REPORT TO

APPLEWOOD GROUP
REDWOOD CITY, CALIFORNIA

FOR

PROPOSED RESIDENCES

890 UPLAND ROAD
REDWOOD CITY, CALIFORNIA

GEOTECHNICAL INVESTIGATION

SEPTEMBER 2021

PREPARED BY

SILICON VALLEY SOIL ENGINEERING
1916 O'TOOLE WAY
SAN JOSE, CALIFORNIA

SILICON VALLEY SOIL ENGINEERING
GEOTECHNICAL CONSULTANTS

File No. SV2281
September 21, 2021

Applewood Group
609 Price Avenue, Suite 207
Redwood City, CA 94063

Attention: Mr. Paul Goswamy

Subject: Proposed Residences
890 Upland Road
Redwood City, California
GEOTECHNICAL INVESTIGATION

Dear Mr. Goswamy:

Pursuant to your request, we are pleased to present herein the results of our geotechnical investigation for the proposed residences. The subject site is located at 890 Upland Road in Redwood City, California.

Our findings indicate that the site is suitable for the proposed development provided the recommendations contained in this report are carefully followed. Our field reconnaissance, drilling, sampling, and laboratory testing of the surface and subsurface material evaluate the suitability of the site. The following report details our investigation, outlines our findings, and presents our conclusions based on those findings.

If you have any questions or require additional information, please feel free to contact our office at your convenience.

Very truly yours,

SILICON VALLEY SOIL ENGINEERING

Sean Deivert

Sean Deivert
Project Manager

Vien Vo, P.E.

SV2281.GI/Copies: 1 to Applewood Group

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INTRODUCTION

Per your authorization, Silicon Valley Soil Engineering (SVSE) conducted a geotechnical investigation. The purpose of this investigation was to determine the nature of the surface and subsurface soil conditions at the subject site through field investigations and laboratory testing. This report presents an explanation of investigative procedures, results of the testing program, our conclusions, and our recommendations for earthwork and foundation design to adapt the proposed development to the existing soil conditions.

PROJECT LOCATION AND DESCRIPTION

The subject site is located at 890 Upland Road in Redwood City, California (Figure 1 – Vicinity Map). Upland Road bounds the subject site to the southwest, existing residence to the northwest, northeast, and southeast. At the time of our investigation, the site is an irregular shaped, moderately steep, southern-facing slope parcel occupied by an existing residence, a barn, and a secondary residence. Based on the preliminary plan for the subject site, the proposed development will include the demolition of the existing structures and the construction of three single-family residences with associated improvements. Location of the proposed residences and our exploratory soil borings is shown on the Figure 2 – Site Plan.

FIELD INVESTIGATION

After considering the nature of the proposed improvements and reviewing available data on the area, a field investigation was conducted at the subject site under the direction of our geotechnical engineer. It included a site reconnaissance to detect any unusual surface features and the drilling of four exploratory soil borings to determine the subsurface soil characteristics. The borings were drilled on September 14, 2021 to the depth of 10 to 15 feet below the existing ground

surface elevation with a truck mounted drill rig using 8-inch diameter hollow stem augers. The approximate location of the borings is shown on Figure 2.

The soils encountered were logged continuously in the field during the drilling operations. Relatively undisturbed soil samples were obtained by hammering a 2.5-inch outside diameter (O.D.) split-tube sampler (Modified California) into the ground at various depths. A 140-pound hammer with a free fall of 30 inches was used to drive the sampler 18 inches into the ground. Blow counts were recorded on each 6-inch increment of the sampled interval. The blows required for advancing the sampler the last 12 inches of the 18-inch sampled interval were recorded on the boring log as penetration resistance. The Drilling Notification for Annual Geotechnical Drilling Permit is enclosed for reference.

In addition, disturbed bulk samples of the near-surface soil were collected for laboratory analyses. The Exploratory Boring Logs contained in the Appendix are a graphic representation of the encountered soil profile; and also show the depths at which the relatively undisturbed soil samples were obtained.

LABORATORY INVESTIGATION

A laboratory-testing program was performed to determine the physical and engineering properties of the soils underlying the site.

1. Water content and dry unit weight tests were performed on the relatively undisturbed soil samples in order to determine soil consistency and the moisture variation throughout the explored soil profile (Table I).

2. The strength parameters of the foundation soils were determined from direct shear tests that were performed on selected relatively undisturbed soil samples (Table I).

3. Atterberg Limits tests were also performed on the near-surface soil to assist in the classification of these soils and to obtain an evaluation of their expansion and shrinkage potential (Figure 4).

4. Laboratory compaction tests of the native soil material were performed to determine the maximum dry density per the ASTM D1557 test procedure (Figure 5).

The results of the laboratory-testing program are presented in the Tables and Figures at the end of this report.

SOIL CONDITIONS

In Boring B-1, the existing driveway pavement section consists of 4.0 inches of Concrete (PCC) over 4.0 inches of Aggregate Base (AB). Below the pavement surface to a depth of 2 feet, a light tan/olive brown, damp, very stiff slit layer was encountered. This is colluvium soil. From the depths of 2 feet to the end of the boring at 15 feet, the soil became light tan, damp, hard siltstone/sandstone. A similar soil profile was encountered in other borings.

Groundwater was not encountered in the borings to the explored depth of 15 feet during the drilling operation. It should be noted that the groundwater table would fluctuate as a result of seasonal changes and hydrogeologic variations such as groundwater pumping and/or recharging. A detailed description of the soil profiles encountered is presented in Exploratory Boring Logs contained in the Appendix.

GEOLOGY

The site lies in the Santa Clara Valley, which is part of the Coast Ranges geological province. The Santa Clara Valley occupies the structural trough formed by two northwest trending mountain ranges; the Santa Cruz Mountains to the southwest

of the valley and the Diablo Range to the northeast. The Diablo Range is predominantly composed of Franciscan Formation, which is uppermost Jurassic to lower Upper Cretaceous eugosynclinal assemblage. The Santa Cruz Mountains are predominantly composed of material formed of Cenozoic shelf and slope deposits. A thick blanket of latest Cretaceous and Tertiary clastic sedimentary rocks and isolated intrusions of serpentine covers large parts of the province. Folds, thrust faults, steep reverse faults, and strikeslip faults developed as a consequence of Cenozoic deformations that occur very often within the province and some of them are continuing today (CDMG; 1966). Earthquake probability and faults are shown on Figure 3.

Sedimentary marine strata alternating with non-marine strata record the Quaternary history of the region. The changes of the depositional environment are related to the fluctuation of sea level corresponding to the glacial and interglacial periods. Late Quaternary deposits fill the center of the Santa Clara Valley and most of the strata are of continental origin characterized as alluvial and fluvial materials. The subject site is underlain by fluvial deposits (Helley and Brabb, 1971, Rogers & Williams, 1974).

LIQUEFACTION

The site is not located in a potential liquefaction zone (CGS).

INUNDATION POTENTIAL

The subject site is located on 890 Upland Road in Redwood City, California. According to the Limerinos and others, 1973 report, the site is not located in an area that has potential for inundation as the result of a 100-year flood (Limerinos; 1973).

CONCLUSIONS

1. The site covered by this investigation is suitable for the proposed development provided the recommendations set forth in this report are carefully followed.

2. Based on the laboratory testing results of the near-surface soil, the soil material at the subject site has been found to have a low expansion potential for subjected to fluctuations in moisture.

3. The proposed residences should be supported on skin friction concrete drill pier and grade beam.

4. The final exterior grade adjacent to the proposed structures should be such that the surface drainage will flow away from the structures.

5. Reference to our report should be stated in the grading and foundation plans that includes the geotechnical investigation file number and date.

6. On the basis of the engineering reconnaissance and exploratory borings, it is our opinion that trenches excavated to depths less than 5 feet below the existing ground surface will not need shoring. However, for trenches or any excavation greater than 5 feet in depth, shoring will be required or excavated in accordance with OSHA guidelines.

7. Specific recommendations are presented in the remainder of this report.

8. All earthwork including grading, pier drilling, foundation excavation and backfilling shall be observed and inspected by a representative from Silicon Valley Soil Engineering (SVSE). Contact our office 48 hours prior to the commencement of any earthwork.

RECOMMENDATIONS:

GRADING

1. The placement of fill and control of any grading operations at the site should be performed in accordance with the recommendations of this report. These recommendations set forth the minimum standards to satisfy other requirements of this report.

2. All existing surface and subsurface structures, if any, which will not be incorporated in the final improvements shall be removed from the subject site prior to any grading operations.

3. The depressions left by the removal of subsurface structures, if any, should be cleaned of all debris, backfilled and compacted with clean, native or approved import soil. This backfill must be engineered fill and should be conducted under the supervision of a SVSE representative.

4. All organic surface material and debris should be stripped prior to any other grading operations and transported away from all areas that are to receive structures or structural fills. Soil containing organic material may be stockpiled for later use in landscaping areas only.

5. After removing all the subsurface structures, if any, and stripping the organic material from the soil, the improved subgrade should be scarified by machine to a depth of 12 inches and thoroughly cleaned of vegetation and other deleterious matter.

6. After stripping, scarifying and cleaning operations, subgrade soil material should be compacted to not less than 95% relative maximum density using ASTM D1557 procedure over the entire improved area, 5 feet beyond the perimeter of the building pad, and 3 feet beyond the edge of the driveway area, if new.

7. All engineered fill or imported soil should be placed in uniform horizontal lifts of not more than 8 to 12 inches in un-compacted thickness and compacted to not less than 95% relative maximum density. This should extend a minimum of 5 feet beyond the perimeter of the building pad and 3 feet beyond the edge of driveway area. Before compaction begins, the fill shall be brought to a water content that will permit proper compaction by either; 1) aerating the material if it is too wet, or 2) spraying the material with water if it is too dry. Each lift should be thoroughly mixed before compaction to assure a uniform distribution of water content.

8. When fill material includes rocks, nesting of rocks will not be allowed, and all voids must be carefully filled by proper compaction. Rocks larger than 4 inches in diameter should not be used for the final 2 feet of the improved area.

9. Unstable (yielding) subgrade should be aerated or moisture conditioned as necessary. Yielding isolated area in the subgrade can be stabilized with an excavation of the subgrade to the depth of 12 to 18 inches, lined with stabilization fabric membrane (Mirafi 500X or equivalent) and backfilled with aggregate base.

10. Driveway asphalt pavement section designs are presented in Table II. Rigid concrete and paver pavement section designs are presented in Table III and IV.

11. All imported soil, if any, must be approved by SVSE before being brought to the site. Import soil must have a plasticity index no greater than 15, an R-Value greater than 25, and environmentally clean (non-hazardous).

