APPENDIX H
Supplemental Geotechnical Review and Analysis

SUPPLEMENTAL GEOTECHNICAL REVIEW AND ANALYSIS, PROPOSED NEW RESIDENCE
6110 CAMINO DE LA COSTA, LA JOLLA
SAN DIEGO COUNTY, CALIFORNIA 92037
APN 357-141-05-00

FOR

DR. JOSEPH STREET
CALIFORNIA COASTAL COMMISSION
1121 L ST. #503
SACRAMENTO, CALIFORNIA 95814

MR. MATTHEW SEGAL, AIA
3000 UPAS ST. #104
SAN DIEGO, CALIFORNIA 92104

W.O. 8538-A-SC **JANUARY 8, 2024**

GeoSoils, Inc.

Geotechnical • Geologic • Coastal • Environmental

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January 8, 2024

W.O. 8538-A-SC

Dr. Joseph Street
California Coastal Commission
1121 L St. #503
Sacramento, California 95814

Mr. Matthew Segal, AIA
3000 Upas St. #104
San Diego, California 92104

Subject: Supplemental Geotechnical Review and Analysis, Proposed New Residence, 6110 Camino De La Costa, La Jolla, San Diego County, California 92037, APN 357-141-05-00

References:
1. Architectural Plans, 6110 Camino de le Costa, Prepared by Jonathan Segal /FAIA, project No 1066101, dated November 29, 2023.

2. "Coastal Hazard and Wave Runup Analysis, 6110 Camino de le Costa, La Jolla, San Diego County, California," W.O. S8538, dated January 26, 2023, by GeoSoils, Inc.

3. "Report of Preliminary Geotechnical Investigation, Proposed Single-Family Residence, 6110 Camino de la Costa, La Jolla, California," CWE 2220191.01, dated July 15, 2022, by Christian Wheeler Engineering.

Dear Dr. Street:

We have completed a supplementary geotechnical review and analysis of the updated architectural plans (Reference 1) with respect to the coastal hazard and wave runup analysis (Reference 2) prepared by us, and the preliminary geotechnical investigation (Reference 3) prepared by Christian Wheeler Engineering.

SUMMARY OF PROPOSED SITE LAYOUT CHANGES SINCE PREVIOUS REPORTS

The following changes to the proposed site layout since the production of the referenced reports include but are not limited to:

- Based on the revised plans, grading would require approximately 1,155 yd^3 of cut (150 yd^3 of native soil and 1,005 yd^3 of artificial fill), and 20 yd^3 of fill, resulting in a net export of 1,135 yd^3 of soil.

- The original design for the proposed ground-floor basement has been reduced in size from 5,523 ft^2 to 3,138 ft^2 in order to accommodate for a corresponding reduction in grading disturbance of native soil, and to allow for a 40 foot bluff setback rather than a 25 foot setback.

- The existing basement area located at the bluff boundary is to be completely removed and backfilled to grade with compacted artificial fill.

- The proposed pool has been redesigned to be located and elevated to the first floor level rather than the basement level, also reducing the amount of grading disturbance of native soil.

ANALYSIS

We've reviewed the slope stability analysis along cross sections A-A', B-B', & C-C' of the referenced preliminary geotechnical report and are in agreement with its findings. We've extrapolated the 1.5 factor of safety of the static analyses, added the retreat rate over the life of the proposed development of less than 3 feet in 75 years as stated in our referenced coastal hazard and wave runup analysis, and plotted this for the geologic setback line (GSL) from the bluff edge, see Plate 1 (Geotechnical Map).

PREVIOUS FINDINGS

As presented in the "Bluff Erosion" section of the referenced Preliminary Geotechnical Investigation:

> "it is our professional opinion and judgment that even with the effects of projected sea level rise, the horizontal extent of bluff top retreat over the design life of the residence will be less than the minimum bluff top setback recommendation of 25 feet for the proposed project."

As presented in the "Results of Stability Analysis" section of the referenced Preliminary Geotechnical Investigation:

> "The results of our stability analyses indicate that the lowest static factors-of-safety for the proposed configuration of the site are approximately 4.4, 4.6, and 4.9 along cross sections A-A', B-B', and C-C', respectively." "Based on the results of our static bluff stability analyses, the existing coastal bluff at the site is considered to possess minimum factors-of-safety against static, gross failure in excess of 1.5, which is the minimum that is generally considered stable."

