

1. INTRODUCTION

At the request of WSP, on behalf of the State of Hawai'i Department of Transportation (HDOT), ASM Affiliates (ASM) has prepared this archaeological monitoring plan for the proposed Kamehameha Highway Pedestrian Safety Project in the vicinity of Laniākea Beach, Kawaioloa Ahupua'a, Waialua District, O'ahu (Figures 1 - 4). This archaeological monitoring plan has been prepared in compliance with the Department of Land and Natural Resources-State Historic Preservation Division's (DLNR-SHPD) Rules Governing Standards for Archaeological Monitoring Studies and Reports as contained in Hawai'i Administrative Rules (HAR) 13§13-279. As the highway improvements are being conducted with aid of monies from the Federal Highway Administration (FHWA), this plan has also been prepared in compliance with commitments made during the National Historic Preservation Act (NHPA) Section 106 process, and historic preservation review under Hawaii Revised Statutes (HRS) §6E-8, and any additional work that is performed during the monitoring project will be consistent with the *Secretary of the Interior's Standards and Guidelines for Archaeological Documentation* (48 FR 44734-370). A description of the proposed Undertaking and the Area of Potential Effects (APE) is presented below, followed by a summary of known historic properties, prior archaeological studies, and anticipated archaeological remains in the vicinity of the proposed project, and an outline of the procedures to be followed and implemented during the archaeological monitoring and subsequent reporting effort.

PROPOSED UNDERTAKING

The HDOT is proposing to improve Kamehameha Highway in the vicinity of Laniākea Beach. While funding when the project started in 2011 was specifically intended to address shoreline erosion, the major project purpose is now improving pedestrian safety. The proposed project will also address or accommodate coastal erosion to improve roadway reliability; relieve congestion to reduce travel times through the area; and provide safe facilities and access for vehicles, pedestrians, and cyclists. The entirety of the proposed alignment route is shown in Figure 5 and close-ups of the southern half and northern half are shown in Figures 6 and 7. Improving this section of Kamehameha Highway was identified as a priority in the 2003 *Statewide Highway Shoreline Protection Study* (Edward K. Noda and Associates 2003), which noted imminent or actual highway damage due to waves; and in the *North Shore Sustainable Communities Plan* (City and County of Honolulu 2011) that identified serious traffic congestion in this area. Concerns raised by the community included the need to address traffic congestion that impacts emergency vehicle response time, the desire to promote alternative modes of transportation and minimize the number of cars on the roadway, and the need for roadway improvements that correct safety deficiencies.