12. SVSE should be notified at least two days prior to commencement of any grading operations so that our office may coordinate the work in the field with the contractor.

13. All grading work shall be observed and approved by a representative from SVSE. The geotechnical engineer should prepare a final report upon completion of the grading operations.

WATER WELLS

14. Any water wells and/or monitoring wells that are determined to be discovered and abandoned on the site shall be capped according to the requirements of the San Mateo County Environmental Health Services Division. The final elevation of the top of the abandoned well casing must be a minimum of 3 feet below the adjacent grade prior to any grading operation.

CUT AND FILL SLOPES

15. The amount of cut and/or fill that can be safely done on this project depends on the steepness of the slopes, stability of the subsurface material on the slopes and the control of the drainage at the top of the slope. Cut slopes shall not exceed 2 (horizontal) to 1 (vertical), with an 8 feet wide bench for each 15 feet of vertical section.

16. Fill slopes shall not exceed 2 (horizontal) to 1 (vertical), with an 8 feet wide bench. Fill slopes shall be properly and consecutively keyed into natural slopes steeper than 6H:1V with a 10 feet wide base key that has 10% downward gradient into the slope. The details of the fill slope with base key subdrain system are shown in Figure 6. The base key shall be backfilled with native soil and compacted to no less than 95% relative maximum density. Rounding of the upper few feet of all slopes is recommended to reduce sloughing. The cut and fill slopes shall be inspected by a representative of our firm. Additional recommendations may be required at the time of construction.

17. It is recommended that overflow of water on the surface of the slopes be prevented. Berms shall be constructed on the crests of all new earth slopes in a manner to divert the water away from the edge of the slope. Concrete lined drainage ditches shall be constructed on the inside edges of the benches to collect and discharge the runoff water to proper vertical drainage channels and/or drainage pipes.

18. The surface of the slopes shall be compacted to provide a surface free of loose material. It is suggested that vegetation be planted on the surface of the slope after the completion of the grading operation as soon as possible. Minor sloughing of slopes should be anticipated. Proper maintenance on these slopes will be required at all times.

19. We recommend that the grading plans be reviewed by our office prior to submitting to the appropriate local agency and/or to construction.

FOUNDATION DESIGN CRITERIA

20. The proposed residences should be supported on skin friction concrete drill pier and grade beam.

21. Skin friction piers shall have a minimum diameter of 18 inches and penetrate a minimum of 10 feet below adjacent grade or 3 feet into bedrock. These piers can be designed with an allowable skin friction value of 400 psf. The top foot of the pier should be neglected in the calculation of the allowable skin friction force and passive resistance. This value is for dead plus live loads and may be increased by 1/3 for short term seismic and wind loads.

22. All piers should be reinforced with at least four No. 5 rebars, which shall run the entire length of the piers, with the perimeter piers tied at least 12 inches into the grade beam's upper section.

23. The grade beams width should be a minimum of 8 inches and be founded a minimum depth of 6 inches below adjacent pad grades. The grade beams should be reinforced with a minimum of two No. 4 rebars, one near the top and one near the bottom.

24. The final design of the foundation and reinforcing required shall be determined by the project structural engineer responsible for the foundation design. We recommend that the foundation plans be reviewed by our office prior to submitting to the appropriate local agency and/or to construction.

2019 CBC SEISMIC VALUES

25. Chapter 16 of the 2019 California Building Code (CBC) outlines the procedure for seismic design. The site categorization and site coefficients are shown in the following table.

Classification/Coefficient*	Design Value
Site Latitude	37.473066° N.
Site Longitude	122.255352° W.
Site Class (ASCE 7-16)	D
Risk Category	I,II,III
0.2-second Mapped Spectra Acceleration, S_S	2.041g
1-second Mapped Spectra Acceleration, S_1	0.844g
Short-Period Site Coefficient, F_a	1.0
Long-Period Site Coefficient, F_V	1.7
0.2-second Period, Maximum considered Earthquake Spectral Response Acceleration, S_{MS} ($S_{MS} = F_a S_S$)	2.041g
1-second Period, Maximum Considered Earthquake Spectral Response Acceleration, S_{M1} ($S_{M1} = F_V S_1$)	1.435g
0.2-second Period, Designed Spectra Acceleration, S_{DS} ($S_{DS} = 2/3 S_{MS}$)	1.360g
1-second Period, Designed Spectra Acceleration, S_{D1} ($S_{D1} = 2/3 S_{M1}$)	0.956g

*2019 CBC

CONCRETE SLAB-ON-GRADE CONSTRUCTION

26. Based on the laboratory testing results of the near-surface soil, the native soil on the site was found to have a low expansion potential when subjected to fluctuation in moisture.

27. The concrete slab-on-grade should be underlain by a minimum of 5 inches of ¾-inch clean crushed rock (recycled crushed rock is not acceptable) and should be placed on the compacted subgrade. The rock should be compacted in-place with vibratory plate. The subgrade soil should be compacted to at least 95% relative maximum density.

28. The concrete slab should have a minimum thickness of 5 inches and reinforced with No. 4 rebar with maximum spacing of 18 inches on-center both ways. If the concrete slab would receive a floor covering or sealant, a Stego 15-mil vapor barrier should be placed between the rock layer and concrete slab. The vapor barrier membrane should be overlapped, taped at seams and/or mastic applied for protrusions.

RETAINING WALLS

29. Retaining walls, if any, should be designed for a lateral earth pressure (active) equivalent to 55 pounds equivalent fluid pressure for cantilevered condition with horizontal backfill. If the retaining walls are restrained from free movement at both ends, the walls should be designed for the earth pressure resulting from 65 pounds equivalent fluid pressure, to which should be added surcharge loads. The structural engineer should discuss the surcharge loads with the geotechnical engineer prior to designing the retaining walls.

30. In designing for allowable resistive lateral earth pressure (passive) of 250 pounds equivalent fluid pressure may be used with the resultant acting at

the third point. The top foot of subgrade soil should be neglected for computation of passive resistance.

31. A friction coefficient of 0.3 should be used for retaining wall design. This can be increased by 1/3 for short term seismic and wind loads.

32. The aforementioned values assume a drained condition and a moisture content compatible with those encountered during our investigation.

33. For drained condition, drainage should be provided behind the retaining wall. The drainage (subdrain) system should consist of perforated pipe (Schedule 40) placed below the base of the retaining wall and surrounded by ¾ inch drain rock wrapped in a filter fabric. The drain rock wrapped in fabric should be at least 12 inches wide and extend from the base of the wall to within 1.5 feet of the ground surface. The upper 1.5 feet of backfill should consist of compacted native soil. The retaining wall drainage system should drain to an appropriate discharge facility.

34. As an alternative to the drain rock and fabric backfill, Miradrain 2000 or 6000 or approved equivalent drain mat may be used behind the retaining wall. The drain mat should extend from the base of the wall to within 12 inches of the ground surface. A perforated pipe (subdrain system) should be placed at the base of the wall in direct contact with the drain mat. The pipe should drain to an appropriate discharge facility.

EXCAVATION

35. Any vertical cuts deeper than 5 feet must be properly shored or excavated in accordance with OSHA guidelines. The minimum cut slope for excavation to the desired elevation is one horizontal to one vertical (1:1). The cut slope should be increased to 2:1 if the excavation is conducted during the rainy season or when the soil is highly saturated with water.

36. No difficulties due to soil conditions are anticipated in excavating the on-site material. Conventional earth moving equipment will be adequate for this project.

DRAINAGE

37. It is considered essential that positive drainage be provided during construction and be maintained throughout the life of the proposed structures.

38. The final exterior grade adjacent to the structures should be such that the surface drainage will flow away from the structures. Rainwater discharge at downspouts should be directed onto pavement sections, splash blocks, or other acceptable facilities which will prevent water from collecting in the soil adjacent to the foundation.

39. Utility lines that cross under or through perimeter foundation should be completely sealed to prevent moisture intrusion into the areas under the slab and/or footings. The utility trench backfill should be of impervious material and this material should be placed at least 4 feet on either side of the exterior footings.

40. Consideration should be given to collection and diversion of roof runoff and the elimination of planted areas or other surfaces which could retain water in areas adjoining the structures. The landscape grade adjacent to the foundation should be sloped away from the structure at a minimum of 5 percent.

41. Perimeter subdrain system should be installed around any crawl space or portion of structure embedded near existing ground elevation at a minimum of 4 feet horizontal distance from the foundation to a minimum

depth of 3 feet below the existing ground surface. The pipe should drain to an appropriate discharge facility.

42. Based on laboratory test results of the near surface soil at the subject site, we estimated that the infiltration rate is approximately 0.5 inch per hour (K_{SAT} = 3.5x10^{-4} cm/sec). This rate can be used in the design of the bio-retention system for on-site storm drainage.

ON-SITE UTILITY TRENCHING

43. Utility trenches within the public right-of-way should be excavated, bedded, and backfilled in accordance with local or governing jurisdiction requirements.

44. All utility lines including plumbing should be bedded with at least 6 inches over the pipe or conduit with 1/4, 3/8 or 3/4 inch crushed rock or well graded sand conforming to pipe manufacture's requirements. Sand and gravel should be compacted in-place.

45. The remaining excavated area should be backfilled with native on-site material or imported fill and compacted to at least 90% relative maximum density and 95% for the final 12 inches. Backfill should be placed in uniform 8 to 12 inch lifts and compacted. Jetting of trench backfill is not recommended. An engineer from our firm should be notified at least 48 hours before the start of any utility trench backfilling operations.

46. The utility trenches running parallel to the building foundation should not be located in an influence zone that will undermine the stability of the foundation. The influence zone is defined as the imaginary line extending at the outer edge of the footing at a downward slope of 1:1 (one unit horizontal distance to one unit vertical distance). If the utility trenches were

encroaching the influence zone, the encroached area should be stabilized with cement sand slurry (75 psi minimum compressive strength).

47. If utility trench excavation is to encounter groundwater, our office should be notified for dewatering recommendations.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations presented herein are based on the soil conditions revealed by our test boring(s) and evaluated for the proposed construction planned at the present time. If any unusual soil conditions are encountered during the construction, or if the proposed construction will differ from that planned at the present time, Silicon Valley Soil Engineering (SVSE) should be notified for supplemental recommendations.

2. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the necessary steps are taken to see that the contractor carries out the recommendations of this report in the field.

3. The findings of this report are valid, as of the present time. However, the passing of time will change the conditions of the existing property due to natural processes, works of man, from legislation or the broadening of knowledge. Therefore, this report is subjected to review and should not be relied upon after a period of three years.

4. The conclusions and recommendations presented in this report are professional opinions derived from current standards of geotechnical practice and no warranty is intended, expressed, or implied, is made or should be inferred.

