

ATTACHEMENT #1

Geotechnical Report



CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

Christophe A. Ciechanowski, President, GE
Grant F. Foster, Vice-President, GE
J. Michael Cleary, Principal, CEG, GE

March 10, 2026
Project No. 771.9A
Ser. 8105

Alum Rock Union Elementary School District
Attn: Narayan Naidu, Chief Facilities Officer
2930 Gay Avenue
San Jose, California 95127

**RE: GEOTECHNICAL AND GEOLOGIC HAZARDS UPDATE (2022 CBC) AND
SUPPLEMENTAL FOUNDATION RECOMMENDATIONS LETTER
NEW PORTABLE CLASSROOM BUILDINGS AND PARKING LOT PROJECT
CLYDE L. FISCHER MIDDLE SCHOOL
1720 HOPKINS DRIVE
SAN JOSE, CALIFORNIA**

Dear Mr. Wasinger:

As requested, we are providing this geotechnical and geologic hazards update letter to comply with the 2022 California Building Code (CBC) for the New Portable Classroom Buildings and Parking Lot project at Clyde L. Fischer Middle School in San Jose, California. Our geotechnical and geologic hazards investigation report for the project, dated January 19, 2026, was completed following the 2025 CBC; however, we understand that the project will be completed under the 2022 CBC. Additionally, our report provided recommendations for buildings supported on wood-skid foundations; however, based on our review of the pre-check documents, we understand that the buildings will be supported on spread footing foundations. Accordingly, this letter also provides supplemental spread footing foundation recommendations for the planned buildings.

Seismic Design Parameters (CBC 2022/ASCE 7-16)

Seismic design values for the project site were analyzed using the site latitude and longitude (37.3376° N, 121.8303° W) and the site classification, which was determined using subsurface seismic data obtained during our geophysical site evaluation.

A site-specific ground motion hazard analysis is also required per ASCE 7-16 (Chapter 11.4.8) for the project site ($S_1 > 0.2$), and site-specific design parameters should be used for structural design, unless the structural engineer elects to use the following exception from ASCE 7-16 Supplement 3: "A ground motion hazard analysis is not required where the value of the parameter SM_1 determined by Eq. (11.4-2) is increased by 50% for all applications of SM_1 in this Standard. The resulting value of the parameter SD_1 determined by Eq. (11.4-4) shall be used for

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all applications of SD_1 in this Standard.” Site-specific design parameters, including one-second period values, can be provided in a supplemental letter, if required.

Based on the results of our investigation, CBC 2022 (Section 1613A), ASCE 7-16 (Chapter 11), and the OSHPD U.S. Seismic Design Maps online application, the following seismic design parameters can be used in lateral force analyses at this site:

Site Class D – Stiff Soil Profile ($V_{s30} = 718$ ft/s)

ASCE 7-16 Values (OSHPD U.S. Seismic Design Maps):

Site Coefficient $F_a = 1.0$

Site Coefficient $F_v = 1.7$

Mapped Spectral Acceleration Values; $S_S = 1.644$, $S_1 = 0.621$

Spectral Response Accelerations; $SM_S = 1.644$, $SM_1 = 1.584^{(1)}$

Design Spectral Response Accelerations; $SD_S = 1.096$, $SD_1 = 1.056$

⁽¹⁾ Value of SM_1 determined by Eq. (11.4-2) increased by 50% per exception discussed above

Soil Liquefaction and Seismic Densification

The calculated peak ground acceleration for the site based on the 2025 CBC/ASCE 7-22 was ($PGA_M = 0.62$); the ground acceleration value is increased to ($PGA_M = 0.761$) based on the 2022 CBC/ASCE 7-16 code. As a result, our liquefaction and dry settlement analysis for EB-1 from our January 2026 report was re-evaluated using the higher peak ground acceleration value.

The results of our analysis indicate that the theoretical seismically-induced liquefaction settlement is approximately three and three-quarter ($3\frac{3}{4}$) inches, with approximately two inches of differential settlement predicted over a distance of 50 feet, using the calculated peak ground acceleration ($PGA_M = 0.761$) for the site. The results and supporting data for the dry soil settlement and liquefaction analysis are attached to this letter.

Based on the above information, we conclude that the likelihood that the planned portable buildings and other site improvements will be damaged by seismically-induced ground settlement is low. The predicted settlement is unchanged from the 2025 CBC values presented in our January 2026 report.

For a general discussion of our liquefaction and seismically-induced dry soil densification analysis and procedures, please refer to our January 2026 report.

Portable Classroom and Restroom Building Spread Footing Foundations

After the building pads have been properly prepared and graded, the planned classroom and restroom buildings can be supported on conventional continuous and isolated spread footings bearing in undisturbed native soils or properly compacted engineered fill. Soft soil or undocumented fill, if encountered in the footing bottoms, should be removed and replaced as engineered fill compacted to at least 90 percent relative compaction as determined by field density testing.

Footings should be embedded at least 12 inches into the supporting subgrade. Continuous footings should have a minimum width of 18 inches and isolated footings should be at least 24 inches square. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1.5:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench. Care should be taken to keep the footings moist by spraying lightly prior to the concrete pour.

At the above depths, footings can be designed for an allowable bearing pressure of 1500 psf due to dead plus live loads and 2250 psf for total design loads including wind and seismic. All continuous footings should be provided with adequate top and bottom reinforcement (as specified by the structural engineer) to provide structural continuity and to permit spanning of local irregularities. The steel reinforcement requirements should be determined by the structural engineer.

Lateral loads can be resisted by friction between the foundation bottoms and the supporting subgrade. A friction coefficient of 0.25 is considered applicable. As an alternative, an equivalent fluid pressure of 250 pcf starting one-half foot below the ground surface can be taken against the sides of footings poured neat.

Soil conditions in the foundation excavations should be checked by our representative prior to placing reinforcing steel or concrete. The excavation of footing trenches should be performed so that the trenches are left open for the minimum practical length of time prior to the placement of concrete. Footing trenches should be kept moist so that any drying-shrinkage cracks are closed prior to placement of concrete. Moisture should be added in a light mist spray.

Post-construction settlements of the spread footing foundations under proposed loads are expected to be within tolerable limits.

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Conclusions

Based on the above information, there are no other changes to the geologic hazards assessment or the recommendations presented in our January 19, 2026 report.

We have provided our findings and recommendations in accordance with generally recognized geotechnical engineering principles and practices. No other warranty is implied.

We are pleased to have served the District on this project. If you have any questions concerning our findings or this letter, please call.

Yours very truly,

CLEARY CONSULTANTS, INC.


Dustin Lettenberger
Civil Engineer 93429




Grant Foster
Geotechnical Engineer 2662



DL/GF:dl

Attachments: Fischer Middle School, New Portable Classroom Buildings Project (2022 CBC Update), Liquefaction and Dry Settlement Analyses and Calculations, EB-1, Drilled November 25, 2025

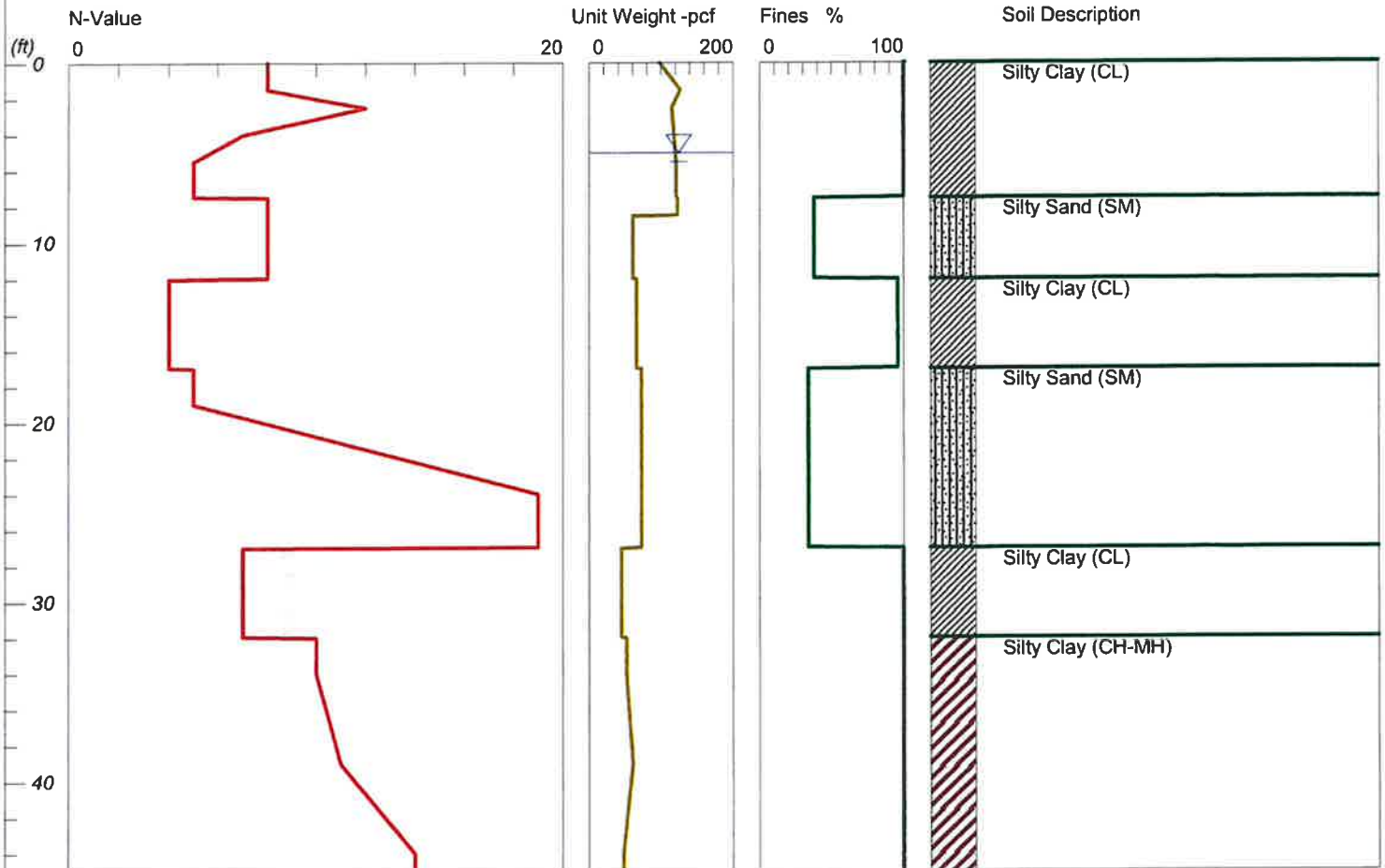
Copies: Addressee (email)
Alum Rock Union Elementary School District (email) Attn: Dale Grogan
Finney Architects (email) Attn: Mike Bowers

LIQUEFACTION ANALYSIS

PORTABLE CLASSROOM BUILDINGS (2022 CBC UPDATE)

Hole No.=EB-1 Water Depth=5.0 ft

Magnitude=8.50
Acceleration=0.761g



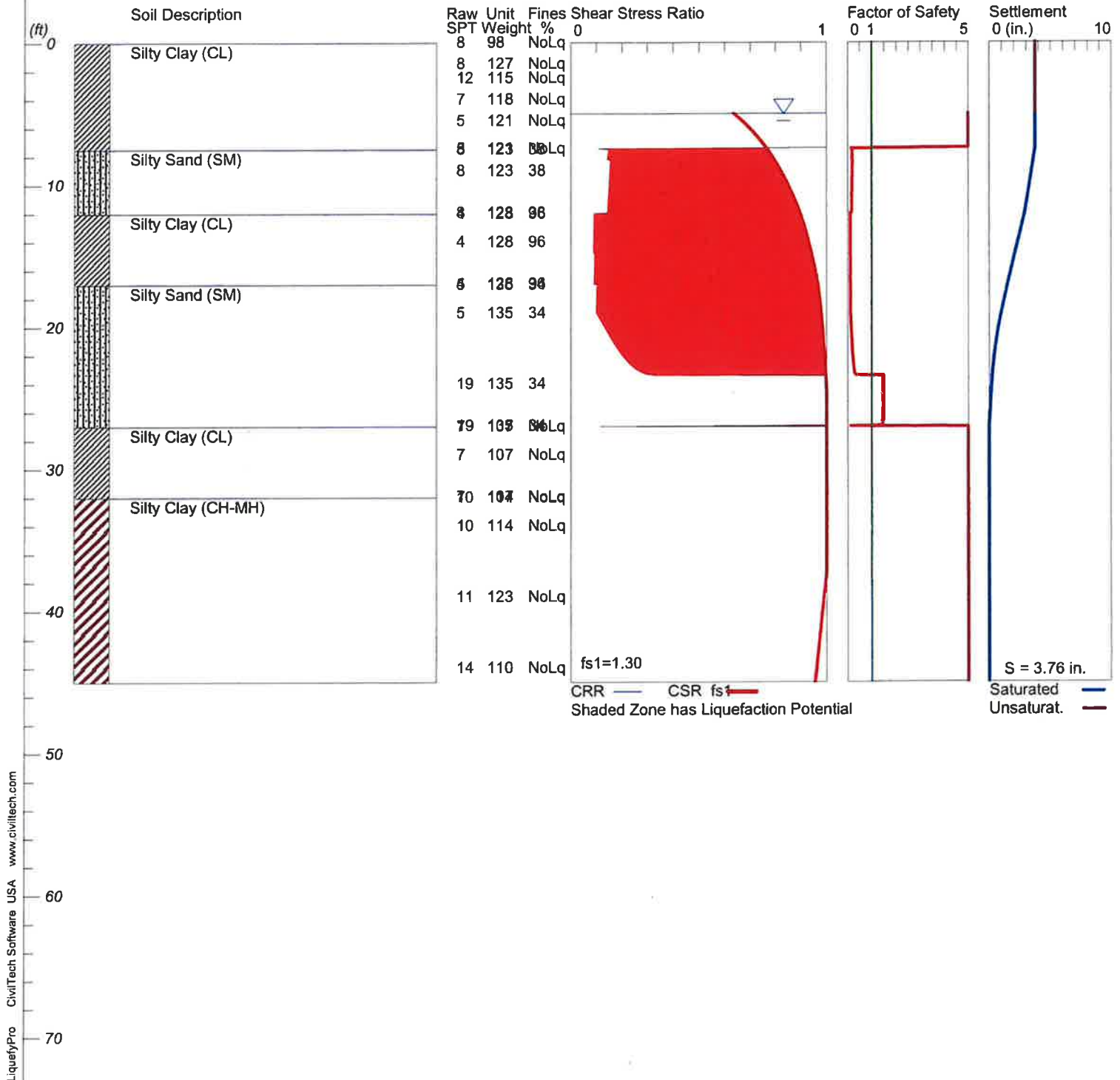
SPT or BPT test

LIQUEFACTION ANALYSIS

PORTABLE CLASSROOM BUILDINGS (2022 CBC UPDATE)

Hole No.=EB-1 Water Depth=5.0 ft

Magnitude=8.50
Acceleration=0.761g



 LIQUEFACTION ANALYSIS SUMMARY
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Input File Name: \\CCISERVER\Shared Folders\Rough Drafts\Grant Foster Rough Drafts\Liquefy Pro
 Data Files grant\771.9A Fischer MS Portable Classroom Buildings, EB-1 (2022 CBC Update).liq
 Title: PORTABLE CLASSROOM BUILDINGS (2022 CBC UPDATE)
 Subtitle: Fischer Middle School

Surface Elev.=
 Hole No.=EB-1
 Depth of Hole= 45.00 ft
 Water Table during Earthquake= 5.00 ft
 Water Table during In-Situ Testing= 8.50 ft
 Max. Acceleration= 0.76 g
 Earthquake Magnitude= 8.50

Input Data:

Surface Elev.=
 Hole No.=EB-1
 Depth of Hole=45.00 ft
 Water Table during Earthquake= 5.00 ft
 Water Table during In-Situ Testing= 8.50 ft
 Max. Acceleration=0.76 g
 Earthquake Magnitude=8.50
 No-Liquefiable Soils: Based on Analysis

1. SPT or BPT Calculation.
 2. Settlement Analysis Method: Tokimatsu, M-correction
 3. Fines Correction for Liquefaction: Idriss/Seed
 4. Fine Correction for Settlement: During Liquefaction*
 5. Settlement Calculation in: All zones*
 6. Hammer Energy Ratio, Ce = 1.25
 7. Borehole Diameter, Cb= 1
 8. Sampling Method, Cs= 1
 9. User request factor of safety (apply to CSR) , User= 1.3
 Plot one CSR curve (fsl=User)
 10. Use Curve Smoothing: Yes*
- * Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	8.00	98.00	NoLiq
1.50	8.00	127.00	NoLiq
2.50	12.00	115.00	NoLiq
4.00	7.00	118.00	NoLiq
5.50	5.00	121.00	NoLiq
7.45	5.00	121.00	NoLiq
7.50	8.00	123.00	38.00
9.00	8.00	123.00	38.00
11.95	8.00	123.00	38.00
12.00	4.00	128.00	96.00
14.00	4.00	128.00	96.00
16.95	4.00	128.00	96.00
17.00	5.00	135.00	34.00
19.00	5.00	135.00	34.00
24.00	19.00	135.00	34.00
26.95	19.00	135.00	34.00
27.00	7.00	107.00	NoLiq
29.00	7.00	107.00	NoLiq
31.95	7.00	107.00	NoLiq
32.00	10.00	114.00	NoLiq
34.00	10.00	114.00	NoLiq
39.00	11.00	123.00	NoLiq
44.00	14.00	110.00	NoLiq

Output Results:

Settlement of Saturated Sands=3.76 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=3.76 in.
Differential Settlement=1.881 to 2.483 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	2.00	0.64	5.00	3.76	0.00	3.76
0.05	2.00	0.64	5.00	3.76	0.00	3.76
0.10	2.00	0.64	5.00	3.76	0.00	3.76
0.15	2.00	0.64	5.00	3.76	0.00	3.76
0.20	2.00	0.64	5.00	3.76	0.00	3.76
0.25	2.00	0.64	5.00	3.76	0.00	3.76
0.30	2.00	0.64	5.00	3.76	0.00	3.76
0.35	2.00	0.64	5.00	3.76	0.00	3.76
0.40	2.00	0.64	5.00	3.76	0.00	3.76
0.45	2.00	0.64	5.00	3.76	0.00	3.76
0.50	2.00	0.64	5.00	3.76	0.00	3.76
0.55	2.00	0.64	5.00	3.76	0.00	3.76
0.60	2.00	0.64	5.00	3.76	0.00	3.76
0.65	2.00	0.64	5.00	3.76	0.00	3.76
0.70	2.00	0.64	5.00	3.76	0.00	3.76
0.75	2.00	0.64	5.00	3.76	0.00	3.76
0.80	2.00	0.64	5.00	3.76	0.00	3.76
0.85	2.00	0.64	5.00	3.76	0.00	3.76
0.90	2.00	0.64	5.00	3.76	0.00	3.76
0.95	2.00	0.64	5.00	3.76	0.00	3.76
1.00	2.00	0.64	5.00	3.76	0.00	3.76
1.05	2.00	0.64	5.00	3.76	0.00	3.76
1.10	2.00	0.64	5.00	3.76	0.00	3.76
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1.40	2.00	0.64	5.00	3.76	0.00	3.76
1.45	2.00	0.64	5.00	3.76	0.00	3.76
1.50	2.00	0.64	5.00	3.76	0.00	3.76
1.55	2.00	0.64	5.00	3.76	0.00	3.76
1.60	2.00	0.64	5.00	3.76	0.00	3.76
1.65	2.00	0.64	5.00	3.76	0.00	3.76
1.70	2.00	0.64	5.00	3.76	0.00	3.76
1.75	2.00	0.64	5.00	3.76	0.00	3.76
1.80	2.00	0.64	5.00	3.76	0.00	3.76
1.85	2.00	0.64	5.00	3.76	0.00	3.76
1.90	2.00	0.64	5.00	3.76	0.00	3.76
1.95	2.00	0.64	5.00	3.76	0.00	3.76
2.00	2.00	0.64	5.00	3.76	0.00	3.76
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2.25	2.00	0.64	5.00	3.76	0.00	3.76
2.30	2.00	0.64	5.00	3.76	0.00	3.76
2.35	2.00	0.64	5.00	3.76	0.00	3.76
2.40	2.00	0.64	5.00	3.76	0.00	3.76
2.45	2.00	0.64	5.00	3.76	0.00	3.76
2.50	2.00	0.64	5.00	3.76	0.00	3.76
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2.70	2.00	0.64	5.00	3.76	0.00	3.76
2.75	2.00	0.64	5.00	3.76	0.00	3.76
2.80	2.00	0.64	5.00	3.76	0.00	3.76
2.85	2.00	0.64	5.00	3.76	0.00	3.76
2.90	2.00	0.64	5.00	3.76	0.00	3.76
2.95	2.00	0.64	5.00	3.76	0.00	3.76
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3.30	2.00	0.64	5.00	3.76	0.00	3.76
3.35	2.00	0.64	5.00	3.76	0.00	3.76

3.40	2.00	0.64	5.00	3.76	0.00	3.76
3.45	2.00	0.64	5.00	3.76	0.00	3.76
3.50	2.00	0.64	5.00	3.76	0.00	3.76
3.55	2.00	0.64	5.00	3.76	0.00	3.76
3.60	2.00	0.64	5.00	3.76	0.00	3.76
3.65	2.00	0.64	5.00	3.76	0.00	3.76
3.70	2.00	0.64	5.00	3.76	0.00	3.76
3.75	2.00	0.64	5.00	3.76	0.00	3.76
3.80	2.00	0.64	5.00	3.76	0.00	3.76
3.85	2.00	0.64	5.00	3.76	0.00	3.76
3.90	2.00	0.64	5.00	3.76	0.00	3.76
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4.30	2.00	0.64	5.00	3.76	0.00	3.76
4.35	2.00	0.64	5.00	3.76	0.00	3.76
4.40	2.00	0.64	5.00	3.76	0.00	3.76
4.45	2.00	0.64	5.00	3.76	0.00	3.76
4.50	2.00	0.64	5.00	3.76	0.00	3.76
4.55	2.00	0.64	5.00	3.76	0.00	3.76
4.60	2.00	0.64	5.00	3.76	0.00	3.76
4.65	2.00	0.64	5.00	3.76	0.00	3.76
4.70	2.00	0.64	5.00	3.76	0.00	3.76
4.75	2.00	0.64	5.00	3.76	0.00	3.76
4.80	2.00	0.64	5.00	3.76	0.00	3.76
4.85	2.00	0.64	5.00	3.76	0.00	3.76
4.90	2.00	0.64	5.00	3.76	0.00	3.76
4.95	2.00	0.64	5.00	3.76	0.00	3.76
5.00	2.00	0.64	5.00	3.76	0.00	3.76
5.05	2.00	0.64	5.00	3.76	0.00	3.76
5.10	2.00	0.64	5.00	3.76	0.00	3.76
5.15	2.00	0.65	5.00	3.76	0.00	3.76
5.20	2.00	0.65	5.00	3.76	0.00	3.76
5.25	2.00	0.65	5.00	3.76	0.00	3.76
5.30	2.00	0.65	5.00	3.76	0.00	3.76
5.35	2.00	0.66	5.00	3.76	0.00	3.76
5.40	2.00	0.66	5.00	3.76	0.00	3.76
5.45	2.00	0.66	5.00	3.76	0.00	3.76
5.50	2.00	0.67	5.00	3.76	0.00	3.76
5.55	2.00	0.67	5.00	3.76	0.00	3.76
5.60	2.00	0.67	5.00	3.76	0.00	3.76
5.65	2.00	0.68	5.00	3.76	0.00	3.76
5.70	2.00	0.68	5.00	3.76	0.00	3.76
5.75	2.00	0.68	5.00	3.76	0.00	3.76
5.80	2.00	0.68	5.00	3.76	0.00	3.76
5.85	2.00	0.69	5.00	3.76	0.00	3.76
5.90	2.00	0.69	5.00	3.76	0.00	3.76
5.95	2.00	0.69	5.00	3.76	0.00	3.76
6.00	2.00	0.70	5.00	3.76	0.00	3.76
6.05	2.00	0.70	5.00	3.76	0.00	3.76
6.10	2.00	0.70	5.00	3.76	0.00	3.76
6.15	2.00	0.70	5.00	3.76	0.00	3.76
6.20	2.00	0.71	5.00	3.76	0.00	3.76
6.25	2.00	0.71	5.00	3.76	0.00	3.76
6.30	2.00	0.71	5.00	3.76	0.00	3.76
6.35	2.00	0.71	5.00	3.76	0.00	3.76
6.40	2.00	0.72	5.00	3.76	0.00	3.76
6.4						

