



**DEPARTMENT OF WATER SUPPLY**

COUNTY OF MAUI

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OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

March 12, 2003

Ms. Genevieve Salmonson, Director  
Office of Environmental Quality Control  
235 S. Beretania Street, Suite 702  
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

**SUBJECT:** Finding of No Significant Impact (FONSI) for  
Hamoia to Hana Waterline & Hamoia Well 2  
Hana, Maui, Hawaii  
TMK: (2) 1-4-09:002 & (2) 1-4-02, 03, 07, 09

The Department of Water Supply, County of Maui, has reviewed the comments received during the 30-day public comment period which began on December 23, 2002. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the March 23, 2003, OEQC Environmental Notice. ✓

We are enclosing a completed OEQC Publication Form and four copies of the final EA.

If you have any questions, please call our Engineering Division at (808) 270-7835.

Sincerely,

GEORGE Y. TENGAN

Director

WKT

cc: C. Takumi Engineering

*"By Water All Things Find Life"*

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MAR 23 2003

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2003-03-23-MA-FEA

**FINAL ENVIRONMENTAL ASSESSMENT  
(FINDING OF NO SIGNIFICANT IMPACT)**

FOR

(HAMOA TO HANA WATERLINE & HAMOA WELL 2)

HANA, MAUI, HAWAII

TMK: (2) 1-4-09: 002 &

(2) 1-4-02, 03, 07, 09

PREPARED FOR  
Department of Water Supply  
County of Maui  
200 South High Street  
Wailuku, Hawaii 96793

PREPARED BY  
C. Takumi Engineering, Inc.  
18 Central Avenue  
Wailuku, Hawaii 96793

MARCH 2003

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CHAPTER 343 Hawaii Revised Statutes (HRS)  
FINAL ENVIRONMENTAL ASSESSMENT  
(FINDING OF NO SIGNIFICANT IMPACT)  
FOR  
HAMOA TO HANA WATERLINE & HAMOA WELL 2  
HANA, MAUI, HAWAII  
TMK: (2) 1-4-09: 002 &  
(2) 1-4-02, 03, 07, 09

I. SUMMARY

A. IDENTIFICATION OF THE PROPOSING/APPROVING AUTHORITY AND CONSULTANT

Proposing Agency/Accepting Authority:

Department of Water Supply, County of Maui  
200 South High Street  
Wailuku, Hawaii 96793

Consultant:

C. Takumi Engineering, Inc.  
18 Central Avenue  
Wailuku, Hawaii 96793

B. DESCRIPTION OF PROPOSED ACTION

Hana Town is the urban center of the Hana District with typical urban zoning consisting of single family, multifamily, business/commercial, service business/residential, and hotel zoning. The County of Maui Department of Water Supply's (DWS) primary water source for Hana Town is the Wakiu Well B. Wakiu Well A, the original back-up source, has been abandoned due to increasing salinity with constant use. To replace Wakiu Well A, an existing Hamoa Well 1, which originally served as the only DWS source for the Hamoa-Koali area, became the back-up source for Hana Town. Hamoa Well 1 distributes water to the Hamoa-Koali area through a 12-inch waterline down to Hana Highway and then south along Hana Highway, where the waterline gradually reduces in size.

The back-up service that the Hamoa Well 1 presently provides to Hana Town is distributed through a 4-inch waterline from the Hamoa Source to Hana Town. However, the current 4-inch waterline is not adequate to supply the required fire flow, 2,000 gpm, to Hana Town. According to the DWS Water System Standards, for Maui only, the maximum velocity in mains shall not exceed 20ft/s for fire flow.

Using Darcy's Law ( $Q=vA$ ), the velocity through a 4-inch pipe would be 51ft/s. A 12-inch pipe would bring down the velocity to 5.66ft/s. Furthermore, since a 12-inch pipe already exists at either ends of the proposed project, a new 12-inch waterline will provide continuity with in the Hana water distribution system.

The new 12-inch waterline will connect at the Hana Highway end of the Hamoa Well 1 waterline, run north along Hana Highway to Hana Town for a distance of about 13,000 feet. The waterline will connect to an existing 12-inch waterline at the south edge of Hana Town. Fire hydrants will be located along the highway as per DWS Standards for fire protection.