5. The area of the boring(s) is very small compared to the site area. As a result, buried structures such as septic tanks, storage tanks, abandoned utilities, or etc. may not be revealed in the boring(s) during our field investigation. Therefore, if buried structures are encountered during grading or construction, our office should be notified immediately for proper disposal recommendations.

6. Standard maintenance should be expected after the initial construction has been completed. Should ownership of this property change hands, the prospective owner should be informed of this report and recommendations so as not to change the grading or block drainage facilities of this subject site.

7. Stormwater management, structure, foundation design, and calculations are not part of our investigation or scope.

8. This report has been prepared solely for the purpose of geotechnical investigation and does not include investigations for toxic contamination studies of soil or groundwater of any type. If there are any environmental concerns, our firm can provide additional studies.

9. Any work related to grading and/or foundation operations during construction performed without direct observation from SVSE personnel will invalidate the recommendations of this report and, furthermore, if we are not retained for observation services during construction, SVSE will cease to be the Geotechnical Engineer of Record for this subject site.

REFERENCES

Borcherdt R.D., Gibbs J. F., Lajoie K.R., 1977 – Maps showing maximum earthquake intensity predicted in the southern San Francisco Bay Region, California, for large earthquakes on the San Andreas and Hayward faults. U.S.G.S. MF-709.

Limerinos J.T., Lee K.W., Lugo P.E.; 1973 – Flood Prone Areas in the San Francisco Bay Region, California; United States Geological Survey Open File Report.

OSHPD, U.S. Seismic Design Maps, https://seismicmaps.org.

2019 (CBC) California Building Code, Title 24, Part 2.

TABLES

TABLE I

SUMMARY OF LABORATORY TESTS

Sample No.	Depth (Feet)	In-Place Conditions		Direct Shear Testing			
		Water Content (% Dry Wt.)	Dry Unit Weight (pcf)	Unit Cohesion (ksf)	Internal Friction Angle (degrees)		
1-1	3.0	7.5	117.0	0.5	22		
1-2	5.0	8.4	123.3				
2-1	3.0	7.2	116.2				
2-2	5.0	8.8	126.1				
3-1	3.0	7.0	126.2				
3-2	5.0	5.9	109.7				
4-1	3.0	7.3	130.4				
4-2	5.0	7.9	132.2				

TABLE II

PROPOSED ASPHALT PAVEMENT SECTIONS

Location: Proposed Residences
890 Upland Road
Redwood City, California

	DRIVEWAY / PARKING (LIGHT VEHICLE)			DRIVEWAY STREET* (FIRE TRUCK)		
Design R-Value	24.0			24.0		
Traffic Index	4.5			6.0		
Gravel Equivalent	14.0			18.0		
Recommended Alternate Pavement Sections:	1A	1B	1C	2A	2B	2C
Asphalt Concrete	3.0"	3.5"	4.0"	3.0"	3.5"	4.0"
Class II Baserock (R=78 min.) compacted to at least 95% relative maximum density	6.0"	5.0"	4.0"	10.0"	9.0"	8.0"
Subgrade soil scarified & compacted to at least 95% relative maximum density	12.0"	12.0"	12.0"	12.0"	12.0"	12.0"

* Support 75,000 pound fire apparatus.

TABLE III

PROPOSED CONCRETE PAVEMENT SECTIONS

Location: Proposed Residences
890 Upland Road
Redwood City, California

	DRIVEWAY *	PEDESTRIAN WALK/PATIO **
Recommended Rigid Pavement Sections:	1A	2A
P.C. Concrete	6.0"	4.0"
Class II Baserock (R=78 min.) compacted to at least 95% relative maximum density	6.0"	4.0"
Subgrade soil scarified and compacted to at least 95% relative maximum density	12.0"	12.0"

* Including curb and gutter and valley gutters. Rebar No. 4 at 18" maximum spacing on-center both ways. Maximum control joints at 10' by 10'. Vertical curbs should be keyed at least 3 inches into pavement subgrade. Curbs should be deepened adjacent to bioretentions.

** Rebar No. 3 at 18" maximum spacing on-center both ways with maximum control joints at 5' by 5'.

TABLE IV

PROPOSED PAVER PAVEMENT SECTIONS

Location: Proposed Residences
890 Upland Road
Redwood City, California

	DRIVEWAY AREA*			
Recommended Paver Pavement Sections:	1A	1B	2A**	2B**
Vehicular Rated Pavers	Min. 3.25" ± Permeable Paver with Subdrain	Min. 3.25" ± Permeable Paver without Subdrain	Min. 3.25" ± Permeable Paver with Subdrain	Min. 3.25" ± Permeable Paver without Subdrain
ASTM No. 8 Bedding Course & Paver Filler	2.0"	2.0"	2.0"	2.0"
3/4" Clean Crushed Rock (ASTM No. 57 Stone)	10.0" +	4.0"	14.0"	4.0"
ASTM No. 2 Stone	---	12.0"	---	14.0"
Subgrade soil scarified and compacted to at least 90% relative maximum density	12.0"	12.0"	12.0"	12.0"

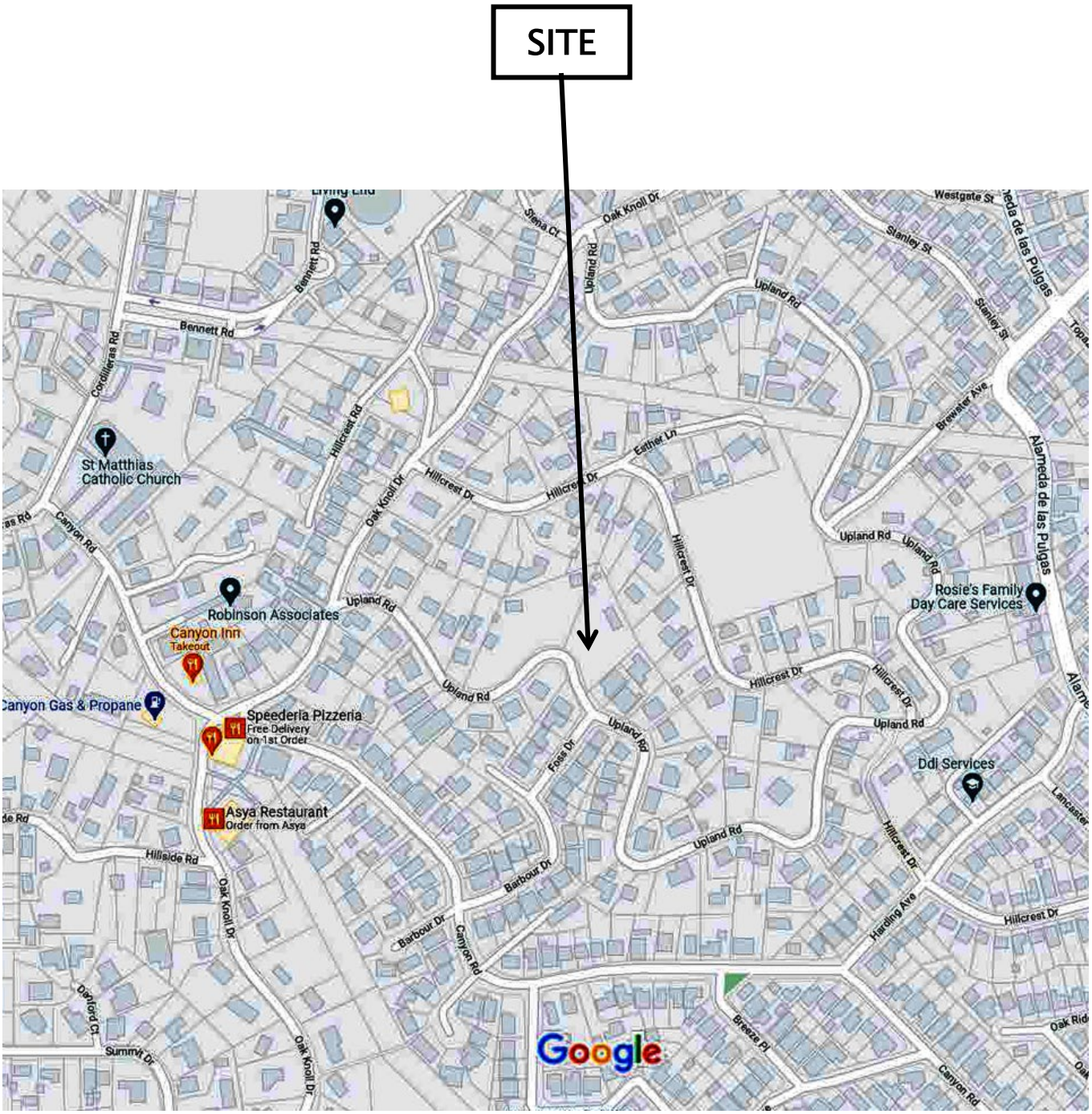
* The subgrade should be lined with filter fabric and Tensar BX1100 biaxial Geogrid or equivalent. The subgrade should be sloped at a minimum of 2% towards the subdrain system away from the building foundation. The pavers should be bordered with a concrete curb/band. Typically, minor maintenance would be required during the life of the pavers.

The subdrain system should consist of a 4-inch diameter perforated pipe surrounded by ¾ inch drain rock wrapped in a filter fabric. The drain rock wrapped in fabric should be at least 12 inches wide and 12 inches below the finished subgrade elevation. The drainage system should be sloped to a discharge facility.

