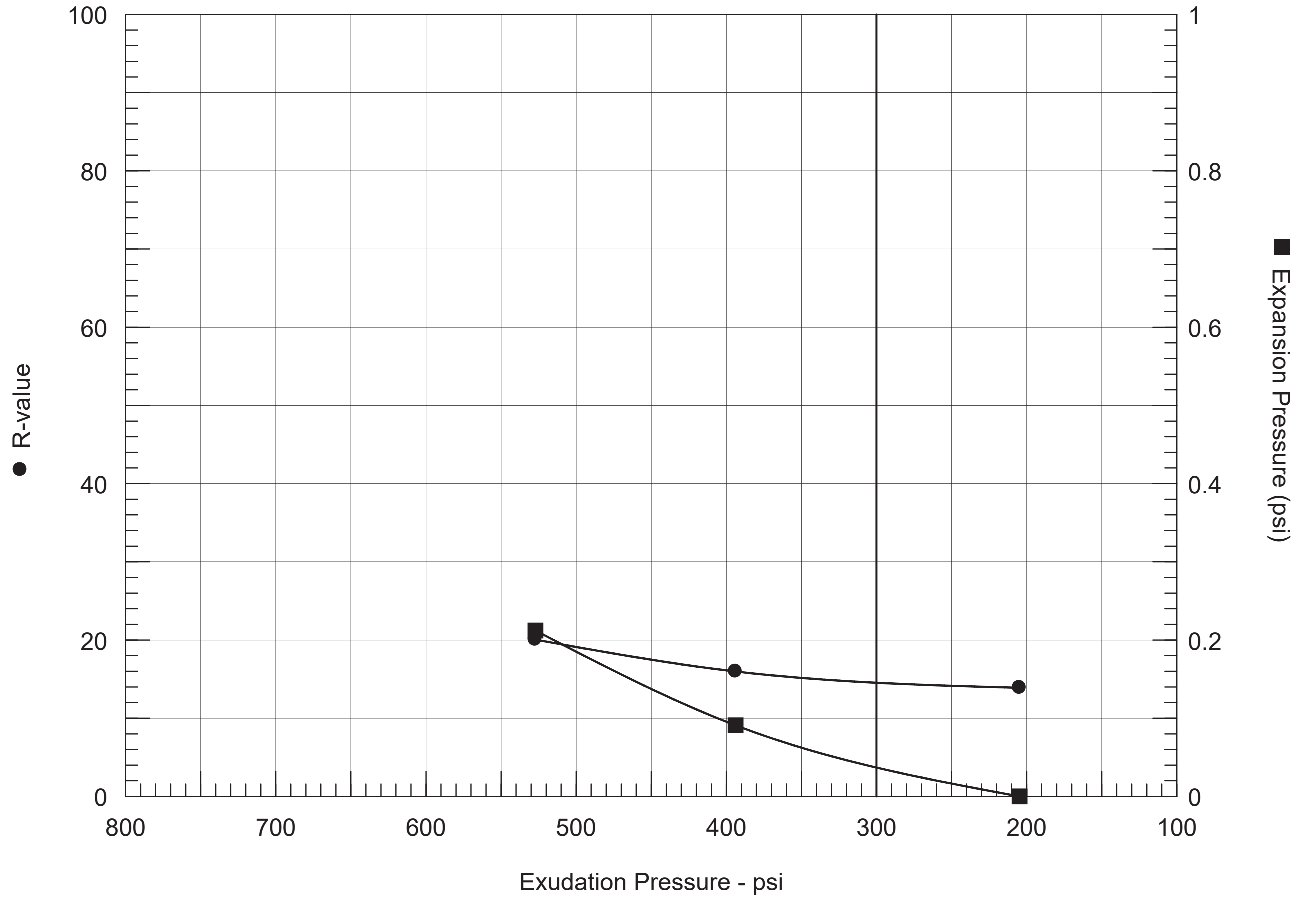
Proj. No.: 20447 **Date Sampled:** 09/15/2025

DIRECT SHEAR TEST REPORT

SOILS ENGINEERING, INC.

Tested By: MY

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	100	108.6	16.5	0.21	114	2.65	527	18	20
2	80	111.2	17.6	0.09	120	2.67	394	14	16
3	60	102.7	18.6	0.00	122	2.59	205	13	14

Test Results	Material Description
R-value at 300 psi exudation pressure = 15 **Exp. pressure at 300 psi exudation pressure =** 0.04 psi	SANDY CLAY (B-4)

Project No.: 20447

Project: Vaca Dixon Power Center

Location: B-4 @ 0-5'

Depth: 0-5'

Date: 10/22/2025

Tested by: RC

Checked by:

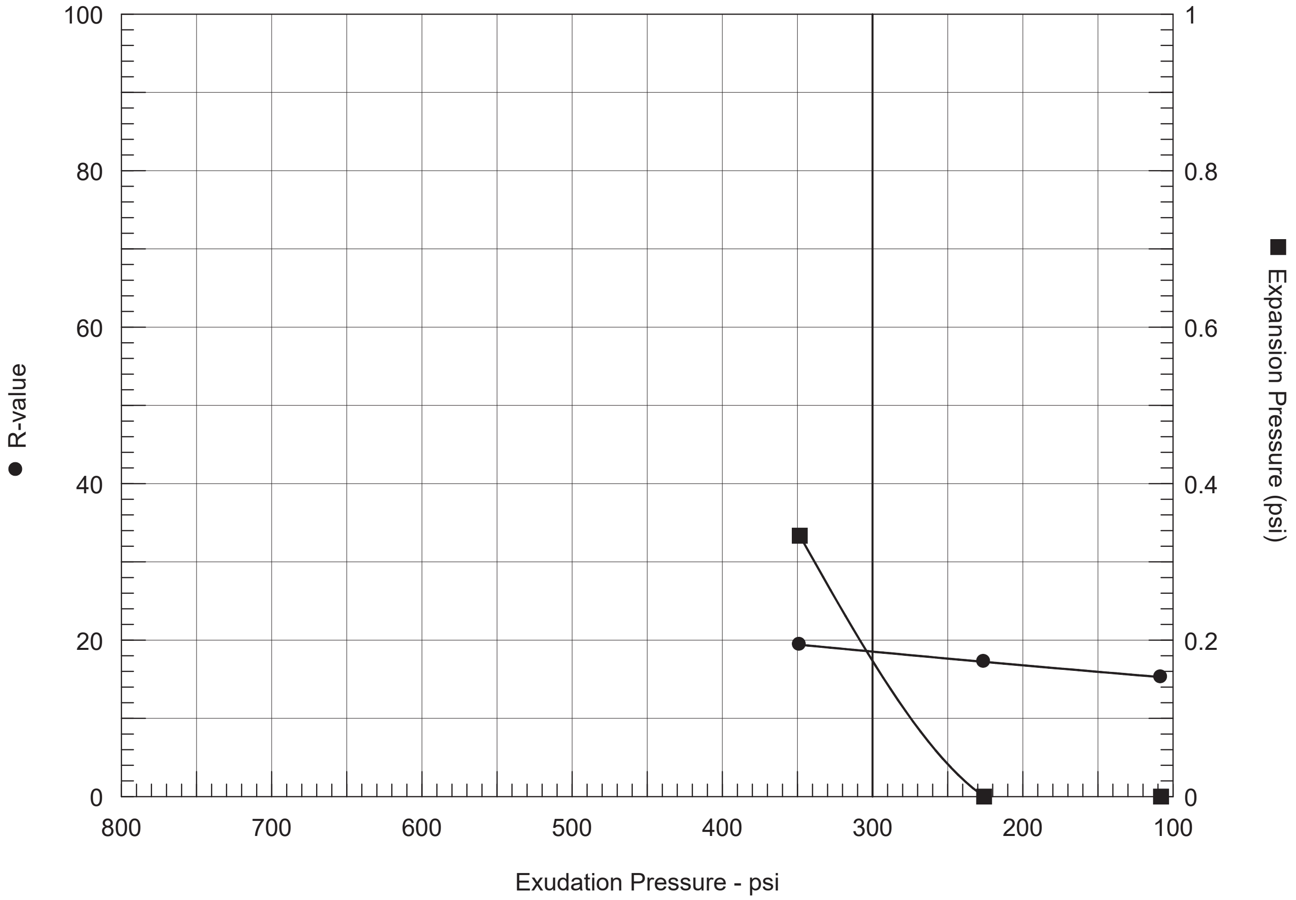
Remarks:
09/28/2025

R-VALUE TEST REPORT

SOILS ENGINEERING, INC.