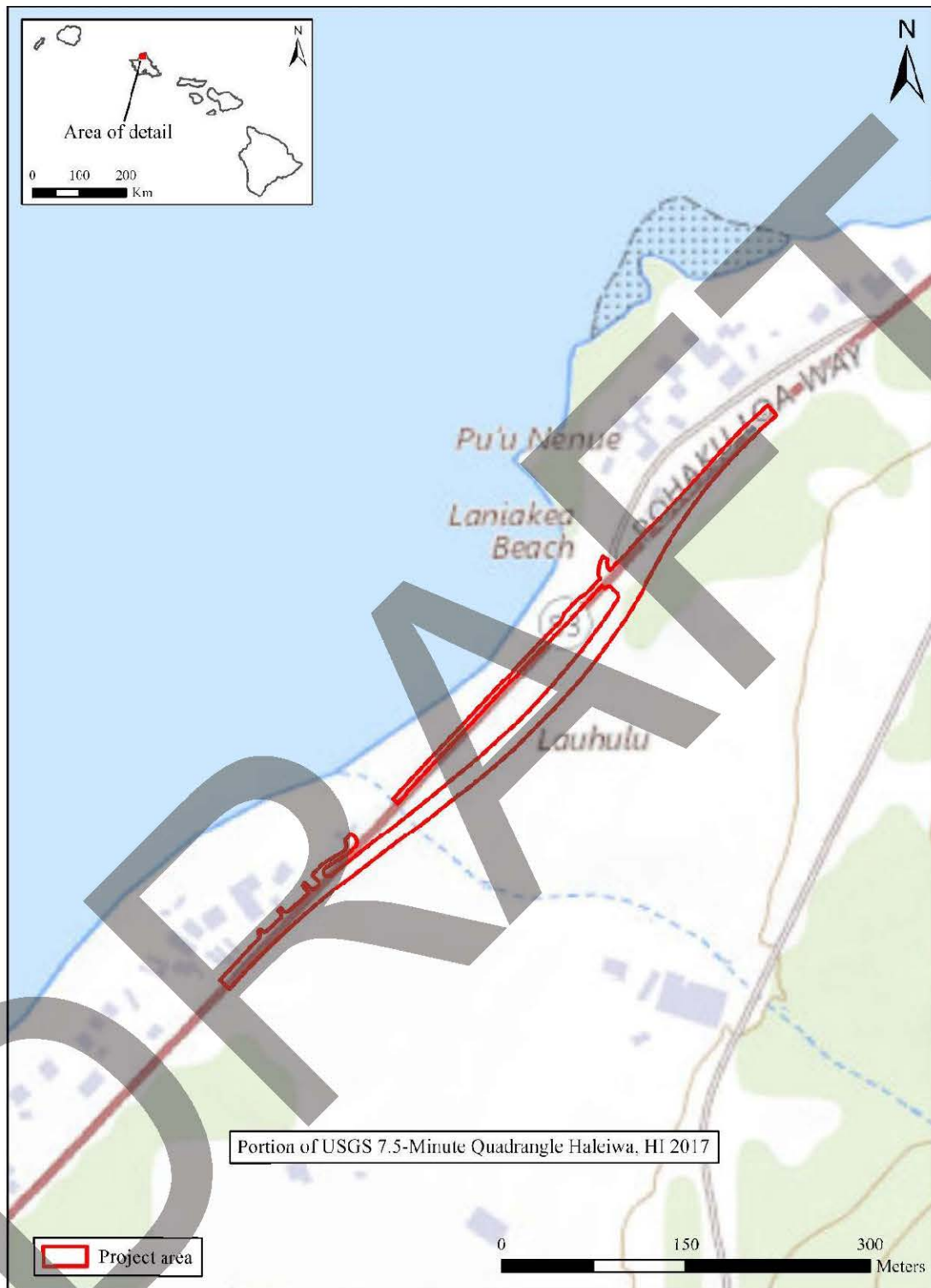


Figure 1. Portion of a 1996 USGS 7.5 Quadrangle Haleiwa with project area.



Figure 2. Recent satellite imagery with project area.