7.20	2.00	0.75	5.00	3.76	0.00	3.76
7.25	2.00	0.76	5.00	3.76	0.00	3.76
7.30	2.00	0.76	5.00	3.76	0.00	3.76
7.35	2.00	0.76	5.00	3.76	0.00	3.76
7.40	2.00	0.76	5.00	3.76	0.00	3.76
7.45	0.11	0.76	0.14*	3.76	0.00	3.76
7.50	0.15	0.77	0.19*	3.76	0.00	3.76
7.55	0.15	0.77	0.19*	3.75	0.00	3.75
7.60	0.15	0.77	0.19*	3.74	0.00	3.74
7.65	0.15	0.77	0.19*	3.73	0.00	3.73
7.70	0.15	0.78	0.19*	3.72	0.00	3.72
7.75	0.15	0.78	0.19*	3.71	0.00	3.71
7.80	0.15	0.78	0.19*	3.70	0.00	3.70
7.85	0.15	0.78	0.19*	3.70	0.00	3.70
7.90	0.15	0.78	0.19*	3.69	0.00	3.69
7.95	0.14	0.78	0.18*	3.68	0.00	3.68
8.00	0.14	0.79	0.18*	3.67	0.00	3.67
8.05	0.14	0.79	0.18*	3.66	0.00	3.66
8.10	0.14	0.79	0.18*	3.65	0.00	3.65
8.15	0.14	0.79	0.18*	3.64	0.00	3.64
8.20	0.14	0.79	0.18*	3.63	0.00	3.63
8.25	0.16	0.80	0.20*	3.62	0.00	3.62
8.30	0.16	0.80	0.20*	3.61	0.00	3.61
8.35	0.16	0.80	0.20*	3.60	0.00	3.60
8.40	0.16	0.80	0.19*	3.59	0.00	3.59
8.45	0.16	0.80	0.19*	3.58	0.00	3.58
8.50	0.16	0.80	0.19*	3.57	0.00	3.57
8.55	0.15	0.81	0.19*	3.56	0.00	3.56
8.60	0.15	0.81	0.19*	3.55	0.00	3.55
8.65	0.15	0.81	0.19*	3.54	0.00	3.54
8.70	0.15	0.81	0.19*	3.53	0.00	3.53
8.75	0.15	0.81	0.19*	3.53	0.00	3.53
8.80	0.15	0.81	0.19*	3.52	0.00	3.52
8.85	0.15	0.82	0.19*	3.51	0.00	3.51
8.90	0.15	0.82	0.19*	3.50	0.00	3.50
8.95	0.15	0.82	0.19*	3.49	0.00	3.49
9.00	0.15	0.82	0.19*	3.48	0.00	3.48
9.05	0.15	0.82	0.19*	3.47	0.00	3.47
9.10	0.15	0.82	0.19*	3.46	0.00	3.46
9.15	0.15	0.83	0.18*	3.45	0.00	3.45
9.20	0.15	0.83	0.18*	3.44	0.00	3.44
9.25	0.15	0.83	0.18*	3.43	0.00	3.43
9.30	0.15	0.83	0.18*	3.42	0.00	3.42
9.35	0.15	0.83	0.18*	3.41	0.00	3.41
9.40	0.15	0.83	0.18*	3.41	0.00	3.41
9.45	0.15	0.83	0.18*	3.40	0.00	3.40
9.50	0.15	0.84	0.18*	3.39	0.00	3.39
9.55	0.15	0.84	0.18*	3.38	0.00	3.38
9.60	0.15	0.84	0.18*	3.37	0.00	3.37
9.65	0.15	0.84	0.18*	3.36	0.00	3.36
9.70	0.15	0.84	0.18*	3.35	0.00	3.35
9.75	0.15	0.84	0.18*	3.34	0.00	3.34
9.80	0.15	0.85	0.18*	3.33	0.00	3.33
9.85	0.15	0.85	0.18*	3.32	0.00	3.32
9.90	0.15	0.85	0.18*	3.31	0.00	3.31
9.95	0.15	0.85	0.18*	3.30	0.00	3.30
10.00	0.15	0.85	0.18*	3.29	0.00	3.29
10.05	0.15	0.85	0.18*	3.28	0.00	3.28
10.10	0.15	0.85	0.18*	3.27	0.00	3.27
10.15	0.15	0.85	0.17*	3.26	0.00	3.26
10.20	0.15	0.86	0.17*	3.26	0.00	3.26
10.25	0.15	0.86	0.17*	3.25	0.00	3.25
10.30	0.15	0.86	0.17*	3.24	0.00	3.24
10.35	0.15	0.86	0.17*	3.23	0.00	3.23
10.40	0.15	0.86	0.17*	3.22	0.00	3.22
10.45	0.15	0.86	0.17*	3.21	0.00	3.21
10.50	0.15	0.86	0.17*	3.20	0.00	3.20
10.55	0.15	0.86	0.17*	3.19	0.00	3.19
10.60	0.15	0.87	0.17*	3.18	0.00	3.18
10.65	0.15	0.87	0.17*	3.17	0.00	3.17
10.70	0.15	0.87	0.17*	3.16	0.00	3.16
10.75	0.15	0.87	0.17*	3.15	0.00	3.15
10.80	0.15	0.87	0.17*	3.14	0.00	3.14
10.85	0.15	0.87	0.17*	3.13	0.00	3.13
10.90	0.15	0.87	0.17*	3.12	0.00	3.12
10.95	0.15	0.87	0.17*	3.11	0.00	3.11

11.00	0.15	0.88	0.17*	3.10	0.00	3.10
11.05	0.15	0.88	0.17*	3.09	0.00	3.09
11.10	0.15	0.88	0.17*	3.08	0.00	3.08
11.15	0.15	0.88	0.17*	3.07	0.00	3.07
11.20	0.15	0.88	0.17*	3.06	0.00	3.06
11.25	0.15	0.88	0.17*	3.05	0.00	3.05
11.30	0.15	0.88	0.17*	3.04	0.00	3.04
11.35	0.15	0.88	0.17*	3.03	0.00	3.03
11.40	0.15	0.88	0.16*	3.03	0.00	3.03
11.45	0.15	0.89	0.16*	3.02	0.00	3.02
11.50	0.15	0.89	0.16*	3.01	0.00	3.01
11.55	0.15	0.89	0.16*	3.00	0.00	3.00
11.60	0.15	0.89	0.16*	2.99	0.00	2.99
11.65	0.15	0.89	0.16*	2.98	0.00	2.98
11.70	0.15	0.89	0.16*	2.97	0.00	2.97
11.75	0.14	0.89	0.16*	2.96	0.00	2.96
11.80	0.14	0.89	0.16*	2.95	0.00	2.95
11.85	0.14	0.89	0.16*	2.94	0.00	2.94
11.90	0.14	0.90	0.16*	2.93	0.00	2.93
11.95	0.14	0.90	0.16*	2.92	0.00	2.92
12.00	0.09	0.90	0.10*	2.91	0.00	2.91
12.05	0.09	0.90	0.10*	2.89	0.00	2.89
12.10	0.09	0.90	0.10*	2.88	0.00	2.88
12.15	0.09	0.90	0.10*	2.87	0.00	2.87
12.20	0.09	0.90	0.10*	2.85	0.00	2.85
12.25	0.09	0.90	0.10*	2.84	0.00	2.84
12.30	0.09	0.90	0.10*	2.83	0.00	2.83
12.35	0.09	0.90	0.10*	2.81	0.00	2.81
12.40	0.09	0.90	0.10*	2.80	0.00	2.80
12.45	0.09	0.91	0.10*	2.78	0.00	2.78
12.50	0.09	0.91	0.10*	2.77	0.00	2.77
12.55	0.09	0.91	0.10*	2.76	0.00	2.76
12.60	0.09	0.91	0.10*	2.74	0.00	2.74
12.65	0.09	0.91	0.10*	2.73	0.00	2.73
12.70	0.09	0.91	0.10*	2.71	0.00	2.71
12.75	0.09	0.91	0.10*	2.70	0.00	2.70
12.80	0.09	0.91	0.10*	2.69	0.00	2.69
12.85	0.09	0.91	0.10*	2.67	0.00	2.67
12.90	0.09	0.91	0.10*	2.66	0.00	2.66
12.95	0.09	0.91	0.10*	2.64	0.00	2.64
13.00	0.09	0.92	0.10*	2.63	0.00	2.63
13.05	0.09	0.92	0.10*	2.62	0.00	2.62
13.10	0.09	0.92	0.10*	2.60	0.00	2.60
13.15	0.09	0.92	0.10*	2.59	0.00	2.59
13.20	0.09	0.92	0.10*	2.57	0.00	2.57
13.25	0.09	0.92	0.10*	2.56	0.00	2.56
13.30	0.09	0.92	0.10*	2.55	0.00	2.55
13.35	0.09	0.92	0.10*	2.53	0.00	2.53
13.40	0.09	0.92	0.10*	2.52	0.00	2.52
13.45	0.09	0.92	0.10*	2.50	0.00	2.50
13.50	0.09	0.92	0.10*	2.49	0.00	2.49
13.55	0.09	0.92	0.10*	2.48	0.00	2.48
13.60	0.09	0.92	0.10*	2.46	0.00	2.46
13.65	0.09	0.93	0.10*	2.45	0.00	2.45
13.70	0.09	0.93	0.10*	2.43	0.00	2.43
13.75	0.09	0.93	0.10*	2.42	0.00	2.42
13.80	0.09	0.93	0.10*	2.41	0.00	2.41
13.85	0.09	0.93	0.10*	2.39	0.00	2.39
13.90	0.09	0.93	0.10*	2.38	0.00	2.38
13.95	0.09	0.93	0.10*	2.36	0.00	2.36
14.00	0.09	0.93	0.10*	2.35	0.00	2.35
14.05	0.09	0.93	0.10*	2.33	0.00	2.33
14.10	0.09	0.93	0.10*	2.32	0.00	2.32
14.15	0.09	0.93	0.10*	2.31	0.00	2.31
14.20	0.09	0.93	0.10*	2.29	0.00	2.29
14.25	0.09	0.93	0.10*	2.28	0.00	2.28
14.30	0.09	0.93	0.10*	2.26	0.00	2.26
14.35	0.09	0.94	0.10*	2.25	0.00	2.25
14.40	0.09	0.94	0.10*	2.24	0.00	2.24
14.45	0.09	0.94	0.09*	2.22	0.00	2.22
14.50	0.09	0.94	0.09*	2.21	0.00	2.21
14.55	0.09	0.94	0.09*	2.19	0.00	2.19
14.60	0.09	0.94	0.09*	2.18	0.00	2.18
14.65	0.09	0.94	0.09*	2.17	0.00	2.17
14.70	0.09	0.94	0.09*	2.15	0.00	2.15
14.75	0.09	0.94	0.09*	2.14	0.00	2.14

14.80	0.09	0.94	0.10*	2.12	0.00	2.12
14.85	0.09	0.94	0.10*	2.11	0.00	2.11
14.90	0.09	0.94	0.10*	2.10	0.00	2.10
14.95	0.09	0.94	0.10*	2.08	0.00	2.08
15.00	0.09	0.94	0.10*	2.07	0.00	2.07
15.05	0.09	0.94	0.10*	2.05	0.00	2.05
15.10	0.09	0.94	0.10*	2.04	0.00	2.04
15.15	0.09	0.95	0.10*	2.03	0.00	2.03
15.20	0.09	0.95	0.10*	2.01	0.00	2.01
15.25	0.09	0.95	0.10*	2.00	0.00	2.00
15.30	0.09	0.95	0.10*	1.99	0.00	1.99
15.35	0.09	0.95	0.10*	1.97	0.00	1.97
15.40	0.09	0.95	0.10*	1.96	0.00	1.96
15.45	0.09	0.95	0.10*	1.94	0.00	1.94
15.50	0.09	0.95	0.10*	1.93	0.00	1.93
15.55	0.09	0.95	0.10*	1.92	0.00	1.92
15.60	0.09	0.95	0.10*	1.90	0.00	1.90
15.65	0.09	0.95	0.10*	1.89	0.00	1.89
15.70	0.09	0.95	0.10*	1.88	0.00	1.88
15.75	0.09	0.95	0.10*	1.86	0.00	1.86
15.80	0.09	0.95	0.10*	1.85	0.00	1.85
15.85	0.09	0.95	0.10*	1.84	0.00	1.84
15.90	0.09	0.95	0.10*	1.82	0.00	1.82
15.95	0.09	0.95	0.10*	1.81	0.00	1.81
16.00	0.09	0.96	0.10*	1.79	0.00	1.79
16.05	0.09	0.96	0.10*	1.78	0.00	1.78
16.10	0.09	0.96	0.10*	1.77	0.00	1.77
16.15	0.09	0.96	0.10*	1.75	0.00	1.75
16.20	0.09	0.96	0.10*	1.74	0.00	1.74
16.25	0.09	0.96	0.10*	1.72	0.00	1.72
16.30	0.09	0.96	0.10*	1.71	0.00	1.71
16.35	0.09	0.96	0.10*	1.70	0.00	1.70
16.40	0.09	0.96	0.10*	1.68	0.00	1.68
16.45	0.09	0.96	0.10*	1.67	0.00	1.67
16.50	0.09	0.96	0.10*	1.66	0.00	1.66
16.55	0.09	0.96	0.10*	1.64	0.00	1.64
16.60	0.09	0.96	0.10*	1.63	0.00	1.63
16.65	0.09	0.96	0.10*	1.61	0.00	1.61
16.70	0.09	0.96	0.10*	1.60	0.00	1.60
16.75	0.09	0.96	0.10*	1.59	0.00	1.59
16.80	0.09	0.96	0.10*	1.57	0.00	1.57
16.85	0.09	0.96	0.10*	1.56	0.00	1.56
16.90	0.09	0.96	0.10*	1.55	0.00	1.55
16.95	0.09	0.96	0.10*	1.53	0.00	1.53
17.00	0.10	0.97	0.11*	1.52	0.00	1.52
17.05	0.10	0.97	0.11*	1.50	0.00	1.50
17.10	0.10	0.97	0.11*	1.49	0.00	1.49
17.15	0.10	0.97	0.11*	1.48	0.00	1.48
17.20	0.10	0.97	0.11*	1.47	0.00	1.47
17.25	0.10	0.97	0.11*	1.45	0.00	1.45
17.30	0.10	0.97	0.11*	1.44	0.00	1.44
17.35	0.10	0.97	0.11*	1.43	0.00	1.43
17.40	0.10	0.97	0.11*	1.42	0.00	1.42
17.45	0.10	0.97	0.11*	1.40	0.00	1.40
17.50	0.10	0.97	0.11*	1.39	0.00	1.39
17.55	0.10	0.97	0.11*	1.38	0.00	1.38
17.60	0.10	0.97	0.11*	1.36	0.00	1.36
17.65	0.10	0.97	0.11*	1.35	0.00	1.35
17.70	0.10	0.97	0.11*	1.34	0.00	1.34
17.75	0.10	0.97	0.11*	1.33	0.00	1.33
17.80	0.10	0.97	0.11*	1.31	0.00	1.31
17.85	0.10	0.97	0.11*	1.30	0.00	1.30
17.90	0.10	0.97	0.11*	1.29	0.00	1.29
17.95	0.10	0.97	0.11*	1.27	0.00	1.27
18.00	0.10	0.97	0.10*	1.26	0.00	1.26
18.05	0.10	0.97	0.10*	1.25	0.00	1.25
18.10	0.10	0.97	0.10*	1.24	0.00	1.24
18.15	0.10	0.97	0.10*	1.22	0.00	1.22
18.20	0.10	0.97	0.10*	1.21	0.00	1.21
18.25	0.10	0.97	0.10*	1.20	0.00	1.20
18.30	0.10	0.97	0.10*	1.18	0.00	1.18
18.35	0.10	0.97	0.10*	1.17	0.00	1.17
18.40	0.10	0.97	0.10*	1.16	0.00	1.16
18.45	0.10	0.98	0.10*	1.15	0.00	1.15
18.50	0.10	0.98	0.10*	1.13	0.00	1.13
18.55	0.10	0.98	0.10*	1.12	0.00	1.12

18.60	0.10	0.98	0.10*	1.11	0.00	1.11
18.65	0.10	0.98	0.10*	1.09	0.00	1.09
18.70	0.10	0.98	0.10*	1.08	0.00	1.08
18.75	0.10	0.98	0.10*	1.07	0.00	1.07
18.80	0.10	0.98	0.10*	1.06	0.00	1.06
18.85	0.10	0.98	0.10*	1.04	0.00	1.04
18.90	0.10	0.98	0.10*	1.03	0.00	1.03
18.95	0.10	0.98	0.10*	1.02	0.00	1.02
19.00	0.10	0.98	0.10*	1.00	0.00	1.00
19.05	0.10	0.98	0.10*	0.99	0.00	0.99
19.10	0.10	0.98	0.11*	0.98	0.00	0.98
19.15	0.11	0.98	0.11*	0.97	0.00	0.97
19.20	0.11	0.98	0.11*	0.95	0.00	0.95
19.25	0.11	0.98	0.11*	0.94	0.00	0.94
19.30	0.11	0.98	0.11*	0.93	0.00	0.93
19.35	0.11	0.98	0.11*	0.92	0.00	0.92
19.40	0.11	0.98	0.12*	0.90	0.00	0.90
19.45	0.12	0.98	0.12*	0.89	0.00	0.89
19.50	0.12	0.98	0.12*	0.88	0.00	0.88
19.55	0.12	0.98	0.12*	0.87	0.00	0.87
19.60	0.12	0.98	0.12*	0.86	0.00	0.86
19.65	0.12	0.98	0.12*	0.85	0.00	0.85
19.70	0.12	0.98	0.13*	0.84	0.00	0.84
19.75	0.13	0.98	0.13*	0.82	0.00	0.82
19.80	0.13	0.98	0.13*	0.81	0.00	0.81
19.85	0.13	0.98	0.13*	0.80	0.00	0.80
19.90	0.13	0.98	0.13*	0.79	0.00	0.79
19.95	0.13	0.98	0.13*	0.78	0.00	0.78
20.00	0.13	0.98	0.14*	0.77	0.00	0.77
20.05	0.13	0.98	0.14*	0.76	0.00	0.76
20.10	0.14	0.98	0.14*	0.75	0.00	0.75
20.15	0.14	0.98	0.14*	0.74	0.00	0.74
20.20	0.14	0.98	0.14*	0.73	0.00	0.73
20.25	0.14	0.99	0.14*	0.72	0.00	0.72
20.30	0.14	0.99	0.14*	0.71	0.00	0.71
20.35	0.14	0.99	0.15*	0.70	0.00	0.70
20.40	0.15	0.99	0.15*	0.69	0.00	0.69
20.45	0.15	0.99	0.15*	0.68	0.00	0.68
20.50	0.15	0.99	0.15*	0.67	0.00	0.67
20.55	0.15	0.99	0.15*	0.66	0.00	0.66
20.60	0.15	0.99	0.15*	0.65	0.00	0.65
20.65	0.15	0.99	0.16*	0.64	0.00	0.64
20.70	0.16	0.99	0.16*	0.63	0.00	0.63
20.75	0.16	0.99	0.16*	0.62	0.00	0.62
20.80	0.16	0.99	0.16*	0.61	0.00	0.61
20.85	0.16	0.99	0.16*	0.60	0.00	0.60
20.90	0.16	0.99	0.16*	0.60	0.00	0.60
20.95	0.16	0.99	0.17*	0.59	0.00	0.59
21.00	0.17	0.99	0.17*	0.58	0.00	0.58
21.05	0.17	0.99	0.17*	0.57	0.00	0.57
21.10	0.17	0.99	0.17*	0.56	0.00	0.56
21.15	0.17	0.99	0.17*	0.55	0.00	0.55
21.20	0.17	0.99	0.17*	0.54	0.00	0.54
21.25	0.17	0.99	0.18*	0.54	0.00	0.54
21.30	0.18	0.99	0.18*	0.53	0.00	0.53
21.35	0.18	0.99	0.18*	0.52	0.00	0.52
21.40	0.18	0.99	0.18*	0.51	0.00	0.51
21.45	0.18	0.99	0.18*	0.50	0.00	0.50
21.50	0.18	0.99	0.18*	0.50	0.00	0.50
21.55	0.18	0.99	0.19*	0.49	0.00	0.49
21.60	0.19	0.99	0.19*	0.48	0.00	0.48
21.65	0.19	0.99	0.19*	0.47	0.00	0.47
21.70	0.19	0.99	0.19*	0.46	0.00	0.46
21.75	0.19	0.99	0.19*	0.46	0.00	0.46
21.80	0.19	0.99	0.20*	0.45	0.00	0.45
21.85	0.20	0.99	0.20*	0.44	0.00	0.44
21.90	0.20	0.99	0.20*	0.43	0.00	0.43
21.95	0.20	0.99	0.20*	0.43	0.00	0.43
22.00	0.20	0.99	0.20*	0.42	0.00	0.42
22.05	0.21	0.99	0.21*	0.41	0.00	0.41
22.10	0.21	0.99	0.21*	0.41	0.00	0.41
22.15	0.21	0.99	0.21*	0.40	0.00	0.40
22.20	0.21	0.99	0.21*	0.39	0.00	0.39
22.25	0.21	0.99	0.22*	0.38	0.00	0.38
22.30	0.22	0.99	0.22*	0.38	0.00	0.38
22.35	0.22	0.99	0.22*	0.37	0.00	0.37

22.40	0.22	0.99	0.22*	0.36	0.00	0.36
22.45	0.22	0.99	0.23*	0.36	0.00	0.36
22.50	0.23	0.99	0.23*	0.35	0.00	0.35
22.55	0.23	0.99	0.23*	0.34	0.00	0.34
22.60	0.23	0.99	0.23*	0.34	0.00	0.34
22.65	0.24	0.99	0.24*	0.33	0.00	0.33
22.70	0.24	0.99	0.24*	0.32	0.00	0.32
22.75	0.24	0.99	0.24*	0.32	0.00	0.32
22.80	0.25	1.00	0.25*	0.31	0.00	0.31
22.85	0.25	1.00	0.25*	0.31	0.00	0.31
22.90	0.25	1.00	0.25*	0.30	0.00	0.30
22.95	0.26	1.00	0.26*	0.29	0.00	0.29
23.00	0.26	1.00	0.26*	0.29	0.00	0.29
23.05	0.26	1.00	0.27*	0.28	0.00	0.28
23.10	0.27	1.00	0.27*	0.28	0.00	0.28
23.15	0.27	1.00	0.28*	0.27	0.00	0.27
23.20	0.28	1.00	0.28*	0.27	0.00	0.27
23.25	0.29	1.00	0.29*	0.26	0.00	0.26
23.30	0.30	1.00	0.30*	0.26	0.00	0.26
23.35	0.31	1.00	0.31*	0.25	0.00	0.25
23.40	0.33	1.00	0.33*	0.25	0.00	0.25
23.45	1.45	1.00	1.46	0.24	0.00	0.24
23.50	1.45	1.00	1.46	0.24	0.00	0.24
23.55	1.45	1.00	1.45	0.23	0.00	0.23
23.60	1.45	1.00	1.45	0.23	0.00	0.23
23.65	1.45	1.00	1.45	0.23	0.00	0.23
23.70	1.45	1.00	1.45	0.22	0.00	0.22
23.75	1.45	1.00	1.45	0.22	0.00	0.22
23.80	1.45	1.00	1.45	0.22	0.00	0.22
23.85	1.45	1.00	1.45	0.21	0.00	0.21
23.90	1.45	1.00	1.45	0.21	0.00	0.21
23.95	1.45	1.00	1.45	0.21	0.00	0.21
24.00	1.45	1.00	1.45	0.20	0.00	0.20
24.05	1.45	1.00	1.45	0.20	0.00	0.20
24.10	1.45	1.00	1.45	0.20	0.00	0.20
24.15	1.45	1.00	1.45	0.19	0.00	0.19
24.20	1.45	1.00	1.45	0.19	0.00	0.19
24.25	1.45	1.00	1.45	0.19	0.00	0.19
24.30	1.45	1.00	1.45	0.19	0.00	0.19
24.35	1.45	1.00	1.45	0.18	0.00	0.18
24.40	1.45	1.00	1.45	0.18	0.00	0.18
24.45	1.45	1.00	1.45	0.18	0.00	0.18
24.50	1.45	1.00	1.45	0.17	0.00	0.17
24.55	1.45	1.00	1.45	0.17	0.00	0.17
24.60	1.45	1.00	1.45	0.17	0.00	0.17
24.65	1.45	1.00	1.45	0.16	0.00	0.16
24.70	1.45	1.00	1.45	0.16	0.00	0.16
24.75	1.45	1.00	1.45	0.16	0.00	0.16
24.80	1.45	1.00	1.45	0.15	0.00	0.15
24.85	1.45	1.00	1.45	0.15	0.00	0.15
24.90	1.45	1.00	1.45	0.15	0.00	0.15
24.95	1.45	1.00	1.45	0.15	0.00	0.15
25.00	1.45	1.00	1.45	0.14	0.00	0.14
25.05	1.45	1.00	1.45	0.14	0.00	0.14
25.10	1.45	1.00	1.45	0.14	0.00	0.14
25.15	1.45	1.00	1.45	0.13	0.00	0.13
25.20	1.45	1.00	1.45	0.13	0.00	0.13
25.25	1.45	1.00	1.45	0.13	0.00	0.13
25.30	1.45	1.00	1.45	0.12	0.00	0.12
25.35	1.45	1.00	1.45	0.12	0.00	0.12
25.40	1.45	1.00	1.45	0.12	0.00	0.12
25.45	1.45	1.00	1.45	0.11	0.00	0.11
25.50	1.45	1.00	1.45	0.11	0.00	0.11
25.55	1.45	1.00	1.45	0.11	0.00	0.11
25.60	1.45	1.00	1.45	0.10	0.00	0.10
25.65	1.45	1.00	1.45	0.10	0.00	0.10
25.70	1.45	1.00	1.45	0.10	0.00	0.10
25.75	1.45	1.00	1.45	0.09	0.00	0.09
25.80	1.45	1.00	1.45	0.09	0.00	0.09
25.85	1.45	1.00	1.45	0.09	0.00	0.09
25.90	1.45	1.00	1.45	0.08	0.00	0.08
25.95	1.45	1.00	1.45	0.08	0.00	0.08
26.00	1.45	1.00	1.45	0.07	0.00	0.07
26.05	1.45	1.00	1.45	0.07	0.00	0.07
26.10	1.45	1.00	1.45	0.07	0.00	0.07
26.15	1.45	1.00	1.45	0.06	0.00	0.06

