MURRAY ENGINEERS INC
GEOTECHNICAL SERVICES

July 6, 2023
Project No. 3262-1L2

Melissa Waters
1063 Cherry Avenue
San Jose, California 95125

RE: RESPONSE TO COUNTY REVIEW COMMENTS & REPORT UPDATE PROPOSED RESIDENCE WATERS PROPERTY APN 351-42-004, PEACOCK COURT SANTA CLARA COUNTY, CALIFORNIA

Dear Ms. Waters:

As requested by your architect, Cove Britton, we have prepared this letter to address geologic review comments presented in a Santa Clara County staff memo dated January 25, 2022 and to update our geotechnical report for the proposed residence and associated improvements on your property on Peacock Court. Our design-level geotechnical report for the project was issued on April 23, 2020. Our services associated with this supplemental letter have included a review of the County's staff memo, our geotechnical report for the project, a preliminary site development feasibility report we prepared for the previous owners in 2017, and the current site development plans; as site reconnaissance by our principal engineering geologist on June 23, 2023; and supplemental geotechnical analyses.

Project Description

The project will include construction of a three-story residence with an attached three-car garage along the crest of a spur ridge in the north central (uphill) portion of the. The residence will include two stories above grade, a partial basement along the downhill side and a small root cellar along the uphill side. A small, single-story chapel will be located to the southwest of the residence and will be connected to the main level of the residence by a breezeway and to the basement level along a short basement-level hallway. A two-story accessory dwelling unit (A.D.U.) is planned on the hillside in the western portion of the property. The A.D.U. will include a lower level basketball half court that will daylight on the slope below the structure and upper level living space with a single-car garage attached to the A.D.U. by a breezeway. Additional site improvements will include a swimming pool and spa with an infinity edge to the northeast of the residence; a graded driveway extending along the northwest property line; an auto court along the southwest side of the residence; site retaining walls to accommodate proposed grade changes along the driveway, auto court and around the swimming pool; and various patios and walkways. The layout of the proposed improvements is shown on Figure A-2 (Revised), Partial Site Plan & Engineering Geologic Map.

Discussion

The location and design of the proposed residence is essentially the same as presented in our 2020 geotechnical report; however, the footprint is slightly expanded to the northeast and the basement areas and basement-level hallway connecting the residence to the chapel have been added. The location of the A.D.U is similar to that presented in our 2020 report, but the structure has been rotated so that the front walls are parallel to the northwest property line. At the time of our 2020 investigation, the location of the swimming pool was not finalized. The layout of the driveway and auto court are similar to that presented in our 2020 report.

Based on our observations at the site on June 23, 2023, the surficial site conditions have not changed significantly since the completion of our 2020 investigation.

Response to County Geology Review Comments

The County's January 25, 2022 staff memorandum notes that the project was initially denied in November 2021, in part based on review of our limited geologic and geotechnical investigation report dated July 11, 2017. The 2017 investigation included five exploratory borings and, based on those borings, a recommended house site was identified in the area of the currently proposed residence. The report described the drainage ravine that extends along the southern property line and identified a potentially unstable area above the ravine based on exploratory borings and computer-aided slope stability analyses. The site plan included in the 2017 report included a recommended building setback line 130 feet from the centerline of the ravine. The memorandum notes that our April 23, 2020 design-level geotechnical report was submitted as part of the appeals process. The memorandum notes that the Geologic Cross-Section A-A' presented in our 2020 report did not depict the proposed improvements and, as a result, it was unclear if the proposed construction extended into the building setback zone. Although not specified in the memorandum, the proposed A.D.U. also extends into the 130-foot building setback zone shown in our 2017 report.

We have modified Geologic Cross-Section A-A' to show the currently proposed main residence and the 130-foot building setback from the centerline of the drainage ravine (see Figure A-6 (Revised), Geologic Cross-Section A-A'). We note that the cross-section was field measured and the centerline of the drainage is slightly different than the centerline depicted on the site plan. In addition, we have added the location of the proposed residence to the slope stability cross-section, which was included in our report (see Figure A-9 (Revised), Pseudo-Static Slope Stability Analysis Along Cross-Section A-A'). In our opinion, the house has been located outside the 130-foot building setback from the centerline of the drainage ravine in accordance with the recommendations of our 2020 geologic and geotechnical investigation report.