Furthermore, because the new 12-inch waterline is a replacement for the existing 4-inch waterline, preliminary plans propose to use the existing disinfection system. The existing disinfection system, which pumps hypochlorite into the influent line to the reservoir, will be used to. The same volume of chlorine will be used since the volume of water being pumped into the reservoir will not change. As such, no booster stations will be required.

In addition to the 12-inch waterline, the Maui Department of Water Supply proposes to construct an exploratory well, Hamoa Well 2, at the Hamoa Source. The Hamoa Well 2 will be located within 250 feet from the existing well. The DWS will conduct water sampling and analysis, which will provide additional information about the aquifer.

**C. LOCATION:**

The Hamoa Well source has a 12-inch waterline from the well site to Hana Highway. The well site is approximately 3,000 feet west of Hana Highway and 1 mile from the ocean. At Hana Highway the waterline turns south and runs along Hana Highway to the Hamoa-Koali area. The proposed waterline will connect to the existing 12-inch waterline at Hana Highway and run north to Hana Town under Hana Highway, through TMK: (2) 1-4-02, 03, 07 and 09.

The proposed well will be located on the same site as the existing Hamoa Well 1 in Hana, Maui, Hawaii, TMK: (2) 1-4-09: por. of 002. See Figure-1.

**D. LAND USE DESIGNATION:**

State Land Use:	Agricultural
County Community Plan:	Agricultural
County Zoning:	Agricultural

**E. REQUIRED PERMITS**

Work to Perform on County Highway  
CWRM Well Drilling Permit  
State Drinking Water Branch, Potable Water Source Approval

Stream Bed Alteration Permit – See Appendix C

**F. PRECONSULTATION AGENCIES CONSULTED:**

**State of Hawaii:**  
Commission on Water Resource Management

**County of Maui:**  
Planning Department  
Department of Public Works & Waste Management

Department of Water Supply

**G. CONSTRUCTION COST AND IMPLEMENTATION**

Construction for the proposed project is anticipated to begin in early 2004 and is estimated to be completed within 6 months. The estimated project cost is approximately \$3,770,000. The development of the well is estimated to cost \$970,000, and an estimated cost of \$2,800,000 for the waterline.

## II. DESCRIPTION OF THE EXISTING ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

### A. PHYSICAL ENVIRONMENT

#### 1. Existing Land Uses

Hana Highway is an existing Highway and the sole route between Hana Town and areas to the south. The proposed waterline will be constructed within the highway right-of-way.

The location of the proposed well is within pastureland covered with various species of grass, weeds, bushes, and trees. The existing well, Hamoa Well 1 is approximately 250 feet away from the location of the proposed well. Besides the existing well, the site contains a 190,000 gallon control reservoir, electrical building, standby generator, disinfection facility, parking, fencing and appurtenances.

#### 2. Surrounding Land Uses

The land surrounding the project site is generally for agricultural purposes, mainly cattle grazing interspersed with a few residences.

#### 3. Climate

The climate at the project area is generally warm with moderate rainfall. Hana region is usually moderate throughout the year due to the northeasterly trade winds, which is typical of the windward areas of the Hawaiian Islands. Diurnal heating and cooling of the land is caused from the absence of trade winds. It produces onshore sea breezes during the day and offshore breezes at night. Temperatures range from the mid 60's to mid 80's. The average annual rainfall at the proposed well site is approximately 75 inches a year. The proposed project will not affect the existing climate conditions.

#### 4. Topography

Hana Highway runs parallel with the ocean. Slopes are relatively flat to moderate.

The elevation at the proposed Hamoa Well 2 is approximately 350 feet above mean sea level (MSL). Due to previous grading of the Hamoa Well 1, the slope at the well site is relatively flat with an approximate slope of 2%. The proposed area does not show any significant topographical constraints.

#### 5. Soils

The area consists of well drained soils known as the Hana Series. These soils were developed from volcanic ash with slopes from 3% to 15%. The annual rainfall amounts to 80 to 150 inches.