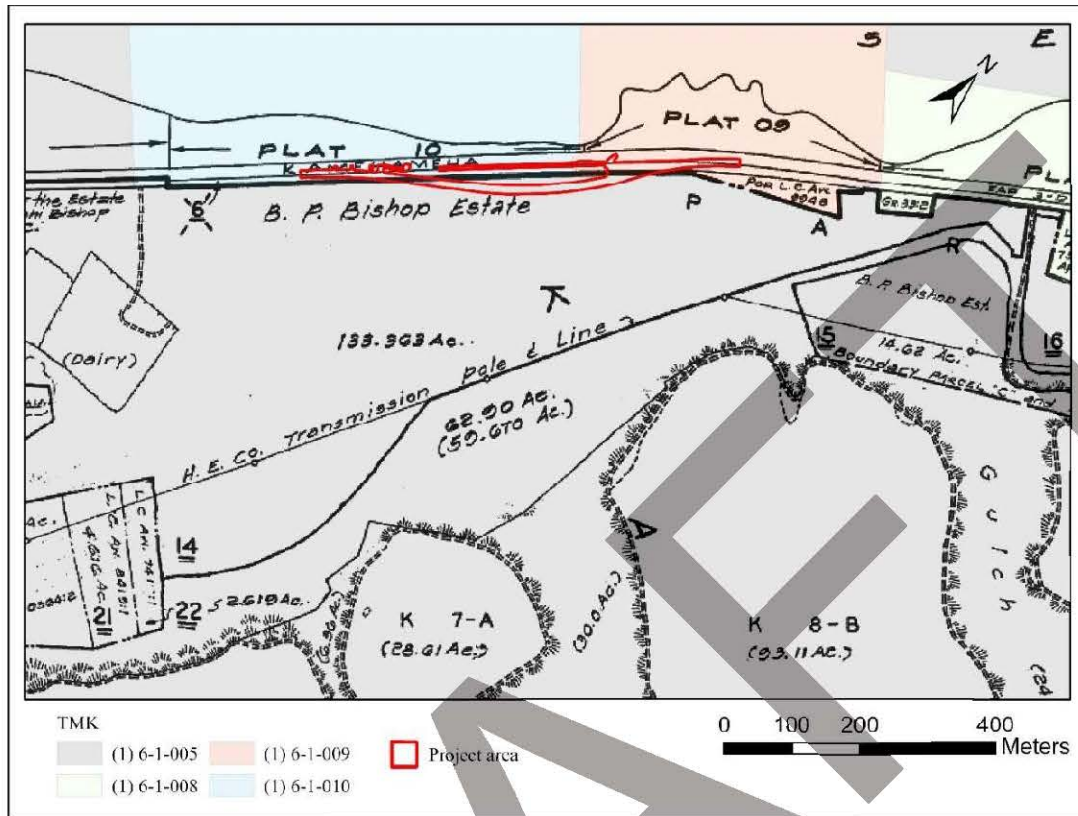


Figure 3. Tax Map Key (TMK) map for plats (1) 6-1-005, -009, and -010.

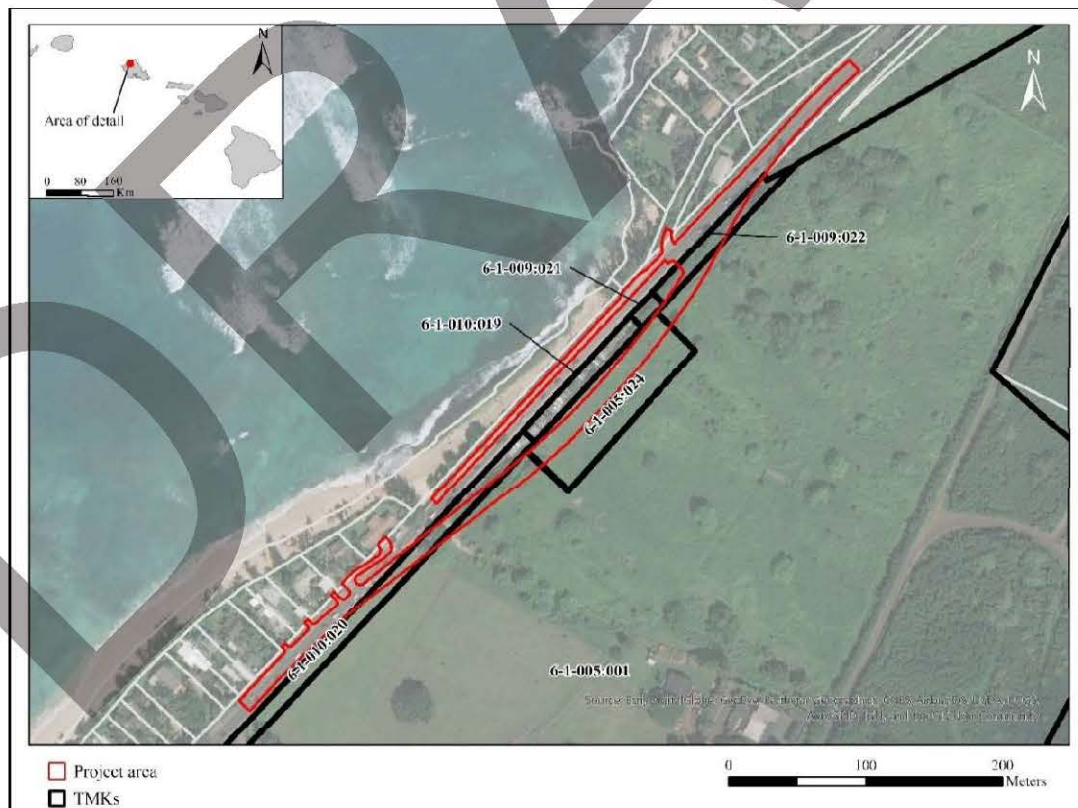


Figure 4. Aerial with project area outlined in red and TMK parcels shown outlined in black.