The proposed A.D.U. was not contemplated at the time of our 2017 investigation. As part of our 2020 design-level investigation we advanced two exploratory borings in the area of the proposed A.D.U. to better assess slope stability in the area of the structure. As noted in the 2020 report, the area of the proposed A.D.U. is blanketed by 8 to 13 feet of colluvial soil underlain by Franciscan mélange. The borings did not encounter the old landslide debris, which was encountered in Borings B-1 and B-2 downslope from the proposed residence. The ground surface downslope from the A.D.U. has a slope of approximately 3:1 (horizontal to vertical) and the drainage course downslope from the A.D.U. is described as a broad swale, as opposed to a steep-sided ravine (see Figure A-2 (Revised) and Figure A-7 (Revised), Geologic Cross-Section B-B'). Because of the subsurface conditions and the moderate slope conditions, although not specifically stated in the 2020 report, in our opinion, a building setback from the drainage is not required for the A.D.U.

Report Update

Based on our recent site visit and our review of the latest architectural plans dated September 9, 2014 and civil plans dated April 9, 2021, it is our opinion that the conclusions and recommendations presented in our April 23, 2020 geologic and geotechnical investigation report are appropriate for the currently proposed project.

As noted above, the basement areas at the main residence were not contemplated at the time of our original investigation. We recommend that the basement along the downhill side of the residence and the basement-level tunnel leading from the main residence to the chapel be supported on drilled piers. The root cellar along the uphill side of the residence may be supported on either drilled piers or a spread footing foundation designed in accordance with the recommendations presented in our report.

As noted above, the location of the swimming pool was not finalized at the time of our 2020 investigation. Because of this, we provide recommendations for a conventional shell if the pool is entirely cut down into supportive material or a pier-supported shell in areas where all or portions of the pool shell would not be cut down into supportive material. As currently proposed, the pool and spa will be constructed along the northeast side of the residence and will include an infinity edge along the northeast side and southeast end. According to the grading plan for the area, the grades in the area of the pool and spa will be raised by up to approximately 5 feet. Because of the existing slope in the pool area, the proposed fill, and the infinity edge, we recommend that the proposed swimming pool and spa be supported on drilled piers designed in accordance with the recommendations presented in our report.

Limitations

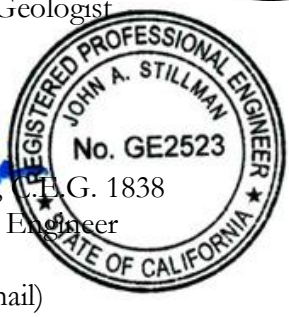
The opinions presented in this supplemental letter have been developed in accordance with engineering geologic and geotechnical principles and practices generally accepted at this time and location. We make no warranty, either expressed or implied.

If you have any questions about the content of this letter, please contact this office.

Sincerely,

MURRAY ENGINEERS, INC.

