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August 23, 1999

MR GARY GILL DIRECTOR
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235 SOUTH BERETANIA STREET SUITE 702
HONOLULU HI 96813

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR ROADWAY AND DRAINAGE
Improvements along Komohana Street and Alenaio Stream, Hilo, Hawaii

The County of Hawaii, Department of Public Work (DPW), has reviewed the comments received during the 30-day public comment period which began on September 23, 1998. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the September 8, 1999 OEQC Environmental Notice.

A completed OEQC Bulletin Publication Form and four copies of the final Environmental Assessment are being sent by to your office under a separate letter from our consultant, M&E Pacific.

The point of contact at DPW is Mr. Paul Nash at 1-808-961-8327. The point of contact at M&E Pacific is Ms. Jenny Li at 521-3051.

Very truly yours,

JIRO A. SUMADA,
Deputy Chief Engineer
Department of Public Works
County of Hawaii

cc: M&E Pacific, Inc.

1999-09-08-HA-FEA-

FINAL
ENVIRONMENTAL ASSESSMENT

Komohana Street/Alenaio Stream
Bridge Replacement

Hilo, Hawaii

TMK: 2-3-37: 06, 2-3-43:05, 2-3-44: 09,
2-3-48: 17-21 & 2-3-50: 12.

Prepared for

Department of Public Works
County of Hawaii

by

M&E Pacific, Inc.
Honolulu, Hawaii

August, 1999

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COVER SHEET

Project:	Komohana Street/Alenaio Stream Bridge Replacement
Project Location:	Hilo, Hawaii
Applicant:	Department of Public Works County of Hawaii, Hawaii
Approving Agency:	Department of Public Works County of Hawaii, Hawaii

Abstract:

Department of Public Works (DPW), County of Hawaii, is planning to conduct a bridge replacement project at and in the vicinity of the crossing between Alenaio Stream and Komohana Street, Hilo, Hawaii Island, Hawaii (Figure 1). The project mainly consists of replacing existing corrugated metal culvert with a new wider concrete box-culvert bridge, improving a portion of the natural channel, and extending two floodwalls. The main purpose of this project is to provide a crossing with adequate hydraulic capacity to reduce roadway damage and overtopping during heavy rains. It is also intended to reduce downstream flooding and erosion hazard at Komohana Street and its adjacent properties. The project will use Federal funds.

This environmental assessment (EA) found that the proposed project will not have significant effect on any endangered or threatened species, or on other biological resources. Two historic sites that are located in the vicinity of the project site will not be disturbed. The project will not have un-mitigated significant adverse environmental impacts. It will benefit the local community and is in response to the County's development plan.

CHAPTER 1
AN INTRODUCTION OF BACKGROUND

To reduce Alenaio Stream flood damage to the community of Hilo, the U.S. Army Corps of Engineers (COE) has conducted a series investigation and studies about the entire Alenaio Stream and its floodplain (Figure 2) since 1970's. The COE completed a preliminary study for possible flood damage reduction measures in 1973. In July 1982, the COE circulated a Final Survey Report and Environmental Impact Statement (FEIS) (COE, 1982). In the FEIS, the problems, needs and extent to which the Federal government should participate in flood-damage reduction measures were extensively identified. A plan of combining structural and non-structural measures was proposed after a variety of preliminary plans were evaluated from various points of view. No significant environmental impacts were identified. The proposed plan was approved in 1982, and advanced planning and construction were funded by Congress in 1988.

Advanced planning were conducted in the end of 1980's to the plan proposed in the FEIS. An EA was issued in 1990 by the COE (COE, 1990) regarding the improved plan. The improved plan covers the entire Alenaio Stream basin. It mainly consists of constructing a concrete channel in the area between Kilauea Avenue and Kamehameha Highway, and performing new floodplain management regulations in the area between Chong's Bridge and Komohana Street. The EA concluded that the environmental conditions in the area of concern had not changed significantly since the FEIS was circulated in 1982, no significant adverse impacts were anticipated to result from the proposed plan, and a Supplemental Environmental Impact Statement was not required.

This EA is for proposed improvement plan at Komohana Street/Alenaio Stream crossing by the County of Hawaii (CH). The COE's FEIS (COE, 1982) and EA (COE, 1990) are incorporated in the EA by reference.

CHAPTER 2
PURPOSE AND NEED FOR THE PROPOSED ACTION

The main scope of the project is to replace existing Alenaio Stream corrugated metal culvert at the Komohana Street with a wider concrete box-culvert bridge, improve a portion of the existing natural channel and extend two floodwall. The existing culvert opening is inadequate for containing Alenaio Stream flow. The new box-culvert bridge is designed to accommodate the stream 100-year flow peak. It is also sized in consideration of future roadway widening.

Alenaio Stream is an intermittent stream which is dry during most of the year (Sato and Associates, Inc., 1996). With vast watersheds, however, the stream has a 7,000 cfs 100-year design storm flow according to the study conducted by the COE (COE, 1990). Komohana Street is a two-lane asphalt concrete roadway, with shoulders and without curbs, gutters and sidewalk. Runoff from the northside subbasin (subbasin H, Figure 2) is collected in the Komohana mauka roadside ditch, and discharges into Alenaio Stream at the northern bank. Runoff from the southside subbasin (subbasin I, Figure 2) is collected in another Komohana mauka roadside ditch, and discharges into the southern bank of Alenaio Stream.

The existing Komohana Street/Alenaio Stream culvert is located in Hilo, approximately 1.2 miles from Hilo Bay at elevation 250 feet above sea level. It is approximately 17 feet by 9 feet high, running under Komohana Street at a horizontal angle of approximately 67 degrees. During periods of heavy rainfall, storm water overtops Komohana Street and floods the adjacent properties. The roadway and the culvert have been washed out by floodwaters several times, requiring road closures and costly repairs.

Residential dwelling units are located in the vicinity of the proposed project site (Figure 3). The proposed project is needed to eliminate overtopping of Komohana road and reduce flooding damage to Komohana Street/Alenaio Stream crossing and its vicinity. It will also reduce downstream flooding and erosion damage to Komohana Street and adjacent properties, and provide the protection to the local residents. Appendix E is a projected flood plain after the completion of the project construction (preliminary design).

CHAPTER 3
DESCRIPTION OF THE PROJECT ACTION

1. Technical Description

The proposed project is mainly to replace the existing corrugated metal arch culvert with a wider box-culvert bridge which is capable of accommodating the 7,000 cfs peak flood flows of a 100-year storm. Figure 4 is the site plan of the new Komohana Street box-culvert bridge and its related improvement structures.

The new box-culvert bridge will be concrete and consist of two abutments and an arch section spanning between the abutments. It will be 90-foot wide, sized to accommodate future Komohana Street roadway widening (Figure 4). The bridge shoulder will be 13-foot wide with guardrails. A 5-foot wide sidewalk with railing will be constructed on makai side of the bridge. The new bridge will be designed to comply with AASHTO HS20-44 Standard Loading.

Hydraulic sizing of the new bridge crossing is based on design criteria listed in the COE *Alenaio Stream Flood Control Project, Hilo, Hawaii, General Design Memorandum and Environmental Assessment* (COE, March 1990). From the inlet to the outlet, the new bridge is 90-foot long and 12-foot 8-inch high, skewed by approximately 67 degrees with wingwalls to direct flow to the inlet. It will have a 32-foot span, with an average height of 14 feet for the channel walls and floodwalls. Due to the minimum freeboard requirement and the existing roadway elevation and grade, a rectangular box cross-section with pre-stressed concrete planks is proposed. The proposed profiles along Komohana Street and along Alenaio Stream are illustrated in Figure 5.

The construction of the new bridge is planned to be conducted in four phases to allow normal traffic flow (one lane open in both directions). In the first phase, an area mauka of Komohana Street will be widened to provide space for the further construction is. In the second phase, the new bridge and its related instream improvement structures will be constructed on the makai side of Komohana Street. In the third phase, the existing culvert below and mauka of Komohana Street will be replaced with the new box-culvert bridge and connected to the part of the new box-culvert bridge constructed during the second phase. In the final phase, detour roadway, which is set up in the previous two phases, will be removed, and roadway and pedestrian path of the new box-culvert bridge will be routed for use.

Aside from the new box-culvert bridge, two inlet channel walls will be installed to direct flow to the new culvert inlet. The height of both north and south inlet channel walls varies from 0.5 feet to 16 feet. The south channel wall is approximately 70 feet long, while the north channel wall is 110 feet long. A floodwall about 12-foot to 18-foot 6-inch high will be extended from the downstream south edge of the box-culvert bridge, and about 370 feet along the stream channel edge adjacent to existing residences (Figure 4). Another 5-foot to 12-foot high floodwall will extend from the downstream north edge of the box-culvert bridge about 50-foot along the channel edge. The two floodwalls are for protecting the surroundings from the stream high flow

erosion caused by excessive flow velocities in the 20 to 30 feet per second (fps). A new concrete swale will be installed next to the south floodwall. Runoff from the south bank will be channeled into the new swale and discharged into the stream. A new arch corrugated metal pipe culvert about 100 feet long is proposed just north of the new concrete box-culvert bridge to drain storm flow from existing mauka road ditch. The size of the pipe culvert is 4.5 feet by 3 feet.

The stream channel will be widened in order to lower the stream water level. To stabilize the stream flow, portions of the stream bed will be leveled by chipping the lava basalt rock on the bed and filling with hydraulic concrete in localized depression areas.

Included also in this project are the building of a 12-foot wide and 140-foot long asphalt pavement maintenance road and the replacement of portions of an existing 12-inch water line. The water line replacement is for accommodating the new box-culvert bridge and the new pipe culvert. Grading and embankment construction will be conducted for the culvert widening to allow transition to the natural stream channel. The total area of grading is approximately 1.51 acres.

The staging/stockpile areas for the proposed project construction will be located along the outside makai shoulders of Komohana Street, approximately 200 feet northeast of the existing culvert crossing. The construction is expected to start in June 2000, and end in May 2001.

2. Economic Characteristics

The total cost of the Komohana Street/Alenaio Stream Bridge Replacement project is estimated to be 2.2 million dollars (M&E Pacific Inc., 1998). The total length of the construction will be approximately twelve months.

3. Social Characteristics

The project site is located in a state land use Urban district and is adjacent to private residential properties. The residential properties along both sides of Alenaio Stream, immediately makai of Komohana Street, are zoned Single Family Residential-7,500 square feet (RS-7.5) by the County of Hawaii. All structures will maintain a minimum yard setback of 15 feet from its front and rear property boundaries, and 8 feet from its side property boundaries. All requirements of the Zoning Code will be complied with.

Komohana Street belongs to the County of Hawaii. The installation of Komohana Street/Alenaio Stream box-culvert bridge will occur within the existing right-of-way. No property acquisition is anticipated. Other related structures for the Alenaio Stream improvements will be placed on both side of Alenaio Stream, and require adjusting setbacks or easements and right-of-way (Figure 4). There is a total of two residences/private properties adjacent and upstream of Komohana Street stream crossing and seven residences/private properties adjacent and downstream of stream

crossing which may be affected by this project due to their proximity to proposed bridge replacement and stream channel improvements.

The project will reduce flood hazards at Komohana Street and adjacent properties, and provide an increased public safety to the local residents.

4. Environmental Characteristics

The proposed box-culvert bridge replacement and stream improvement will be conducted at the areas which were previously disturbed. The existing environmental conditions and the nature of the project ensure that environmental characteristics of the project site and its vicinities will not be significantly altered. Nevertheless, the construction contractor will be required to develop an environmental protection plan to include compliance procedures for all applicable federal, state and county environmental regulations.

CHAPTER 4
ALTERNATIVES INCLUDING THE PROPOSED ACTION

1. No Action Alternative

The No Action Alternative would leave Alenaio Stream drainage area and the culvert as they are, without any improvements to reduce flood damage.

The existing culvert with its stream diversion and runoff drainage system is located within a residential area. Komohana roadway is one of the primary roadways which connects northern and southern Hilo over Alenaio Stream. Installed within a floodway, the culvert and its stream structures are incapable of diverting Alenaio Stream flow and runoffs to downstream during heavy rainfall events. Komohana roadway and the culvert have been washed out several times by flood waters, resulting in roadway closures and costly repairs.

The floodings are a threat to the safety of the local residents and their properties. Furthermore, the closures of Komohana roadway create difficulties and inconvenience to the traveling among the local communities.

The No Action Alternative was eliminated from consideration early in the planning process because it would not contribute to a solution of the flood damage problems of the local area of concern.

2. Alternative Plan 1

This alternative is the proposed project and is described the previous chapter.

3. Other Alternative Plans

Flood damage reduction of Alenaio Stream has been investigated by COE since the beginning of 1970's. Various possible plans for different reaches of Alenaio Stream have been evaluated. Many of the plans were eliminated because of their high costs compared with expected benefits and/or technical inapplicability to that area. Among those plans, installing diversions for flood flows into Wailuku River, Wailoa Stream, or through lava tubes could be regarded as alternatives to the proposed project since they involve the same area of concern. These alternatives were eliminated because of cost, environmental impacts and lack of needed technology.

An example of these alternatives is to install a diversion channel to Wailuku River. The diversion channel will start from approximately 500 feet above Komohana Street and extend into the Wailuku River. The diversion channel is 4,200 feet long, and mainly consists of a trapezoidal channel at the point of diversion for 1,850 feet, a transition section of 100 feet and a rectangular channel of 2,250 feet. It was estimated by COE that the total first cost (including construction real estate, supervision administration costs) is more than ten million dollars. Nine to ten acres of

agricultural/residential lands is required to be dedicated for flood control easements and for the diversion channel.

CHAPTER 5
AFFECTED ENVIRONMENT

1. Project Location

The project site includes Alenaio Stream crossing at Komohana Street and its immediate vicinity. It is identified by the Tax Map Key (TMK) as 2-3-37: 06, 2-3-44: 09, 2-3-48: 17-20, 2-3-50: 12, 14, 15 (Figure 3).

2. Physical Conditions

2.1 Climate

According to the study conducted by COE (COE, March 1990), the climate around the project area is semi-tropical, with a mean annual temperature of 73.4 °F. The mean annual rainfall is about 200 inches. Four types of storms produce heavy precipitation around the project area. These are winter storms, "Kona" storms (southernly winds), convective-type thunderstorms and hurricanes or tropical storms. These storms can result in rain fall of 10-20 inches of rain in 24 hours.

2.2 Geology and Soil

Lava basalt of the Punahoa flow is exposed in the Alenaio stream bottom at the project area, although portion of the Stream upstream of Komohana Street consists of thin to moderately thick marsh-like soils, overlying the lava basalt.

2.3 Natural Hazards

The project site is within flood hazard areas designated by FEMA as Zones AE and X (Figure 6). Zone AE are areas within a floodway where base flood elevations have been determined. Zone X are areas of 500-year flood, areas of 100-year flood with average depths of less than one foot or with drainage areas less than one square mile, and areas protected by levees from 100-year flood.

Being a low-lying area, the project site is subject to the impacts of hurricanes, earthquakes and tsunamis.

2.4 Air Quality

Air quality around the project area is excellent most of the time, with the only significant sources of pollution coming from the periodic eruption of the Kilauea Volcano nearby and the operation of vehicles. Volcanic pollutants frequently exceed EPA air quality standards.

2.5 Noise

Noise level around the project area is low, typical of a small rural urban/suburban community with vehicles and aircraft being the main sources.

2.6 Water Quality

Alenaio Stream is normally dry except at the lower reach where it joins Waiolama Canal. The water level along the proposed channel of improvements varies from no flow (normal) to 8.9' to 14.1' depth. Water surface elevation varies from 255.5 feet to 227.8 feet. During heavy rains, the stream can have flows as high as 2,800 cubic feet per second (cfs). The high flows are sediment ladened, and may contain elevated levels of agricultural chemicals from field runoff. When the stream is flowing, dissolved oxygen levels are near or at saturation and turbidity is moderate.

The stream is classified as Class 2 water under the classification of water uses for inland waters, Title 11, Chapter 54, Water Quality Standards, State of Hawaii, Department of Health Administration Rules. This class of water is protected for use as recreation, propagation of fish and other aquatic life and agricultural and industrial water supply. According to the 1998 Hawaii Stream Assessment, Alenaio Stream is also ranked as having both substantial water quality and high cultural resources quality.

2.7 Aesthetic Values

The project area is rural urban in character, possessing large areas of open space, wooded and densely vegetated areas and old residential areas (Figure 7).

3. Biological Environment

3.1 Terrestrial Resources

The flora of the project area is lush, consisting mostly of introduced species, growing along and in the unlined portion of the stream bed. It includes grasses, vines, shrubs and trees on the streambed and on the sides of the stream where houses are built on (Figure 7).

Fauna in the vicinity of the project site consists of introduced mammals such as feral dogs and cats, various species of rodents and Indian mongoose in the urban areas, and feral pigs, sheep and goats in the higher undeveloped areas. Bird species observed in the project area include the barred dove, lace-necked dove, common mynah, Japanese white-eye, ricebird, house sparrow, house finch, and red-crested cardinal.

3.2 Aquatic Resources

Alenaio Stream around the project site is ephemeral, flowing only during and shortly after heavy rains, so that there is very little chance of developing a significant aquatic community in that area. Small freshwater frogs/toads and fishes were observed along the stream area.

3.3 Threatened and Endangered Species

The U.S. Department of Interior Fish and Wildlife Service reports that several federally endangered species (birds and bat) may traverse the project site. The Hawaiian hoary bat (*Lasierus cinerus semotus*) has been observed in the Hilo area in the past; however, it is unlikely that the project area provides more than a peripheral habitat for this species. The Hawaiian hawk (*Buteo solitarius*) habitat overlaps the project site.

4. Cultural Resources

A cultural reconnaissance survey conducted by Bishop Museum in 1982 determined that there are no physical remains of archaeological or other significant cultural sites within the area. A subsurface survey conducted by COE (COE, March 1990) found no evidence of burials in the area. According to the State of Hawaii Department of Land and Natural Resources State Historical Preservation Division (SHPD), two historic sites (a historic habitation site and Hilo Boarding School Ditch) are located on the land parcel identified as TMK: 2-3-44:009. However, the inventory of SHPD is incomplete, there may be other historic sites in the vicinity of the project.

5. Socioeconomic Resources

The basic elements of the economy of County of Hawaii are tourism, agriculture and fishing, manufacturing, and scientific research. Hilo is the principal urban area of the County. Hilo is the center of government and serves as the center for trade, distribution and services. Currently, agriculturally-fallow lands beside Komohana Street north of Alenaio Stream area planned for residential and commercial development in the near future.

The project site is located within a residential area. Komohana Street is one of the primary roadways which connects northern and southern Hilo over Alenaio Stream. There are existing telephone, electrical, and cablevision overhead service on wooden poles aligned parallel to Komohana Street at the project site. An underground water line is also located along Komohana Street.

Komohana Street and the adjacent properties have been overtopped by storm water several times during periods of heavy rainfall. It resulted in significant damages to the properties and Komohana Street roadway, and costly repairs. The floodings also constantly threaten public safety in the vicinity.

CHAPTER 6
ENVIRONMENTAL CONSEQUENCES

1. Effects on Physical Conditions

1.1 Traffic

Komohana Street is one of the primary roadways which connects northern and southern Hilo over Alenaio Stream. The new box-culvert bridge installation over Alenaio Stream on Komohana Street may have adverse impact on the normal daily traffic. To avoid roadway closure and minimize the impact on the traffic, construction will be conducted into four phases as described in Chapter 2. If necessary, there may be a temporary two-lane detour roadway with a narrow sidewalk provided all time for use through the whole box-culvert bridge construction.

1.2 Climate

The proposed project will not have an effect on the climate of the area.

1.3 Geology

The new box-culvert bridge with its wider opening and other stream improvement structures will be capable of containing more storm runoff and thus avoiding Komohana Street flooding. Increased stream flow volume may result in high-speed stream flow, and carrying more sediments far downstream than before.

The project requires necessary grading (Figure 4). The proposed stream bed modification and the culvert replacement may result in discharging dredged or fill material. The Contractor will be required to develop and practice best management practices during the construction to minimize the discharge related sedimentation and erosion.

1.4 Natural Hazards

Existing culvert with its stream structures and existing runoff drainage system are located with a floodway. They are incapable of accommodating storm-flood flows and diverting them properly to the downstream. Furthermore, being within floodway, they block floodway and consequently worsen flooding situations.

The proposed project is designed based on the peak flood flow of a 100-year storm. It is anticipated that the structures will effectively divert storm-flood flows and reduce flooding and erosion at Komohana Street and its adjacent properties.

1.5 Air Quality

An increase in air pollution can be expected during the construction in the vicinity of the work area. The contractor will be required to comply with provisions of Chapter 11-60.1, HAR, Section 11-60.1-33 on fugitive dust and employ mitigation measures to minimize the amount of particulate generated by construction. These measures include frequent wetting down of loose soil areas with water, using dust palliatives, restricting the daily area of operation, and if necessary, curtailing activities during dry, high wind conditions.

Hydrocarbon emissions from the construction equipment and vehicles are expected. The Contractor will be required to use emission control devices on all construction vehicles. All construction activities will need to comply with state air pollution control regulations (Chapter 60, Title 11, Administrative Rules of the State of Hawaii, Department of Health).

