Historic Land Use in the Project Area

As mentioned previously, the 174 acres of the project area includes a section of sloping prehistoric pahoehoe flows ranging from 350 feet to 700 feet in elevation. An unusual feature is the presence of two intermittent streams - Horse Shoe Bend Stream and Holualoa School Stream. These two stream beds flow parallel to each other through the property and join together below the Kuakini Highway (Figure 3).

Another feature of special interest is the presence of the historic railroad bed. This railroad played an important part in the agricultural development of Kona in the early part of this century. The railroad was built in 1901 by the Kona Sugar Company. The railroad was sold to the Kona Development Company in 1906 and was used to haul freight and lumber as well as sugar (Conde and Best 1973, Kelly 1983: 90-91). The railroad stretched from Holualoa to Keopuka and was probably used at least up to 1926.

There were a number of agricultural enterprises pursued in the "kula" lands of Kona in the late 19th and early 20th Century including sugar, cotton, sisil, coffee, goat and cattle ranching. However, from the traces left on the ground the project area shows the effects of two main historic uses - coffee growing and cattle ranching. Although the two activities were probably pursued simultaneously, cattle ranching continues to today, but coffee farming in the property has been long abandoned.

Coffee Farming

Although most of the prime coffee growing land is well above the 700 foot elevation there is strong indication that coffee was planted in the present project on a strip directly below the railroad berm at the north end of the property, and extended makai along the two stream beds. The deep soil deposits and the ground moisture would have supported coffee plants below the elevation at which they generally flourish.

These areas were extensively modified with neat terracing along slopes and rock mounding in flat areas. Some of the rock piles are quite imposing with high stacking and neat facing. In fact, in one area stone clearance mounts were classified as burial platforms until they were tested (site 17). At first appearance these terraces and mounds are similar to the traditional and mainly prehistoric "Kona Field System". However, on closer inspection the terraces are wider with more formal facings and the planting areas are larger. The rock clearing was more

methodical and larger rocks were moved. This probably reflects the availability of draft animals and wagons and the commercial scale of the effort.

Coffee trees were observed along the stream bed to at least the 600 foot elevation and in one area at the northeast corner the trees appear evenly spaced and thick as if from the original plantings.

The coffee industry left other affects on the landscape. Besides the many terraces and rock mounds there are structures in the steeper terrain at the northwest corner of the property (Sites 15, 239) which appear to be loading ramps. These structures are stone platforms averaging 15 feet square with a level top surface. The downslope walls of the platforms are 6-8 feet above the ground and the upslopeside is level with the ground. It is likely that these were used to load or store coffee.

Site 240, at the extreme northeast is a square, well constructed stone foundation almost 30 feet on a side. It is situated on the top of a steep hill above "Horseshoe Bend" Stream. Although a quantity of historic material was found in the foundation rocks it remains unclear whether this was a residence or a work building. In any case, its use was probably related to coffee growing in the property.

Cattle Ranching

From the original introduction of cattle to the Big Island by Vancouver in 1794, cattle roamed wild in upland Kona (Kelly 1983: 79). However, it was not until the latter part of the 19th Century that commercial ranching became established. Whenever there are cultivated crops coexisting with grazing cattle,fences or walls to contain or exclude cattle are necessary. Nowhere else in Hawai'i can one find more plentiful and intricate networks of walls than in the Kona Region. The vast majority of these were built to control cattle and as a feature of the landscape are superimposed on the largely prehistoric "Kona Field System". Only recently have barbed wire and wire fences replaced stone walls for cattle control and even today stone walls are in use and continuously repaired. The building of a stone wall actually served two purposes; that of the wall itself and also to help clear and improve pasture and growing land. In all cases, the raw material was available within a few steps. Mr. Gomes, a long time Kona rancher remembers that in the 20s and 30s walls could be built for 35 or 40¢ a fathom (Kelly (1983: 112).

In an archaeological perspective walls in Kona reflect the mauka-makai orientation of traditional Hawaiian land use, Ahupua'a boundaries and in later times kuleana plots, properly lines, dividers between cultivated land and grazing land and separate grazing plots. There are also corrals and cattle runs for herding cattle between pastures and to loading areas. The size of the grazing plots can be an indicator of the richness of the grazing land - the smaller the plot, the richer the land.

Within the project area the longest continuous walls run mauka-makai. Although many have been bulldozed, the pattern is still discernible. Of interest also are a number of parallel walls which probably served as cattle runs. These appear to terminate at the railroad berm. This gives some credence to the possibility that the railroad was used at times to transport cattle although the 3 foot gauge of the railroad would not seem to have been suitable for such transport (Figure 4).

The walls in the northeast corner probably served to exclude cattle from the coffee fields which would have stretched makai at least to site 17.

Cattle grazing continues to the present time in the project area. One of the variations from the traditional pattern is that in a few areas, wire fences have replaced stone walls and the watering troughs are fed from corrugated pipe from mauka.