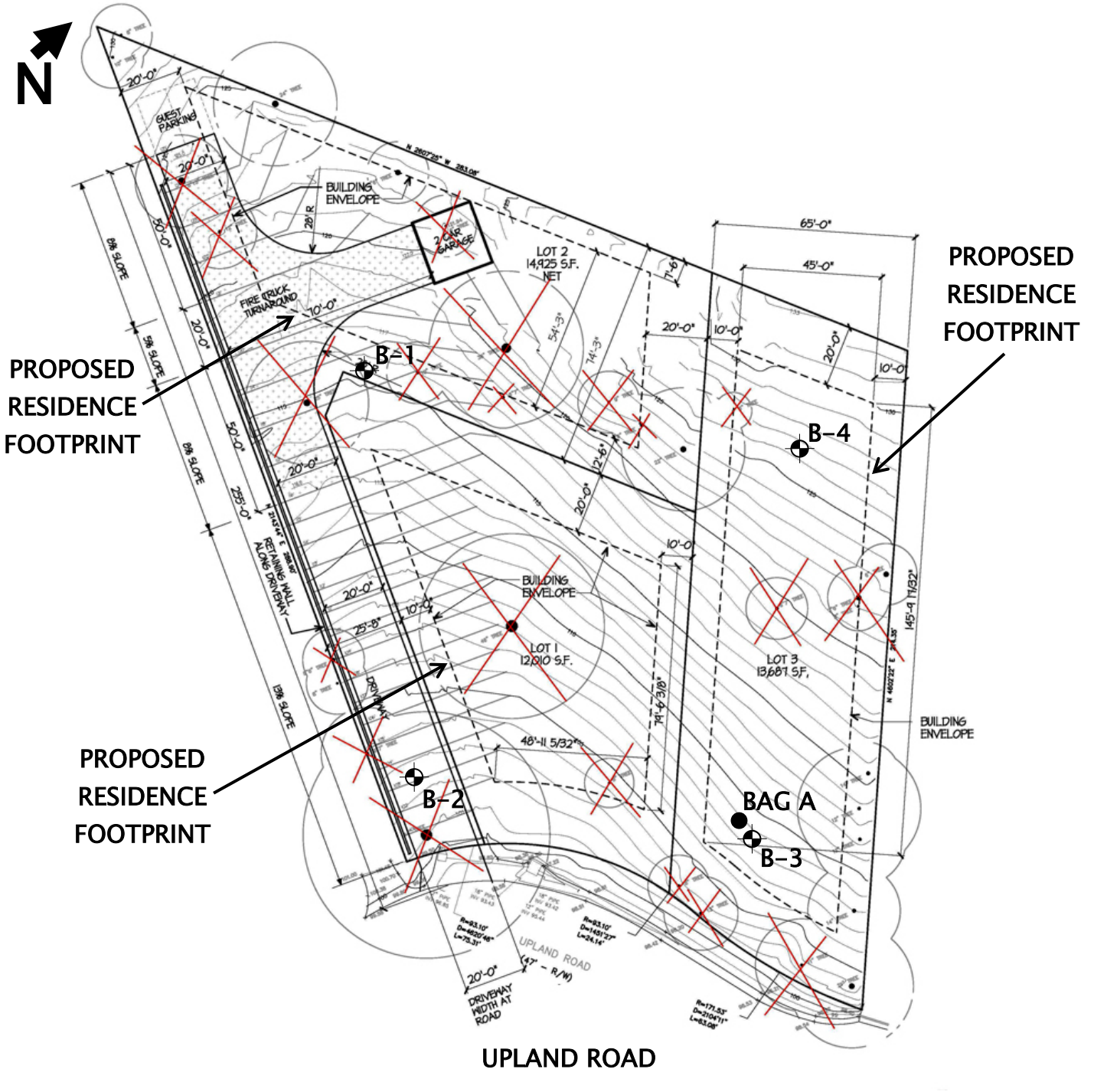
+ or, Class II Permeable Baserock compacted to at least 92% relative maximum density

** Support 75,000 pound fire apparatus

FIGURES

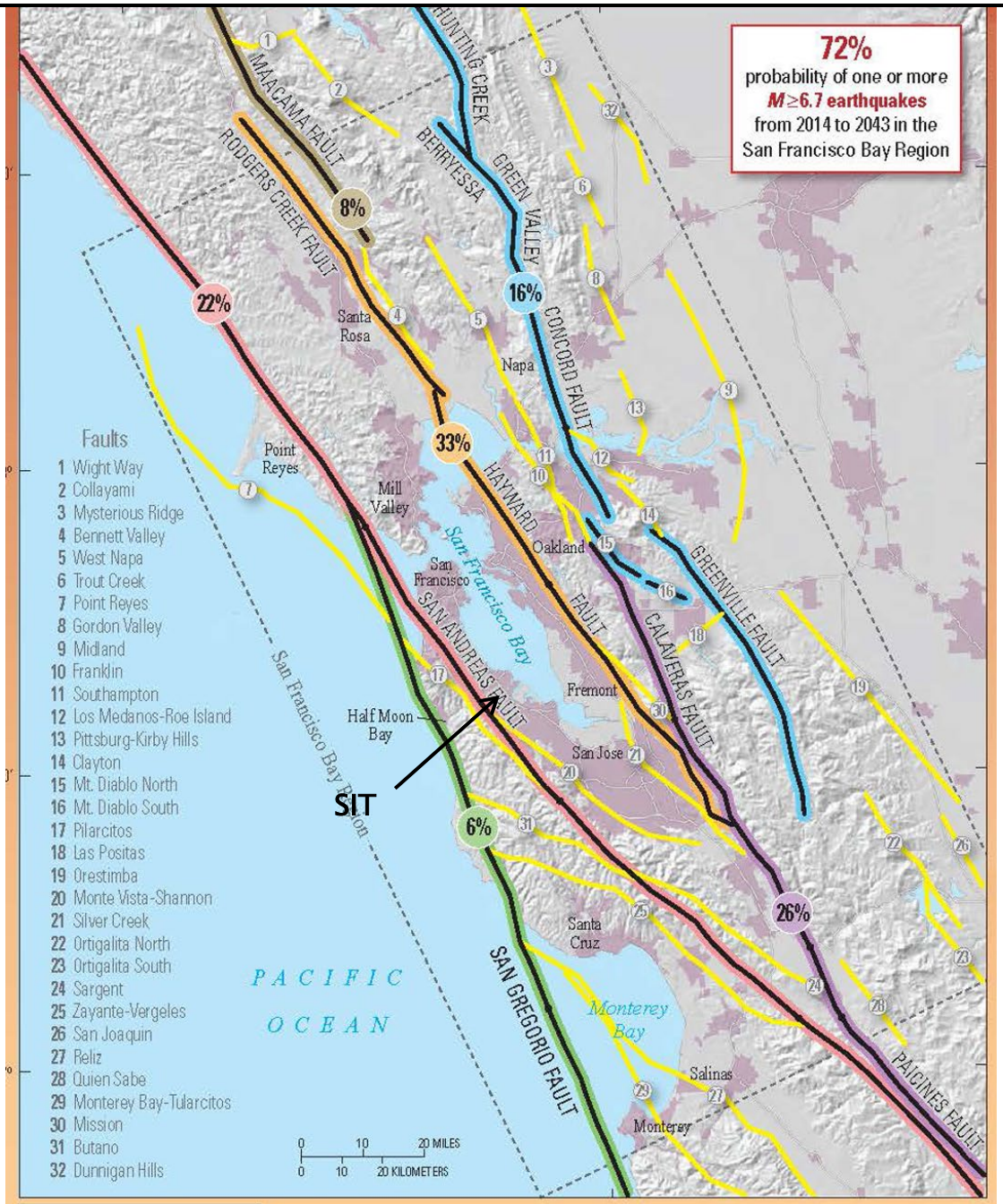


Silicon Valley Soil Engineering 1916 O'Toole Way San Jose, CA 95131 (408) 324-1400	**VICINITY MAP** Proposed Residences 890 Upland Road Redwood City, California	File No.: SV2281 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 1 September 2021



NOTE: ⊕ DENOTES APPROXIMATE EXPLORATORY BORING LOCATION
● DENOTES APPROXIMATE EXPLORATORY BAG SAMPLE LOCATION

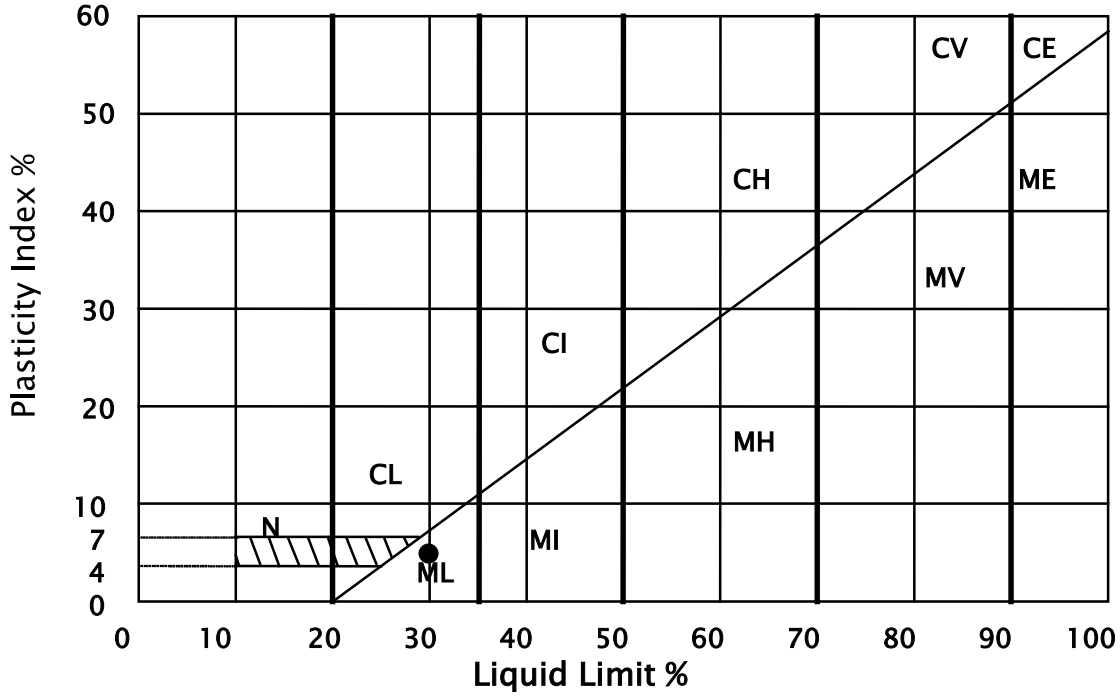
Silicon Valley Soil Engineering 1916 O'Toole Way San Jose, CA 95131 (408) 324-1400	**SITE PLAN** Proposed Residences 890 Upland Road Redwood City, California	File No.: SV2281 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 2 September 2021



Map of known active faults in the San Francisco Bay region. The 72 percent probability of a magnitude 6.7 or greater earthquake includes the well-known major plate-boundary faults, lesser-known faults, and unknown faults. The percentage shown within each colored circle is the probability that a magnitude 6.7 or greater earthquake will occur somewhere on that fault system by the year 2043. The probability that a magnitude 6.7 or greater earthquake will involve one of the lesser-known faults is 13 percent.

