SOILS ENGINEERING, INC.

GEOTECHNICAL INVESTIGATION REPORT

FOR THE

MCFARLAND POLICE STATION

APN: 201-070-64 | 35.667359, -119.231853 | MCFARLAND, CA

Prepared for:

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By:

SOILS ENGINEERING, INC.
SEI File No. 25-20251
April 4, 2025

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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 supplement to the "Earthwork Recommendations" section of this report.

Appendix B, "Field Investigation," contains a boring location map, Figure 1, and Logs of Test Borings, Figures 2 and 3.

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

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

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 McFarland Police Station project is located at the northeast corner of the intersection of Taylor Avenue and Mast Avenue in McFarland, CA (site). The proposed development at the subject site is to construct a new police station. The police station will consist of a building with paved parking. We anticipate the building will be constructed of a combination of concrete, wood, masonry and/or metal framing. Project area borders include Mast Avenue to the west, Taylor Avenue to the south, Central Valley Modified Community to the east and vacant land to the north.

The project area surface appears to be mainly a dirt surface and is relatively flat.

B. GEOLOGIC SETTING

According to the 2010 Geologic Map of California the zone of influence for the proposed construction is located wholly within Pleistocene-Holocene marine and nonmarine (continental) sedimentary rock deposits (Q) within the southern San Joaquin Valley. Although the site is not located in an Alquist-Priolo (earthquake fault) Special Study Zone, there are various earthquake faults in the vicinity. Nearby faults, with distances from the site, are tabulated below.

Kern Front	3.5	miles/	5.6	Kilometers
White Wolf	40.1	miles/	64.5	Kilometers
San Andreas – Cho-Moj M-1b-1 and other segments	43	miles/	69.2	Kilometers
San Andreas – Cholame M-1c-1............	43.2	miles/	69.5	Kilometers
Great Valley 14	46.5	miles/	74.8	kilometers
Pleito Thrust	46.7	miles/	75.2	kilometers
San Juan..	54.2	miles/	87.3	Kilometers

The largest estimated maximum site acceleration, based on deterministic methods, is 0.395g from an 6.3 magnitude earthquake on the Kern Front Fault approximately 5.6 kilometers away. The information above is from the program EQFault (vers.3.0) and a complete listing of faults within 100-miles is presented in Appendix D.

C. SUBSURFACE CONDITIONS

Surface soils encountered in our field investigation consisted predominately of upper soil layers of a damp to moist, cohesive Clayey Sand (SC) that is underlain by a damp, fine to coarse grained, and medium dense Poorly Graded Sand (SP). Also encountered was a damp, fine to medium grained Silty Sand (SM), a low plasticity Sandy Silt (ML) and a moist, low to medium plasticity, and medium stiff to very stiff Sandy Clay/ Clay (CL). These soils are classified as SC, SP, SM, ML, and CL, respectively in the Unified Soil Classification System (USCS).

The majority of the near surface soils should provide adequate support for the proposed structures provided that a portion of the surface soils are excavated and compacted as outlined in the earthwork recommendations of this report. Detailed descriptions of the various soils encountered during our field investigation are shown on Figures 2 and 3 in Appendix B, “Field Investigation.” A “Key to Symbols” legend describing the symbols in the boring logs is also attached.

D. GROUNDWATER

Groundwater was not encountered in the soil borings which extended to a maximum depth of 51.5’ bgs. According to recent maps prepared by the California Department of Water Resources (DWR) and presented on the State SGMA Data Viewer, depth to water was 335’ in the Spring of 2024 to 270’ in the Spring of 2011 near the site. Historical depth to water data from the DWR and presented on the Water Data Library Station Map indicates that the shallowest depth to water within a mile is approximately 110’ in 1992. It is expected that groundwater will be deep enough to not be an issue to this site.

E. DRAINAGE BASIN STUDY

Based on our field investigation, it is our engineering opinion that the majority of the sump areas can be expected to have permeable subsurface soils at a depth of 5 feet below existing grade (See percolation test rates, shown on the Laboratory Summary Table 2, Appendix C). Accordingly, the proposed sump shall drain in seven days or less. For design infiltration rate, 14 inch per day should be used.

If impermeable cohesive soil layers are encountered during the sump construction, these materials shall be excavated and replaced with clean cohesionless sand. Our field representative will review the construction process of the proposed sump. A letter will be issued stating compliance with these requirements when the construction of the sump is completed.

F. SEISMIC DESIGN VALUES

The seismic design values presented in the table below are based on the 2022 CBC. The Site Class for the proposed project is a Site Class "D" in accordance with the 2022 CBC §1613.2.2, soil boring data and local knowledge. The site is not located within an Alquist-Priolo (earthquake fault) Special Study Zone.

SEISMIC DESIGN CRITERIA		VALUE	SOURCE
Risk Category		**IV**	2022 CBC Table 1604.5
Site Class		**D**	2022 CBC § 1613.2.2; ASCE 7-16 Table. 20.3-1; Site Specific Soils Report and Local Knowledge.
Mapped MCE_R Spectral Response Acceleration, short period	S_S	**0.754**	SEAOC-OSHPD software; 2022 CBC Figure 1613.2.1(1)
Mapped MCE_R Spectral Response Acceleration, at 1-sec. Period	S_1	**0.283g**	SEAOC-OSHPD software; 2022 CBC Figure 1613.2.1(2)
Site Coefficient	F_a	**1.199**	SEAOC- OSHPD software; 2022 CBC Table 1613.2.3(1)
Site Coefficient	F_v*	**2.034***	2022 CBC Table 1613.2.3(2)
Adjusted MCE_R Spectral Response Acceleration, short period, $F_a * S_s$	S_{MS}	**0.903g**	SEAOC- OSHPD software; 2022 CBC §1613.2.3
Adjusted MCE_R Spectral Response Acceleration, 1-sec. period, $F_v * S_1 * 1.5$	S_{M1}*	**0.863g***	2022 CBC §1613.2.3
Design Spectral Response Acceleration, short period, 2/3 * S_{MS}	S_{DS}	**0.602g**	SEAOC- OSHPD software; 2022 CBC §1613.2.4
Design Spectral Response Acceleration, 1-sec. period, 2/3 * S_{MI}	S_{D1}*	**0.576g***	2022 CBC §1613.2.4
Peak Ground Acceleration for Max. Considered Earthquake (MCE_G)	**PGA**	**0.329g**	SEAOC- OSHPD software; ASCE 7-16 Fig 22-9
Adjusted PGA; F_{PGA} = 1.231, F_{PGA}* PGA=	PGA_M	**0.418g**	SEAOC- OSHPD software; ASCE 7-16 §11.8.3.2
Mapped Risk Coefficient at 0.2 second Spectral Response Period	C_{RS}	**0.923**	SEAOC- OSHPD software; ASCE 7-16 Figure 22-18A
Mapped Risk Coefficient at 1 second Spectral Response Period	C_{R1}	**0.922**	SEAOC- OSHPD software; ASCE 7-16 Figure 22-19A
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 S_{M1}, S_{D1}, and the Seismic Design Category/1-second period are based on the site coefficient, F_v, 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)

G. LIQUEFACTION & SEISMIC SETTLEMENT

Groundwater was not encountered in any of the on-site geotechnical soil borings to the total depth explored of 51.5' bgs. Historical DWR depth to water data shows a high of 110' in 1992 within a mile radius of the site borders. In addition, no perched or shallow ground water has been indicated near this area from 1982 to 2012. The lithology encountered in the subsurface (onsite and nearby projects) include mostly Clayey Sand, Silty Sand, Sandy Clay, Sandy Silt and Poorly Graded Sands. SPT equivalent blow counts in the on-site SEI soil borings ranged from 16 to 44 blowcounts per foot to a depth of 51.5'. A liquefaction analysis was performed on the on-site boring B-1 utilizing the program LiquefyPro (version 5.9b). Site-specific information was used in this analysis including; SPT blowcounts per foot, grain-size analysis, wet weight densities, the moment magnitude earthquake and the PGA for the MCEg earthquake motion (0.418g) and a depth to water of 110'. The liquefaction potential at this site appears to be minimal. See attached LiquefyPro data in Appendix D and the Geological Hazard Study for more detail.

Settlement

The estimated amount of dynamic settlement that would occur at this site during a major earthquake is approximately 0.14" at onsite boring B-1, based on the lithology encountered, the SPT equivalent blowcounts recorded during sampling and the settlement analysis conducted on boring B-1 utilizing the program LiquefyPro. The estimated amount of differential settlement is 0.07" over a span of 30 feet based on the program LiquefyPro results. These settlement values appear to be acceptable for the proposed development as long as the recommendations by the Geotechnical Engineer are implemented. See attached Liquefaction Analysis Calculation Sheets and graphs in Appendix D for more detail.

EARTHWORK RECOMMENDATIONS

"Earthwork Specifications," in Appendix A are provided for general guidance in preparing site grading plans. In addition, the following specific recommendations are provided and supersede the latter wherever discrepancies may exist:

A. COMPACTION AND OPTIMUM MOISTURE

Unless otherwise specified herein, the terms, "Compaction," or "Compacted," wherever used or implied within this report should be interpreted as compaction to 90 percent of the maximum density obtainable by ASTM Test Method D1557. The term, "Optimum Moisture," wherever used or implied within this report, should be interpreted as that obtained by the above-described test method.

B. STRIPPING

Prior to site grading, existing ground surfaces should be stripped of surface vegetation and high-volume root masses. A stripping depth of one to three inches is generally adequate. Stripped material shall not be used as engineered fill or blended with or incorporated into any materials which will underlie any structures or other improvements on the project. Removal of trees or other large plants shall include all roots larger than ¾" diameter. If necessary, root remnants are to be removed by hand-picking. Remove existing structures and improvements, including within the limits of grading or as depicted in the project documents.

C. GROUND SURFACE PREPARATION

Proposed Structure Areas:

Ground surfaces in the proposed building area should be compacted in accordance with the following procedures:

1. Excavate earth material to a minimum depth of three (3) feet below existing grade or one (1) foot below the bottom of the lowest foundation elevation in each of the structure areas, whichever is lower.

2. The bottom of the excavation shall be reviewed by the soil engineer or his or her representative prior to any backfill operations. *The top eight inches of materials exposed at the bottom of the excavation shall be scarified and compacted to a minimum of 90 percent of ASTM D-1557.*

3. Moisten soils to near the optimum moisture or to a 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 exterior footing and two feet beyond pavement edges. Where excavation may undermine or damage adjacent structures or utilities the geotechnical engineer shall be consulted.

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.

Concrete Flatwork, Slab-on-Grade, and Sidewalk Areas:

Ground surfaces to receive concrete flatwork and sidewalk should be over-excavate one foot below existing grade or one foot below bottom of the concrete. The bottom of the over-excavation should be scarified and compacted to a minimum depth of 8 inches. The upper two feet of the finish grade must be non-expansive material. The on-site expansive clayey soil is not suitable for the upper two feet of the finish grade.

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 concrete flatwork and sidewalk area 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.

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.

Compaction Requirements – where not otherwise specified in our plans or in these recommendations, the following compaction requirements are applicable to all electrical, gas or water conduits:

TABLE A COMPACTION DEPTH			
Area	**Haunch to 1 ft. Above Top Of Pipe**	**1 ft. Above Top of Pipe to 2'6" Below Finished Grade**	**2'6" Below Finished Grade to Finished Subgrade**
Structural	90%	90%	90%
Pavements	90%	90%	90%
Non-Structural	90%	90%	90%

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 on a case-by-case basis. No soil materials shall be imported onto the project site without prior approval by the Geotechnical Engineer. Any deviation from the specifications given below shall be approved by the Geotechnical Engineer 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 LIQUID LIMIT 40
MAXIMUM PLASTICITY INDEX 14
MINIMUM R-VALUE FOR PAVEMENT AREAS 50
MAXIMUM EXPANSION INDEX 20

Furthermore, the soils proposed for import shall be generally homogenous and shall not contain cemented 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 acceptance testing by the Geotechnical Engineer.

The contractor shall provide sufficient advance notice, prior to import operations, to allow testing and evaluation of the proposed import materials. 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 soil(s) which was sampled and tested is the same soil(s) 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. Installation of gravel-filled drains to route subsurface drainage away from walls will reduce the thickness of damp-proofing resulting in considerable savings.

G. SLOPES

Both fill and cut slopes should be constructed at 2:1 (horizontal to vertical) in accordance with the 2022 California Building Code.

Finished slopes nearer than five feet from building foundations should be graded no steeper than five horizontal to one vertical (5:1). A slope ratio of two horizontal to one vertical (2:1) should provide adequate stability for slopes farther than five feet from footing lines.

The fill slopes shall be compacted to a minimum of 90% of ASTM D1557 and in accordance with the Guide Specifications for Earthwork, Appendix A. This may be achieved by overfilling the constructed slope and trimming to a compacted finished surface, rolling the slope face with a sheepsfoot as the level of the fill is raised, or any method that achieves the desired product.

The cut portion of the slope should be constructed first. Prior to construction of the fill slope, incompetent surface soils should be removed from the top of the cut.

Areas to receive fill or to support structures, slabs or pavements should be removed of all vegetation, debris and disturbed soils. All existing uncertified fill soils should be excavated to expose competent native soils.

Existing underground pipelines, private sewage disposal systems and any water or oil wells, if encountered during grading, should be removed or capped in accordance with procedures considered acceptable by the appropriate governing agency. Tree roots to 2 inches in diameter should be removed.

Both fill and cut slopes will be subject to erosion immediately after grading, and should be designed to reduce surficial sloughing by implementing a permanent slope maintenance program as soon as practical after completion of slope construction.

Slope maintenance should include proper care of erosion and drainage control devices, rodent control, and immediate planting with deep-rooting, lightweight, drought-resistant vegetation. An erosion control geotextile may also be used in combination with vegetation to control erosion.

Experience has shown that slope performance is largely dependent upon proper slope maintenance (i.e., planting, proper watering, clearing of drainage devices, etc.). Slopes properly placed and conscientiously maintained are not expected to display excessive raveling or sloughing.

FOUNDATIONS RECOMMENDATIONS

The proposed structures could be supported on either spread footing or Cast-In-Place Drilled Piers. Following are both options:

Spread Footings – The proposed foundation could be supported on continuous spread footings in accordance with the following Table B:

TABLE B
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

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 increased 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 twenty feet.

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. **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 sandy 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 PRESSURES

Case	Lateral Earth Pressures
Active	40 P.C.F.
Passive	340 P.C.F.
At-Rest	55 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.

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

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. 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 **0.32** 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 highest Sulfate (SO_4) concentration measured was 15 ppm.

Based on Table 19.3.1.1 “Exposure categories and classes” of ACI 318-14 “Building Code Requirements for Structural Concrete” the soil exposure is classified as S0. Per Table 19.3.2.1 “Requirement for Concrete by Exposure Class” of the same reference, no restriction applies to the cement type or mix design.

Chlorides (Cl)

The highest Chloride (Cl) concentration measured was 6.8 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 was measured at 8.00. Generally, a pH level less than 5.5 are considered to be corrosive to foundation elements. (Ref: Caltrans Corrosion Guidelines / Version 1.0).

Although preliminary test results indicate that soil corrosivity at the locations and depths tested is low to negligible, if the site grading operations will result in a blend of native and/or imported materials at finished subgrade elevations, additional tests should be performed after rough grading has been completed and prior to concrete and/or mechanical design.

Soils Engineering, Inc. are not experts in the field of soil corrosivity. Should detailed analysis of soil corrosivity be required, it is our recommendation to contract a corrosion engineer.

PAVEMENT FIELD INVESTIGATION & DESIGN DATA

Hot Mix Asphalt (HMA) pavement shall be designed based on the lowest Resistant (R) Value test result of R=17. The laboratory test reports are provided as Figures D-1 and D-2.

Hot Mix Asphalt (HMA) pavement shall be designed based on Resistant (R) Value test result of R=17.

HMA Pavement Sections:

TI of 5	0.25 feet of HMA and 0.65 feet of Class 2 Aggregate Base
TI of 6	0.30 feet of HMA and 0.85 feet of Class 2 Aggregate Base
TI of 7	0.35 feet of HMA and 1.00 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.

PCC design should meet the requirements of the American Concrete Institute (ACI) 330R, Guide for the Design and Construction of Concrete.

Ground surfaces to receive HMA or Portland Cement Concrete (PCC) pavements 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.

SLABS-ON-GROUND

Slabs-on-ground may be supported on earth materials prepared in accordance with the recommendations of this Geotechnical Investigation.

Moisture protection between the soil and the interior slabs-on-ground is recommended. For exceptions to slab moisture protection, refer to the 2022 California Building Code, §1907.1. The project designer should provide specific details regarding construction of the concrete slab-on-ground, including the moisture barrier or vapor retarder/barrier, capillary break (if included), and blotter material (if included). The American Concrete Institute recommends a minimum moisture vapor retarder of 10 mil thick polyethylene. The vapor retarder should be protected from damage. Punctures and tears should be repaired prior to concrete placement. It is our opinion that existing soil and groundwater conditions do not warrant the inclusion of a capillary break.

It has been common local practice to use a sandy material as a blotter layer between the moisture barrier and the concrete to absorb some of the bleed water and to potentially reduce slab curling. However, a blotter layer may act as a moisture reservoir. If that occurs, all apparent advantages of its use are negated. A blotter layer should not be incorporated into the section design for moisture-sensitive slabs if it cannot be kept dry prior to concrete placement or if water may migrate into the layer after slab construction (eg. wet curing, rainfall). If the slab-on-ground section is to include a blotter layer between the moisture barrier and the concrete, it is our recommendation that the blotter material consist of crusher fines (rock dust) or sand with angular, interlocking grains. The material should be easily compacted and should be screened so that 100% of the material is finer than ¼". Do not use blotter material which may be potentially reactive with the alkalis in the concrete or which has high sulfate content. At the time of concrete placement, the blotter material should be dry to damp, compact, and smooth. For slabs which are to be water-cured, a blotter layer should not be used. For further consideration, refer to the American Concrete Institute *Manual of Concrete Practice 302.1R and 360.*

Slab thicknesses, reinforcing, and the concrete characteristics should be in accordance with the project designer's recommendations. The 2022 California Building Code, §1907.1 requires that the slab thickness be not less than 3½". Pressurized water lines should not be installed beneath slabs-on-ground. Where pressurized water lines must be routed beneath the slab, they should be routed entirely inside continuous sleeves with both ends open to the atmosphere above the slab surface. Gravity flow sewer lines may underlie slabs-on-ground, but they should be routed to the exterior point of connection by the shortest feasible path.

LIMITATIONS, OBSERVATION AND TESTING

Conclusions and recommendations in this report are given for the McFarland Police Station, located at APN: 201-070-64 | 35.667359, -119.231853 | McFarland, CA and are based on the following:

a. The information retrieved from two (2) 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 Kern 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 with regard to 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[2]. 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.

SOILS ENGINEERING, INC.

[2] If the civil engineer, the soils engineer, the engineering geologist or the testing agency of record is changed during the course of the work, the work shall be stopped until the replacement has agreed to accept the responsibility within the area of his or her technical competence for approval upon completion of the work.

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.

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 the course of 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 any and 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 the purpose of 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 other specified layer is placed.

3. SITE CONDITIONS

The contractor shall visit the site, prior to bid submittal, to determine existing soil and topographic conditions, and the nature of materials that may be encountered during the course of the work under this contract and 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 as a result 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 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.