1.6 Noise

Project construction activities may increase noise levels in the vicinity of the construction site. However, this construction nuisance is temporary and abatement measures will be undertaken during construction. Construction activities will be restricted to regular work hours, limiting noise impacts to those times. The contractor will be required to comply with Federal, State and County noise control regulations.

1.7 Water Quality

Temporarily water quality in the ephemeral Alenaio Stream may be degraded by an increase in turbidity, sedimentation and temperature. This is due to the in-stream construction for the new box-culvert bridge and box culvert channels. To minimize the degradation of water quality and impacts to natural resources, the following measures will be conducted as recommended by United States Department of the Interior, Fish and Wildlife Service: a) no construction materials will be stockpiled in the aquatic environment, b) all construction equipment placed in the water will be free of pollutants, c) no contamination of the aquatic environment (trash or debris disposal, etc.) will result from project-related activities, d) a contingency plan to control petroleum products accidentally spilled during construction will be developed, and e) turbidity and siltation from the proposed work will be minimized and contained to within the vicinity of the site through the use of effective silt containment devices. The best management plan for the proposed construction activities will also be complied with the Coastal Non-point Pollution Control Program Management Plan of State of Hawaii Office of Planning.

Since Alenaio Stream has high velocity flows during some storms, the construction will be conducted only during the dry season. To avoid foreign objects being carried away downstream by the stream flow and runoff, materials used for construction will be removed immediately from the site after use, and structures that are set up will be anchored tightly onto the ground.

1.8 Aesthetic Values

The proposed project will replace/improve existing stream structures. The new structures will not worsen the existing aesthetic character of the land. Most of the new structures will be below the line of view. However, the proposed channel walls and floodwalls may interfere with the view towards Alenaio Stream. Since these walls are necessary for protecting the properties next to the stream from flooding, the project will use facade rock wall (other decoration alternatives) on the floodwall outside faces to provide a natural looking.

2. Effects on Biological Resources

2.1 Terrestrial Resources

Vegetation will be removed only as required by limits of grading and limits of channel improvements. It is not anticipated that the project will result in significant damages to the existing terrestrial resources.

2.2 Aquatic Resources

Since Alenaio Stream's ephemeral flow character will not be changed/affected by the proposed project, it is anticipated that the project will not have significant long term effects on aquatic organisms.

2.3 Threatened and Endangered Species

It is indicated by the U.S. Fish and Wildlife Service, Office of Endangered Species, that the Hawaiian hawk habitat overlaps the project area. Since the proposed project is to mainly replace and improve existing stream structures, it is not anticipated that the project will have significant impact on the hawk nor its habitat. However, should the hawk habitats be discovered during the construction, the construction will be halted and the Contractor will be required to report immediately to the U.S. Fish and Wildlife Service, Office of Endangered Species.

3. Effects on Cultural Resources

Two historic sites (a historic habitation site and Hilo Boarding School Ditch) are located on the land parcel identified as TMK: 2-3-44:09. The proposed north inlet channel wall will be extended approximately 110 feet into this parcel. However, this action will not disturb the historic sites with their required buffer zones, and thus it is anticipated that the action will not have impact on the two historic sites.

Since there are no other physical remains of cultural resources in the project area, it is anticipated that the project will not have impact on the cultural resources. Nevertheless, should any archaeologically significant artifacts, bones, or other indicators of previous onsite activity be

uncovered during the construction phases of development, their treatment will be conducted in strict compliance with the requirements of the Department of Land and Natural Resources.

4. Socioeconomic Effects

The proposed stream improvement may require new setback or easement and right-of-way which encroaches approximately thirty to forty feet into adjacent properties (Figure 4). After the completion of the new box-culvert bridge and the stream improvement constructions, the flooding at Komohana Street is expected to be reduced, and flooding damage and erosion hazard to adjacent properties and the threat to public safety of the adjacent residents are expected to be lessened. The bridge replacement and stream channel improvements will encourage various human activities. Furthermore, the box-culvert bridge will be ready for the future roadway widening (two lanes to four lanes with a widened 13-foot-wide sidewalk). This is consistent with the county's development plan around the project site.

The design and construction of the proposed project will comply with Chapter 205A, Coastal Zone Management (CZM), Hawaii Revised Statutes (HRS), and be consistent with the related federal regulations.

CHAPTER 7
AGENCIES AND PERSONS CONSULTED

Federal

Department of the Army
Corps of Engineers

Department of the Interior
Fish & Wildlife Service

Department of the Interior
Water Resources Division, Geological Survey

U.S. Department of Agriculture
Resources Conservation Service

State of Hawaii

Department of Business, Economic Development & Tourism
Office of Planning

Department of Health

Department of Lands and Natural Resources
Commission on Water Resource Management
Forestry and Wildlife Division
State Historic Preservation Division

County of Hawaii

Planning Department

Persons

Property Owners of TMK 2-3-37:06, 2-3-44:09, 2-3-48:17, 18, 19, 20, 21, & 2-3-50:12

CHAPTER 8
LIST OF PERMITS

The following permits and approvals will be required as part of this project:

Federal

- Department of the Army Harbors and River Act Section 404 Clean Water Act Permit
- Floodway Map Approval (FEMA)

State

- Department of Land and Natural Resources Stream Channel Alteration Permit
- Department of Health Clean Water Branch Section 401 Water Quality Certification
- Office of Planning Coastal Zone Management Determination

County

- Grading Permit
- Building Permit

CHAPTER 9
SUMMARY

The Komohana Street/Alenaio Stream Bridge Replacement project is to reduce the flooding and erosion hazard to the environment and properties surrounding Komohana Street. The project areas are either previously developed, disturbed or vacant. It is anticipated that the project will not result in an irrevocable commitment to loss or destruction of any natural or cultural resources.

The range of beneficial uses of the environment will not be curtailed by the proposed project. By improving the existing drainage conditions and reducing flooding and erosion hazard, it will help increase public interest of beneficial uses of the existing environment at Komohana area.

The project will comply with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344 State Environmental Policy, HRS, and any revisions thereof and amendments thereto, court orders or executive orders. The project is in response to the county's long range development plan for the project area.

The project will not adversely affect the economic or social welfare or the community or state. The project will improve the social welfare by providing a safer living environment and a wider roadway.

The project will not adversely affect public health. Short-term impacts on air and water quality and ambient noise levels will occur during the proposed construction. The contractor will be instructed to comply with Federal, State and County regulations on mitigating these impacts. However, long-term detrimental impacts on air or water quality or ambient noise levels are not anticipated.

The project will not involve substantial adverse secondary impacts, such as population changes or effects on public facilities. The project is in response to both current needs and projected population growth.

The project will not involve a substantial degradation of environmental quality. The proposed improvement is on the existing developed area. The new structures will not worsen the existing aesthetic character of the land.

The project will not include considerable cumulative effect upon the environment nor involves a commitment for larger actions.

The proposed improvement is on the existing developed/already-disturbed area. The project will not substantially affect a rare, threatened or endangered species, or its habitat.

The project will not detrimentally affect air or water quality or ambient noise levels. Short-term impacts will occur during the construction phases. The contractor will be instructed to comply with Federal, State and County regulations on mitigating these impacts.

The project will not affect an environmentally sensitive area such as a tsunami zone, erosion-prone area, geological hazardous land, estuary, fresh water, or coastal waters. The project area encompasses AE flood zone, but the proposed construction will reduce Alenaio Stream and Komohana flooding and erosion situation.

The project does not have significant impact on existing scenic vistas or view planes. Most of the proposed structures will be below the line of sight. The proposed channel walls and floodwalls may interfere with the view towards Alenaio Stream. The project will use facade rock wall (other decoration alternatives) on the floodwall outside faces to provide a natural looking.

The project does not require substantial energy consumption. Construction of the proposed project will not require substantial energy consumption relative to other similar project. After the completion of the project, the new structures will require neither energy to operate nor substantial energy to maintain.

REFERENCES

Documents reviewed during preparation of this Environmental Assessment:

Federal Emergency Management Agency, 1988, *Flood Insurance Rate Map,* Hawaii County, Hawaii, Community-Panel Number 880 of 135.

Administrative Rules of the State of Hawaii, Department of Health, Title 11 Chapter 54, "Water Quality Standards".

Administrative Rules of the State of Hawaii, Department of Health, Title 11 Chapter 60, "Air Pollution Control".

Hawaii Revised Status (HRS) Chapter 205A, "Coastal Zone Management".

Hawaii Revised Status (HRS) Chapter 344, "State Environmental Policy".

M&E Pacific, Inc., April 1998. *Supplemental Information for Permitting of Komohana Street/Alenaio Stream Improvements, Hilo, Hawaii.*

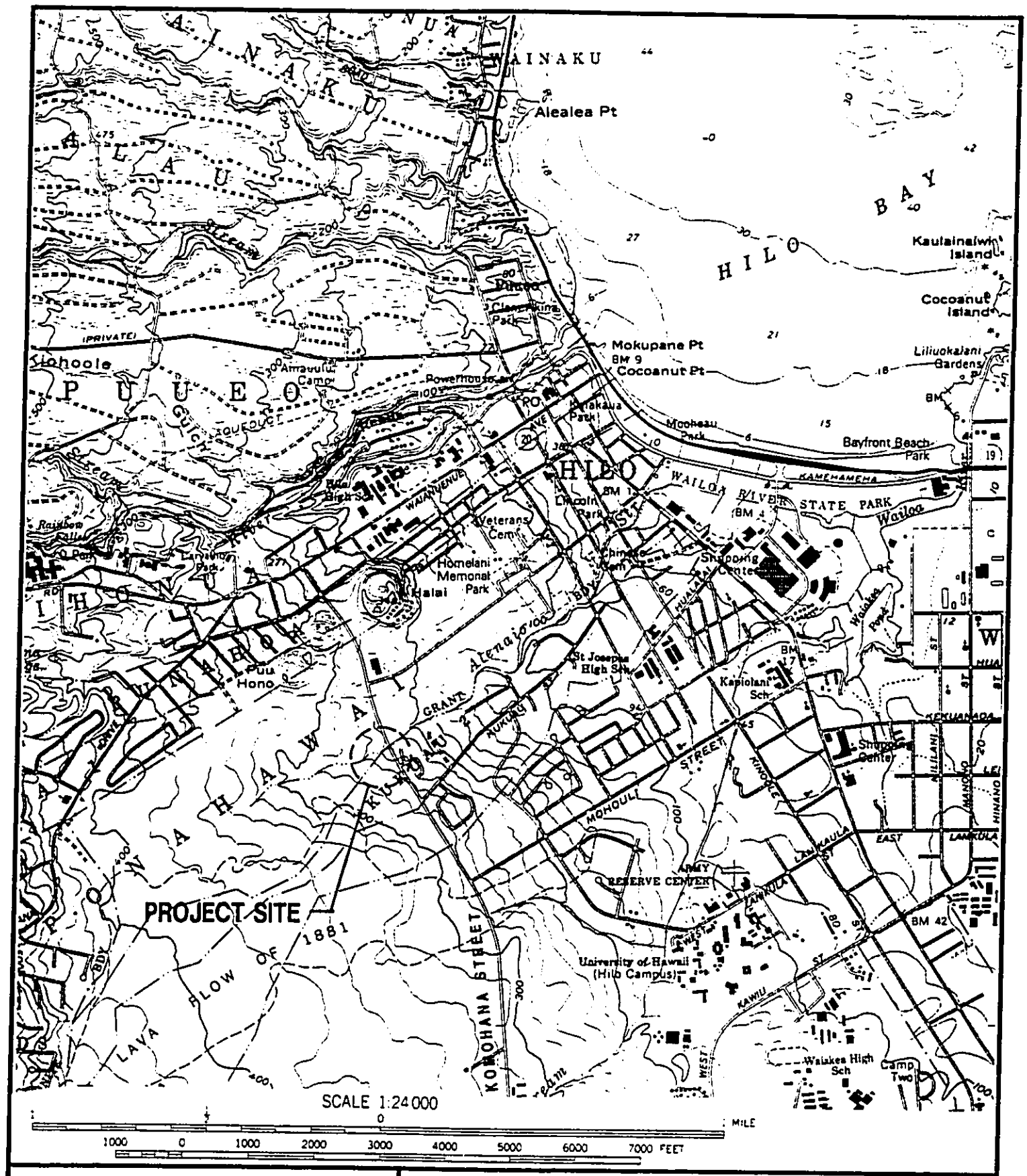
Sato and Associates, Inc., June 1996. *Preliminary Design Study for the Komohana Street/Alenaio Stream Bridge Replacement, Hilo, Hawaii.*

U.S. Army Corps of Engineers (COE), July 1982. *Final Survey Report and Environmental Impact Statement, Alenaio Stream, Island of Hawaii, Harbors and Rivers in Hawaii.*

U.S. Army Corps of Engineers (COE), March 1990. *Alenaio Stream Flood Control Project, Hilo, Hawaii, General Design Memorandum and Environment Assessment.*

FIGURES

Figure 1. Regional Location Map
Figure 2. Watershed Map
Figure 3. TMK Map
Figure 4. Site Plan
Figure 5. Profile - along Komohana Street and Alenaio Stream
Figure 6. Flood Insurance Rate Map
Figure 7. Pictures of Existing Komohana Street/Alenaio Stream Crossing Culvert and Its Ambient Environment.



Source:

M&E Pacific, Inc.
ENGINEERS & ARCHITECTS
SUITE 500, PAUAHI TOWER · 1001 BISHOP ST., HONOLULU, HAWAII 96813

Figure 1
PROJECT LOCATION MAP
Komohana Street/Alenaio Stream
Bridge Replacement
HILO, HAWAII

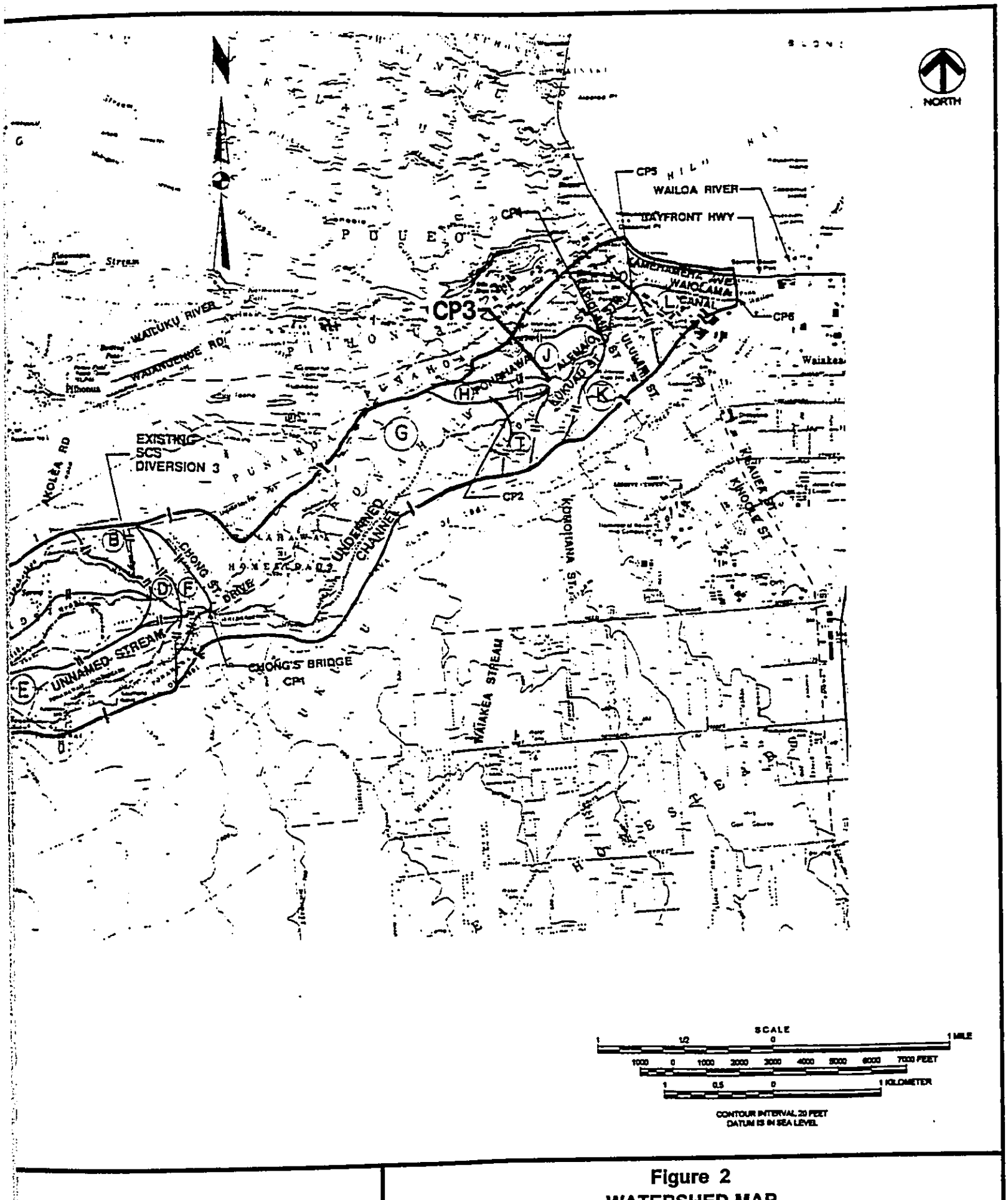
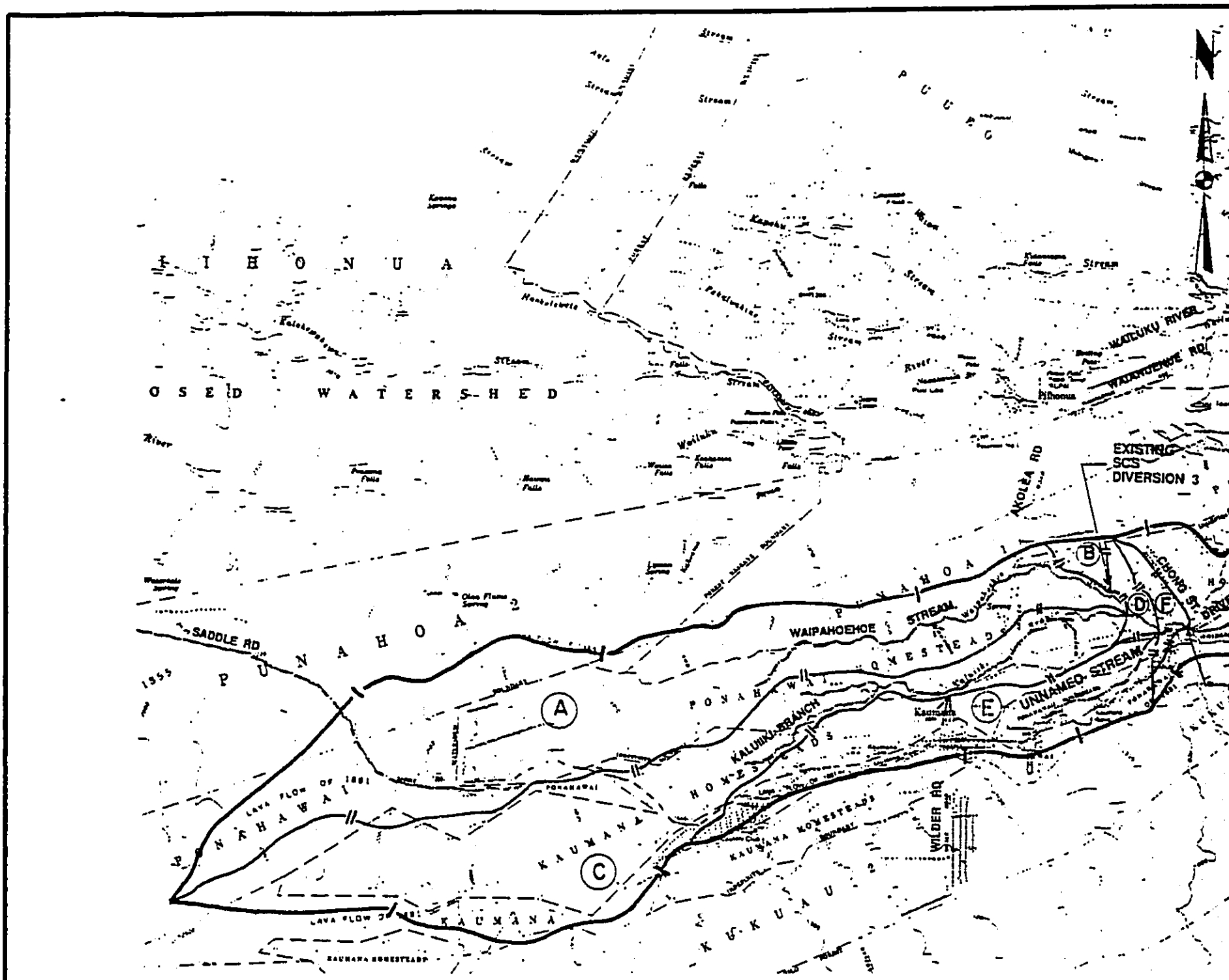