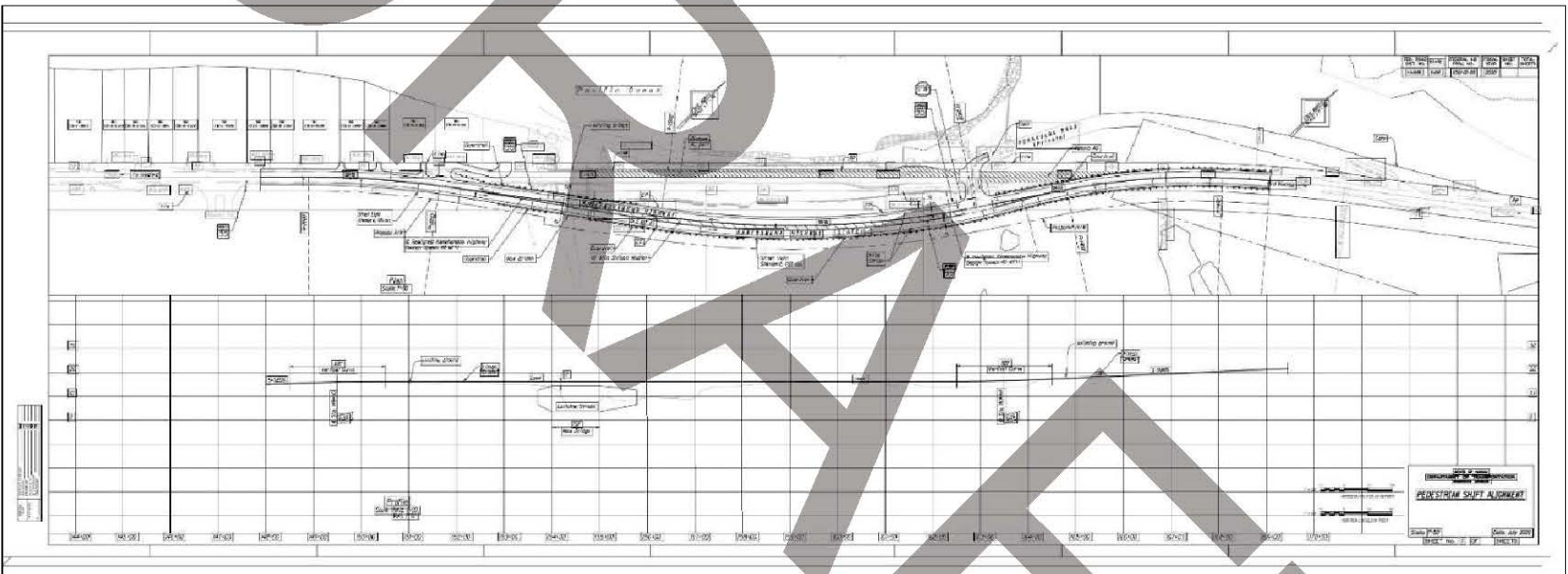