5.3.3 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 operation 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 particular 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 particular 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 advance 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

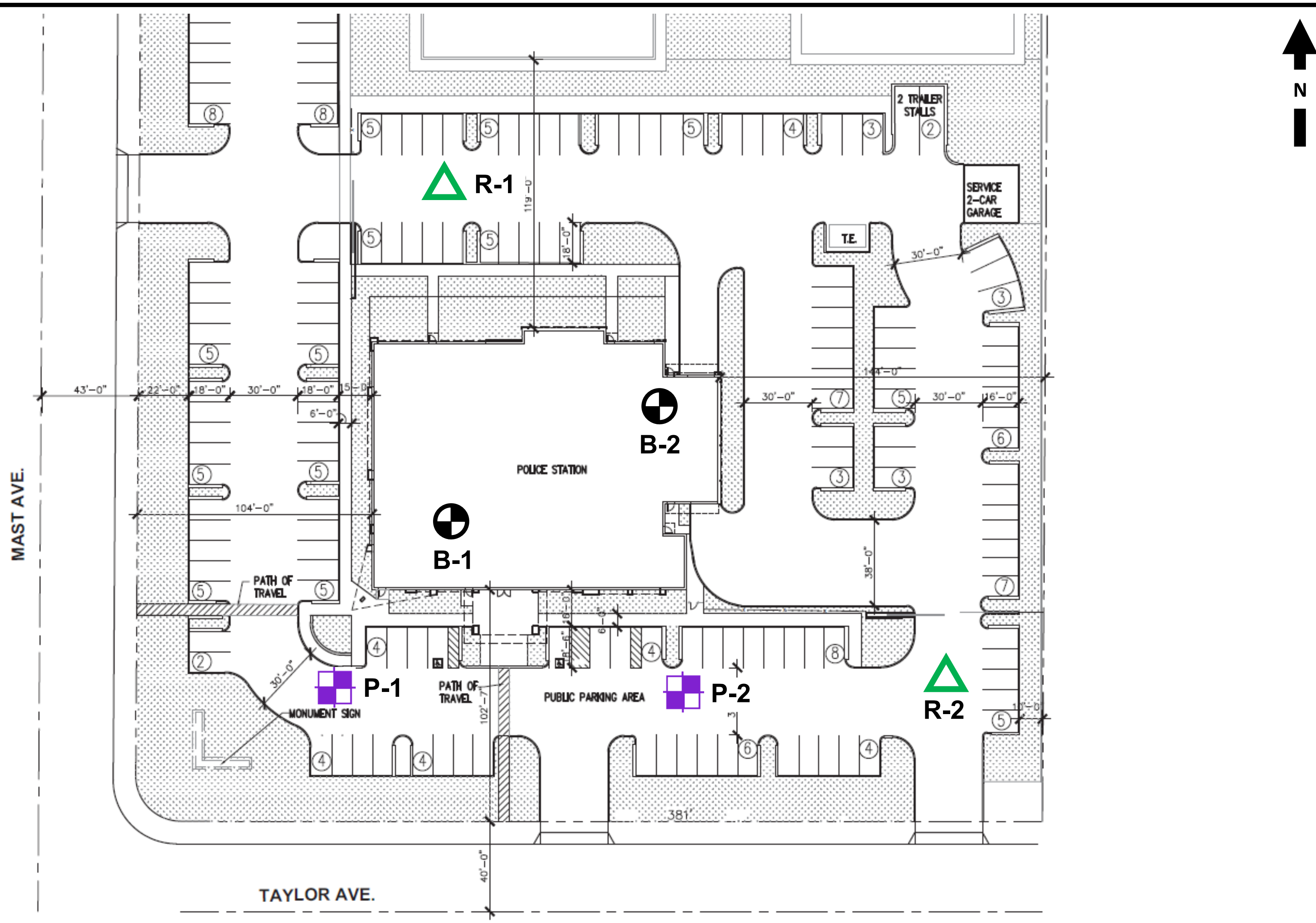
FIELD INVESTIGATION

Two (2) 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 (4.25) 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 and 3, 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 two separate locations. Tests were performed at approximately five [5] feet below the existing ground surface and were conducted in substantial accordance with the Manual of Septic Tank Practice, Part I, of the U.S. Department of Health, Education, and Welfare, Public Health Service, and the Kern County Environmental Health Department.



Boring Location

R Value Sample Location

Soils Engineering Inc.

McFarland Police Station
Boring Location Map

Figure 1

LOG OF TEST BORING
BORING B-1

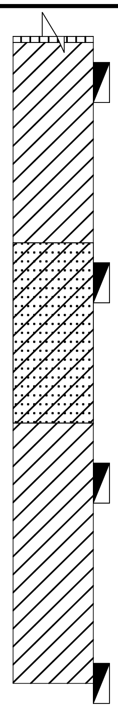
PROJECT: *McFarland Police Station*
FILE NO: *20251*
BORING DATE: *03/10/25*
ELEV.:
BORING LOCATION: *See Boring Location Map, Figure 1*
START: *03/10/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
FINISH: *03/10/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - : *N/A*
CAVING - : *N/A*
LOGGER: *LW*

ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
0		SC	CLAYEY SAND; light yellowish brown, damp to moist, cohesive, silt.			
	6/6 9/6 18/6		Medium dense.		111.2	8.0
5		CL	SANDY CLAY; light brown, damp, low plasticity, silt.			
	7/6 14/6 38/6	SC ML	CLAYEY SAND; light yellowish brown, moist.		115.0	6.5
			Dense.			
10	7/6 11/6 15/6	SP SP	POORLY GRADED SAND; light yellowish brown, damp, fine to coarse grained.		110.1	1.3
			Medium dense.			
			Fine gravel.			
15	15/6 24/6 31/6	SC	CLAYEY SAND; light yellowish brown, damp, cohesive.		115.4	5.7
			Dense.			
20	6/6 14/6 16/6	SP SP	POORLY GRADED SAND; light yellowish brown, damp, fine grained.			1.3
			Medium dense.			
25	12/6 13/6 17/6	SM	SILTY SAND; light yellowish brown, damp, fine to meidum grained, traces of clay.			2.1
30	8/6 9/6 13/6	ML ML	SANDY SILT; light brown, damp, traces of clay, low plasticity.			6.4
			Very stiff.			
35			Hard drilling.			

Figure Number 2

LOG OF TEST BORING
BORING B-1

PROJECT: *McFarland Police Station* **FILE NO:** *20251*
BORING DATE: *03/10/25* **ELEV.:**
BORING LOCATION: *See Boring Location Map, Figure 1* **START:** *03/10/25*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger* **FINISH:** *03/10/25*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - : *N/A* **CAVING -** : *N/A* **LOGGER:** *LW*



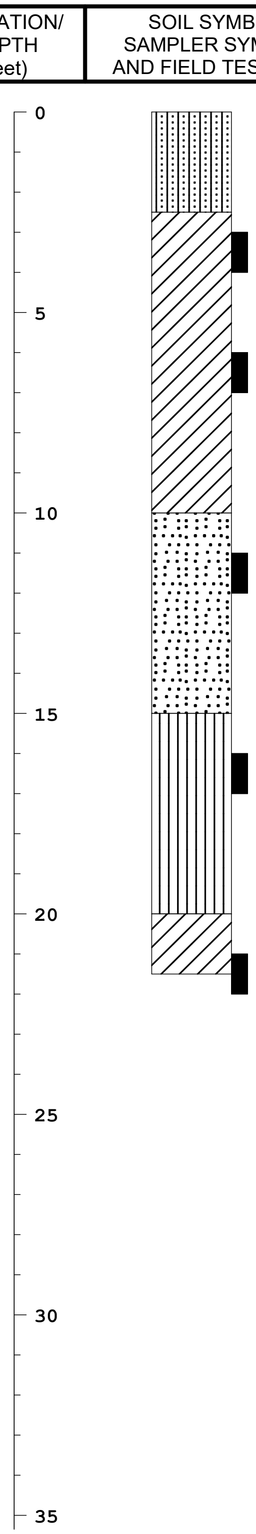
ELEVATION/ DEPTH (feet)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	8/6 11/6 17/6	CL	CLAY; yellowish brown, moist, medium plasticity, traces of sand.			18.9
40	11/6 21/6 23/6	SC	CLAYEY SAND; light yellowish brown, damp, cohesive.			4.2
		SC	Dense.			
45	11/6 14/6 17/6	CL	SANDY CLAY; light yellowish brown, moist, low to medium plasticity.			10.2
			Hard.			
50	5/6 10/6 11/6	CL	Very stiff.			17.9
			BOTTOM.			
55						
60						
65						
70						

Figure Number 2

LOG OF TEST BORING
BORING B-2

PROJECT: *McFarland Police Station*
BORING DATE: *03/10/25*
BORING LOCATION: *See Boring Location Map, Figure 1*
DRILL METHOD: *4.25" I.D. Hollow-Stem Auger*
DESCRIPTION: *Geotechnical Engineering Services*
DEPTH TO WATER - : *N/A*
CAVING - : *N/A*

FILE NO: *20251*
ELEV.:
START: *03/10/25*
FINISH: *03/10/25*
LOGGER: *MW*



SAMPLER SYMBOLS AND FIELD TEST DATA	USCS	Description	Remarks	Density pcf	Moisture %
	SM	SILTY SAND; yellowish brown, dry to damp, fine grained.			
4/6 6/6 8/6	CL	SILTY CLAY; brown, dry to damp, low to medium plasticity. Stiff.		102.4	7.6
12/6 25/6 30/6	CL	Hard.		118.2	10.1
4/6 5/6 6/6	SP	POORLY GRADED SAND; light yellowish brown, dry, fine grained. Loose.		115.5	2.2
7/6 25/6 30/6	ML	SANDY SILT; yellowish brown, dry to damp, low plasticity. Hard.		123.5	11.2
14/6 22/6 20/6	CL	SILTY CLAY; yellowish brown, dry to damp, low plasticity. Very stiff.		112.8	17.0
		BOTTOM.			

Figure Number 3

KEY TO SYMBOLS

Symbol Description

Strata symbols

Clayey sand

Low plasticity clay

Poorly graded sand

Silty sand

Silt

Misc. Symbols

Boring continues

Soil Samplers

California sampler

Standard penetration test

Notes:

1. Two (2) exploratory borings were drilled on 03/10/2025 using an 8-inch outside diameter hollow-stem auger.

2. No free groundwater was encountered to the maximum depth drilled of 51.5'.

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.

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 and A-2.

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 and 3.

CONSOLIDATION TESTS (ASTM D2435)

Compressibility of soils was determined on saturated, undisturbed samples of native materials. Consolidation Test Diagrams, Figures B-1 and B-2, 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 Figure C-1.

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 one (1) composite sample taken from the upper 5 feet of B-2 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.

R-VALUE TESTS (CTM-301)

R-Value tests were performed to obtain flexible pavement design data. Test results are presented on Figures D-1 and D-2.

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BHT Engineering, Inc.

Geotechnical Engineering Services
McFarland Police Station
APN: 201-070-64 | 35.667359, -119.231853 | McFarland, CA

SEI File No.25-20251
April 4, 2025

TABLE 1

TEST LOCATION	USCS	% < # 200	CONSOLIDATION				DIRECT SHEAR		E.I.	MINIMUM RESISITIVITY	ATTERBERG LIMITS			R-VALUE @ 300 psi		MAXIMUM DENSITY	
			C_C	C_S	S.P. (psf)	HV %	C, (ksf)	F.A.			LL	PL	PI	R.V.	E.P. (psi)	MDD (pcf)	O.M.
B-1 @ 3'	ML						0.4	28.2									
B-1 @ 6'	ML		0.05	0.01		-1.7											
B-1 @ 11'	SP	4.8															
B-1 @ 21'	SP	7.8															
B-1 @ 31'	ML	73															
B-1 @ 41'	SC	32															
B-1 @ 51'	CL	84															
B-2 @ 0-5'	SM	45							6								
B-2 @ 6'	CL		0.17	0.01		-0.7											
R-1 @ 0-5'	CL	60												17			
R-2 @ 0-5'	CL	48												23	0.04		

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

RESISTANCE VALUE (R-VALUE)
RV - R-Value @ 300 psi
EP - Expansion Press @ 300 psi
MINIMUM RESISITIVITY - (ohm-cm)

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

TABLE 2 - PERCOLATION TEST DATA LOG

SEI File No. 25-20251

SITE ADDRESS: APN: 201-070-64 | 35.667359, -119.231853 | McFarland, CA

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

TEST DATE: 03/10/2025

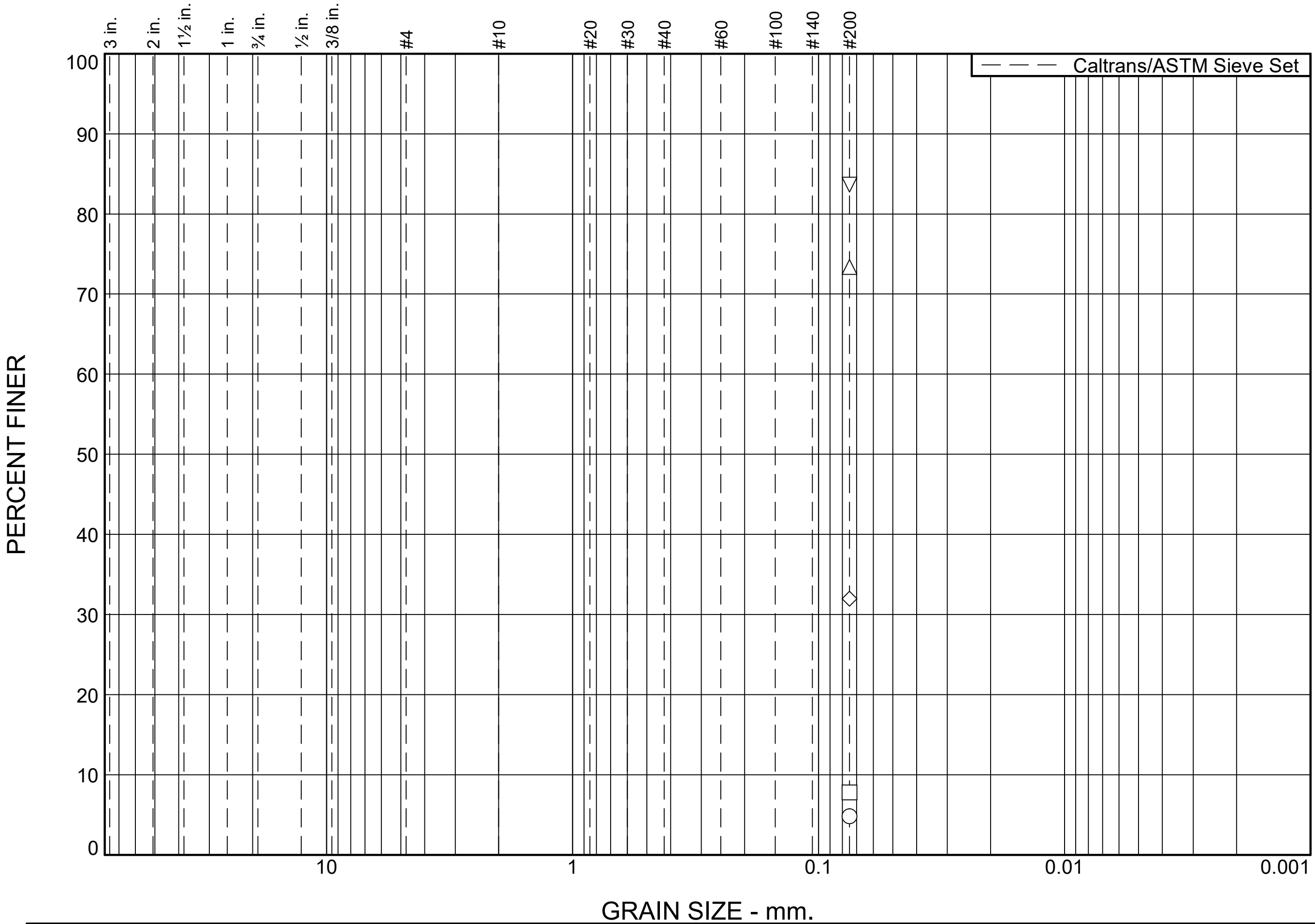
HOLE #	Percolation # 1 (P-1)				Percolation # 2 (P-2)				N/A			
DEPTH	5 FEET				5 FEET				-- FEET			
	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)	TIME (MIN)		WATER LEVEL DROP (IN)	PERC RATE (MIN/IN)
	INITIAL	FINAL			INITIAL	FINAL			INITIAL	FINAL		
	TEST # 1				**TEST # 1**				**N/A**			
	0	--	9:25		0	--	8.75					
	0	19	9:25	2.05	0	30	8.25	3.64				
	TEST # 2				**TEST # 2**				**N/A**			
	0	--	11.25		0	--	8.50					
	0	30	8.25	3.64	0	30	6.25	4.80				
	TEST # 3				**TEST # 3**				**N/A**			
	0	--	9.00		0	--	10.50					
	0	30	6.25	4.80	0	30	6.25	4.80				
	TEST # 4				**TEST # 4**				**N/A**			
	0	--	8.25		0	--	11.25					
	0	30	5.50	5.45	0	30	6.25	4.80				
	TEST # 5				**TEST # 5**				**N/A**			
	0	--	9.50		0	--	10.00					
	0	30	5.75	5.22	0	30	6.00	5.00				
	N/A				**N/A**				**N/A**			

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: 5.45 MINUTES PER INCH. SOIL TYPE | 1 | 2 | **3** | 4 | 5 |

SIGNATURE OF QUALIFIED PROFESSIONAL: ____________________________

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							4.8	
□							7.8	
△							73.4	
◇							32.0	
▽							83.6	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-1		11'	POORLY GRADED SAND	SP
□	B-1		21'	POORLY GRADED SAND WITH LOW FINE CONTENT	SP
△	B-1		31'	SANDY SILT	ML
◇	B-1		41'	CLAYEY SAND	SC
▽	B-1		51'	SANDY CLAY	CL

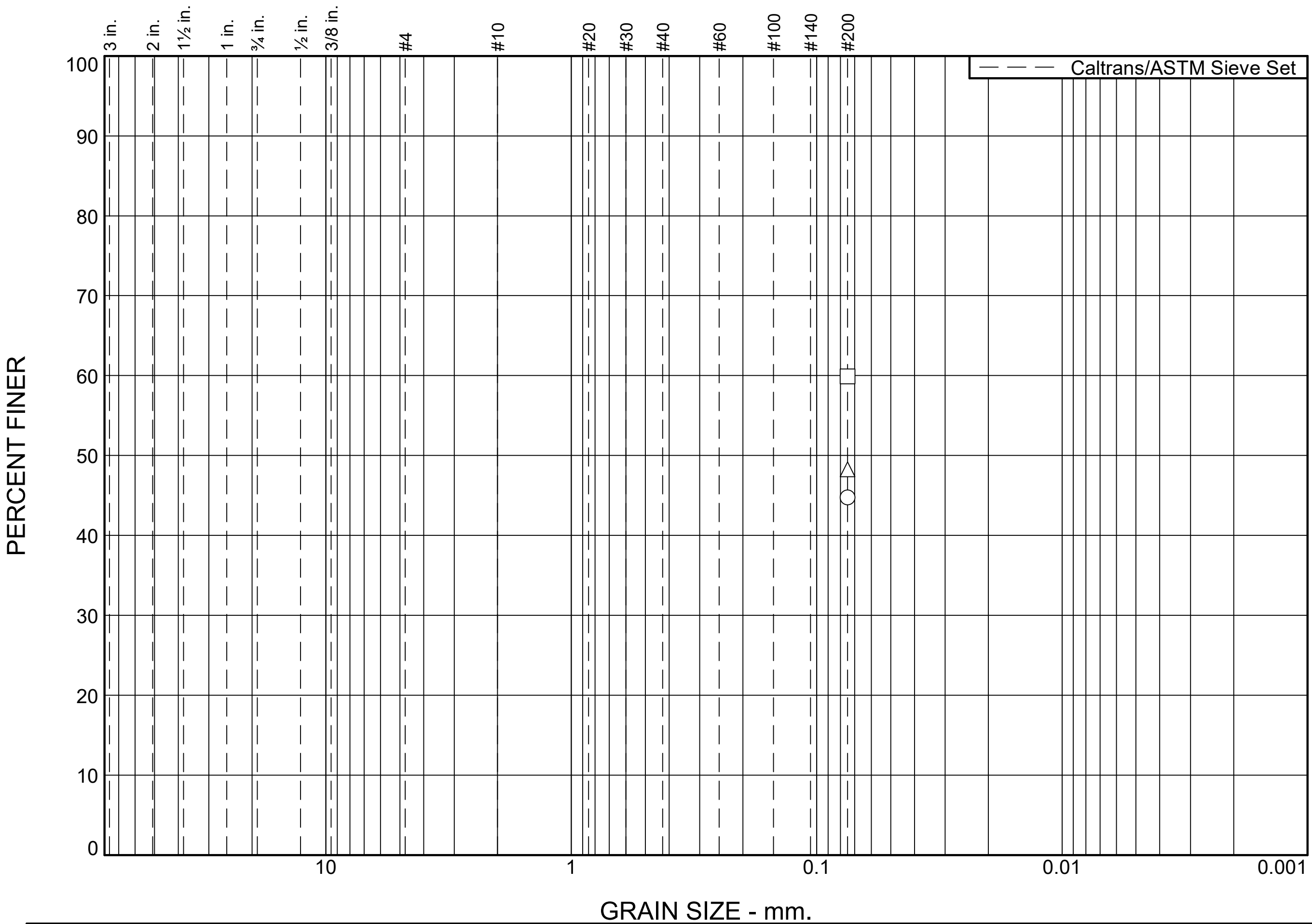
SOILS ENGINEERING, INC.