Figure 2

WATERSHED MAP

Komohana Street/Alenaio Stream
Bridge Replacement
HILO, HAWAII

Prepared By: US Army Corps of Engineers
March 1990



SUB-AREA	DRAINAGE AREA (SQ. MILES)
A	2.82
B	0.07
C	2.31
D	0.09
E	0.87
F	0.09
G	1.36
H	0.08
I	0.08
J	0.28
K	0.39
L	0.28

LEGEND

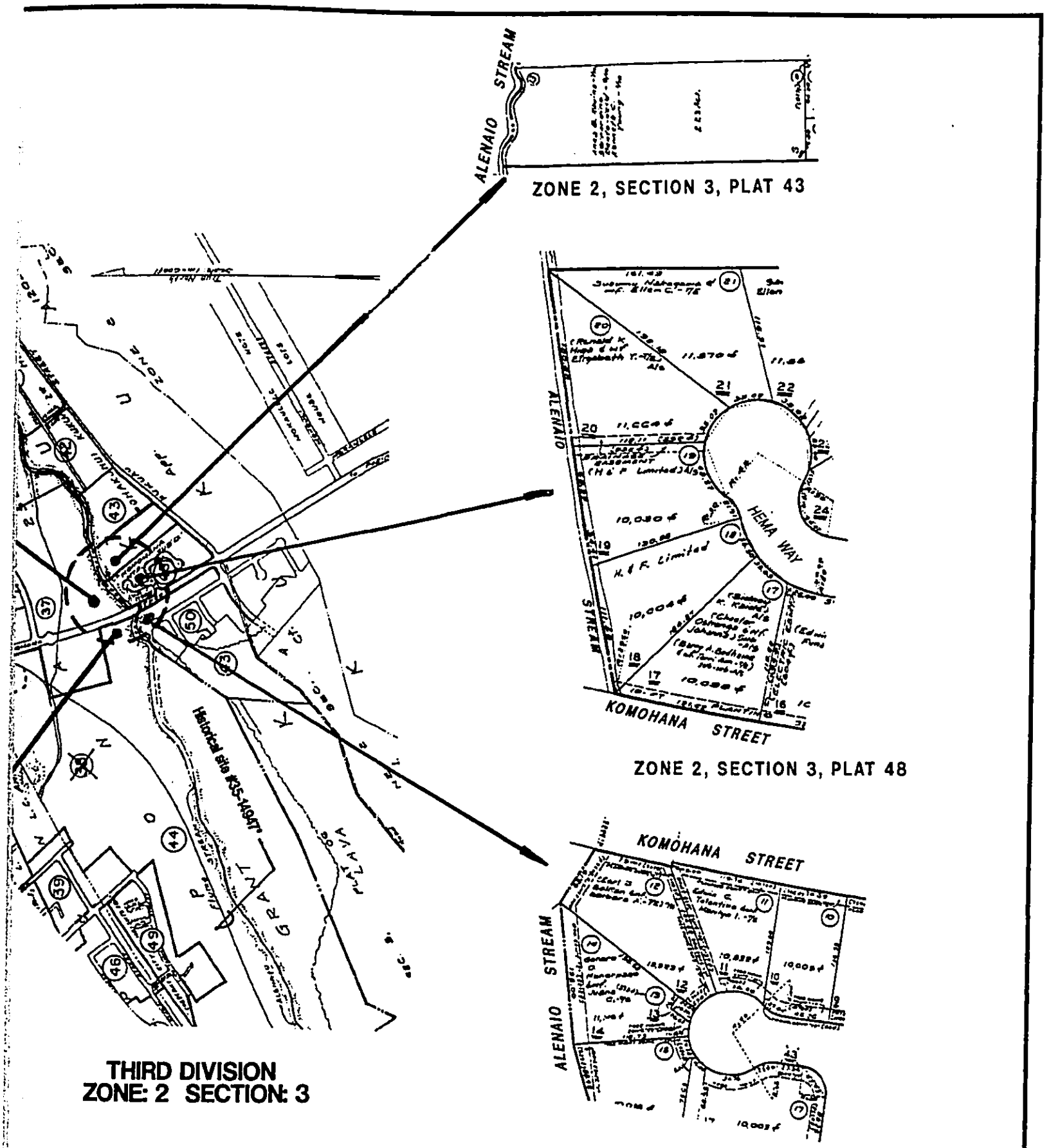
- STREAM
- DRAINAGE BOUNDARY
- SUB-AREA DRAINAGE BOUNDARY
- (E) SUB-AREA
- SCS PROPOSED DIVERSIONS
- CP CONCENTRATON POINT

Source:

M&E Pacific, Inc.
ENGINEERS & ARCHITECTS
SUITE 500, PALIAHI TOWER • 1001 BISHOP ST., HONOLULU, HAWAII 96813

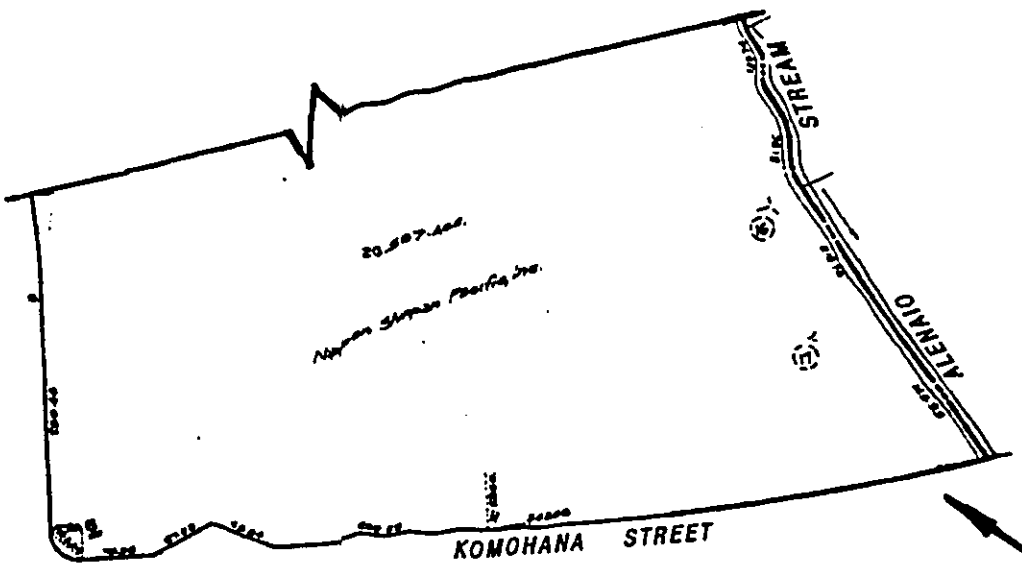
Prepared By: US Arm

p:\projects\c_hawaii\021202\alenaio\figs\figure2.dwg 08/18/99

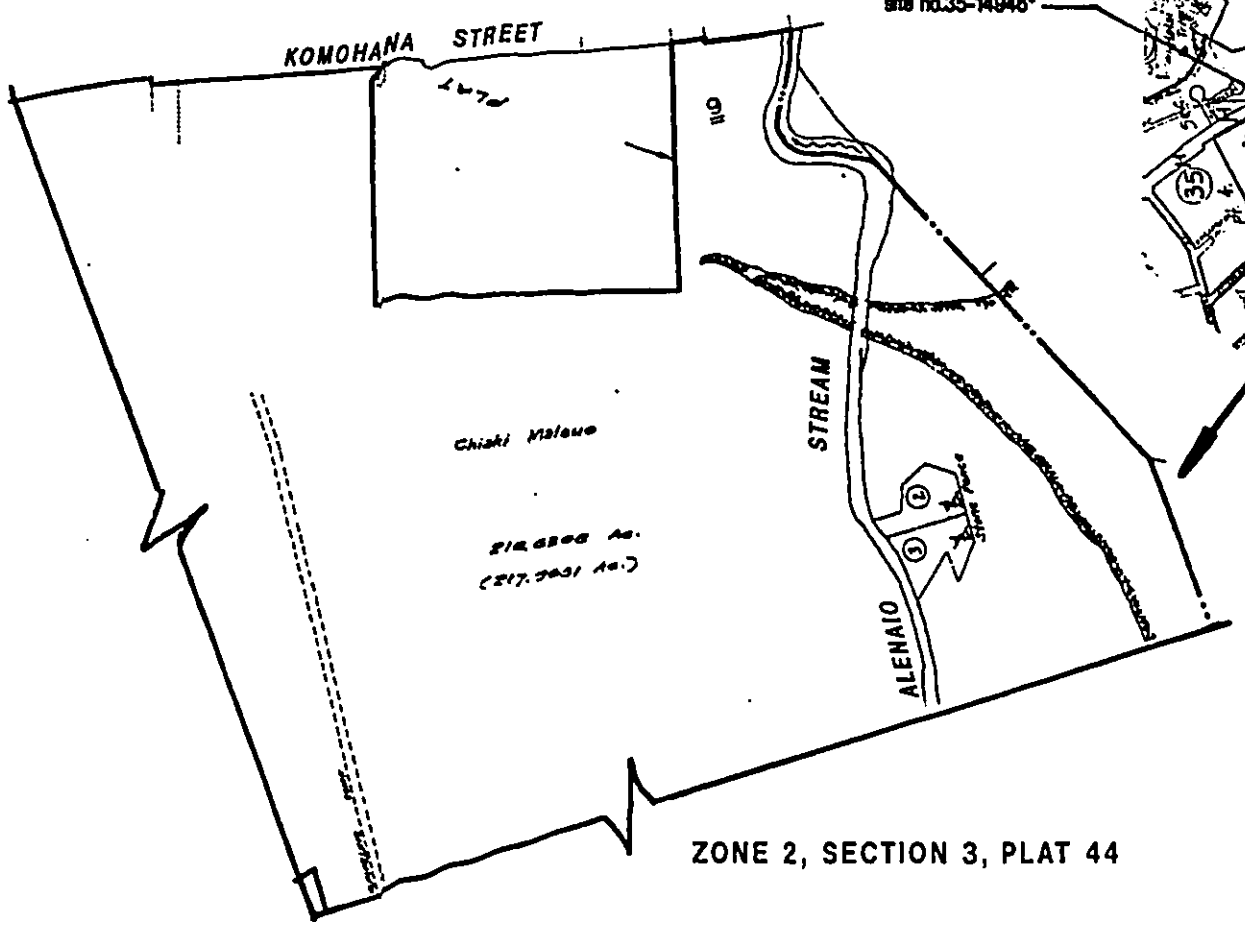


re information about the two historical sites, see Appendix D.

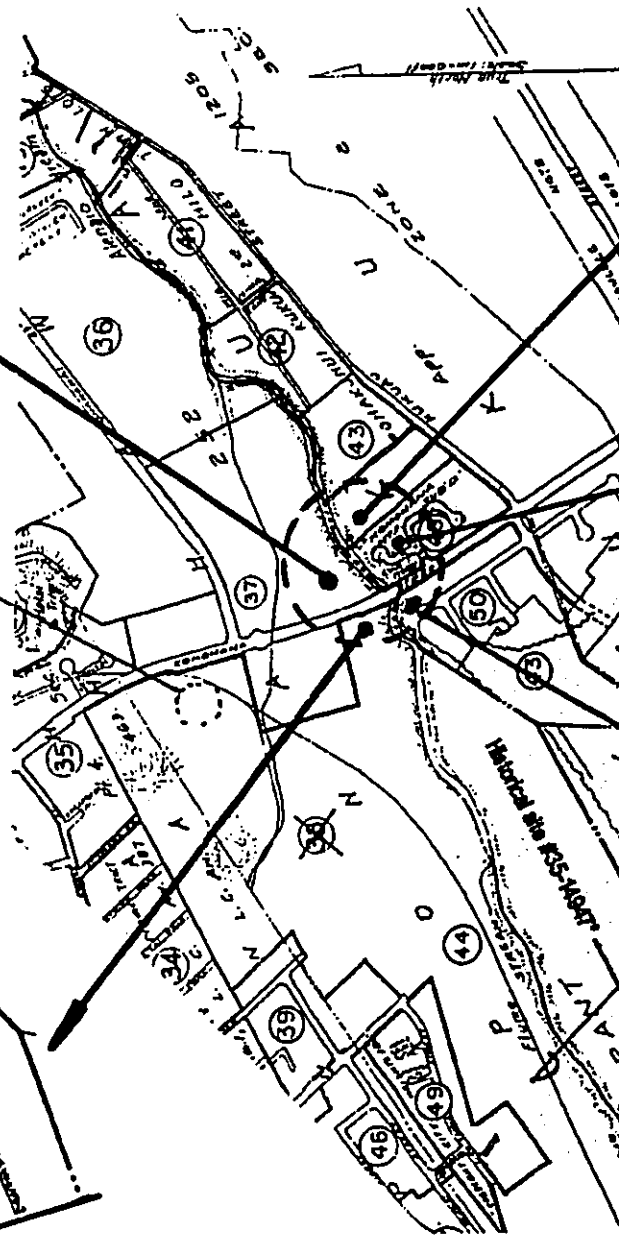
Figure 3
TMK MAP
Komohana Street/Alenaio Stream
Bridge Replacement
HILO, HAWAII



ZONE 2, SECTION 3, PLAT 37



ZONE 2, SECTION 3, PLAT 44

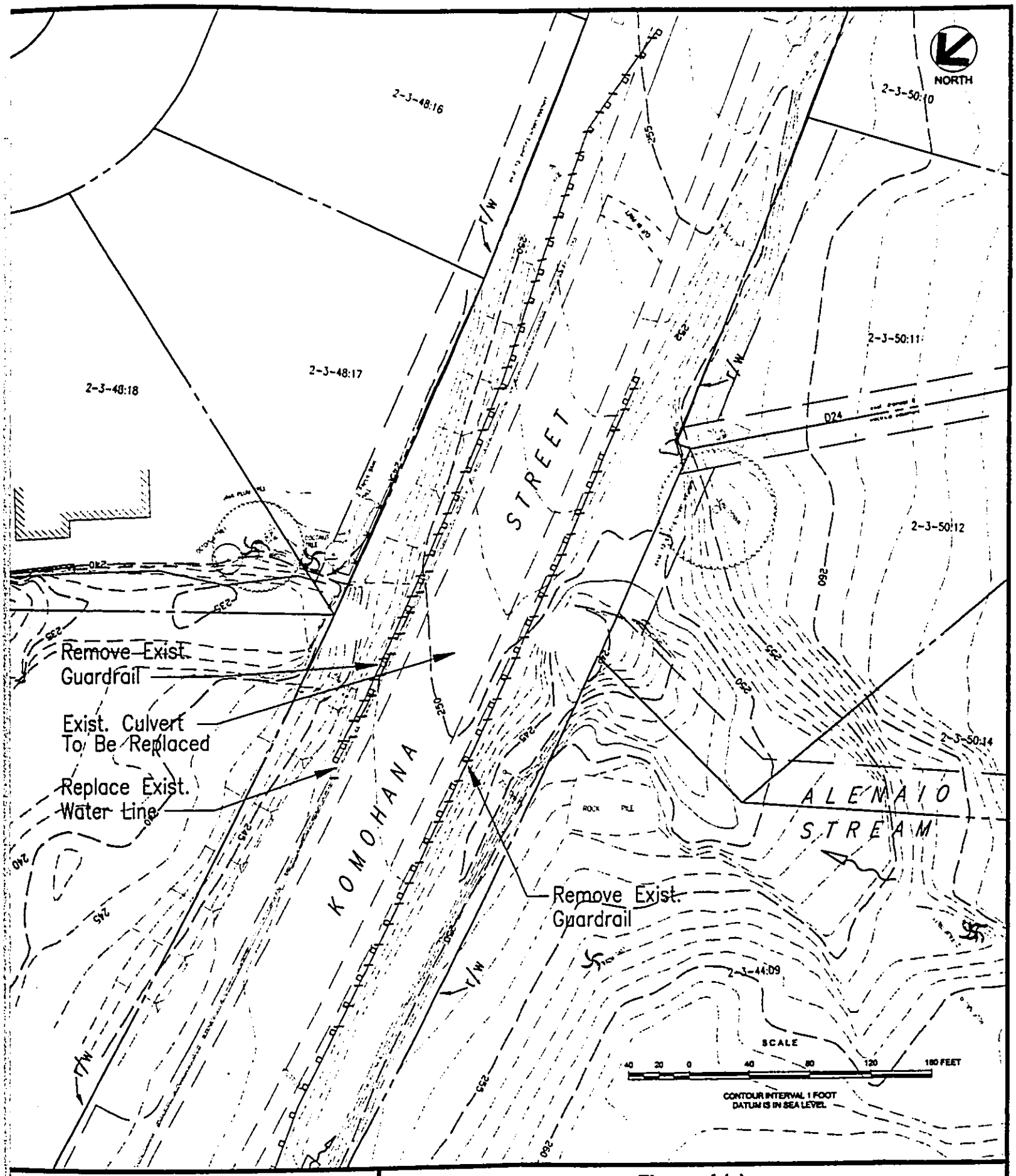


THIRD DIVISION
ZONE: 2 SECTIO

* For more information about the two historic

Source:

M&E Pacific, Inc.
ENGINEERS & ARCHITECTS
SUITE 500, PALIAHI TOWER • 1001 BISHOP ST., HONOLULU, HAWAII 96813



dst. Water Line

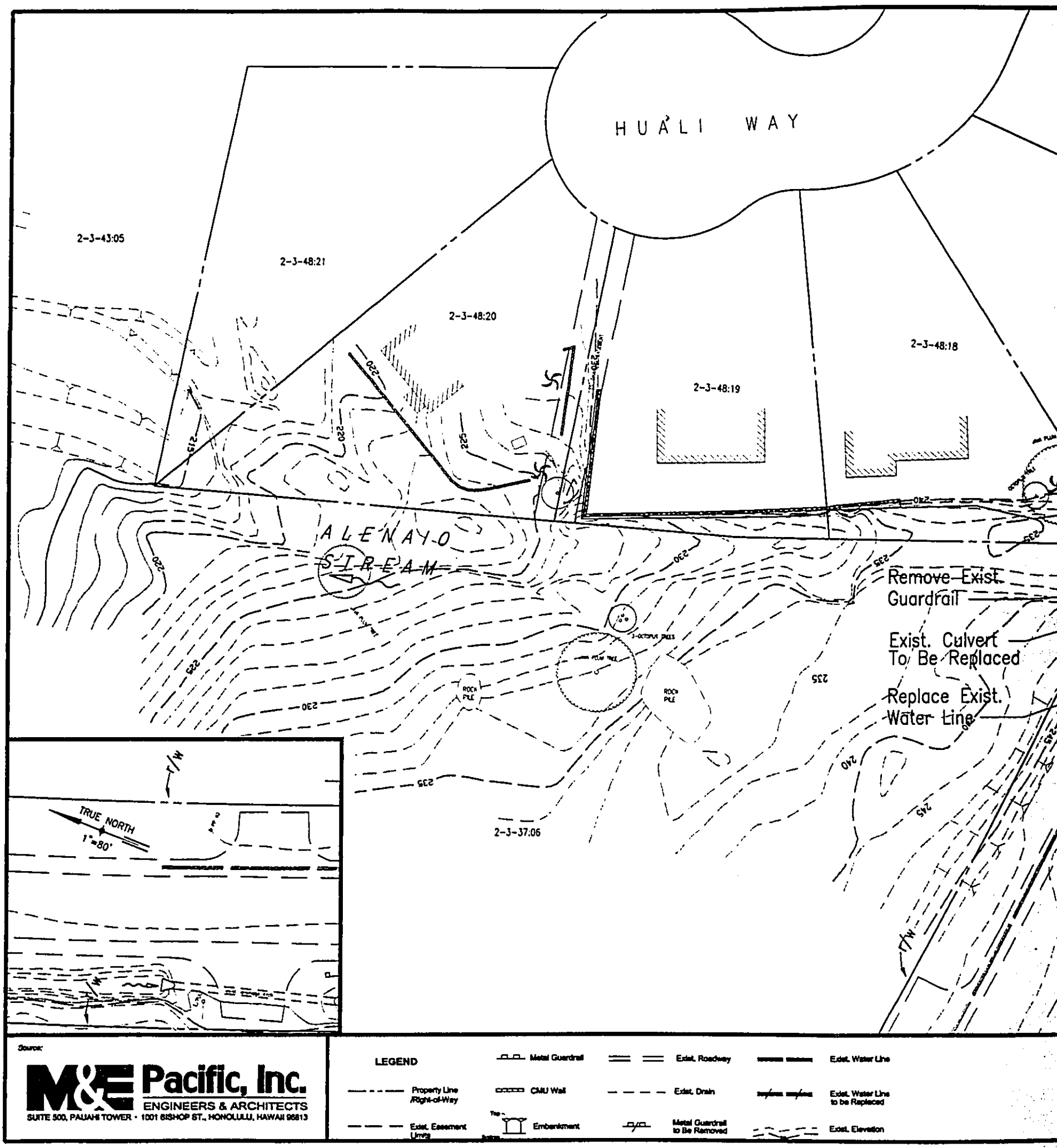
dst. Water Line
be Replaced

dst. Elevation

Figure 4 (a)

TOPOGRAPHIC SITE PLAN - EXISTING SITE CONDITIONS

Komohana Street/Alenaio Stream
Bridge Replacement
HILO, HAWAII



Source:

M&E Pacific, Inc.
ENGINEERS & ARCHITECTS
SUITE 500, PAUAHI TOWER · 1001 BISHOP ST., HONOLULU, HAWAII 96813

LEGEND

- Property Line /Right-of-Way
- Exist. Easement Line
- Metal Guardrail
- CMU Wall
- Embankment
- Exist. Roadway
- Exist. Drain
- Metal Guardrail to Be Removed
- Exist. Water Line
- Exist. Water Line to be Replaced
- Exist. Elevation

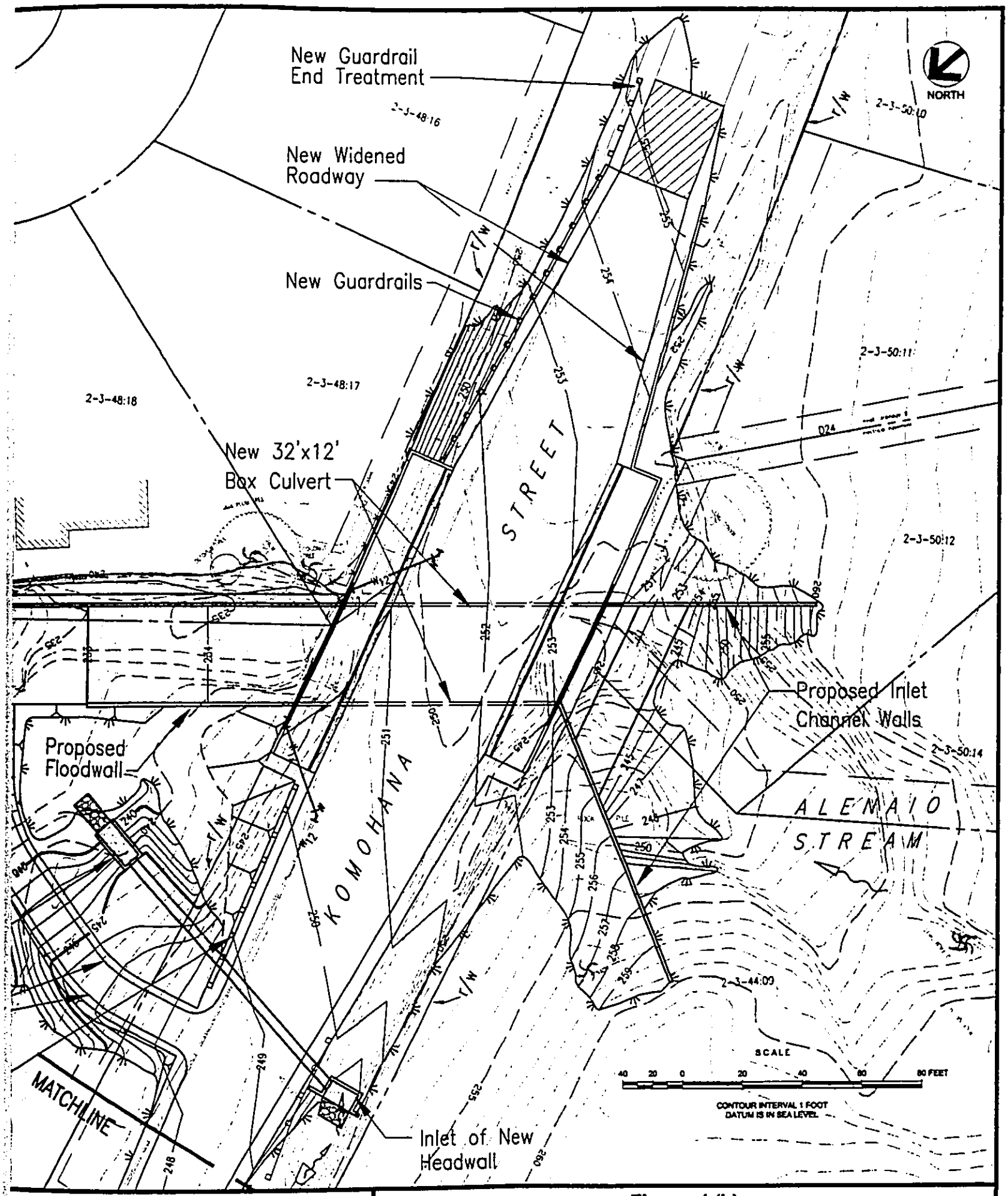
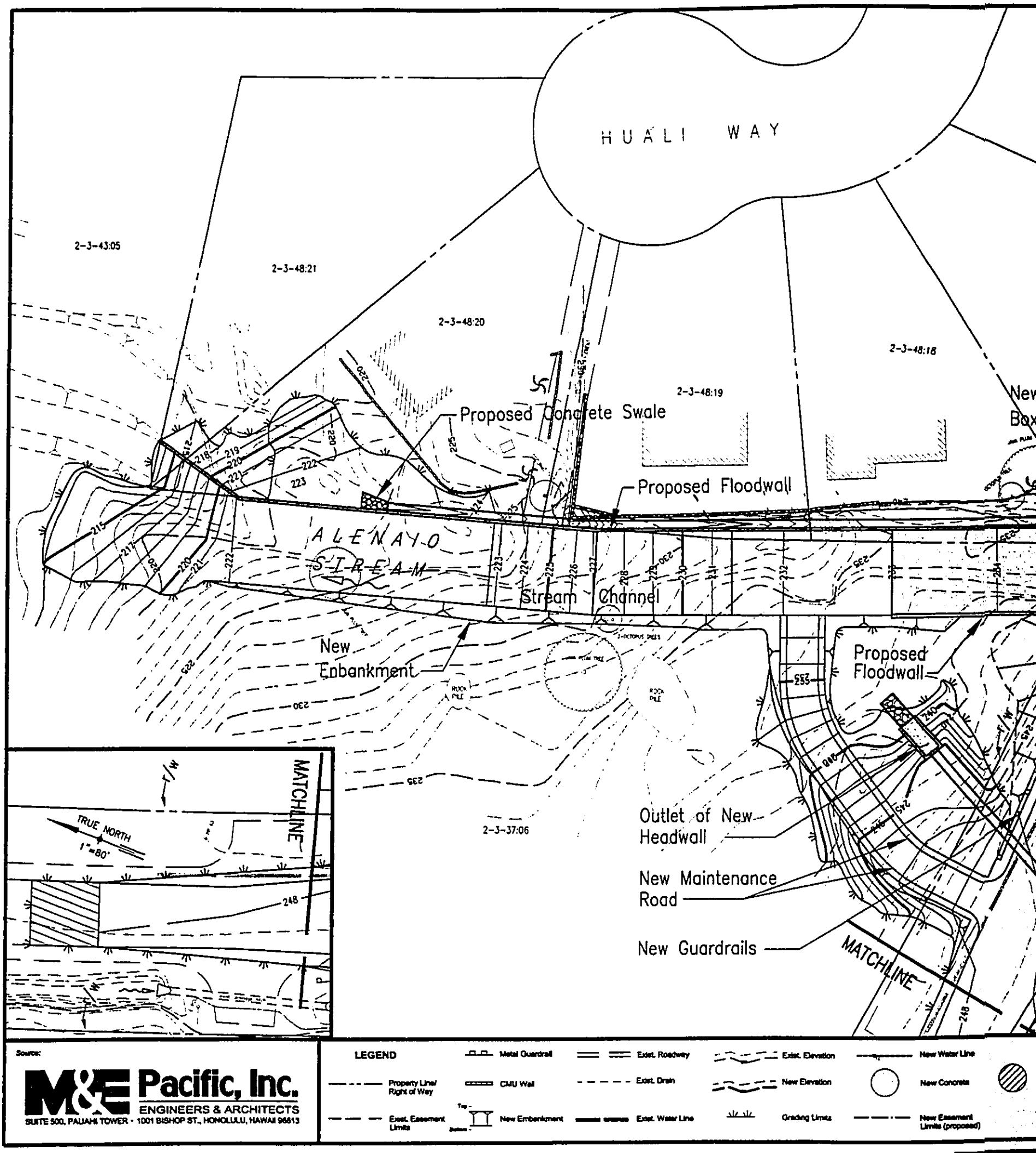


Figure 4 (b)

TOPOGRAPHIC SITE PLAN - PROPOSED SITE IMPROVEMENTS

Komohana Street/Alenaio Stream
Bridge Replacement
HILO, HAWAII


HUALI WAY
2-3-43:05
2-3-48:21
2-3-48:20
2-3-48:19
2-3-48:18
2-3-37:06
Proposed Concrete Swale
Proposed Floodwall
ALENAIO STREAM
Stream Channel
New Embankment
Proposed Floodwall
Outlet of New Headwall
New Maintenance Road
New Guardrails
MATCHLINE
MATCHLINE
TRUE NORTH
1"=80'
Source:
M&E Pacific, Inc.
ENGINEERS & ARCHITECTS
SUITE 500, PAUAHI TOWER · 1001 BISHOP ST., HONOLULU, HAWAII 96813
LEGEND
Metal Guardrail
Exist. Roadway
Exist. Elevation
New Water Line
Property Line/ Right of Way
CMU Wall
Exist. Drain
New Elevation
New Concrete
Exist. Easement Limits
New Embankment
Exist. Water Line
Grading Limits
New Easement Limits (proposed)

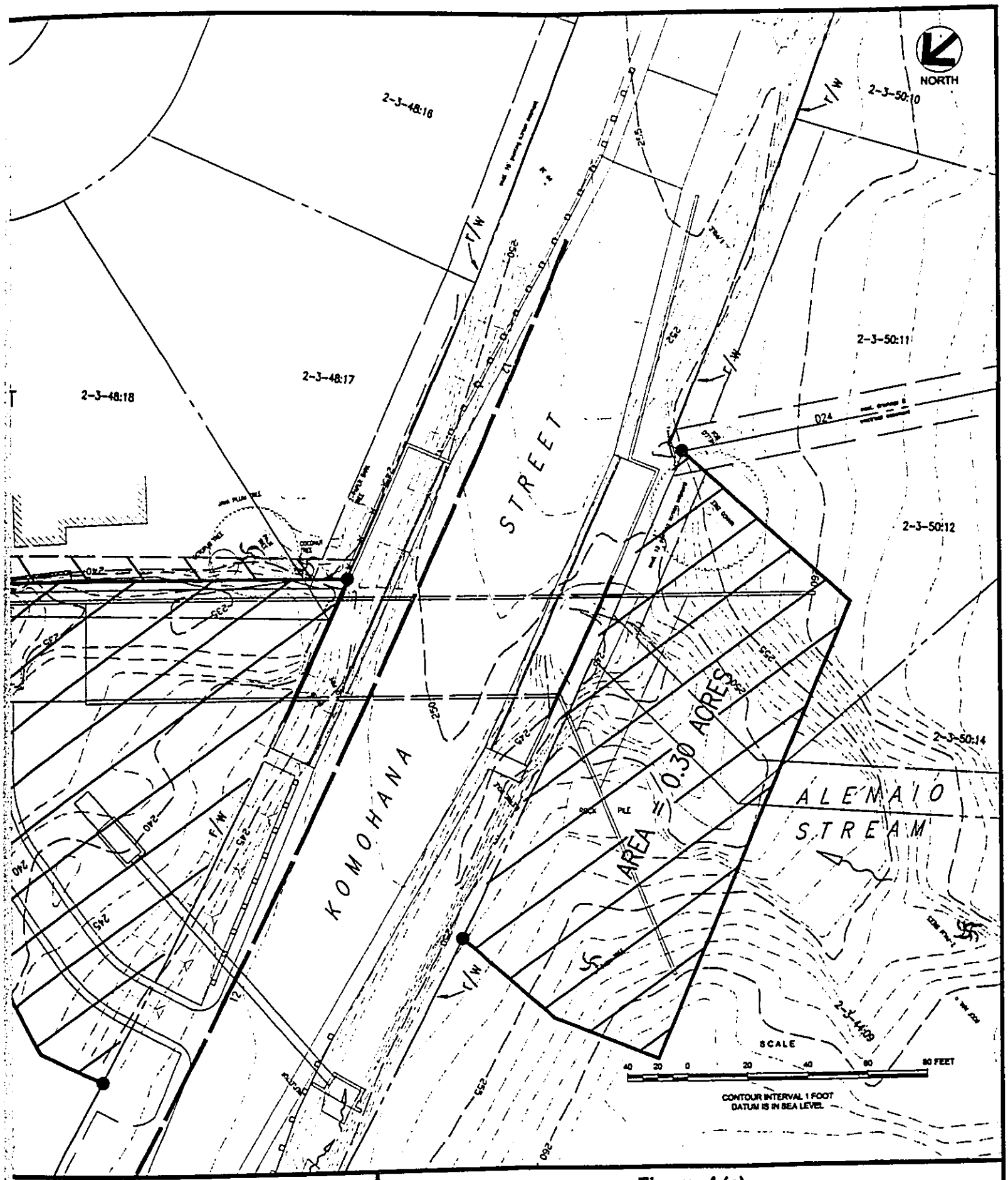
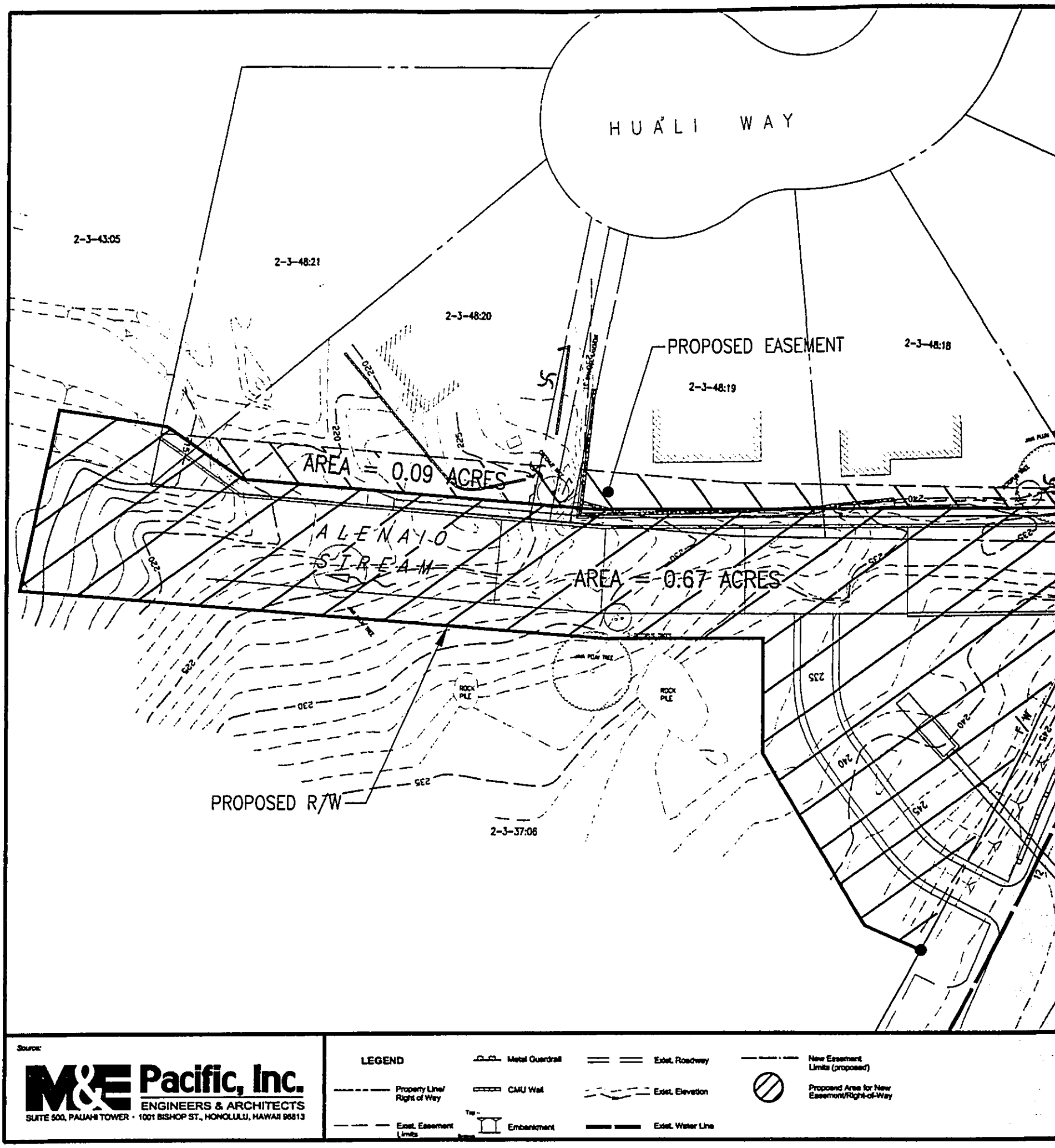


Figure 4 (c)

SITE PLAN - PROPOSED EASEMENT & RIGHT-OF-WAY

Komohana Street/Alenaio Stream
Bridge Replacement
HILO, HAWAII



Source:

M&E Pacific, Inc.
ENGINEERS & ARCHITECTS
SUITE 500, PAUAHI TOWER · 1001 BISHOP ST., HONOLULU, HAWAII 96813

LEGEND

- Property Line/ Right of Way
- Exist. Easement Limits
- Metal Guardrail
- CMU Wall
- Top / Bottom Embankment
- Exist. Roadway
- Exist. Elevation
- Exist. Water Line
- New Easement Limits (proposed)
- Proposed Area for New Easement/Right-of-Way