26.20	1.45	1.00	1.45	0.06	0.00	0.06
26.25	1.45	1.00	1.45	0.06	0.00	0.06
26.30	1.45	1.00	1.45	0.05	0.00	0.05
26.35	1.45	1.00	1.45	0.05	0.00	0.05
26.40	1.45	1.00	1.45	0.05	0.00	0.05
26.45	1.45	1.00	1.45	0.04	0.00	0.04
26.50	1.45	1.00	1.45	0.04	0.00	0.04
26.55	1.45	1.00	1.45	0.03	0.00	0.03
26.60	1.45	1.00	1.45	0.03	0.00	0.03
26.65	1.45	1.00	1.44	0.03	0.00	0.03
26.70	1.45	1.00	1.44	0.02	0.00	0.02
26.75	1.45	1.00	1.44	0.02	0.00	0.02
26.80	1.45	1.00	1.44	0.02	0.00	0.02
26.85	1.45	1.00	1.44	0.01	0.00	0.01
26.90	1.45	1.00	1.44	0.01	0.00	0.01
26.95	1.45	1.00	1.44	0.00	0.00	0.00
27.00	0.12	1.00	0.11*	0.00	0.00	0.00
27.05	2.00	1.01	5.00	0.00	0.00	0.00
27.10	2.00	1.01	5.00	0.00	0.00	0.00
27.15	2.00	1.01	5.00	0.00	0.00	0.00
27.20	2.00	1.01	5.00	0.00	0.00	0.00
27.25	2.00	1.01	5.00	0.00	0.00	0.00
27.30	2.00	1.01	5.00	0.00	0.00	0.00
27.35	2.00	1.01	5.00	0.00	0.00	0.00
27.40	2.00	1.01	5.00	0.00	0.00	0.00
27.45	2.00	1.01	5.00	0.00	0.00	0.00
27.50	2.00	1.01	5.00	0.00	0.00	0.00
27.55	2.00	1.01	5.00	0.00	0.00	0.00
27.60	2.00	1.01	5.00	0.00	0.00	0.00
27.65	2.00	1.01	5.00	0.00	0.00	0.00
27.70	2.00	1.01	5.00	0.00	0.00	0.00
27.75	2.00	1.01	5.00	0.00	0.00	0.00
27.80	2.00	1.01	5.00	0.00	0.00	0.00
27.85	2.00	1.01	5.00	0.00	0.00	0.00
27.90	2.00	1.01	5.00	0.00	0.00	0.00
27.95	2.00	1.01	5.00	0.00	0.00	0.00
28.00	2.00	1.01	5.00	0.00	0.00	0.00
28.05	2.00	1.01	5.00	0.00	0.00	0.00
28.10	2.00	1.01	5.00	0.00	0.00	0.00
28.15	2.00	1.01	5.00	0.00	0.00	0.00
28.20	2.00	1.01	5.00	0.00	0.00	0.00
28.25	2.00	1.01	5.00	0.00	0.00	0.00
28.30	2.00	1.01	5.00	0.00	0.00	0.00
28.35	2.00	1.01	5.00	0.00	0.00	0.00
28.40	2.00	1.01	5.00	0.00	0.00	0.00
28.45	2.00	1.01	5.00	0.00	0.00	0.00
28.50	2.00	1.01	5.00	0.00	0.00	0.00
28.55	2.00	1.02	5.00	0.00	0.00	0.00
28.60	2.00	1.02	5.00	0.00	0.00	0.00
28.65	2.00	1.02	5.00	0.00	0.00	0.00
28.70	2.00	1.02	5.00	0.00	0.00	0.00
28.75	2.00	1.02	5.00	0.00	0.00	0.00
28.80	2.00	1.02	5.00	0.00	0.00	0.00
28.85	2.00	1.02	5.00	0.00	0.00	0.00
28.90	2.00	1.02	5.00	0.00	0.00	0.00
28.95	2.00	1.02	5.00	0.00	0.00	0.00
29.00	2.00	1.02	5.00	0.00	0.00	0.00
29.05	2.00	1.02	5.00	0.00	0.00	0.00
29.10	2.00	1.02	5.00	0.00	0.00	0.00
29.15	2.00	1.02	5.00	0.00	0.00	0.00
29.20						

[illegible]

[illegible]

[illegible]

[illegible]

* 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/ft ²)
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

Geotechnical and Geologic Hazards Update Letter

03/10/26

**GEOTECHNICAL AND GEOLOGIC
HAZARDS INVESTIGATION
NEW PORTABLE CLASSROOM BUILDINGS
AND PARKING LOT PROJECT
CLYDE L. FISCHER MIDDLE SCHOOL
1720 HOPKINS DRIVE
SAN JOSE, CALIFORNIA**

for

**Alum Rock Union Elementary School District
Attn: Mr. Eric Wasinger, Senior Executive of Bonds, M&O
2930 Gay Avenue
San Jose, California 95127**

by

**Cleary Consultants, Inc.
560 Division Street
Campbell, California 95008**

January 2026



CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

Christophe A. Ciechanowski, President, GE
Grant F. Foster, Vice-President, GE
J. Michael Cleary, Principal, CEG, GE

January 19, 2026
Project No. 771.9A
Ser. 8069

Alum Rock Union Elementary School District
Attn: Mr. Eric Wasinger, Senior Executive of Bonds, M&O
2930 Gay Avenue
San Jose, California 95127

**RE: GEOTECHNICAL AND GEOLOGIC HAZARDS INVESTIGATION
NEW PORTABLE CLASSROOM BUILDINGS AND PARKING LOT PROJECT
CLYDE L. FISCHER MIDDLE SCHOOL
1720 HOPKINS DRIVE
SAN JOSE, CALIFORNIA**

Dear Mr. Wasinger:

As requested, we have performed a geotechnical and geologic hazards investigation for the planned New Portable Classroom Buildings and Parking Lot project at Clyde L. Fischer Middle School in San Jose, California. The accompanying report presents the results of our field investigation, laboratory testing and engineering analyses. The site and subsurface conditions are discussed, recommendations for the soil and foundation engineering aspects of the project design are presented and potential geologic hazards are evaluated. The recommendations presented in this report are contingent upon our review of the grading and foundation plans for the proposed new construction and observation/testing of the earthwork and foundation installation phases of the project.

We refer you to the text of the report for detailed findings and recommendations. If you have any questions concerning our findings or the report, please call.

Yours very truly,
CLEARY CONSULTANTS, INC.

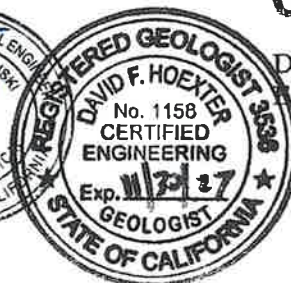

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Copies: Addressee (email)

Alum Rock Union Elementary School District (email) Attn: Dale Grogan

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APPENDIX B – Terean, Shear Wave Velocity Report, Clyde L. Fischer Middle School, New Portable Classroom Buildings and Parking Lot Project, January 5, 2026

INTRODUCTION

This report presents the results of our geotechnical and geologic hazards investigation for the planned New Portable Classroom Buildings and Parking Lot project at Clyde L. Fischer Middle School in San Jose, California (see Drawing 1, Site Vicinity and Earthquake Zones of Required Investigation Map for location). The purpose of this investigation was to explore the soil and foundation conditions in the general location of the planned portable classroom buildings and associated site improvements, develop recommendations for the geotechnical engineering aspects of the project design, and evaluate potential geologic and seismic hazards at the site.

Based on our review of the undated site plan (see Drawing 5, Site Plan) provided to us by Nathan Thome of Pageturn Projects, Inc., we understand that the project will include the installation of three new portable classroom buildings arranged in a “C” shape on the northwest side of the main campus building complex, and the installation of four new shade structures within a planned courtyard in the middle of the planned classroom buildings. The portable classroom buildings will be supported on wood-skid foundations. Structural loads are expected to be typical of these types of construction. The project will also include the installation of a new parking lot to replace the existing parking lot southwest of the planned portable classroom buildings site, concrete flatwork, and associated underground utilities.

Preliminary geotechnical recommendations were provided to the District in our January 13, 2026 transmittal summary.

We have reviewed the *Geologic Hazards Evaluation and Geotechnical Engineering Study for the New Multi-Purpose Center at the Clyde Fischer Middle School Campus* prepared by Earth Systems Pacific, dated June 8, 2015. Relevant information from this prior investigation was used in the current study.

SCOPE

As presented in our proposal letter dated November 19, 2025, the scope of our services for this investigation has included:

A. Geotechnical Investigation

1. A review of relevant published and unpublished and readily available geologic literature, maps and geotechnical information for the area.
2. Several reconnaissance visits to the site by our staff, including our certified engineering geologist.
3. A subsurface investigation including the drilling of five (5) exploratory borings at the project site and recovery of samples from borings.
4. Laboratory testing of samples obtained from the borings.
5. Engineering analysis of the field and laboratory data.
6. Preparation of this geotechnical investigation and geologic and seismic hazards evaluation report for use in the project design and construction. The report includes findings, conclusions and recommendations for the following:
 - a. Geologic and seismic setting of the site and surrounding area, including literature research and review of available geologic/seismic reports and maps.
 - b. 2025 CBC seismic design criteria.
 - c. Site preparation and grading.

- d. Portable classroom building wood-skid foundation allowable bearing pressures.
- e. Recommended foundation type and geotechnical engineering design parameters for the proposed new shade structures.
- f. Estimated foundation settlements.
- g. Subgrade preparation and aggregate base section for new exterior concrete slabs-on-grade.
- h. Subgrade preparation and aggregate base and asphalt pavement sections for new parking lot pavements.
- i. Treatment of expansive soils (as required).
- j. Backfilling and compaction of utility trenches.
- k. Surface and subsurface drainage.
- l. Unusual design or construction conditions encountered in the investigation.

B. Geologic and Seismic Hazards Evaluation

- 1. Discussion of geologic and seismic conditions and data on the nature of the site and potential earthquake damage including:
 - a. Regional geology.

- b. Seismic conditions and historical information on the seismicity of the local and regional area.
 - c. Location of known active and potentially active faults in the vicinity of the site, as well as nearby known or judged inactive faults.
- 2. A geophysical site evaluation at the site using seismograph/geophones for subsurface seismic imaging, processing of the seismic data collected, computation of the average shear-wave velocity in the upper 100 feet (V_{s30}), and site classification per CBC 2025/ASCE 7-22 seismic site class definitions.
 - 3. Earthquake ground motion acceleration design parameters for the site in accordance with the 2025 California Building Code study requirements.
 - 4. Potential site impacts related to faulting, liquefaction, lateral spreading, seismic settlement and differential compaction, landsliding, radon gas, flooding and dam failure inundation with recommended mitigation measures, where appropriate.
 - 5. Reconnaissance visit to the site by our certified engineering geologist, conducted January 7, 2026.

This report has been prepared for the specific use of the Alum Rock Union Elementary School District and their consultants in accordance with generally accepted geotechnical engineering principles and practices. No other warranty, either expressed or implied, is made. In the event that any substantial changes in the nature, design or location of the project are planned, the conclusions and recommendations of this report shall not be considered valid unless such changes are reviewed and the conclusions of this report modified or verified in writing. Any use or reliance of this report or the information herein by a third party shall be at such party's sole risk.

It should also be recognized that the passage of time may result in significant changes in technology, building code requirements, state of the practice, economic conditions or site variations which would render the report inaccurate. Accordingly, neither the owner, nor any other party, should rely on the information or conclusions contained in this report after three years from its date of issuance without the express written consent of Cleary Consultants, Inc.

METHOD OF INVESTIGATION

A. Subsurface Exploration

The subsurface investigation was performed on November 25, 2025, under the guidance of our Staff Engineering Geologist, Mr. Ian Severais, using track-mounted solid flight auger and rotary wash drilling equipment. Five (5) exploratory borings were drilled to a maximum depth of 45 feet at the locations shown on Drawing 5, Site Plan.

A key describing the soil classification system and soil consistency terms used in this report is presented on Drawing 6 and the soil sampling procedures are described in Drawing 7. The logs of the borings are presented on Drawings 9 through 15.

The borings were located in the field by surveyor's wheel measurements and interpolation of the features shown on available satellite imagery and the site plan provided to us. These locations should be considered accurate only to the degree implied by the method used.

B. Laboratory Testing

Samples of the soil materials from the borings were returned to our laboratory for classification and testing. The results of moisture content, dry density, percent finer than No. 4 and No. 200

sieves, plasticity index, free swell, pocket penetrometer, and torvane testing are shown on the boring logs. The laboratory testing procedures followed during this investigation are summarized on Drawing 8. Drawing 16 summarizes the results of the plasticity index testing. The results of R-Value testing performed on untreated and chemically-treated samples of the upper soils composited from the borings are presented on Drawings 17 and 18, respectively. The results of soil corrosivity testing performed on a composite sample of the surficial soils collected from the borings are presented on Drawing 19.

A list of references consulted during the investigation is included at the end of the text.

GEOPHYSICAL SITE EVALUATION

Our geophysical site evaluation, performed on December 19, 2025, included subsurface seismic imaging and earthquake ground shaking potential evaluation using Terēan's VsSurf ReMi seismic data processing software. Seismic surveys were performed to determine the seismic site class per ASCE 7-22 using the weighted-average soil shear wave velocity for the upper 100 feet (V_{s100}). The surveys were performed by recording active and ambient (passive) seismic sources. The seismic recording array for these surveys consisted of 24, 4.5 Hz geophones at 10 ft spacing, for a total survey length of 230 feet. Noise was generated by hammer strikes during data acquisition while ambient noise was generated from traffic along the nearby roads. The seismic data were acquired using a ReMiDAQ 4-24 channel seismograph, while data was processed using Terēan's ReMi software.

SITE CONDITIONS

A. Surface

The project site is located on the northwest to west side of the main campus building complex of the relatively level Clyde L. Fischer Middle School campus, which is bounded by residential homes to the northwest and southeast, Karl Street to the northeast, Hopkins Drive to the southwest, and a public library to the west.

The site of the planned classroom buildings, shade structures, and associated courtyard is presently an open grass field bordering the northwest side of an asphalt-paved playground. The physical education building is situated southeast of the site, athletic fields are situated to the northeast, and an open grass field is situated to the northwest.

The planned parking lot site will be situated southwest of the planned classroom buildings, predominantly occupied by an existing parking lot. The northeast portion of the planned parking lot site is presently occupied by asphalt hardscape, a garden, and a grass field. The existing parking lot pavement is in generally fair condition, with longitudinal cracking throughout and occasional “alligator” cracking. Vegetation was observed growing through cracks in the parking lot pavement. Several trees are situated within planters in the parking lot vicinity, and the pavement was observed to be raised in several areas due to tree roots.

The elevation of the project site is approximately 120 feet above Mean Sea Level. The overall regional topographic gradient is less than one percent toward the northwest in the site vicinity.

B. Subsurface

Exploratory Boring 1 (EB-1) of this investigation encountered firm to stiff silty clay to an approximate depth of seven and one-half (7½) feet, underlain by loose silty sand to an

approximate depth of 12 feet, further underlain by soft silty clay to an approximate depth of 17 feet. These layers were in turn underlain by loose to medium dense silty sand to an approximate depth of 27 feet, underlain by firm to stiff silty clay to the maximum depth explored, 45 feet.

EB-2 encountered two feet of fill consisting of sandy clay overlying firm sandy clay to an approximate depth of three and one-half (3½) feet, underlain by firm silty clay to the maximum depth explored, 15 feet.

EB-3 encountered soft to stiff silty clay to the maximum depth explored, 15 feet.

EB-4 and EB-5 encountered firm to stiff sandy clay to the maximum depth explored, six and one-half (6½) feet.

The near-surface soils encountered in the borings are considered to have a moderate expansion potential based on their plasticity characteristics (Plasticity Indices of 10 to 15 percent) and the free swell test data (Free Swells of 50 to 70 percent). The results of the free swell testing and plasticity index testing are shown on the boring logs. The results of the plasticity index testing are also presented on Drawing 16.

The attached boring logs and related information depict subsurface conditions only at the specific locations shown on Drawing 5 and on the particular date designated on the logs. Soil conditions at other locations may differ from conditions occurring at the boring locations. Also, the passage of time may result in a change of soil conditions at these boring locations due to environmental changes.

C. Groundwater

Groundwater was encountered in Exploratory Boring 1 (EB-1), EB-2, and EB-3 during drilling for this investigation at approximate depths of eight to eight and one-half (8½) feet below the

ground surface. EB-4 and EB-5 did not encounter groundwater within the maximum depth explored, six and one-half (6½) feet. The exploratory borings of Earth Systems Pacific's 2015 investigation, drilled at roughly the same location as the current study, encountered groundwater at an approximate depth of eight and one-half (8½) feet below the ground surface. It should be noted that the borings were only open for a period of a few hours, and this may not have been sufficiently long to allow local piezometric pressure to make a stabilized water table condition to become evident. Fluctuations of localized perched groundwater and the regional groundwater level can occur due to such factors as variations in rainfall, temperature, runoff, irrigation, and other factors not evident at the time our measurements were made and reported herein. These factors may result in the discrepancy between our findings and other regional data.

The groundwater table contours depicted in Seismic Hazard Zone Report 044 for the San Jose East Quadrangle (California Geological Survey, 2000) indicate the historic high groundwater table in the site vicinity to be less than 10 feet below the ground surface.

Groundwater elevation data provided by the Santa Clara Valley Water District's Historical Groundwater Elevation Data GIS website indicates that the project site lies within an area where the generalized depth to first groundwater is five (5) to 10 feet below the ground surface.

The California State Water Resources Control Board GeoTracker website, which performs a search for groundwater well records based on the site address and search radius input, and the Sustainable Groundwater Management Act (SGMA) Data Viewer online application did not provide relevant groundwater data in the vicinity of the project site.

Based on our review of the above information, we have conservatively assumed a groundwater depth of five feet for our liquefaction settlement analysis.

GEOLOGY AND SEISMICITY

The Santa Clara Valley, a broad, sediment-filled basin bordered on the east by the Diablo Range and on the west by the Santa Cruz Mountain Range, is about 12 miles wide in the vicinity of the site, which is situated in the southeast portion of the Valley. Structurally, the Santa Clara Valley has formed as a result of tectonic downwarping controlled by three northwest trending active fault zones: the San Andreas fault on the southwest and the Hayward and Calaveras faults on the northeast. Published geologic mapping by Helley and Wesling (1990) indicates that the site is underlain by Holocene-age floodbasin deposits (map unit Qhb) comprised of “organic-rich dark clay to very fine silty-clay deposits.” Dibblee (2005) more broadly indicates the site vicinity to be underlain by undifferentiated Quaternary alluvium (map unit Qa) consisting of gravel, sand, and clay. The findings of our investigation are consistent with the regional geologic mapping discussed above. A geological map of the site vicinity, as prepared by Helley and Wesling (1990), is presented on Drawing 2, Local Geologic Map.

The San Francisco Bay Area is recognized by geologists and seismologists as one of the most active seismic regions in the United States. The three major fault zones which pass through the Bay Area in a northwest direction have produced approximately a dozen earthquakes per century strong enough to cause structural damage. The faults causing these earthquakes are part of the San Andreas fault system, a major rift in the earth's crust that extends for at least 450 miles along the California Coast and includes the Hayward, Calaveras, and San Andreas faults. The site is located approximately 1.8 miles, 2.4 miles, 3.0 miles, and 3.8 miles southwest of the Evergreen, Quimby, Southeast Extension, and Crosley fault members of the Hayward fault zone, respectively, and 8.1 miles southeast of the main Hayward fault trace. The Calaveras and San Andreas faults are located approximately 5.5 miles northeast and 14.6 miles southwest of the site, respectively. The site is also located approximately 8.7 miles northeast of the potentially active Monte Vista-Shannon fault and approximately 1.1 miles northeast, 3.7 miles northeast, and 3.8 miles southwest of the inferred buried/concealed traces of the Quaternary (age undifferentiated) Silver Creek, Piercy, and Arroyo Aguague faults, respectively. A regional fault map (Jennings & Bryant, 2010) is presented on Drawing 3.

The distances between the site and the capable segments of the above faults, as well as other significant faults within a radius of 60 miles from the site, were determined using the USGS Earthquake Hazards Program 2008 USGS National Seismic Hazard Maps – Fault Parameters, as presented below in Table 1.

TABLE 1 - Summary of Significant Earthquake Faults Capable of Generating Strong Ground Shaking at the Clyde L. Fischer Middle School, New Portable Classroom Buildings and Parking Lot Project Site^{(1), (2)}

Earthquake Generating Fault	Approximate Distance and Direction to Generating Fault (Miles)	Maximum Earthquake (Moment Magnitude)
Evergreen (Hayward)	1.8 NE ⁽³⁾	7.3
Quimby (Hayward)	2.4 NE ⁽³⁾	7.3
Hayward Southeast Extension	3.0 NE ⁽³⁾	7.3
Calaveras CN+CC+CS ⁽⁴⁾	5.5 NE	7.0
Hayward	8.1 NW	7.3
Monte Vista - Shannon	8.7 SW	6.5
Sargent	14.4 SW	6.9
N. San Andreas	14.6 SW	8.1
SAO+SAN+SAP+SAS ⁽⁴⁾		
Zayante – Vergeles	18.9 SW	7.0
Greenville Connected	19.4 NE	7.0
Mount Diablo Thrust	27.1 NW	6.7
San Gregorio Connected	29.8 SW	7.5
Ortogonalita	30.6 SE	7.1
Great Valley 7	31.3 NE	6.9
Monterey Bay – Tularcitos	33.0 SW	7.3
Quien Sabe	38.3 SE	6.6
Green Valley Connected	39.8 NW	6.8
Rinconada	45.9 SE	7.5

⁽¹⁾ USGS Earthquake Hazards Program 2008 USGS National Seismic Hazard Maps – Fault Parameters, ran December 15, 2025

⁽²⁾ Site Latitude: 37.3376°N; Site Longitude: 121.8303°W

⁽³⁾ Jennings and Bryant, 2010

⁽⁴⁾ Corresponds to portions of the scenario fault rupture

Since the early 1800s, a number of significant regional earthquakes have occurred along the San Andreas, Hayward, Calaveras and other fault zones in the vicinity of the San Francisco Bay Area and the surrounding region, as shown on Drawing 4, Regional Earthquake Epicenter Map

(Toppozada, et al, 2000). A discussion of significant regional historic earthquakes within a radius of 60 miles from the site is presented below.

Several major earthquakes have occurred on the San Andreas fault, including earthquakes having estimated magnitudes ranging from 6.3 to 7.4 in 1838, 1840, 1865, and 1890, the presumed epicenters of which are located about 18 miles southwest, 38 miles southeast, 10 miles southwest and 33 miles southeast of the project site, respectively. The San Francisco Earthquake of 1906 had a Richter Magnitude of approximately 8.3, the epicenter of which was located approximately 44 miles northwest of the site. Earthquakes of magnitude 5.8 and 5.3 occurred in 1910 and 1957 with epicenters located approximately 28 miles southeast and 42 miles northwest of the site; the 1957 Daly City earthquake caused approximately one million dollars (approximately eight million in 2018 dollars) in damage. On October 17, 1989, the Loma Prieta Earthquake, which had its epicenter 21 miles southwest of the site and a recorded Moment Magnitude of 6.9, produced widespread damage throughout the San Francisco Bay Area.

In 1868, an earthquake having an estimated Richter Magnitude of 7.0 occurred along the Hayward fault at a location approximately 29 miles northwest of the project site. This earthquake opened fissures at random locations along the fault from San Pablo to Mission San Jose.

Historical earthquakes along the Calaveras fault include events in 1861, 1897, 1899, 1979, 1984, and 2007 with estimated or recorded magnitudes ranging from 5.6 to 6.5. These earthquakes had epicenters located approximately 29 miles northwest, 30 miles southeast, 38 miles southeast, 24 miles southeast, eight miles southeast, and seven miles northeast of the project site, respectively.

The San Gregorio fault produced an earthquake of magnitude 5.8 with an epicenter approximately 30 miles southwest of the site in 1926.

In 1836, an earthquake with an estimated magnitude 6.4 was reported along the Sargent fault, the epicenter of which was located approximately 35 miles southeast of the project site. An

earthquake of estimated magnitude 5.5 occurred on the Quien Sabe fault in 1889, with an epicenter located approximately 36 miles southeast of the site. An earthquake of magnitude 5.7 occurred on the Monterey Bay Complex in 1910 at a location approximately 40 miles southwest of the site. An earthquake with Richter Magnitude 5.4 experienced on the Concord fault in 1955 had its epicenter approximately 45 miles northwest of the site. Two earthquakes in 1980, along traces of the Greenville fault, had their epicenters approximately 35 miles north of the site. These 1980 earthquakes had Richter magnitudes of 5.5 and 5.8. In addition, numerous earthquakes of magnitudes 4.0 or greater have been recorded throughout the San Francisco Bay Area along the San Andreas, Hayward, Calaveras and other faults.