Client: BHT Engineering, Inc.
Project: McFarland Police Station

Project No.: 20251 **Figure** A-1

Tested By: SC **Checked By:** AL

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○							44.8	
□							59.9	
△							48.3	

SOIL DATA

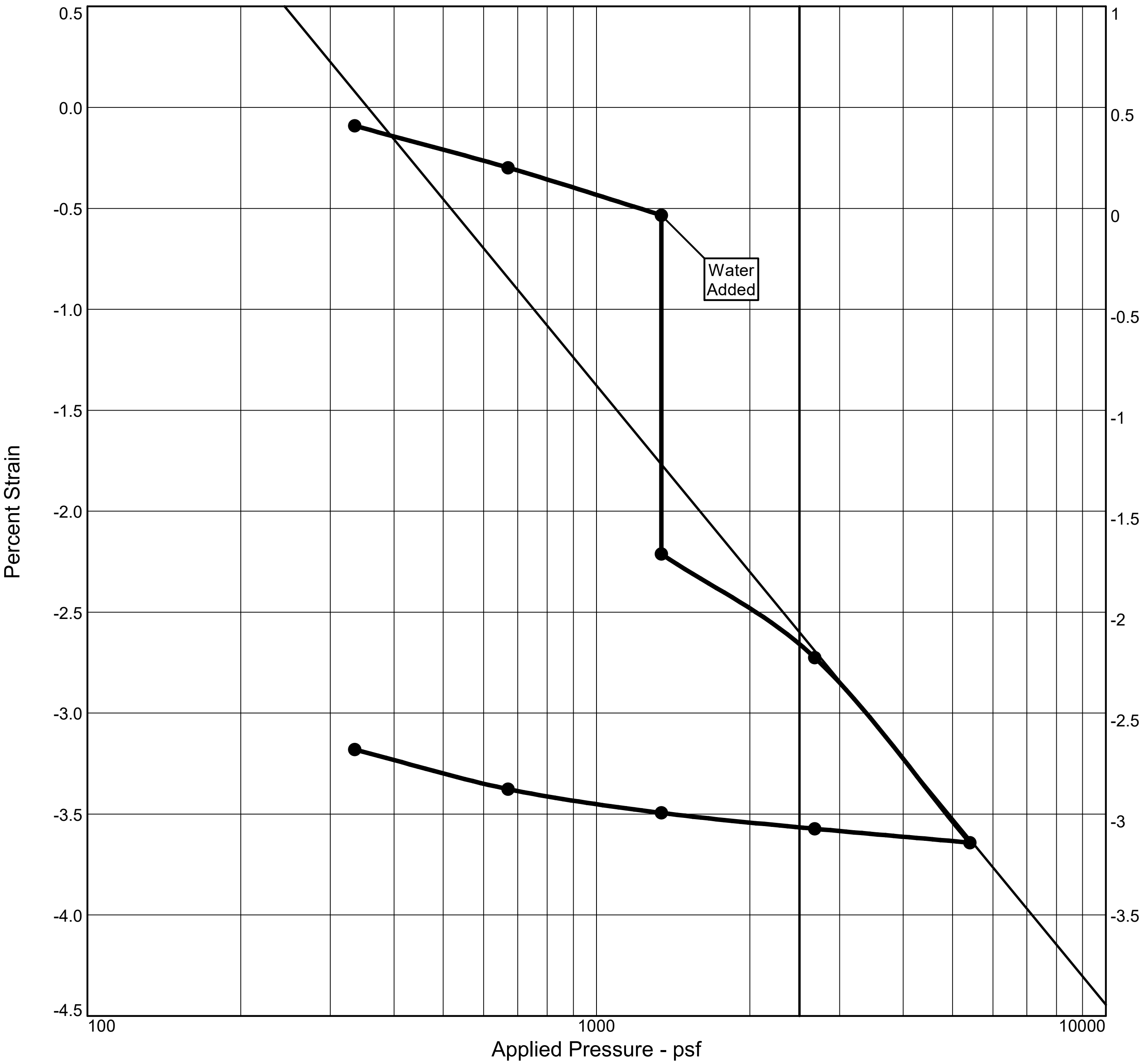
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○			0'-5'	SILTY SAND (B-2)	SM
□		25-1810-18	0-5'	SANDY CLAY (R-1)	CH
△		25-1810-19	0-5'	SANDY CLAY (R-2)	CH

SOILS ENGINEERING, INC.

Client: BHT Engineering, Inc.
Project: McFarland Police Station
Project No.: 20251 **Figure** A-2

Tested By: ● SC ■ RC ▲ RC **Checked By:** AL

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.											
19.7 %	4.2 %	106.1			2.65	336	2679	0.05	0.01		-1.7	0.559

MATERIAL DESCRIPTION	USCS	AASHTO
SANDY SILT	ML	

Project No. 20251 **Client:** BHT Engineering, Inc.

Project: McFarland Police Station

Source of Sample: B-1 **Depth:** 6'

Remarks:
Date Tested: 03/11/25

SOILS ENGINEERING, INC.

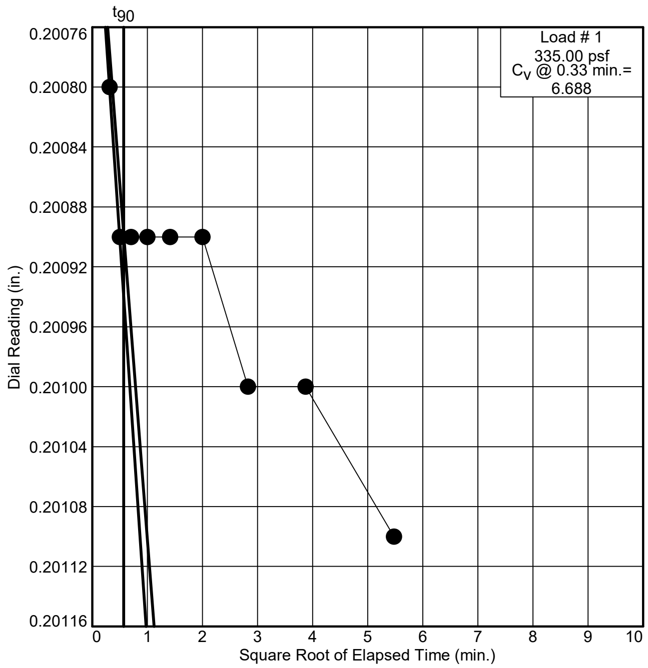
Figure B-1

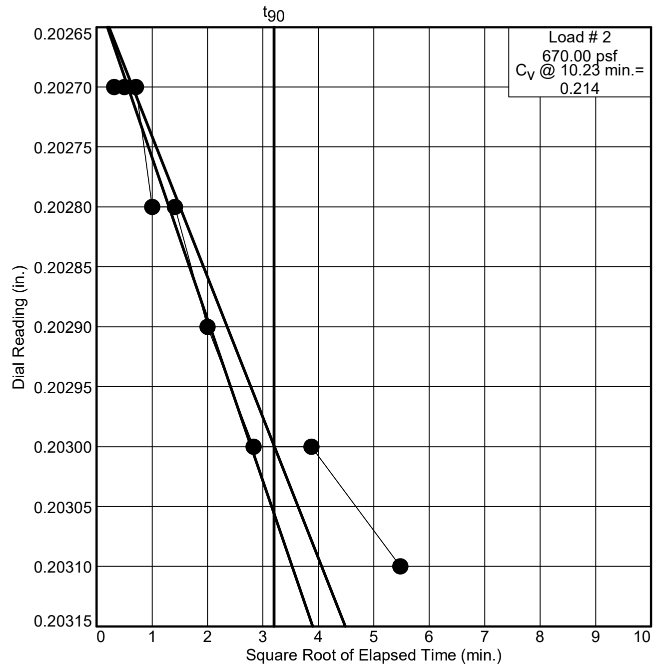
Checked By: AL

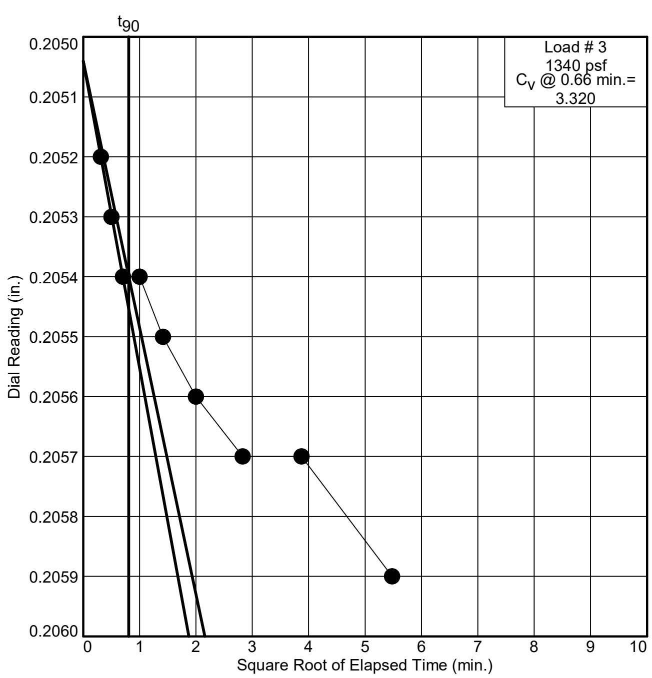
Dial Reading vs. Time

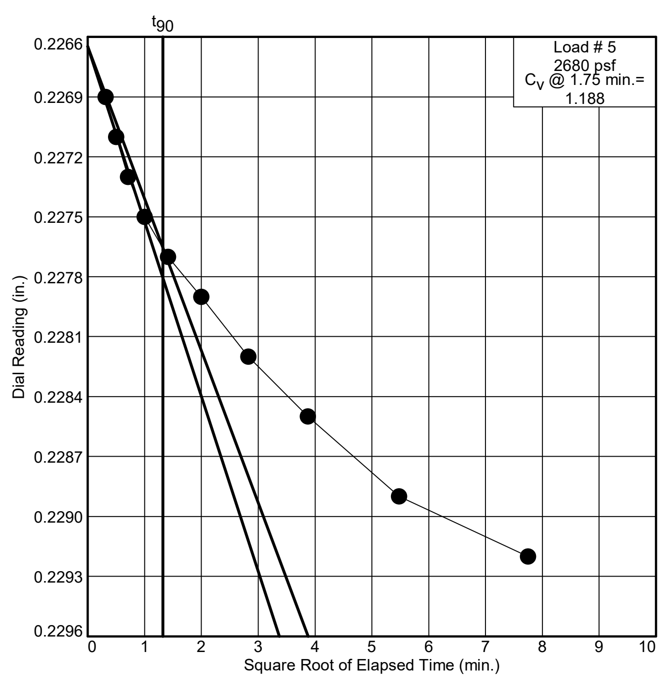
Project No.: 20251
Project: McFarland Police Station

Source of Sample: B-1 Depth: 6'









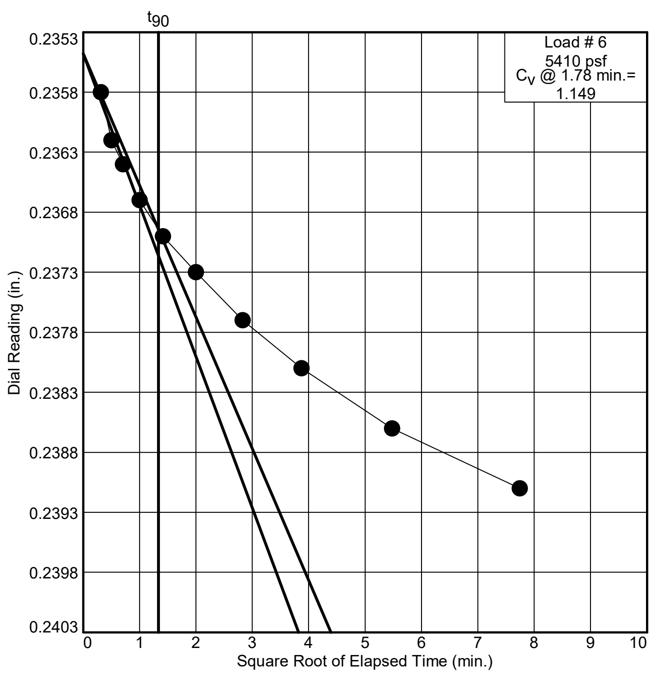
SOILS ENGINEERING, INC.

Figure B-1

Dial Reading vs. Time

Project No.: 20251
Project: McFarland Police Station

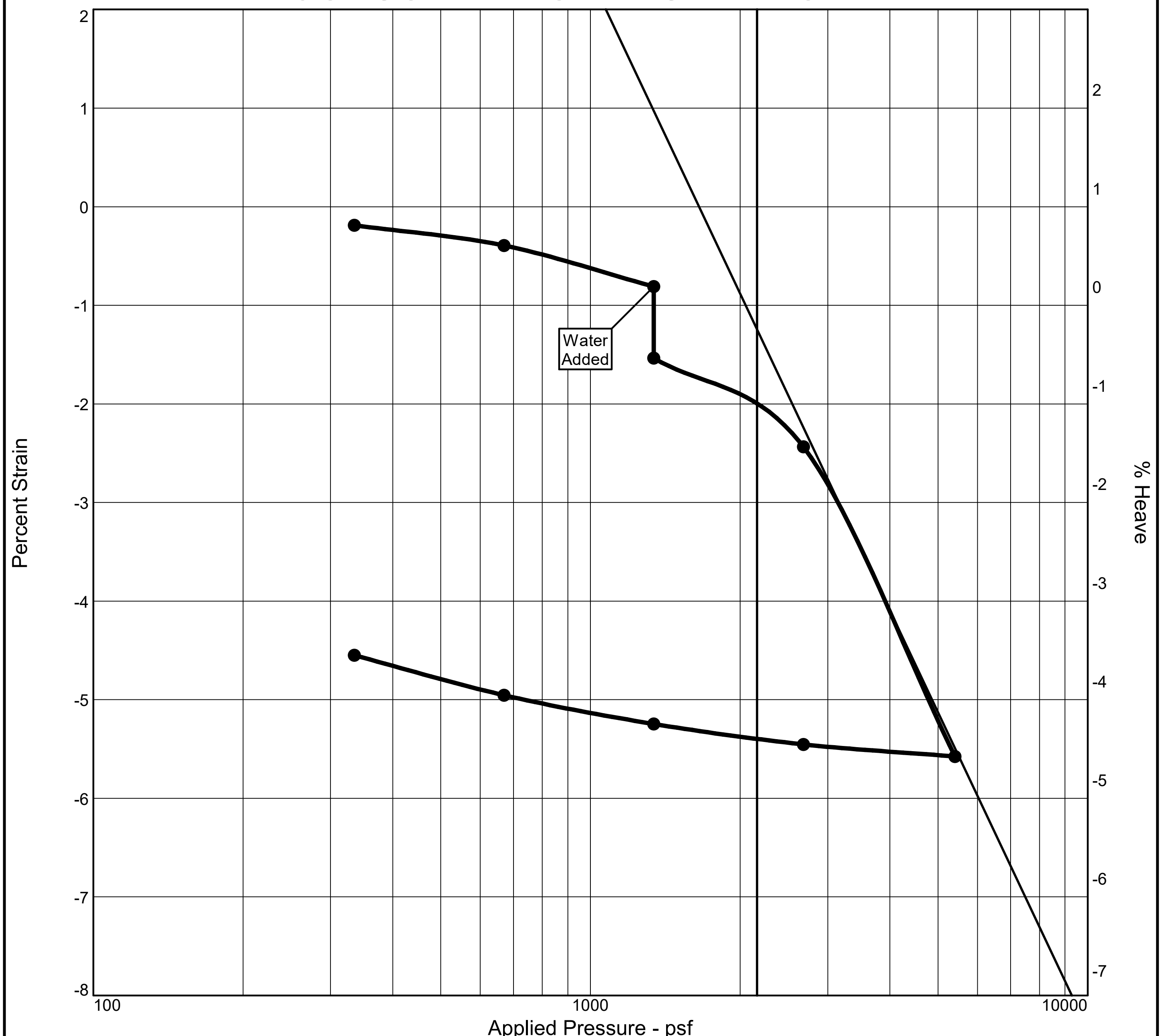
Source of Sample: B-1 Depth: 6'



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.											
54.8 %	12.3 %	103.7			2.65	336	2608	0.17	0.01		-0.7	0.595

MATERIAL DESCRIPTION	USCS	AASHTO
CLAYEY SILT	CL	

Project No. 20251 **Client:** BHT Engineering, Inc.

Project: McFarland Police Station

Source of Sample: B-2 **Depth:** 6'

SOILS ENGINEERING, INC.

Remarks:

Date Tested: 03/11/25

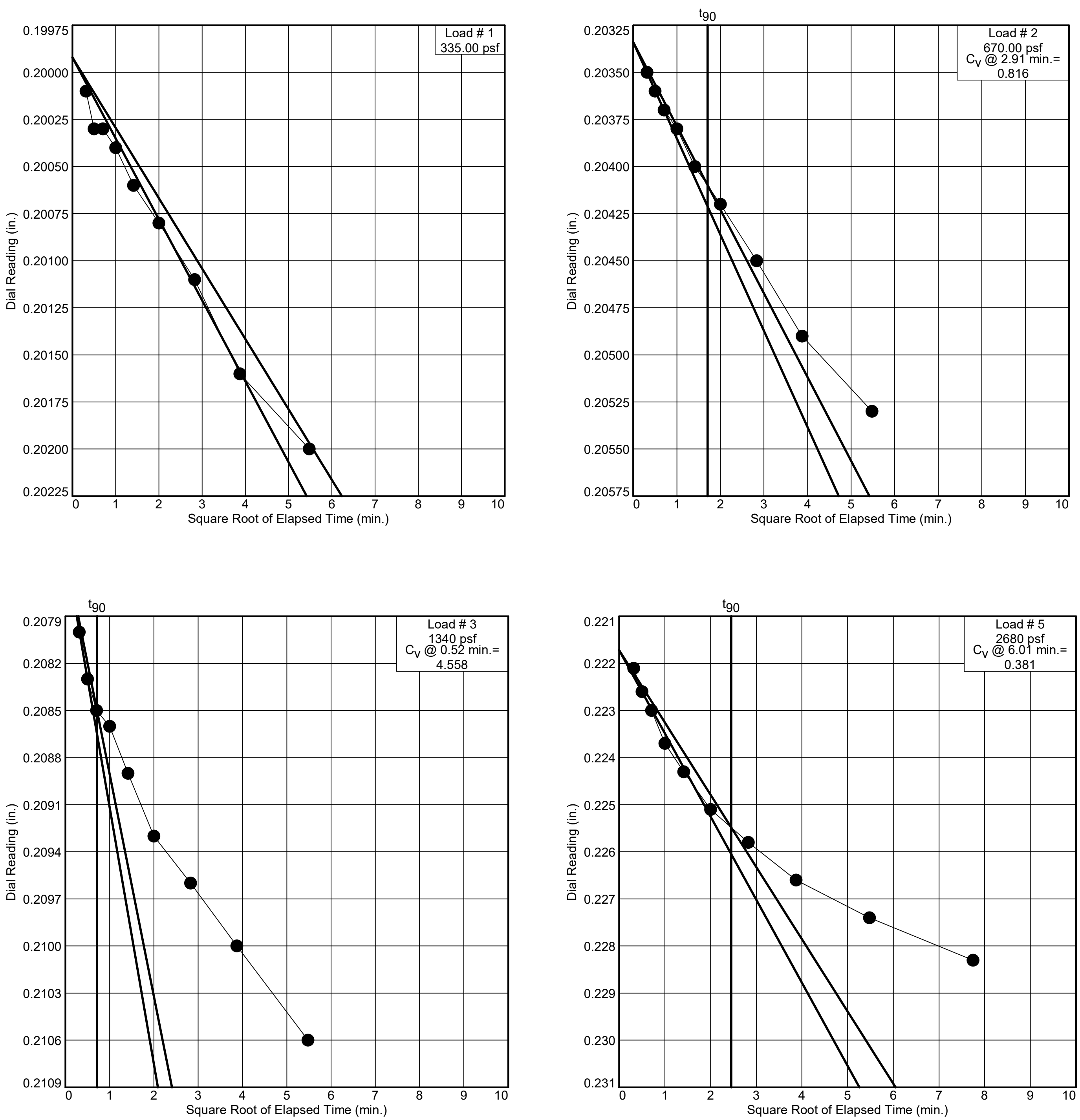
Figure B-2

Checked By: AL

Dial Reading vs. Time

Project No.: 20251
Project: McFarland Police Station

Source of Sample: B-2   Depth: 6'



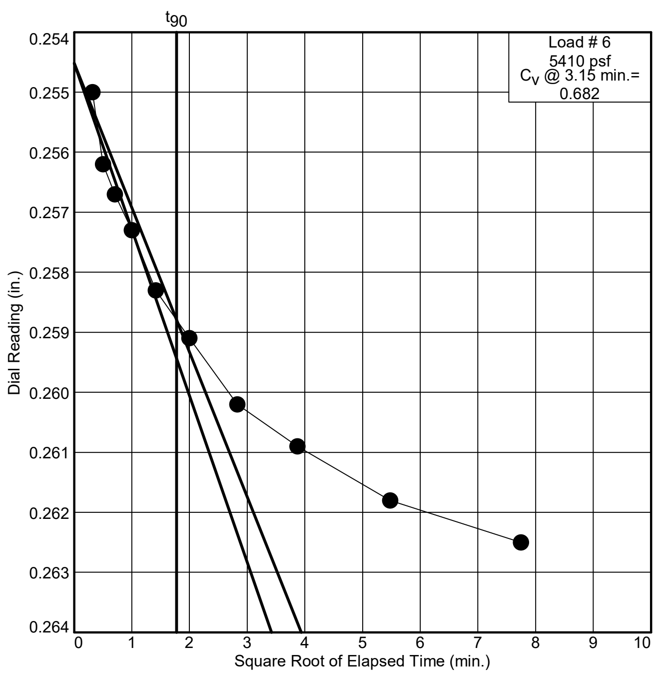
SOILS ENGINEERING, INC.