Figure D-1

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	100	115.9	15.3	0.33	112	2.60	348	18	19
2	70	114.0	16.4	0.00	114	2.51	226	17	17
3	50	107.1	17.4	0.00	120	2.58	108	15	15

Test Results	Material Description
R-value at 300 psi exudation pressure = 19 **Exp. pressure at 300 psi exudation pressure =** 0.17 psi	SANDY CLAY (B-8)

Project No.: 20447

Project: Vaca Dixon Power Center

Location: B-8 @ 0-5'

Depth: 0-5'

Date: 10/22/2025

Tested by: RC

Checked by:

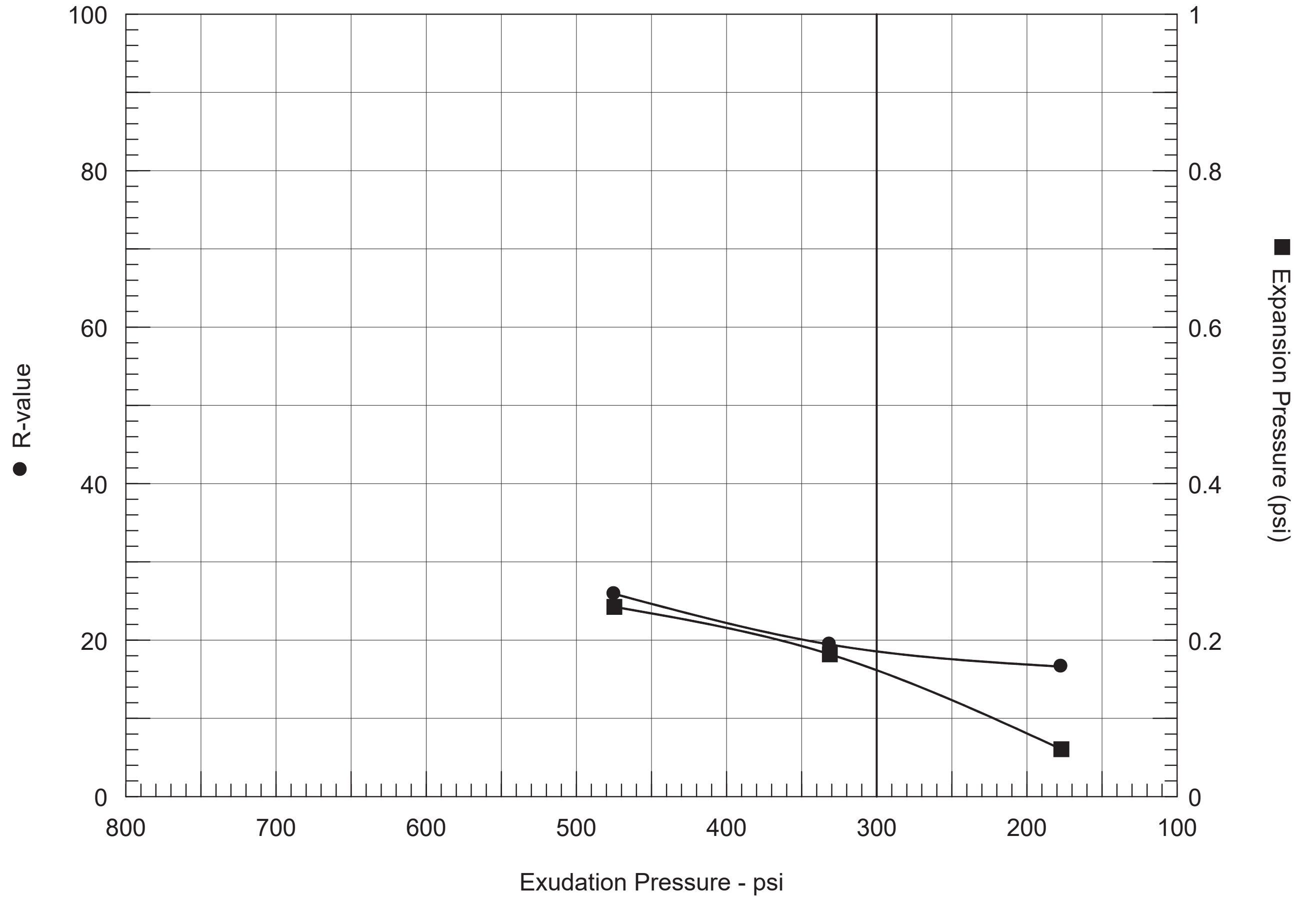
Remarks:
Test Date: 09/30/2025

R-VALUE TEST REPORT

SOILS ENGINEERING, INC.

Figure D-2

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	185	122.2	13.1	0.24	100	2.45	475	26	26
2	120	118.8	14.2	0.18	112	2.54	331	19	19
3	70	116.9	15.2	0.06	116	2.53	177	17	17

Test Results	Material Description
R-value at 300 psi exudation pressure = 19 **Exp. pressure at 300 psi exudation pressure =** 0.16 psi	CLAYEY SAND (B-10)

Project No.: 20447

Project: Vaca Dixon Power Center

Location: B-10 @ 0-5'

Depth: 0-5'

Date: 10/22/2025

Tested by: RC

Checked by:

Remarks:
Test Date: 09/30/2025

R-VALUE TEST REPORT

SOILS ENGINEERING, INC.

Figure D-3

Soils Engineering, Inc.
4400 Yeager Way, Bakersfield, CA 93313
Ph: (661) 831-5100 / Fax: (661) 831-2111

Report No: PTR:25-6664-01
Issue Number: 1

Proctor Report

Client: Middle River Power
CC:
Project: Vaca Dixon Power Center

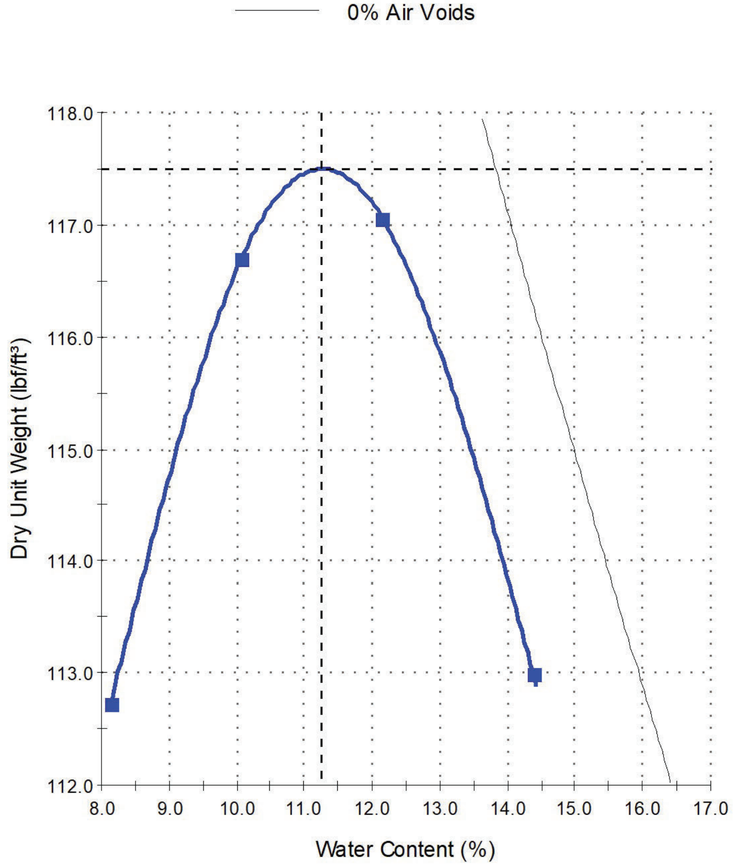
Location: APN: 0133060060 - 38.396085, -121.921605 - Vacaville, Solano County, CA
Jurisdiction:
SEI No: 20447