Table 2 presents a summary of the regional historic earthquakes discussed above.

**TABLE 2 - Summary of Significant Regional Historic Earthquakes
in the Vicinity of the Clyde L. Fischer Middle School, New Portable
Classroom Buildings and Parking Lot Project Site^{(1), (2), (3)}**

Fault	Year (Name)	Magnitude (Richter)	Approximate Distance and Direction to Earthquake Epicenter (Miles)
San Andreas ⁽¹⁾	1838	7.4	18 SW
	1840	6.5	38 SE
	1865	6.6	10 SW
	1882	5.9	71 SE
	1890	6.3	33 SE
	1906 (San Francisco)	7.8 (8.3)	44 NW
	1910	5.8	28 SE
	1957 (Daly City)	5.3	42 NW
	1961	5.5	54 SE
	1989 (Loma Prieta)	6.9	21 SW
Calaveras ^{(1), (2)}	1861	5.8 (6.5)	29 NW
	1897	5.8 (6.5)	30 SE
	1899	5.8 (6.5)	38 SE
	1979	5.8 (6.5)	24 SE
	1984 (Morgan Hill)	6.1	8 NE
	2007 (Alum Rock)	5.6	7 NE
Hayward ⁽¹⁾	1868	7	29 NW
Concord ⁽¹⁾	1955	5.4	45 NW
Greenville ⁽¹⁾	1980 (Two Earthquakes)	5.5 & 5.8	35 N
Monterey Bay Complex ⁽¹⁾	1910	5.7	40 SW
	1926	6.1	58 SW
Quien Sabe ⁽¹⁾	1889	5.5	36 SE
San Gregorio ⁽¹⁾	1926	5.8	30 SW
Sargent ⁽¹⁾	1836	6.4	35 SE
West Napa ⁽²⁾	2014	6	66 NW

⁽¹⁾ USGS OFR 2007-1437H

⁽²⁾ USGS Earthquakes Hazards Program Website

⁽³⁾ Site Latitude: 37.3376°N; Site Longitude: 121.8303°W

Modeling of earthquake occurrence probabilities over the 30-year period of 2014 to 2043 on both a statewide and regional basis was performed by the 2014 Working Group on California Earthquake Probabilities. The results of the study are presented in the Long-Term Time-Dependent Probabilities for the Third Uniform California Earthquake Forecast (Field, E.H., et.

al., 2015). The report indicates a 72 percent probability that one or more earthquakes of magnitude 6.7 or greater will occur in the San Francisco Bay region between 2014 and 2043. Additionally, the probability of one or more regional earthquakes of magnitude 6.0 or greater over the same time period is indicated to be 98 percent. Likewise, the occurrence of at least one regional earthquake of magnitude 5.0 or greater over this time period is evaluated as being a near certainty.

Therefore, similar to most of the San Francisco Bay Area, it is reasonable to assume that the planned buildings and other site improvements will be subjected to a moderate to large earthquake from one of the above-mentioned faults during their design lifetime. During such an earthquake, strong ground shaking is likely to occur at the site.

GEOLOGIC AND SEISMIC HAZARDS EVALUATION

A. Fault Offset Hazard

Based on our site reconnaissance, field exploration and review of available geologic information, we conclude that there are no known active or potentially active faults crossing the planned project site. The site is not located within an Earthquake Fault Zone as defined by the County of Santa Clara (2012), California Geological Survey (2001), and City of San Jose (1983). Therefore, the hazard resulting from surface fault rupture or fault offset at the site is considered low.

B. Ground Shaking Hazards

1. Strong Ground Shaking

Strong ground shaking is likely to occur during the lifetime of the planned buildings and other site improvements as a result of movement along one or more of the regional active faults discussed above. The buildings and other proposed improvements will need to be designed and constructed in accordance with current standards of earthquake-resistant construction.

Ground shaking during an earthquake could cause furnishings which are not rigidly attached (such as bookshelves and file cabinets) to undergo movement with respect to the buildings. Design measures that minimize such potential movement and also minimize the adverse effects of such movement where they cannot be prevented should be utilized.

2. Seismically-Induced Liquefaction and Dry Soil Settlement

Liquefaction is a phenomenon in which saturated cohesionless soils lose strength during strong shaking and experience horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained, clay-free sands and sandy silts that lie within 50 feet of the ground surface. Seismically-induced dry soil settlement can occur in non-saturated soils, and is considered most applicable to non-cohesive clean, loose sands with less than five percent fines (Day, 2002).

The site is mapped within a potential liquefaction hazard zone as defined by the California Geological Survey (2001) and Santa Clara County (2012).

As discussed above, our investigation found that the project site is generally underlain by interlayered soft to stiff silty clay and loose to medium dense silty sand in the upper 27 feet, underlain by firm to stiff silty clay to the maximum depth explored, 45 feet.

The fine-grained soil layers were additionally analyzed for liquefaction susceptibility using criteria from Bray, J.D. and Sancio, R.B. in their 2006 paper “Assessment of the Liquefaction Susceptibility of Fine-Grained Soils”. This study found that fine-grained soils with a plasticity index of less than 12 and water content to liquid limit ratio of less than 0.85, or a plasticity index of 12 to 18 and water content to liquid limit ratio of less than 0.8, are not susceptible to liquefaction. Based on these criteria, the silty clay layers encountered in EB-1 were generally found to be not susceptible to liquefaction except for the silty clay layer encountered between the depths of 12 feet and 17 feet (potentially susceptible).

Soil characterizations from EB-1 were then analyzed for seismically-induced liquefaction and dry soil settlement using the LiquefyPro (Version 5.0) computer program, which evaluates liquefaction potential and calculates settlements using the SPT blowcount obtained during soil sampling and total unit weight and fines content data obtained from the samples during laboratory testing. The program is based on the most recent publications of the NCEER Workshop and SP117 Implementation, and the analysis was performed using the Tokimatsu and Seed calculation method with earthquake magnitude scaling correction. The parameters used to analyze the boring were a maximum Peak Ground Acceleration (PGA_M) of 0.62g, earthquake Moment Magnitude of 8.50 M_w and factor of safety (FS) of 1.3, per California Geological Survey Special Publication 117A (2008) and Note 48 (2019). As discussed above, the assumed groundwater depth used in the analysis was five feet.

The results and supporting data for the seismically-induced liquefaction and dry soil settlement analyses of the boring are included in Appendix A of this report.

Our analysis indicates that the theoretical seismically-induced liquefaction settlement at the site is approximately three and three-quarter ($3\frac{3}{4}$) inches, with approximately two inches of differential settlement predicted over a horizontal distance of 50 feet. The theoretical seismically-induced dry soil settlement is nil. Based on the above findings, the likelihood that the proposed portable classroom buildings, shade structures, and other site improvements will be damaged by seismically-induced ground settlement is considered low, provided that they are designed to withstand these predicted settlements.

3. Liquefaction-Induced Ground Surface Manifestations

The potential for liquefaction-induced ground surface manifestations was evaluated using the method of Ishihara (1985). This method provides empirical criteria to assess the potential for ground surface disturbance at liquefaction sites based on the thickness of the non-liquefiable surface layer (H_1) overlying the thickness of the underlying layer that exhibits liquefaction potential (H_2).

The liquefaction analyses of EB-1, as shown in Appendix A, indicates that a 7.5-foot-thick non-liquefiable layer (H_1) overlies a 19.5-foot-thick layer with liquefaction potential (H_2), as determined based on Figure 7.12 (Southern California Earthquake Center, 1999) and a historic maximum high groundwater table of five feet.

The thickness of the surface layer and the potentially liquefiable layer encountered in the boring was used to plot a point on the chart titled “Proposed Boundary Curves for Site Identification of Liquefaction-Induced Damage” (Ishihara, 1985). EB-1 was found to fall in the region in which liquefaction-induced surface manifestations could potentially occur for maximum ground accelerations of less than 0.2g. As stated above, the calculated peak ground acceleration predicted at the site is 0.62g.

The planned building wood skid foundations are anticipated to bear approximately at the existing surface elevation (7.5 feet above the potentially liquefiable layer) and the

planned shade structure spread footing foundations are anticipated to bear approximately two feet below the existing surface elevation (5.5 feet above the potentially liquefiable layer). Accordingly, we have evaluated the bearing capacity of the liquifiable layers starting as shallow as approximately 5.5 feet below the foundation bearing surfaces using the undrained residual strength as characteristic of their liquefiable state. At a depth of 7.5 feet below the ground surface, the allowable bearing pressure using the undrained residual strength of the potentially liquefiable soils as representative of their liquefiable state was determined to be a conservative minimum of 550 psf and the maximum vertical pressure due to total foundation design loads at that depth was determined to be approximately 200 psf. Based on our evaluation, we have concluded that the soils will provide adequate support for the allowable bearing pressures for foundations provided below (See Conclusions and Recommendations, Section B, Portable Classroom Building Wood-Skid Foundations and Section C, Shade Structure Spread Footing Foundations).

In summary, it is our opinion that the proposed classroom buildings and shade structure foundations may be subject to minor liquefaction-induced surface manifestations such as ground cracking, but no loss of support due to liquefaction is likely to occur in the event of an earthquake along one or more of the faults in the site vicinity due to the thickness (7.5 feet) of the non-liquefiable silty clay cap supporting the classroom buildings and shade structure foundations.

4. Other Seismic Hazards

We have also considered the possibility of geologic conditions likely to produce other seismically-induced hazards that could potentially impact the planned portable classroom buildings, shade structures, and other site improvements, such as lateral spreading, landsliding and ground cracking.

Because of the site's gentle topography, and the absence of a "free face" in the site vicinity, lateral spreading is considered remote. As indicated by the California

Geological Survey (2001), the site is not located within a zone of required investigation for earthquake-induced landsliding. Since the site topography is generally level, the likelihood of landsliding is also considered remote.

Ground cracking may be caused by any of the phenomena discussed above. As discussed above, there is potential for minor ground surface manifestations such as ground cracking resulting from soil liquefaction at the project site in the event of an earthquake along one or more of the regional active faults in the site vicinity. Our opinion is that any liquefaction-induced surface manifestations will be minor and within tolerable limits due to the thickness (7.5 feet) of the non-liquefiable silty clay layer supporting the classroom buildings and shade structure foundations.

C. Flooding

F.E.M.A. Flood Insurance Mapping (May 2009) indicates the project site is located within Zone D: “Areas in which flood hazards are undetermined, but possible.”

The project site is not located within the known dam failure inundation zones for the reservoirs in Santa Clara County, including Kuhn Dam (Office of Water Programs at CSU Sacramento, 2019) and Cherry Flat Dam (AECOM, 2020; Division of Safety and Dams, 2026).

The site is outside of the runup zone resulting from a seismically generated tsunami (California Geological Survey, 2021). The site is also not within the immediate vicinity of any lakes or reservoirs, and therefore there is not a hazard at the site from seiches.

D. Radon Gas Hazards

Radon Potential Zone Mapping for Western Santa Clara County (California Geological Survey, 2018) indicates that the project is located within an area of “low potential for indoor radon levels above four picocuries per liter.” The new buildings should be installed in accordance with current radon-resistant construction techniques.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our investigation, we judge that there are no geologic or seismic hazards or constraints that would preclude the construction of the proposed New Portable Classroom Buildings and Parking Lot project at Clyde L. Fischer Middle School in San Jose, California. From a soil and foundation engineering standpoint, we also conclude that the new portable classroom buildings and other improvements can be constructed as planned provided the recommendations of this report are incorporated into the design and construction of the project.

The near surface silty clay and sandy clay soils at the project site are of variable strength and consistency, and have a moderate expansion potential. Accordingly, in order to provide suitable support for the wood skid foundation-supported buildings, we recommend that after the building pads have been cut to grade, the upper soils be scarified to a depth of 12 inches (minimum), moisture conditioned to approximately two percent over optimum moisture and recompacted. A minimum of 12 inches of virgin (non-recycled) Class 2 aggregate baserock should then be placed and compacted over the prepared subgrade. Asphalt pavement, if used for the building pads above the Class 2 aggregate base section, should have a minimum thickness of three inches (See Section B, Portable Classroom Building Wood-Skid Foundations).

The planned shade structures can be supported on conventional spread footing foundations bearing in the undisturbed native soils underlying the site or properly compacted engineered fill, as described in Section C, Shade Structure Spread Footing Foundations.

A cushion of Class 2 aggregate baserock should be provided under exterior concrete flatwork and asphalt pavements as described in Section E, Slabs-on-Grade and Section F, Flexible Pavements.

Our analysis indicates that the theoretical seismically-induced liquefaction settlement at the site is approximately three and three-quarter (3¾) inches, with approximately two inches of differential settlement predicted over a horizontal distance of 50 feet.

The recommendations presented in the remainder of this report are contingent on our review of the earthwork and foundation plans for the project and our observation of the grading, foundation installation, concrete slab installation, and asphaltic concrete pavement installation phases of the construction.

A. Earthwork

1. Stripping and Site Preparation

Existing foundations, underground utilities, tree root bulbs, as well as any other site improvements which are to be removed should be cleared from the construction area. Below grade obstructions, such as buried tanks and existing foundations, should then be removed to their full depth and extent and hauled from the site. The new portable classroom building sites and other improvement areas should then be stripped to a sufficient depth to remove any remaining organic laden topsoil. Any areas of loose or soft materials that are exposed during the grading should also be removed or recompacted, as determined by our representative in the field.

Holes resulting from the removal of underground obstructions (such as abandoned utilities, tree root bulbs or foundation demolition excavations) that extend below the

planned finished grade should be cleared of loose soil and debris, then backfilled with suitable material compacted to the requirements discussed below for engineered fill (see Section A-4, Fill Placement and Compaction).

2. Chemical Soil Stabilization

The required baserock section underneath exterior concrete flatwork and asphalt pavements can be reduced by chemically treating with a five (5) percent by dry weight mixture of 50 percent Hi-Cal Quicklime and 50 percent Portland cement to a depth of at least 18 inches below the finished subgrade (See Section E, Slabs-on-Grade and Section F, Flexible Pavements). Chemical treatment will also provide a stable subgrade for construction traffic and mitigate pumping subgrade conditions, particularly if construction occurs during the wet season.

The performance of the chemically-stabilized soil is highly dependent upon uniform mixing of the chemical additive into the soil and proper curing of the chemically treated soil mixture. Hence, this work should be performed by a specialty subcontractor using appropriately sized spreading and mixing equipment which will result in a uniform mixture throughout the recommended section to be treated.

It is anticipated that up to 18 inches of soil can be chemically treated in-place using heavy-duty compaction equipment, such as a Rex 3-70 or similar compactor. A maximum 12-inch lift thickness is recommended where materials are removed and replaced as chemically-treated soil.

After satisfactory soil mixing has been achieved and the moisture content has been brought to optimum moisture for compaction, the recommended section of chemically treated soil should be recompact to at least 95 percent relative compaction in areas of vehicular pavement, and 90 percent within areas of pedestrian pavement. Compaction should be performed using heavy compaction equipment such as a sheepfoot roller or

segmented wheeled compactor. Field density tests should be performed in the chemically treated soil during the mixing and compaction process as a means of evaluating the contractor's compaction effort and compliance with the recommended minimum relative compaction.

The surface of the chemically treated subgrade should be kept moist for a minimum of four days after treatment and compaction is performed. Heavy vehicular loading should not be allowed on the treated subgrade surface during the four day curing period.

3. **Recompaction of Surface Soils Outside of Chemically Treated Areas**

After the site has been cleared, stripped and excavated to required grade, the exposed soil in areas to receive site improvements or fill outside of any chemically treated areas should be moisture conditioned and recompacted. The upper 12 inches of the exposed subgrade should be processed such that the moisture reaches the approximate laboratory established optimum moisture content, and then compacted to at least 90 percent relative compaction as determined by ASTM Test Designation D1557. The moisture conditioning process should be observed by our field representative. Field testing of the moisture content and relative compaction in the upper 12 inches should be performed just prior to placing fill or aggregate base on the recompacted subgrade. Placement of stabilizing fabric and a 12-inch layer of Class 2 aggregate baserock, or, alternatively chemical stabilization may be required to stabilize the subgrade if excessive pumping or instability is observed, prior to placing any required fill and/or aggregate base material.

Any soft soil or undocumented fills encountered should be removed and replaced as properly engineered fill, as determined by our representative in the field.

Compaction should be performed using heavy compaction equipment, such as a self-propelled sheepsfoot roller or segmented wheeled compactor. After the exposed subgrade soils are compacted, any required fill and the required aggregate base material

can be placed in lifts not exceeding eight inches in uncompacted thickness, and compacted to the requirements given below for engineered fill.

The subgrade should not be allowed to dry below optimum moisture content prior to placing additional fill or Class 2 aggregate base. This is likely to require periodic sprinkling during the dry season. Should drying of the soils occur, they should again be scarified, moisture conditioned to the proper moisture content and recompacted.

Based on the moisture content of samples obtained from the borings, we anticipate that it may be necessary to adjust the soil moisture content at the time of construction in order to achieve satisfactory compaction in the subgrade and fill soils. This may require that water be added and thoroughly mixed into any soils which are too dry or, alternatively, that repeated scarification and "turning over" of the soils during periods of dry weather be performed in order to aerate and reduce the moisture content of any soils which naturally too wet.

4. Fill Placement and Compaction

Existing soils having an organic content of less than three percent by volume, and which are free of construction debris, can be used as engineered fill. Fill material should not, however, contain rocks or lumps greater than six inches in greatest dimension with not more than 15 percent larger than 2.5 inches. Imported fill and aggregate baserock placed within the building footprints should be virgin/non-recycled and free of ground-up asphalt.

Engineered fill should be compacted to at least 90 percent relative compaction, as determined by ASTM Test Designation D1557. Fill material should be spread and compacted in lifts not exceeding eight inches in uncompacted thickness. In order to achieve satisfactory compaction in the subgrade and fill soils, it is likely that it will be necessary to adjust the soil moisture content at the time of soil compaction. This may

require that water be added and thoroughly mixed into any soils which are too dry, or that repeated scarification and "turning over" of the soils during periods of dry weather will be necessary in order to aerate and reduce the moisture content of any soils which are too wet.

5. Utility Trenches

The presently available subsurface information indicates that utility trenches can be excavated with conventional backhoe equipment. Trenches deeper than five feet should be properly braced or sloped in accordance with the current requirements of CAL-OSHA or the local governmental agency, whichever is more stringent.

Utility trenches that extend below the water table will likely require temporary dewatering and shoring.

Utility trenches should be backfilled with engineered fill placed in lifts not exceeding eight inches in uncompacted thickness, except thicker lifts may be used with the approval of our representative provided satisfactory compaction is achieved. If on-site soil is used, the material should be compacted to at least 90 percent relative compaction by mechanical means only. Imported sand can also be used for backfilling trenches provided it is compacted to at least 90 percent relative compaction. In slab and pavement areas, the upper three feet of trench backfill should be compacted to at least 90 percent relative compaction for on-site soils, and 95 percent where imported clean sand backfill is used. The upper foot of trench backfill underlying vehicular pavements should be compacted to at least 95 percent relative compaction.

Chemically-treated soil removed during excavation of utility trenches should be replaced with Class 2 aggregate baserock.

Our firm recommends that water jetting to achieve the required level of backfill compaction not be permitted.

6. Surface Drainage

Positive surface gradients of at least two percent on porous surfaces and one percent on paved surfaces should be maintained adjacent to the new classroom buildings so that water does not collect in the vicinity of the foundations. Water from roof downspouts should be collected into closed pipes or discharged onto impermeable surfaces, which carry the runoff away from the buildings and discharge into approved drainage facilities.

7. Construction Observation

Grading and earthwork operations should be observed and tested by our representative for conformance with the project plans/specifications and our recommendations. This work includes site preparation, selection of satisfactory fill materials, and placement and compaction of the subgrades and fills. Sufficient notification prior to commencement of earthwork is essential to make certain that the work will be properly observed.

B. Portable Classroom Building Wood-Skid Foundations

Wood skid supports for the planned portable classroom buildings bearing on 12 inches of compacted virgin (non-recycled) Class 2 aggregate baserock (a minimum of three inches of asphaltic concrete may also be installed to protect the baserock) can be designed for an allowable bearing pressure of 1000 psf due to dead loads with a one-third increase for dead plus live loads (1333 psf) and a 50 percent increase for total design loads, including wind and seismic (1500 psf).

Settlements under the anticipated loads are expected to be within tolerable limits for the proposed construction.

C. Shade Structure Spread Footing Foundations

The planned shade structures can be supported on conventional isolated spread footings bearing in undisturbed native soils or properly compacted engineered fill. Soft soil or undocumented fill, if encountered in the footing bottoms, should be removed and replaced as engineered fill compacted to at least 90 percent relative compaction as determined by field density testing.

The isolated spread footings should be founded at least 18 inches below lowest adjacent finished grade, and have minimum dimensions of 24 inches square or greater as determined by the project structural engineer. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1.5:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench.

At the above depths, footings can be designed for an allowable bearing pressure of 1500 psf for dead loads plus live loads and 2250 psf for total design loads including wind and seismic.

Lateral loads can be resisted by friction between the foundation bottoms and the supporting subgrade. A friction coefficient of 0.25 is considered applicable. As an alternative, an equivalent fluid pressure of 250 pcf starting one-half foot below the ground surface can be taken against the sides of footings poured neat.

Post-construction settlements of the spread footing foundations under proposed loads are expected to be within tolerable limits.

D. Seismic Design Parameters

Seismic design values for the project site were analyzed using the site latitude and longitude (37.3376° N, 121.8303° W) and the site classification, which was determined using subsurface seismic data obtained during our geophysical site evaluation. The shear wave velocity report based on our geophysical site evaluation, prepared by Terēan, is included in Appendix B of this report. The OSHPD U.S. Seismic Design Maps online application was used to determine base ASCE 7-22 seismic design values, which should be used for structural design. Based on the above described analyses, the following seismic design parameters can be used in lateral force analyses at the project site.

Site Class D – Medium Dense Sand or Stiff Clay Soil Profile ($V_{s30} = 718$ ft/s)

ASCE 7-22 Values (OSHPD U.S. Seismic Design Maps):

Mapped Spectral Acceleration Values; $S_s = 1.85$, $S_1 = 0.71$

Spectral Response Accelerations; $SM_s = 1.87$, $SM_1 = 1.70$

Design Spectral Response Accelerations; $SD_s = 1.24$, $SD_1 = 1.13$

E. Slabs-on-Grade

Slab-on-grade construction will be used for new exterior concrete flatwork. Exterior pedestrian concrete flatwork, sidewalks, and curb and gutters should be underlain by at least eight inches of Class 2 aggregate baserock placed on the prepared subgrade, or six inches of Class 2 aggregate baserock placed on 18 inches of properly compacted chemically-treated subgrade.

Reinforcement of slabs should be provided in accordance with their anticipated use and loading, but as a minimum, slabs should be reinforced with No. 3 bars at 18 inches on center, both ways, or No. 4 bars at 24 inches on center, both ways. Concrete slabs should be articulated with a maximum joint spacing of ten feet in both directions.

The baserock and upper 12 inches of underlying subgrade should be compacted to at least 90 percent relative compaction, and 95 percent in areas of vehicular traffic.

Prior to final construction of slabs, the baserock and subgrade surface should be proof rolled to provide a smooth, firm non-yielding surface. The moisture content of the compacted baserock and subgrade should be maintained at, or slightly above, optimum moisture prior to placing non-expansive fill materials.

F. Flexible Pavements

The near-surface soils at the site were determined to have an untreated R-Value of 15 and a chemically-treated R-Value of 86 based on the laboratory test results. The required thickness of the pavement section can be reduced by chemically treating the subgrade (minimum 18 inches deep) with a five (5) percent by dry weight mixture of 50 percent Hi-Cal Quicklime and 50 percent Portland cement in new AC pavement areas. Chemical treatment will also mitigate pumping subgrade conditions, particularly if construction occurs during the wet season. Utilizing the above R-Values and Traffic Indices of 4.5 for automobile parking and 6.0 for fire truck and bus lanes, driveways, and drive aisles, and Procedure 301-F of the California Department of Transportation, we have developed the following alternative minimum flexible pavement sections for use on this project:

Table 3 - Recommended Alternative Flexible Pavement Sections

Traffic Condition	Asphaltic Concrete (inches)	Class 2 Aggregate Base (inches)	Chemical Subgrade Treatment (inches)	Total Thickness (inches)
Auto Parking (T.I. = 4.5)				
Untreated	3.0	8.0	--	11.0
Chemically Treated	3.0	6.0	18.0	27.0
Fire/Bus Lanes, Driveways, Drive Aisles (T.I. = 6.0)				
Untreated	4.0	10.0	--	14.0
Chemically Treated	4.0	6.0	18.0	28.0

New asphalt hardscape areas (anticipating only pedestrian traffic) required for the project should consist of two inches AC over six inches of Class 2 aggregate baserock.

The upper 12 inches of new pavement area subgrade should be compacted to at least 95 percent relative compaction. Any fill required below the upper six inches of subgrade should be compacted to at least 90 percent.