Figure B-2

Dial Reading vs. Time

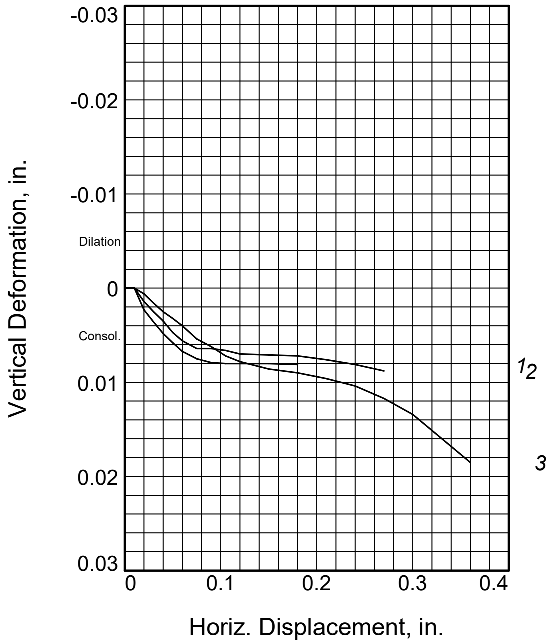
Project No.: 20251
Project: McFarland Police Station

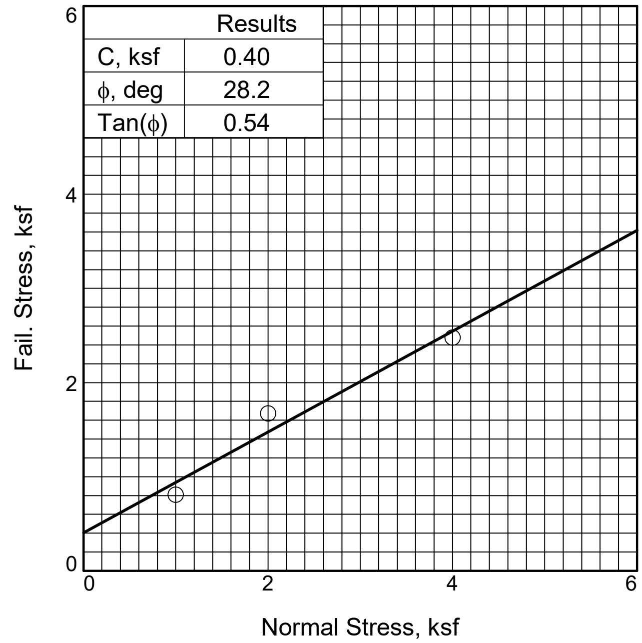
Source of Sample: B-2 Depth: 6'

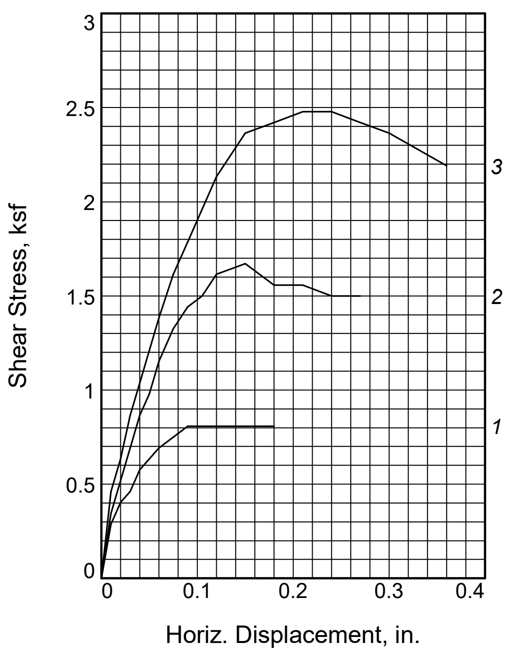


SOILS ENGINEERING, INC.

Figure B-2







	Sample No.	1	2	3
Initial	Water Content, %	9.6	9.4	8.2
	Dry Density, pcf	95.0	98.7	103.2
	Saturation, %	34.1	37.0	36.2
	Void Ratio	0.7419	0.6767	0.6036
	Diameter, in.	2.46	2.46	2.46
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	25.4	23.8	19.5
	Dry Density, pcf	95.0	98.7	103.2
	Saturation, %	90.9	93.0	85.8
	Void Ratio	0.7419	0.6767	0.6036
	Diameter, in.	2.46	2.46	2.46
	Height, in.	1.00	1.00	1.00
	Normal Stress, ksf	1.00	2.00	4.00
	Fail. Stress, ksf	0.81	1.67	2.48
	Displacement, in.	0.09	0.15	0.21
	Ult. Stress, ksf			
	Displacement, in.			
	Strain rate, in./min.	N/A	N/A	N/A

Sample Type: 2.5" X 6" TUBE
Description: CLAYEY SILT

Assumed Specific Gravity= 2.65
Remarks: Date Tested: 03/11/25

Figure C-1

Client: BHT Engineering, Inc.

Project: McFarland Police Station

Source of Sample: B-1 **Depth:** 3'

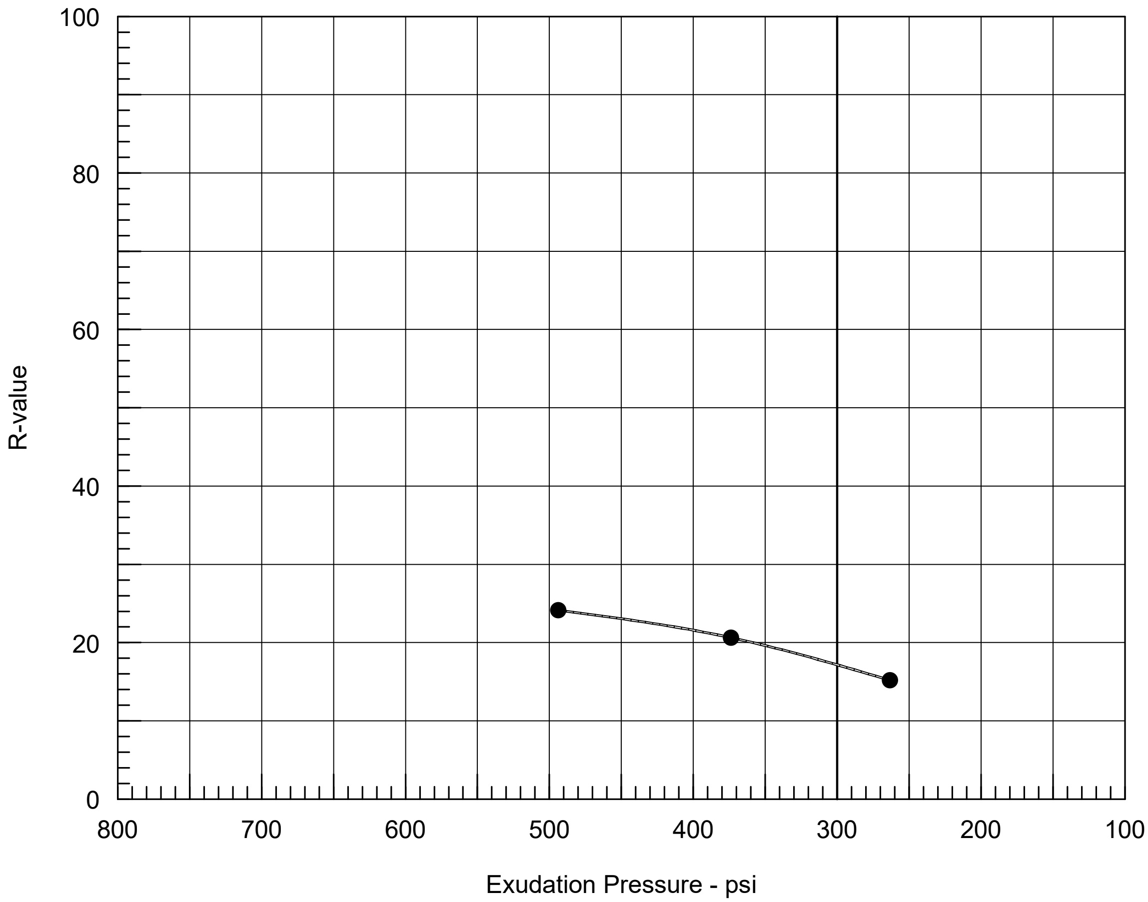
Proj. No.: 20251 **Date Sampled:** 03/10/25

DIRECT SHEAR TEST REPORT

SOILS ENGINEERING, INC.

Tested By: SC **Checked By:** AL

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	170	120.6	10.5	0.00	104	2.57	494	23	24
2	85	118.2	11.5	0.00	110	2.55	374	21	21
3	80	3063.3	12.6	0.00	116	2.54	263	15	15

Test Results	Material Description
R-value at 300 psi exudation pressure = 17	SANDY CLAY

Project No.: 20251
Project: McFarland Police Station
Location: R-1 @ 0-5'
Sample Number: 25-1810-18 **Depth:** 0-5'
Date: 4/3/2025

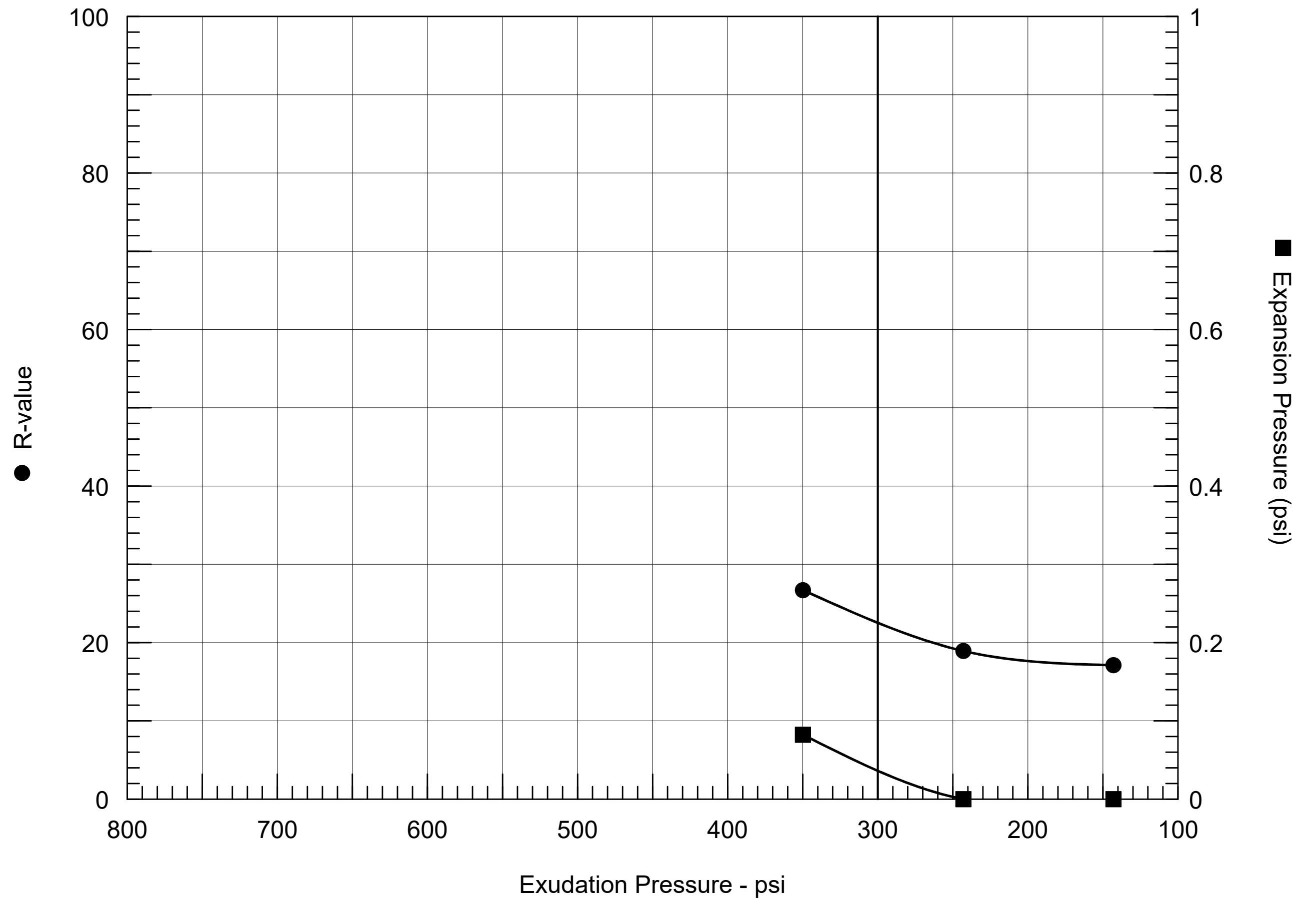
Tested by: RC
Checked by: AL
Remarks:

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	65	124.6	10.5	0.08	94	2.42	350	28	27
2	80	121.6	11.5	0.00	109	2.47	243	19	19
3	65	117.5	12.6	0.00	112	2.50	143	17	17

Test Results	Material Description
R-value at 300 psi exudation pressure = 23 **Exp. pressure at 300 psi exudation pressure =** 0.04 psi	SANDY CLAY

Project No.: 20251
Project: McFarland Police Station
Location: R-2 @ 0-5'
Sample Number: 25-1810-19 **Depth:** 0-5'
Date: 4/3/2025

Tested by: RC
Checked by: AL
Remarks:

R-VALUE TEST REPORT

SOILS ENGINEERING, INC.

Figure D-2

APPENDIX D

LIQUEFACTION ANALYSIS

SEISMIC DESIGN INFORMATION
SEAC Design Map Summary and Detail Report

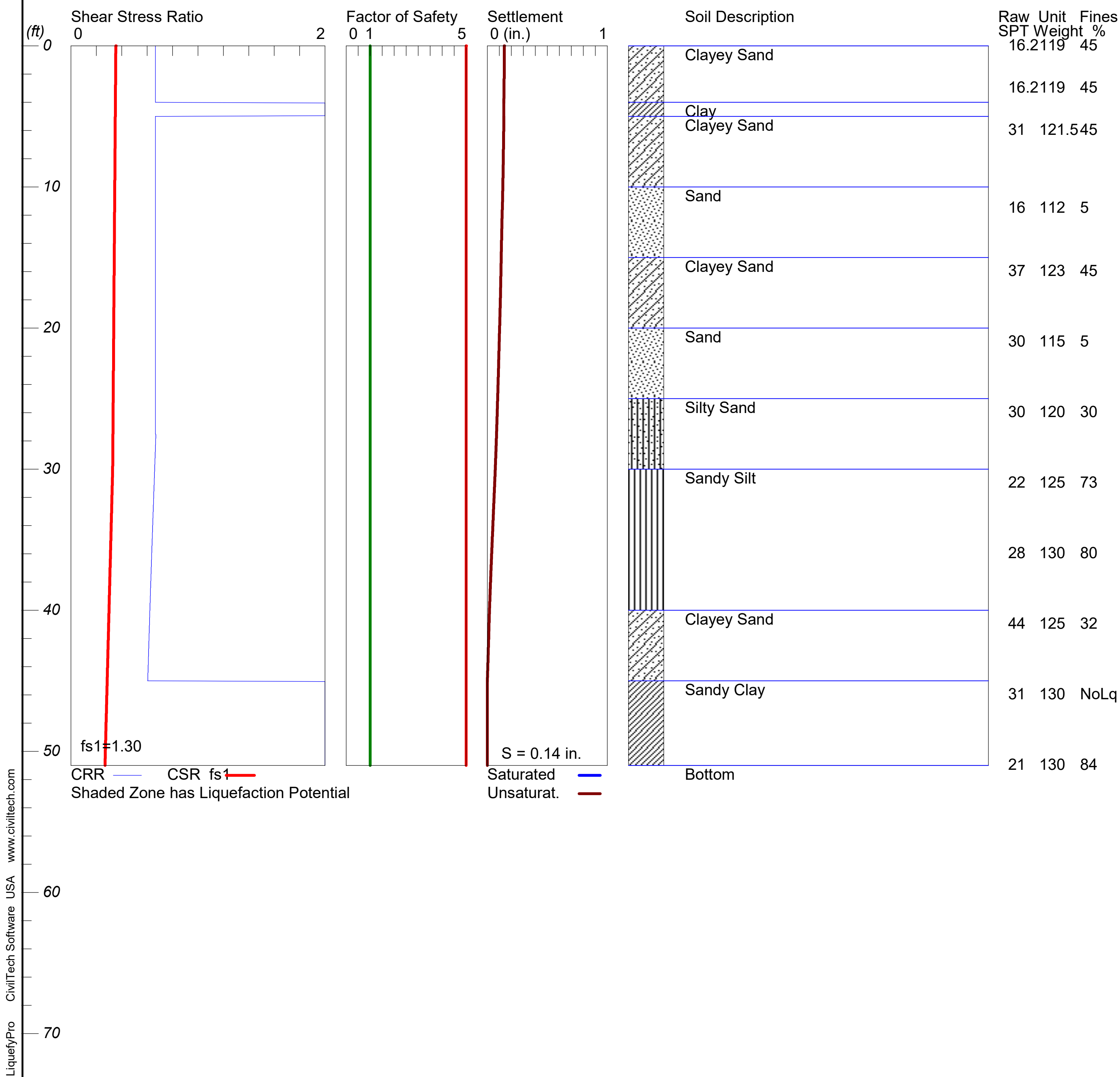
EQFAULT
Version 3.00

California Fault Map

LIQUEFACTION ANALYSIS

20251 McFarland Police Station

Hole No.=B-1 Water Depth=110 ft ***Magnitude=6.71***
Acceleration=0.418g



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****

LIQUEFACTION ANALYSIS SUMMARY

****
****

Font: Courier New, Regular, Size 8 is recommended for this report.
Licensed to SEI, 4/3/2025   5:03:00 PM

Input File Name: O:\b. PROJECT FILES (ACTIVE)\20200-20299\20251 BHT, McFarland Police Station GEOTECH\OFFICE REPORTS\LiquefyPro Files\20251 B1 Liqufey.liq
Title: 20251 McFarland Police Station
Subtitle: 20251 B-1

Surface Elev.=
Hole No.=B-1
Depth of Hole= 51.00 ft
Water Table during Earthquake= 110.00 ft
Water Table during In-Situ Testing= 110.00 ft
Max. Acceleration= 0.42 g
Earthquake Magnitude= 6.71

Input Data:

Surface Elev.=
Hole No.=B-1
Depth of Hole=51.00 ft
Water Table during Earthquake= 110.00 ft
Water Table during In-Situ Testing= 110.00 ft
Max. Acceleration=0.42 g
Earthquake Magnitude=6.71
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu, M-correction
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.45
7. Borehole Diameter, Cb= 1.15
8. Sampling Method, Cs= 1.2
9. User request factor of safety (apply to CSR) ,   User= 1.3
   Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: Yes*

* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	16.20	119.00	45.00
3.00	16.20	119.00	45.00
6.00	31.00	121.50	45.00
11.50	16.00	112.00	5.00
16.00	37.00	123.00	45.00
21.00	30.00	115.00	5.00
26.00	30.00	120.00	30.00
31.00	22.00	125.00	73.00
36.00	28.00	130.00	80.00
41.00	44.00	125.00	32.00
46.00	31.00	130.00	NoLiq
51.00	21.00	130.00	84.00

Output Results:

Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.14 in.
Total Settlement of Saturated and Unsaturated Sands=0.14 in.
Differential Settlement=0.071 to 0.094 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	0.66	0.35	5.00	0.00	0.14	0.14
0.05	0.66	0.35	5.00	0.00	0.14	0.14
0.10	0.66	0.35	5.00	0.00	0.14	0.14
0.15	0.66	0.35	5.00	0.00	0.14	0.14
0.20	0.66	0.35	5.00	0.00	0.14	0.14
0.25	0.66	0.35	5.00	0.00	0.14	0.14
0.30	0.66	0.35	5.00	0.00	0.14	0.14
0.35	0.66	0.35	5.00	0.00	0.14	0.14
0.40	0.66	0.35	5.00	0.00	0.14	0.14
0.45	0.66	0.35	5.00	0.00	0.14	0.14
0.50	0.66	0.35	5.00	0.00	0.14	0.14
0.55	0.66	0.35	5.00	0.00	0.14	0.14
0.60	0.66	0.35	5.00	0.00	0.14	0.14
0.65	0.66	0.35	5.00	0.00	0.14	0.14
0.70	0.66	0.35	5.00	0.00	0.14	0.14
0.75	0.66	0.35	5.00	0.00	0.14	0.14
0.80	0.66	0.35	5.00	0.00	0.14	0.14
0.85	0.66	0.35	5.00	0.00	0.14	0.14
0.90	0.66	0.35	5.00	0.00	0.14	0.14
0.95	0.66	0.35	5.00	0.00	0.14	0.14
1.00	0.66	0.35	5.00	0.00	0.14	0.14
1.05	0.66	0.35	5.00	0.00	0.14	0.14
1.10	0.66	0.35	5.00	0.00	0.14	0.14
1.15	0.66	0.35	5.00	0.00	0.14	0.14
1.20	0.66	0.35	5.00	0.00	0.14	0.14
1.25	0.66	0.35	5.00	0.00	0.14	0.14

1.30	0.66	0.35	5.00	0.00	0.14	0.14
1.35	0.66	0.35	5.00	0.00	0.14	0.14
1.40	0.66	0.35	5.00	0.00	0.14	0.14
1.45	0.66	0.35	5.00	0.00	0.14	0.14
1.50	0.66	0.35	5.00	0.00	0.14	0.14
1.55	0.66	0.35	5.00	0.00	0.14	0.14
1.60	0.66	0.35	5.00	0.00	0.14	0.14
1.65	0.66	0.35	5.00	0.00	0.14	0.14
1.70	0.66	0.35	5.00	0.00	0.14	0.14
1.75	0.66	0.35	5.00	0.00	0.14	0.14
1.80	0.66	0.35	5.00	0.00	0.14	0.14
1.85	0.66	0.35	5.00	0.00	0.14	0.14
1.90	0.66	0.35	5.00	0.00	0.14	0.14
1.95	0.66	0.35	5.00	0.00	0.14	0.14
2.00	0.66	0.35	5.00	0.00	0.14	0.14
2.05	0.66	0.35	5.00	0.00	0.14	0.14
2.10	0.66	0.35	5.00	0.00	0.14	0.14
2.15	0.66	0.35	5.00	0.00	0.14	0.14
2.20	0.66	0.35	5.00	0.00	0.14	0.14
2.25	0.66	0.35	5.00	0.00	0.14	0.14
2.30	0.66	0.35	5.00	0.00	0.14	0.14
2.35	0.66	0.35	5.00	0.00	0.14	0.14
2.40	0.66	0.35	5.00	0.00	0.14	0.14
2.45	0.66	0.35	5.00	0.00	0.14	0.14
2.50	0.66	0.35	5.00	0.00	0.14	0.14
2.55	0.66	0.35	5.00	0.00	0.14	0.14
2.60	0.66	0.35	5.00	0.00	0.14	0.14
2.65	0.66	0.35	5.00	0.00	0.14	0.14
2.70	0.66	0.35	5.00	0.00	0.14	0.14
2.75	0.66	0.35	5.00	0.00	0.14	0.14
2.80	0.66	0.35	5.00	0.00	0.14	0.14
2.85	0.66	0.35	5.00	0.00	0.14	0.14
2.90	0.66	0.35	5.00	0.00	0.14	0.14
2.95	0.66	0.35	5.00	0.00	0.14	0.14
3.00	0.66	0.35	5.00	0.00	0.14	0.14
3.05	0.66	0.35	5.00	0.00	0.14	0.14
3.10	0.66	0.35	5.00	0.00	0.14	0.14
3.15	0.66	0.35	5.00	0.00	0.14	0.14
3.20	0.66	0.35	5.00	0.00	0.14	0.14
3.25	0.66	0.35	5.00	0.00	0.14	0.14
3.30	0.66	0.35	5.00	0.00	0.14	0.14
3.35	0.66	0.35	5.00	0.00	0.14	0.14
3.40	0.66	0.35	5.00	0.00	0.14	0.14
3.45	0.66	0.35	5.00	0.00	0.14	0.14
3.50	0.66	0.35	5.00	0.00	0.14	0.14
3.55	0.66	0.35	5.00	0.00	0.14	0.14
3.60	0.66	0.35	5.00	0.00	0.14	0.14
3.65	0.66	0.35	5.00	0.00	0.14	0.14
3.70	0.66	0.35	5.00	0.00	0.14	0.14
3.75	0.66	0.35	5.00	0.00	0.14	0.14
3.80	0.66	0.35	5.00	0.00	0.14	0.14
3.85	0.66	0.35	5.00	0.00	0.14	0.14
3.90	0.66	0.35	5.00	0.00	0.14	0.14
3.95	0.66	0.35	5.00	0.00	0.14	0.14

4.00	0.66	0.35	5.00	0.00	0.14	0.14
4.05	2.00	0.35	5.00	0.00	0.14	0.14
4.10	2.00	0.35	5.00	0.00	0.14	0.14
4.15	2.00	0.35	5.00	0.00	0.14	0.14
4.20	2.00	0.35	5.00	0.00	0.14	0.14
4.25	2.00	0.35	5.00	0.00	0.14	0.14
4.30	2.00	0.35	5.00	0.00	0.14	0.14
4.35	2.00	0.35	5.00	0.00	0.14	0.14
4.40	2.00	0.35	5.00	0.00	0.14	0.14
4.45	2.00	0.35	5.00	0.00	0.14	0.14
4.50	2.00	0.35	5.00	0.00	0.14	0.14
4.55	2.00	0.35	5.00	0.00	0.14	0.14
4.60	2.00	0.35	5.00	0.00	0.14	0.14
4.65	2.00	0.35	5.00	0.00	0.14	0.14
4.70	2.00	0.35	5.00	0.00	0.14	0.14
4.75	2.00	0.35	5.00	0.00	0.14	0.14
4.80	2.00	0.35	5.00	0.00	0.14	0.14
4.85	2.00	0.35	5.00	0.00	0.14	0.14
4.90	2.00	0.35	5.00	0.00	0.14	0.14
4.95	2.00	0.35	5.00	0.00	0.14	0.14
5.00	0.66	0.35	5.00	0.00	0.14	0.14
5.05	0.66	0.35	5.00	0.00	0.14	0.14
5.10	0.66	0.35	5.00	0.00	0.14	0.14
5.15	0.66	0.35	5.00	0.00	0.14	0.14
5.20	0.66	0.35	5.00	0.00	0.14	0.14
5.25	0.66	0.35	5.00	0.00	0.14	0.14
5.30	0.66	0.35	5.00	0.00	0.14	0.14
5.35	0.66	0.35	5.00	0.00	0.14	0.14
5.40	0.66	0.35	5.00	0.00	0.14	0.14
5.45	0.66	0.35	5.00	0.00	0.14	0.14
5.50	0.66	0.35	5.00	0.00	0.14	0.14
5.55	0.66	0.35	5.00	0.00	0.14	0.14
5.60	0.66	0.35	5.00	0.00	0.14	0.14
5.65	0.66	0.35	5.00	0.00	0.14	0.14
5.70	0.66	0.35	5.00	0.00	0.14	0.14
5.75	0.66	0.35	5.00	0.00	0.14	0.14
5.80	0.66	0.35	5.00	0.00	0.14	0.14
5.85	0.66	0.35	5.00	0.00	0.14	0.14
5.90	0.66	0.35	5.00	0.00	0.14	0.14
5.95	0.66	0.35	5.00	0.00	0.14	0.14
6.00	0.66	0.35	5.00	0.00	0.14	0.14
6.05	0.66	0.35	5.00	0.00	0.14	0.14
6.10	0.66	0.35	5.00	0.00	0.14	0.14
6.15	0.66	0.35	5.00	0.00	0.14	0.14
6.20	0.66	0.35	5.00	0.00	0.14	0.14
6.25	0.66	0.35	5.00	0.00	0.14	0.14
6.30	0.66	0.35	5.00	0.00	0.14	0.14
6.35	0.66	0.35	5.00	0.00	0.14	0.14
6.40	0.66	0.35	5.00	0.00	0.14	0.14
6.45	0.66	0.35	5.00	0.00	0.14	0.14
6.50	0.66	0.35	5.00	0.00	0.14	0.14
6.55	0.66	0.35	5.00	0.00	0.14	0.14
6.60	0.66	0.35	5.00	0.00	0.14	0.14
6.65	0.66	0.35	5.00	0.00	0.14	0.14

6.70	0.66	0.35	5.00	0.00	0.14	0.14
6.75	0.66	0.35	5.00	0.00	0.14	0.14
6.80	0.66	0.35	5.00	0.00	0.14	0.14
6.85	0.66	0.35	5.00	0.00	0.14	0.14
6.90	0.66	0.35	5.00	0.00	0.14	0.14
6.95	0.66	0.35	5.00	0.00	0.13	0.13
7.00	0.66	0.35	5.00	0.00	0.13	0.13
7.05	0.66	0.35	5.00	0.00	0.13	0.13
7.10	0.66	0.35	5.00	0.00	0.13	0.13
7.15	0.66	0.35	5.00	0.00	0.13	0.13
7.20	0.66	0.35	5.00	0.00	0.13	0.13
7.25	0.66	0.35	5.00	0.00	0.13	0.13
7.30	0.66	0.35	5.00	0.00	0.13	0.13
7.35	0.66	0.35	5.00	0.00	0.13	0.13
7.40	0.66	0.35	5.00	0.00	0.13	0.13
7.45	0.66	0.35	5.00	0.00	0.13	0.13
7.50	0.66	0.35	5.00	0.00	0.13	0.13
7.55	0.66	0.35	5.00	0.00	0.13	0.13
7.60	0.66	0.35	5.00	0.00	0.13	0.13
7.65	0.66	0.35	5.00	0.00	0.13	0.13
7.70	0.66	0.35	5.00	0.00	0.13	0.13
7.75	0.66	0.35	5.00	0.00	0.13	0.13
7.80	0.66	0.35	5.00	0.00	0.13	0.13
7.85	0.66	0.35	5.00	0.00	0.13	0.13
7.90	0.66	0.35	5.00	0.00	0.13	0.13
7.95	0.66	0.35	5.00	0.00	0.13	0.13
8.00	0.66	0.35	5.00	0.00	0.13	0.13
8.05	0.66	0.35	5.00	0.00	0.13	0.13
8.10	0.66	0.35	5.00	0.00	0.13	0.13
8.15	0.66	0.35	5.00	0.00	0.13	0.13
8.20	0.66	0.35	5.00	0.00	0.13	0.13
8.25	0.66	0.35	5.00	0.00	0.13	0.13
8.30	0.66	0.35	5.00	0.00	0.13	0.13
8.35	0.66	0.35	5.00	0.00	0.13	0.13
8.40	0.66	0.35	5.00	0.00	0.13	0.13
8.45	0.66	0.35	5.00	0.00	0.13	0.13
8.50	0.66	0.35	5.00	0.00	0.13	0.13
8.55	0.66	0.35	5.00	0.00	0.13	0.13
8.60	0.66	0.35	5.00	0.00	0.13	0.13
8.65	0.66	0.35	5.00	0.00	0.13	0.13
8.70	0.66	0.35	5.00	0.00	0.13	0.13
8.75	0.66	0.35	5.00	0.00	0.13	0.13
8.80	0.66	0.35	5.00	0.00	0.13	0.13
8.85	0.66	0.35	5.00	0.00	0.13	0.13
8.90	0.66	0.35	5.00	0.00	0.13	0.13
8.95	0.66	0.35	5.00	0.00	0.13	0.13
9.00	0.66	0.35	5.00	0.00	0.13	0.13
9.05	0.66	0.35	5.00	0.00	0.13	0.13
9.10	0.66	0.35	5.00	0.00	0.13	0.13
9.15	0.66	0.35	5.00	0.00	0.13	0.13
9.20	0.66	0.35	5.00	0.00	0.13	0.13
9.25	0.66	0.35	5.00	0.00	0.13	0.13
9.30	0.66	0.35	5.00	0.00	0.13	0.13
9.35	0.66	0.35	5.00	0.00	0.13	0.13

9.40	0.66	0.35	5.00	0.00	0.13	0.13
9.45	0.66	0.35	5.00	0.00	0.13	0.13
9.50	0.66	0.35	5.00	0.00	0.13	0.13
9.55	0.66	0.35	5.00	0.00	0.13	0.13
9.60	0.66	0.35	5.00	0.00	0.13	0.13
9.65	0.66	0.35	5.00	0.00	0.13	0.13
9.70	0.66	0.35	5.00	0.00	0.13	0.13
9.75	0.66	0.35	5.00	0.00	0.13	0.13
9.80	0.66	0.35	5.00	0.00	0.13	0.13
9.85	0.66	0.35	5.00	0.00	0.13	0.13
9.90	0.66	0.35	5.00	0.00	0.13	0.13
9.95	0.66	0.35	5.00	0.00	0.13	0.13
10.00	0.66	0.34	5.00	0.00	0.13	0.13
10.05	0.66	0.34	5.00	0.00	0.13	0.13
10.10	0.66	0.34	5.00	0.00	0.13	0.13
10.15	0.66	0.34	5.00	0.00	0.13	0.13
10.20	0.66	0.34	5.00	0.00	0.13	0.13
10.25	0.66	0.34	5.00	0.00	0.13	0.13
10.30	0.66	0.34	5.00	0.00	0.13	0.13
10.35	0.66	0.34	5.00	0.00	0.13	0.13
10.40	0.66	0.34	5.00	0.00	0.13	0.13
10.45	0.66	0.34	5.00	0.00	0.13	0.13
10.50	0.66	0.34	5.00	0.00	0.13	0.13
10.55	0.66	0.34	5.00	0.00	0.13	0.13
10.60	0.66	0.34	5.00	0.00	0.13	0.13
10.65	0.66	0.34	5.00	0.00	0.13	0.13
10.70	0.66	0.34	5.00	0.00	0.13	0.13
10.75	0.66	0.34	5.00	0.00	0.13	0.13
10.80	0.66	0.34	5.00	0.00	0.13	0.13
10.85	0.66	0.34	5.00	0.00	0.13	0.13
10.90	0.66	0.34	5.00	0.00	0.13	0.13
10.95	0.66	0.34	5.00	0.00	0.13	0.13
11.00	0.66	0.34	5.00	0.00	0.13	0.13
11.05	0.66	0.34	5.00	0.00	0.13	0.13
11.10	0.66	0.34	5.00	0.00	0.13	0.13
11.15	0.66	0.34	5.00	0.00	0.13	0.13
11.20	0.66	0.34	5.00	0.00	0.13	0.13
11.25	0.66	0.34	5.00	0.00	0.13	0.13
11.30	0.66	0.34	5.00	0.00	0.13	0.13
11.35	0.66	0.34	5.00	0.00	0.13	0.13
11.40	0.66	0.34	5.00	0.00	0.13	0.13
11.45	0.66	0.34	5.00	0.00	0.13	0.13
11.50	0.66	0.34	5.00	0.00	0.13	0.13
11.55	0.66	0.34	5.00	0.00	0.12	0.12
11.60	0.66	0.34	5.00	0.00	0.12	0.12
11.65	0.66	0.34	5.00	0.00	0.12	0.12
11.70	0.66	0.34	5.00	0.00	0.12	0.12
11.75	0.66	0.34	5.00	0.00	0.12	0.12
11.80	0.66	0.34	5.00	0.00	0.12	0.12
11.85	0.66	0.34	5.00	0.00	0.12	0.12
11.90	0.66	0.34	5.00	0.00	0.12	0.12
11.95	0.66	0.34	5.00	0.00	0.12	0.12
12.00	0.66	0.34	5.00	0.00	0.12	0.12
12.05	0.66	0.34	5.00	0.00	0.12	0.12

12.10	0.66	0.34	5.00	0.00	0.12	0.12
12.15	0.66	0.34	5.00	0.00	0.12	0.12
12.20	0.66	0.34	5.00	0.00	0.12	0.12
12.25	0.66	0.34	5.00	0.00	0.12	0.12
12.30	0.66	0.34	5.00	0.00	0.12	0.12
12.35	0.66	0.34	5.00	0.00	0.12	0.12
12.40	0.66	0.34	5.00	0.00	0.12	0.12
12.45	0.66	0.34	5.00	0.00	0.12	0.12
12.50	0.66	0.34	5.00	0.00	0.12	0.12
12.55	0.66	0.34	5.00	0.00	0.12	0.12
12.60	0.66	0.34	5.00	0.00	0.12	0.12
12.65	0.66	0.34	5.00	0.00	0.12	0.12
12.70	0.66	0.34	5.00	0.00	0.12	0.12
12.75	0.66	0.34	5.00	0.00	0.12	0.12
12.80	0.66	0.34	5.00	0.00	0.12	0.12
12.85	0.66	0.34	5.00	0.00	0.12	0.12
12.90	0.66	0.34	5.00	0.00	0.12	0.12
12.95	0.66	0.34	5.00	0.00	0.12	0.12
13.00	0.66	0.34	5.00	0.00	0.12	0.12
13.05	0.66	0.34	5.00	0.00	0.12	0.12
13.10	0.66	0.34	5.00	0.00	0.12	0.12
13.15	0.66	0.34	5.00	0.00	0.12	0.12
13.20	0.66	0.34	5.00	0.00	0.12	0.12
13.25	0.66	0.34	5.00	0.00	0.12	0.12
13.30	0.66	0.34	5.00	0.00	0.12	0.12
13.35	0.66	0.34	5.00	0.00	0.12	0.12
13.40	0.66	0.34	5.00	0.00	0.12	0.12
13.45	0.66	0.34	5.00	0.00	0.12	0.12
13.50	0.66	0.34	5.00	0.00	0.12	0.12
13.55	0.66	0.34	5.00	0.00	0.12	0.12
13.60	0.66	0.34	5.00	0.00	0.12	0.12
13.65	0.66	0.34	5.00	0.00	0.12	0.12
13.70	0.66	0.34	5.00	0.00	0.12	0.12
13.75	0.66	0.34	5.00	0.00	0.12	0.12
13.80	0.66	0.34	5.00	0.00	0.12	0.12
13.85	0.66	0.34	5.00	0.00	0.12	0.12
13.90	0.66	0.34	5.00	0.00	0.12	0.12
13.95	0.66	0.34	5.00	0.00	0.12	0.12
14.00	0.66	0.34	5.00	0.00	0.12	0.12
14.05	0.66	0.34	5.00	0.00	0.12	0.12
14.10	0.66	0.34	5.00	0.00	0.12	0.12
14.15	0.66	0.34	5.00	0.00	0.12	0.12
14.20	0.66	0.34	5.00	0.00	0.12	0.12
14.25	0.66	0.34	5.00	0.00	0.12	0.12
14.30	0.66	0.34	5.00	0.00	0.12	0.12
14.35	0.66	0.34	5.00	0.00	0.12	0.12
14.40	0.66	0.34	5.00	0.00	0.12	0.12
14.45	0.66	0.34	5.00	0.00	0.12	0.12
14.50	0.66	0.34	5.00	0.00	0.12	0.12
14.55	0.66	0.34	5.00	0.00	0.12	0.12
14.60	0.66	0.34	5.00	0.00	0.12	0.12
14.65	0.66	0.34	5.00	0.00	0.12	0.12
14.70	0.66	0.34	5.00	0.00	0.12	0.12
14.75	0.66	0.34	5.00	0.00	0.12	0.12