Silicon Valley Soil Engineering 1916 O'Toole Way San Jose, CA 95131 (408) 324-1400	**EARTHQUAKE PROBABILITY AND FAULT MAP** Proposed Residences 890 Upland Road Redwood City, California	File No.: SV2281 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 3 September 2021

PLASTICITY CHART

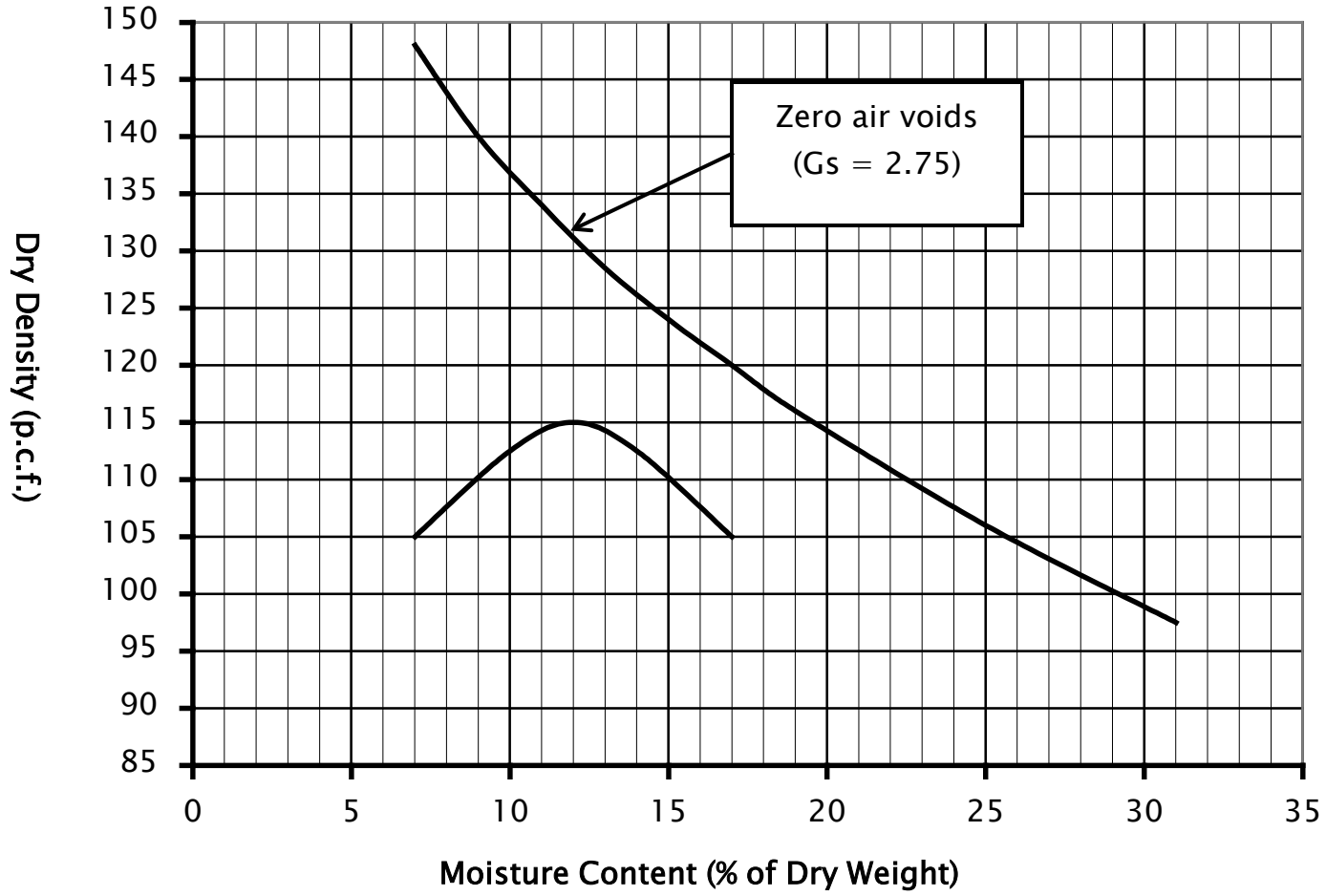


PLASTICITY DATA

Key Symbol	Sample No.	Depth (ft.)	Liquid Limit %	Plasticity Index %	Unified Soil Classification Symbol *
●	BAG A	0-1.0	30	6	ML

*Soil type classification Based on British suggested revisions to Unified Soil Classification System

Silicon Valley Soil Engineering 1916 O'Toole Way San Jose, CA 95131 (408) 324-1400	**PLASTICITY INDEX** Proposed Residences 890 Upland Road Redwood City, California	File No.: SV2281 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 4 September 2021



SAMPLE: A

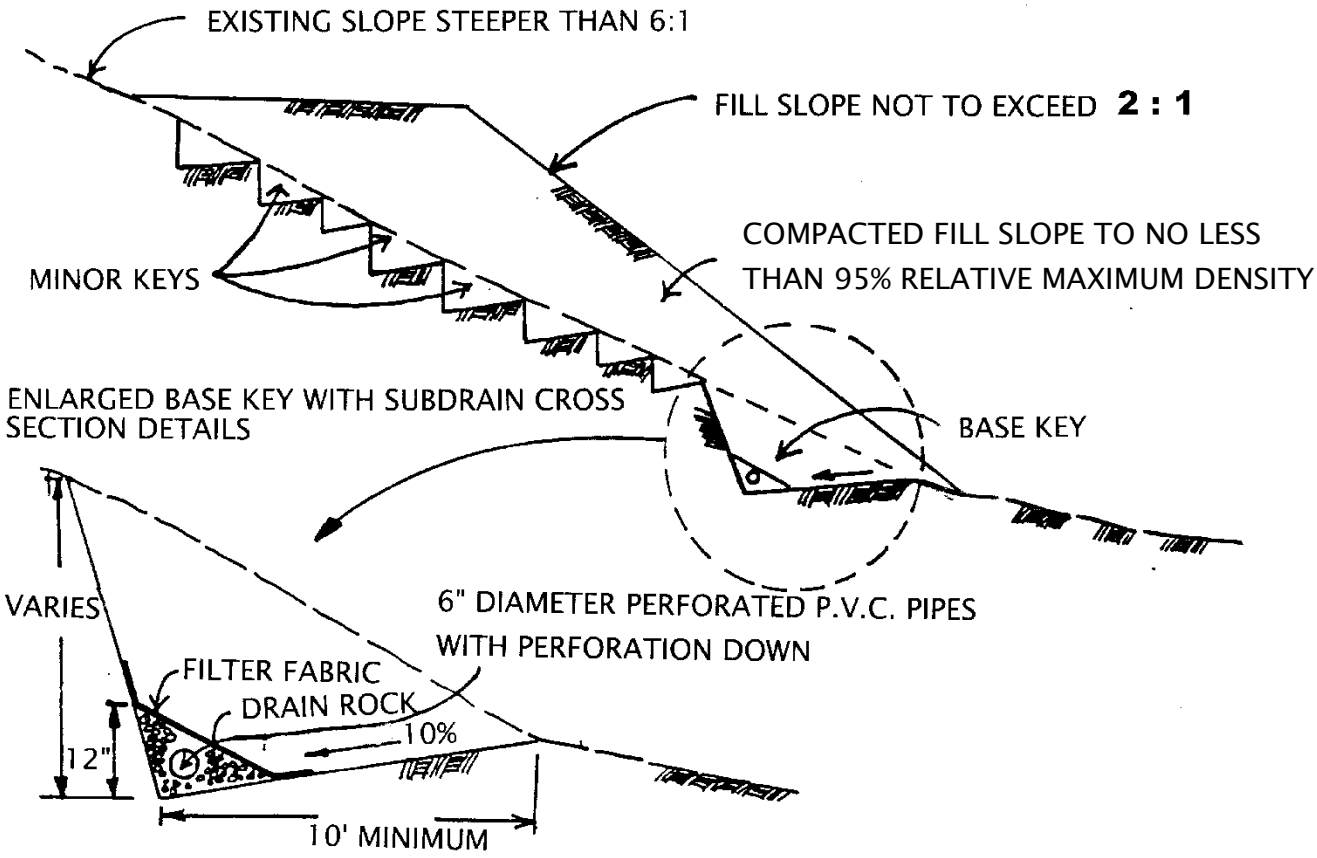
DESCRIPTION: Light Tan/Olive Brown SILT

LABORATORY TEST PROCEDURE: ASTM D1557

MAXIMUM DRY DENSITY: 115.0 p.c.f.

OPTIMUM MOISTURE CONTENT: 12.0 %

Silicon Valley Soil Engineering 1916 O'Toole Way San Jose, CA 95131 (408) 324-1400	**COMPACTION TEST A** Proposed Residences 890 Upland Road Redwood City, California	File No. SV2281 Drawn by: V.V. Scale: NOT TO SCALE	FIGURE 5 September 2021



Silicon Valley Soil Engineering 1916 O'Toole Way San Jose, CA 95131 (408) 324-1400	**FILL SLOPE DETAILS** Proposed Residences 890 Upland Road Redwood City, California	File No.: SV2281 Drawn by: S.D. Scale: NOT TO SCALE	FIGURE 6 September 2021

APPENDICES

MODIFIED MERCALLI SCALE

METHOD OF SOIL CLASSIFICATION

KEY TO LOG OF BORING

EXPLORATORY BORING LOGS (B-1 THROUGH B-4)

SAN MATEO COUNTY DRILLING PERMIT

GENERAL COMPARISON BETWEEN EARTHQUAKE MAGNITUDE AND THE EARTHQUAKE EFFECTS DUE TO GROUND SHAKING

Earthquake Category	Richter Magnitude	Modified Mercalli Intensity Scale* (After Housner, 1970)		Damage to Structure
		I –	Detected only by sensitive instruments.	
	2.0	II –	Felt by few persons at rest, especially on upper floors; delicate suspended objects may swing.	
	3.0	III –	Felt noticeably indoors, but not always recognized as an earthquake; standing cars rock slightly, vibration like passing truck.	No Damage
Minor		IV –	Felt indoors by many, outdoors by a few; at night some awaken; dishes, windows, doors disturbed; cars rock noticeably.	
	4.0	V –	Felt by most people; some breakage of dishes, windows, and plaster; disturbance of tall objects.	Architec-tural Damage
		VI –	Felt by all; many are frightened and run outdoors; falling plaster and chimneys; damage small.	
5.3	5.0	VII –	Everybody runs outdoors. Damage to building varies, depending on quality of construction; noticed by drivers of cars.	
Moderate	6.0	VIII –	Panel walls thrown out of frames; fall of walls, monuments, chimneys; sand and mud ejected; drivers of cars disturbed.	
6.9		IX –	Buildings shifted off foundations, cracked, thrown out of plumb; ground cracked, underground pipes broken; serious damage to reservoirs and embankments.	Structural Damage
Major	7.0	X –	Most masonry and frame structures destroyed; ground cracked; rail bent slightly; landslides.	
7.7		XI –	Few structures remain standing; bridges destroyed; fissures in ground; pipes broken; landslides; rails bent.	
Great	8.0	XII –	Damage total; waves seen on ground surface; lines of sight and level distorted; objects thrown into the air; large rock masses displaced.	Near Total Destruction

*Intensity is a subject measure of the effect of the ground shaking, and is not engineering measure of the ground acceleration.