Mark F. Baumann, C.E.G. 1787
Principal Engineering Geologist



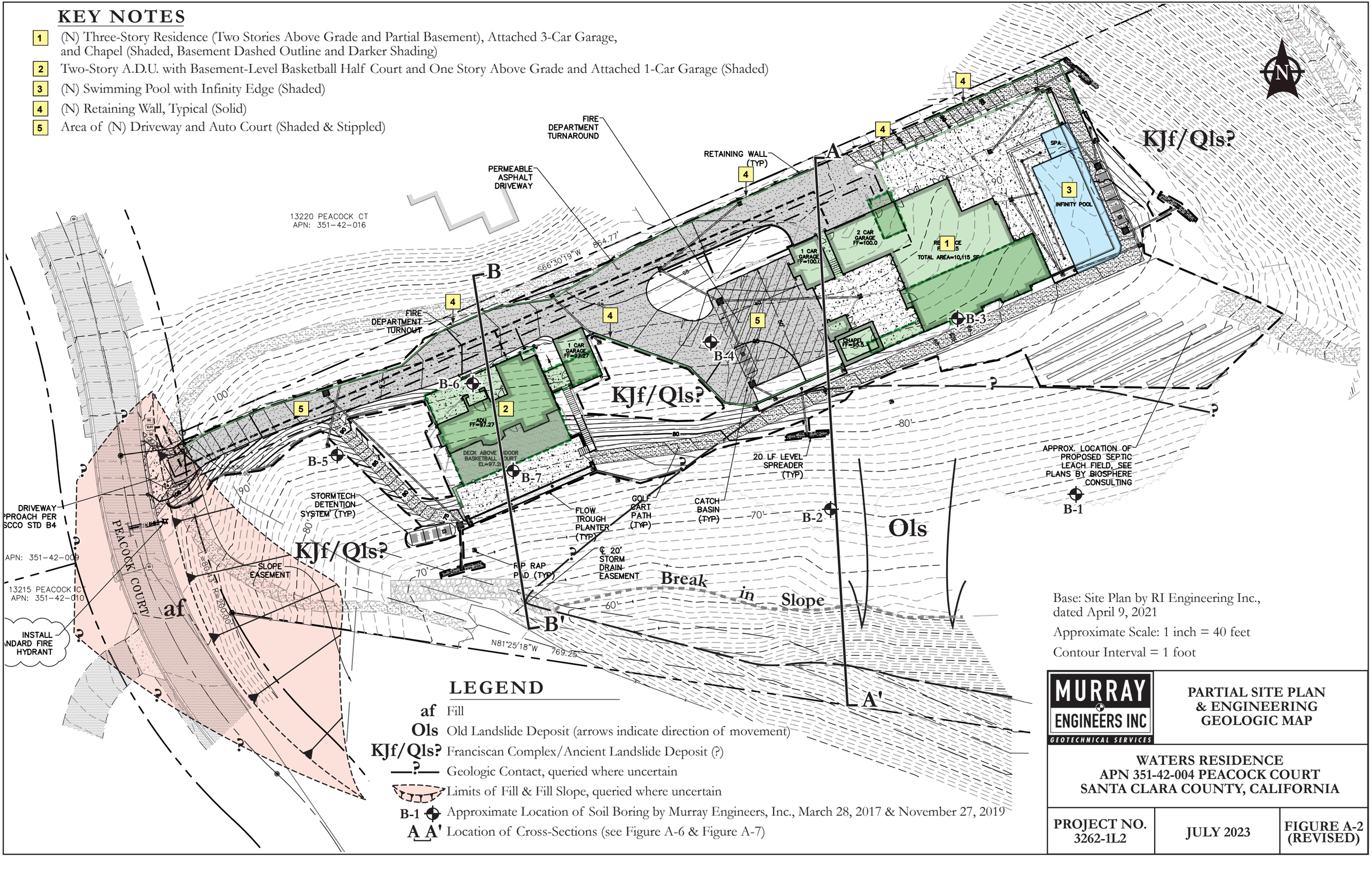
John A. Stillman, G.E., C.H.G. 1838
Principal Geotechnical Engineer

Copies: Addressee (email)
Matson Britton Architects (email)
Attn: Mr. Cove Britton

Attachments: Figure A-2 (Revised), Partial Site Plan & Engineering Geologic Map
Figure A-6 (Revised), Geologic Cross-Section A-A'
Figure A-7 (Revised), Geologic Cross-Section B-B'
Figure A-9 (Revised), Pseudo-Static Slope Stability Analysis Along Cross-Section A-A'

KEY NOTES

1. (N) Three-Story Residence (Two Stories Above Grade and Partial Basement), Attached 3-Car Garage, and Chapel (Shaded, Basement Dashed Outline and Darker Shading)
2. Two-Story A.D.U. with Basement-Level Basketball Half Court and One Story Above Grade and Attached 1-Car Garage (Shaded)
3. (N) Swimming Pool with Infinity Edge (Shaded)
4. (N) Retaining Wall, Typical (Solid)
5. Area of (N) Driveway and Auto Court (Shaded & Stippled)



LEGEND

af	Fill
Ols	Old Landslide Deposit (arrows indicate direction of movement)
KJf/Qls?	Franciscan Complex/Ancient Landslide Deposit (?)
—?—	Geologic Contact, queried where uncertain
	Limits of Fill & Fill Slope, queried where uncertain
B-1 ⊕	Approximate Location of Soil Boring by Murray Engineers, Inc., March 28, 2017 & November 27, 2019
A A'	Location of Cross-Sections (see Figure A-6 & Figure A-7)