14.80	0.66	0.34	5.00	0.00	0.12	0.12
14.85	0.66	0.34	5.00	0.00	0.12	0.12
14.90	0.66	0.34	5.00	0.00	0.12	0.12
14.95	0.66	0.34	5.00	0.00	0.12	0.12
15.00	0.66	0.34	5.00	0.00	0.12	0.12
15.05	0.66	0.34	5.00	0.00	0.12	0.12
15.10	0.66	0.34	5.00	0.00	0.12	0.12
15.15	0.66	0.34	5.00	0.00	0.12	0.12
15.20	0.66	0.34	5.00	0.00	0.12	0.12
15.25	0.66	0.34	5.00	0.00	0.12	0.12
15.30	0.66	0.34	5.00	0.00	0.12	0.12
15.35	0.66	0.34	5.00	0.00	0.11	0.11
15.40	0.66	0.34	5.00	0.00	0.11	0.11
15.45	0.66	0.34	5.00	0.00	0.11	0.11
15.50	0.66	0.34	5.00	0.00	0.11	0.11
15.55	0.66	0.34	5.00	0.00	0.11	0.11
15.60	0.66	0.34	5.00	0.00	0.11	0.11
15.65	0.66	0.34	5.00	0.00	0.11	0.11
15.70	0.66	0.34	5.00	0.00	0.11	0.11
15.75	0.66	0.34	5.00	0.00	0.11	0.11
15.80	0.66	0.34	5.00	0.00	0.11	0.11
15.85	0.66	0.34	5.00	0.00	0.11	0.11
15.90	0.66	0.34	5.00	0.00	0.11	0.11
15.95	0.66	0.34	5.00	0.00	0.11	0.11
16.00	0.66	0.34	5.00	0.00	0.11	0.11
16.05	0.66	0.34	5.00	0.00	0.11	0.11
16.10	0.66	0.34	5.00	0.00	0.11	0.11
16.15	0.66	0.34	5.00	0.00	0.11	0.11
16.20	0.66	0.34	5.00	0.00	0.11	0.11
16.25	0.66	0.34	5.00	0.00	0.11	0.11
16.30	0.66	0.34	5.00	0.00	0.11	0.11
16.35	0.66	0.34	5.00	0.00	0.11	0.11
16.40	0.66	0.34	5.00	0.00	0.11	0.11
16.45	0.66	0.34	5.00	0.00	0.11	0.11
16.50	0.66	0.34	5.00	0.00	0.11	0.11
16.55	0.66	0.34	5.00	0.00	0.11	0.11
16.60	0.66	0.34	5.00	0.00	0.11	0.11
16.65	0.66	0.34	5.00	0.00	0.11	0.11
16.70	0.66	0.34	5.00	0.00	0.11	0.11
16.75	0.66	0.34	5.00	0.00	0.11	0.11
16.80	0.66	0.34	5.00	0.00	0.11	0.11
16.85	0.66	0.34	5.00	0.00	0.11	0.11
16.90	0.66	0.34	5.00	0.00	0.11	0.11
16.95	0.66	0.34	5.00	0.00	0.11	0.11
17.00	0.66	0.34	5.00	0.00	0.11	0.11
17.05	0.66	0.34	5.00	0.00	0.11	0.11
17.10	0.66	0.34	5.00	0.00	0.11	0.11
17.15	0.66	0.34	5.00	0.00	0.11	0.11
17.20	0.66	0.34	5.00	0.00	0.11	0.11
17.25	0.66	0.34	5.00	0.00	0.11	0.11
17.30	0.66	0.34	5.00	0.00	0.11	0.11
17.35	0.66	0.34	5.00	0.00	0.11	0.11
17.40	0.66	0.34	5.00	0.00	0.11	0.11
17.45	0.66	0.34	5.00	0.00	0.11	0.11

17.50	0.66	0.34	5.00	0.00	0.11	0.11
17.55	0.66	0.34	5.00	0.00	0.11	0.11
17.60	0.66	0.34	5.00	0.00	0.11	0.11
17.65	0.66	0.34	5.00	0.00	0.11	0.11
17.70	0.66	0.34	5.00	0.00	0.11	0.11
17.75	0.66	0.34	5.00	0.00	0.11	0.11
17.80	0.66	0.34	5.00	0.00	0.11	0.11
17.85	0.66	0.34	5.00	0.00	0.11	0.11
17.90	0.66	0.34	5.00	0.00	0.11	0.11
17.95	0.66	0.34	5.00	0.00	0.11	0.11
18.00	0.66	0.34	5.00	0.00	0.11	0.11
18.05	0.66	0.34	5.00	0.00	0.11	0.11
18.10	0.66	0.34	5.00	0.00	0.11	0.11
18.15	0.66	0.34	5.00	0.00	0.11	0.11
18.20	0.66	0.34	5.00	0.00	0.11	0.11
18.25	0.66	0.34	5.00	0.00	0.11	0.11
18.30	0.66	0.34	5.00	0.00	0.11	0.11
18.35	0.66	0.34	5.00	0.00	0.11	0.11
18.40	0.66	0.34	5.00	0.00	0.11	0.11
18.45	0.66	0.34	5.00	0.00	0.11	0.11
18.50	0.66	0.34	5.00	0.00	0.11	0.11
18.55	0.66	0.34	5.00	0.00	0.11	0.11
18.60	0.66	0.34	5.00	0.00	0.11	0.11
18.65	0.66	0.34	5.00	0.00	0.11	0.11
18.70	0.66	0.34	5.00	0.00	0.11	0.11
18.75	0.66	0.34	5.00	0.00	0.11	0.11
18.80	0.66	0.34	5.00	0.00	0.11	0.11
18.85	0.66	0.34	5.00	0.00	0.11	0.11
18.90	0.66	0.34	5.00	0.00	0.11	0.11
18.95	0.66	0.34	5.00	0.00	0.11	0.11
19.00	0.66	0.34	5.00	0.00	0.11	0.11
19.05	0.66	0.34	5.00	0.00	0.11	0.11
19.10	0.66	0.34	5.00	0.00	0.11	0.11
19.15	0.66	0.34	5.00	0.00	0.11	0.11
19.20	0.66	0.34	5.00	0.00	0.11	0.11
19.25	0.66	0.34	5.00	0.00	0.10	0.10
19.30	0.66	0.34	5.00	0.00	0.10	0.10
19.35	0.66	0.34	5.00	0.00	0.10	0.10
19.40	0.66	0.34	5.00	0.00	0.10	0.10
19.45	0.66	0.34	5.00	0.00	0.10	0.10
19.50	0.66	0.34	5.00	0.00	0.10	0.10
19.55	0.66	0.34	5.00	0.00	0.10	0.10
19.60	0.66	0.34	5.00	0.00	0.10	0.10
19.65	0.66	0.34	5.00	0.00	0.10	0.10
19.70	0.66	0.34	5.00	0.00	0.10	0.10
19.75	0.66	0.34	5.00	0.00	0.10	0.10
19.80	0.66	0.34	5.00	0.00	0.10	0.10
19.85	0.66	0.34	5.00	0.00	0.10	0.10
19.90	0.66	0.34	5.00	0.00	0.10	0.10
19.95	0.66	0.34	5.00	0.00	0.10	0.10
20.00	0.66	0.34	5.00	0.00	0.10	0.10
20.05	0.66	0.34	5.00	0.00	0.10	0.10
20.10	0.66	0.34	5.00	0.00	0.10	0.10
20.15	0.66	0.34	5.00	0.00	0.10	0.10

20.20	0.66	0.34	5.00	0.00	0.10	0.10
20.25	0.66	0.34	5.00	0.00	0.10	0.10
20.30	0.66	0.34	5.00	0.00	0.10	0.10
20.35	0.66	0.34	5.00	0.00	0.10	0.10
20.40	0.66	0.34	5.00	0.00	0.10	0.10
20.45	0.66	0.34	5.00	0.00	0.10	0.10
20.50	0.66	0.34	5.00	0.00	0.10	0.10
20.55	0.66	0.34	5.00	0.00	0.10	0.10
20.60	0.66	0.34	5.00	0.00	0.10	0.10
20.65	0.66	0.34	5.00	0.00	0.10	0.10
20.70	0.66	0.34	5.00	0.00	0.10	0.10
20.75	0.66	0.34	5.00	0.00	0.10	0.10
20.80	0.66	0.34	5.00	0.00	0.10	0.10
20.85	0.66	0.34	5.00	0.00	0.10	0.10
20.90	0.66	0.34	5.00	0.00	0.10	0.10
20.95	0.66	0.34	5.00	0.00	0.10	0.10
21.00	0.66	0.34	5.00	0.00	0.10	0.10
21.05	0.66	0.34	5.00	0.00	0.10	0.10
21.10	0.66	0.34	5.00	0.00	0.10	0.10
21.15	0.66	0.34	5.00	0.00	0.10	0.10
21.20	0.66	0.34	5.00	0.00	0.10	0.10
21.25	0.66	0.34	5.00	0.00	0.10	0.10
21.30	0.66	0.34	5.00	0.00	0.10	0.10
21.35	0.66	0.34	5.00	0.00	0.10	0.10
21.40	0.66	0.34	5.00	0.00	0.10	0.10
21.45	0.66	0.34	5.00	0.00	0.10	0.10
21.50	0.66	0.34	5.00	0.00	0.10	0.10
21.55	0.66	0.34	5.00	0.00	0.10	0.10
21.60	0.66	0.34	5.00	0.00	0.10	0.10
21.65	0.66	0.34	5.00	0.00	0.10	0.10
21.70	0.66	0.34	5.00	0.00	0.10	0.10
21.75	0.66	0.34	5.00	0.00	0.10	0.10
21.80	0.66	0.34	5.00	0.00	0.10	0.10
21.85	0.66	0.34	5.00	0.00	0.10	0.10
21.90	0.66	0.34	5.00	0.00	0.10	0.10
21.95	0.66	0.34	5.00	0.00	0.10	0.10
22.00	0.66	0.34	5.00	0.00	0.10	0.10
22.05	0.66	0.34	5.00	0.00	0.10	0.10
22.10	0.66	0.34	5.00	0.00	0.10	0.10
22.15	0.66	0.33	5.00	0.00	0.10	0.10
22.20	0.66	0.33	5.00	0.00	0.10	0.10
22.25	0.66	0.33	5.00	0.00	0.10	0.10
22.30	0.66	0.33	5.00	0.00	0.09	0.09
22.35	0.66	0.33	5.00	0.00	0.09	0.09
22.40	0.66	0.33	5.00	0.00	0.09	0.09
22.45	0.66	0.33	5.00	0.00	0.09	0.09
22.50	0.66	0.33	5.00	0.00	0.09	0.09
22.55	0.66	0.33	5.00	0.00	0.09	0.09
22.60	0.66	0.33	5.00	0.00	0.09	0.09
22.65	0.66	0.33	5.00	0.00	0.09	0.09
22.70	0.66	0.33	5.00	0.00	0.09	0.09
22.75	0.66	0.33	5.00	0.00	0.09	0.09
22.80	0.66	0.33	5.00	0.00	0.09	0.09
22.85	0.66	0.33	5.00	0.00	0.09	0.09

22.90	0.66	0.33	5.00	0.00	0.09	0.09
22.95	0.66	0.33	5.00	0.00	0.09	0.09
23.00	0.66	0.33	5.00	0.00	0.09	0.09
23.05	0.66	0.33	5.00	0.00	0.09	0.09
23.10	0.66	0.33	5.00	0.00	0.09	0.09
23.15	0.66	0.33	5.00	0.00	0.09	0.09
23.20	0.66	0.33	5.00	0.00	0.09	0.09
23.25	0.66	0.33	5.00	0.00	0.09	0.09
23.30	0.66	0.33	5.00	0.00	0.09	0.09
23.35	0.66	0.33	5.00	0.00	0.09	0.09
23.40	0.66	0.33	5.00	0.00	0.09	0.09
23.45	0.66	0.33	5.00	0.00	0.09	0.09
23.50	0.66	0.33	5.00	0.00	0.09	0.09
23.55	0.66	0.33	5.00	0.00	0.09	0.09
23.60	0.66	0.33	5.00	0.00	0.09	0.09
23.65	0.66	0.33	5.00	0.00	0.09	0.09
23.70	0.66	0.33	5.00	0.00	0.09	0.09
23.75	0.66	0.33	5.00	0.00	0.09	0.09
23.80	0.66	0.33	5.00	0.00	0.09	0.09
23.85	0.66	0.33	5.00	0.00	0.09	0.09
23.90	0.66	0.33	5.00	0.00	0.09	0.09
23.95	0.66	0.33	5.00	0.00	0.09	0.09
24.00	0.66	0.33	5.00	0.00	0.09	0.09
24.05	0.66	0.33	5.00	0.00	0.09	0.09
24.10	0.66	0.33	5.00	0.00	0.09	0.09
24.15	0.66	0.33	5.00	0.00	0.09	0.09
24.20	0.66	0.33	5.00	0.00	0.09	0.09
24.25	0.66	0.33	5.00	0.00	0.09	0.09
24.30	0.66	0.33	5.00	0.00	0.09	0.09
24.35	0.66	0.33	5.00	0.00	0.09	0.09
24.40	0.66	0.33	5.00	0.00	0.09	0.09
24.45	0.66	0.33	5.00	0.00	0.09	0.09
24.50	0.66	0.33	5.00	0.00	0.09	0.09
24.55	0.66	0.33	5.00	0.00	0.09	0.09
24.60	0.66	0.33	5.00	0.00	0.09	0.09
24.65	0.66	0.33	5.00	0.00	0.09	0.09
24.70	0.66	0.33	5.00	0.00	0.09	0.09
24.75	0.66	0.33	5.00	0.00	0.09	0.09
24.80	0.66	0.33	5.00	0.00	0.09	0.09
24.85	0.66	0.33	5.00	0.00	0.09	0.09
24.90	0.66	0.33	5.00	0.00	0.09	0.09
24.95	0.66	0.33	5.00	0.00	0.09	0.09
25.00	0.66	0.33	5.00	0.00	0.09	0.09
25.05	0.66	0.33	5.00	0.00	0.09	0.09
25.10	0.66	0.33	5.00	0.00	0.09	0.09
25.15	0.66	0.33	5.00	0.00	0.09	0.09
25.20	0.66	0.33	5.00	0.00	0.09	0.09
25.25	0.66	0.33	5.00	0.00	0.09	0.09
25.30	0.66	0.33	5.00	0.00	0.08	0.08
25.35	0.66	0.33	5.00	0.00	0.08	0.08
25.40	0.66	0.33	5.00	0.00	0.08	0.08
25.45	0.66	0.33	5.00	0.00	0.08	0.08
25.50	0.66	0.33	5.00	0.00	0.08	0.08
25.55	0.66	0.33	5.00	0.00	0.08	0.08

25.60	0.66	0.33	5.00	0.00	0.08	0.08
25.65	0.66	0.33	5.00	0.00	0.08	0.08
25.70	0.66	0.33	5.00	0.00	0.08	0.08
25.75	0.66	0.33	5.00	0.00	0.08	0.08
25.80	0.66	0.33	5.00	0.00	0.08	0.08
25.85	0.66	0.33	5.00	0.00	0.08	0.08
25.90	0.66	0.33	5.00	0.00	0.08	0.08
25.95	0.66	0.33	5.00	0.00	0.08	0.08
26.00	0.66	0.33	5.00	0.00	0.08	0.08
26.05	0.66	0.33	5.00	0.00	0.08	0.08
26.10	0.66	0.33	5.00	0.00	0.08	0.08
26.15	0.66	0.33	5.00	0.00	0.08	0.08
26.20	0.66	0.33	5.00	0.00	0.08	0.08
26.25	0.66	0.33	5.00	0.00	0.08	0.08
26.30	0.66	0.33	5.00	0.00	0.08	0.08
26.35	0.66	0.33	5.00	0.00	0.08	0.08
26.40	0.66	0.33	5.00	0.00	0.08	0.08
26.45	0.66	0.33	5.00	0.00	0.08	0.08
26.50	0.66	0.33	5.00	0.00	0.08	0.08
26.55	0.66	0.33	5.00	0.00	0.08	0.08
26.60	0.66	0.33	5.00	0.00	0.08	0.08
26.65	0.66	0.33	5.00	0.00	0.08	0.08
26.70	0.66	0.33	5.00	0.00	0.08	0.08
26.75	0.66	0.33	5.00	0.00	0.08	0.08
26.80	0.66	0.33	5.00	0.00	0.08	0.08
26.85	0.66	0.33	5.00	0.00	0.08	0.08
26.90	0.66	0.33	5.00	0.00	0.08	0.08
26.95	0.66	0.33	5.00	0.00	0.08	0.08
27.00	0.66	0.33	5.00	0.00	0.08	0.08
27.05	0.66	0.33	5.00	0.00	0.08	0.08
27.10	0.66	0.33	5.00	0.00	0.08	0.08
27.15	0.66	0.33	5.00	0.00	0.08	0.08
27.20	0.66	0.33	5.00	0.00	0.08	0.08
27.25	0.66	0.33	5.00	0.00	0.08	0.08
27.30	0.66	0.33	5.00	0.00	0.08	0.08
27.35	0.66	0.33	5.00	0.00	0.08	0.08
27.40	0.66	0.33	5.00	0.00	0.08	0.08
27.45	0.66	0.33	5.00	0.00	0.08	0.08
27.50	0.66	0.33	5.00	0.00	0.08	0.08
27.55	0.67	0.33	5.00	0.00	0.08	0.08
27.60	0.67	0.33	5.00	0.00	0.08	0.08
27.65	0.67	0.33	5.00	0.00	0.08	0.08
27.70	0.67	0.33	5.00	0.00	0.08	0.08
27.75	0.67	0.33	5.00	0.00	0.08	0.08
27.80	0.67	0.33	5.00	0.00	0.08	0.08
27.85	0.67	0.33	5.00	0.00	0.08	0.08
27.90	0.67	0.33	5.00	0.00	0.08	0.08
27.95	0.67	0.33	5.00	0.00	0.08	0.08
28.00	0.67	0.33	5.00	0.00	0.07	0.07
28.05	0.67	0.33	5.00	0.00	0.07	0.07
28.10	0.67	0.33	5.00	0.00	0.07	0.07
28.15	0.67	0.33	5.00	0.00	0.07	0.07
28.20	0.67	0.33	5.00	0.00	0.07	0.07
28.25	0.67	0.33	5.00	0.00	0.07	0.07

28.30	0.67	0.33	5.00	0.00	0.07	0.07
28.35	0.67	0.33	5.00	0.00	0.07	0.07
28.40	0.67	0.33	5.00	0.00	0.07	0.07
28.45	0.67	0.33	5.00	0.00	0.07	0.07
28.50	0.66	0.33	5.00	0.00	0.07	0.07
28.55	0.66	0.33	5.00	0.00	0.07	0.07
28.60	0.66	0.33	5.00	0.00	0.07	0.07
28.65	0.66	0.33	5.00	0.00	0.07	0.07
28.70	0.66	0.33	5.00	0.00	0.07	0.07
28.75	0.66	0.33	5.00	0.00	0.07	0.07
28.80	0.66	0.33	5.00	0.00	0.07	0.07
28.85	0.66	0.33	5.00	0.00	0.07	0.07
28.90	0.66	0.33	5.00	0.00	0.07	0.07
28.95	0.66	0.33	5.00	0.00	0.07	0.07
29.00	0.66	0.33	5.00	0.00	0.07	0.07
29.05	0.66	0.33	5.00	0.00	0.07	0.07
29.10	0.66	0.33	5.00	0.00	0.07	0.07
29.15	0.66	0.33	5.00	0.00	0.07	0.07
29.20	0.66	0.33	5.00	0.00	0.07	0.07
29.25	0.66	0.33	5.00	0.00	0.07	0.07
29.30	0.66	0.33	5.00	0.00	0.07	0.07
29.35	0.66	0.33	5.00	0.00	0.07	0.07
29.40	0.66	0.33	5.00	0.00	0.07	0.07
29.45	0.66	0.33	5.00	0.00	0.07	0.07
29.50	0.66	0.33	5.00	0.00	0.07	0.07
29.55	0.66	0.33	5.00	0.00	0.07	0.07
29.60	0.66	0.33	5.00	0.00	0.07	0.07
29.65	0.66	0.33	5.00	0.00	0.07	0.07
29.70	0.66	0.33	5.00	0.00	0.07	0.07
29.75	0.66	0.33	5.00	0.00	0.07	0.07
29.80	0.66	0.33	5.00	0.00	0.07	0.07
29.85	0.66	0.33	5.00	0.00	0.07	0.07
29.90	0.66	0.33	5.00	0.00	0.07	0.07
29.95	0.66	0.33	5.00	0.00	0.07	0.07
30.00	0.66	0.33	5.00	0.00	0.07	0.07
30.05	0.66	0.33	5.00	0.00	0.07	0.07
30.10	0.66	0.33	5.00	0.00	0.07	0.07
30.15	0.66	0.33	5.00	0.00	0.07	0.07
30.20	0.66	0.33	5.00	0.00	0.07	0.07
30.25	0.66	0.33	5.00	0.00	0.06	0.06
30.30	0.66	0.33	5.00	0.00	0.06	0.06
30.35	0.66	0.33	5.00	0.00	0.06	0.06
30.40	0.66	0.33	5.00	0.00	0.06	0.06
30.45	0.66	0.33	5.00	0.00	0.06	0.06
30.50	0.66	0.33	5.00	0.00	0.06	0.06
30.55	0.66	0.33	5.00	0.00	0.06	0.06
30.60	0.66	0.33	5.00	0.00	0.06	0.06
30.65	0.66	0.33	5.00	0.00	0.06	0.06
30.70	0.66	0.33	5.00	0.00	0.06	0.06
30.75	0.66	0.33	5.00	0.00	0.06	0.06
30.80	0.66	0.33	5.00	0.00	0.06	0.06
30.85	0.66	0.33	5.00	0.00	0.06	0.06
30.90	0.66	0.33	5.00	0.00	0.06	0.06
30.95	0.66	0.33	5.00	0.00	0.06	0.06