The subgrade should be statically rolled with a heavy, smooth drum roller to provide a smooth firm surface. Any unstable or pumping subgrade areas should be chemically treated as described above, or subexcavated, plugged with baserock and overlain with a stabilizing fabric such as Mirafi 600X. Fabric installation should be performed in accordance with the manufacturer's recommendations. The method and extent of any required stabilization work should be evaluated by our representative.

Class 2 aggregate base should have an R-Value of at least 78 and conform to the requirements of Section 26, State of California "CALTRANS" Standard Specifications, latest edition. The aggregate base material should be placed in thin lifts in a manner to prevent segregation, and

should be uniformly moisture conditioned and compacted to at least 95 percent relative compaction to provide a smooth, unyielding surface.

The asphaltic concrete should conform to and be placed in accordance with the requirements of Section 39 in the State of California CALTRANS Standard Specifications, latest edition.

G. Soil Corrosivity

Laboratory resistivity, pH, chloride and sulfate testing was performed on a composite soil sample obtained from the upper three feet of the borings during our geotechnical investigation for this project. The testing was performed by Cooper Testing Laboratory for the purpose of evaluating the soils' corrosion potential for use in the design of underground utilities and embedded concrete on this project.

In summary, the test results indicated a minimum resistivity of 1,642 Ohm-Cm, a pH of 8.1, a chloride content of 58 ppm, and water-soluble sulfate content of 125 ppm. Soils with chloride contents of less than 500 ppm and sulfate contents of less than 1500 ppm are considered to be of low corrosivity. However, based on the resistivity testing, the soils are considered to be “moderately corrosive.”

Table 4 below shows the general correlation between resistivity and corrosion potential.

Table 4 - Correlation Between Resistivity and Corrosion Potential (c)

Soil Resistivity (ohm-cm)	Soil Classification
Below 500	Very Corrosive
500 to 1,000	Corrosive
1,000 to 2,000	Moderately Corrosive
2,000 to 10,000	Mildly Corrosive
Above 10,000	Progressively Less Corrosive

(c) National Association of Corrosion Engineers.

This condition combined with the basic soil condition encountered at the site could result in reduced life span of buried steel piping and culverts for this project. Thicker gauge pipelines would have greater life spans. For example, the life spans for 18, 16 and 14-gauge steel culverts with a soil resistivity of 1,642 ohm-cm and a pH of 8.1 are estimated to be roughly 31, 40 and 49 years, respectively (California Department of Transportation, 2019).

Based on the resistivity and sulfate testing, for the purposes of design of concrete in contact with the soil against acid and sulfate exposure conditions, there are no cementitious material or water content restrictions (Portland Cement Association, 2002).

PLAN REVIEW AND CONSTRUCTION OBSERVATION

We should be provided the opportunity to review the foundation and grading plans and the specifications for the project when they are available. We should also be retained to provide soil engineering observation and testing services during the grading and foundation installation phases of the project. This will provide the opportunity for correlation of the soil conditions found in our investigation with those actually encountered in the field, and thus permit any necessary modifications in our recommendations resulting from changes in anticipated conditions.

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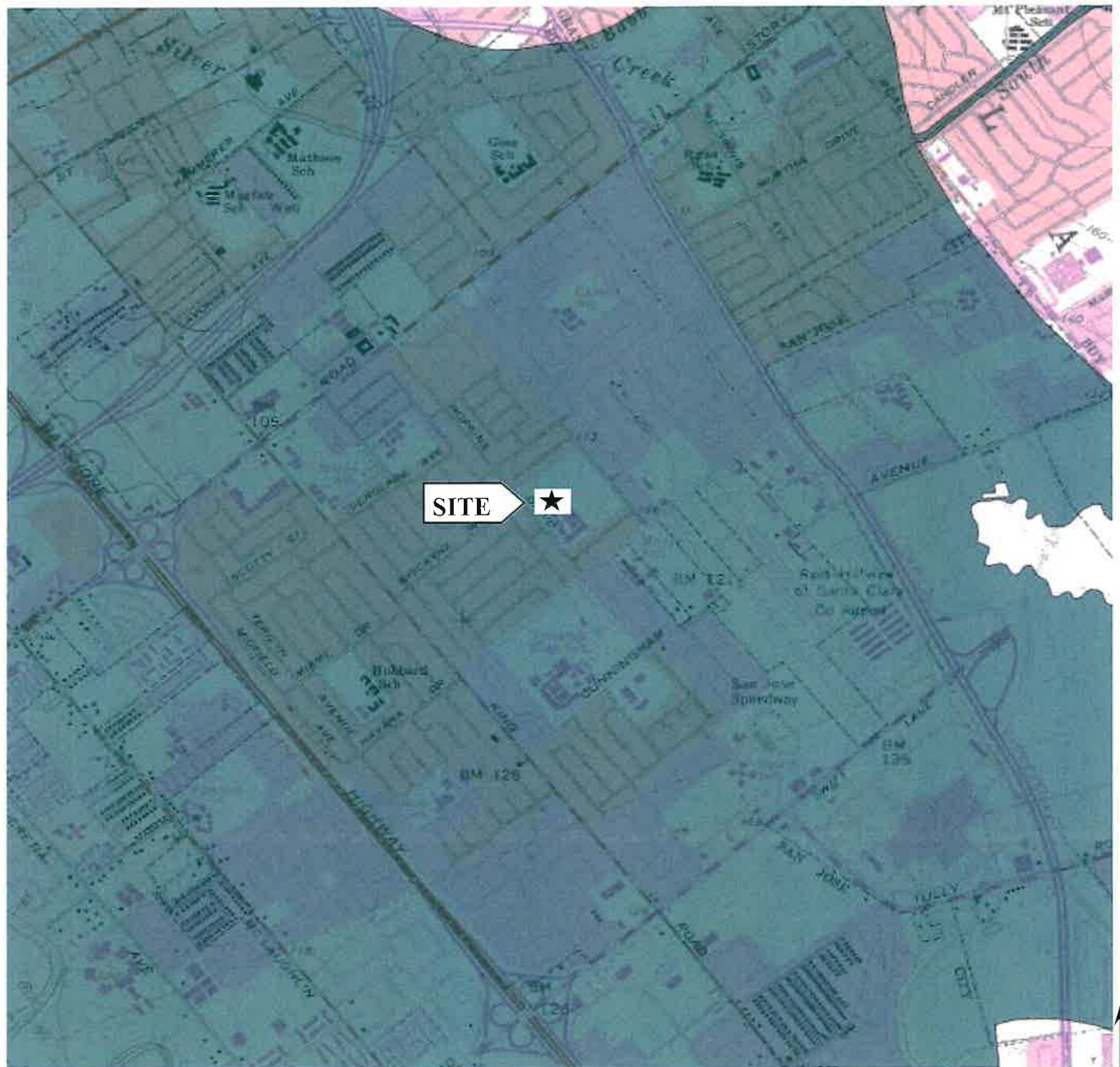
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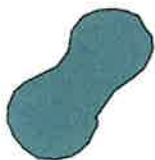
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MAP EXPLANATION



Liquefaction Zones

Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

BASE: California Geological Survey, 2001, Earthquake Zones of Required Investigation, San Jose East Quadrangle

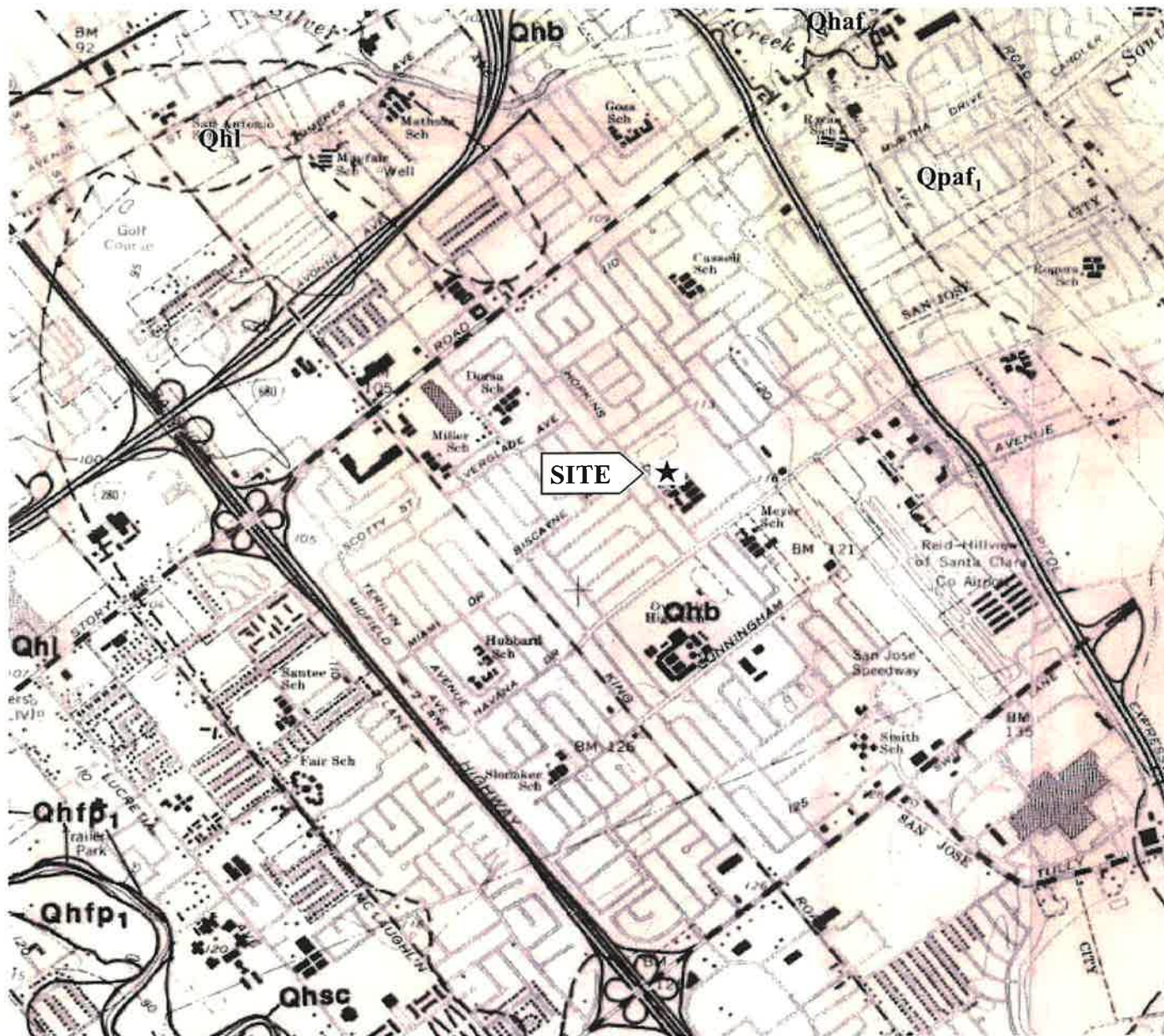
SITE VICINITY AND EARTHQUAKE ZONES OF REQUIRED INVESTIGATION MAP



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NEW PORTABLE CLASSROOM BUILDINGS
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San Jose, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 2000'	771.9A	January 2026	1



EXPLANATION

- Qhsc** Stream Channel and Their Deposits (Holocene)
- Qhfp₁** Alluvial Terrace Deposits (Holocene)
- Qhl** Natural Levee Deposits (Holocene)
- Qhb** Floodbasin Deposits (Holocene)
- Qhaf** Alluvial Fan Deposits (Holocene)
- Qpaf₁** Older Alluvial Fan Deposits (Pleistocene)



BASE: Helley, E.J., and Wesling, J.R., 1990, Geologic Map of the San Jose East Quadrangle, OFR 90-427

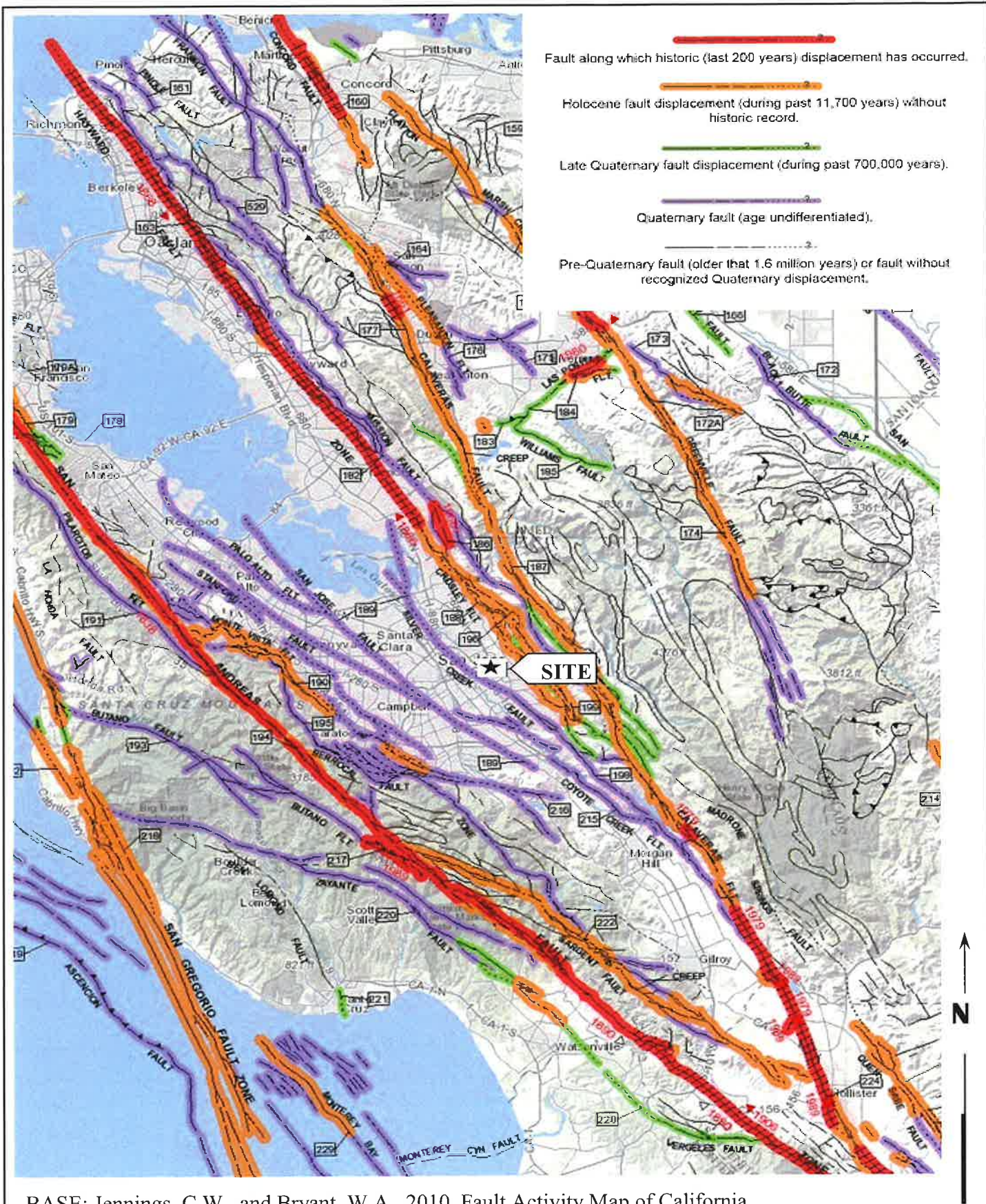
LOCAL GEOLOGIC MAP



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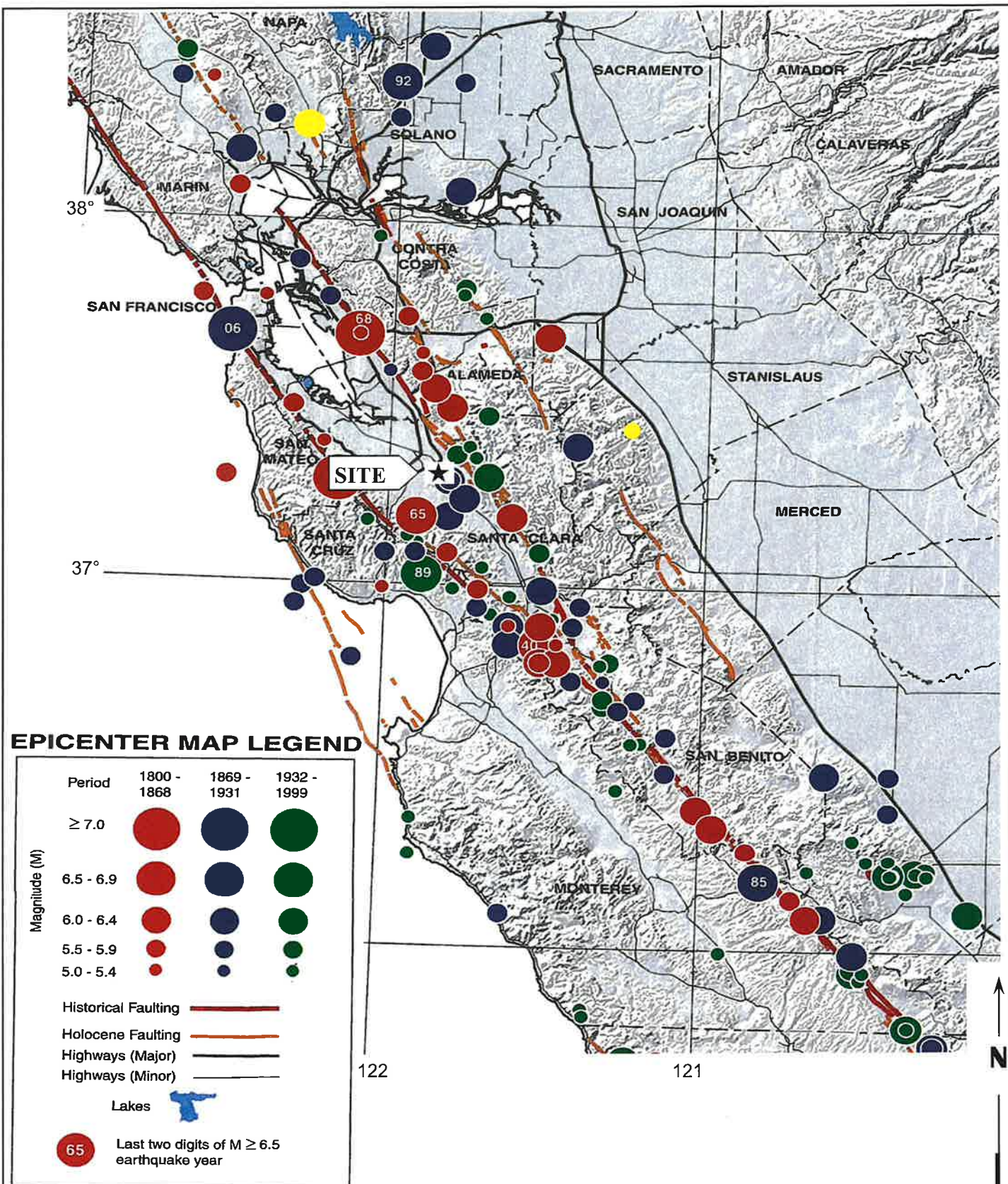
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GF	1" = 2000'	771.9A	January 2026	2



REGIONAL FAULT MAP

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GF	1" = 10 miles ±	771.9A	January 2026	3



BASE: CDMG Map Sheet 49; Toppozada et al, 2000. Magnitude 5.0 and Greater Earthquakes Plotted Through 1999; Subsequent Earthquakes through August 2014 plotted in yellow.

REGIONAL EARTHQUAKE EPICENTER MAP



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GF/CC

SCALE

1" = 25 miles ±

PROJECT NO.

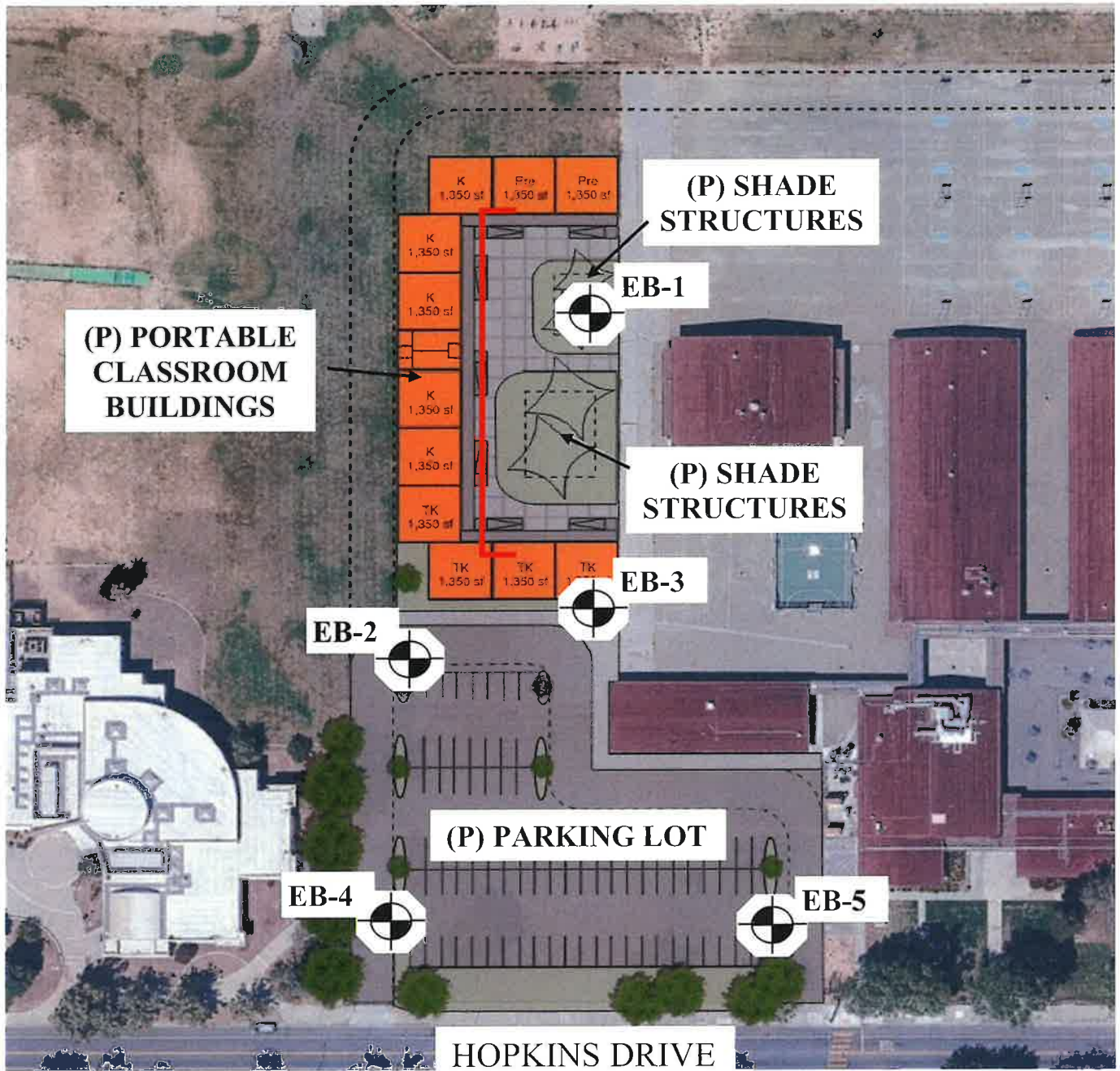
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DATE

January 2026

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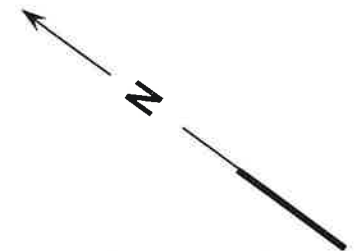
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EXPLANATION

EB-1  Approximate Location of Exploratory Boring

 Approximate Location of Seismic Line



BASE: Undated Site Plan Provided by Nathan Thome (Pageturn Projects, Inc.) via Email on Dec. 16, 2025

SITE PLAN

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APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 100' ±	771.9A	January 2026	5

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISION
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands or gravelly sands, little or no fines
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines
			SC	Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

U.S. STANDARD SERIES SIEVE

CLEAR SQUARE SIEVE OPENINGS

200

40

10

4

3/4"

3"

12"

SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

GRAIN SIZES

SANDS AND GRAVELS	BLOWS/FOOT ↕
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

SILTS AND CLAYS	STRENGTH ☆	BLOWS/FOOT ↕
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

RELATIVE DENSITY

CONSISTENCY

↕ Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split barrel (ASTM D-1586).