Base: Site Plan by RI Engineering Inc., dated April 9, 2021

Approximate Scale: 1 inch = 40 feet

Contour Interval = 1 foot

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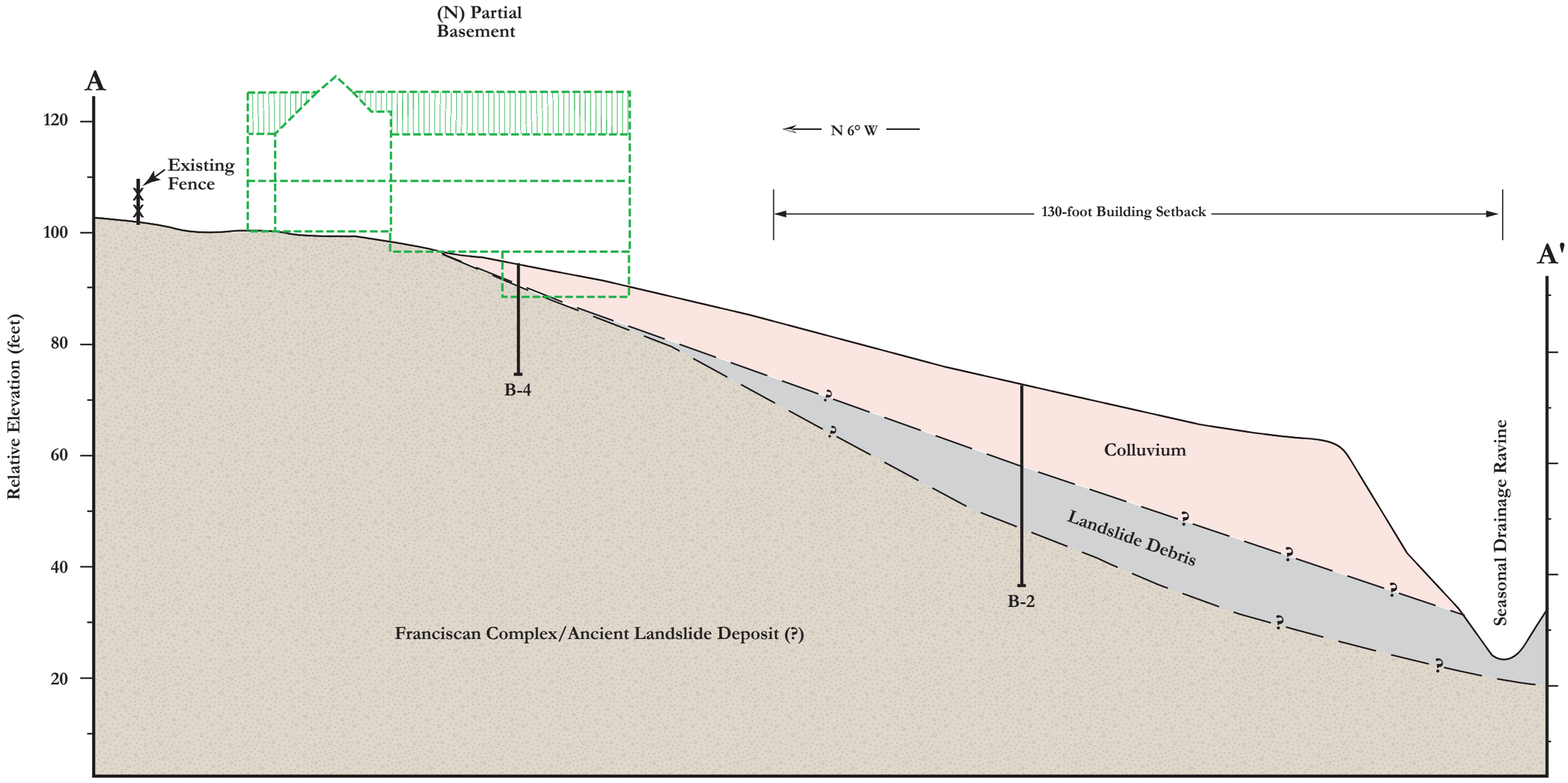
PARTIAL SITE PLAN & ENGINEERING GEOLOGIC MAP

WATERS RESIDENCE
APN 351-42-004 PEACOCK COURT
SANTA CLARA COUNTY, CALIFORNIA

PROJECT NO.		
3262-1L2	JULY 2023	FIGURE A-2 (REVISED)



Note: This section was field measured and the slope in the area of the seasonal drainage ravine and the centerline of the ravine are slightly different than shown on the site plan

LEGEND

B-1 — Approximate Location of Soil Boring by Murray Engineers, Inc., drilled March 28, 2017

Base: Laser Range Finder and Zip Level Survey by Murray Engineers, Inc., April 21, 2017

Approximate Scale: 1 inch = 20 feet (horizontal = vertical)