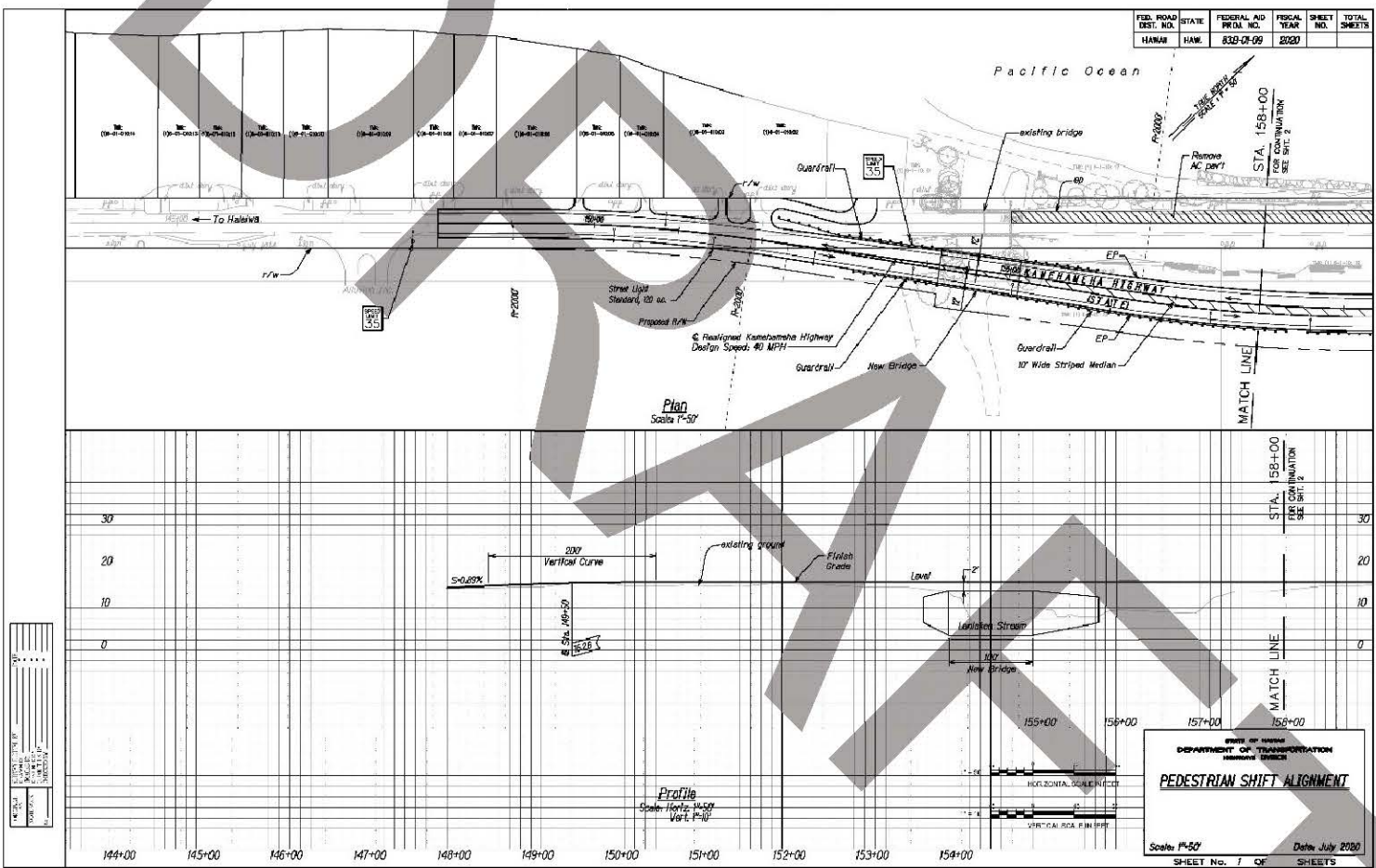