Submitted By: Andrew Lucas (Laboratory Manager)
Date: 10/10/2025

Sample Details

Sample ID: 25-6664-01
Date Sampled: 10/7/2025
Sampling Method: Sampled per ASTM D75
Source: Native
Material: Native
Specification:
Location: B-4 @0-5'

Dry Unit Weight - Water Content Relationship



Test Results

ASTM D 1557

Maximum Dry Unit Weight (lbf/ft³): **117.5**
Optimum Water Content (%): **11.3**
Method: A
Preparation Method: Moist
Rammer Type: Mechanical
Specific Gravity (Fines): 2.55
Tested By: Saul Cardenas Monreal
Date Tested: 10/7/2025
Visual Description: CLAYEY SAND; dark brown, low plasticity, damp, trace of organics

Figure E-1

Comments

Soils Engineering, Inc.
4400 Yeager Way, Bakersfield, CA 93313
Ph: (661) 831-5100 / Fax: (661) 831-2111

Report No: PTR:25-6612-01
Issue Number: 1

Proctor Report

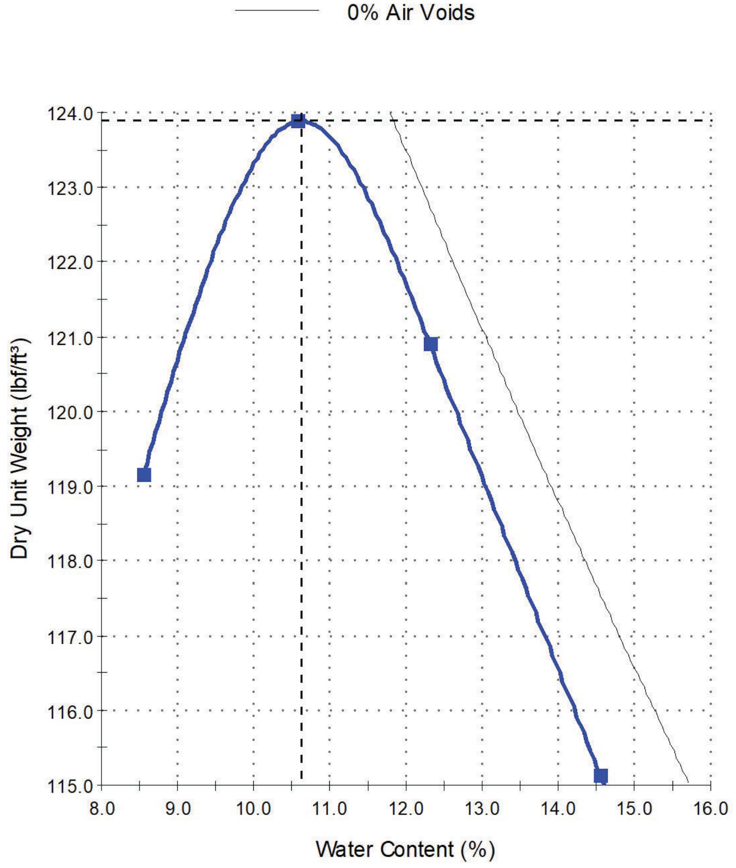
Client: Middle River Power **CC:**
Project: Vaca Dixon Power Center
Location: APN: 0133060060 - 38.396085, -121.921605 - Vacaville, Solano County, CA
Jurisdiction:
SEI No: 20447

Submitted By: Andrew Lucas (Laboratory Manager)
Date: 10/7/2025

Sample Details

Sample ID:	25-6612-01	**Date Sampled:**	10/6/2025
Sampling Method:	Sampled per ASTM D75		
Source:	Native		
Material:	Native		
Specification:			
Location:	B-8 @0-5'		

Dry Unit Weight - Water Content Relationship



Test Results

ASTM D 1557

Maximum Dry Unit Weight (lbf/ft³):	**123.9**
Optimum Water Content (%):	**10.6**
Method:	A
Preparation Method:	Moist
Specific Gravity (Fines):	2.60
Tested By:	Saul Cardenas Monreal
Date Tested:	10/6/2025
Visual Description:	CLAYEY SAND; dark brown, low plasticity, dry to damp, trace of organics

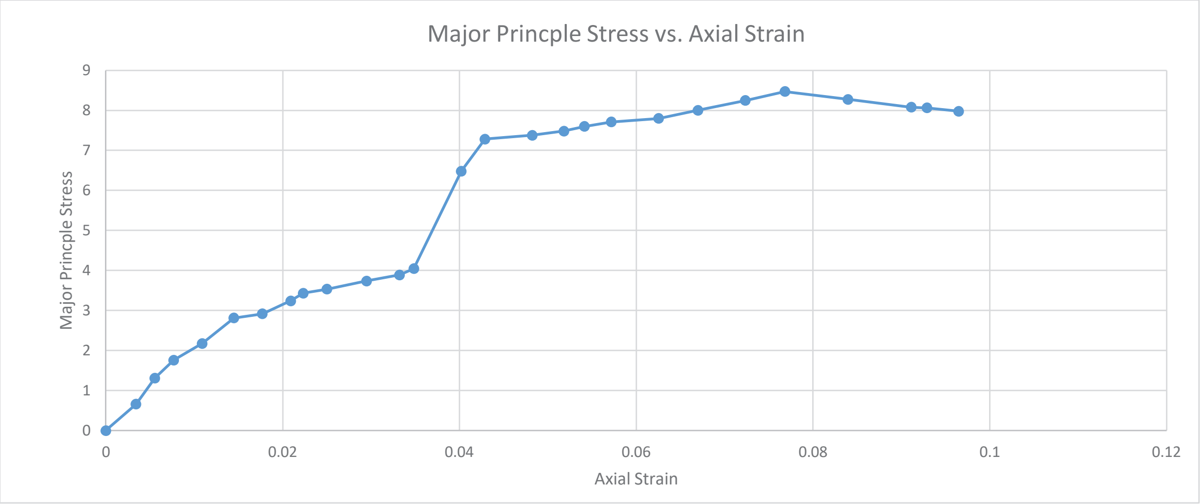
Figure E-2

Comments

Unconfined Compression Report

Initial Average Diameter D_0(in.)= 2.41 should be close to 2.375 which is the inside diameter of boring tube
Initial Average Height H_0(in.)= 5.60 shoot for 5.5", acceptable range is 4.75"-5.90" based on boring tube diameter
Initial Area A_0(in^2)= 4.57
Initial Volume V_0(in^3)= 25.57
Height to Diameter ratio= 2.32 ASTM specifies 2-2.5 ratio
Strain rate (%/min)= 1.25 strain rate must be between .5-2(%/min)
rate of hand crank (seconds/turn)= 4.29