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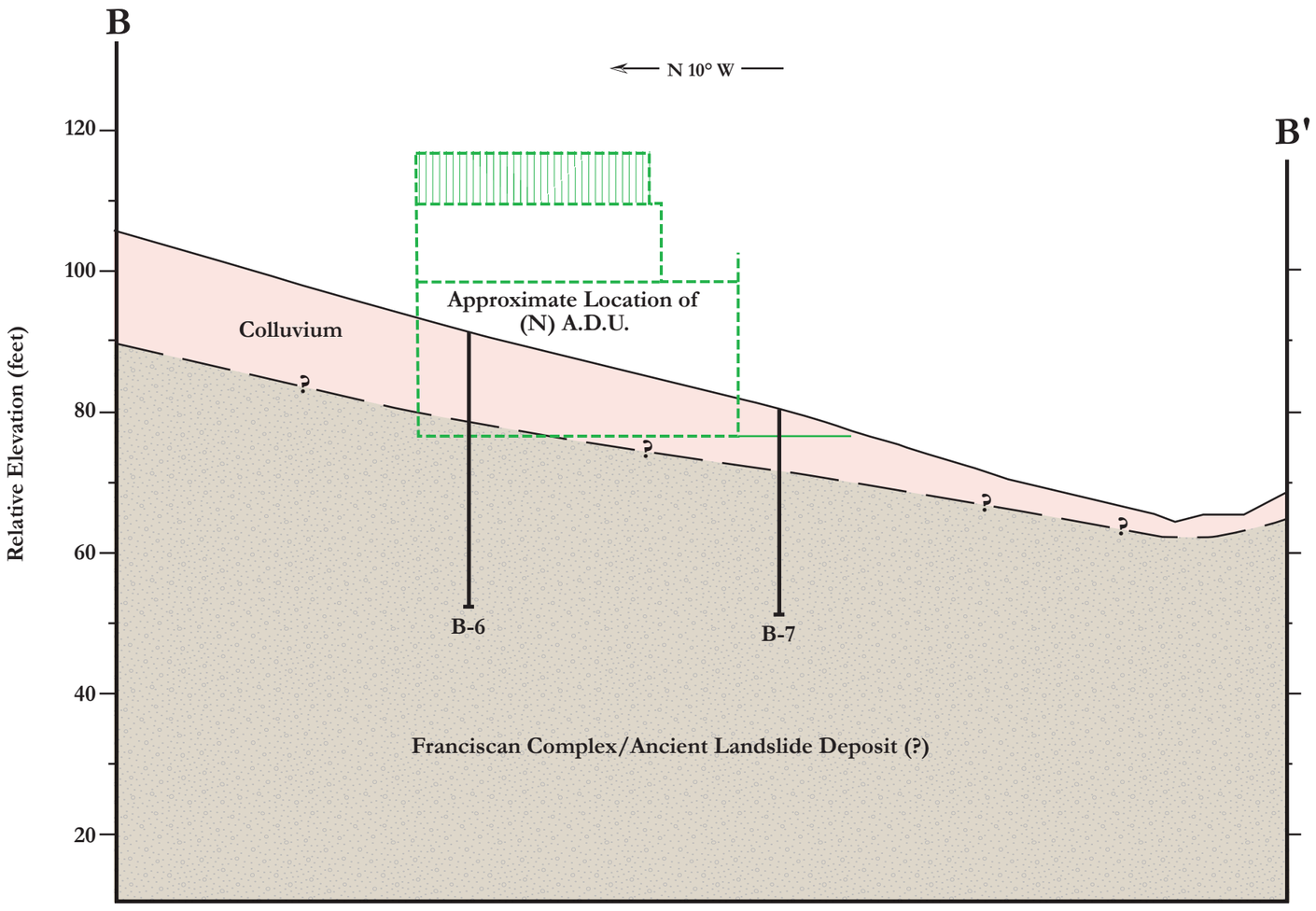
GEOLOGIC CROSS-SECTION A-A'

WATERS RESIDENCE
APN 351-42-004 PEACOCK COURT
SANTA CLARA COUNTY, CALIFORNIA

PROJECT NO.		
3262-1L2	JULY 2023	FIGURE A-6 (REVISED)



LEGEND

B-7 Approximate Location of Soil Boring by Murray Engineers, Inc., drilled November 27, 2019

Base: Grading & Drainage Plan by RI Engineering Inc., dated January 2019

Approximate Scale: 1 inch = 20 feet (horizontal = vertical)