#### 6. Flood Hazard

Both the well site and waterline location are in flood Zone C, an area of minimal flood hazard as determined by the Flood Insurance Map for the area. The proposed waterline will be mainly buried under Hana Highway and should not obstruct or alter any flooding that may cross Hana Highway. See attached Figure-2.

A minimal amount of ground area will be affected, since the area is previously developed and the addition of the well and disinfection building is negligible in comparison to previous

improvements.

7. High Level Groundwater

The proposed well will be drilled to the basal aquifer lens. The basal aquifer lens is at or near sea level. Water for the first well located approximately 250 feet from the new well recorded water level at 6.5 feet MSL. No high level ground water was encountered during the construction of the existing well. However, if high level ground water is encountered, the water will be sealed off by grouting during the well drilling operation. Once drilling is completed, the annular space around the casing shall be grouted from just above the water level to the top of the well to keep surface and high level ground water from affecting the basal aquifer.

8. Surface Water

The waterline will cross Moomoonui and Haneoo Gulches; however, it is not clear if these stream beds dry or wet. Preliminary investigations point to a dry stream bed (Appendix-C), but on January 16, 2003, a request for stream bed determination was sent to various agencies. If these stream beds are found to be wet, then all necessary requirements of a stream bed alteration permit will be completed.

9. Flora and Fauna

The well site is currently grassed with manienie and fenced. Outside of the fence the trees noted were mango and guava. There are no known rare, endangered or threatened plants within the site.

Animals found in the Hana region are as follows: cattle, mongoose, rodents, chickens, dogs and cats. Avifauna that is typically found in the region is mynas, sparrows, cardinals, franklin, doves and finches. There are no known endangered or threatened wildlife within the project site.

10. Air Quality

The air quality in Hana is considered good. Automobile emissions coming from Hana Highway are the main contributors of airborne pollutants.

11. Noise Characteristics

The noise level in the project area is relatively low. Natural conditions and traffic coming from the Hana Highway are the only attributes.

12. Archaeological Resources

Because the proposed project will occur over existing developed lands, any historic artifacts/ site will have already been disturbed. However, if historic artifacts are discovered during construction, work will be stopped and the State Historic Preservation Division will be immediately contacted for appropriate mitigate measures.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Population and Economy

The estimated 1990 population of the Hana region is 1,895. By the year 2000, an increase of 2,182 is predicted. An increase of 2,392 is anticipated by 2010. The number of water services installed in the Hana Water Service District increased by 29 in the past 10 years indicating comparatively slow rural growth. A cattle ranching is considered the most essential element in area economy.



## C. PUBLIC SERVICES

### 1. Recreational Facilities

The Hana region offers several recreational facilities for tourist and residents of the area. They are the Hana Cultural Center & Museum, Haleakala National Park of Ohe'o gulch (Seven Pools), Wailua Falls, and Kahanu National Tropical Botanical Garden.

### 2. Police and Fire Protection

The Wailuku Station is the headquarters for Maui County's Police Department. The Hana substation is found at the intersection of Hana Highway and Uakea Road. They patrol the Hana District and Keanae area.

The Department of Fire Control's Hana Station offers fire prevention, suppression and protection for the Hana area. The station is found at the intersection of Hana Highway and Uakea Road.

### 3. Health Care

The Hana Medical Center can be found at the intersection of Hana Highway and Uakea Road. It is the nearest medical facility for the area and provides 24-hour emergency services as well as family practice. If patients need serious medical attention they are transported to the Maui Memorial Hospital.

### 4. Schools

One school, located at 4111 Hana Highway, serves the Hana area for grades K-12, Hana High and Elementary School.

### 5. Solid Waste

The Hana district is served by a County refuse system. All solid waste is then transported to the Hana Landfill. For the year 1995, an estimated rate of 4 tons per day arrived at the Hana Landfill.

## D. INFRASTRUCTURE

### 1. Roadways

The proposed waterline will run under and/or along the right-of-way for Hana Highway. Any damage done to the Highway will be repaired to equal or better condition.

The proposed location of Hamoa Well 2 is near Hamoa Well 1. Well 1 has its own private driveway, which is located near the intersection of Hana Highway and Haneo Road.