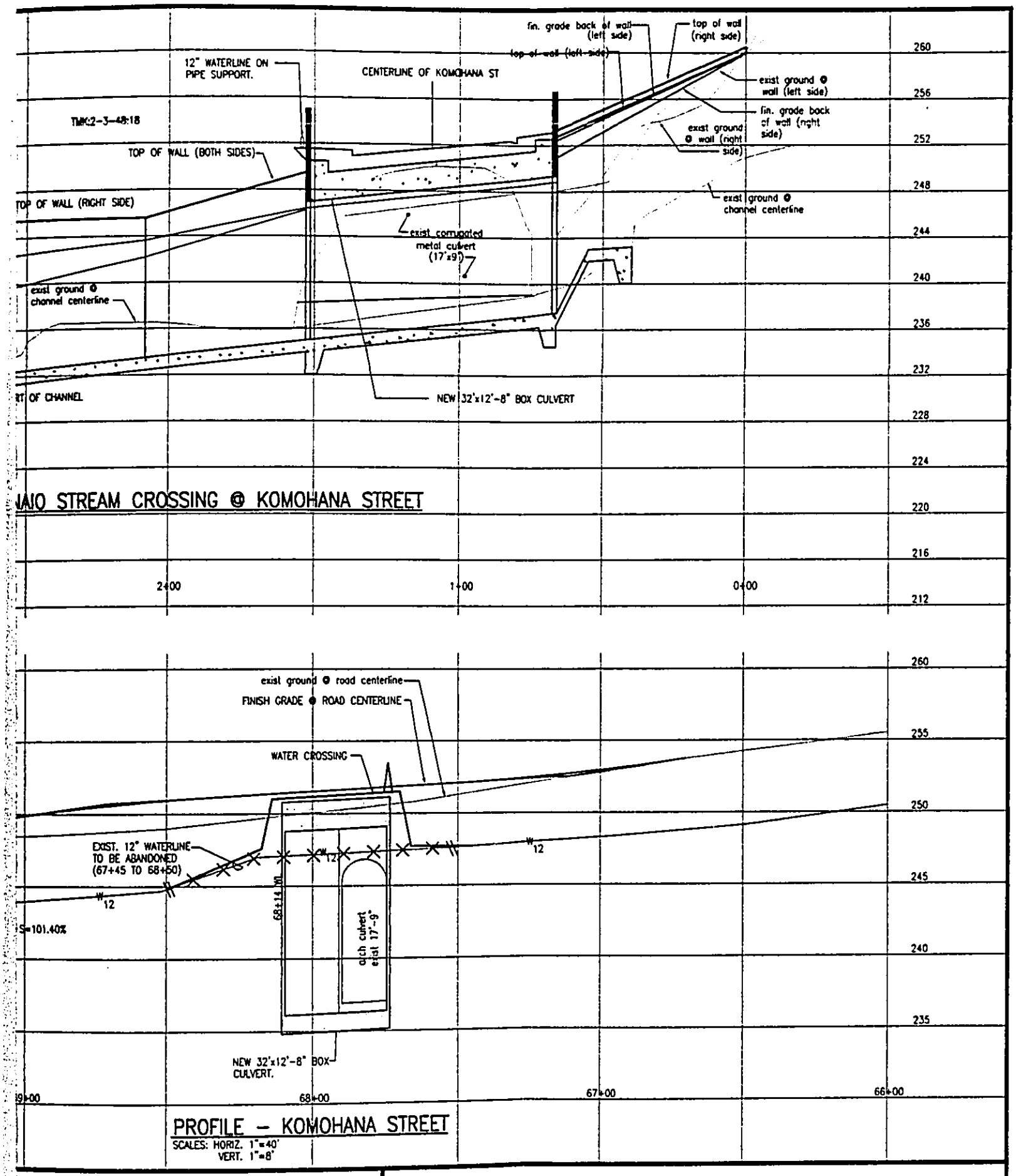


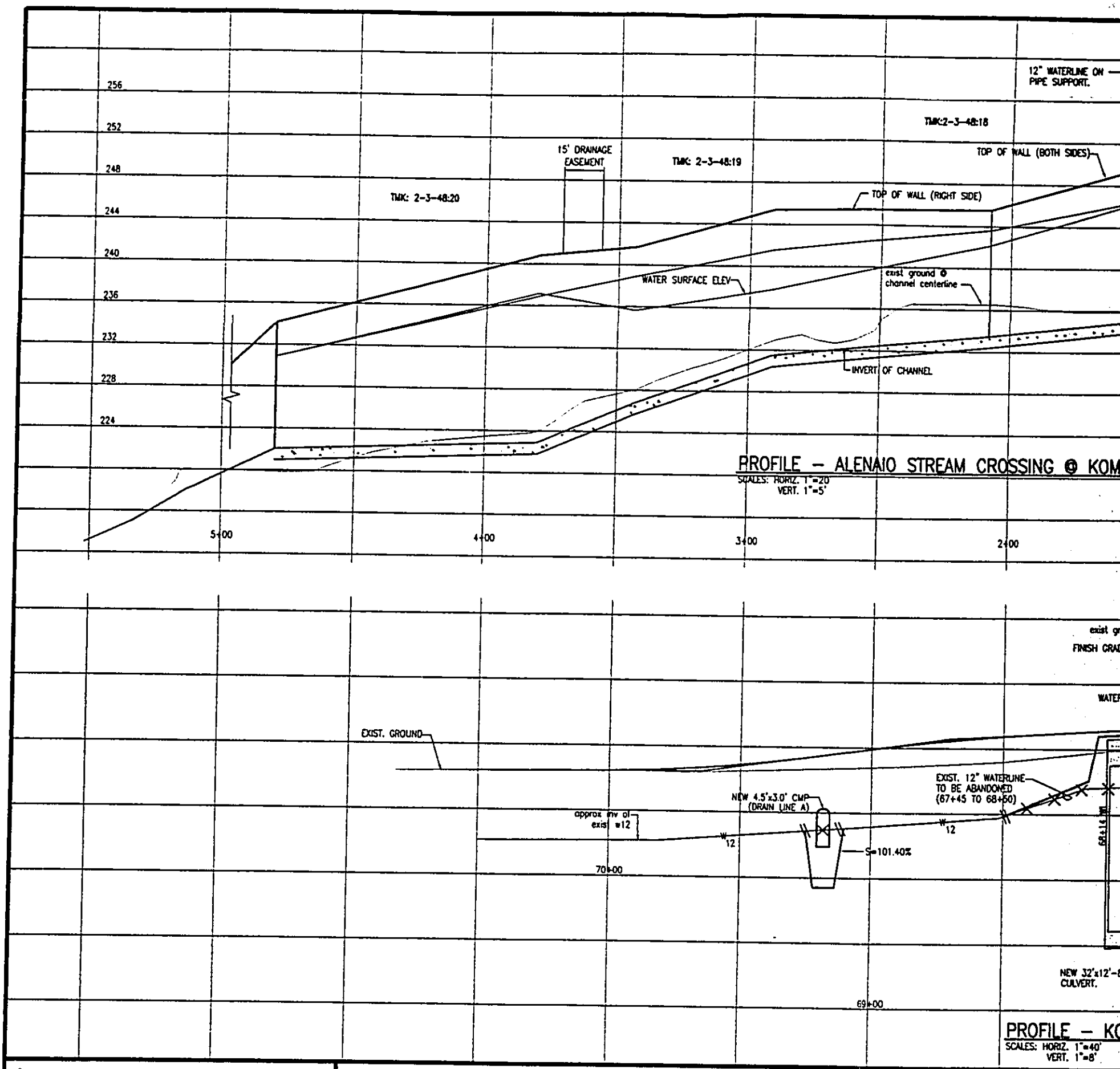
Figure 5

PROFILES - ALENAIO STREAM & KOMOHANA STREET

Komohana Street/Alenaio Stream

Bridge Replacement

HILO, HAWAII

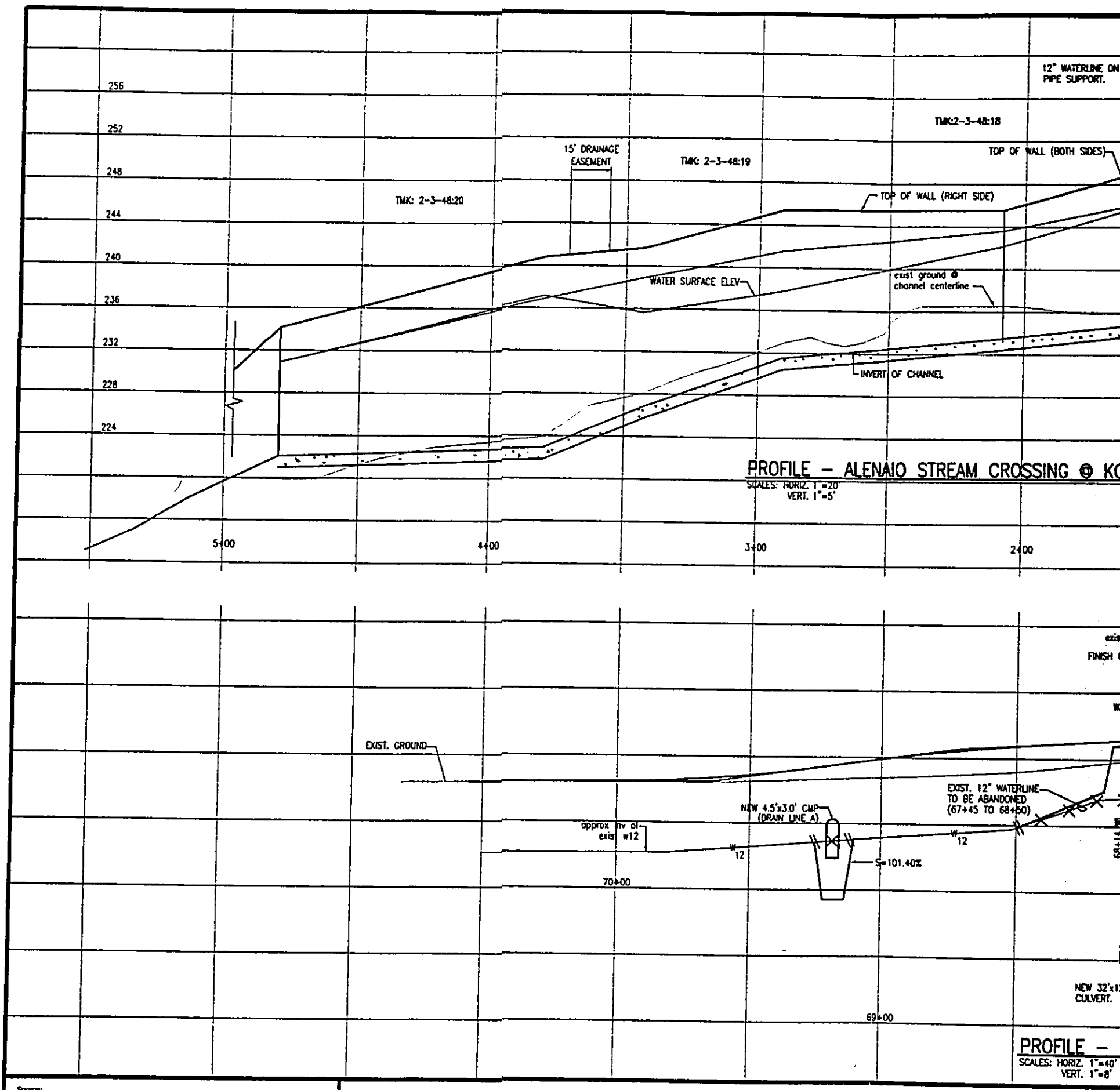


Source:

M&E Pacific, Inc.
ENGINEERS & ARCHITECTS
SUITE 500, PALIAHI TOWER • 1001 BISHOP ST., HONOLULU, HAWAII 96813

LEGEND

Exist. Water Line to be abandoned



Source:

M&E Pacific, Inc.
ENGINEERS & ARCHITECTS
SUITE 500, PAUAHI TOWER • 1001 BISHOP ST., HONOLULU, HAWAII 96813

LEGEND

Exist. Water Line to be abandoned

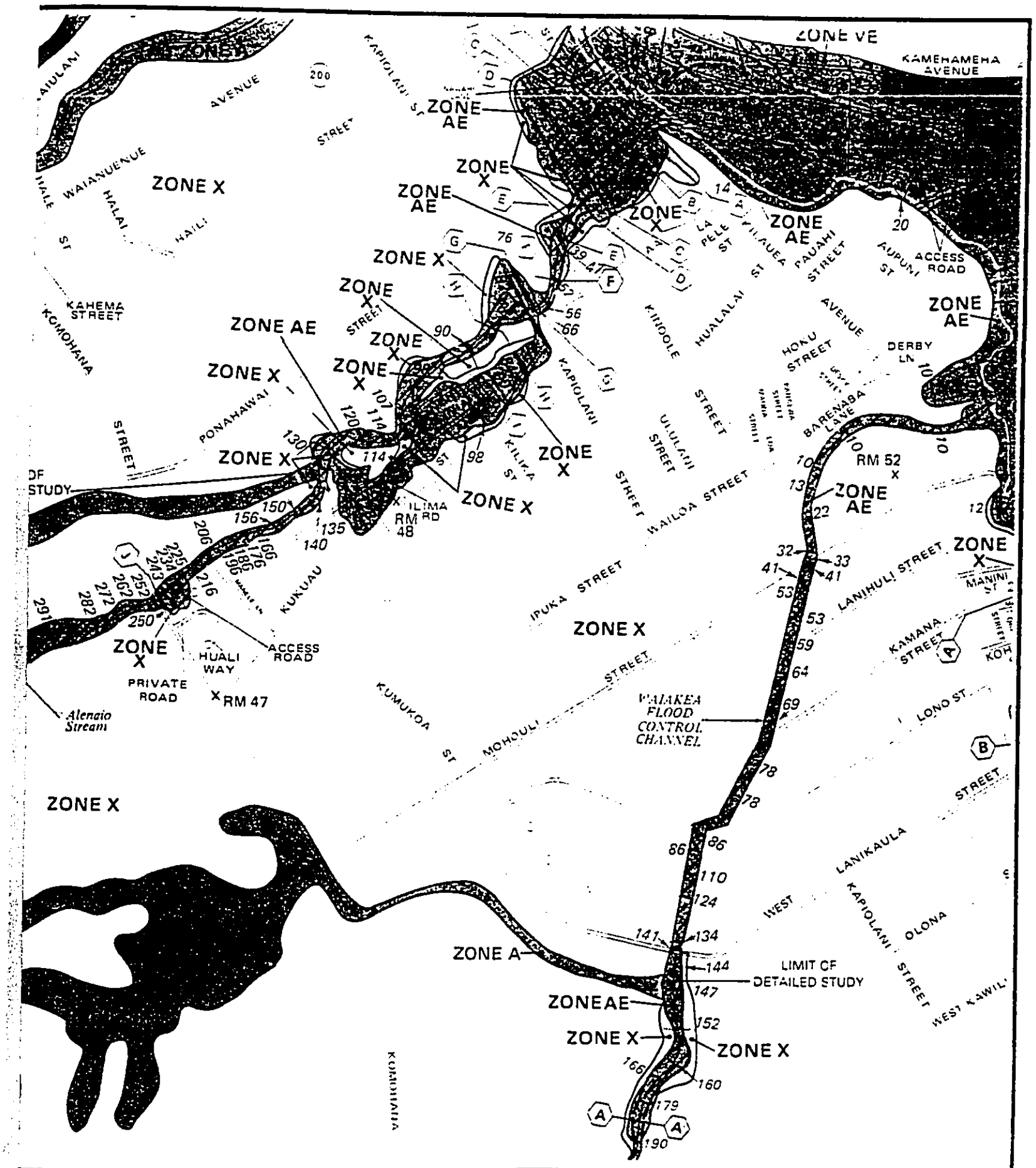


Figure 6
FLOOD INSURANCE RATE MAP
Komohana Street/Alenaio Stream
Bridge Replacement
HILO, HAWAII

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- **ZONE A** — No base flood elevations determined.
- **ZONE AE** — Base flood elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- **ZONE V** — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

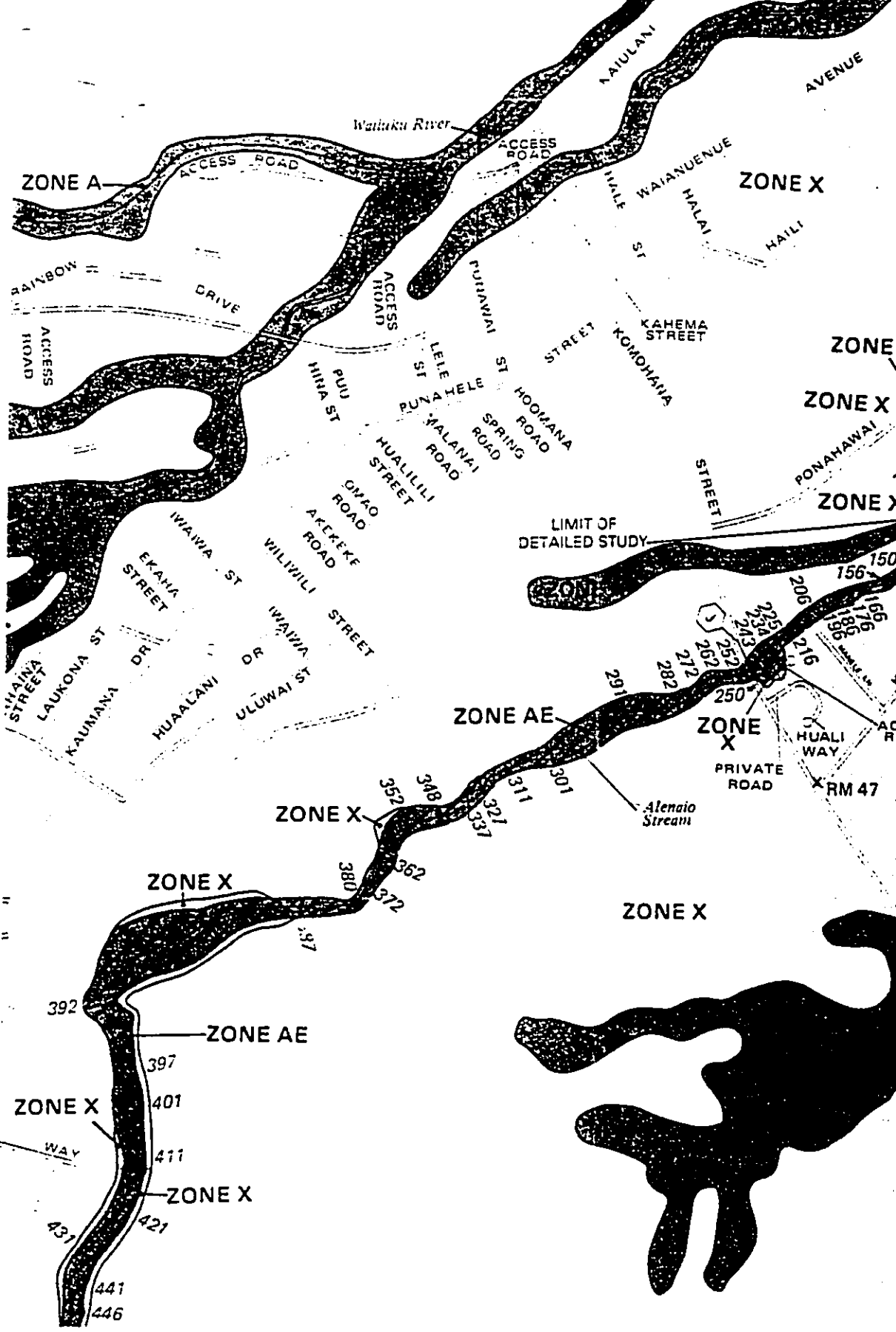
- **ZONE X** — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside 500-year flood plain.
- **ZONE D** — Areas in which flood hazards are undetermined.

- Flood Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet*
- D — D — Cross Section Line
- (EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*
- RM7 X — Elevation Reference Mark
- • M20 — Coastline Mile

Referenced to the National Geodetic Vertical Datum of 1929

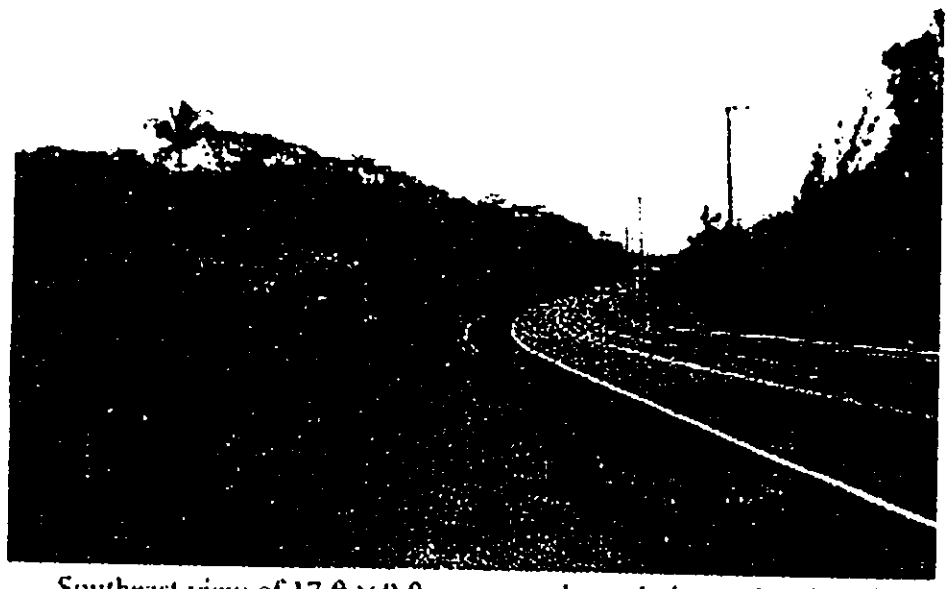


Source:

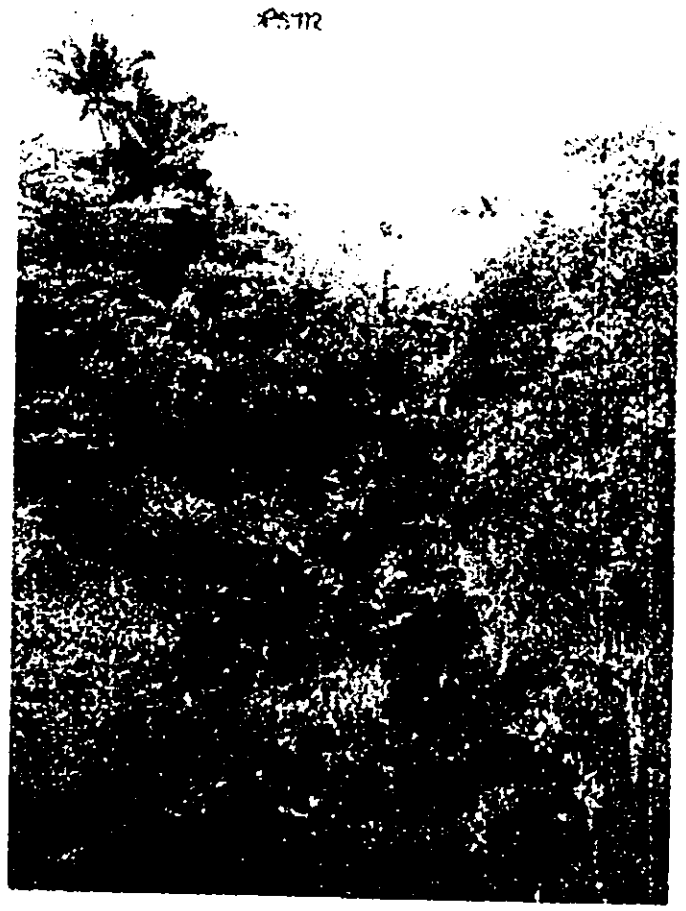
M&E Pacific, Inc.
ENGINEERS & ARCHITECTS
SUITE 500, PAUAHI TOWER · 1001 BISHOP ST., HONOLULU, HAWAII 96813

Figure 7 Pictures of Existing Komohana Street/Alenaio Stream Crossing Culvert and Its Ambient Environment.

a) Komohana Street/Alenaio Stream crossing. (North View)



b) West view of Upstream of culvert inlet. (Ancient lava bed, steep slope, intermittent stream small pools)

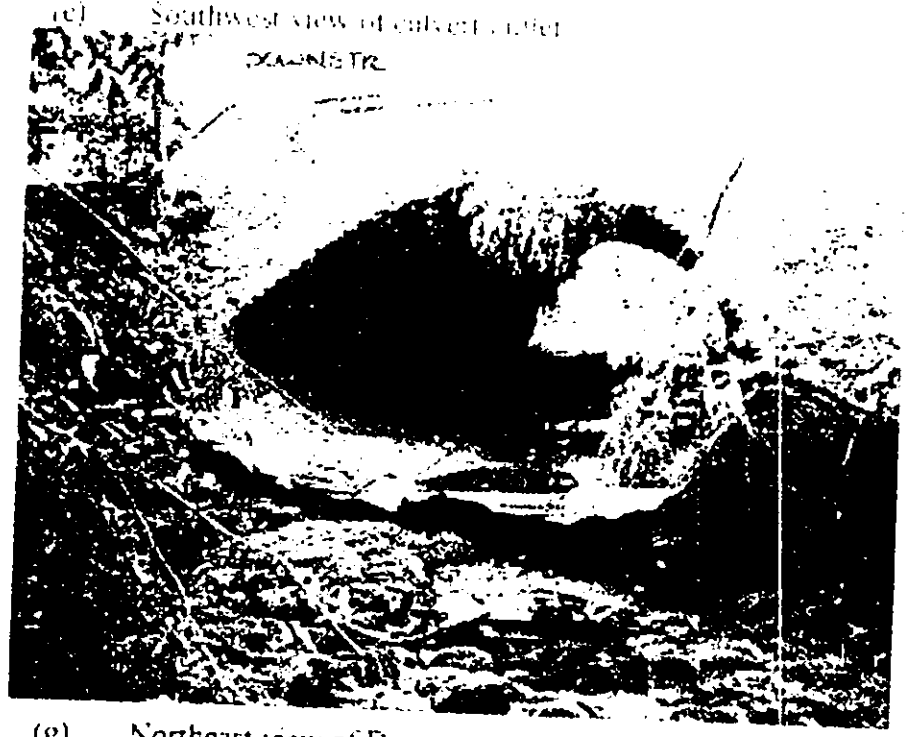


c) Southeast view of 17 ft × 9 ft corrugated metal pipe arch culvert inlet.