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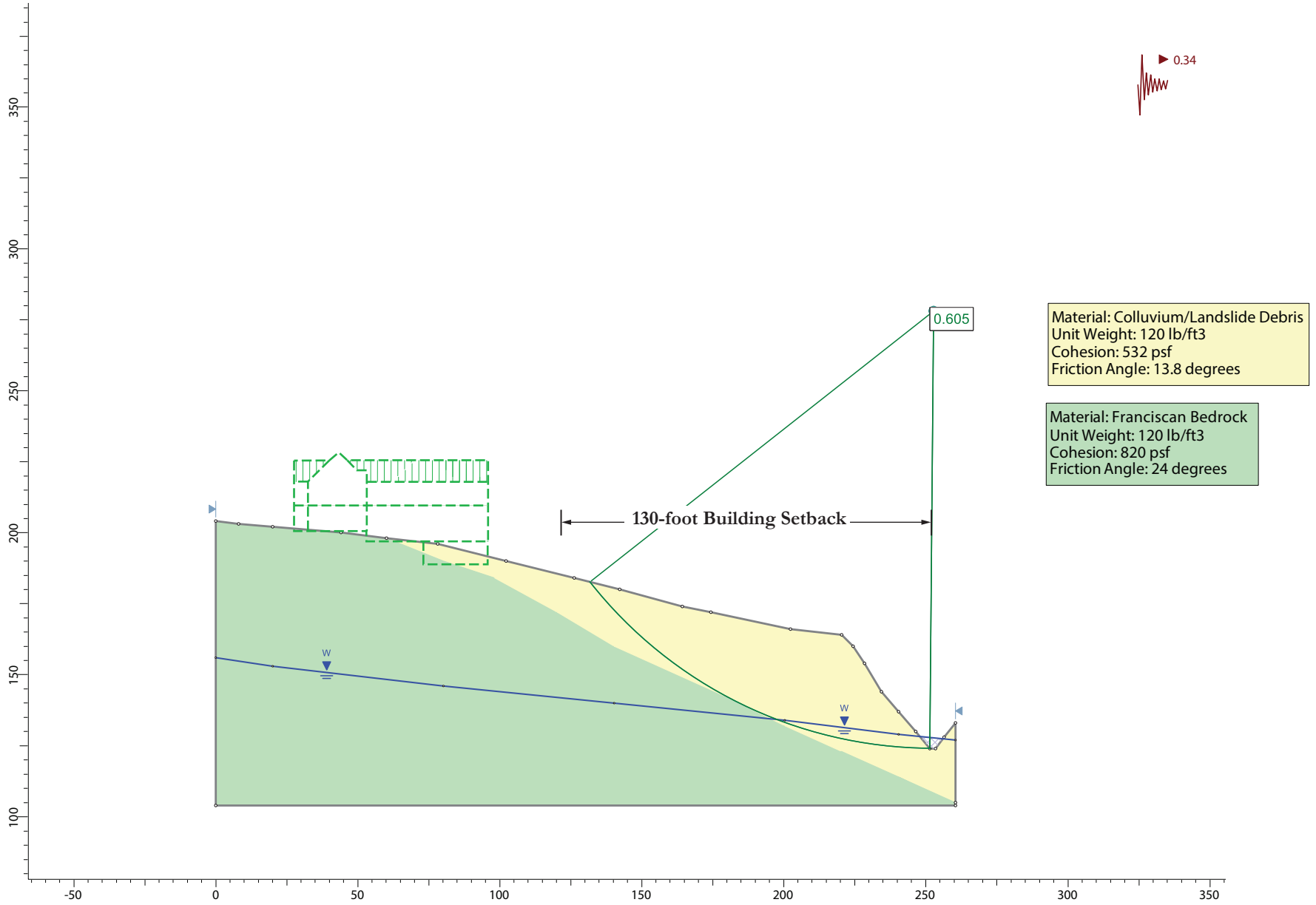
GEOLOGIC CROSS-SECTION B-B'

WATERS RESIDENCE
APN 351-42-004 PEACOCK COURT
SANTA CLARA COUNTY, CALIFORNIA

PROJECT NO.		FIGURE
3262-1L2	JULY 2023	A-7 (REVISED)



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PSEUDO-STATIC SLOPE STABILITY ANALYSIS ALONG CROSS-SECTION A-A'

PROJECT NO. 3262-1R1	JULY 2023	FIGURE A-9 (REVISED)