	elapsed time	load dial	axial load	strain dial	total strain	unit strain	corrected area	stress	stress
Units	(sec)	(.001")	(lbs)	(.01")	(.001")		(in^2)	(lbs/in^2)	(ksf)
	0	0	2.06	0	0	0	0.00	0.00	0
	15	21	21.02	19	0.019	0.00339407	4.58	4.59	0.66
	30	44	41.79	31	0.031	0.00553769	4.59	9.10	1.31
	45	60	56.24	43	0.043	0.00768131	4.60	12.22	1.76
	60	75	69.79	61	0.061	0.01089675	4.62	15.11	2.18
	75	98	90.56	81	0.081	0.01446945	4.64	19.54	2.81
	90	102	94.17	99	0.099	0.01768489	4.65	20.25	2.92
	105	114	105.00	117	0.117	0.02090032	4.67	22.50	3.24
	120	121	111.33	125	0.125	0.0223294	4.67	23.82	3.43
	135	125	114.94	140	0.14	0.02500893	4.69	24.53	3.53
	150	133	122.16	165	0.165	0.02947481	4.71	25.95	3.74
	165	139	127.58	186	0.186	0.03322615	4.73	27.00	3.89
	180	145	133.00	195	0.195	0.03483387	4.73	28.10	4.05
	195	235	214.27	225	0.225	0.04019293	4.76	45.02	6.48
	210	265	241.36	240	0.24	0.04287245	4.77	50.57	7.28
	225	270	245.88	270	0.27	0.04823151	4.80	51.23	7.38
	240	275	250.39	290	0.29	0.05180422	4.82	51.97	7.48
	255	280	254.91	303	0.303	0.05412647	4.83	52.78	7.60
	270	285	259.42	320	0.32	0.05716327	4.85	53.54	7.71
	285	290	263.94	350	0.35	0.06252233	4.87	54.16	7.80
	300	299	272.07	375	0.375	0.06698821	4.90	55.56	8.00
	315	310	282.00	405	0.405	0.07234727	4.92	57.26	8.25
	330	320	291.03	430	0.43	0.07681315	4.95	58.81	8.47
	345	315	286.51	470	0.47	0.08395856	4.99	57.45	8.27
	360	310	282.00	510	0.51	0.09110397	5.03	56.10	8.08
	375	310	282.00	520	0.52	0.09289032	5.04	55.99	8.06
	390	308	280.19	540	0.54	0.09646302	5.06	55.42	7.98



Unconfined Compressive strength Q_u= 8.47 (ksf)
Unconfined Compressive strength Q_u= 58.81 (psi)
Cohesion C = 4.23 (ksf)

SOILS ENGINEERING, INC.

Client: Middle River Power

Project: Vaca Dixon Power Center

Location: B-16 **Depth:** 11'

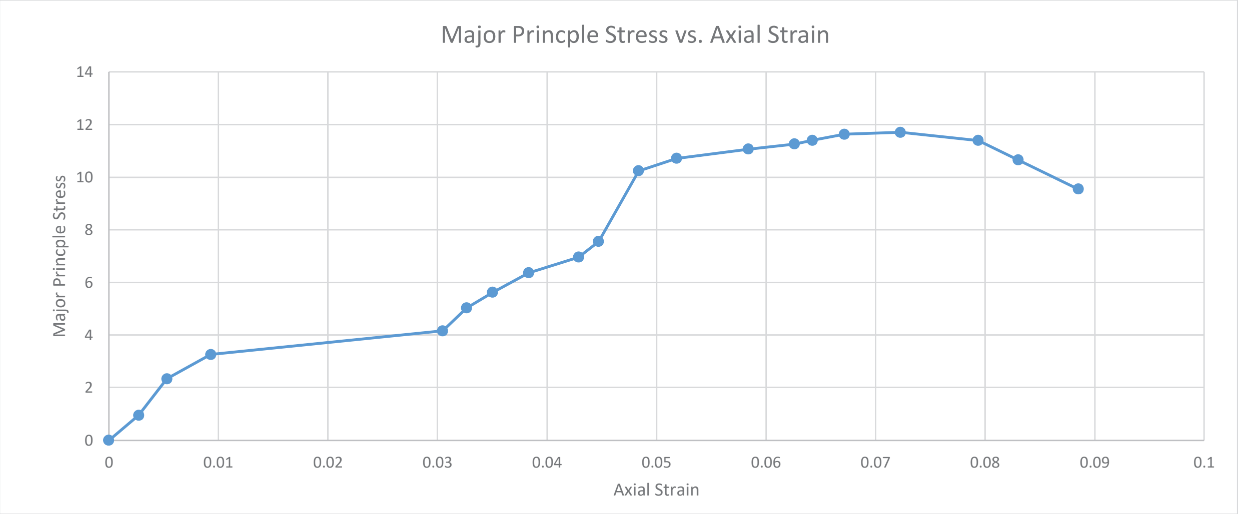
Material Description: SANDY CLAY; light brown, high plasticity, stiff.

Project No.: 20447 **Figure** F-1

Unconfined Compression Report

Initial Average Diameter D_0(in.)= 2.41 should be close to 2.375 which is the inside diameter of boring tube
Initial Average Height H_0(in.)= 5.48 shoot for 5.5", acceptable range is 4.75"-5.90" based on boring tube diameter
Initial Area A_0(in^2)= 4.56
Initial Volume V_0(in^3)= 24.99
Height to Diameter ratio= 2.27 ASTM specifies 2-2.5 ratio
Strain rate (%/min)= 1.25 strain rate must be between .5-2(%/min)
rate of hand crank (seconds/turn)= 4.38

	elapsed time	load dial	axial load	strain dial	total strain	unit strain	corrected area	stress	stress
Units	(sec)	(.001")	(lbs)	(.01")	(.001")		(in^2)	(lbs/in^2)	(ksf)
	0	0	2.06	0	0	0	0.00	0.00	0
	15	31	30.05	15	0.015	0.00273723	4.57	6.57	0.95
	30	80	74.30	29	0.029	0.00529197	4.59	16.20	2.33
	45	113	104.10	51	0.051	0.00930657	4.60	22.61	3.26
	60	148	135.71	167	0.167	0.03047445	4.70	28.85	4.15
	75	180	164.60	179	0.179	0.03266423	4.71	34.91	5.03
	90	202	184.47	192	0.192	0.0350365	4.73	39.03	5.62
	105	230	209.76	210	0.21	0.03832117	4.74	44.23	6.37
	120	253	230.53	235	0.235	0.04288321	4.77	48.38	6.97
	135	275	250.39	245	0.245	0.04470803	4.77	52.45	7.55
	150	375	340.70	265	0.265	0.04835766	4.79	71.09	10.24
	165	394	357.85	284	0.284	0.05182482	4.81	74.40	10.71
	180	410	372.30	320	0.32	0.05839416	4.84	76.86	11.07
	195	419	380.43	343	0.343	0.06259124	4.87	78.19	11.26
	210	425	385.85	352	0.352	0.06423358	4.87	79.17	11.40
	225	435	394.88	368	0.368	0.06715328	4.89	80.77	11.63
	240	440	399.39	396	0.396	0.07226277	4.92	81.24	11.70
	255	432	392.17	435	0.435	0.07937956	4.95	79.16	11.40
	270	405	367.79	455	0.455	0.0830292	4.97	73.95	10.65
	285	365	331.67	485	0.485	0.08850365	5.00	66.28	9.55



Unconfined Compressive strength Q_u= 11.70 (ksf)
Unconfined Compressive strength Q_u= 81.24 (psi)
Cohesion C = 5.85 (ksf)

SOILS ENGINEERING, INC.