### 2. Water

Presently, the Department of Water Supply has three wells (Wakiu Wells A & B and Hamoa Well 1) providing water for the entire Hana community.

The existing Wakiu Wells A & B are located mauka of Hana Highway in TMK: (2) 1-3-04: por. of 12. Wakiu Well B site is at a higher elevation than the Wakiu Well A. Both wells pump into a 500,000 reservoir situated near Well A at an elevation of 307.0 feet. However, use of Well A has been discontinued because of high salinity. Well B, on the other hand, has a pumping capacity of 350 gpm and a 16 hr. pumping capacity of 336,017 gallons.

Hamoia Well 1 is located south of Hana Town within TMK: (2) 1-4-09:2. A 190,000 gallon reservoir exists at an elevation of 352.0 feet. Hamoia Well 1 has a pumping capacity of 200 gpm and a 16 hr. pumping capacity of 192,010 gals.

Currently, Wakiu Well B is the main water supply source for Hana Town, and Hamoia Well 1 serves as a back-up for Hana Town and as a main water supply for Hamoia-Koali area.

3. Wastewater

The County sewer system serves as far as the Kuau district, and Hana region is not served by a sewer system. Since 1988, the State Department of Health has not allowed the usage of cesspools in new developments and disposal of wastewater is by the use septic tanks along with absorption trenches or seepage pits.

New developments within 1,000 feet of the existing well require aerobic units with shallow soil absorption system. The proposed well located with in 250 feet from the existing well will not increase any existing requirements for waste water disposal. However, during the development of the well, there will be minimal amount of wastewater. This waste will be disposed of such that it does not affect the current conditions of the aquifer.

Water quality sampling will be tested during well construction.

4. Drainage

There is no existing storm drain system. Storm waters sheet flow across the project site in an easterly direction. Some of the water will percolate into the ground, while most of the storm water will end up in nearby fields.

The top of the well casing shall be terminated above the ground surface and sealed to protect against surface water, pollutants and other contaminants from entering the well.

III. POTENTIAL IMPACTS AND MITIGATION MEASURES

A. IMPACTS TO THE PHYSICAL ENVIRONMENT

1. Flora and Fauna

The proposed site exhibits no significant rare, endangered or threatened flora and fauna species. The clearing and grubbing of existing flora and ousting of fauna on the project site is not considered a significant impact on the environment.

2. Air Quality and Noise Characteristics

The short-term drilling-related activities may create dust, which will cause an impact on the air quality. Dust control and wind blown emissions will be kept to a minimum through regular watering and sprinkling. Site work, such as clearing and grubbing could generate air-borne particles. Also, the temporary pump used to test the water may be diesel operated and may cause a short-term impact on the quality of the air.

In the long-term the Hamoia Well 2 is not expected to have an impact on the air quality of the Hana area.

In order to minimize the impact of surrounding noise conditions, the drilling related activities

shall be limited to daylight working hours. This is to adhere to the State Department of Health's noise regulations for drilling equipment and out of respect for property owners that live nearby.

In the short term, there will be noise during pump testing.

3. Archaeological Resources

The site has been previously disturbed without archaeological finding, and therefore it is unlikely that archaeological sites will be found during the proposed construction. However, if any artifacts are found during the construction of the waterline or well, work will be stopped. The State Historic Preservation Division will then be contacted for further appropriate measures.

B. SOCIO-ECONOMIC ENVIRONMENT AND PUBLIC SERVICES

Local Economy

The socio-economic impacts that are expected from the proposed project are beneficial. The short-term well construction activities will increase construction and construction-related employment.

The long-term socio-economic impacts will also be favorable. The residents of Hana will have a more reliable source and distribution system of potable water.

Police, Fire and Medical Services

The proposed project will not adversely affect any of the police, fire and medical services of the Hana area. In fact, the new waterline will improve fire protection.

Solid Waste

The clearing and grubbing of the proposed activities will require proper disposal procedures, thus a plan will be arranged with the Maui County Department of Public Works and Waste Management, Solid Waste Division.

