

**GEOTECHNICAL ENGINEERING EXPLORATION  
TRAFFIC SIGNAL MODERNIZATION PROJECT  
KALANIANA'OLE HIGHWAY & KALANIIKI STREET INTERSECTION  
HONOLULU, OAHU, HAWAII  
W.O. 7328-00(C)    AUGUST 12, 2019**

<b>SUMMARY OF FINDINGS AND RECOMMENDATIONS</b>
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Our field exploration generally encountered a pavement structure consisting of approximately 5 inches of asphaltic concrete overlay followed by about 6 inches of Portland cement concrete. Below the pavement, fill material consisting of stiff to very stiff clay was encountered at a depth of approximately 6 feet underlain by medium hard to hard basalt rock formation extending to the maximum depth explored of about 26.7 feet below the existing ground surface. We did not encounter groundwater in the boring drilled at the time of our field exploration. However, it should be noted that water levels may vary with seasonal rainfall, time of year, and other environmental factors.

We recommend supporting the new traffic signal poles on cast-in-place concrete drilled shaft foundations. Based on the subsurface conditions encountered, for traffic signal poles with mast arm lengths of 40 feet or less, we believe the Standard Plan TE-33A.1 and 33A.2, Type II Traffic Signal Standard by the State of Hawaii – Department of Transportation, Highways Division may be used for the design of the proposed drilled shaft foundations. We did not encounter groundwater at the time of our field exploration. Therefore, we recommend utilizing the appropriate drilled shaft diameters and lengths in accordance with TE-33A.2, Type II Traffic Signal Standard Drilled Shaft Foundation Schedule for a Level Ground Condition – Above Ground Water Table.

It is imperative that a Geolabs representative is present at the project site to observe the drilling and installation of the drilled shafts during construction to confirm the assumed subsurface conditions.

The text of this report should be referred to for detailed discussion and specific design recommendations.

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END OF SUMMARY OF FINDINGS AND RECOMMENDATIONS