Client: Middle River Power

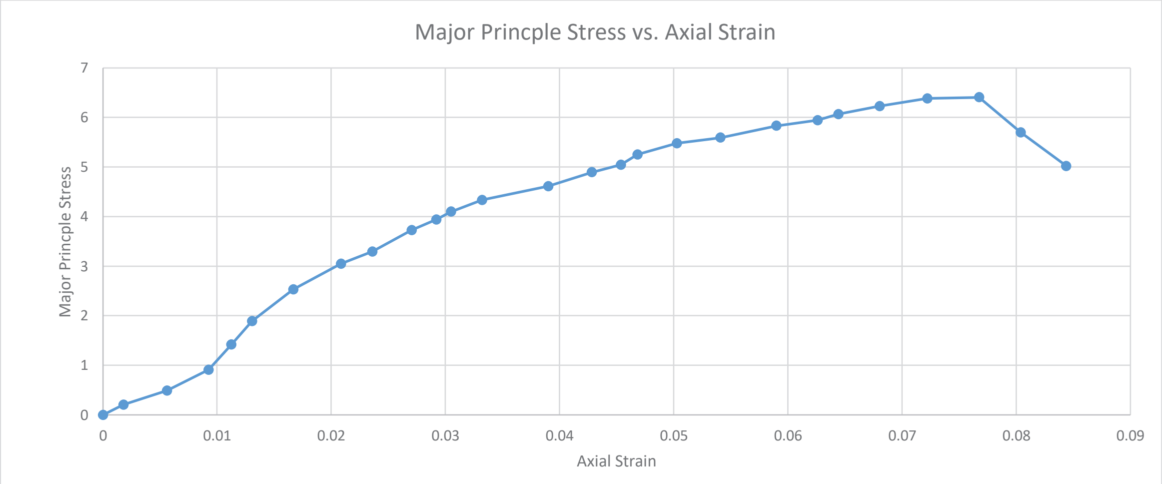
Project: Vaca Dixon Power Center

Location: B-16 **Depth:** 21'
Material Description: SANDY CLAY; light brown, high plasticity, stiff.
Project No.: 20447 **Figure** F-2

Unconfined Compression Report

Initial Average Diameter D_0(in.)=	2.41	should be close to 2.375 which is the inside diameter of boring tube
Initial Average Height H_0(in.)=	5.51	shoot for 5.5", acceptable range is 4.75"-5.90" based on boring tube diameter
Initial Area A_0(in^2)=	4.56	
Initial Volume V_0(in^3)=	25.13	
Height to Diameter ratio=	2.29	ASTM specifies 2-2.5 ratio
Strain rate (%/min)=	1.25	strain rate must be between .5-2(%/min)
rate of hand crank (seconds/turn)=	4.36	

	elapsed time	load dial	axial load	strain dial	total strain	unit strain	corrected area	stress	stress
Units	(sec)	(.001")	(lbs)	(.01")	(.001")		(in^2)	(lbs/in^2)	(ksf)
	0	0	2.06	0	0	0	0.00	0.00	0
	15	5	6.57	10	0.01	0.00181488	4.57	1.44	0.21
	30	15	15.60	31	0.031	0.00562613	4.59	3.40	0.49
	45	30	29.15	51	0.051	0.0092559	4.60	6.33	0.91
	60	48	45.40	62	0.062	0.01125227	4.61	9.84	1.42
	75	65	60.75	72	0.072	0.01306715	4.62	13.15	1.89
	90	88	81.52	92	0.092	0.01669691	4.64	17.58	2.53
	105	107	98.68	115	0.115	0.02087114	4.66	21.19	3.05
	120	116	106.81	130	0.13	0.02359347	4.67	22.87	3.29
	135	132	121.26	149	0.149	0.02704174	4.69	25.87	3.73
	150	140	128.48	161	0.161	0.0292196	4.70	27.35	3.94
	165	146	133.90	168	0.168	0.03049002	4.70	28.46	4.10
	180	155	142.03	183	0.183	0.03321234	4.72	30.11	4.34
	195	166	151.96	215	0.215	0.03901996	4.75	32.02	4.61
	210	177	161.90	236	0.236	0.04283122	4.76	33.98	4.89
	225	183	167.31	250	0.25	0.04537205	4.78	35.02	5.04
	240	191	174.54	258	0.258	0.04682396	4.78	36.48	5.25
	255	200	182.67	277	0.277	0.05027223	4.80	38.04	5.48
	270	205	187.18	298	0.298	0.05408348	4.82	38.82	5.59
	285	215	196.21	325	0.325	0.05898367	4.85	40.48	5.83
	300	220	200.73	345	0.345	0.06261343	4.87	41.26	5.94
	315	225	205.24	355	0.355	0.06442831	4.87	42.10	6.06
	330	232	211.56	375	0.375	0.06805808	4.89	43.23	6.23
	345	239	217.88	398	0.398	0.0722323	4.92	44.32	6.38
	360	241	219.69	423	0.423	0.07676951	4.94	44.47	6.40
	375	215	196.21	443	0.443	0.08039927	4.96	39.56	5.70
	390	190	173.63	465	0.465	0.08439201	4.98	34.86	5.02
	415	130	119.45	490	0.49	0.08892922	5.01	23.86	3.44
	420	96	88.75	520	0.52	0.09437387	5.04	17.62	2.54



Unconfined Compressive strength Q_u=	6.40	(ksf)
Unconfined Compressive strength Q_u=	44.47	(psi)
Cohesion C =	3.20	(ksf)

SOILS ENGINEERING, INC.

Client: Middle River Power

Project: Vaca Dixon Power Center

Location: B-16 **Depth:** 41'

Material Description: SANDY CLAY

Project No.: 20447 **Figure** F-3

APPENDIX D

SEISMIC INVESTIGATION

SEISMIC DESIGN INFORMATION

SEAOC Design Map Summary and Detail Report

EQFAULT

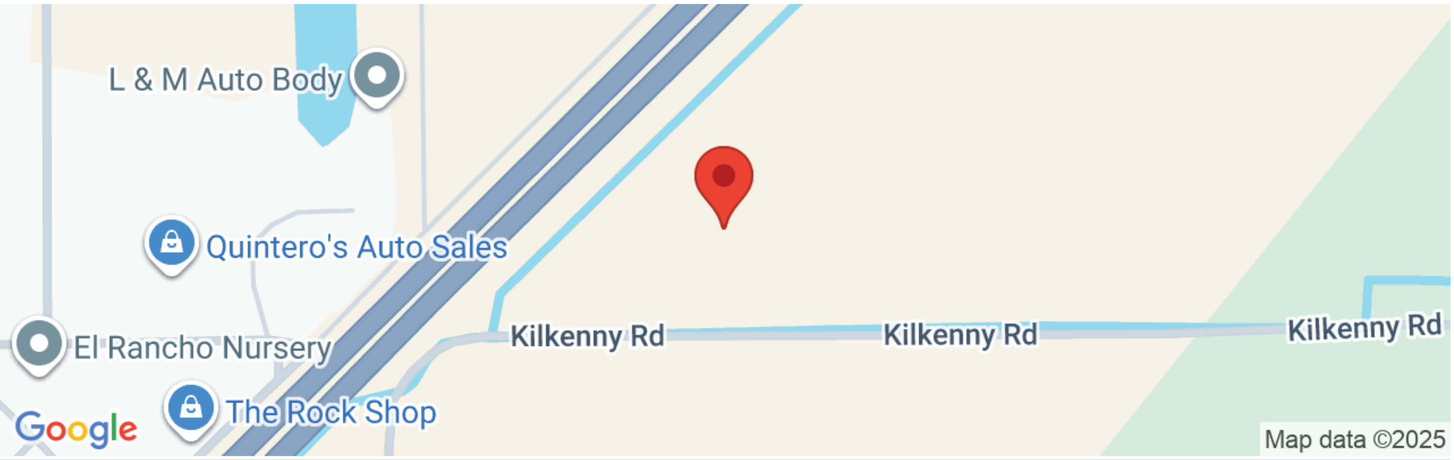
Version 3.00

California Fault Map

Announcement
ASCE 7-22 is now available.