Roadways

The construction employee parking will be located on the project site to avoid impact on the local traffic conditions. The new 12-inch waterline's proposed location is along Hana Highway. In general, the new waterline will be on one side of the road, thereby limiting construction to one lane of the two lane highway. Traffic will be impacted, but given the limited traffic in this area and that construction will be completed in segments, two-way traffic will easily be controlled through one lane.

I. RELATIONSHIPS TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS  
STATE LAND USE DISTRICTS

Chapter 205, Hawaii Revised Statutes, relating to the Land Use Commission (LUC), establishes the 4 major land use districts in which all lands in the State are placed. These districts are designated: Urban, Rural, Agricultural, and Conservation. The proposed water utility project, Hamoa Well 2 is permitted use within the Agricultural district.

MAUI COUNTY GENERAL PLAN

The Maui County General Plan (1990 Update) sets forth broad objectives and policies to help guide the long-range development of the County. As stated in the Maui County Charter, the purpose of the General Plan is to recognize and state the major problems and opportunities concerning the needs and the development of the County and the social, economic and environmental effects of such development and set forth the desired sequence, patterns and characteristics of future development.

The proposed project, Hamoa Well 2 is within the guidelines of the following Maui County General Plan:

**(1) Water**

**Objective:** To provide an adequate supply of potable and irrigation water to meet the needs of Maui County's residents.

**Policy:**

- Support the improvement of water transmission systems to those areas, which historically experience critical water supply problems provided the improvements are consistent with the water priorities and the County's Water Use Development Plan provisions for the applicable community plan area.
- Seek new sources of water by exploration in conjunction with other government agencies.
- Develop sufficient water supply during drought seasons so as to keep agricultural activities viable.

**HANA COMMUNITY PLAN**

The location of the well site is within the Hana Community Plan region. The Hana Community Plan contains recommendations and standards, which guide the sequencing, patterns and characteristics of future developments in the region.

The Maui County Zoning Map designates the subject property as Agriculture.

The proposed project will address the following Hana Community Plan objective:

Ensure that groundwater and surface water resources are preserved and maintained at capacities and levels to meet the current and future domestic, agricultural, commercial, ecological and traditional cultural demands of each area in the Hana district.

Discourage water or land development and activities which threaten the biological diversity of the Hana region and degrade the existing quality of the region's (1) air and noise character, (2) marine, surface and ground water and (3) scenic resources and vistas.

**OTHER REQUIRED PERMITS AND APPROVALS**

The required permits that are or may be required to proceed with the proposed project are a Well Construction Permit and Stream Channel Alteration Permit from the Commission on Water Resource Management, County of Maui's Special Management Area Permit, and a State Department of Health NPDES permit.

**ALTERNATIVES TO THE PROPOSED ACTION**

A no action alternative would not be beneficial for the farmers and/or residents of the Hana community since an inferior water system would be maintained. Moreover, developing a replacement well at the Wakiu Well A site is excluded, because of high salinity levels in the area. Additional alternatives considered include developing a well at the Helani Well or Kaeleku Well site, but evidence suggest that chloride levels in the are high making the sites less desirable. An exploratory well in Hamoa is the best option

#### CONSTRUCTION COST AND IMPLEMENTATION

Construction for the proposed project is anticipated to begin in 2003 and is estimated to be completed in 6 months. The estimated project cost is approximately \$3,770,000. The development of the exploratory well is estimated to cost \$970,000, and an estimated cost of \$2,800,000 for the waterline. The proposed project will mainly be funded by the County of Maui; however, Federal funds may be used as well.

#### FINDINGS OF NO SIGNIFICANT IMPACT (FONSI)

- (1) **Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.**  
The proposed waterline alignment will be constructed along an existing portion of Hana Highway. Any previous natural or cultural resources have already been disturbed by the road. Should archaeological significant artifacts or other indicators of activity be uncovered during construction, treatment will be in strict compliance with the requirements of the State Historic Preservation Division, State Department of Land and Natural Resources.

The proposed exploratory well is also located at a site previously disturbed for the construction of Hamoa Well, water tank and other improvements.