Figure 7 Pictures of Existing Keonikani Street Alternate Stream Crossing Culvert and Its Ambient Environment (Cont'd)

(d) A close look of culvert inlet

(e) Southwest view of culvert inlet



(f) Southwest view of culvert downstream

(g) Northeast view of Downstream

APPENDIXES

Appendix A.	Draft EA Distribution List
Appendix B.	Draft EA Comment and Response
Appendix C.	Land Owner Consultation Letters and Meeting Minutes
Appendix D.	Information of Historic Sites No. 14946 and 14947
Appendix E.	Flood Plain Map

APPENDIX A DRAFT EA DISTRIBUTION LIST

Federal Agencies

- Department of Agriculture
  - Resources Conservation Service: State Conservationist
- Department of the Interior
  - Fish & Wildlife Service: Pacific Islands Ecoregion
  - Water Resources Division, Geological Survey
- US Army Corps of Engineers
  - Civil Works Branch

State of Hawaii

- Department of Business, Economic Development & Tourism
  - Office of Planning
    - Coastal Zone Management Program
    - Coastal Nonpoint Pollution Control Program Management
- Department of Health
  - Environmental Planning Office
- Department of Land and Natural Resources
  - Forestry and Wildlife Division
  - Historic Preservation Division
  - Commission on Water Resources Management
- Office of Environmental Quality Control

County of Hawaii

- Planning Department
- Department of Public Works

Other Groups, Organizations and Persons

- Hilo Public Library
- Owners of parcels identified by TMK No. 2-3-37: 06, 2-3-43:05, 2-3-44: 09, 2-3-48: 17~21, & 2-3-50: 12, 14, 15

APPENDIX B DRAFT EA COMMENT AND RESPONSE

BENJAMIN J. CAYETANO
GOVERNOR

GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

October 16, 1998

Mr. Jiro A. Sumada, Deputy Chief Engineer
Hawaii County Department of Public Works
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Sumada:

Subject: Draft Environmental Assessment for the Komohana Street/Alenaio Stream Improvements, Hilo, Hawaii

Thank you for the opportunity to review the subject document. We have the following comments.

1. Please prepare site plans that clearly show the following:
   1) Alenaio stream;
   2) detour road;
   3) lined channel and floodwall;
   4) affected properties; and
   5) required setback or easement areas.

2. Please provide cross section and plan drawings that show the bridge abutments in relationship to the stream.

3. Please consult with the following parties and document the consultations in the final environmental assessment:
   1) affected neighbors and property owners;
   2) State Commission on Water Resources Management; and
   3) State Office of Planning.

4. The environmental assessment states that the bridge will be designed in harmony with the surroundings. Please describe the specific design measures that will be undertaken to meet this objective.

5. Please describe whether any downstream property will experience increased flood risk after this project is completed. Please provide the necessary documentation to support your response.

6. Please consider the alternative of building a grass-lined channel instead of a concrete lined one to improve stormwater quality. For guidance please refer to the attached article entitled, "Restoring Streambanks, Naturally."

7. Please provide reasons for supporting the FONSI determination based on an analysis of all 13 significance criteria in section 11-200-12 of the Hawaii Environmental Impact Statement Rules. Refer to the enclosed sample as a guideline.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185. Mahalo.

Sincerely,

Gary Gill
Director

c: M&E Pacific

Attachments

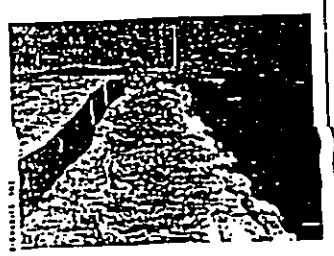
SOLUTION FILE

Restoring Streambanks, Naturally

Through bioengineering, plants and plant materials can revegetate eroded streambanks and create a living, self-sustaining barrier against further erosion.

Streams in urban and suburban areas endure considerable punishment. Oil, grease, and other pollutants washed off parking lots and streets by rainwater foul nearby streams. As more land is covered with impervious surfaces like asphalt and concrete, less rainwater filters into the ground. Thus, even a minor storm can send torrents of water raging into what was previously a small stream, eroding streambanks and filling stream channels with silt and sediments. In many areas, 100-year storm flows now occur every year.

After the Little Patuxent River streambank is excavated, live branches from willow and dogwood trees are installed so that their tips extend over the stream. The branches are anchored in place with stakes and covered with soil. (The temporary diversion wall was installed to prevent erosion during construction.)



By early spring, the branches have begun to sprout from the bank. Stones placed along the toe of the bank provide added protection against erosion.

The traditional engineering response to eroding streambanks calls for placing stone or concrete revetments, such as riprap, along the affected bank to shield it against floodwaters. While generally effective against erosion, such an approach is unattractive and provides little in the way of wildlife habitat.

A more natural erosion control technique, known as bioengineering, is gaining credence in the United States, having been used for centuries in Europe. Bioengineering refers to the use of plant material, often in conjunction with traditional engineering methods, to provide ecologically sound solutions to engineering problems. Thus, plants and plant materials can be used to create a living, self-sustaining barrier against erosion and to revegetate eroded streambanks, typically at half to two-thirds the cost of stone or concrete barriers.

Certain plants, like willow, will sprout readily from cuttings and prosper in wet soils. Thus, a dense mat of willow tree cuttings or stems anchored along an eroded streambank will help deflect and slow the flow of water during storms and also will revegetate the streambank. As the willows grow, their roots cling to the soil, providing added strength and protection. In addition, the trees supply wildlife habitat along the banks and in the stream.

Although many bioengineering techniques have been developed, two are featured here, from projects in Maryland and Pennsylvania.

Little Patuxent River, Columbia, Maryland. The Little Patuxent River winds through central Maryland and passes the new town of Columbia before joining the Patuxent River, a tributary of the Chesapeake Bay. Route 29, a busy commuter road along the Washington-Baltimore corridor, crosses over the Little Patuxent near Columbia.

In 1989, the Maryland State Highway Authority decided to upgrade Route 29 and build a new bridge over the river. As part of the road and bridge construction, the highway authority wanted to install a protective embankment along the river to stabilize the bank and prevent erosion.

Rather than rely on traditional engineering methods, the highway authority considered, at the behest of the Maryland Department of Natural Resources, environmentally sensitive alternatives such as bioengineering. It retained Biohabitats, Inc., of Towson, Maryland, to develop an erosion control system that would provide lasting protection against erosion, enhance wildlife habitat, and blend with the natural landscape.

By summer, the bank supports a vigorous growth of willow and dogwood saplings.

Floodwaters severely eroded the bank of Little Cedar Creek in Allentown, Pennsylvania.

After grading the streambank, construction crews install the fiber schine along the toe of the bank to prevent undercutting. Fiber textiles (not shown) are placed along the eroded creek bank.

Like most new technologies, bioengineering suffers from a lack of standardized procedures; there are no agreed-upon design and construction specifications or standards, no guidelines to gauge the likely effectiveness of different bioengineering techniques. Nonetheless, after consultation with Biohabitats, the highway authority took "a great leap of faith," according to Keith Bowers, president of the firm, and selected two measures: branch packing and root wads.

Branch Packing. The bank of the Little Patuxent River was excavated to create steps leading from the water to the top of the bank. Mats of interwoven live and dead branches of native willow and dogwood trees then were placed on the steps, anchored with pegs made of live willow branches, and covered with soil. (The dead branches were added for structural support.) As the live branches grow into trees, they will form a dense mat of roots and stems to guard against erosion. Native brownstone was installed along the toe of the stream, where the water meets the bank, for added protection.

Root Wads. In areas prone to severe erosion, such as along the inside curve of the river's meanders, Biohabitats installed root wads salvaged from mature trees felled during the widening of the highway. Fifteen trees with large root wads (at least five feet in diameter) and 20 feet of trunk attached were positioned side by side in an excavated trench along the streambank, with the wads extending from the bank, perpendicular to the stream. The trunks then were anchored in place with boulders and covered with earth. Like riprap, the interlocking root wads provide protection against the scouring of streambanks caused by storm flows. Seeds of quick-growing grasses were planted in the spaces within and between the root wads to further control erosion.

Thus far, the two systems have withstood all storms since they were installed in 1990.

Little Cedar Creek, Allentown, Pennsylvania. Floodwaters from surrounding development had undercut the bank of Little Cedar Creek in Allentown's Trexler Park, leaving behind a barren, scoured bank that receded with each storm. The Allentown Parks Department sought a natural erosion control system that would arrest bank erosion and improve the aesthetics of the riparian areas. It settled on two products developed by the Creative Habitat Corporation of White Plains, New York: fiber schines and fiber textiles, both made of durable and inexpensive coconut fibers.

The fiber schine is a 12-inch-diameter, ten-foot-long flexible cylinder made of coconut fibers that have been compressed and stuffed, like sausages, into netting that also is made of coconut fibers. It is tough, flexible, and, at 7.5 pounds per linear foot, light enough to be hand carried, which makes it ideal for installation in inaccessible or environmentally sensitive spots. The fiber textile is a thick mesh carpet of coconut fibers that can be rolled out, like sod, and staked down over eroded areas. The textile is tough enough to protect against erosion yet porous enough for plants to grow though. Both products will biodegrade after about five years, at which time plants will have grown sufficiently to keep the streambank intact.

One year later, the creek bank supports a thick growth of native wild flowers and grasses.

At Little Cedar Creek, the eroded streambank was graded to a more gentle slope, and fiber schines, anchored with wooden stakes, were placed along the toe of the bank to prevent further undercutting. Fiber textiles were rolled along the bare soil of the creek bank and staked. Quick-growing native grass and wild flower seedlings were planted throughout the mesh.

Like the bioengineering system installed at the Little Patuxent River, Creative Habitat's coconut-based system has withstood all storms, including a 100-year storm that occurred immediately after the project was completed in 1991. ❖

This solution was submitted by David Salvesen, an environmental writer and consultant based in Kensington, Maryland.

What's your solution?

Readers are invited to offer solutions to common land use or community development problems for publication in this department. Topic suggestions should be addressed to Julie Stern, Associate Editor, Urban Land (3), 625 Indiana Avenue, NW, Suite 400, Washington, DC 20004-2932.

8.0 DETERMINATION, FINDINGS AND REASONS FOR SUPPORTING DETERMINATION

8.1 SIGNIFICANCE CRITERIA

According to the Department of Health Rules (11-200-12), an applicant or agency must determine whether an action may have a significant impact on the environment, including all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long-term effects. In making the determination, the Rules establish "Significance Criteria" to be used as a basis for identifying whether significant environmental impact will occur. According to the Rules, an action shall be determined to have a significant impact on the environment if it meets any one of the following criteria:

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resources;

The proposed project will not impact scenic views of the ocean or any ridge lines in the area. The visual character of the area will change from the current agricultural land to an improved 4-lane highway which is compatible with the surrounding land use plans and programs being implemented for the region. The highway corridor is comprised of "Prime" agricultural land which is an important resource. Development of drainage systems will follow established design standards to ensure the safe conveyance and discharge of storm runoff. In addition, the subject property is located outside of the Count's Special Management Area (SMA).

As previously noted, no significant archaeological or historical sites are known to exist within the corridor. Should any archaeologically significant artifacts, bones, or other indicators of previous on-site activity be uncovered during the construction phases of development, their treatment will be conducted in strict compliance with the requirements of the Department of Land and Natural Resources.

(2) Curtails the range of beneficial uses of the environment;

Although the subject property is suitable for agricultural uses, the land area adjoining the Mokulele Highway is naturally suited for transportation purposes due to its location proximate to an existing highway system. To return the site to a natural environmental condition is not practical from both an environmental and economic perspective.

(3) Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders;

The proposed development is consistent with the Environmental Policies established in Chapter 344, HRS, and the National Environmental Policy Act.

(4) Substantially affects the economic or social welfare of the community or state;

The proposed project will provide a significant contribution to Maui's future population by providing residents with the opportunity to "live and work in harmony" in a high quality living environment. The proposed project is designed to support surrounding land use patterns, will not negatively or significantly alter existing residential areas, nor will unplanned population growth or its distribution be stimulated. The project's development is responding to projected population growth rather than contributing to new population growth by stimulating in-migration.

(5) Substantially affects public health

Impacts to public health may be affected by air, noise, and water quality impacts, however, these will be insignificant or not detectable, especially when weighed against the positive economic, social, and quality of life implications associated with the project. Overall, air, noise, and traffic impacts will be significantly positive in terms of public health as compared to the "no action" alternative.

(6) Involves substantial secondary impacts, such as population changes or effects on public facilities

Existing and planned large-scale housing development projects within Wailuku-Kahului and Kihei will contribute to a future population growth rate that will require expansion of public and private facilities and services. These improvements will become necessary as the overall population of Maui grows and settlement patterns shift. However, the proposed project will not in itself generate new population growth, but provide needed infrastructure the area's present and future population.

In addition, new employment opportunities will generate new sources of direct and indirect revenue for individuals and the County of Maui by providing both temporary and long-term employment opportunities during the construction period. Indirect employment in a wide range of service related industries will also be created from construction during project development.

(7) Involves a substantial degradation of environmental quality;

The proposed development will utilize existing vacant agricultural land. With development of the proposed project, the addition of urban landscaping will significantly mitigate the visual impact of the development as viewed from outside the site while the overall design will complement background vistas.

Makai views from the subject property are available, however, they are not significant nor generally available to the public in the property's present restricted condition.

(8) Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions;

By planning now to address the future needs of the community and the State, improvement of the transportation system is consistent with the long term plans for Maui. No views will be obstructed or be visually incompatible with the surrounding area.

(9) Substantially affects a rare, threatened or endangered species or its habitat;

No endangered plant or animal species are located within the highway corridor.

(10) Detrimentally affects air or water quality or ambient noise levels;

Any possible impact to near-shore ecosystems resulting from surface runoff, will be mitigated by the establishment of on-site retention basins during the construction phases of development. After development, retention areas within the highway right-of-way will serve the same function to encourage recharge of the groundwater.

(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters.

Development of the property is compatible with the above criteria since there are not environmentally sensitive areas associated with the project and the physical character of the corridor has been previously disturbed by agricultural uses. As such, the property no longer reflects a "natural environment". Shoreline, valleys, or ridges will not be impacted by the development.

(12) Substantially affects scenic vistas and view planes identified in county or state plans or studies;

Due to topographical characteristics of the property, views of the area to be developed are generally not significant although they are visible. The majority of the proposed project will not be visible, except from higher elevations by the general public or from persons traveling along the highway.

(13) Requires substantial energy consumption.

The location of the proposed project is between Maui's major growth areas. This relationship will reduce travel times and energy consumption after project build out through efficiencies gained by the increased capacity of the highway. Construction of the proposed project will not require substantial energy consumption relative to other similar projects.

Stephen K. Yamashiro
Mayor

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WOI
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4
(808) 961-8321 • Fax (808) 961-8530

August 23, 1999

MR GARY GILL DIRECTOR
STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET SUITE 702
HONOLULU HI 96813

Subject: Your Letter of October 16, 1998, to M&E Pacific, Inc. Regarding the Draft Environmental Assessment for the proposed Komohana Street/Alenaio Stream Improvements, Hilo, Hawaii

Thank you for reviewing the Draft Environmental Assessment for the proposed Komohana Street/Alenaio Stream Improvements project.

We provide the following responses to your concerns:

1. The site plan (Figure 4 of DEA/FEA) has been revised to show Alenaio Stream, the proposed lined channel and floodwall, affected properties and required setback or easement areas. Although the detour road will not be needed, a maintenance road is included for this project.

2. The profiles that show the bridge abutments in relationship to the stream have been provided as Figure 5 in the final environmental assessment.

3. We have sent DEA to the affected neighbors and property owners for review and comments. M&E Pacific will send you copies of these letters. Furthermore, an informational meeting was held for them on November 16, 1998, outlining the project and addressing any questions or concerns they may have. M&E Pacific will also send you the minutes of the informational meeting.

We have also consulted State Commission on Water Resources Management and State Office of Planning. The consultations are documented in the final environmental assessment.

4. The new bridge will include a flood wall, and by a request from the residents, a rockwall effect will be included (using a cast-in-place concrete form liner system used in DOT projects).

5. The flood risk for homes both upstream and downstream south bank will be reduced according to hydraulic computations by M&E Pacific.

6. Thank you for the informative article entitled "Restoring Streambanks, Naturally." The existing stream bed of this intermittent stream consists of weathered lava rock, without vegetation. The stream banks are vegetated however. The unlined portion of the will remain as the peak flow velocities are in the 20 to 30 feet per second range, well beyond the range for plant materials. (We will incorporated the suggestion for future projects where velocities are not as extreme as our project.)

7. Based on the analysis of all 13 significant criteria in Section 11-200-12 of the Hawaii Environmental Impact Statement Rules, we have provided reasons for supporting the FONSI determination in the final environmental assessment.

If you have any questions, please contact Mr. Paul Nash at 1-808-961-8327.

Very truly yours

JIRO A. SUMADA,
Deputy Chief Engineer
Department of Public Works
County of Hawaii

cc: Jenny Li, M&E Pacific, Inc.

DEPARTMENT OF THE ARMY
U S ARMY ENGINEER DISTRICT, HONOLULU
FT SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

October 29, 1998

Operations Branch

Ms. Jenny Li, Engineer
M&E Pacific, Inc.
Pauahi Tower, Suite 500
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Ms. Li:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for Komohana Street/Alenaio Stream Improvements, Hilo, Hawaii (TMKs 2-3-37:06; 2-3-44:09; 2-3-48:17-20; and 2-3-50:12,14,15). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits:

a. Based on the information provided, a DA permit will be required

b. The flood hazard information provided on pages 8 and 16 is correct.

Please contact please contact Mr. Peter Galloway at 438-9258, extension 15, for further information and refer to File No. 980000314.

Sincerely,

George P. Young, P.E.
Chief, Operations Branch

Stephen K. Yamashiro
Mayor

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

August 23, 1999

MR GEORGE P YOUNG P E
CHIEF OPERATIONS BRANCH
DEPARTMENT OF THE ARMY
U S ARMY ENGINEER DISTRICT HONOLULU
FORT SHAFTER HI 96858

Subject: Your Letter of October 29, 1998, to M&E Pacific, inc. Regarding the Draft Environmental Assessment for the proposed Komohana Street/Alenaio Stream Improvements, Hilo, Hawaii

Thank you for reviewing the Draft Environmental Assessment for the Komohana Street/Alenaio Stream Improvement project.

We acknowledge that a DA permit will be required for this project and the flood hazard information provided in the EA is correct.

If you have any questions, please contact Mr. Paul Nash at 1-808-961-8327.

Very truly yours

JIRO A. SUMADA,
Deputy Chief Engineer
Department of Public Works
County of Hawaii

cc: Jenny Li, M&E Pacific, Inc.

BENJAMIN J CAYETANO

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P O BOX 621
HONOLULU HAWAII 96809

MICHAEL D WILSON
ROBERT G GIRALD
DAVID A NOBRIGA
LAWRENCE H MIIKE
RICHARD H COX
HERBERT M RICHARDS JR

TIMOTHY E JOHNS

JAN 13 '99

Ms. Jenny Li, Engineer
M & E Pacific, Inc.
Pauahi Tower
1001 Bishop Street, Suite 500
Honolulu, Hawaii 96813

Dear Ms. Li:

Thank you for allowing us to review and comment on the Draft Environmental Assessment for the Komohana Street/Alenaio Stream Improvements project.

A stream channel alteration permit pursuant to Hawaii Revised Statutes §174C-71 must be obtained by the County of Hawaii, Department of Public Works.

If you have any questions regarding this letter, please call David Higa of our staff at 587-0249.