20447 MRP, Vaca Dixon Power Center

Latitude, Longitude: 38.396043, -121.921533



Date	9/26/2025, 1:16:55 PM
Design Code Reference Document	ASCE7-16
Risk Category	III
Site Class	D

Type	Value	Description
S_S	1.215	MCE_R ground motion. (for 0.2 second period)
S_1	0.436	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.232	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	0.821	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.014	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.507	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.557	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.215	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.313	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.478	Factored deterministic acceleration value. (0.2 second)
S1RT	0.436	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.47	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.827	Factored deterministic acceleration value. (1.0 second)
PGAd	1.002	Factored deterministic acceleration value. (Peak Ground Acceleration)

Type	Value	Description
PGA_{UH}	0.507	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.925	Mapped value of the risk coefficient at short periods
C_{R1}	0.93	Mapped value of the risk coefficient at a period of 1 s
C_V	1.343	Vertical coefficient

DISCLAIMER

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                             ***********************
                             *                     *
                             *    E Q F A U L T    *
                             *                     *
                             *    Version 3.00     *
                             *                     *
                             ***********************

                           DETERMINISTIC ESTIMATION OF
                     PEAK ACCELERATION FROM DIGITIZED FAULTS


JOB NUMBER: 20447
                                                     DATE: 09-26-2025

JOB NAME: Vaca Dixon Power Center

CALCULATION NAME: Test Run Analysis

FAULT-DATA-FILE NAME: CGSFLTE.DAT

SITE COORDINATES:
   SITE LATITUDE:  38.3960
   SITE LONGITUDE:  121.9215

SEARCH RADIUS:   100  mi

ATTENUATION RELATION:   3) Boore et al. (1997) Horiz. - NEHRP D (250)
   UNCERTAINTY (M=Median, S=Sigma): M       Number of Sigmas:  0.0
   DISTANCE MEASURE:  cd_2drp
   SCOND:   0
   Basement Depth:  5.00 km     Campbell SSR:        Campbell SHR:
   COMPUTE PEAK HORIZONTAL ACCELERATION

FAULT-DATA FILE USED:  CGSFLTE.DAT


MINIMUM DEPTH VALUE (km):  0.0
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                                 ---------------
                                 EQFAULT SUMMARY
                                 ---------------



                          -----------------------------
                          DETERMINISTIC SITE PARAMETERS
                          -----------------------------

Page  1
-------------------------------------------------------------------------------
                                |              |ESTIMATED MAX. EARTHQUAKE EVENT
                                | APPROXIMATE  |-------------------------------
          ABBREVIATED           |   DISTANCE   | MAXIMUM  |   PEAK   |EST. SITE
          FAULT  NAME           |   mi   (km)  |EARTHQUAKE|   SITE   |INTENSITY
                                |              | MAG.(Mw) | ACCEL. g |MOD.MERC.
================================|==============|==========|==========|=========
GREAT VALLEY 4                  |   0.8(   1.3)|   6.6    |   0.595  |    X
GREAT VALLEY 5                  |   6.5(  10.5)|   6.5    |   0.319  |   IX
CONCORD/GV (GVN)                |  13.9(  22.3)|   6.0    |   0.122  |   VII
CONCORD/GV (GVS+GVN)            |  13.9(  22.3)|   6.5    |   0.156  |  VIII
CONCORD/GV (CON+GVS+GVN)        |  13.9(  22.3)|   6.7    |   0.176  |  VIII
CONCORD/GV (FLOATING)           |  13.9(  22.3)|   6.2    |   0.134  |  VIII
CONCORD/GV (GVS)                |  15.4(  24.8)|   6.2    |   0.127  |  VIII
CONCORD/GV (CON+GVS)            |  15.4(  24.8)|   6.6    |   0.152  |  VIII
HUNTING CREEK - BERRYESSA       |  15.4(  24.8)|   7.1    |   0.199  |  VIII
GREAT VALLEY 3                  |  19.1(  30.8)|   6.9    |   0.186  |  VIII
WEST NAPA                       |  22.5(  36.2)|   6.5    |   0.109  |   VII
CONCORD/GV (CON)                |  26.0(  41.9)|   6.3    |   0.086  |   VII
MOUNT DIABLO (MTD)              |  31.1(  50.1)|   6.7    |   0.112  |   VII
HAYWARD (HN+RC)                 |  34.7(  55.8)|   7.1    |   0.108  |   VII
HAYWARD (FLOATING)              |  34.7(  55.8)|   6.9    |   0.097  |   VII
HAYWARD (RC)                    |  34.7(  55.8)|   7.0    |   0.102  |   VII
HAYWARD (HS+HN+RC)              |  34.7(  55.8)|   7.3    |   0.117  |   VII
HAYWARD (HS+HN)                 |  35.0(  56.3)|   6.9    |   0.097  |   VII
HAYWARD (HN)                    |  35.0(  56.3)|   6.5    |   0.078  |   VII
GREENVILLE (GN)                 |  35.7(  57.5)|   6.7    |   0.083  |   VII
CALAVERAS (CN)                  |  40.3(  64.8)|   6.8    |   0.081  |   VII
CALAVERAS (CC+CN)               |  40.3(  64.8)|   6.2    |   0.061  |   VI
CALAVERAS (CS+CC+CN)            |  40.3(  64.8)|   6.9    |   0.088  |   VII
CALAVERAS (FLOATING)            |  40.3(  64.8)|   6.2    |   0.060  |   VI
HAYWARD (HS)                    |  42.3(  68.1)|   6.7    |   0.074  |   VII
MAACAMA - GERBERVILLE           |  43.6(  70.1)|   7.5    |   0.112  |   VII
FOOTHILLS FAULT SYSTEM 1        |  47.8(  77.0)|   6.5    |   0.075  |   VII
BARTLETT SPRINGS FAULT SYSTEM   |  48.7(  78.4)|   7.6    |   0.108  |   VII
COLLAYOMI                       |  49.0(  78.8)|   6.5    |   0.060  |   VI
GREAT VALLEY 7                  |  50.5(  81.3)|   6.7    |   0.079  |   VII
GREENVILLE (GS+GN)              |  51.0(  82.1)|   6.9    |   0.073  |   VII
GREENVILLE (GS)                 |  51.0(  82.1)|   6.6    |   0.061  |   VI
GREENVILLE (FLOATING)           |  51.0(  82.1)|   6.2    |   0.050  |   VI
GREAT VALLEY 2                  |  51.9(  83.6)|   6.4    |   0.066  |   VI
SAN ANDREAS (SAN)               |  52.8(  84.9)|   7.5    |   0.094  |   VII
SAN ANDREAS (SAS+SAP+SAN)       |  52.8(  84.9)|   7.8    |   0.110  |   VII
SAN ANDREAS (SAP+SAN+SAO)       |  52.8(  84.9)|   7.8    |   0.114  |   VII
SAN ANDREAS (SAS+SAP+SAN+SAO)   |  52.8(  84.9)|   7.9    |   0.119  |   VII
SAN ANDREAS (FLOATING)          |  52.8(  84.9)|   6.9    |   0.070  |   VI
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SAN ANDREAS (SAP+SAN)           |  52.8(  84.9)|   7.7    |   0.104  |   VII