- (2) **Curtails the range of beneficial uses of the environment.**  
Once the waterline is installed, the trench will be repaved and Hana Highway open to traffic.
- (3) **Conflict with the State's long term goals or guidelines as expressed in Chapter 343, HRS.**  
The proposed improvements do not conflict with the Environmental Policies established in Chapter 343, HRS, and the National Environmental Policy Act.
- (4) **Substantially affect the economic or social welfare of the community or state.**  
The proposed project will not in itself generate new population growth, but will provide additional information on Hamoa water source and its ability to provide an alternative water source for Hana Town.
- (5) **Substantially affect the public health.**  
The existing Wakiu Well B has sufficient capacity to adequately supply Hana Town; however, the existing 4-inch waterline from Hamoa to Hana is not sufficient to supply an adequate source of water, according to DWS standards, should the Wakiu Well B experience pump failure. Additionally, the 4-inch waterline fails to meet DWS fire flow standards. The project will help assure that Hana Town has an adequate supply of water.

(6) **Involve substantial secondary effects, such as population changes or infrastructure demands.**  
The project will be financed by the Maui Board of Water Supply for the sole purpose of maintaining an adequate supply of water for Hana Water System. The project does not involve changes in land use which would incite population changes or infrastructure demands

(7) **Involves a substantial degradation of environmental quality**  
Once the project is completed, impacts on air, noise, and water quality will be insignificant or not detectable. Overall, the improvements will not substantially degrade the area's environmental quality.

(8) **Cumulatively have a considerable effect on the environment or involve a commitment to larger actions.**  
The exploratory well at Hamoa may incur a commitment to develop the well as a backup source of water for the Hamoa Area. The DWS will then be assured that reasonable measures have been made so an adequate water supply is available at all times.

(9) **Substantially affect a rare, threatened, or endangered species or its habitat.**  
No endangered plant or animal species were observed in the project area. There will be noise disturbance during construction; however, habitat that may be adjacent to the project will return to normal once construction is completed.

(10) **Detrimentially affect air or water quality or ambient noise levels.**

The short-term drilling, clearing and grubbing related activities may create dust, which will cause an impact on the air quality. Dust control and wind blown emissions will be kept to a minimum through regular watering and sprinkling. In the long-term the Hamoa Well 2 is not expected to have an impact on the air quality of the Hana area.

In order to minimize the impact of surrounding noise conditions, the drilling related activities shall be limited to daylight working hours. This is to adhere to the State Department of Health's noise regulations for drilling equipment and out of respect for property owners that live nearby. In addition, there will be noise during pump testing, but that is only a short term effect.

The proposed exploratory well should not have an affect on the local water quality. The well will be drilled such that groundwater will not be contaminated and all waste water from the pump test will be disposed of according to State Department of Health NPDES permit.

Moreover, impacts of potential releases of disinfected water into the environment resulting from waterline breaks near potentially sensitive areas are minimal. Since the water is being chlorinated in the reservoir rather than in the waterline, the residual chlorine will be insignificant. Any spillage into the environment would be negligible and cause little if any damage. The only time that chlorine levels would be significant would be during super chlorination, when the new waterline is disinfected. Areas that would be most sensitive to this would be stream beds. However, the project proposes to concrete jacket the waterline through these types of areas, which will significantly decrease the likelihood of damage to the pipe, and therefore the release of chlorinated water directly into these areas.

(11) **Affect an environmentally sensitive area, such as a flood plain, tsunami zone, erosion prone area, geologically hazardous land, estuary, freshwater area, or costal waters.**

Areas that would be considered environmentally sensitive would be stream beds. However, if a stream alteration permit is necessary, the project proposes to complete all requirements of the permit. In addition, plans propose to concrete jacket the waterline through these types of areas, which will significantly decrease the likelihood of damage to the pipe, and therefore protecting the streams from any further alteration.

- (12) **Substantially affect any scenic vista or view plane.**  
The proposed project does not affect any scenic vista or view plane.
- (13) **Require substantial energy consumption.**  
The development of the exploratory well will require some energy consumption, but not a significant amount.

#### CONCLUSIONS

The Hamoa Well 2 is intended to provide updated and additional information on the Hamoa aquifer, which will further the process of obtaining a reliable back-up source of potable water for Hana Town. Moreover, the new 12-inch waterline is intended to improve water distribution and to DWS Standards.