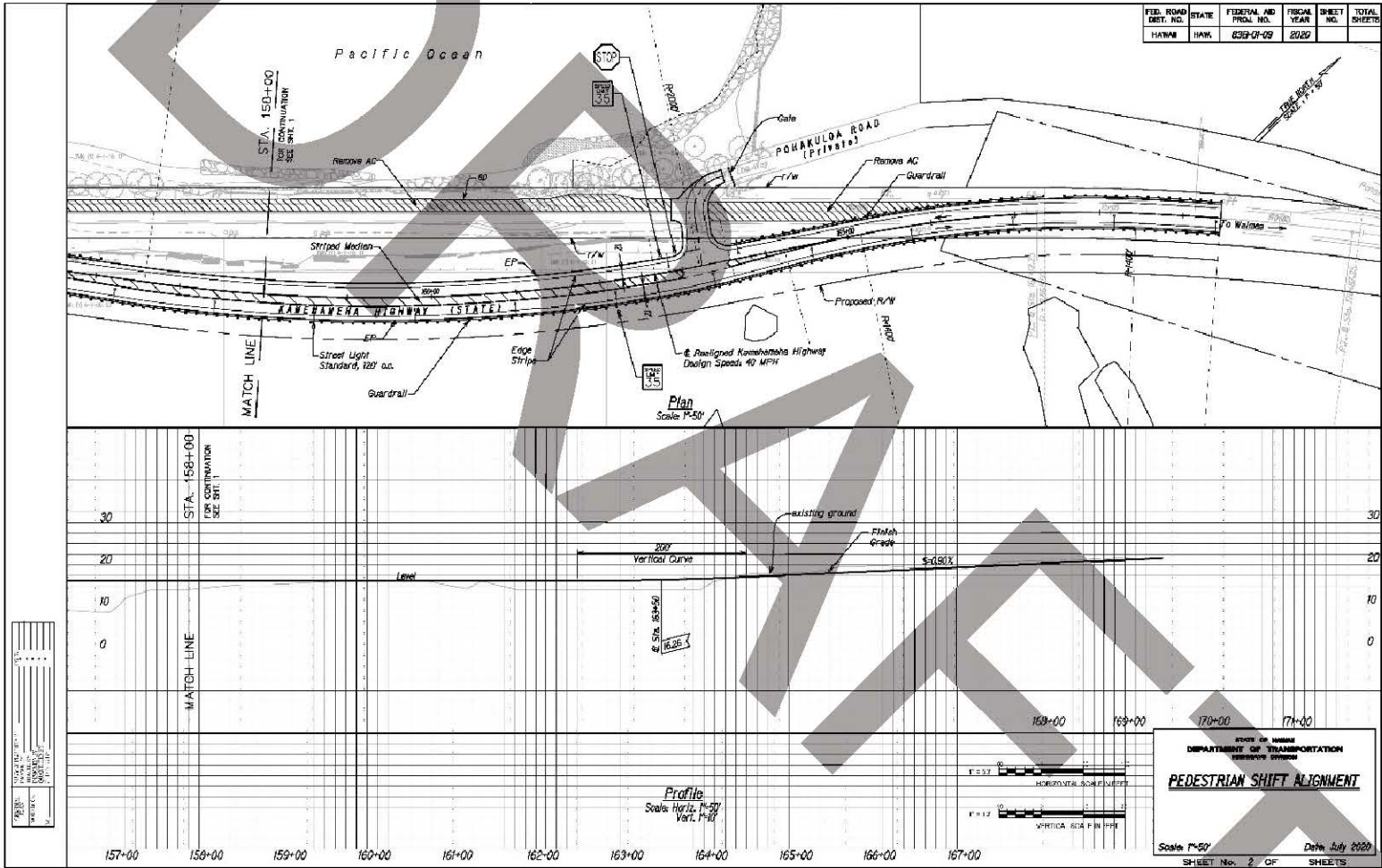