Sincerely,

TIMOTHY E. JOHNS
Deputy Director

DH:fc

Stephen K. Yamashiro
Mayor

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

August 23, 1999

MR TIMOTHY E JOHNS DEPUTY DIRECTOR
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P O BOX 621
HONOLULU HI 96809

Subject: Your Letter of January 13, 1999, to M&E Pacific, Inc. Regarding the Draft Environmental Assessment for the proposed Komohana Street/Alenaio Stream Improvements, Hilo, Hawaii

Thank you for reviewing the Draft Environmental Assessment for the proposed Komohana Street/Alenaio Stream Improvements project.

We acknowledge that a Stream Channel Alternation (SCA) permit pursuant to Hawaii Revised Statutes §174C-71.

If you have any questions, please contact Mr. Paul Nash at 1-808-961-8327.

Very truly yours

JIRO A. SUMADA,
Deputy Chief Engineer
Department of Public Works
County of Hawaii

cc: Jenny Li, M&E Pacific, Inc.

RECEIVED DEC 09 1998

BENJAMIN J. CAYETANO
GOVERNOR
SELBY F. NAYA
DIRECTOR
BRADLEY J. MOSSMAN
DEPUTY DIRECTOR
RICK EGGED
DIRECTOR, OFFICE OF PLANNING

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

OFFICE OF PLANNING
235 South Beretania Street, 6th Flr., Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Tel: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-7828

December 1, 1998

Ms. Jenny Li
Engineer
M&E Pacific, Inc.
Suite 500, Pauahi Tower
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Ms. Li:

Subject: Draft Environmental Assessment (DEA) for Komohana Street/Alenaio Stream Improvements, Hilo, Hawaii

The proposed bridge widening involves instream work. Because of the stream alterations, soil erosion and polluted runoff are likely. Therefore, mitigation measures may be necessary to prevent or mitigate the impacts. Although the DEA states that measures recommended by the U.S. Fish and Wildlife Service will be implemented, we recommend that you consult our Coastal Nonpoint Pollution Control Program Management Plan which also contains management measures for construction activities.

If there are any questions, please contact Howard Fujimoto of our Coastal Zone Management Program at 587-2898.

Sincerely,

Bradley J. Mossman

Bradley J. Mossman
Director
Office of Planning

08/25/99 WED 08:59 FAX 808 9618630 PUBLIC WORKS 003

Stephen K. Yamashiro
Mayor

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii
DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

August 23, 1999

MR BRADLEY J. MOSSMAN, DIRECTOR
OFFICE OF PLANNING
DEPARTMENT OF BUSINESS ECONOMIC DEVELOPMENT & TOURISM
235 SOUTH BERETANIA STREET 6TH FLOOR
HONOLULU HI 96813

Subject: Your Letter of December 1, 1998, to M&E Pacific, Inc. Regarding the Draft Environmental Assessment for the proposed Komohana Street/Alenaio Stream Improvements, Hilo, Hawaii

Thank you for reviewing the Draft Environmental Assessment for the proposed Komohana Street/Alenaio Stream Improvements project.

We provide the following responses to your concerns:

The Coastal Nonpoint Pollution Control Program Management Plan has been consulted per your recommendation. The Contractor will be requested to comply with the management measures contained in this plan as well. The plan will be used as a guideline for developing the project best management plan (BMP) for construction activities.

If you have any questions, please contact Mr. Paul Nash at 1-808-961-8327.

Very truly yours

JIRO A. SUMADA,
Deputy Chief Engineer
Department of Public Works
County of Hawaii

cc: Jenny Li, M&E Pacific, Inc.

AUG 25 '99 10:09 808 9618630 PAGE.03

BENJAMIN J CAYETANO
GOVERNOR OF HAWAII

LAWRENCE MIIKE
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P O BOX 3378
HONOLULU HAWAII 96801

In reply, please refer to

October 20, 1998

98-197/epo

Ms. Jenny Li, Engineer
M&E Pacific, Inc.
Suite 500, Pauahi Tower
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Ms. Li:

Subject: Draft Environmental Assessment (DEA)
Komohana Street/Alenaio Stream Improvements
Hilo, Hawaii
TMK: 2-3-37: 6

Thank you for allowing us to review and comment on the subject project. We do not have any comments to offer at this time.

Sincerely,

BRUCE S. ANDERSON, Ph.D.
Deputy Director for
Environmental Health

BENJAMIN J CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

MICHAEL D. WILSON, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
DEPUTIES
GILBERT COLOMA AGARAN
AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION DIVISION
LAND DIVISION
STATE PARKS
WATER AND LAND DEVELOPMENT

October 19, 1998

Ms. Jenny Li
M & E Pacific, Inc.
Suite 500, Pauahi Tower
1001 Bishop Street
Honolulu, Hawaii 96813

LOG NO: 22389
DOC NO: 9810PM09

Dear Ms. Li:

SUBJECT: Draft Environmental Assessment for Komohana Street /Alenaio Stream Improvements Ponahawai, South Hilo, Hawaii Island TMK: 2-2-37:06; 2-3-44:09; 2-3-48:17-20; 2-3-50:12, 14, 15

This is in response to your memo of September 15, 1998 with a request for our review and comments on the subject document.

There are no known historic sites in the project area, which according to the information presented in the Draft Environmental Assessment, has been previously disturbed. We thus believe that the proposed work will have "no effect" on significant historic sites.

For your information, we do not need to receive a copy of the Final EA.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

PM:amk

Stephen K. Yamashiro
Mayor

Virginia Goldstein
Director

Russell Kokubun
Deputy Director

County of Hawaii

PLANNING DEPARTMENT
25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-8742

September 28, 1998

Ms. Jenny Li
M&E Pacific, Inc.
Suite 500, Pauahi Tower
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Ms. Li:

Draft Environmental Assessment for the Proposed Komohana Street-Alenaio Stream Improvements
TMK: 2-3-37:6; 2-3-44:9; 2-3-48:17-20; 2-3-50:12; Ponahawai, South Hilo, HI

Thank you for your letter dated September 8, 1998, in response to comments we provided regarding the above-described project. We also appreciate receiving a copy of the draft environmental assessment for our review.

We have completed our review of the draft environmental assessment and have no objection to the information and findings contained therein.

Thank you for giving our office the opportunity to comment. Please contact Daryn Arai of this office should you have any questions at 961-8288.

Sincerely,

VIRGINIA GOLDSTEIN
Planning Director

DSA:jkg
f:\wp60\Ch343\1998\L_Alena02.dsa

c: DPW-Engineering

APPENDIX C **APPENDIX C. LAND OWNER CONSULTATION LETTERS AND MEETING MINUTES**

M&E Pacific, Inc.

Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935-5934

November 6, 1998

ISF Development Co., Ltd.
1-5-6-505 Kitakyo Hojimachi
Chu-Ku Osaka
JAPAN

TMK: 2-3-44: 9

Re: Komohana Street/Alenaio Stream Improvements

Our company, M&E Pacific, Inc., has been contracted by the County of Hawaii, Department of Public Works, to design improvements at the Alenaio Stream crossing at Komohana Street.

The project involves the replacement of the existing corrugated metal pipe culvert with a wider concrete bridge to reduce flooding damage to the Komohana Street roadway and its adjacent properties. As part of the project, the County will also improve portions of the natural stream channel and extend an existing floodwall along the stream for added protection to the surrounding properties.

Attached is a copy of the draft Environmental Assessment prepared for the project which explains the nature of the improvements and discusses the various impacts and mitigative measures proposed. Your property is indicated in red on Figure 3 of the attached report.

The project is presently in the preliminary engineering stage. Construction of the proposed improvements will not occur until all Federal, State and County permits and requirements are met and secured.

Please review the report and call me at 961-2776 should you have any questions.

Very truly yours,

Edward K. Harada
Manager

Attachment: 1

cc: Mr. Lance Tokuda
Mrs. Jenny Li
Mr. Paul Nash

M&E Pacific, Inc.
Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935-5934

November 6, 1998

Frank DeLuz III
Carolyn M. Asencion
332 Huali Way
Hilo, Hawaii 96720

TMK: 2-3-48: 17

Re: Komohana Street/Alenaio Stream Improvements

Our company, M&E Pacific, Inc., has been contracted by the County of Hawaii, Department of Public Works, to design improvements at the Alenaio Stream crossing at Komohana Street.

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Very truly yours,

Edward K. Harada
Manager

Attachment: 1

cc: Mr. Lance Tokuda
Mrs. Jenny Li
Mr. Paul Nash

M&E Pacific, Inc.
Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935-5934

November 6, 1998

Frank DeLuz III
Brenda I. DeLuz
330 Huali Way
Hilo, Hawaii 96720

TMK: 2-3-48:18

Re: Komohana Street/Alenaio Stream Improvements

Our company, M&E Pacific, Inc., has been contracted by the County of Hawaii Department of Public Works, to design improvements at the Alenaio Stream crossing at Komohana Street.

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Very truly yours,

Edward K. Harada
Manager

Attachment: 1

cc: Mr. Lance Tokuda
Mrs. Jenny Li
Mr. Paul Naah

M&E Pacific, Inc.

Engineers & Architects

Big Island Office
1100 Kuwili St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935-3554

November 6, 1998

Patricia G. Forbes
Patricia G. Englehard
324 Huali Way
Hilo, Hawaii 96720

TMK: 2-3-48: 19

Re: Komohana Street/Alenaio Stream Improvements

Our company, M&E Pacific, Inc., has been contracted by the County of Hawaii, Department of Public Works, to design improvements at the Alenaio Stream crossing at Komohana Street.

The project involves the replacement of the existing corrugated metal pipe culvert with a wider concrete bridge to reduce flooding damage to the Komohana Street roadway and its adjacent properties. As part of the project, the County will also improve portions of the natural stream channel and extend an existing floodwall along the stream for added protection to the surrounding properties.

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Very truly yours,

Edward K. Harada
Manager

Attachment: 1

cc: Mr. Lance Tokuda
Mrs. Jenny Li
Mr. Paul Nash

M&E Pacific, Inc.

Engineers & Architects

Big Island Office
[illegible]
Hilo, Hawaii 96720
Telephone (808) [illegible]
Fax (808) [illegible]

November 6, 1998

William T./Michaela L. Aiona
P.O. Box [illegible]
Kamuela, Hawaii 96743

TMK: 2-3-48: 20

Re: Komohana Street/Alenaio Stream Improvements

Our company, M&E Pacific, Inc., has been contracted by the County of Hawaii, Department of Public Works, to design improvements at the Alenaio Stream crossing at Komohana Street.

The project involves the replacement of the existing corrugated metal pipe culvert with a wider concrete bridge to reduce flooding damage to the Komohana Street roadway and its adjacent properties. As part of the project, the County will also improve portions of the natural stream channel and extend an existing floodwall along the stream for added protection to the surrounding properties

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Please review the report and call me at 961-2776 should you have any questions.

Very truly yours,

Edward K. Harada
Manager

Attachment: 1

cc: *Mr. Lance Tokuda*
Mrs. Jenny Li
Mr. Paul Nash

M&E Pacific, Inc.

Engineers & Architects

Big Island Office
100 Pauahi St., Suite 210
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935-8934

November 6, 1998

Susumu Nakagawa, Trustee
1180 Mililani Street
Hilo, Hawaii 96720

TMK: 2-3-48: 21

Re: Komohana Street/Alenaio Stream Improvements

Our company, M&E Pacific, Inc., has been contracted by the County of Hawaii Department of Public Works, to design improvements at the Alenaio Stream crossing at Komohana Street.

The project involves the replacement of the existing corrugated metal pipe culvert with a wider concrete bridge to reduce flooding damage to the Komohana Street roadway and its adjacent properties. As part of the project, the County will also improve portions of the natural stream channel and extend an existing floodwall along the stream for added protection to the surrounding properties.

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Please review the report and call me at 961-2776 should you have any questions.

Very truly yours,

Edward K. Harada
Manager

Attachment: 1

cc: Mr. Lance Tokuda
Mrs. Jenny Li
Mr. Paul Nash

M&E Pacific, Inc.

Engineers & Architects

Big Island Office
[illegible]
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935 5104

November 6, 1998

Gamlon Corp.
1188 Bishop Street, Suite 903
Honolulu, Hawaii 96813

TMK: 2-3-37: 6

Re: Komohana Street/Alenaio Stream Improvements

Our company, M&E Pacific, Inc., has been contracted by the County of Hawaii, Department of Public Works, to design improvements at the Alenaio Stream crossing at Komohana Street.

The project involves the replacement of the existing corrugated metal pipe culvert with a wider concrete bridge to reduce flooding damage to the Komohana Street roadway and its adjacent properties. As part of the project, the County will also improve portions of the natural stream channel and extend an existing floodwall along the stream for added protection to the surrounding properties.

Attached is a copy of the draft Environmental Assessment prepared for the project which explains the nature of the improvements and discusses the various impacts and mitigative measures proposed. Your property is indicated in red on Figure 3 of the attached report.

The project is presently in the preliminary engineering stage. Construction of the proposed improvements will not occur until all Federal, State and County permits and requirements are met and secured.

Please review the report and call me at 961-2776 should you have any questions.

Very truly yours,

Edward K. Harada
Manager

Attachment: 1

cc: Mr. Lance Tokuda
Mrs. Jenny Li
Mr. Paul Nash

M&E Pacific, Inc.

Engineers & Architects

Big Island Office
100 Pauani St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935-5934

November 6, 1998

Francis H./Genevieve P. Woo
327 Ohukea Street
Hilo, Hawaii 96720

TMK: 2-3-50: 12

Re: Komohana Street/Alenaio Stream Improvements

Our company, M&E Pacific, Inc., has been contracted by the County of Hawaii, Department of Public Works, to design improvements at the Alenaio Stream crossing at Komohana Street.

The project involves the replacement of the existing corrugated metal pipe culvert with a wider concrete bridge to reduce flooding damage to the Komohana Street roadway and its adjacent properties. As part of the project, the County will also improve portions of the natural stream channel and extend an existing floodwall along the stream for added protection to the surrounding properties.

Attached is a copy of the draft Environmental Assessment prepared for the project which explains the nature of the improvements and discusses the various impacts and mitigative measures proposed. Your property is indicated in red on Figure 3 of the attached report.

The project is presently in the preliminary engineering stage. Construction of the proposed improvements will not occur until all Federal, State and County permits and requirements are met and secured.

Please review the report and call me at 961-2776 should you have any questions.

Very truly yours,

Edward K. Harada
Manager

Attachment: 1

cc: Mr. Lance Tokuda
Mrs. Jenny Li
Mr. Paul Nash

M&E AQUA ALLIANCE

OFFICE COPY

August 4, 1999

Bernadino Deco Bento, Ronald Bento, etal.
P.O. Box 206
Hakalau, HI 96710

TMK: 2-3-43:05

Re: Roadway & Drainage Improvements
along Komohana Street & Alenaio Stream

Our company, M&E Pacific, Inc., has been contracted by the County Hawaii, Department of Public Works, to design improvements at the Alenaio Stream crossing at Komohana Street.

The project involves the replacement of the existing corrugated metal pipe culvert with a wider concrete bridge to reduce flooding damage to the Komohana Street roadway and its adjacent properties. As part of the project, the County will also improve portions of the natural stream channel and extend an existing floodwall along the stream for added protection to the surrounding properties.

Attached is a copy of the draft Environmental Assessment prepared for the project which explains the nature of the improvements and discusses the various impacts

M&E Pacific Inc.
Ste 500 Pauahi Tower
1001 Bishop Street
Honolulu, HI 96813
Tel: 808 521 3051 Fax: 808 521 0246

an affiliate of VIVENDI

M&E PACIFIC AQUA ALLIANCE

The project is presently in the preliminary engineering stage. Construction of the proposed improvements will not occur until all Federal, State and County permits and requirements are met and secured.

Please review the report and call Mr. Ed Harada at 961-2776 (our Hilo office) or Mr. Lance Tokuda or me at 1-808-521-3051 should you have any questions.

Sincerely yours

Jenny Li
Engineer

Attachment: 1

cc: Mr. Lance Tokuda
Mr. Ed Harada
Mr. Paul Nash

an affiliate of VIVENDI

M&E Pacific, Inc.
Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2778
Fax (808) 935-5324

November 12, 1998

ISF Development Co., Ltd.
1-5-6-505 Kitakyo Hojimachi
Chu-Ku Osaka
JAPAN

Re: Komohana Street/Alenaio Stream Improvements

Following up on my letter dated November 6, 1998 regarding the above-noted project, this is to notify you that there will be an informational meeting on Monday, November 16, 1998 in the County Councilroom located on the second floor of the County Building on Aupuni Street at 11:00 a.m.

Representatives from the County of Hawaii Department of Public Works and M&E Pacific, Inc. will be present to outline the project and address any questions or concerns you may have.

Sincerely,

Edward K. Harada
Manager

cc: Mr. Paul Nash
Mr. Lance Tokuda
Mrs. Jenny Li

M&E Pacific, Inc.
Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2778
Fax (808) 935-5324

November 12, 1998

Frank DeLuz III
Carolyn M. Asencion
332 Huali Way
Hilo, Hawaii 96720

Re: Komohana Street/Alenaio Stream Improvements

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Sincerely,

Edward K. Harada
Manager

cc: Mr. Paul Nash
Mr. Lance Tokuda
Mrs. Jenny Li

M&E Pacific, Inc.
Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935-5934

November 12, 1998

Frank DeLuz III
Brenda I. DeLuz
330 Huali Way
Hilo, Hawaii 96720

Re: Komohana Street/Alenaio Stream Improvements

Following up on my letter dated November 6, 1998 regarding the above-noted project, this is to notify you that there will be an informational meeting on Monday, November 16, 1998 in the County Councilroom located on the second floor of the County Building on Aupuni Street at 11:00 a.m.

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Sincerely,

Edward K. Harada
Manager

cc: Mr. Paul Nash
Mr. Lance Tokuda
Mrs. Jenny Li

M&E Pacific, Inc.
Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935-5934

November 12, 1998

Patricia G. Forbes
Patricia G. Englehard
324 Huali Way
Hilo, Hawaii 96720

Re: Komohana Street/Alenaio Stream Improvements

Following up on my letter dated November 6, 1998 regarding the above-noted project, this is to notify you that there will be an informational meeting on Monday, November 16, 1998 in the County Councilroom located on the second floor of the County Building on Aupuni Street at 11:00 a.m

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Sincerely,

Edward K. Harada
Manager

cc: Mr. Paul Nash
Mr. Lance Tokuda
Mrs. Jenny Li

M&E Pacific, Inc.
Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935-5934

November 12, 1998

William T./Michaela L. Aiona
P. O. Box 1621
Kamuela, Hawaii 96743

Re: Komohana Street/Alenaio Stream Improvements

Following up on my letter dated November 6, 1998 regarding the above-noted project, this is to notify you that there will be an informational meeting on Monday, November 16, 1998 in the County Councilroom located on the second floor of the County Building on Aupuni Street at 11:00 a.m.

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Sincerely,

Edward K. Harada
Manager

cc: Mr. Paul Nash
Mr. Lance Tokuda
Mrs. Jenny Li

M&E Pacific, Inc.
Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
Telephone (808) 961-2776
Fax (808) 935-5934

November 12, 1998

Susumu Nakagawa, Trustee
1180 Mililani Street
Hilo, Hawaii 96720

Re: Komohana Street/Alenaio Stream Improvements

Following up on my letter dated November 6, 1998 regarding the above-noted project, this is to notify you that there will be an informational meeting on Monday, November 16, 1998 in the County Councilroom located on the second floor of the County Building on Aupuni Street at 11:00 a.m.

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Sincerely,

Edward K. Harada
Manager

cc: Mr. Paul Nash
Mr. Lance Tokuda
Mrs. Jenny Li

M&E Pacific, Inc.
Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
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November 12, 1998

Gamlon Corp.
1188 Bishop Street, Suite 903
Honolulu, Hawaii 96813

Re: Komohana Street/Alenaio Stream Improvements

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Sincerely,

Edward K. Harada
Manager

cc: Mr. Paul Nash
Mr. Lance Tokuda
Mrs. Jenny Li

M&E Pacific, Inc.
Engineers & Architects

Big Island Office
100 Pauahi St., Suite 212
Hilo, Hawaii 96720
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November 12, 1998

Francis H./Genevieve P. Woo
327 Ohukea Street
Hilo, Hawaii 96720

Re: Komohana Street/Alenaio Stream Improvements

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Sincerely,

Edward K. Harada
Manager

cc: Mr. Paul Nash
Mr. Lance Tokuda
Mrs. Jenny Li

M&E
AQUA ALLIANCE

MEETING MINUTES

From:	Lance Tokuda	Date: 11/17/98
Location:	County of Hawaii Councilroom November 06, 1998, 11:00 a.m.	File: minutes
Project:	Komohana Street/Alenaio Stream Bridge Replacement	
Subject:	Informational Meeting	

The following is a brief summary of the concerns of the residents and additional work to be performed:

1. The channel/floodwall will obstruct the residents' view of natural beauty of Alenaio Stream. They understood that the wall was necessary to protect against scour. However, the County should look into finding alternatives to mitigate an unsightly wall. Such alternatives included a facade rock wall on the outside face of the wall, and green pvc coated fencing on the wall[1].

