

## SECTION 4. LIMITATIONS

The analyses and recommendations submitted herein are based in part upon information obtained from the field borings. Variations of conditions between and beyond the field borings 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 are approximate, having been estimated by using a hand-held Global Positioning System (GPS) device and shown on the roadway plans provided by WSP USA Inc. on December 12, 2018. Elevations of three borings were estimated based on spot elevations shown on the available topographic survey maps prepared by Controlpoint Surveying, Inc. for some of the sign locations. The physical locations and elevations of the borings should be considered accurate only to the degree implied by the methods used.

The stratification breaks shown on graphic representations of the borings depict the approximate boundaries between soil/rock 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. These data have been reviewed and interpretations made in the formulation of this report. However, it must be noted that fluctuation may occur due to variation in seasonal rainfall, surface runoff and other factors. These data have been reviewed and interpretations made in the formulation of this report.

This report has been prepared for the exclusive use of KSF, Inc. for specific application to the *Interstate Route H-1 and H-201 Destination Sign Upgrade/Replacement, Phase 3, Federal Aid Project No. NH-0300(144), Island of Oahu, Hawaii* project 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 engineer in the design of the proposed project. Therefore, this report may not contain sufficient

data, or the proper information, to serve as the basis for preparation of construction cost estimates. A contractor wishing to bid on this project is urged to retain a competent geotechnical engineer to assist in the interpretation of this report and/or in the performance of additional site-specific exploration for bid estimating purposes.

The owner/client should be aware that unanticipated soil conditions are commonly encountered. Unforeseen soil 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 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