Figure5. Proposed alignment route in the vicinity of Laniākea Beach.





PROJECT AREA

The project area is located roughly two miles northeast of Hale'iwa Town within the coastal lowlands of the *ahupua'a* of Kawaihoa in the Waialua District, Island of O'ahu and will extend for roughly 600 meters between the driveway entrance to Kawaihoa Ranch (former Meadow Gold Dairy) to the northern side of the Highway's intersection with Pohakuloa Way (see Figure 3) and include the following TMKs: (1) 6-1-005:023 and 024; 6-1-009:021 and 022; and 6-1-010:019 and 020. The proposed project area includes the existing portion of Kamehameha Highway near Laniākea Beach and the proposed realignment route which extends eastward (*mauka*) onto adjacent lands and reconnects with the existing Kamehameha Highway.

The elevation within the study area ranges between sea level and 15 feet above sea level. The underlying geology in the northern portion of the project area is Ko'olau Basalt that is dated to between 1.8 to 3 million years (mapped in Figure 9 as "QTkl"). Moving in a southerly direction this basalt gives way (may be superseded by) alluvial deposits (mapped in Figure 9 as "Qa") and ultimately beach deposit (mapped in Figure 9 as "Qbd") occupy the southern half of the study corridor. Overlaying the geology, the soils within the study area are primarily mapped as Waialua silty clay (mapped in Figure 8 as "WkA," on a 0 to 3 percent slope) with a small amount of Waialua stony silty clay (mapped in Figure 8 as "WIB," on a 3 to 8 percent slope); the soil mapping also shows small amounts of Beaches (mapped in Figure 8 as "BS") and Jaucas sand (mapped in Figure 8 as "JaC" on a 0 to 15 percent slope) within the project area (Foote, et al. 1972). Subsurface testing of the area, conducted as part of an archaeological inventory survey for the current project (Rechtman and Lauko 2021), demonstrated that sandy deposits occupy the entirety of portions of the project area which lie to the south of Lauhulu Stream drainage, a much greater extent than the soil mapping indicates.

Located within the subtropical climate zone, the mean annual precipitation within the current study area is roughly thirty-seven inches, with rainfall steadily increasing between the months of September through January. Rainfall gradually decreases between the months of February through August (Giambelluca, et al. 2013). The climate is relatively warm with a mean annual temperature ranging from 70° Fahrenheit during the winter months to 77° during the summer months (Giambelluca, et al. 2014). Vegetation within the study corridor reflects the fact that it has been used for grazing purposes for over a century. The area south of Lauhulu Stream drainage consists of grassed open pasture (Figures 10 and 11) and the area north of the stream drainage, based on underlying soils, contains a mix of grassed open pasture, *koa haole* or *ēkoa* (*Leucaena leucocephala*), guinea grass (*Megathyrsus maximus*), *hau* (*Hibiscus tiliaceus*), Date Palms (*Phoenix* sp.), *kiawe* (*Prosopis pallida*), banyan (*Ficus benghalensis*), and mixed weed and grass species (Figures 12 - 15).