                          -----------------------------
                          DETERMINISTIC SITE PARAMETERS
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Page  2
-------------------------------------------------------------------------------
                                |              |ESTIMATED MAX. EARTHQUAKE EVENT
                                | APPROXIMATE  |-------------------------------
          ABBREVIATED           |   DISTANCE   | MAXIMUM  |   PEAK   |EST. SITE
          FAULT  NAME           |   mi   (km)  |EARTHQUAKE|   SITE   |INTENSITY
                                |              | MAG.(Mw) | ACCEL. g |MOD.MERC.
================================|==============|==========|==========|=========
SAN ANDREAS (SAN+SAO)           |  52.8(  84.9)|   7.7    |   0.107  |   VII
SAN ANDREAS (SAP)               |  55.1(  88.6)|   7.2    |   0.077  |   VII
SAN ANDREAS (SAS+SAP)           |  55.1(  88.6)|   7.4    |   0.089  |   VII
POINT REYES                     |  55.1(  88.7)|   7.0    |   0.087  |   VII
SAN GREGORIO (SGS+SGN)          |  57.4(  92.4)|   7.4    |   0.087  |   VII
SAN GREGORIO (SGN)              |  57.4(  92.4)|   7.2    |   0.078  |   VII
SAN GREGORIO (FLOATING)         |  57.4(  92.4)|   6.9    |   0.066  |   VI
FOOTHILLS FAULT SYSTEM 2        |  59.3(  95.4)|   6.5    |   0.063  |   VI
GREAT VALLEY 1                  |  64.5( 103.8)|   6.7    |   0.066  |   VI
FOOTHILLS FAULT SYSTEM 3        |  65.7( 105.7)|   6.5    |   0.058  |   VI
CALAVERAS (CC)                  |  66.0( 106.2)|   6.2    |   0.041  |    V
CALAVERAS (CS+CC FLOATING)      |  66.0( 106.2)|   6.2    |   0.041  |    V
CALAVERAS (CS+CC)               |  66.0( 106.2)|   6.4    |   0.044  |   VI
MONTE VISTA - SHANNON           |  68.6( 110.4)|   6.7    |   0.063  |   VI
GREAT VALLEY 8                  |  77.4( 124.5)|   6.6    |   0.054  |   VI
SAN ANDREAS (SAS)               |  84.4( 135.8)|   7.0    |   0.052  |   VI
ORTIGALITA                      |  85.1( 137.0)|   7.1    |   0.054  |   VI
FOOTHILLS FAULT SYSTEM 4        |  87.2( 140.4)|   6.5    |   0.047  |   VI
ZAYANTE-VERGELES                |  90.3( 145.4)|   7.0    |   0.049  |   VI
*******************************************************************************
-END OF SEARCH-   59 FAULTS FOUND WITHIN THE SPECIFIED SEARCH RADIUS.

THE GREAT VALLEY 4                   FAULT IS CLOSEST TO THE SITE.
IT IS ABOUT 0.8 MILES (1.3 km) AWAY.

LARGEST MAXIMUM-EARTHQUAKE SITE ACCELERATION: 0.5948 g
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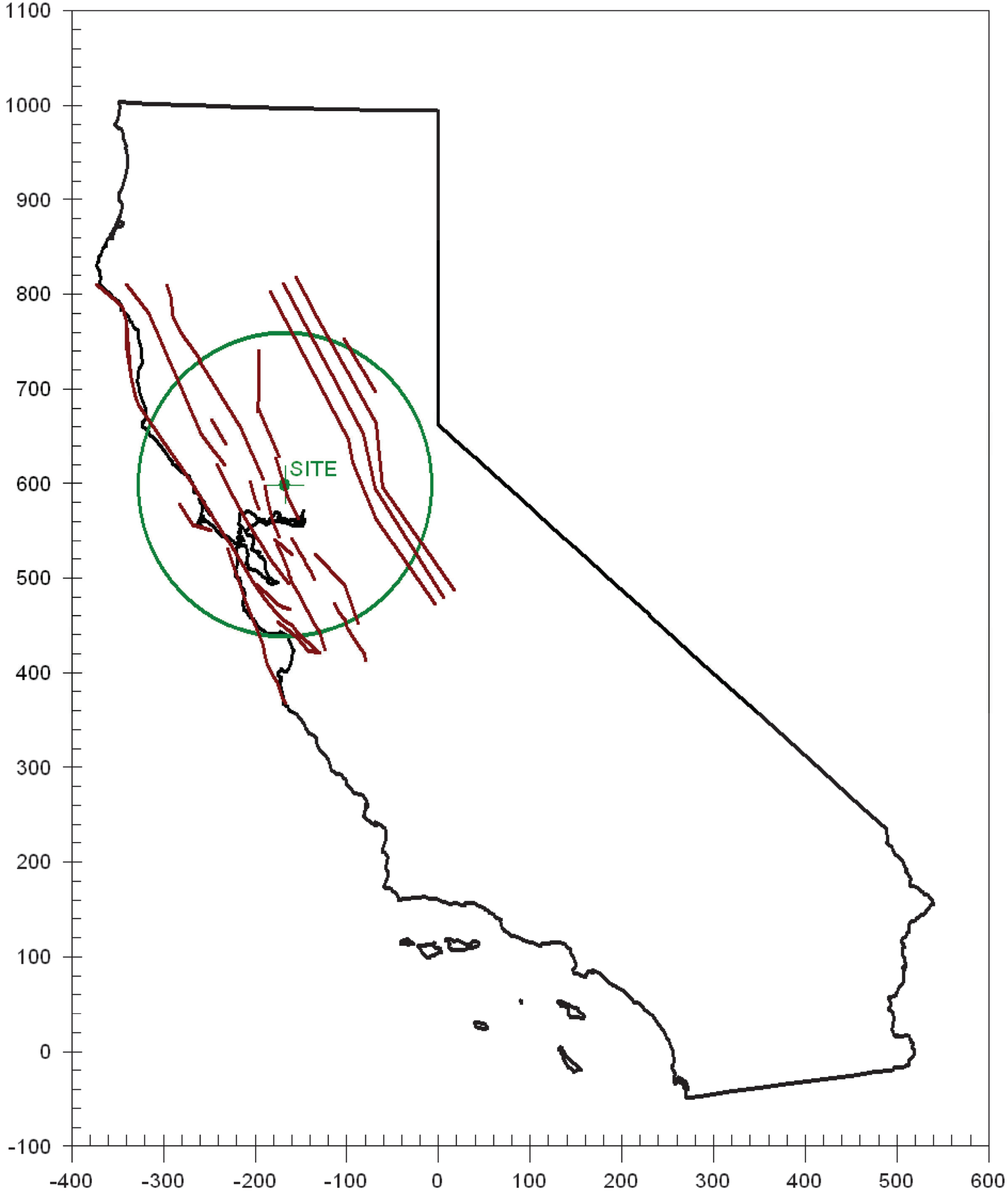
CALIFORNIA FAULT MAP
Vaca Dixon Power Center