☆ Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

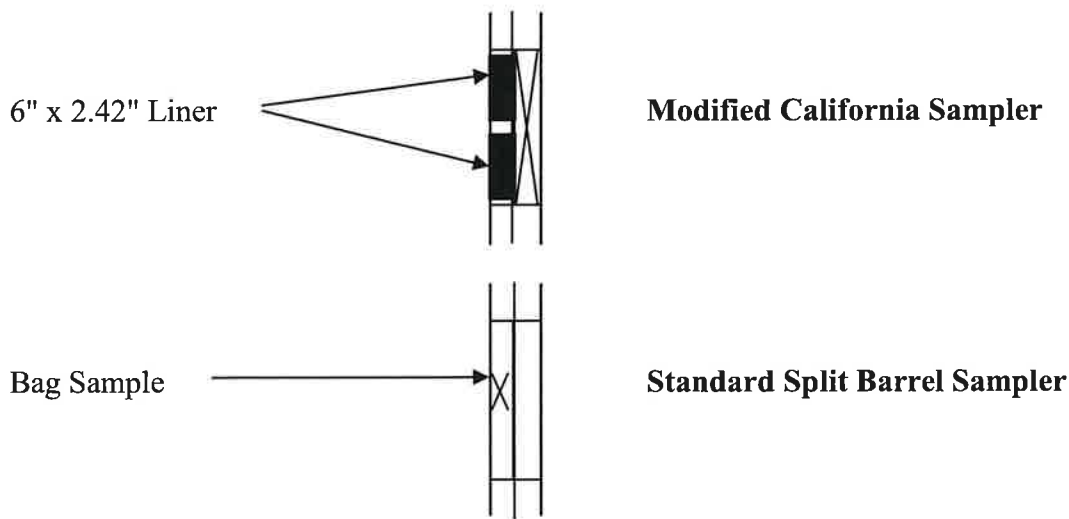
 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>	KEY TO EXPLORATORY BORING LOGS		
	NEW PORTABLE CLASSROOM BUILDINGS		
	Clyde L. Fischer Middle School		
	San Jose, California		
	PROJECT NO.	DATE	DRAWING NO.
	771.9A	January 2026	6

FIELD SAMPLING PROCEDURES

The soils encountered in the borings were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D-2487).

Representative soil samples were obtained from the borings at selected depths appropriate to the soil investigation. All samples were returned to our laboratory for classification and testing.

In accordance with the ASTM D1586 procedure, the standard penetration resistance was obtained by dropping a 140 pound hammer through a 30-inch free fall. The 2-inch O.D. Standard split barrel sampler was driven 18 inches or to practical refusal and the number of blows were recorded for each 6-inch penetration interval. The blows per foot recorded on the boring logs represent the accumulated number of blows, or N-value, required to drive the penetration sampler the final 12 inches. In addition, 3-inch O.D. x 2.42-inch I.D. drive samples were obtained using a Modified California Sampler and 140 pound hammer. Blow counts for the Modified California Sampler were converted to standard penetration resistance by multiplying by 0.6. The sampler type is shown on the boring logs in accordance with the designation below.



Where obtained, the shear strength of the soil samples using either Torvane (TV) or Pocket Penetrometer (PP) devices is shown on the boring logs in the far right hand column.



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SUMMARY OF FIELD SAMPLING PROCEDURES

NEW PORTABLE CLASSROOM BUILDINGS

Clyde L. Fischer Middle School

San Jose, California

PROJECT NO.

DATE

DRAWING NO.

771.9A

January 2026

7

LABORATORY TESTING PROCEDURES

The laboratory testing program was directed toward a quantitative and qualitative evaluation of the physical and mechanical properties of the soils underlying the site.

The natural water content was determined on 51 samples of the materials recovered from the borings in accordance with the ASTM D2216 Test Procedure. These water contents are recorded on the boring logs at the appropriate sample depths.

Dry density determinations were performed on 39 samples to measure the unit weight of the subsurface soils in accordance with the ASTM D2937 Test Procedure. The results of these tests are shown on the boring logs at the appropriate sample depths.

Atterberg Limit determinations were performed on seven samples of the subsurface soils in accordance with the ASTM D4318 Test Procedure to determine the range of water contents over which the materials exhibited plasticity. The Atterberg Limits are used to classify the soils in accordance with the Unified Soil Classification System and to evaluate the soil's expansion potential. The results of these tests are presented on Drawing 16 and on the boring logs at the appropriate sample depths.

The percent soil fraction passing the #4 sieve and #200 sieves were determined on 17 samples of the subsurface soils in accordance with the ASTM D1140 Test Procedure to aid in the classification of the soils. The results of these tests are shown on the boring logs at the appropriate sample depths.

Free swell tests were performed on 17 samples of the soil materials to evaluate the swelling potential of the soil. The free swell tests were performed by slowly pouring 10 ml of air-dried soil passing the No. 40 sieve into a 100 ml graduated cylinder filled with approximately 90 ml of distilled water. The suspension was stirred repeatedly to ensure thorough wetting of the soil specimen. The graduated cylinder was then filled with distilled water to the 100 ml mark and allowed to settle until equilibrium was reached (approximately 24 hours). The free swell volume of the soil was then noted. The percent free swell was calculated by subtracting the initial soil volume from the free swell volume, dividing the difference by the initial volume, and multiplying the result by 100 percent. The results of these tests are presented on the boring logs.

R-Value tests were performed by Cooper Testing Laboratory on composite samples of the subgrade soils to provide data for the pavement design. The tests were performed in accordance with California Test Method 301-F on untreated material and on material chemically-treated with a five percent mixture of 50 percent hi-calcium quicklime and 50 percent Portland cement, indicating R-Values of 15 and 86, respectively, at an exudation pressure of 300 pounds per square inch. The results of the tests are presented on Drawings 17 and 18.

Corrosion testing was performed on a composite sample of the surficial soil materials from the site. Testing included resistivity, pH, chloride and sulfate testing performed in accordance with ASTM G57, ASTM G51, Caltrans 422 (modified) and Caltrans 417 (modified), respectively. The results of these tests are presented on Drawing 19 and are discussed in Section G. Soil Corrosivity.

EQUIPMENT	4" Diameter Rotary Wash*	ELEVATION	---	LOGGED BY	IS						
DEPTH TO GROUNDWATER	± 8.5'	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	11/25/2025						
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)		
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE								
Irrigated Grass Field SILTY CLAY, very moist, fine grained sand @1.5': Liquid Limit = 34% Plasticity Index = 14% Finer Than #4 = 100% Finer Than #200 = 86% Free Swell = 60% @3.0': moist Finer Than #4 = 100% Finer Than #200 = 92% Free Swell = 55% @4.5': Liquid Limit = 30% Plasticity Index = 11% Finer Than #4 = 100% Finer Than #200 = 95% Free Swell = 45%	Dark Brown	Firm	CL	1		8	24	79	PP=3.75 TV=1.00		
		Stiff		2			22	104			
	Brown			3		12		11		PP=2.50 TV=0.50	
		Firm		4		7	16				
				5			20	98			
				6		5	23				
				7							
SILTY SAND, very moist, fine grained sand @9.5': Finer Than #4 = 100% Finer Than #200 = 38% Free Swell = 30%	Brown	Loose	SM	8							
				9		8	25	98			
				10			24	99			
				11							
SILTY CLAY, very moist, fine grained sand, mottled @14.5': Liquid Limit = 31% Plasticity Index = 9% Finer Than #4 = 100% Finer Than #200 = 96% Free Swell = 30%	Gray to Brown	Soft	CL	12						PP=0.50 TV=1.00	
				13							
				14		4	27	96			
				15			29	99			
				16							
SILTY SAND, very moist, fine to medium grained sand, mottled ☹ Water level as encountered 0.50 hours after drilling ☹ Water level as encountered during drilling * Drilled with CME-55 LCX Track Mounted Rig PP = Pocket Penetrometer TV = Torvane Test	Gray to Brown	Loose	SM	17							
				18							
				19							
				20		5					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

LOG OF EXPLORATORY BORING NO. 1

PORTABLE CLASSROOM BUILDINGS AND PARKING LOT
Clyde L. Fischer Middle School
San Jose, California



CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

PROJECT NO.

DATE

DRAWING NO.

771.04

January 2026

0

EQUIPMENT	4" Diameter Rotary Wash*			ELEVATION	---			LOGGED BY	IS						
DEPTH TO GROUNDWATER ± 8.5'				DEPTH TO BEDROCK Not Enc				DATE DRILLED 11/25/2025							
DESCRIPTION AND CLASSIFICATION					DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)					
DESCRIPTION AND REMARKS				COLOR							CONSIST.	SOIL TYPE			
SILTY SAND, very moist, continued... @24.5': Finer Than #4 = 100% Finer Than #200 = 34% Free Swell = 40%				Gray to Brown	Loose	SM	21	19	15 17	115 115					
							22								
					23										
					24										
					25										
					26										
SILTY CLAY, very moist, trace fine grained sand, mottled @29.5': Liquid Limit = 43% Plasticity Index = 20% Finer Than #4 = 100% Finer Than #200 = 99% Free Swell = 45%				Gray to Brown	Firm	CL	27	7	29 34	87 80					
							28								
					29										
					30										
					31										
					32										
SILTY CLAY, very moist, trace fine grained sand, mottled @34.5': Liquid Limit = 57% Plasticity Index = 28% Finer Than #4 = 100% Finer Than #200 = 100% Free Swell = 75% * Drilled with CME-55 LCX Track Mounted Rig PP = Pocket Penetrometer TV = Torvane Test				Gray to Black Yellowish Brown to Gray	Stiff	CH- MH	33	10	33 34	88 85					
							34								
					35										
					36										
					37										
					38										
												39	11	25 29	99 95
												40			
					PP=1.75 TV=0.20										

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

LOG OF EXPLORATORY BORING NO. 1

PORTABLE CLASSROOM BUILDINGS AND PARKING LOT
Clyde L. Fischer Middle School
San Jose, California



CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

PROJECT NO.

DATE

DRAWING NO.

771.04

January 2026

10

EQUIPMENT 4" Diameter Rotary Wash*		ELEVATION ---		LOGGED BY IS					
DEPTH TO GROUNDWATER ± 8.5'		DEPTH TO BEDROCK Not Enc		DATE DRILLED 11/25/2025					
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
SILTY CLAY, very moist, continued...	Yellowish Brown to Gray	Stiff	CH- MH	41		14	26	99	
	42								
	43								
	44								
	45								
Bottom of Boring = 45.0'				46					
				47					
				48					
				49					
				50					
				51					
				52					
				53					
				54					
				55					
				56					
				57					
				58					
				59					
				60					
* Drilled with CME-55 LCX Track Mounted Rig									
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL									
 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>				LOG OF EXPLORATORY BORING NO. 1					
				PORTABLE CLASSROOM BUILDINGS AND PARKING LOT Clyde L. Fischer Middle School San Jose, California					
				PROJECT NO.		DATE		DRAWING NO.	
				771-04		January 2026		11	

EQUIPMENT	6" Diameter Solid Flight Auger*	ELEVATION	---	LOGGED BY	IS				
DEPTH TO GROUNDWATER	± 8.0'	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	11/25/2025				
DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
Irrigated Grass Field SANDY CLAY, very moist, fine grained sand, asphalt and rebar debris	Dark Brown	N/A	CL	1					
				2					
SANDY CLAY, very moist, fine grained sand @3.0': Liquid Limit = 32% Plasticity Index = 15% Finer Than #4 = 100% Finer Than #200 = 80% Free Swell = 60%	Dark Brown	Firm	CL	3		8	17	95	PP=3.25 TV=0.75
			CL	4			17	112	
SILTY CLAY, very moist, fine grained sand @4.5': Finer Than #4 = 100% Finer Than #200 = 85% Free Swell = 50%	Yellowish Brown	Firm		5		5	22		
				6		6	20	104	
				7					
				8		7	25		
			CL-ML	9					
@9.5': Finer Than #4 = 100% Finer Than #200 = 99% Free Swell = 40%				10		5	27	102	PP=1.25 TV=0.20
				11			28	93	
				12					
	Yellowish Brown to Gray, Mottled			13					
				14					
				15		5	27	93	
				16			21	106	
Bottom of Boring = 15.0'				17					
				18					
				19					
				20					
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL									
LOG OF EXPLORATORY BORING NO. 2									
PORTABLE CLASSROOM BUILDINGS AND PARKING LOT Clyde L. Fischer Middle School San Jose, California									
PROJECT NO.					DATE		DRAWING NO.		
771-04					January 2026		13		

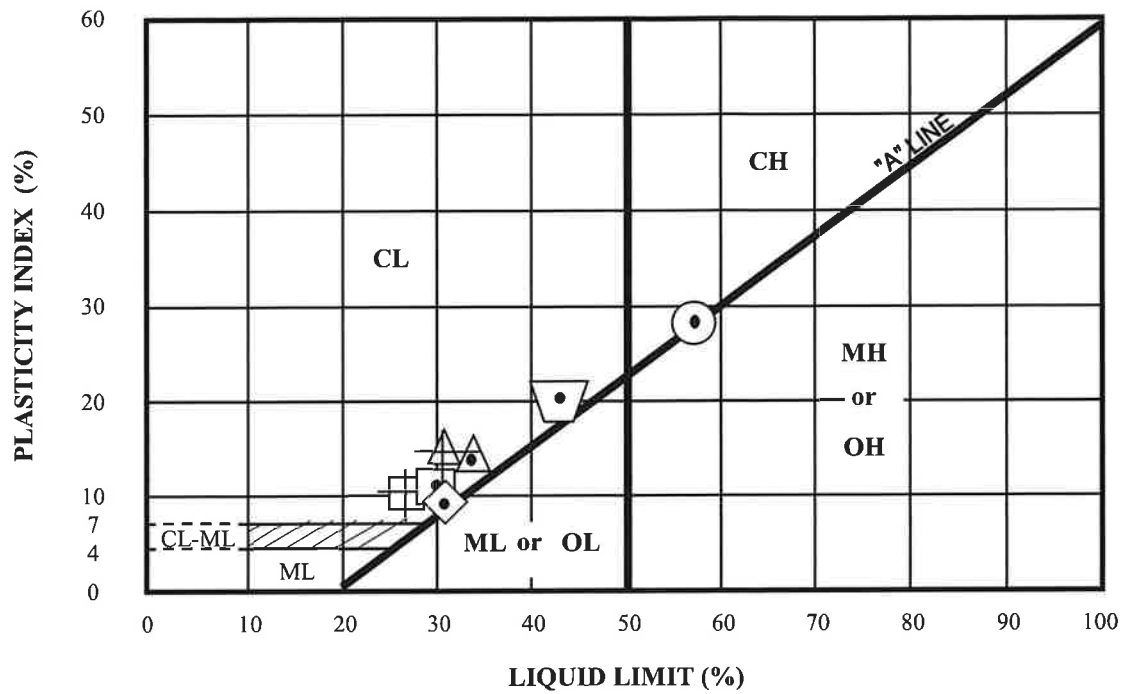


CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

EQUIPMENT	6" Diameter Solid Flight Auger*			ELEVATION	---	LOGGED BY		IS				
DEPTH TO GROUNDWATER		± 8.5'		DEPTH TO BEDROCK		Not Enc		DATE DRILLED 11/25/2025				
DESCRIPTION AND CLASSIFICATION						DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)	
DESCRIPTION AND REMARKS				COLOR	CONSIST.							SOIL TYPE
Irrigated Grass Field SILTY CLAY, moist, fine grained sand @1.5': Finer Than #4 = 100% Finer Than #200 = 90% Free Swell = 70% @3.0': Finer Than #4 = 100% Finer Than #200 = 90% Free Swell = 65% @9.5': Finer Than #4 = 100% Finer Than #200 = 98% Free Swell = 40%				Brown	Stiff	CL	1		9	19	99	PP>4.50 TV=1.25
				Yellowish Brown			2			18	110	
							3		9	16		
							4		5	21	100	
					Soft		5			22	101	
							6		3	26		
							7					
						CL- ML	8					
							9		3	25	102	PP=1.00 TV=0.10
							10		30	95		
				11								
					Stiff		12					
							13					
							14		9	24	103	
				Bottom of Boring = 15.0'							15	
			16									
			17									
			18									
			19									
			20									
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL												
 CLEARY CONSULTANTS, INC. Geotechnical Engineers and Geologists				LOG OF EXPLORATORY BORING NO. 3								
				PORTABLE CLASSROOM BUILDINGS AND PARKING LOT Clyde L. Fischer Middle School San Jose, California								
				PROJECT NO.		DATE		DRAWING NO.				
				771-04		January 2026		12				

EQUIPMENT6" Diameter Solid Flight Auger*		ELEVATION---		LOGGED BYIS					
DEPTH TO GROUNDWATERNot Enc.		DEPTH TO BEDROCKNot Enc.		DATE DRILLED11/25/2025					
DESCRIPTION AND CLASSIFICATION									
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
Parking Lot: 5" AC over 6" AB SANDY CLAY, moist, fine grained sand @1.5': Finer Than #4 = 100% Finer Than #200 = 56% Free Swell = 60% @3.0': Finer Than #4 = 100% Finer Than #200 = 57% Free Swell = 50% @4.5': very moist	Dark Brown	Firm	CL	1		5	9	103	PP=1.25 TV=0.25
				2			15		
	Yellowish Brown	Stiff		3		10	14		
		Firm		4		7	21	90	
				5		24	95		
				6		7	24		
Bottom of Boring = 6.5'				7					
				8					
				9					
				10					
				11					
				12					
				13					
				14					
				15					
				16					
				17					
				18					
				19					
				20					
* Drilled with CME-55 LCX Track Mounted Rig PP = Pocket Penetrometer TV = Torvane Test									
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL									
 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>		LOG OF EXPLORATORY BORING NO. 4 PORTABLE CLASSROOM BUILDINGS AND PARKING LOT Clyde L. Fischer Middle School San Jose, California							
		PROJECT NO.		DATE		DRAWING NO.			
		551-01		January 2026		11			

EQUIPMENT		6" Diameter Solid Flight Auger*		ELEVATION		---		LOGGED BY		IS		
DEPTH TO GROUNDWATER		Not Enc.		DEPTH TO BEDROCK		Not Enc.		DATE DRILLED		11/25/2025		
DESCRIPTION AND CLASSIFICATION						DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)	
DESCRIPTION AND REMARKS				COLOR	CONSIST.							SOIL TYPE
Parking Lot: 5" AC over 6" AB SANDY CLAY, moist, fine grained sand @1.5': Liquid Limit = 27% Plasticity Index = 10% Finer Than #4 = 100% Finer Than #200 = 66% Free Swell = 50% @6.0': very moist				Dark Brown	Stiff	CL	1		12	14	108	PP=4.50 TV=0.90
							2			15	118	
				Yellowish Brown			3		10	11		
							4				10	
					Firm		5		5	20	104	
							6			23		
Bottom of Boring = 6.5'							7					
							8					
							9					
							10					
							11					
							12					
							13					
							14					
							15					
							16					
							17					
18												
19												
* Drilled with CME-55 LCX Track Mounted Rig PP = Pocket Penetrometer TV = Torvane Test							20					
							20					
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL												
 CLEARY CONSULTANTS, INC. Geotechnical Engineers and Geologists				LOG OF EXPLORATORY BORING NO. 5								
				PORTABLE CLASSROOM BUILDINGS AND PARKING LOT Clyde L. Fischer Middle School San Jose, California								
				PROJECT NO.				DATE		DRAWING NO.		
11-2024				11/25/2025		15						



KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %	PASSING NO. 200 SIEVE %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
	1	1.5	22	34	14	86	0.1	CL
	1	4.5	20	30	11	95	0.1	CL
	1	14.5	29	31	9	96	0.8	CL
	1	29.5	34	43	20	99	0.6	CL
	1	34.5	34	57	28	100	0.2	CH - MH
	2	3.0	17	32	15	80	0.0	CL
	5	1.5	15	27	10	66	-0.2	CL

PLASTICITY CHART

NEW PORTABLE CLASSROOM BUILDINGS
Clyde L. Fischer Middle School
San Jose, California

PROJECT NO.

771.9A

DATE

January 2026

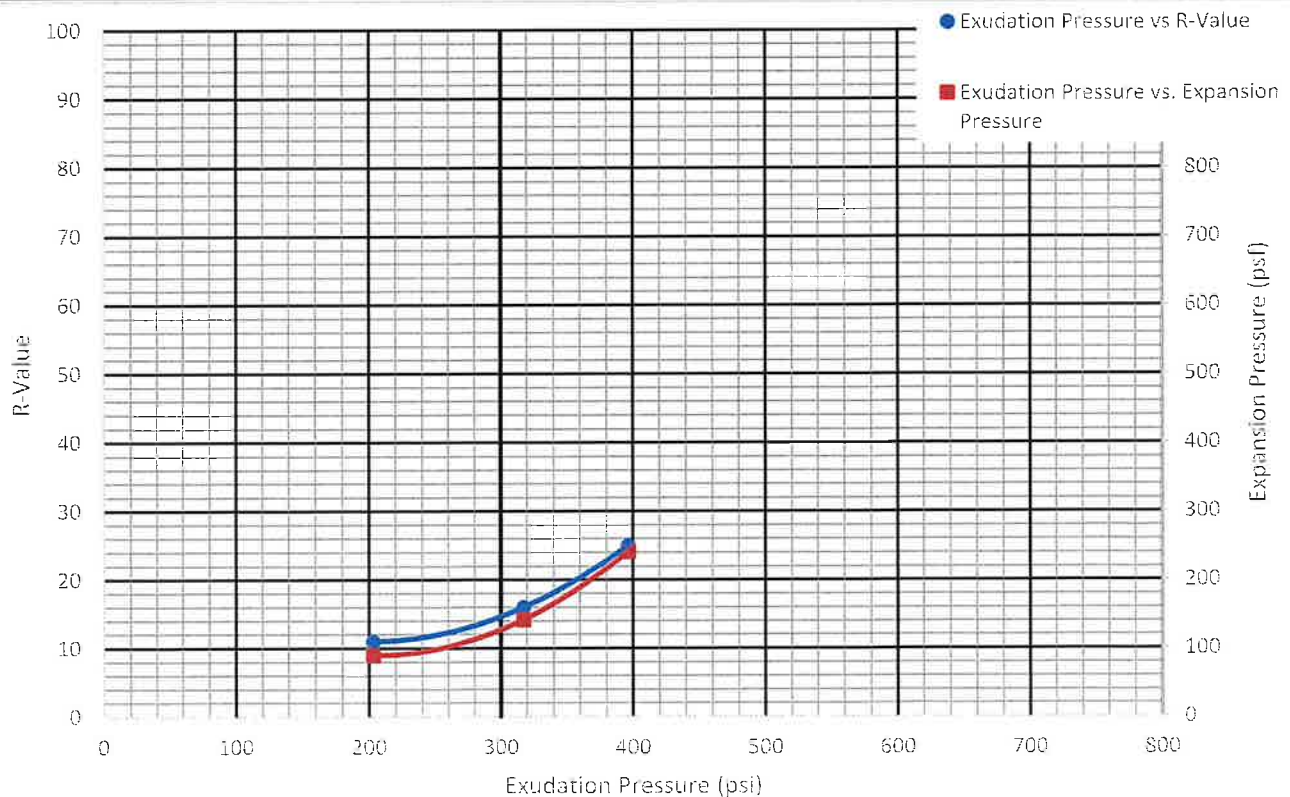
DRAWING NO.