File No. SV2281

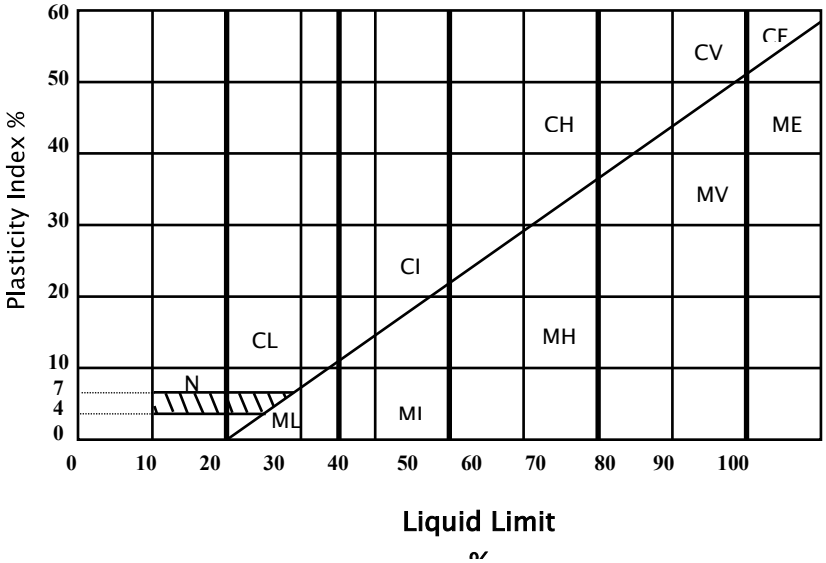
METHOD OF SOIL CLASSIFICATION CHART

MAJOR DIVISIONS		SYMBOL		TYPICAL NAMES
COARSE GRAINED SOILS (More than 1/2 of soil > no. 200 sieve size)	GRAVELS (More than 1/2 of coarse fraction > no. 4 sieve size)	GW		Well graded gravel or gravel-sand mixtures, little or no fines
		GP		Poorly graded gravel or gravel-sand moistures, little or no fines
		GM		Silty gravels, gravel-sand-silt mixtures
		GC		Clayey Gravels, gravel-sand-clay mixtures
	SANDS (More than 1/2 of coarse fraction < no. 4 sieve size	SW		Well graded sands or gravelly sands, no fines
		SP		Poorly graded sands or gravelly sands, no fines
		SM		Silty sands, sand-silt mixtures
		SC		Clayey sands, sand-clay mixtures
FINE GRAINED SOILS (More than 1/2 of soil < no. 200 sieve size)	SILTS & CLAYS LL < 50	ML		Inorganic silts and very fine sand, rock, flour, silty or clayey fine sand or clayey silt/slight plasticity
		CL		Inorganic clay of low to medium plasticity, gravelly clayes, sandy clay, silty clay, lean clays
		OL		Organic siltys and organic silty clay of low plasticity
	SILTS & CLAYS LL > 50	MH		Inorganic silts, micaceous or diatocaceous fine sandy, or silty soils, elastic silt
		CH		Inorganic clays of high plasticity, fat clays
		OH		Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOIL		PT		Peat and other highly organic soils

CLASSIFICATION CHART - UNIFIED SOIL CLASSIFICATION SYSTEM

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size In Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	305 to 76.2
GRAVELS Coarse Fine	3" to No. 4 3" to 3/4" 3/4" to No. 4	76.2 to 4.76 76.2 to 19.1 19.1 to 4.76
SAND Coarse Medium Fine	No. 4 to No. 200 No. 4 to No. 10 No.10 to No. 40 No.40 to No. 200	4.76 to 0.074 4.76 to 2.00 2.00 to 0.420 0.420 to 0.074
SILT AND CLAY	Below No. 200	Below 0.074

PLASTICITY INDEX CHART



Method of Soil Classification Chart

SILICON VALLEY SOIL ENGINEERING

Project: Proposed Residences **Project Location:** 890 Upland Road Redwood City, California **Project Number:** SV2281	**Silicon Valley Soil Engineering** **1916 O'Toole Way** **San Jose, CA 95131** **(408) 324-1400**	Key to Log of Boring **Sheet 1 of 1**

Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Direct Shear Test - Cohesion in ksf	Direct Shear Test - Internal Friction Angle in degrees	Liquid Limit - LL, %	Plasticity Index - PI, %
1	2	3	4	5	6	7	8	9	10	11	12	13

COLUMN DESCRIPTIONS

1. Depth (feet): Depth in feet below the ground surface.
2. Sample Type: Type of soil sample collected at the depth interval shown.
3. Sample Number: Sample identification number.
4. Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.
5. Material Type: Type of material encountered.
6. Graphic Log: Graphic depiction of the subsurface material encountered.
7. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
8. Water Content, %: Water content of the soil sample, expressed as percentage of dry weight of sample.
9. Dry Unit Weight, pcf: Dry weight per unit volume of soil sample measured in laboratory, in pounds per cubic foot.
10. Direct Shear Test - Cohesion in ksf: Cohesion is the y-axis intercept of the failure envelope tangent to the Mohr circles.
11. Direct Shear Test - Internal Friction Angle in degrees: The internal friction angle (Phi) is the angle inclination of the failure envelope.
12. Liquid Limit - LL, %: Liquid Limit, expressed as a water content.
13. Plasticity Index - PI, %: Plasticity Index, expressed as a water content.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS

Portland Cement Concrete (PCC)
Aggregate Base (AB)
SILT, SILT w/SAND, SANDY SILT (ML)
Sandstone

TYPICAL SAMPLER GRAPHIC SYMBOLS

Auger sampler
Bulk Sample
3-inch-OD California w/ brass rings
CME Sampler
Grab Sample
2.5-inch-OD Modified California w/ brass liners
Pitcher Sample
2-inch-OD unlined split spoon (SPT)
Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

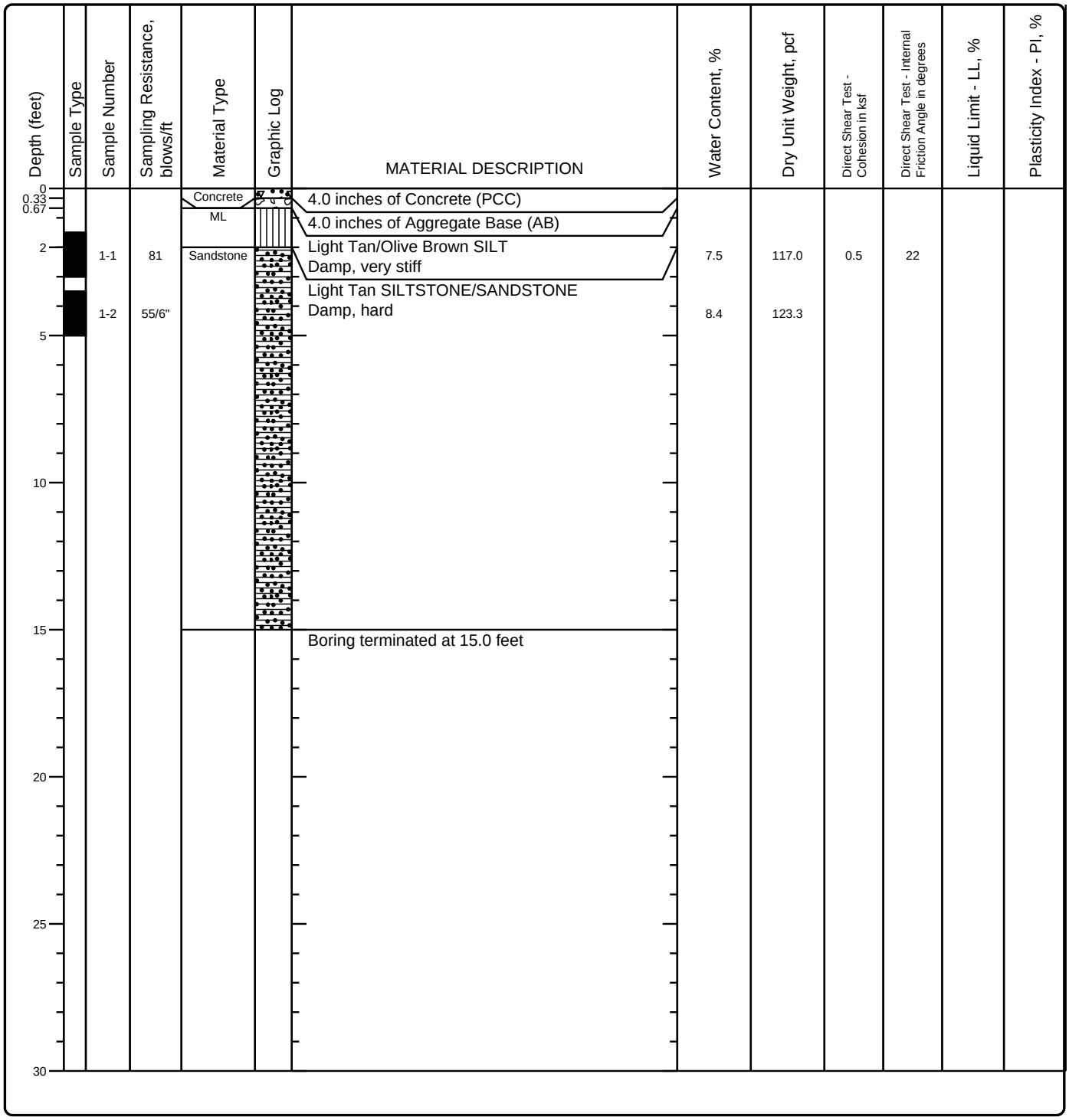
Water level (at time of drilling, ATD)
Water level (after waiting)
Minor change in material properties within a stratum
Inferred/gradational contact between strata
Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