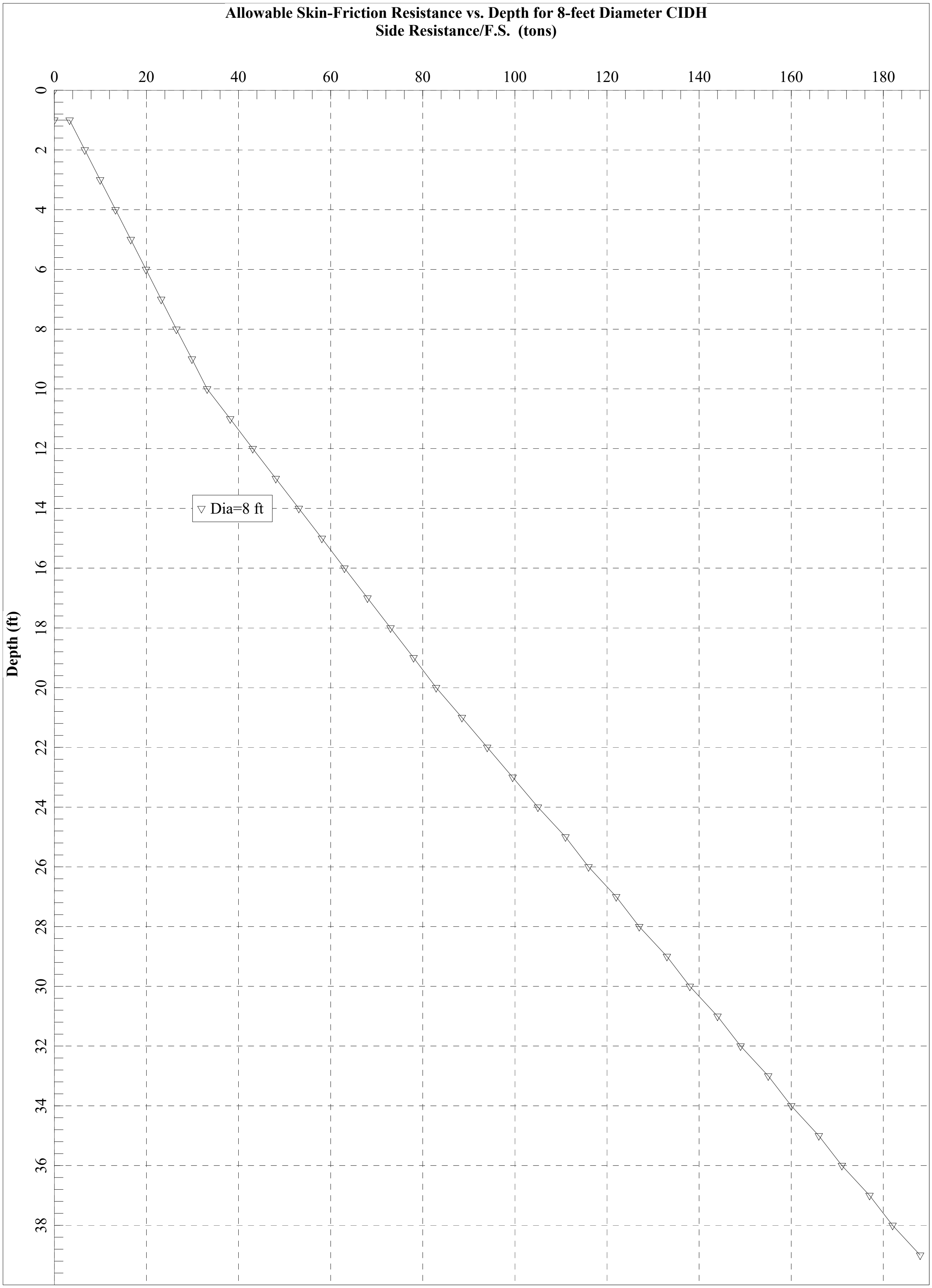


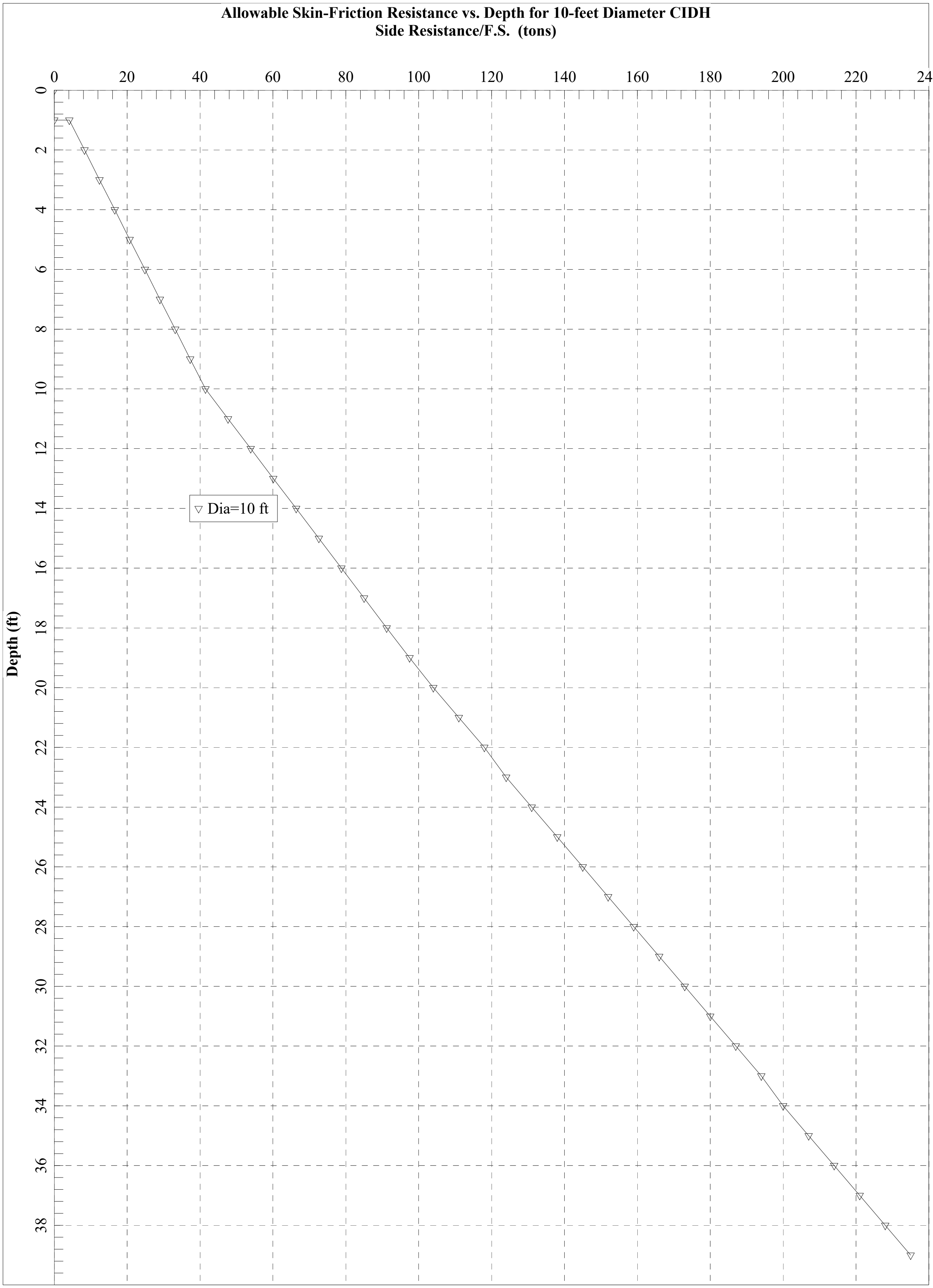
APPENDIX E

DRILLED PIER SKIN FRICTION

96 & 120 inch diameter drilled pier (CIDH), allowable capacity in compression for skin friction.

Allowable Skin-Friction Resistance vs. Depth for 8-feet Diameter CIDH



Allowable Skin-Friction Resistance vs. Depth for 10-feet Diameter CIDH
Side Resistance/F.S. (tons)
0
20
40
60
80
100
120
140
160
180
200
220
240
Depth (ft)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
▽ Dia=10 ft