16



R-Value CTM 301

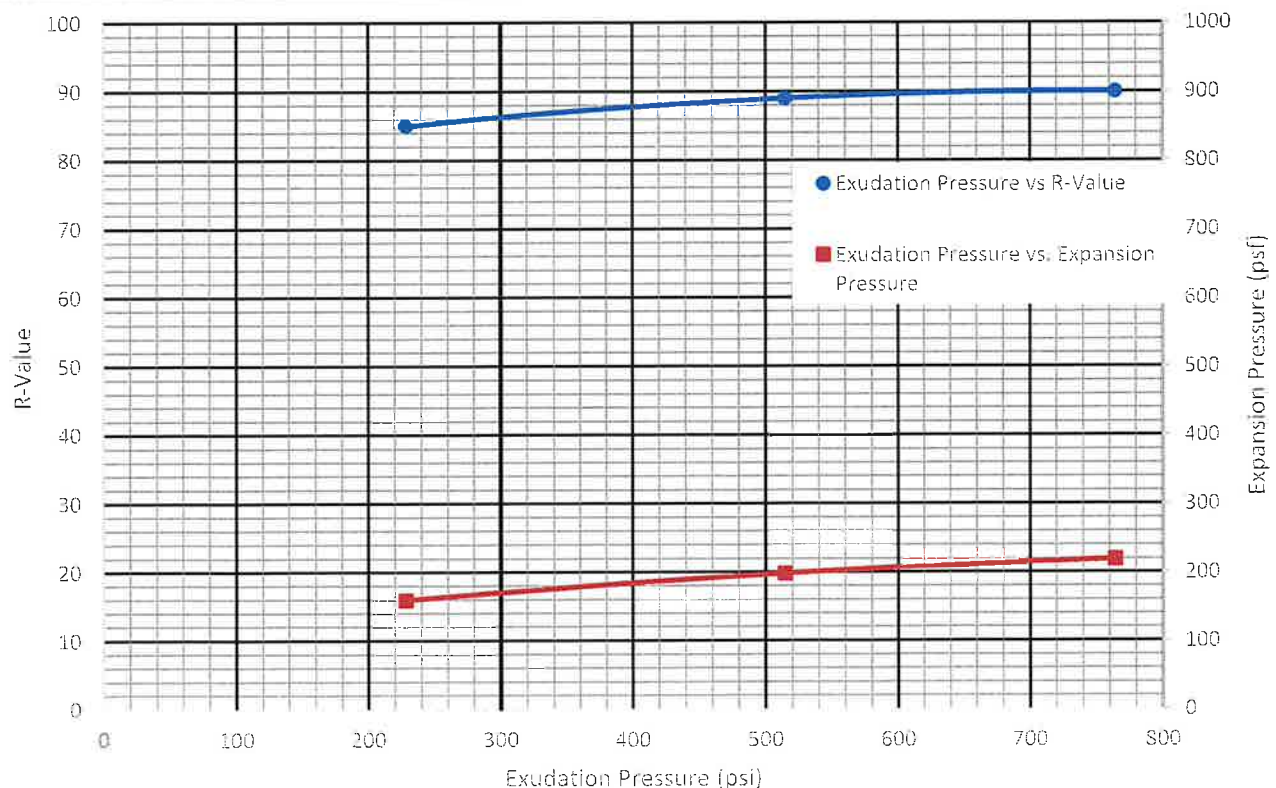
CTL Job No.:	018-1278	Boring:	EB1-5	Reduced By:	RU
Client:	Cleary Consultants	Sample:		Checked By:	PJ
Project Number:	771.9A	Depth:	0.5-3.0	Date:	1/12/2026
Project Name:	Fischer Middle School - Portable Classroom Building and Parking Lot			R-Value	15
Soil Description:	Brown Sandy CLAY			Expansion Pressure	130
Remarks:					
Specimen Designation	A	B	C	D	E
Compactor Foot Pressure (psi)	200	90	150		
Exudation Pressure (psi)	396	203	317		
Exudation Load (lbf)	4976	2551	3984		
Height After Compaction (in)	2.59	2.56	2.54		
Expansion Pressure (psf)	241	90	142		
Stabilometer @ 2000	116	139	130		
Turns Displacement	3.08	3.32	3.13		
R-value	24	10	16		
Corrected R-Value	25	11	16		
Moisture Content (%)	14.8	17.5	16.6		
Wet Density (pcf)	133.3	132.2	127.6		
Dry Density (pcf)	116.1	112.5	109.4		





R-Value CTM 301

CTL Job No.:	018-1278	Boring:	EB1-5	Reduced By:	RU
Client:	Cleary Consultants	Sample:		Checked By:	PJ
Project Number:	771.9A	Depth:	0.5-3.0	Date:	1/16/2026
Project Name:	Fischer Middle School - Portable Classroom Building and Parking Lot			R-Value	86
Soil Description:	Brown Sandy CLAY (+5% QLP)			Expansion Pressure	175
Remarks:					
Specimen Designation	A	B	C	D	E
Compactor Foot Pressure (psi)	230	230	230		
Exudation Pressure (psi)	764	514	228		
Exudation Load (lbf)	9601	6459	2865		
Height After Compaction (in)	2.53	2.36	2.50		
Expansion Pressure (psf)	219	198	159		
Stabilometer @ 2000	18	18	26		
Turns Displacement	2.14	2.15	2.34		
R-value	90	90	85		
Corrected R-Value	90	89	85		
Moisture Content (%)	18.5	18.7	19.2		
Wet Density (pcf)	127.1	127.9	123.1		
Dry Density (pcf)	107.3	107.7	103.3		





PJ

Proj. No: 771.9A

Sample Location or ID	Resistivity @ 15.5 °C (Ohm-cm)	Chloride	Sulfate	pH	ORP	Sulfide	Mo
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DRAWING NO. 19

APPENDIX A

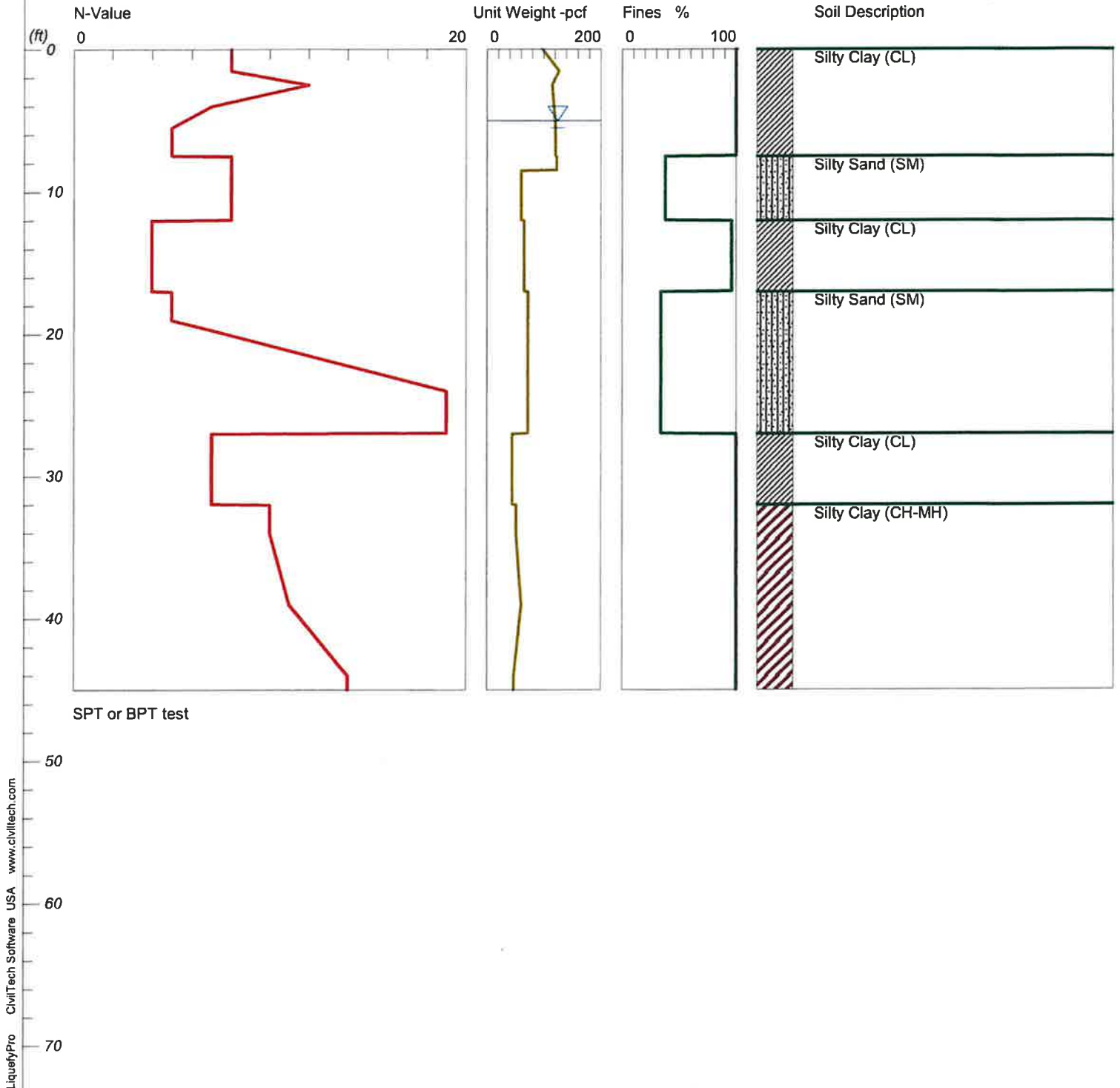
Clyde L. Fischer Middle School
New Portable Classroom Buildings and Parking Lot Project
Liquefaction and Dry Settlement Analysis Results
EB-1, Drilled November 25, 2025

LIQUEFACTION ANALYSIS

PORTABLE CLASSROOM BUILDINGS AND PARKING LOT

Hole No.=EB-1 Water Depth=5.0 ft

Magnitude=8.50
Acceleration=0.62g

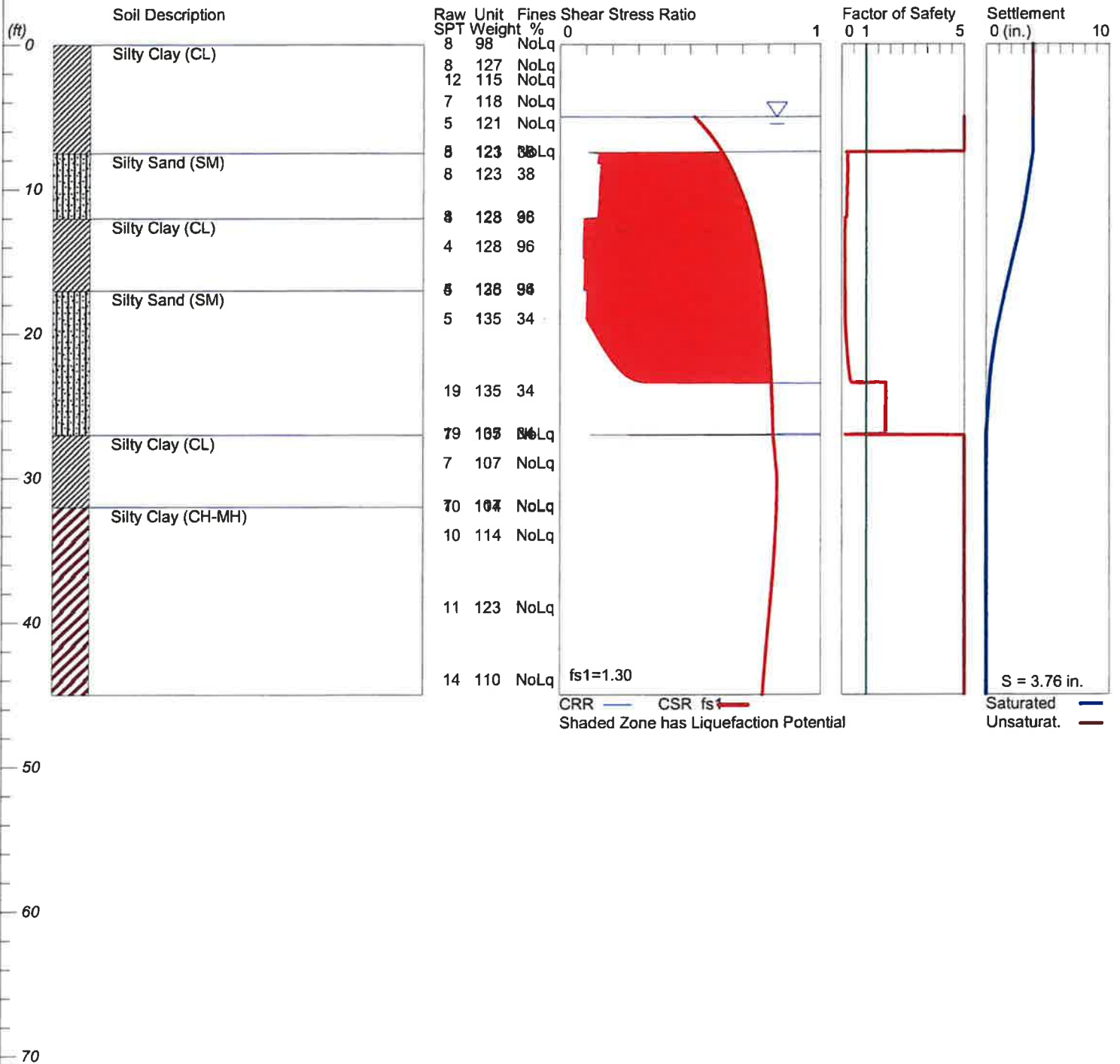


LIQUEFACTION ANALYSIS

PORTABLE CLASSROOM BUILDINGS AND PARKING LOT

Hole No.=EB-1 Water Depth=5.0 ft

Magnitude=8.50
Acceleration=0.62g



LIQUEFACTION ANALYSIS SUMMARY
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Input File Name: \\CCISERVER\Shared Folders\Rough Drafts\Grant Foster Rough Drafts\Liquefy Pro Data Files
grant\771.9A Fischer MS Portable Classroom Buildings, EB-1.liq
Title: PORTABLE CLASSROOM BUILDINGS AND PARKING LOT
Subtitle: Fischer Middle School

Surface Elev.=
Hole No.=EB-1
Depth of Hole= 45.00 ft
Water Table during Earthquake= 5.00 ft
Water Table during In-Situ Testing= 8.50 ft
Max. Acceleration= 0.62 g
Earthquake Magnitude= 8.50

Input Data:

Surface Elev.=
Hole No.=EB-1
Depth of Hole=45.00 ft
Water Table during Earthquake= 5.00 ft
Water Table during In-Situ Testing= 8.50 ft
Max. Acceleration=0.62 g
Earthquake Magnitude=8.50
No-Liquefiable Soils: Based on Analysis

1. SPT or BPT Calculation.
 2. Settlement Analysis Method: Tokimatsu, M-correction
 3. Fines Correction for Liquefaction: Idriss/Seed
 4. Fine Correction for Settlement: During Liquefaction*
 5. Settlement Calculation in: All zones*
 6. Hammer Energy Ratio, $C_e = 1.25$
 7. Borehole Diameter, $C_b = 1$
 8. Sampling Method, $C_s = 1$
 9. User request factor of safety (apply to CSR) , User= 1.3
Plot one CSR curve ($f_{s1} = \text{User}$)
 10. Use Curve Smoothing: Yes*
- * Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
-------------	-----	--------------	------------

0.00	8.00	98.00	NoLiq
1.50	8.00	127.00	NoLiq
2.50	12.00	115.00	NoLiq
4.00	7.00	118.00	NoLiq
5.50	5.00	121.00	NoLiq
7.45	5.00	121.00	NoLiq
7.50	8.00	123.00	38.00
9.00	8.00	123.00	38.00
11.95	8.00	123.00	38.00
12.00	4.00	128.00	96.00
14.00	4.00	128.00	96.00
16.95	4.00	128.00	96.00
17.00	5.00	135.00	34.00
19.00	5.00	135.00	34.00
24.00	19.00	135.00	34.00
26.95	19.00	135.00	34.00
27.00	7.00	107.00	NoLiq
29.00	7.00	107.00	NoLiq
31.95	7.00	107.00	NoLiq
32.00	10.00	114.00	NoLiq
34.00	10.00	114.00	NoLiq

39.00	11.00	123.00	NoLiq
44.00	14.00	110.00	NoLiq

Output Results:

Settlement of Saturated Sands=3.76 in.
Settlement of Unsaturated Sands=0.00 in.
Total Settlement of Saturated and Unsaturated Sands=3.76 in.
Differential Settlement=1.881 to 2.483 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	2.00	0.52	5.00	3.76	0.00	3.76
0.05	2.00	0.52	5.00	3.76	0.00	3.76
0.10	2.00	0.52	5.00	3.76	0.00	3.76
0.15	2.00	0.52	5.00	3.76	0.00	3.76
0.20	2.00	0.52	5.00	3.76	0.00	3.76
0.25	2.00	0.52	5.00	3.76	0.00	3.76
0.30	2.00	0.52	5.00	3.76	0.00	3.76
0.35	2.00	0.52	5.00	3.76	0.00	3.76
0.40	2.00	0.52	5.00	3.76	0.00	3.76
0.45	2.00	0.52	5.00	3.76	0.00	3.76
0.50	2.00	0.52	5.00	3.76	0.00	3.76
0.55	2.00	0.52	5.00	3.76	0.00	3.76
0.60	2.00	0.52	5.00	3.76	0.00	3.76
0.65	2.00	0.52	5.00	3.76	0.00	3.76
0.70	2.00	0.52	5.00	3.76	0.00	3.76
0.75	2.00	0.52	5.00	3.76	0.00	3.76
0.80	2.00	0.52	5.00	3.76	0.00	3.76
0.85	2.00	0.52	5.00	3.76	0.00	3.76
0.90	2.00	0.52	5.00	3.76	0.00	3.76
0.95	2.00	0.52	5.00	3.76	0.00	3.76
1.00	2.00	0.52	5.00	3.76	0.00	3.76
1.05	2.00	0.52	5.00	3.76	0.00	3.76
1.10	2.00	0.52	5.00	3.76	0.00	3.76
1.15	2.00	0.52	5.00	3.76	0.00	3.76
1.20	2.00	0.52	5.00	3.76	0.00	3.76
1.25	2.00	0.52	5.00	3.76	0.00	3.76
1.30	2.00	0.52	5.00	3.76	0.00	3.76
1.35	2.00	0.52	5.00	3.76	0.00	3.76
1.40	2.00	0.52	5.00	3.76	0.00	3.76
1.45	2.00	0.52	5.00	3.76	0.00	3.76
1.50	2.00	0.52	5.00	3.76	0.00	3.76
1.55	2.00	0.52	5.00	3.76	0.00	3.76
1.60	2.00	0.52	5.00	3.76	0.00	3.76
1.65	2.00	0.52	5.00	3.76	0.00	3.76
1.70	2.00	0.52	5.00	3.76	0.00	3.76
1.75	2.00	0.52	5.00	3.76	0.00	3.76
1.80	2.00	0.52	5.00	3.76	0.00	3.76
1.85	2.00	0.52	5.00	3.76	0.00	3.76
1.90	2.00	0.52	5.00	3.76	0.00	3.76
1.95	2.00	0.52	5.00	3.76	0.00	3.76
2.00	2.00	0.52	5.00	3.76	0.00	3.76
2.05	2.00	0.52	5.00	3.76	0.00	3.76
2.10	2.00	0.52	5.00	3.76	0.00	3.76
2.15	2.00	0.52	5.00	3.76	0.00	3.76
2.20	2.00	0.52	5.00	3.76	0.00	3.76
2.25	2.00	0.52	5.00	3.76	0.00	3.76
2.30	2.00	0.52	5.00	3.76	0.00	3.76
2.35	2.00	0.52	5.00	3.76	0.00	3.76
2.40	2.00	0.52	5.00	3.76	0.00	3.76
2.45	2.00	0.52	5.00	3.76	0.00	3.76
2.50	2.00	0.52	5.00	3.76	0.00	3.76
2.55	2.00	0.52	5.00	3.76	0.00	3.76
2.60	2.00	0.52	5.00	3.76	0.00	3.76
2.65	2.00	0.52	5.00	3.76	0.00	3.76
2.70	2.00	0.52	5.00	3.76	0.00	3.76
2.75	2.00	0.52	5.00	3.76	0.00	3.76

[illegible]

6.25	2.00	0.58	5.00	3.76	0.00	3.76
6.30	2.00	0.58	5.00	3.76	0.00	3.76
6.35	2.00	0.58	5.00	3.76	0.00	3.76
6.40	2.00	0.58	5.00	3.76	0.00	3.76
6.45	2.00	0.59	5.00	3.76	0.00	3.76
6.50	2.00	0.59	5.00	3.76	0.00	3.76
6.55	2.00	0.59	5.00	3.76	0.00	3.76
6.60	2.00	0.59	5.00	3.76	0.00	3.76
6.65	2.00	0.59	5.00	3.76	0.00	3.76
6.70	2.00	0.60	5.00	3.76	0.00	3.76
6.75	2.00	0.60	5.00	3.76	0.00	3.76
6.80	2.00	0.60	5.00	3.76	0.00	3.76
6.85	2.00	0.60	5.00	3.76	0.00	3.76
6.90	2.00	0.60	5.00	3.76	0.00	3.76
6.95	2.00	0.61	5.00	3.76	0.00	3.76
7.00	2.00	0.61	5.00	3.76	0.00	3.76
7.05	2.00	0.61	5.00	3.76	0.00	3.76
7.10	2.00	0.61	5.00	3.76	0.00	3.76
7.15	2.00	0.61	5.00	3.76	0.00	3.76
7.20	2.00	0.61	5.00	3.76	0.00	3.76
7.25	2.00	0.62	5.00	3.76	0.00	3.76
7.30	2.00	0.62	5.00	3.76	0.00	3.76
7.35	2.00	0.62	5.00	3.76	0.00	3.76
7.40	2.00	0.62	5.00	3.76	0.00	3.76
7.45	0.11	0.62	0.17*	3.76	0.00	3.76
7.50	0.15	0.62	0.24*	3.76	0.00	3.76
7.55	0.15	0.63	0.24*	3.75	0.00	3.75
7.60	0.15	0.63	0.23*	3.74	0.00	3.74
7.65	0.15	0.63	0.23*	3.73	0.00	3.73
7.70	0.15	0.63	0.23*	3.72	0.00	3.72
7.75	0.15	0.63	0.23*	3.71	0.00	3.71
7.80	0.15	0.63	0.23*	3.70	0.00	3.70
7.85	0.15	0.64	0.23*	3.70	0.00	3.70
7.90	0.15	0.64	0.23*	3.69	0.00	3.69
7.95	0.14	0.64	0.23*	3.68	0.00	3.68
8.00	0.14	0.64	0.23*	3.67	0.00	3.67
8.05	0.14	0.64	0.22*	3.66	0.00	3.66
8.10	0.14	0.64	0.22*	3.65	0.00	3.65
8.15	0.14	0.65	0.22*	3.64	0.00	3.64
8.20	0.14	0.65	0.22*	3.63	0.00	3.63
8.25	0.16	0.65	0.24*	3.62	0.00	3.62
8.30	0.16	0.65	0.24*	3.61	0.00	3.61
8.35	0.16	0.65	0.24*	3.60	0.00	3.60
8.40	0.16	0.65	0.24*	3.59	0.00	3.59
8.45	0.16	0.65	0.24*	3.58	0.00	3.58
8.50	0.16	0.66	0.24*	3.57	0.00	3.57
8.55	0.15	0.66	0.24*	3.56	0.00	3.56
8.60	0.15	0.66	0.24*	3.55	0.00	3.55
8.65	0.15	0.66	0.23*	3.54	0.00	3.54
8.70	0.15	0.66	0.23*	3.53	0.00	3.53
8.75	0.15	0.66	0.23*	3.53	0.00	3.53
8.80	0.15	0.66	0.23*	3.52	0.00	3.52
8.85	0.15	0.67	0.23*	3.51	0.00	3.51
8.90	0.15	0.67	0.23*	3.50	0.00	3.50
8.95	0.15	0.67	0.23*	3.49	0.00	3.49
9.00	0.15	0.67	0.23*	3.48	0.00	3.48
9.05	0.15	0.67	0.23*	3.47	0.00	3.47
9.10	0.15	0.67	0.23*	3.46	0.00	3.46
9.15	0.15	0.67	0.23*	3.45	0.00	3.45
9.20	0.15	0.67	0.23*	3.44	0.00	3.44
9.25	0.15	0.68	0.23*	3.43	0.00	3.43
9.30	0.15	0.68	0.23*	3.42	0.00	3.42
9.35	0.15	0.68	0.22*	3.41	0.00	3.41
9.40	0.15	0.68	0.22*	3.41	0.00	3.41
9.45	0.15	0.68	0.22*	3.40	0.00	3.40
9.50	0.15	0.68	0.22*	3.39	0.00	3.39
9.55	0.15	0.68	0.22*	3.38	0.00	3.38
9.60	0.15	0.68	0.22*	3.37	0.00	3.37
9.65	0.15	0.68	0.22*	3.36	0.00	3.36

9.70	0.15	0.69	0.22*	3.35	0.00	3.35
9.75	0.15	0.69	0.22*	3.34	0.00	3.34
9.80	0.15	0.69	0.22*	3.33	0.00	3.33
9.85	0.15	0.69	0.22*	3.32	0.00	3.32
9.90	0.15	0.69	0.22*	3.31	0.00	3.31
9.95	0.15	0.69	0.22*	3.30	0.00	3.30
10.00	0.15	0.69	0.22*	3.29	0.00	3.29
10.05	0.15	0.69	0.22*	3.28	0.00	3.28
10.10	0.15	0.70	0.22*	3.27	0.00	3.27
10.15	0.15	0.70	0.21*	3.26	0.00	3.26
10.20	0.15	0.70	0.21*	3.26	0.00	3.26
10.25	0.15	0.70	0.21*	3.25	0.00	3.25
10.30	0.15	0.70	0.21*	3.24	0.00	3.24
10.35	0.15	0.70	0.21*	3.23	0.00	3.23
10.40	0.15	0.70	0.21*	3.22	0.00	3.22
10.45	0.15	0.70	0.21*	3.21	0.00	3.21
10.50	0.15	0.70	0.21*	3.20	0.00	3.20
10.55	0.15	0.70	0.21*	3.19	0.00	3.19
10.60	0.15	0.71	0.21*	3.18	0.00	3.18
10.65	0.15	0.71	0.21*	3.17	0.00	3.17
10.70	0.15	0.71	0.21*	3.16	0.00	3.16
10.75	0.15	0.71	0.21*	3.15	0.00	3.15
10.80	0.15	0.71	0.21*	3.14	0.00	3.14
10.85	0.15	0.71	0.21*	3.13	0.00	3.13
10.90	0.15	0.71	0.21*	3.12	0.00	3.12
10.95	0.15	0.71	0.21*	3.11	0.00	3.11
11.00	0.15	0.71	0.21*	3.10	0.00	3.10
11.05	0.15	0.71	0.21*	3.09	0.00	3.09
11.10	0.15	0.72	0.21*	3.08	0.00	3.08
11.15	0.15	0.72	0.20*	3.07	0.00	3.07
11.20	0.15	0.72	0.20*	3.06	0.00	3.06
11.25	0.15	0.72	0.20*	3.05	0.00	3.05
11.30	0.15	0.72	0.20*	3.04	0.00	3.04
11.35	0.15	0.72	0.20*	3.03	0.00	3.03
11.40	0.15	0.72	0.20*	3.03	0.00	3.03
11.45	0.15	0.72	0.20*	3.02	0.00	3.02
11.50	0.15	0.72	0.20*	3.01	0.00	3.01
11.55	0.15	0.72	0.20*	3.00	0.00	3.00
11.60	0.15	0.72	0.20*	2.99	0.00	2.99
11.65	0.15	0.73	0.20*	2.98	0.00	2.98
11.70	0.15	0.73	0.20*	2.97	0.00	2.97
11.75	0.14	0.73	0.20*	2.96	0.00	2.96
11.80	0.14	0.73	0.20*	2.95	0.00	2.95
11.85	0.14	0.73	0.20*	2.94	0.00	2.94
11.90	0.14	0.73	0.20*	2.93	0.00	2.93
11.95	0.14	0.73	0.20*	2.92	0.00	2.92
12.00	0.09	0.73	0.13*	2.91	0.00	2.91
12.05	0.09	0.73	0.13*	2.89	0.00	2.89
12.10	0.09	0.73	0.13*	2.88	0.00	2.88
12.15	0.09	0.73	0.13*	2.87	0.00	2.87
12.20	0.09	0.73	0.12*	2.85	0.00	2.85
12.25	0.09	0.74	0.12*	2.84	0.00	2.84
12.30	0.09	0.74	0.12*	2.83	0.00	2.83
12.35	0.09	0.74	0.12*	2.81	0.00	2.81
12.40	0.09	0.74	0.12*	2.80	0.00	2.80
12.45	0.09	0.74	0.12*	2.78	0.00	2.78
12.50	0.09	0.74	0.12*	2.77	0.00	2.77
12.55	0.09	0.74	0.12*	2.76	0.00	2.76
12.60	0.09	0.74	0.12*	2.74	0.00	2.74
12.65	0.09	0.74	0.12*	2.73	0.00	2.73
12.70	0.09	0.74	0.12*	2.71	0.00	2.71
12.75	0.09	0.74	0.12*	2.70	0.00	2.70
12.80	0.09	0.74	0.12*	2.69	0.00	2.69
12.85	0.09	0.74	0.12*	2.67	0.00	2.67
12.90	0.09	0.74	0.12*	2.66	0.00	2.66
12.95	0.09	0.74	0.12*	2.64	0.00	2.64
13.00	0.09	0.75	0.12*	2.63	0.00	2.63
13.05	0.09	0.75	0.12*	2.62	0.00	2.62
13.10	0.09	0.75	0.12*	2.60	0.00	2.60

