

**GEOTECHNICAL ENGINEERING EXPLORATION
FREEWAY MANAGEMENT SYSTEM
PHASE 3, UNITS 1 AND 2, IM-0300(152)
INTERSTATE ROUTES H-1 AND H-2 FREEWAYS
DISTRICTS OF HONOLULU AND EWA, OAHU, HAWAII
W.O. 6891-30(A) FEBRUARY 5, 2021**

SUMMARY OF FINDINGS AND RECOMMENDATIONS

Based on our field exploration and research of available geologic information, the geologic units that comprise the sites include lava flows of the Koolau Volcanic series at the H-2 North, H-2 South and Waikele CCTV sites. The H-1/Kamehameha CCTV site encountered about a 14-foot thick layer of fill material overlying lava flows of the Koolau Volcanic series. The Ko Olina CCTV site encountered colluvium. We did not encounter groundwater in the borings at the time of our field exploration.

In order to develop the required bearing and lateral load resistances for the new CCTV structures, we recommend supporting them on 42-inch diameter drilled shaft foundations. Based on the anticipated structural loads and the subsoil conditions encountered at each site, the length of the drilled shafts supporting the CCTV structures would range from 6 to 13 feet.

The performance of the drilled shafts depends significantly upon the contractor's method of construction, construction procedures, and workmanship. Therefore, the contractor should follow the recommendations and general guidelines presented in this report during the drilled shaft foundation construction.

The drilled shaft subcontractor will need to have the appropriate equipment and tools to drill through the cobbles, boulders, and basalt rock encountered. Basalt rock was encountered at the Waikele CCTV and H-2 North CCTV sites. Residual and saprolitic soils were encountered at the H-1/Kamehameha CCTV and H-2 South CCTV sites. It should be noted that there is a high potential for encountering basalt rock in the form of unweathered cobbles and boulders in the residual and saprolitic soils. In addition, cobbles and boulders may be encountered in the fill. The text of this report should be referred to for detailed discussion and recommendations.

END OF SUMMARY OF FINDINGS AND RECOMMENDATIONS