2. On the residents' side of the wall, the county will need to check the drainage especially at the existing swale which is used to drain the cul-de-sac.

3. Private lands outside of existing drain easements are needed for the maintenance roadway and bridge inlet wingwall. Received a call from Mr. Greg Kashiwa (a consultant representing Gamalon Corp in Japan, TMK 2-3-37:06), he would've wanted a channel in order to stop flooding onto the property downstream from the bridge. It was mentioned to him that the County will probably want to acquire easements/right-of-way for the channel maintenance roadway. The TMK 2-3-37:06 property owner agreed to sale the related land to the county for use.

4. Immediately upstream, there is an unmarked concrete pedestal which will be removed. None of the residents present at the meeting had any concerns about it.

5. Blasting will probably not be permitted. A hoe ram will be used. Noise pollution mitigation is recommended.

6. Additional work is necessary for the maintenance roadway and the proper sizing of a proposed culvert crossing located just north of the bridge.

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[1] The fencing will no longer be needed since the wall is high enough.

M&E Pacific Inc.
Ste. 500 Pauahi Tower
1001 Bishop Street
Honolulu, HI 96813
Tel: 808 521 3051 Fax: 808 524 0246

APPENDIX D **INFORMATION REGARDING HISTORIC SITES NO. 14946 AND NO. 14947**

998-021091

FINDINGS

Evidence of prehistoric activity in the project area was observed in the form of remnant sections of the Hilo Boarding School and Old Mission Ditch, which is identified on historic maps. The suggestion that this feature is prehistoric in age is an hypothesis based on previous research (Kelly and Athens 1982, discussed in detail in the Conclusion section). Evidence of possible historic use and occupation was observed at a second location within the project area, and consists of the remains of a possible small residence first identified by archaeologist Stephen Athens in 1982 and referred to as a "cane house." Both the cane house remains and the excavated ditch were recorded and assigned temporary field designations, 14946 and 14947 respectively.

Numerous modifications are present in the project area. Not only was most of the project area extensively cultivated for sugarcane production, but the easternmost of the two cinder cones has been extensively quarried for cinder and other construction rock, and has been nearly completely removed over the years. As well, both of these features have been scarred by numerous haul roads and bulldozer cuts. Several heavily overgrown roads or bulldozer cuts were visible in the eastern one-third of the project area. It is likely that most if not all of these represent fairly recent features. Historic maps indicate that at least one east-west haul road was constructed through the project area in association with Hilo Sugar Company operations.

SITE 14946

Site 14946, cane house remains, is located approximately 40 meters due west of Komohana Road—which marks the western edge of the project area (Figure 2). The site consists primarily of a shed heavily overgrown with vines and other vegetation; the shed was constructed by excavating a rectangular "notch" into a low natural rise; subsequently, a north wall was established by piling and stacking basalt cobbles and boulders 2-3 courses high and wide. Approximately 15 posts were then erected vertically in order to establish two parallel walls, each wall extending approximately 3 meters front-to-back (east to west) and separated from one another by approximately 2 meters. Several beams were then placed across the top so as to span the two rows of posts and thereby support stringers which in turn were used to nail down a galvanized metal roof. The result is a small enclosure measuring approximately 2 m in width and 3 m in depth. Chicken wire on the front suggests use for birds, probably chickens or geese. Several wire nails were observed in posts and other timbers, and small quantities of wholly contemporary trash (i.e., plastic items) were observed in the vicinity.

As noted, the shed was constructed at the base of a small knoll. The top of the knoll has been cleared and bulldozed, resulting in a flat surface with considerable exposed bedrock and large cobbles. Two rusty wire nails and a few pieces of glass were observed on the surface of the flattened knoll; no additional evidence of historic use or occupation was noted. Athens originally believed that this flat knoll may have been the site of a small cane house, and that the knoll may also have been utilized in prehistoric times by Native Hawaiians. This speculation was based on the presence of several basalt cobbles which Athens had observed on the surface within this area. In order to evaluate this latter possibility, two 1m square test excavation units were excavated within this area utilizing hand tools, with all excavated material screened through 1/4- and 1/8-inch mesh. The results were negative with respect to discovering any evidence of early historic or prehistoric use or occupation. It now appears that the several basalt cobbles exposed on the surface in this area most likely represent items excavated and fragmented during flattening of the knoll for construction of the presumed residence. That heavy equipment was used is suggested by the quantity of topsoil which appears to have been removed from the area and the extent of bedrock exposure in the area. Figure 2 provides a plan view of the site showing the relative location of the animal shed and bulldozed flat, as well as the location of the two test units which were placed within the latter area.

SITE 14947

Site 14947 consists of a ditch system with one primary channel which remains partially intact. The primary channel clearly corresponds with the Hilo Boarding School and Old Mission Ditch previously documented by Kelly and Athens in their study of the proposed Alenaio Stream Flood Damage Control Project Area (Kelly and Athens 1982: Figures 11-12).

The intact ditch segment enters the project area immediately west of the uppermost of the three Hala'i Hills (Puuhonu) (see Figure 1). The ditch, which averages 1 to 1.25 m in width and from 0.40 to 0.75 cm in depth, follows the approximate 300' contour line around the base of Puuhonu cinder cone, and then proceeds easterly around the base of Ope'ape'a, the second of the three Hala'i Hills. Portions of the ditch within Ope'ape'a area have been stone- and concrete-lined in order to prevent down-cutting and erosion adjacent to existing residential subdivisions. No features of any kind and no artifact concentrations were observed along this segment of ditch, which terminates within the northeastern corner of the project area at a point just south of the intersection of Komohana and Waianuenue Streets.

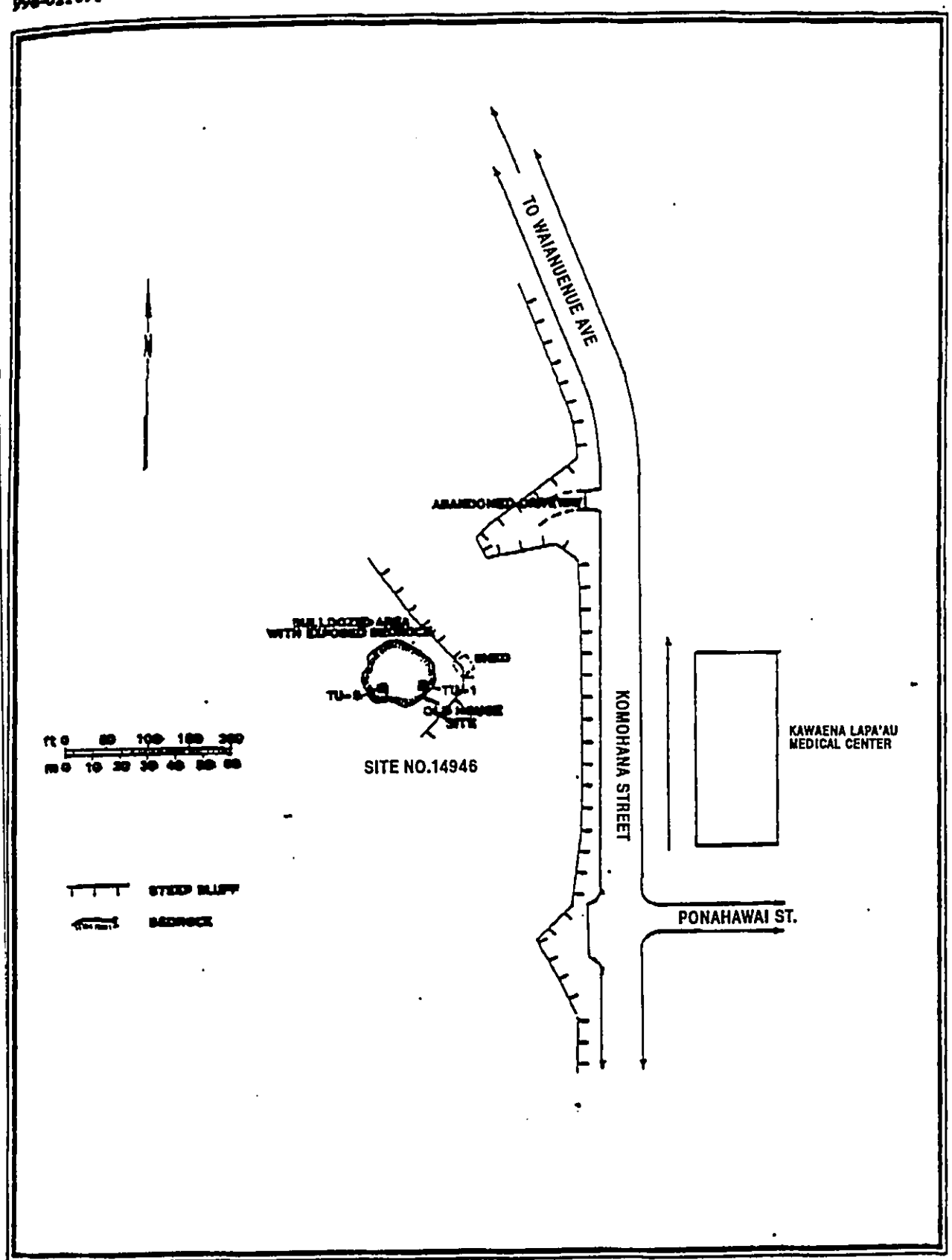


Figure 2.
SITE 14946, PLAN MAP

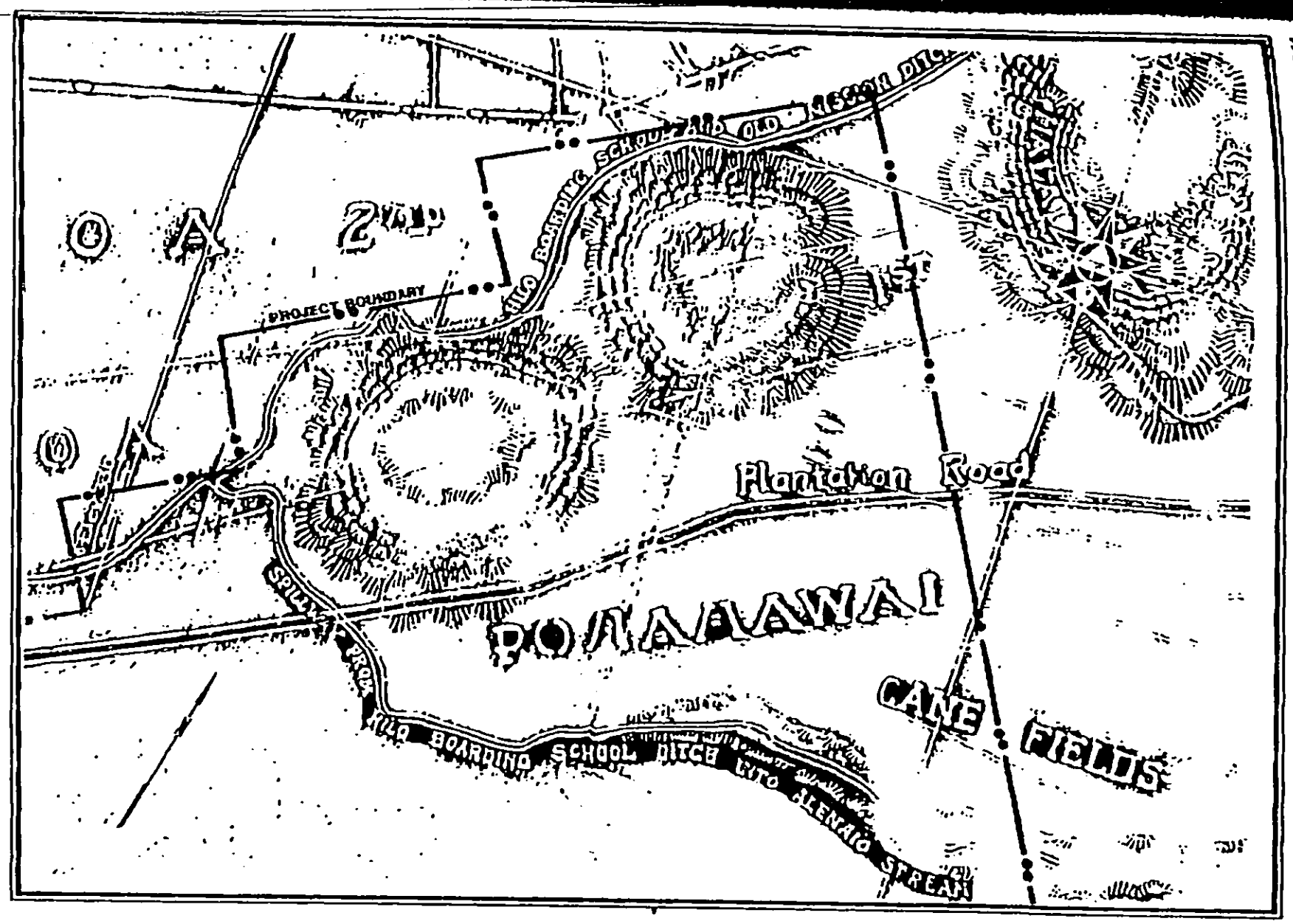
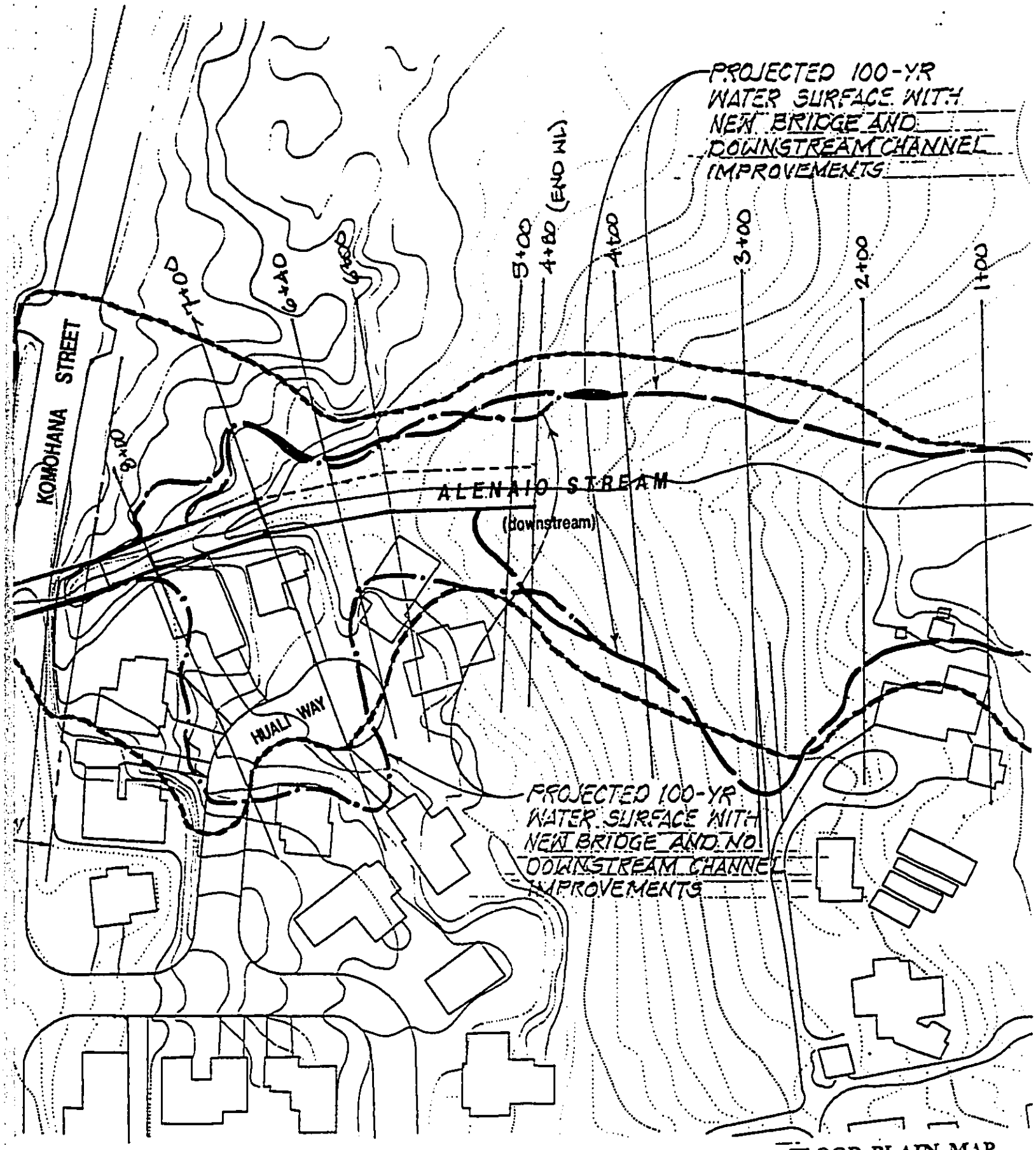


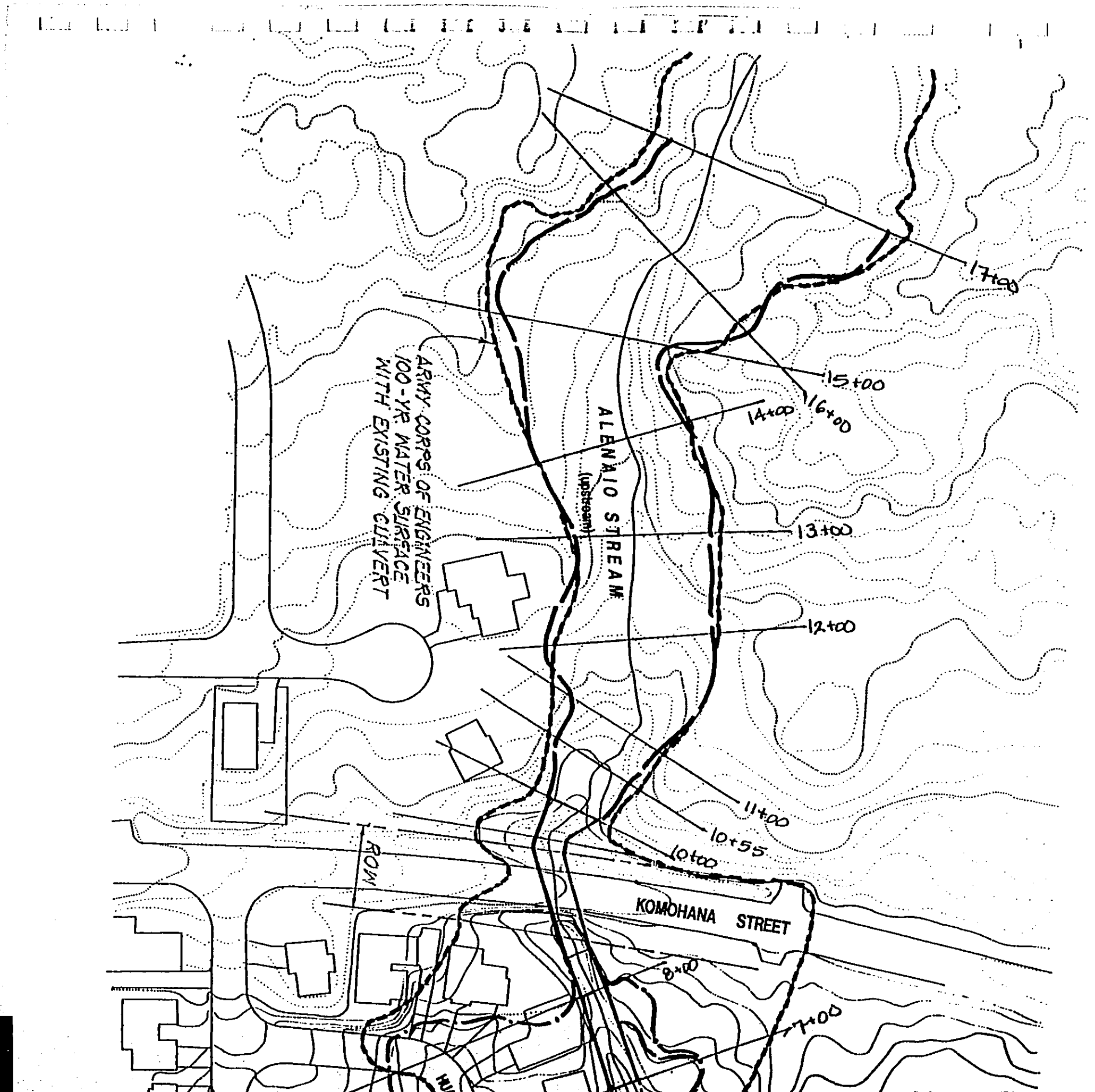
Figure 3.
1913 MAP COMMISSIONED BY HILO BOARDING SCHOOL SHOWING ROUTES OF DITCHES BEING UTILIZED

APPENDIX E FLOOD PLAIN MAP



FLOOD PLAIN MAP

SOURCE: SATO & ASSOCIATES, INC. JUNE 1996. PRELIMINARY DESIGN STUDY FOR THE KOMOHANA STREET/ALENAIO STREAM BRIDGE REPLACEMENT.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7+00
ARMY CORPS OF ENGINEERS
100-YR WATER SURFACE
WITH EXISTING CULVERT
ALENAIO STREAM
(upstream)
ROW
KOMOHANA STREET