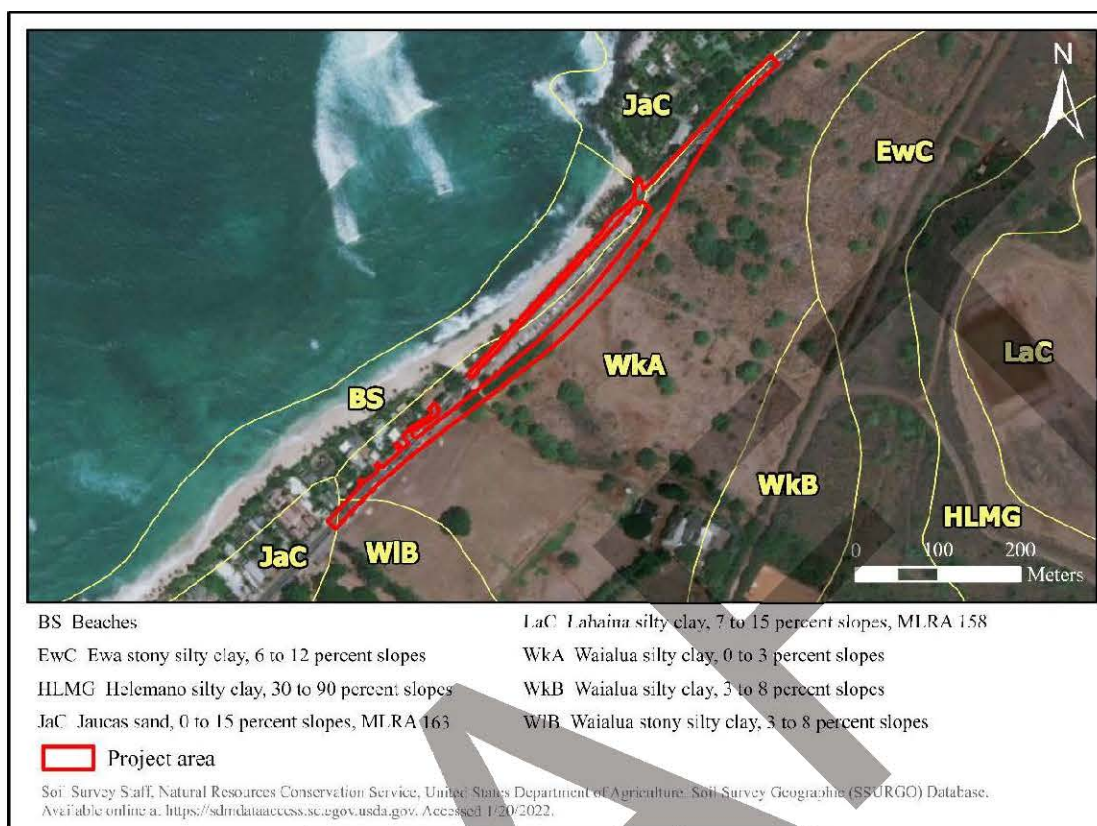


Figure 8. Aerial with soil survey overlay (Soil Survey Staff 2020).

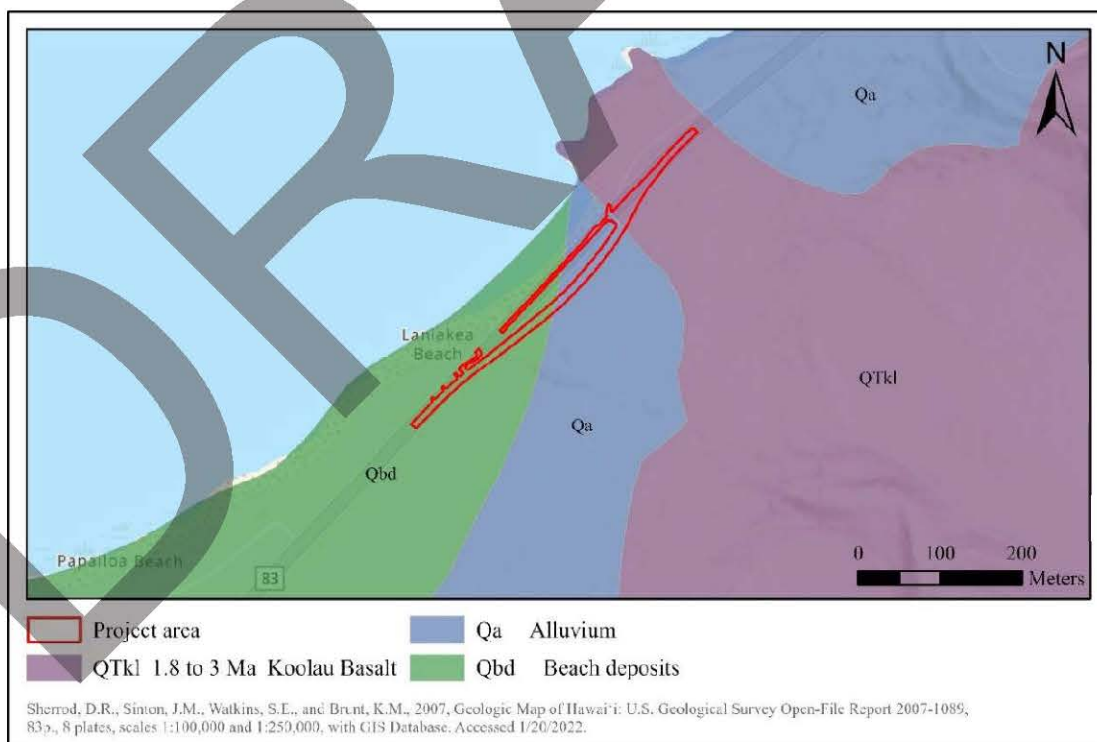


Figure 9. Portion of USGS map with geological overlay (Sherrod, et al. 2007).



Figure 10. Grassed open pasture in the southern portion of the project area, view to the northeast.



Figure 11. Edge of grassed open pasture at Lauhulu Stream drainage (in background), view to the north.



Figure 12. *Hau* and *kiawe* on the northern side of Lauhulu Stream, view to the northeast.



Figure 13. Grassed open pasture in the north-central portion of the project area, view to the northeast.



Figure 14. Grass and tree species in the northern portion of the project area, view to the northeast.



Figure 15. *Ēkoa* and banyan with mixed grasses in the northern section of the project area, view to the northeast.