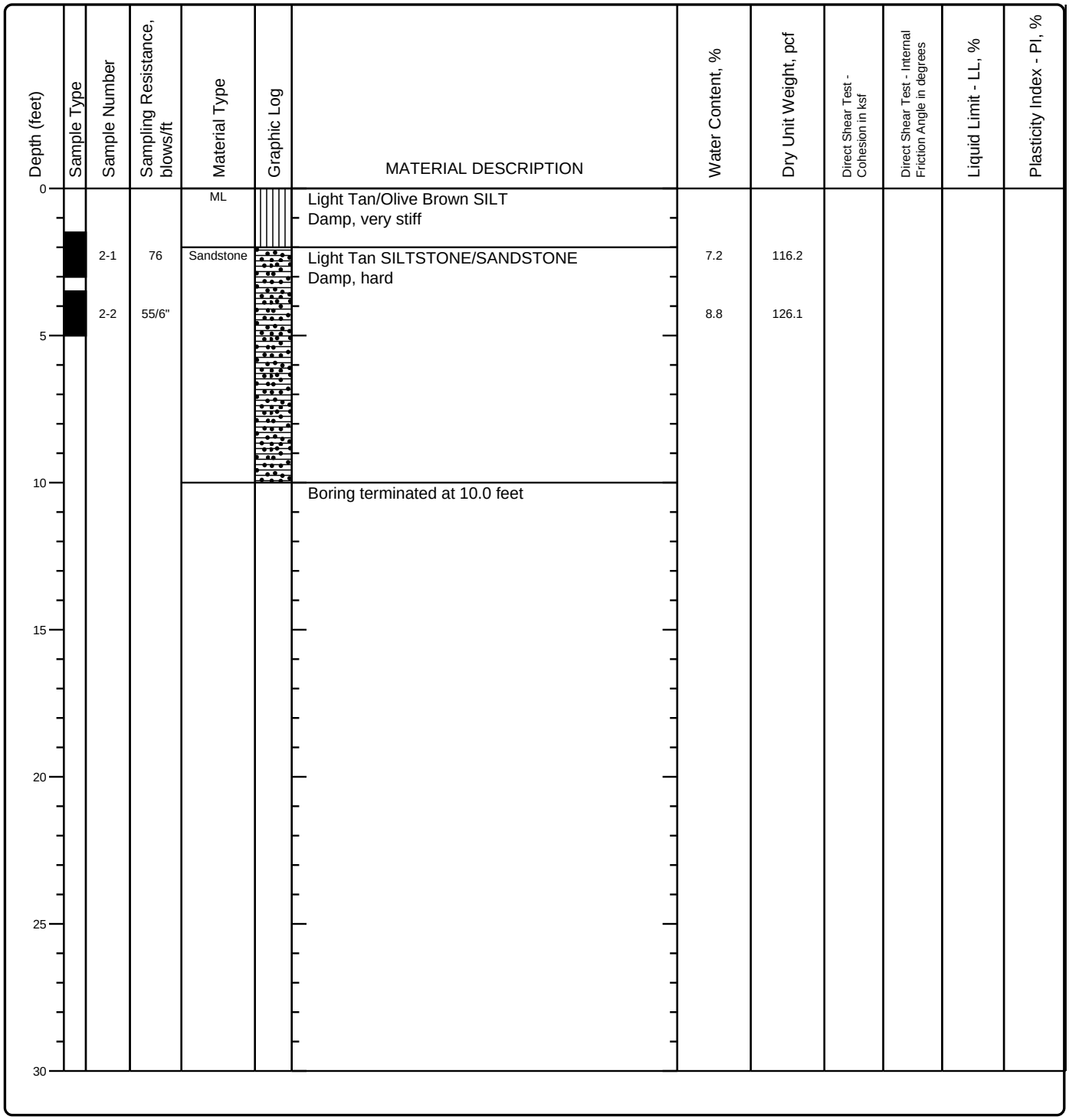
Project: Proposed Residences **Project Location:** 890 Upland Road Redwood City, California **Project Number:** SV2281	**Silicon Valley Soil Engineering** **1916 O'Toole Way** **San Jose, CA 95131** **(408) 324-1400**	Log of Boring B-1 **Sheet 1 of 1**

Date(s) Drilled **09/14/2021**	Logged By **V.V.**	Checked By
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **8-inch**	Total Depth of Borehole **15.0 feet**
		Approximate Surface Elevation **222 feet**
Groundwater Level and Date Measured **Not encountered**	Sampling Method(s) **Modified California**	Hammer Data **140 lbs**
Borehole Backfill **Grout**	Location	



Project: Proposed Residences **Project Location:** 890 Upland Road Redwood City, California **Project Number:** SV2281	**Silicon Valley Soil Engineering** **1916 O'Toole Way** **San Jose, CA 95131** **(408) 324-1400**	Log of Boring B-2 **Sheet 1 of 1**

Date(s) Drilled **09/14/2021**	Logged By **V.V.**	Checked By
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **8-inch**	Total Depth of Borehole **10.0 feet**
		Approximate Surface Elevation **186 feet**
Groundwater Level and Date Measured **Not encountered**	Sampling Method(s) **Modified California**	Hammer Data **140 lbs**
Borehole Backfill **Grout**	Location	



Project: Proposed Residences **Project Location:** 890 Upland Road Redwood City, California **Project Number:** SV2281	**Silicon Valley Soil Engineering** **1916 O'Toole Way** **San Jose, CA 95131** **(408) 324-1400**	Log of Boring B-3 **Sheet 1 of 1**

Date(s) Drilled **09/14/2021**	Logged By **V.V.**	Checked By
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **8-inch**	Total Depth of Borehole **15.0 feet**
		Approximate Surface Elevation **189 feet**
Groundwater Level and Date Measured **Not encountered**	Sampling Method(s) **Modified California**	Hammer Data **140 lbs**
Borehole Backfill **Grout**	Location	

Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Direct Shear Test - Cohesion in ksf	Direct Shear Test - Internal Friction Angle in degrees	Liquid Limit - LL, %	Plasticity Index - PI, %
0				ML		Light Tan/Olive Brown SILT Damp, very stiff						
		3-1	83	Sandstone		Light Tan SILTSTONE/SANDSTONE Damp, hard	7.0	126.2				
		3-2	55/6"				5.9	109.7				
5						Color chnaged to light reddsih brown						
10												
15						Boring terminated at 15.0 feet						
20												
25												
30												

Project: Proposed Residences **Project Location:** 890 Upland Road Redwood City, California **Project Number:** SV2281	**Silicon Valley Soil Engineering** **1916 O'Toole Way** **San Jose, CA 95131** **(408) 324-1400**	Log of Boring B-4 **Sheet 1 of 1**

Date(s) Drilled **09/14/2021**	Logged By **V.V.**	Checked By
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **8-inch**	Total Depth of Borehole **10.0 feet**
		Approximate Surface Elevation **202 feet**
Groundwater Level and Date Measured **Not encountered**	Sampling Method(s) **Modified California**	Hammer Data **140 lbs**
Borehole Backfill **Grout**	Location	

Depth (feet)	Sample Type	Sample Number	Sampling Resistance, blows/ft	Material Type	Graphic Log	MATERIAL DESCRIPTION	Water Content, %	Dry Unit Weight, pcf	Direct Shear Test - Cohesion in ksf	Direct Shear Test - Internal Friction Angle in degrees	Liquid Limit - LL, %	Plasticity Index - PI, %
0				ML		Light Tan/Olive Brown SILT Damp, very stiff						
		4-1	97	Sandstone		Light Tan SILTSTONE/SANDSTONE Damp, hard	7.3	130.4				
		4-2	55/6"				7.9	132.2				
5						Color chnaged to light reddsih brown						
10						Boring terminated at 10.0 feet						
15												
20												
25												
30												

DRILLING NOTIFICATION FORM FOR ANNUAL GEOTECHNICAL DRILLING PERMIT

SAN MATEO COUNTY ENVIRONMENTAL HEALTH SERVICES DIVISION
2000 ALAMEDA DE LAS PULGAS, SUITE 100, SAN MATEO, CA. 94403
VOICE (650) 372-6200 FAX (650) 627-8244 WWW.SMCHEALTH.ORG

An accurate & correct map of proposed boring locations must be included with notification.

Notification is hereby given under Annual Geotechnical Drilling Permit No. AGDP-21-0605, with expiration date April 27, 2022 that Silicon Valley Soil Engineering will be drilling for soil boring geotechnical investigation only, not permanent structures or for environmental investigations, as described below.

ALL DRILLING MUST BE SCHEDULED WITH COUNTY STAFF (drilling@smcgov.org) AT LEAST TWO (2) WORKING DAYS (48 HOURS) IN ADVANCE

DRILLING WILL BEGIN ON: Sept. 14, 2021 AT: 9:00AM (AM/PM) NO. OF BORINGS 4

BORING DESIGNATIONS# B-1, B-2, B-3, & B-4

DRILLING INFORMATION **(MUST BE FILLED OUT COMPLETELY)**

SITE NAME Proposed Residences ASSESSOR'S PARCEL # (REQUIRED) 058-272-120 (per notification)

DRILLING LOCATION ADDRESS 890 Upland Road CITY Redwood City ZIP 94062

Borings To Be Constructed In: ☐ Public Property ☒ Private Property ☐ Refuse ☐ Other

Maximum Proposed Depth Wells/Borings 15 (feet) Drilling Method Hollow Stem

Boring Diameter 8" Grout Material: use 6 gallons water max per 94 lb cement, can add up to 5% bentonite

BORING OWNER **(BORING OWNER NAME OR CONTACT NAME SHOULD MATCH SIGNATURE)**

NAME Surinder P Goswamy CONTACT PERSON Paul Goswamy

ADDRESS 152 Nevada Street CITY, STATE, ZIP Redwood City, CA 94062

TELEPHONE 650-533-5800 EMAIL gps20001@comcast.net

(Letter signed by boring owner attesting to knowledge of all permit requirements and conditions, may be substituted for signature on permit application.)

→ **Boring Owner's Signature** S Goswamy **Date** 9/10/21 ←

PROPERTY OWNER **(NAME AS APPEARS ON ASSESSOR'S ROLES SHOULD MATCH SIGNATURE)**

NAME Surinder P Goswamy CONTACT PERSON Mr. Paul Goswamy

ADDRESS 152 Nevada Street CITY, STATE, ZIP Redwood City, CA 94062

TELEPHONE 650-533-5800 EMAIL gps20001@comcast.net

I understand that a boring(s) is being installed on my property. *(Letter signed by property owner, containing previous language, or encroachment permit may be substituted for signature on permit application.)*

→ **Property Owner's Signature** S Goswamy **Date** 9/10/21 ←

DRILLING COMPANY

DRILLING COMPANY Exploration Geoservices, Inc. CONTACT PERSON John Collins

ADDRESS 563 Asbury Street CITY, STATE, ZIP San Jose, CA 95110

TELEPHONE (408) 280-6822 C 57 LICENSE # 484288 E-MAIL john@explorationgeo.com

I certify that borings under this notification will be constructed/destroyed in compliance with the conditions of the Annual Geotechnical Drilling Permit listed above, the San Mateo County Ordinance, and the State Water Well Standards, and that the license listed above is considered current and active by the Contractor's State License Board.