Similar results for the pseudo-static stability analyses were presented, with the lowest pseudo-static factors-of-safety approximately 3.0, 3.0, and 3.2 along the respective cross sections, which are greater than the minimum factor-of-safety of 1.1 generally considered stable for pseudo-static gross failure.

As presented in the "Future Bluff Retreat Summary" section of the referenced Coastal Hazard and Wave Runup Analysis:

> "one can conservatively say the retreat rate is the average of the historic retreat rate and the future retreat rate at the end of the life of the development. The average retreat rate is 0.03 ft/y, which over the life of the development would account for less than 3 feet of bluff retreat."

As presented in the "Conclusions" section of the referenced Coastal Hazard and Wave Runup Analysis:

> "the site is well setback from the impact of shoreline erosion in consideration of SLR. No protective devices will be necessary to protect the proposed development from any existing or anticipated future coastal hazards over the life."

CONCLUSIONS AND RECOMMENDATIONS

The GSL we have added to the site plan to supplement the referenced reports is approximately 20 feet seaward of the allowed design setback of 25 feet, meaning the design setback is approximately 20 feet landward of our GSL. The reduced amount of grading disturbance of native soil due to the reduced basement size design and also due to the relocation of the proposed pool to the first floor from the basement level is more conservative in regards to bluff stability compared to the previous construction design.

Based upon our review of the referenced reports, it is our opinion that the design changes portrayed in the updated architectural plans are more conservative than the previous plans, with respect to site stability from a geotechnical perspective, and that the findings in the referenced reports are still valid.

LIMITATIONS

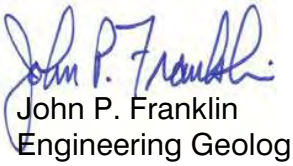
The materials encountered on the project site and used for our analysis are believed representative of the area; however, soil and bedrock materials vary in character between excavations and natural outcrops or conditions exposed during mass grading. Site conditions may vary due to seasonal changes or other factors.

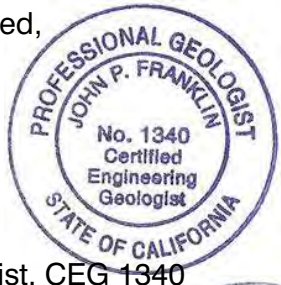
Inasmuch as our study is based upon our review and engineering analyses and laboratory data, the conclusions and recommendations are professional opinions. These opinions have been derived in accordance with current standards of practice, and no warranty, either express or implied, is given. Standards of practice are subject to change with time. GSI assumes no responsibility or liability for work or testing performed by others, or their inaction. In addition, this report may be subject to review by the controlling authorities. Thus, this report brings to completion our scope of services for this portion of the project.

The opportunity to be of service is sincerely appreciated. If you should have any questions, please do not hesitate to contact our office.

Respectfully submitted,

GeoSoils, Inc.