31.00	0.66	0.33	5.00	0.00	0.06	0.06
31.05	0.65	0.33	5.00	0.00	0.06	0.06
31.10	0.65	0.33	5.00	0.00	0.06	0.06
31.15	0.65	0.33	5.00	0.00	0.06	0.06
31.20	0.65	0.32	5.00	0.00	0.06	0.06
31.25	0.65	0.32	5.00	0.00	0.06	0.06
31.30	0.65	0.32	5.00	0.00	0.06	0.06
31.35	0.65	0.32	5.00	0.00	0.06	0.06
31.40	0.65	0.32	5.00	0.00	0.06	0.06
31.45	0.65	0.32	5.00	0.00	0.06	0.06
31.50	0.65	0.32	5.00	0.00	0.06	0.06
31.55	0.65	0.32	5.00	0.00	0.06	0.06
31.60	0.65	0.32	5.00	0.00	0.06	0.06
31.65	0.65	0.32	5.00	0.00	0.06	0.06
31.70	0.65	0.32	5.00	0.00	0.06	0.06
31.75	0.65	0.32	5.00	0.00	0.06	0.06
31.80	0.65	0.32	5.00	0.00	0.06	0.06
31.85	0.65	0.32	5.00	0.00	0.06	0.06
31.90	0.65	0.32	5.00	0.00	0.06	0.06
31.95	0.65	0.32	5.00	0.00	0.06	0.06
32.00	0.65	0.32	5.00	0.00	0.06	0.06
32.05	0.65	0.32	5.00	0.00	0.06	0.06
32.10	0.65	0.32	5.00	0.00	0.06	0.06
32.15	0.65	0.32	5.00	0.00	0.06	0.06
32.20	0.65	0.32	5.00	0.00	0.06	0.06
32.25	0.65	0.32	5.00	0.00	0.05	0.05
32.30	0.65	0.32	5.00	0.00	0.05	0.05
32.35	0.65	0.32	5.00	0.00	0.05	0.05
32.40	0.65	0.32	5.00	0.00	0.05	0.05
32.45	0.65	0.32	5.00	0.00	0.05	0.05
32.50	0.65	0.32	5.00	0.00	0.05	0.05
32.55	0.65	0.32	5.00	0.00	0.05	0.05
32.60	0.65	0.32	5.00	0.00	0.05	0.05
32.65	0.65	0.32	5.00	0.00	0.05	0.05
32.70	0.65	0.32	5.00	0.00	0.05	0.05
32.75	0.65	0.32	5.00	0.00	0.05	0.05
32.80	0.65	0.32	5.00	0.00	0.05	0.05
32.85	0.65	0.32	5.00	0.00	0.05	0.05
32.90	0.65	0.32	5.00	0.00	0.05	0.05
32.95	0.65	0.32	5.00	0.00	0.05	0.05
33.00	0.65	0.32	5.00	0.00	0.05	0.05
33.05	0.65	0.32	5.00	0.00	0.05	0.05
33.10	0.65	0.32	5.00	0.00	0.05	0.05
33.15	0.65	0.32	5.00	0.00	0.05	0.05
33.20	0.65	0.32	5.00	0.00	0.05	0.05
33.25	0.65	0.32	5.00	0.00	0.05	0.05
33.30	0.65	0.32	5.00	0.00	0.05	0.05
33.35	0.65	0.32	5.00	0.00	0.05	0.05
33.40	0.65	0.32	5.00	0.00	0.05	0.05
33.45	0.65	0.32	5.00	0.00	0.05	0.05
33.50	0.65	0.32	5.00	0.00	0.05	0.05
33.55	0.65	0.32	5.00	0.00	0.05	0.05
33.60	0.64	0.32	5.00	0.00	0.05	0.05
33.65	0.64	0.32	5.00	0.00	0.05	0.05

33.70	0.64	0.32	5.00	0.00	0.05	0.05
33.75	0.64	0.32	5.00	0.00	0.05	0.05
33.80	0.64	0.32	5.00	0.00	0.05	0.05
33.85	0.64	0.32	5.00	0.00	0.05	0.05
33.90	0.64	0.32	5.00	0.00	0.05	0.05
33.95	0.64	0.32	5.00	0.00	0.05	0.05
34.00	0.64	0.32	5.00	0.00	0.05	0.05
34.05	0.64	0.32	5.00	0.00	0.05	0.05
34.10	0.64	0.32	5.00	0.00	0.05	0.05
34.15	0.64	0.32	5.00	0.00	0.05	0.05
34.20	0.64	0.32	5.00	0.00	0.05	0.05
34.25	0.64	0.32	5.00	0.00	0.04	0.04
34.30	0.64	0.32	5.00	0.00	0.04	0.04
34.35	0.64	0.32	5.00	0.00	0.04	0.04
34.40	0.64	0.32	5.00	0.00	0.04	0.04
34.45	0.64	0.32	5.00	0.00	0.04	0.04
34.50	0.64	0.32	5.00	0.00	0.04	0.04
34.55	0.64	0.32	5.00	0.00	0.04	0.04
34.60	0.64	0.32	5.00	0.00	0.04	0.04
34.65	0.64	0.32	5.00	0.00	0.04	0.04
34.70	0.64	0.31	5.00	0.00	0.04	0.04
34.75	0.64	0.31	5.00	0.00	0.04	0.04
34.80	0.64	0.31	5.00	0.00	0.04	0.04
34.85	0.64	0.31	5.00	0.00	0.04	0.04
34.90	0.64	0.31	5.00	0.00	0.04	0.04
34.95	0.64	0.31	5.00	0.00	0.04	0.04
35.00	0.64	0.31	5.00	0.00	0.04	0.04
35.05	0.64	0.31	5.00	0.00	0.04	0.04
35.10	0.64	0.31	5.00	0.00	0.04	0.04
35.15	0.64	0.31	5.00	0.00	0.04	0.04
35.20	0.64	0.31	5.00	0.00	0.04	0.04
35.25	0.64	0.31	5.00	0.00	0.04	0.04
35.30	0.64	0.31	5.00	0.00	0.04	0.04
35.35	0.64	0.31	5.00	0.00	0.04	0.04
35.40	0.64	0.31	5.00	0.00	0.04	0.04
35.45	0.64	0.31	5.00	0.00	0.04	0.04
35.50	0.64	0.31	5.00	0.00	0.04	0.04
35.55	0.64	0.31	5.00	0.00	0.04	0.04
35.60	0.64	0.31	5.00	0.00	0.04	0.04
35.65	0.64	0.31	5.00	0.00	0.04	0.04
35.70	0.64	0.31	5.00	0.00	0.04	0.04
35.75	0.64	0.31	5.00	0.00	0.04	0.04
35.80	0.64	0.31	5.00	0.00	0.04	0.04
35.85	0.64	0.31	5.00	0.00	0.04	0.04
35.90	0.64	0.31	5.00	0.00	0.04	0.04
35.95	0.64	0.31	5.00	0.00	0.04	0.04
36.00	0.64	0.31	5.00	0.00	0.04	0.04
36.05	0.64	0.31	5.00	0.00	0.04	0.04
36.10	0.64	0.31	5.00	0.00	0.04	0.04
36.15	0.64	0.31	5.00	0.00	0.04	0.04
36.20	0.64	0.31	5.00	0.00	0.04	0.04
36.25	0.63	0.31	5.00	0.00	0.03	0.03
36.30	0.63	0.31	5.00	0.00	0.03	0.03
36.35	0.63	0.31	5.00	0.00	0.03	0.03

36.40	0.63	0.31	5.00	0.00	0.03	0.03
36.45	0.63	0.31	5.00	0.00	0.03	0.03
36.50	0.63	0.31	5.00	0.00	0.03	0.03
36.55	0.63	0.31	5.00	0.00	0.03	0.03
36.60	0.63	0.31	5.00	0.00	0.03	0.03
36.65	0.63	0.31	5.00	0.00	0.03	0.03
36.70	0.63	0.31	5.00	0.00	0.03	0.03
36.75	0.63	0.31	5.00	0.00	0.03	0.03
36.80	0.63	0.31	5.00	0.00	0.03	0.03
36.85	0.63	0.31	5.00	0.00	0.03	0.03
36.90	0.63	0.31	5.00	0.00	0.03	0.03
36.95	0.63	0.31	5.00	0.00	0.03	0.03
37.00	0.63	0.31	5.00	0.00	0.03	0.03
37.05	0.63	0.31	5.00	0.00	0.03	0.03
37.10	0.63	0.31	5.00	0.00	0.03	0.03
37.15	0.63	0.31	5.00	0.00	0.03	0.03
37.20	0.63	0.31	5.00	0.00	0.03	0.03
37.25	0.63	0.31	5.00	0.00	0.03	0.03
37.30	0.63	0.31	5.00	0.00	0.03	0.03
37.35	0.63	0.31	5.00	0.00	0.03	0.03
37.40	0.63	0.31	5.00	0.00	0.03	0.03
37.45	0.63	0.31	5.00	0.00	0.03	0.03
37.50	0.63	0.31	5.00	0.00	0.03	0.03
37.55	0.63	0.31	5.00	0.00	0.03	0.03
37.60	0.63	0.31	5.00	0.00	0.03	0.03
37.65	0.63	0.31	5.00	0.00	0.03	0.03
37.70	0.63	0.31	5.00	0.00	0.03	0.03
37.75	0.63	0.31	5.00	0.00	0.03	0.03
37.80	0.63	0.31	5.00	0.00	0.03	0.03
37.85	0.63	0.31	5.00	0.00	0.03	0.03
37.90	0.63	0.31	5.00	0.00	0.03	0.03
37.95	0.63	0.31	5.00	0.00	0.03	0.03
38.00	0.63	0.31	5.00	0.00	0.03	0.03
38.05	0.63	0.31	5.00	0.00	0.03	0.03
38.10	0.63	0.31	5.00	0.00	0.03	0.03
38.15	0.63	0.31	5.00	0.00	0.03	0.03
38.20	0.63	0.30	5.00	0.00	0.03	0.03
38.25	0.63	0.30	5.00	0.00	0.03	0.03
38.30	0.63	0.30	5.00	0.00	0.03	0.03
38.35	0.63	0.30	5.00	0.00	0.03	0.03
38.40	0.63	0.30	5.00	0.00	0.02	0.02
38.45	0.63	0.30	5.00	0.00	0.02	0.02
38.50	0.63	0.30	5.00	0.00	0.02	0.02
38.55	0.63	0.30	5.00	0.00	0.02	0.02
38.60	0.63	0.30	5.00	0.00	0.02	0.02
38.65	0.63	0.30	5.00	0.00	0.02	0.02
38.70	0.63	0.30	5.00	0.00	0.02	0.02
38.75	0.63	0.30	5.00	0.00	0.02	0.02
38.80	0.63	0.30	5.00	0.00	0.02	0.02
38.85	0.63	0.30	5.00	0.00	0.02	0.02
38.90	0.63	0.30	5.00	0.00	0.02	0.02
38.95	0.63	0.30	5.00	0.00	0.02	0.02
39.00	0.62	0.30	5.00	0.00	0.02	0.02
39.05	0.62	0.30	5.00	0.00	0.02	0.02

39.10	0.62	0.30	5.00	0.00	0.02	0.02
39.15	0.62	0.30	5.00	0.00	0.02	0.02
39.20	0.62	0.30	5.00	0.00	0.02	0.02
39.25	0.62	0.30	5.00	0.00	0.02	0.02
39.30	0.62	0.30	5.00	0.00	0.02	0.02
39.35	0.62	0.30	5.00	0.00	0.02	0.02
39.40	0.62	0.30	5.00	0.00	0.02	0.02
39.45	0.62	0.30	5.00	0.00	0.02	0.02
39.50	0.62	0.30	5.00	0.00	0.02	0.02
39.55	0.62	0.30	5.00	0.00	0.02	0.02
39.60	0.62	0.30	5.00	0.00	0.02	0.02
39.65	0.62	0.30	5.00	0.00	0.02	0.02
39.70	0.62	0.30	5.00	0.00	0.02	0.02
39.75	0.62	0.30	5.00	0.00	0.02	0.02
39.80	0.62	0.30	5.00	0.00	0.02	0.02
39.85	0.62	0.30	5.00	0.00	0.02	0.02
39.90	0.62	0.30	5.00	0.00	0.02	0.02
39.95	0.62	0.30	5.00	0.00	0.02	0.02
40.00	0.62	0.30	5.00	0.00	0.02	0.02
40.05	0.62	0.30	5.00	0.00	0.02	0.02
40.10	0.62	0.30	5.00	0.00	0.02	0.02
40.15	0.62	0.30	5.00	0.00	0.02	0.02
40.20	0.62	0.30	5.00	0.00	0.02	0.02
40.25	0.62	0.30	5.00	0.00	0.02	0.02
40.30	0.62	0.30	5.00	0.00	0.02	0.02
40.35	0.62	0.30	5.00	0.00	0.02	0.02
40.40	0.62	0.30	5.00	0.00	0.02	0.02
40.45	0.62	0.30	5.00	0.00	0.02	0.02
40.50	0.62	0.30	5.00	0.00	0.02	0.02
40.55	0.62	0.30	5.00	0.00	0.02	0.02
40.60	0.62	0.30	5.00	0.00	0.02	0.02
40.65	0.62	0.30	5.00	0.00	0.02	0.02
40.70	0.62	0.30	5.00	0.00	0.02	0.02
40.75	0.62	0.30	5.00	0.00	0.02	0.02
40.80	0.62	0.30	5.00	0.00	0.01	0.01
40.85	0.62	0.30	5.00	0.00	0.01	0.01
40.90	0.62	0.30	5.00	0.00	0.01	0.01
40.95	0.62	0.30	5.00	0.00	0.01	0.01
41.00	0.62	0.30	5.00	0.00	0.01	0.01
41.05	0.62	0.30	5.00	0.00	0.01	0.01
41.10	0.62	0.30	5.00	0.00	0.01	0.01
41.15	0.62	0.30	5.00	0.00	0.01	0.01
41.20	0.62	0.30	5.00	0.00	0.01	0.01
41.25	0.62	0.30	5.00	0.00	0.01	0.01
41.30	0.62	0.30	5.00	0.00	0.01	0.01
41.35	0.62	0.30	5.00	0.00	0.01	0.01
41.40	0.62	0.30	5.00	0.00	0.01	0.01
41.45	0.62	0.30	5.00	0.00	0.01	0.01
41.50	0.62	0.30	5.00	0.00	0.01	0.01
41.55	0.62	0.30	5.00	0.00	0.01	0.01
41.60	0.62	0.30	5.00	0.00	0.01	0.01
41.65	0.62	0.29	5.00	0.00	0.01	0.01
41.70	0.62	0.29	5.00	0.00	0.01	0.01
41.75	0.62	0.29	5.00	0.00	0.01	0.01

41.80	0.62	0.29	5.00	0.00	0.01	0.01
41.85	0.62	0.29	5.00	0.00	0.01	0.01
41.90	0.61	0.29	5.00	0.00	0.01	0.01
41.95	0.61	0.29	5.00	0.00	0.01	0.01
42.00	0.61	0.29	5.00	0.00	0.01	0.01
42.05	0.61	0.29	5.00	0.00	0.01	0.01
42.10	0.61	0.29	5.00	0.00	0.01	0.01
42.15	0.61	0.29	5.00	0.00	0.01	0.01
42.20	0.61	0.29	5.00	0.00	0.01	0.01
42.25	0.61	0.29	5.00	0.00	0.01	0.01
42.30	0.61	0.29	5.00	0.00	0.01	0.01
42.35	0.61	0.29	5.00	0.00	0.01	0.01
42.40	0.61	0.29	5.00	0.00	0.01	0.01
42.45	0.61	0.29	5.00	0.00	0.01	0.01
42.50	0.61	0.29	5.00	0.00	0.01	0.01
42.55	0.61	0.29	5.00	0.00	0.01	0.01
42.60	0.61	0.29	5.00	0.00	0.01	0.01
42.65	0.61	0.29	5.00	0.00	0.01	0.01
42.70	0.61	0.29	5.00	0.00	0.01	0.01
42.75	0.61	0.29	5.00	0.00	0.01	0.01
42.80	0.61	0.29	5.00	0.00	0.01	0.01
42.85	0.61	0.29	5.00	0.00	0.01	0.01
42.90	0.61	0.29	5.00	0.00	0.01	0.01
42.95	0.61	0.29	5.00	0.00	0.01	0.01
43.00	0.61	0.29	5.00	0.00	0.01	0.01
43.05	0.61	0.29	5.00	0.00	0.01	0.01
43.10	0.61	0.29	5.00	0.00	0.01	0.01
43.15	0.61	0.29	5.00	0.00	0.01	0.01
43.20	0.61	0.29	5.00	0.00	0.01	0.01
43.25	0.61	0.29	5.00	0.00	0.01	0.01
43.30	0.61	0.29	5.00	0.00	0.01	0.01
43.35	0.61	0.29	5.00	0.00	0.01	0.01
43.40	0.61	0.29	5.00	0.00	0.01	0.01
43.45	0.61	0.29	5.00	0.00	0.01	0.01
43.50	0.61	0.29	5.00	0.00	0.01	0.01
43.55	0.61	0.29	5.00	0.00	0.01	0.01
43.60	0.61	0.29	5.00	0.00	0.01	0.01
43.65	0.61	0.29	5.00	0.00	0.01	0.01
43.70	0.61	0.29	5.00	0.00	0.01	0.01
43.75	0.61	0.29	5.00	0.00	0.00	0.00
43.80	0.61	0.29	5.00	0.00	0.00	0.00
43.85	0.61	0.29	5.00	0.00	0.00	0.00
43.90	0.61	0.29	5.00	0.00	0.00	0.00
43.95	0.61	0.29	5.00	0.00	0.00	0.00
44.00	0.61	0.29	5.00	0.00	0.00	0.00
44.05	0.61	0.29	5.00	0.00	0.00	0.00
44.10	0.61	0.29	5.00	0.00	0.00	0.00
44.15	0.61	0.29	5.00	0.00	0.00	0.00
44.20	0.61	0.29	5.00	0.00	0.00	0.00
44.25	0.61	0.29	5.00	0.00	0.00	0.00
44.30	0.61	0.29	5.00	0.00	0.00	0.00
44.35	0.61	0.29	5.00	0.00	0.00	0.00
44.40	0.61	0.29	5.00	0.00	0.00	0.00
44.45	0.61	0.29	5.00	0.00	0.00	0.00