13.15	0.09	0.75	0.12*	2.59	0.00	2.59
13.20	0.09	0.75	0.12*	2.57	0.00	2.57
13.25	0.09	0.75	0.12*	2.56	0.00	2.56
13.30	0.09	0.75	0.12*	2.55	0.00	2.55
13.35	0.09	0.75	0.12*	2.53	0.00	2.53
13.40	0.09	0.75	0.12*	2.52	0.00	2.52
13.45	0.09	0.75	0.12*	2.50	0.00	2.50
13.50	0.09	0.75	0.12*	2.49	0.00	2.49
13.55	0.09	0.75	0.12*	2.48	0.00	2.48
13.60	0.09	0.75	0.12*	2.46	0.00	2.46
13.65	0.09	0.75	0.12*	2.45	0.00	2.45
13.70	0.09	0.75	0.12*	2.43	0.00	2.43
13.75	0.09	0.76	0.12*	2.42	0.00	2.42
13.80	0.09	0.76	0.12*	2.41	0.00	2.41
13.85	0.09	0.76	0.12*	2.39	0.00	2.39
13.90	0.09	0.76	0.12*	2.38	0.00	2.38
13.95	0.09	0.76	0.12*	2.36	0.00	2.36
14.00	0.09	0.76	0.12*	2.35	0.00	2.35
14.05	0.09	0.76	0.12*	2.33	0.00	2.33
14.10	0.09	0.76	0.12*	2.32	0.00	2.32
14.15	0.09	0.76	0.12*	2.31	0.00	2.31
14.20	0.09	0.76	0.12*	2.29	0.00	2.29
14.25	0.09	0.76	0.12*	2.28	0.00	2.28
14.30	0.09	0.76	0.12*	2.26	0.00	2.26
14.35	0.09	0.76	0.12*	2.25	0.00	2.25
14.40	0.09	0.76	0.12*	2.24	0.00	2.24
14.45	0.09	0.76	0.12*	2.22	0.00	2.22
14.50	0.09	0.76	0.12*	2.21	0.00	2.21
14.55	0.09	0.76	0.12*	2.19	0.00	2.19
14.60	0.09	0.76	0.12*	2.18	0.00	2.18
14.65	0.09	0.77	0.12*	2.17	0.00	2.17
14.70	0.09	0.77	0.12*	2.15	0.00	2.15
14.75	0.09	0.77	0.12*	2.14	0.00	2.14
14.80	0.09	0.77	0.12*	2.12	0.00	2.12
14.85	0.09	0.77	0.12*	2.11	0.00	2.11
14.90	0.09	0.77	0.12*	2.10	0.00	2.10
14.95	0.09	0.77	0.12*	2.08	0.00	2.08
15.00	0.09	0.77	0.12*	2.07	0.00	2.07
15.05	0.09	0.77	0.12*	2.05	0.00	2.05
15.10	0.09	0.77	0.12*	2.04	0.00	2.04
15.15	0.09	0.77	0.12*	2.03	0.00	2.03
15.20	0.09	0.77	0.12*	2.01	0.00	2.01
15.25	0.09	0.77	0.12*	2.00	0.00	2.00
15.30	0.09	0.77	0.12*	1.99	0.00	1.99
15.35	0.09	0.77	0.12*	1.97	0.00	1.97
15.40	0.09	0.77	0.12*	1.96	0.00	1.96
15.45	0.09	0.77	0.12*	1.94	0.00	1.94
15.50	0.09	0.77	0.12*	1.93	0.00	1.93
15.55	0.09	0.77	0.12*	1.92	0.00	1.92
15.60	0.09	0.77	0.12*	1.90	0.00	1.90
15.65	0.09	0.78	0.12*	1.89	0.00	1.89
15.70	0.09	0.78	0.12*	1.88	0.00	1.88
15.75	0.09	0.78	0.12*	1.86	0.00	1.86
15.80	0.09	0.78	0.12*	1.85	0.00	1.85
15.85	0.09	0.78	0.12*	1.84	0.00	1.84
15.90	0.09	0.78	0.12*	1.82	0.00	1.82
15.95	0.09	0.78	0.12*	1.81	0.00	1.81
16.00	0.09	0.78	0.12*	1.79	0.00	1.79
16.05	0.09	0.78	0.12*	1.78	0.00	1.78
16.10	0.09	0.78	0.12*	1.77	0.00	1.77
16.15	0.09	0.78	0.12*	1.75	0.00	1.75
16.20	0.09	0.78	0.12*	1.74	0.00	1.74
16.25	0.09	0.78	0.12*	1.72	0.00	1.72
16.30	0.09	0.78	0.12*	1.71	0.00	1.71
16.35	0.09	0.78	0.12*	1.70	0.00	1.70
16.40	0.09	0.78	0.12*	1.68	0.00	1.68
16.45	0.09	0.78	0.12*	1.67	0.00	1.67
16.50	0.09	0.78	0.12*	1.66	0.00	1.66
16.55	0.09	0.78	0.12*	1.64	0.00	1.64

16.60	0.09	0.78	0.12*	1.63	0.00	1.63
16.65	0.09	0.78	0.12*	1.61	0.00	1.61
16.70	0.09	0.78	0.12*	1.60	0.00	1.60
16.75	0.09	0.78	0.12*	1.59	0.00	1.59
16.80	0.09	0.78	0.12*	1.57	0.00	1.57
16.85	0.09	0.79	0.12*	1.56	0.00	1.56
16.90	0.09	0.79	0.12*	1.55	0.00	1.55
16.95	0.09	0.79	0.12*	1.53	0.00	1.53
17.00	0.10	0.79	0.13*	1.52	0.00	1.52
17.05	0.10	0.79	0.13*	1.50	0.00	1.50
17.10	0.10	0.79	0.13*	1.49	0.00	1.49
17.15	0.10	0.79	0.13*	1.48	0.00	1.48
17.20	0.10	0.79	0.13*	1.47	0.00	1.47
17.25	0.10	0.79	0.13*	1.45	0.00	1.45
17.30	0.10	0.79	0.13*	1.44	0.00	1.44
17.35	0.10	0.79	0.13*	1.43	0.00	1.43
17.40	0.10	0.79	0.13*	1.42	0.00	1.42
17.45	0.10	0.79	0.13*	1.40	0.00	1.40
17.50	0.10	0.79	0.13*	1.39	0.00	1.39
17.55	0.10	0.79	0.13*	1.38	0.00	1.38
17.60	0.10	0.79	0.13*	1.36	0.00	1.36
17.65	0.10	0.79	0.13*	1.35	0.00	1.35
17.70	0.10	0.79	0.13*	1.34	0.00	1.34
17.75	0.10	0.79	0.13*	1.33	0.00	1.33
17.80	0.10	0.79	0.13*	1.31	0.00	1.31
17.85	0.10	0.79	0.13*	1.30	0.00	1.30
17.90	0.10	0.79	0.13*	1.29	0.00	1.29
17.95	0.10	0.79	0.13*	1.27	0.00	1.27
18.00	0.10	0.79	0.13*	1.26	0.00	1.26
18.05	0.10	0.79	0.13*	1.25	0.00	1.25
18.10	0.10	0.79	0.13*	1.24	0.00	1.24
18.15	0.10	0.79	0.13*	1.22	0.00	1.22
18.20	0.10	0.79	0.13*	1.21	0.00	1.21
18.25	0.10	0.79	0.13*	1.20	0.00	1.20
18.30	0.10	0.79	0.13*	1.18	0.00	1.18
18.35	0.10	0.79	0.13*	1.17	0.00	1.17
18.40	0.10	0.79	0.13*	1.16	0.00	1.16
18.45	0.10	0.79	0.13*	1.15	0.00	1.15
18.50	0.10	0.79	0.13*	1.13	0.00	1.13
18.55	0.10	0.80	0.13*	1.12	0.00	1.12
18.60	0.10	0.80	0.13*	1.11	0.00	1.11
18.65	0.10	0.80	0.13*	1.09	0.00	1.09
18.70	0.10	0.80	0.13*	1.08	0.00	1.08
18.75	0.10	0.80	0.13*	1.07	0.00	1.07
18.80	0.10	0.80	0.13*	1.06	0.00	1.06
18.85	0.10	0.80	0.13*	1.04	0.00	1.04
18.90	0.10	0.80	0.13*	1.03	0.00	1.03
18.95	0.10	0.80	0.13*	1.02	0.00	1.02
19.00	0.10	0.80	0.13*	1.00	0.00	1.00
19.05	0.10	0.80	0.13*	0.99	0.00	0.99
19.10	0.10	0.80	0.13*	0.98	0.00	0.98
19.15	0.11	0.80	0.13*	0.97	0.00	0.97
19.20	0.11	0.80	0.13*	0.95	0.00	0.95
19.25	0.11	0.80	0.14*	0.94	0.00	0.94
19.30	0.11	0.80	0.14*	0.93	0.00	0.93
19.35	0.11	0.80	0.14*	0.92	0.00	0.92
19.40	0.11	0.80	0.14*	0.90	0.00	0.90
19.45	0.12	0.80	0.14*	0.89	0.00	0.89
19.50	0.12	0.80	0.15*	0.88	0.00	0.88
19.55	0.12	0.80	0.15*	0.87	0.00	0.87
19.60	0.12	0.80	0.15*	0.86	0.00	0.86
19.65	0.12	0.80	0.15*	0.85	0.00	0.85
19.70	0.12	0.80	0.15*	0.84	0.00	0.84
19.75	0.13	0.80	0.16*	0.82	0.00	0.82
19.80	0.13	0.80	0.16*	0.81	0.00	0.81
19.85	0.13	0.80	0.16*	0.80	0.00	0.80
19.90	0.13	0.80	0.16*	0.79	0.00	0.79
19.95	0.13	0.80	0.16*	0.78	0.00	0.78
20.00	0.13	0.80	0.17*	0.77	0.00	0.77

20.05	0.13	0.80	0.17*	0.76	0.00	0.76
20.10	0.14	0.80	0.17*	0.75	0.00	0.75
20.15	0.14	0.80	0.17*	0.74	0.00	0.74
20.20	0.14	0.80	0.17*	0.73	0.00	0.73
20.25	0.14	0.80	0.18*	0.72	0.00	0.72
20.30	0.14	0.80	0.18*	0.71	0.00	0.71
20.35	0.14	0.80	0.18*	0.70	0.00	0.70
20.40	0.15	0.80	0.18*	0.69	0.00	0.69
20.45	0.15	0.80	0.18*	0.68	0.00	0.68
20.50	0.15	0.80	0.19*	0.67	0.00	0.67
20.55	0.15	0.80	0.19*	0.66	0.00	0.66
20.60	0.15	0.80	0.19*	0.65	0.00	0.65
20.65	0.15	0.80	0.19*	0.64	0.00	0.64
20.70	0.16	0.80	0.19*	0.63	0.00	0.63
20.75	0.16	0.80	0.19*	0.62	0.00	0.62
20.80	0.16	0.80	0.20*	0.61	0.00	0.61
20.85	0.16	0.80	0.20*	0.60	0.00	0.60
20.90	0.16	0.80	0.20*	0.60	0.00	0.60
20.95	0.16	0.81	0.20*	0.59	0.00	0.59
21.00	0.17	0.81	0.21*	0.58	0.00	0.58
21.05	0.17	0.81	0.21*	0.57	0.00	0.57
21.10	0.17	0.81	0.21*	0.56	0.00	0.56
21.15	0.17	0.81	0.21*	0.55	0.00	0.55
21.20	0.17	0.81	0.21*	0.54	0.00	0.54
21.25	0.17	0.81	0.22*	0.54	0.00	0.54
21.30	0.18	0.81	0.22*	0.53	0.00	0.53
21.35	0.18	0.81	0.22*	0.52	0.00	0.52
21.40	0.18	0.81	0.22*	0.51	0.00	0.51
21.45	0.18	0.81	0.22*	0.50	0.00	0.50
21.50	0.18	0.81	0.23*	0.50	0.00	0.50
21.55	0.18	0.81	0.23*	0.49	0.00	0.49
21.60	0.19	0.81	0.23*	0.48	0.00	0.48
21.65	0.19	0.81	0.23*	0.47	0.00	0.47
21.70	0.19	0.81	0.24*	0.46	0.00	0.46
21.75	0.19	0.81	0.24*	0.46	0.00	0.46
21.80	0.19	0.81	0.24*	0.45	0.00	0.45
21.85	0.20	0.81	0.24*	0.44	0.00	0.44
21.90	0.20	0.81	0.25*	0.43	0.00	0.43
21.95	0.20	0.81	0.25*	0.43	0.00	0.43
22.00	0.20	0.81	0.25*	0.42	0.00	0.42
22.05	0.21	0.81	0.25*	0.41	0.00	0.41
22.10	0.21	0.81	0.26*	0.41	0.00	0.41
22.15	0.21	0.81	0.26*	0.40	0.00	0.40
22.20	0.21	0.81	0.26*	0.39	0.00	0.39
22.25	0.21	0.81	0.27*	0.38	0.00	0.38
22.30	0.22	0.81	0.27*	0.38	0.00	0.38
22.35	0.22	0.81	0.27*	0.37	0.00	0.37
22.40	0.22	0.81	0.27*	0.36	0.00	0.36
22.45	0.22	0.81	0.28*	0.36	0.00	0.36
22.50	0.23	0.81	0.28*	0.35	0.00	0.35
22.55	0.23	0.81	0.28*	0.34	0.00	0.34
22.60	0.23	0.81	0.29*	0.34	0.00	0.34
22.65	0.24	0.81	0.29*	0.33	0.00	0.33
22.70	0.24	0.81	0.29*	0.32	0.00	0.32
22.75	0.24	0.81	0.30*	0.32	0.00	0.32
22.80	0.25	0.81	0.30*	0.31	0.00	0.31
22.85	0.25	0.81	0.31*	0.31	0.00	0.31
22.90	0.25	0.81	0.31*	0.30	0.00	0.30
22.95	0.26	0.81	0.32*	0.29	0.00	0.29
23.00	0.26	0.81	0.32*	0.29	0.00	0.29
23.05	0.26	0.81	0.33*	0.28	0.00	0.28
23.10	0.27	0.81	0.33*	0.28	0.00	0.28
23.15	0.27	0.81	0.34*	0.27	0.00	0.27
23.20	0.28	0.81	0.35*	0.27	0.00	0.27
23.25	0.29	0.81	0.35*	0.26	0.00	0.26
23.30	0.30	0.81	0.37*	0.26	0.00	0.26
23.35	0.31	0.81	0.38*	0.25	0.00	0.25
23.40	0.33	0.81	0.41*	0.25	0.00	0.25
23.45	1.45	0.81	1.79	0.24	0.00	0.24

23.50	1.45	0.81	1.79	0.24	0.00	0.24
23.55	1.45	0.81	1.79	0.23	0.00	0.23
23.60	1.45	0.81	1.79	0.23	0.00	0.23
23.65	1.45	0.81	1.79	0.23	0.00	0.23
23.70	1.45	0.81	1.79	0.22	0.00	0.22
23.75	1.45	0.81	1.78	0.22	0.00	0.22
23.80	1.45	0.81	1.78	0.22	0.00	0.22
23.85	1.45	0.81	1.78	0.21	0.00	0.21
23.90	1.45	0.81	1.78	0.21	0.00	0.21
23.95	1.45	0.81	1.78	0.21	0.00	0.21
24.00	1.45	0.81	1.78	0.20	0.00	0.20
24.05	1.45	0.81	1.78	0.20	0.00	0.20
24.10	1.45	0.81	1.78	0.20	0.00	0.20
24.15	1.45	0.81	1.78	0.19	0.00	0.19
24.20	1.45	0.81	1.78	0.19	0.00	0.19
24.25	1.45	0.81	1.78	0.19	0.00	0.19
24.30	1.45	0.81	1.78	0.19	0.00	0.19
24.35	1.45	0.81	1.78	0.18	0.00	0.18
24.40	1.45	0.81	1.78	0.18	0.00	0.18
24.45	1.45	0.81	1.78	0.18	0.00	0.18
24.50	1.45	0.81	1.78	0.17	0.00	0.17
24.55	1.45	0.81	1.78	0.17	0.00	0.17
24.60	1.45	0.81	1.78	0.17	0.00	0.17
24.65	1.45	0.81	1.78	0.16	0.00	0.16
24.70	1.45	0.82	1.78	0.16	0.00	0.16
24.75	1.45	0.82	1.78	0.16	0.00	0.16
24.80	1.45	0.82	1.78	0.15	0.00	0.15
24.85	1.45	0.82	1.78	0.15	0.00	0.15
24.90	1.45	0.82	1.78	0.15	0.00	0.15
24.95	1.45	0.82	1.78	0.15	0.00	0.15
25.00	1.45	0.82	1.78	0.14	0.00	0.14
25.05	1.45	0.82	1.78	0.14	0.00	0.14
25.10	1.45	0.82	1.78	0.14	0.00	0.14
25.15	1.45	0.82	1.78	0.13	0.00	0.13
25.20	1.45	0.82	1.78	0.13	0.00	0.13
25.25	1.45	0.82	1.78	0.13	0.00	0.13
25.30	1.45	0.82	1.78	0.12	0.00	0.12
25.35	1.45	0.82	1.78	0.12	0.00	0.12
25.40	1.45	0.82	1.78	0.12	0.00	0.12
25.45	1.45	0.82	1.78	0.11	0.00	0.11
25.50	1.45	0.82	1.78	0.11	0.00	0.11
25.55	1.45	0.82	1.78	0.11	0.00	0.11
25.60	1.45	0.82	1.78	0.10	0.00	0.10
25.65	1.45	0.82	1.78	0.10	0.00	0.10
25.70	1.45	0.82	1.78	0.10	0.00	0.10
25.75	1.45	0.82	1.78	0.09	0.00	0.09
25.80	1.45	0.82	1.78	0.09	0.00	0.09
25.85	1.45	0.82	1.78	0.09	0.00	0.09
25.90	1.45	0.82	1.78	0.08	0.00	0.08
25.95	1.45	0.82	1.78	0.08	0.00	0.08
26.00	1.45	0.82	1.78	0.07	0.00	0.07
26.05	1.45	0.82	1.78	0.07	0.00	0.07
26.10	1.45	0.82	1.78	0.07	0.00	0.07
26.15	1.45	0.82	1.78	0.06	0.00	0.06
26.20	1.45	0.82	1.77	0.06	0.00	0.06
26.25	1.45	0.82	1.77	0.06	0.00	0.06
26.30	1.45	0.82	1.77	0.05	0.00	0.05
26.35	1.45	0.82	1.77	0.05	0.00	0.05
26.40	1.45	0.82	1.77	0.05	0.00	0.05
26.45	1.45	0.82	1.77	0.04	0.00	0.04
26.50	1.45	0.82	1.77	0.04	0.00	0.04
26.55	1.45	0.82	1.77	0.03	0.00	0.03
26.60	1.45	0.82	1.77	0.03	0.00	0.03
26.65	1.45	0.82	1.77	0.03	0.00	0.03
26.70	1.45	0.82	1.77	0.02	0.00	0.02
26.75	1.45	0.82	1.77	0.02	0.00	0.02
26.80	1.45	0.82	1.77	0.02	0.00	0.02
26.85	1.45	0.82	1.77	0.01	0.00	0.01
26.90	1.45	0.82	1.77	0.01	0.00	0.01

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[illegible]

44.20	2.00	0.78	5.00	0.00	0.00	0.00
44.25	2.00	0.78	5.00	0.00	0.00	0.00
44.30	2.00	0.78	5.00	0.00	0.00	0.00
44.35	2.00	0.78	5.00	0.00	0.00	0.00
44.40	2.00	0.78	5.00	0.00	0.00	0.00
44.45	2.00	0.78	5.00	0.00	0.00	0.00
44.50	2.00	0.78	5.00	0.00	0.00	0.00
44.55	2.00	0.78	5.00	0.00	0.00	0.00
44.60	2.00	0.78	5.00	0.00	0.00	0.00
44.65	2.00	0.78	5.00	0.00	0.00	0.00
44.70	2.00	0.78	5.00	0.00	0.00	0.00
44.75	2.00	0.78	5.00	0.00	0.00	0.00
44.80	2.00	0.78	5.00	0.00	0.00	0.00
44.85	2.00	0.78	5.00	0.00	0.00	0.00
44.90	2.00	0.78	5.00	0.00	0.00	0.00
44.95	2.00	0.78	5.00	0.00	0.00	0.00
45.00	2.00	0.78	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

APPENDIX B

Terean
Shear Wave Velocity Report
Clyde L. Fischer Middle School
New Portable Classroom Buildings and Parking Lot Project
January 5, 2026

SURVEY INFORMATION

Project Name: **771.9A Clyde L. Fischer MS Portable Classroom Buildings and Parking Lot**

Performed By: **Cleary Consultants, Inc.**

Analysis By: **Aasha Pancha**

Analysis Date: **12/30/2025**

RESULTS

Line No.	Geophone Spacing	Array Length	1D Depth	Vs100	ASCE 7-16 Site Class	ASCE 7-22 Site Class
1	10 ft	230 ft	115 ft	718 ft/s	D	D

SHEAR-WAVE VELOCITIES AND SEISMIC SITE CLASS

The geophysical site evaluation included subsurface seismic imaging and assessment of earthquake ground-shaking potential using Terēan's VsSurf ReMi® seismic data-processing software.

Surveys were performed to determine subsurface layer thicknesses and velocities, and to classify the site's Seismic Site Class per ASCE 7-16 & 7-22, based on the weighted-average shear-wave velocity of the upper 100 ft.

Terēan recommends incorporating both active and ambient (passive) seismic sources and verifying data quality in the field to ensure reliable results. Noise was generated by hammer hits during data acquisition while ambient noise was generated from traffic along the nearby roads.

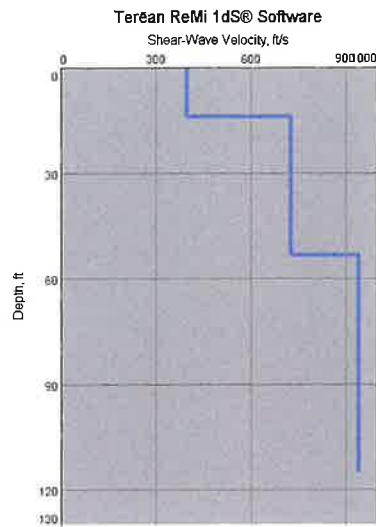
Data were acquired using a ReMiDAQ® 24-channel seismograph and processed with Terēan ReMi® software (terean.com/products).

Disclaimer:

Terēan's interpretations are based solely on the analysis of geophysical data and documented field observations. These results are intended to support, not replace, geotechnical evaluations.

Line 1

Depth (ft)	Vs (ft/s)
0.0	397
13.7	397
13.7	727
53.2	727
53.2	938
114.8	938



Line 1

Frequency (Hz)	Slowness (s/m)
43.945	0.00892
41.015	0.00892
37.109	0.00892
32.226	0.00892
29.296	0.00892
26.367	0.00892
22.460	0.00892
19.042	0.00866
17.089	0.00839
15.625	0.00813
14.160	0.00787
13.183	0.00761
12.207	0.00734
11.718	0.00708
10.742	0.00682
10.253	0.00656
9.277	0.00629
8.789	0.00603
7.812	0.00577
6.836	0.00551
5.859	0.00524
5.371	0.00498
4.394	0.00472
3.418	0.00446