Driller's Signature **Date** 9/10/21

CONSULTANT COMPANY

CONSULTANT COMPANY Silicon Valley Soil Engineering PROJECT MANAGER Sean Deivert

ADDRESS 1916 O'Toole Way TELEPHONE # (408)324-1400

CITY,STATE, ZIP San Joe, CA 95131 E-MAIL siliconvalleysoil@gmail.com

I certify that this notification is correct to the best of my knowledge. I certify that the geotechnical borings under this notification will be constructed/destroyed in compliance with the conditions of the Annual Geotechnical Drilling Permit listed above, the San Mateo County Ordinance, and the State Water Well Standards. I certify if I indicated the purpose of drilling is geotechnical, then no one will use the boring to collect any samples for environmental analyses. (*Responsible Professional must be a California Professional Geologist or Civil Engineer.*)

Responsible Professional's Name (Please print legibly) Vien Vo

Responsible Professional's Signature **Date** 9/10/21

California Professional Geologist (PG) No. **or Civil Engineer (PE) No.** 32296

Revised every January 1

 ANNUAL GEOTECHNICAL DRILLING PERMIT NOTIFICATION

REQUIREMENTS:

An accurate & correct map of existing and proposed boring locations **must** be included with the drilling notification. The boring location map **must** include the following.

1. North arrow, existing site features, wells, approximate property lines, closest street and cross-street, and any other pertinent existing & historic information.
2. Proposed boring locations to scale.

Upon review of information in this drilling notification and subject to approval, no additional documents or verbal correspondence may be issued notifying boring owner, driller, and responsible professional (consultant) to perform the specified work. The annual geotechnical permit is subject to General Conditions stated in the permit. A copy of the approved Annual Geotechnical Drilling Permit and the submitted Drilling Notification **must** be available on site while work related to the permit is being performed. This drilling notification **must** be submitted to County staff at least two (2) working days in advance of field work. Drilling may begin at the notified date and time whether County staff is present or not. However, should the field work be cancelled or delayed, notification must be given to GPP staff up to 1 minute before the listed start time. If GPP staff attempt to perform an inspection and was not properly notified of a cancellation, then the Consultant will be billed an Inspection Cancellation fee of $342.

DRILLING NOTIFICATION INSTRUCTIONS

Section 1: Drilling Date and Time

The **date** and **time** of the start of the geotechnical drilling must be entered. Circle either AM or PM for the start time. Indicate the **number of borings** and list the preliminary **boring designations.** This is to avoid confusion regarding geotechnical borings which may have already been performed at this site as indicated on the site map.

Section 2: Drilling Information

All applicable spaces must be filled in. **Site name** refers to the name of the project under which the investigation is being conducted. **Assessor's parcel number** is the 9-digit number corresponding to the specific private property drilling is proposed to be conducted on (County Assessor's web site wecare.co.sanmateo.ca.us under Property Assessment or www.sanmateocountytaxcollector.org under Secured Property Taxes). Each notification must include only one assessor's parcel number. If the drilling is to be conducted only in public right-of-ways, then the assessor's parcel number space should be filled in with NA for not applicable. If drilling is to occur on both a private property and a contiguous public right-of-way, then two notifications (one for the private property and one for the public right-of-way) must be filled out. **Address** and **City** refer to the location of the specific property drilling is proposed to be conducted on. The Address for a public right-of-way would simply be the name of the specific section of the public right-of-way (such as 100s block of Main Street). **Borings to be Constructed in** must have one box selected. Again, this differentiates between a public right-of-way and a private property. **Refuse** is a special land use designation which needs to be indicated on the drilling notification. The rest of this section is self- explanatory, may change in the field based on conditions encountered, and must be filled in. Drilling in the City of Daly City is permitted permitted by the City of Daly City Water and Wastewater Department personnel at (650) 991-8200.

Grout Material requires the use of a maximum of 6 gallons of water per 94 pounds of cement. This measurement (for both water and cement) must be able to be demonstrated in the field upon request from the inspector (such as using a 5-gallon bucket for measuring the water and using entire bags of cement). Grout must be tremmied into the boring if water is present in 10% of the boring or greater or the total depth of the boring is deeper than 30 feet.

Section 3: Boring Owner

The **name** of the entity owning the borings must be listed along with their contact person (if different from the name of the boring owner), address, telephone number, and email address. The **contact person** must be directly associated with or an agent of the entity owning the borings such as a property manager, real estate manager, contractor, or lawyer but not the geotechnical consultant listed on the permit application in Section 6. A **telephone** number and an **email** address must be provided to allow the County inspector to contact the boring owner to verify information if necessary. The drilling notification must be **signed** and **dated** by either the entity listed as the owner of the wells and borings or the contact person. **Signatures (Sections 3 through 6)** do not need to be wet; however, one copy of the permit application must contain all of the information besides the signatures in a legible format. ALL SIGNATURES REQUIRED (SECTIONS 3 THROUGH 6) DO NOT NEED TO BE ON THE SAME COPY OF THE PERMIT APPLICATION.

Section 4: Property Owner

The **name** of the entity owning the property must be listed and needs to match the name listed with the County Assessor for this property. The **contact person** must be directly associated with or an agent of the entity owning the property such as a property manager, real estate manager, contractor, or lawyer but not the environmental consultant listed on the permit application in Section 6. A **telephone** number and an **email** address must be provided to allow the County inspector to contact the property owner to verify information if necessary. The drilling notification must be signed and dated by the entity listed as the property owner only. AGENTS CAN NOT SIGN FOR THE PROPERTY OWNER. For public rights-of-way, a copy of the Encroachment Permit can be substituted for the property owner signature. It is known by San Mateo County that the City of San Mateo will not issue an encroachment permit until the drilling permit is issued, but the City of San Mateo will issue a letter of intent to issue an encroachment permit which is acceptable to San Mateo County as a substitute for the property owner signature in City of San Mateo rights-of-way.

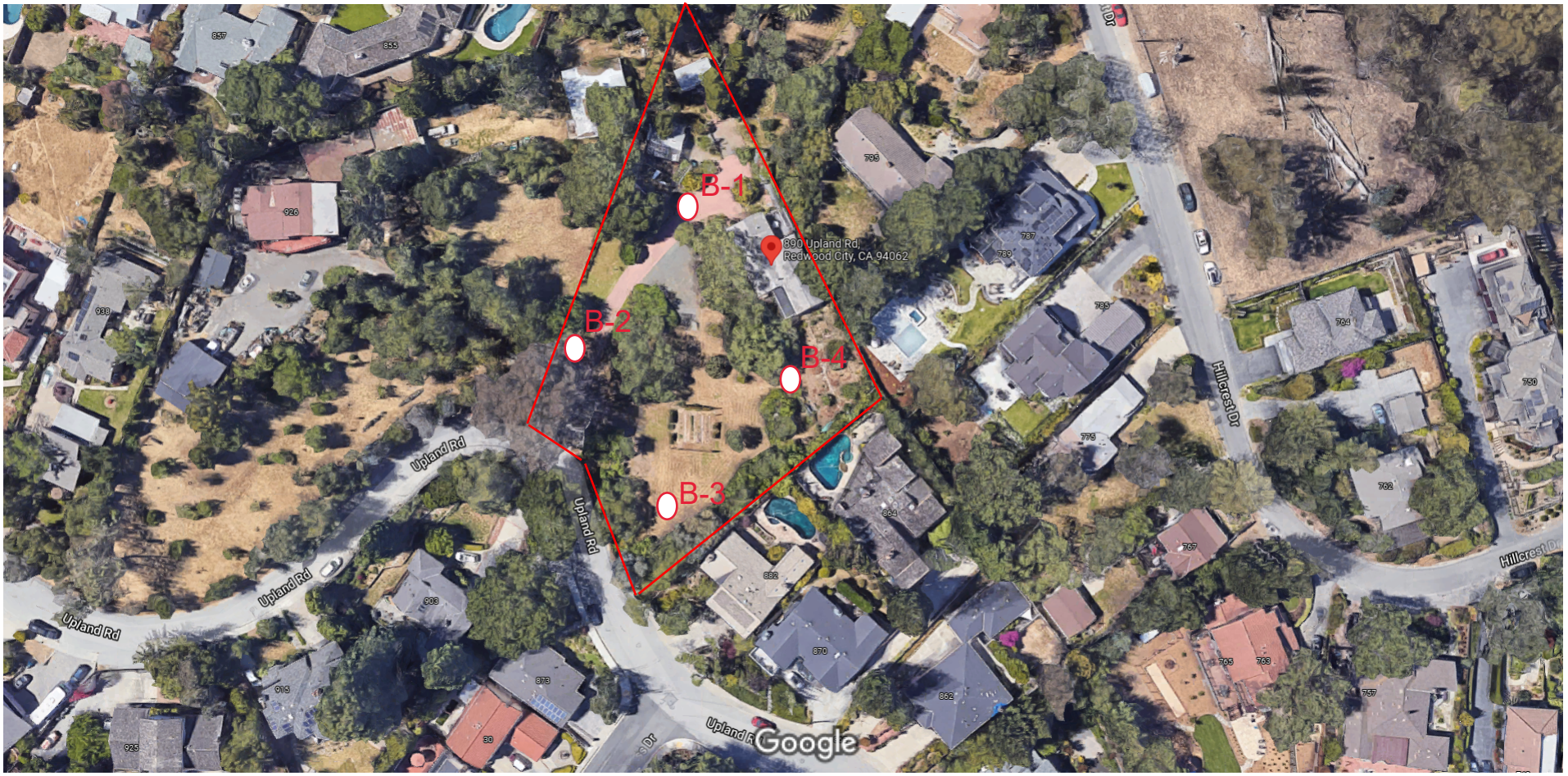
Section 5: Drilling Company

The **name** of the company proposed to drill the borings must be listed along with the drilling company **contact person**, address, telephone number, and email address. In addition, the **driller's C57 license number** must be provided. A **telephone** number and an **email** address must be provided to allow the County inspector to contact the drilling company to verify information if necessary. The drilling notification must be signed and dated by the driller's contact person. If the drilling company changes, then a new drilling notification should be filled out completely except for Sections 3, 4, and 6.

Section 6: Consulting Company

The **name** of the company overseeing the proposed drilling of the borings must be listed along with the **project manager**, address, **telephone** number, and **email** address. The responsible professional overseeing the work must **print** their name legibly, **sign** their name and date, and provide either their **California Professional Geologist** number or **California Civil or Geotechnical Engineering** number.

Google Maps 890 Upland Rd, Redwood City, CA



Imagery ©2021 Google, Map data ©2021 , Map data ©2021 50 ft

NOTE: ○ DENOTES EXPLORATORY SOIL BORING LOCATION