John P. Franklin
Engineering Geologist, CEG 1340

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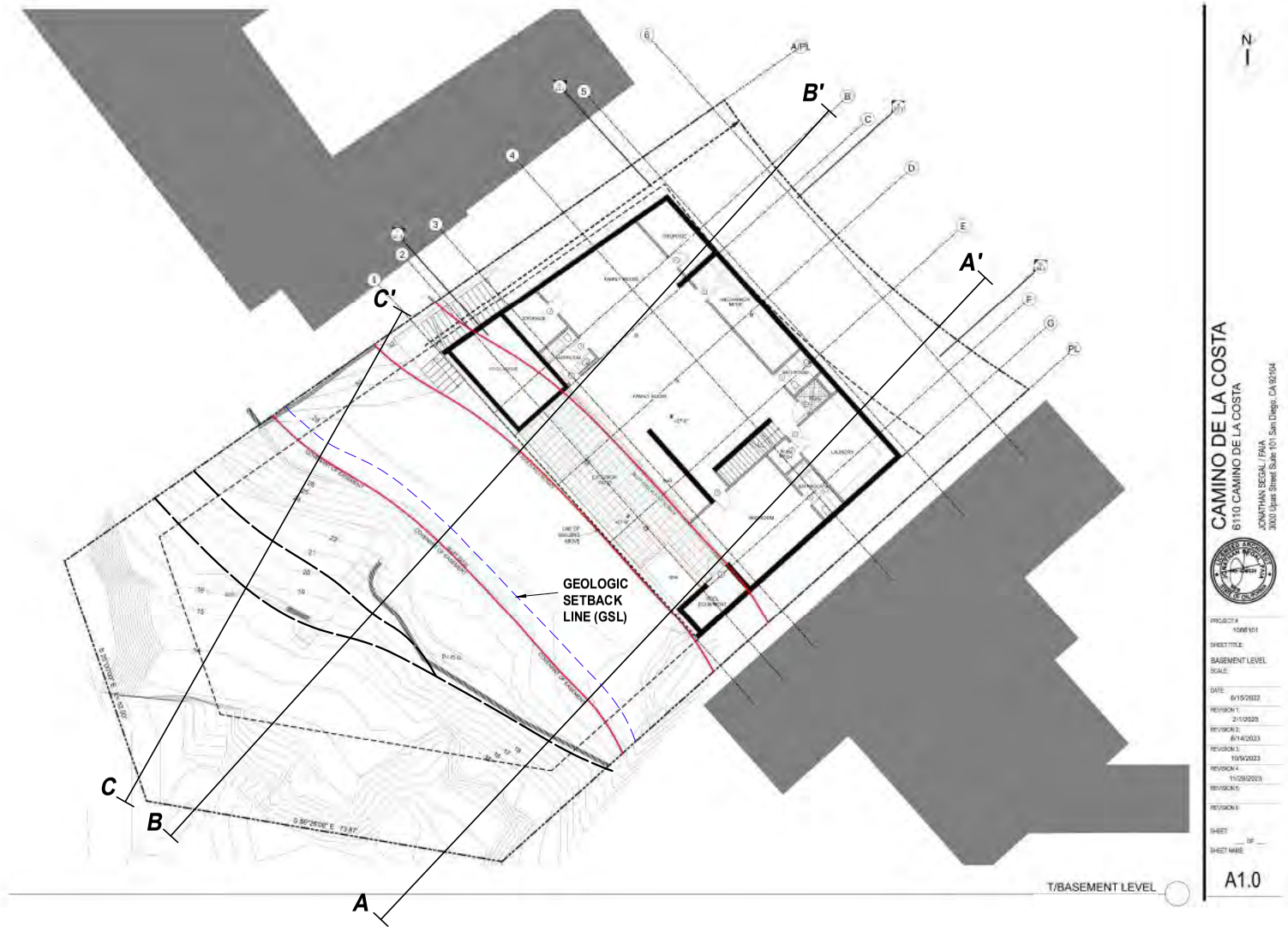
Enclosure: Plate 1 - Geotechnical Map

Distribution: (1) Addressee (PDF via email)

GSI LEGEND

C — C' — LOCATION OF GEOLOGIC CROSS SECTION (CHRISTIAN WHEELER ENGINEERS, 2022)



CAMINO DE LA COSTA
6110 CAMINO DE LA COSTA

JONATHAN SEGAL / FAIA
3000 Upas Street Suite 101 San Diego, CA 92104

PROJECT #: 1006101
SHEET TITLE: BASEMENT LEVEL
SCALE:
DATE: 6/15/2022
REVISION 1: 2/1/2023
REVISION 2: 6/14/2023
REVISION 3: 10/9/2023
REVISION 4: 11/28/2023
REVISION 5:
REVISION 6:
SHEET: OF
SHEET NAME: A1.0

N

GRAPHIC SCALE
10 0 5 10 20
1" = 10'

ALL LOCATIONS ARE APPROXIMATE

This document or efile is not a part of the Construction Documents and should not be relied upon as being an accurate depiction of design.

GeoSoils, Inc.

GEOTECHNICAL MAP

Plate 1

W.O. 8538-A-SC	DATE: 01/24	SCALE: 1" = 10'