

## SECTION 4. LIMITATIONS

The analyses and recommendations submitted herein are based in part upon information obtained from the field borings and bulk samples. Variations of the subsurface conditions between and beyond the field data points may occur, and the nature and extent of these variations may not become evident until construction is underway. If variations then appear evident, it will be necessary to re-evaluate the recommendations presented herein.

The field boring locations indicated herein are approximate, having been estimated using a handheld GPS device. Elevations of the borings were estimated from contours and spot elevations shown on the Roadway Plan and Profile dated May 2022 transmitted by WSP USA. The field boring locations and elevations should be considered accurate only to the degree implied by the methods used.

The stratification breaks shown on the graphic representations of the borings depict the approximate boundaries between soil types and, as such, may denote a gradual transition. Water level data from the borings were measured at the times shown on the graphic representations and/or presented in the text of this report. This data has been reviewed and interpretations made in the formulation of this report. However, it should be noted that groundwater levels can fluctuate depending on surface water runoff, storm surge conditions, seasonal precipitation, perched groundwater, and other factors.

This report has been prepared for the exclusive use of WSP USA and their client, the State of Hawaii, Department of Transportation – Highways Division for specific application to the design of the *Kamehameha Highway Drainage and Safety Improvements* project in Waialua on the Island of Oahu, Hawaii in accordance with generally accepted geotechnical engineering principles and practices. No warranty is expressed or implied.

This report has been prepared solely for the purpose of assisting the engineers in the preparation of the design documents for the highway improvements project. Therefore, this report may not contain sufficient data, or the proper information, for use to form the basis for the preparation of construction cost estimates or contract bidding. A

contractor wishing to bid on this project should retain a competent geotechnical engineer to assist in the interpretation of this report and/or performance of site-specific exploration for bid estimating purposes.

The owner/client should be aware that unanticipated soil conditions are commonly encountered. Unforeseen subsurface conditions, such as perched groundwater, soft deposits, hard layers, or cavities may occur in localized areas and may require additional probing or corrections in the field (which may result in construction delays) to attain a properly constructed project. Therefore, a sufficient contingency fund is recommended to accommodate these possible extra costs.

This geotechnical engineering exploration conducted at the project site was not intended to investigate the potential presence of hazardous materials existing at the project site. It should be noted that the equipment, techniques, and personnel used to conduct a geo-environmental exploration differ substantially from those applied in geotechnical engineering.

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END OF LIMITATIONS