44.50	0.61	0.29	5.00	0.00	0.00	0.00
44.55	0.61	0.29	5.00	0.00	0.00	0.00
44.60	0.61	0.29	5.00	0.00	0.00	0.00
44.65	0.61	0.29	5.00	0.00	0.00	0.00
44.70	0.61	0.29	5.00	0.00	0.00	0.00
44.75	0.61	0.29	5.00	0.00	0.00	0.00
44.80	0.61	0.29	5.00	0.00	0.00	0.00
44.85	0.61	0.29	5.00	0.00	0.00	0.00
44.90	0.60	0.29	5.00	0.00	0.00	0.00
44.95	0.60	0.29	5.00	0.00	0.00	0.00
45.00	0.60	0.29	5.00	0.00	0.00	0.00
45.05	2.00	0.29	5.00	0.00	0.00	0.00
45.10	2.00	0.29	5.00	0.00	0.00	0.00
45.15	2.00	0.28	5.00	0.00	0.00	0.00
45.20	2.00	0.28	5.00	0.00	0.00	0.00
45.25	2.00	0.28	5.00	0.00	0.00	0.00
45.30	2.00	0.28	5.00	0.00	0.00	0.00
45.35	2.00	0.28	5.00	0.00	0.00	0.00
45.40	2.00	0.28	5.00	0.00	0.00	0.00
45.45	2.00	0.28	5.00	0.00	0.00	0.00
45.50	2.00	0.28	5.00	0.00	0.00	0.00
45.55	2.00	0.28	5.00	0.00	0.00	0.00
45.60	2.00	0.28	5.00	0.00	0.00	0.00
45.65	2.00	0.28	5.00	0.00	0.00	0.00
45.70	2.00	0.28	5.00	0.00	0.00	0.00
45.75	2.00	0.28	5.00	0.00	0.00	0.00
45.80	2.00	0.28	5.00	0.00	0.00	0.00
45.85	2.00	0.28	5.00	0.00	0.00	0.00
45.90	2.00	0.28	5.00	0.00	0.00	0.00
45.95	2.00	0.28	5.00	0.00	0.00	0.00
46.00	2.00	0.28	5.00	0.00	0.00	0.00
46.05	2.00	0.28	5.00	0.00	0.00	0.00
46.10	2.00	0.28	5.00	0.00	0.00	0.00
46.15	2.00	0.28	5.00	0.00	0.00	0.00
46.20	2.00	0.28	5.00	0.00	0.00	0.00
46.25	2.00	0.28	5.00	0.00	0.00	0.00
46.30	2.00	0.28	5.00	0.00	0.00	0.00
46.35	2.00	0.28	5.00	0.00	0.00	0.00
46.40	2.00	0.28	5.00	0.00	0.00	0.00
46.45	2.00	0.28	5.00	0.00	0.00	0.00
46.50	2.00	0.28	5.00	0.00	0.00	0.00
46.55	2.00	0.28	5.00	0.00	0.00	0.00
46.60	2.00	0.28	5.00	0.00	0.00	0.00
46.65	2.00	0.28	5.00	0.00	0.00	0.00
46.70	2.00	0.28	5.00	0.00	0.00	0.00
46.75	2.00	0.28	5.00	0.00	0.00	0.00
46.80	2.00	0.28	5.00	0.00	0.00	0.00
46.85	2.00	0.28	5.00	0.00	0.00	0.00
46.90	2.00	0.28	5.00	0.00	0.00	0.00
46.95	2.00	0.28	5.00	0.00	0.00	0.00
47.00	2.00	0.28	5.00	0.00	0.00	0.00
47.05	2.00	0.28	5.00	0.00	0.00	0.00
47.10	2.00	0.28	5.00	0.00	0.00	0.00
47.15	2.00	0.28	5.00	0.00	0.00	0.00

47.20	2.00	0.28	5.00	0.00	0.00	0.00
47.25	2.00	0.28	5.00	0.00	0.00	0.00
47.30	2.00	0.28	5.00	0.00	0.00	0.00
47.35	2.00	0.28	5.00	0.00	0.00	0.00
47.40	2.00	0.28	5.00	0.00	0.00	0.00
47.45	2.00	0.28	5.00	0.00	0.00	0.00
47.50	2.00	0.28	5.00	0.00	0.00	0.00
47.55	2.00	0.28	5.00	0.00	0.00	0.00
47.60	2.00	0.28	5.00	0.00	0.00	0.00
47.65	2.00	0.28	5.00	0.00	0.00	0.00
47.70	2.00	0.28	5.00	0.00	0.00	0.00
47.75	2.00	0.28	5.00	0.00	0.00	0.00
47.80	2.00	0.28	5.00	0.00	0.00	0.00
47.85	2.00	0.28	5.00	0.00	0.00	0.00
47.90	2.00	0.28	5.00	0.00	0.00	0.00
47.95	2.00	0.28	5.00	0.00	0.00	0.00
48.00	2.00	0.28	5.00	0.00	0.00	0.00
48.05	2.00	0.28	5.00	0.00	0.00	0.00
48.10	2.00	0.28	5.00	0.00	0.00	0.00
48.15	2.00	0.28	5.00	0.00	0.00	0.00
48.20	2.00	0.28	5.00	0.00	0.00	0.00
48.25	2.00	0.28	5.00	0.00	0.00	0.00
48.30	2.00	0.28	5.00	0.00	0.00	0.00
48.35	2.00	0.28	5.00	0.00	0.00	0.00
48.40	2.00	0.28	5.00	0.00	0.00	0.00
48.45	2.00	0.28	5.00	0.00	0.00	0.00
48.50	2.00	0.28	5.00	0.00	0.00	0.00
48.55	2.00	0.28	5.00	0.00	0.00	0.00
48.60	2.00	0.27	5.00	0.00	0.00	0.00
48.65	2.00	0.27	5.00	0.00	0.00	0.00
48.70	2.00	0.27	5.00	0.00	0.00	0.00
48.75	2.00	0.27	5.00	0.00	0.00	0.00
48.80	2.00	0.27	5.00	0.00	0.00	0.00
48.85	2.00	0.27	5.00	0.00	0.00	0.00
48.90	2.00	0.27	5.00	0.00	0.00	0.00
48.95	2.00	0.27	5.00	0.00	0.00	0.00
49.00	2.00	0.27	5.00	0.00	0.00	0.00
49.05	2.00	0.27	5.00	0.00	0.00	0.00
49.10	2.00	0.27	5.00	0.00	0.00	0.00
49.15	2.00	0.27	5.00	0.00	0.00	0.00
49.20	2.00	0.27	5.00	0.00	0.00	0.00
49.25	2.00	0.27	5.00	0.00	0.00	0.00
49.30	2.00	0.27	5.00	0.00	0.00	0.00
49.35	2.00	0.27	5.00	0.00	0.00	0.00
49.40	2.00	0.27	5.00	0.00	0.00	0.00
49.45	2.00	0.27	5.00	0.00	0.00	0.00
49.50	2.00	0.27	5.00	0.00	0.00	0.00
49.55	2.00	0.27	5.00	0.00	0.00	0.00
49.60	2.00	0.27	5.00	0.00	0.00	0.00
49.65	2.00	0.27	5.00	0.00	0.00	0.00
49.70	2.00	0.27	5.00	0.00	0.00	0.00
49.75	2.00	0.27	5.00	0.00	0.00	0.00
49.80	2.00	0.27	5.00	0.00	0.00	0.00
49.85	2.00	0.27	5.00	0.00	0.00	0.00

49.90	2.00	0.27	5.00	0.00	0.00	0.00
49.95	2.00	0.27	5.00	0.00	0.00	0.00
50.00	2.00	0.27	5.00	0.00	0.00	0.00
50.05	2.00	0.27	5.00	0.00	0.00	0.00
50.10	2.00	0.27	5.00	0.00	0.00	0.00
50.15	2.00	0.27	5.00	0.00	0.00	0.00
50.20	2.00	0.27	5.00	0.00	0.00	0.00
50.25	2.00	0.27	5.00	0.00	0.00	0.00
50.30	2.00	0.27	5.00	0.00	0.00	0.00
50.35	2.00	0.27	5.00	0.00	0.00	0.00
50.40	2.00	0.27	5.00	0.00	0.00	0.00
50.45	2.00	0.27	5.00	0.00	0.00	0.00
50.50	2.00	0.27	5.00	0.00	0.00	0.00
50.55	2.00	0.27	5.00	0.00	0.00	0.00
50.60	2.00	0.27	5.00	0.00	0.00	0.00
50.65	2.00	0.27	5.00	0.00	0.00	0.00
50.70	2.00	0.27	5.00	0.00	0.00	0.00
50.75	2.00	0.27	5.00	0.00	0.00	0.00
50.80	2.00	0.27	5.00	0.00	0.00	0.00
50.85	2.00	0.27	5.00	0.00	0.00	0.00
50.90	2.00	0.27	5.00	0.00	0.00	0.00
50.95	2.00	0.27	5.00	0.00	0.00	0.00
51.00	2.00	0.27	5.00	0.00	0.00	0.00

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

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

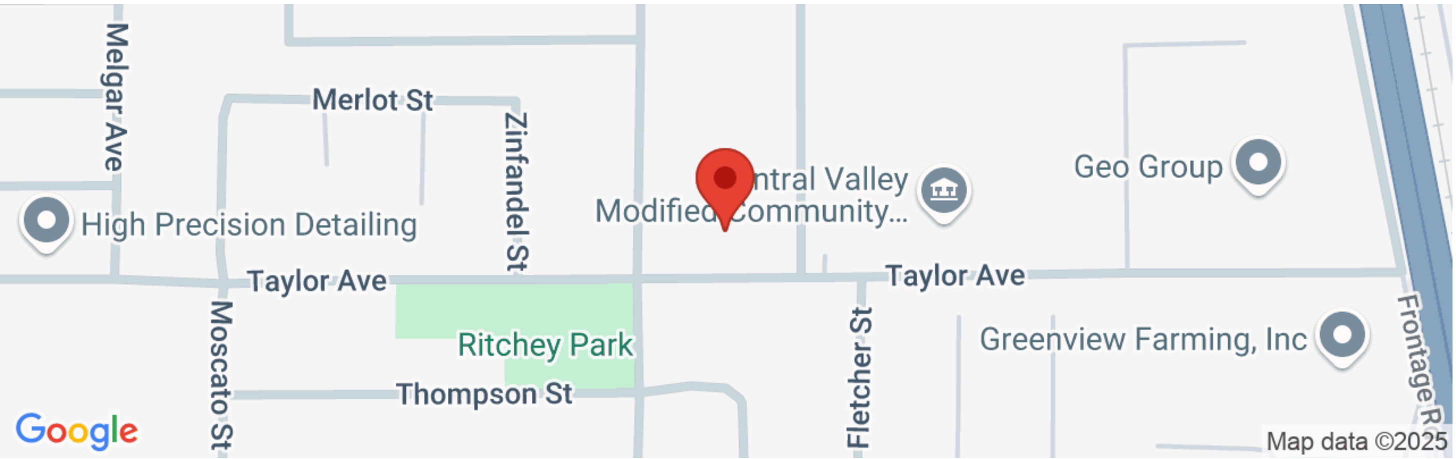
1 atm (atmosphere) = 1 tsf (ton/ft2)

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

USGS web services were down for some period of time and as a result this tool wasn't operational, resulting in *timeout* error.
USGS web services are now operational so this tool should work as expected.

20251 McFarland Police Station

Latitude, Longitude: 35.66754, -119.23128



Date	3/31/2025, 9:04:07 AM
Design Code Reference Document	ASCE7-16
Risk Category	IV
Site Class	D - Stiff Soil

Type	Value	Description
S_S	0.754	MCE_R ground motion. (for 0.2 second period)
S_1	0.283	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.903	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	0.602	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	1.199	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.329	MCE_G peak ground acceleration
F_{PGA}	1.271	Site amplification factor at PGA
PGA_M	0.418	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.754	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.816	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.283	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.306	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)
PGA_{UH}	0.329	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.923	Mapped value of the risk coefficient at short periods
C_{R1}	0.922	Mapped value of the risk coefficient at a period of 1 s
C_V	1.177	Vertical coefficient

DISCLAIMER

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*    E Q F A U L T  *
*                   *
*    Version 3.00   *
*                   *
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DETERMINISTIC ESTIMATION OF
PEAK ACCELERATION FROM DIGITIZED FAULTS

JOB NUMBER: 20251

DATE: 04-03-2025

JOB NAME: 20251 McFarland Police Sta

CALCULATION NAME: Test Run Analysis

FAULT-DATA-FILE NAME: CGSFLTE.DAT

SITE COORDINATES:
SITE LATITUDE: 35.6675
SITE LONGITUDE: 119.2313

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

EQFAULT SUMMARY

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi (km)	ESTIMATED MAX. EARTHQUAKE EVENT: MAXIMUM EARTHQUAKE MAG.(Mw)	PEAK SITE ACCEL. g	EST. SITE INTENSITY MOD.MERC.
Kern Front	3.5(5.6)	6.3	0.395	X
WHITE WOLF	40.1(64.5)	7.3	0.130	VIII
SAN ANDREAS - Cho-Moj M-1b-1	43.0(69.2)	7.8	0.132	VIII
SAN ANDREAS - 1857 Rupture M-2a	43.0(69.2)	7.8	0.132	VIII
SAN ANDREAS - Whole M-1a	43.0(69.2)	8.0	0.147	VIII
SAN ANDREAS - Carrizo M-1c-2	43.0(69.2)	7.4	0.107	VII
SAN ANDREAS - Cholame M-1c-1	43.2(69.5)	7.3	0.101	VII
GREAT VALLEY 14	46.5(74.8)	6.4	0.072	VII
PLEITO THRUST	46.7(75.2)	7.0	0.099	VII
SAN JUAN	54.2(87.3)	7.1	0.076	VII
BIG PINE	59.8(96.2)	6.9	0.064	VI
GARLOCK (West)	59.9(96.4)	7.3	0.078	VII
SAN ANDREAS - Parkfield	60.3(97.0)	6.5	0.051	VI
GREAT VALLEY 13	61.1(98.3)	6.5	0.062	VI
SAN GABRIEL	68.8(110.8)	7.2	0.067	VI
So. SIERRA NEVADA	69.8(112.3)	7.3	0.085	VII

GARLOCK (East)	72.8(117.1)	7.5	0.075	VII
SAN LUIS RANGE (S. Margin)	73.7(118.6)	7.2	0.077	VII
RINCONADA	75.9(122.2)	7.5	0.073	VII
SANTA YNEZ (East)	76.9(123.7)	7.1	0.058	VI
LITTLE LAKE	77.7(125.0)	6.9	0.052	VI
GREAT VALLEY 12	78.0(125.6)	6.3	0.046	VI
SAN ANDREAS (Creeping)	78.1(125.7)	6.2	0.036	V
NORTH CHANNEL SLOPE	78.3(126.0)	7.4	0.082	VII
SAN ANDREAS - Mojave M-1c-3	78.3(126.0)	7.4	0.067	VI
LOS OSOS	78.4(126.2)	7.0	0.066	VI
OWENS VALLEY	78.8(126.8)	7.6	0.074	VII
M.RIDGE-ARROYO PARIDA-SANTA ANA	78.9(126.9)	7.2	0.073	VII
SAN CAYETANO	80.0(128.7)	7.0	0.065	VI
SANTA YNEZ (West)	82.0(131.9)	7.1	0.055	VI
LOS ALAMOS-W. BASELINE	84.9(136.7)	6.9	0.059	VI
RED MOUNTAIN	84.9(136.7)	7.0	0.062	VI
INDEPENDENCE	85.6(137.7)	7.1	0.065	VI
LIONS HEAD	86.1(138.6)	6.6	0.050	VI
CASMALIA (Orcutt Frontal Fault)	86.6(139.4)	6.5	0.047	VI
LENWOOD-LOCKHART-OLD WOMAN SPRGS	88.1(141.8)	7.5	0.065	VI
SANTA SUSANA	89.0(143.3)	6.7	0.051	VI
GREAT VALLEY 11	89.0(143.3)	6.4	0.044	VI
HOLSER	89.0(143.3)	6.5	0.046	VI
VENTURA - PITAS POINT	89.8(144.5)	6.9	0.056	VI

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi (km)	ESTIMATED MAX. EARTHQUAKE EVENT		
		MAXIMUM EARTHQUAKE MAG.(Mw)	PEAK SITE ACCEL. g	EST. SITE INTENSITY MOD.MERC.
OAK RIDGE (Onshore)	91.0(146.5)	7.0	0.059	VI
NORTHRIDGE (E. Oak Ridge)	92.1(148.2)	7.0	0.058	VI
OAK RIDGE MID-CHANNEL STRUCTURE	92.3(148.5)	6.6	0.047	VI
SIMI-SANTA ROSA	94.1(151.4)	7.0	0.057	VI
SIERRA MADRE (San Fernando)	95.9(154.4)	6.7	0.048	VI
CHANNEL IS. THRUST (Eastern)	96.6(155.5)	7.5	0.073	VII
HOSGRI	99.7 (160.4)	7.5	0.059	VI

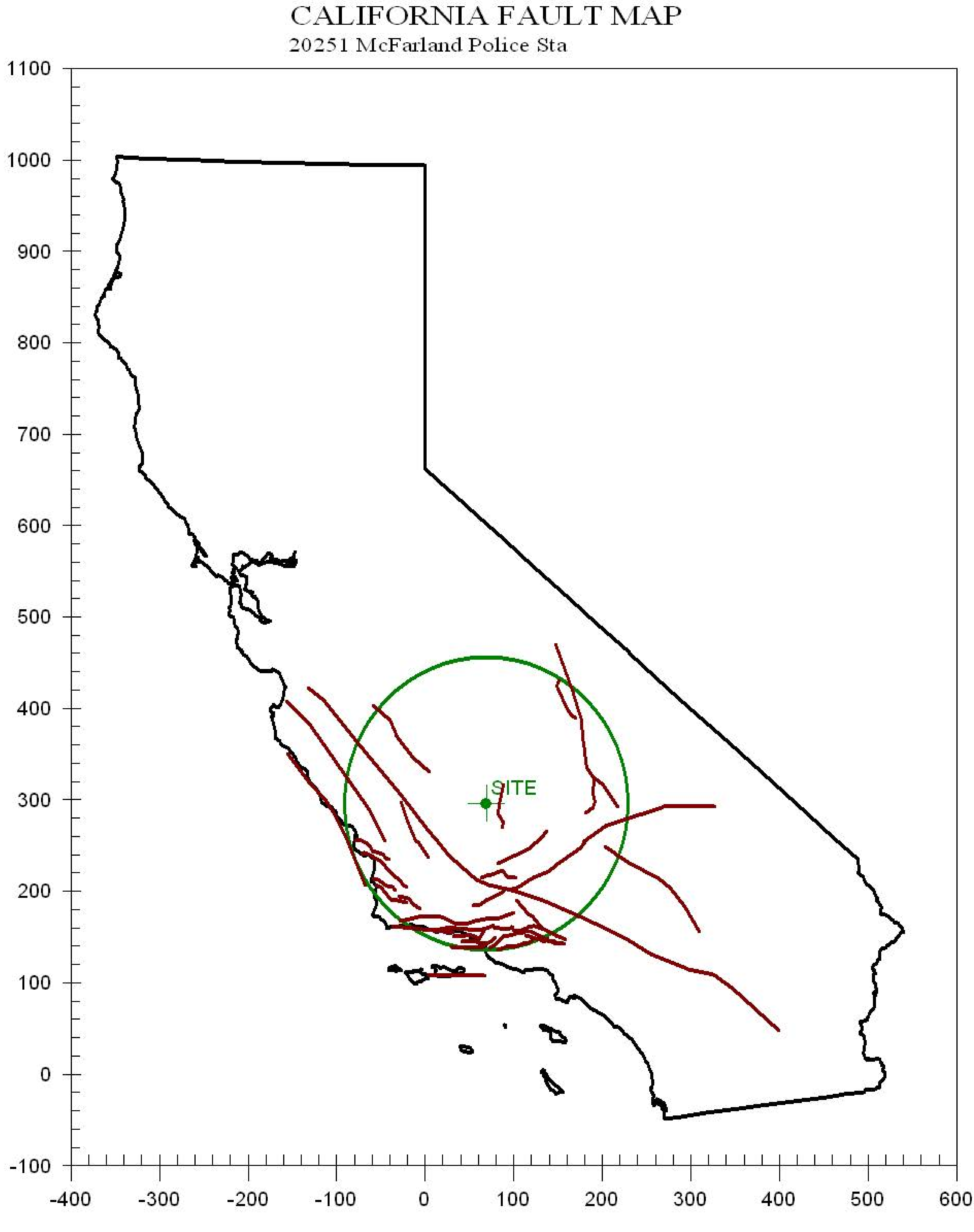
****

-END OF SEARCH- 47 FAULTS FOUND WITHIN THE SPECIFIED SEARCH RADIUS.

THE Kern Front FAULT IS CLOSEST TO THE SITE.

IT IS ABOUT 3.5 MILES (5.6 km) AWAY.

LARGEST MAXIMUM-EARTHQUAKE SITE ACCELERATION: 0.3951 g


CALIFORNIA FAULT MAP
20251 McFarland Police Sta
1100
1000
900
800
700
600
500
400
300
200
100
0
-100
-400
-300
-200
-100
0
100
200
300
400
500
600
SITE