The proposed project involves the exploratory drilling, casing and pump testing of Hamoa Well 2. There are no anticipated effects upon the existing or surrounding land uses in the short or long-term with well activities. The findings of this exploratory well will be utilized to develop a backup water source which may be able to function along with the existing series of wells.

In addition, the construction of the 12-inch waterline and necessary fire-hydrants will require cutting and repairing of some paved areas of Hana Highway. There are no anticipated effects upon the existing or surrounding land use in the short or long term with construction activities associated with the construction of the waterline.

Moreover, the proposed project is not expected to affect any existing environmental features. There are no anticipated impacts on any archaeological or historical features. The Hamoa Well 2 and 12-inch waterline will not have an unfavorable impact on socio-economic conditions or existing public services and infrastructure.

It is anticipated the proposed project will not cause any significant impacts on the environment.

## REFERENCES

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County of Maui, Office of Economic Development. Maui County Data Book 1995. February 1996.

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County of Maui, Department of Water Supply. Water System Standards 2002.



**APPENDIX A: PRE-CONSULTATION LETTERS**

Organization	Response		Date
	Yes	No	
Commission on Water Resource Management	X		10/15/02
Department of Planning	X		10/16/02
Department of Public Works and Waste Management	X		10/22/02

DOCUMENT CAPTURED AS RECEIVED

BENJAMIN J. CAYETANO  
GOVERNOR OF HAWAII



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DEPUTY DIRECTOR

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
P.O. BOX 821  
HONOLULU, HAWAII 96809

October 15, 2002

Mr. Carl K. Takumi, P.E.  
C. Takumi Engineering, Inc.  
18 Central Avenue  
Wailuku, HI 96793

Dear Mr. Takumi:

Subject: Pre construction for Hamoa Well 2 and Hamoa to Hana Water Line  
Hana, Maui, Hawaii.

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

- We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.
- We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.
- The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.
- Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.
- If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).
- If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.
- OTHER:

If there are any questions, please contact David Higa at 587-0249.

Sincerely,  
  
LINNEL T. NISHIOKA  
Deputy Director

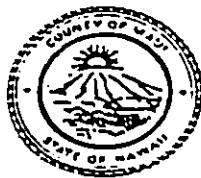
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DOCUMENT CAPTURED AS RECEIVED

JAMES "KIMO" APANA  
Mayor

JOHN E. MIN  
Director

CLAYTON I. YOSHIDA  
Deputy Director



COUNTY OF MAUI  
DEPARTMENT OF PLANNING

October 16, 2002

Mr. Carl K. Takumi  
C. Takumi Engineering, Inc.  
18 Central Avenue  
Wailuku, Hawaii 96793

Dear Mr. Takumi:

RE: Preliminary Consultation on a Draft Environmental Assessment (DEA) for the Hamoa Well 2 (TMK: 1-4) and the Hamoa to Hana Waterline (TMK: 1-4-009: 002. portion). Hana, Maui, Hawaii.

The Maui County Planning Department (Department) is in receipt of your letter dated September 30, 2002, soliciting comments for the above-referenced project in conjunction with the DEA pre-assessment consultation process. The Department has the following comments:

1. The Hana Community Plan identifies several goals, objectives and policies, specifically related to preservation of groundwater and surface water resources, which should be addressed in the DEA.
2. The DEA should include detailed maps and plans for the project and include, but not be limited to, the location of the proposed 12-inch waterline and fire hydrants that will extend along Hana Highway. The Special Management Area (SMA) extends from the shoreline to the makai side of Hana Highway. If the proposed location of the 12-inch waterline and fire hydrants are within this area, the SMA permitting process of the Maui Planning Commission will apply.

Thank you for the opportunity to comment. If additional clarification is required, please contact Ms. Kivette A. Caigoy, Staff Planner, of this office at 270-7735.

Very truly yours,

JOHN E. MIN  
Planning Director

JEM:KAC:jay

c: Clayton Yoshida, AICP, Deputy Planning Director  
Kivette A. Caigoy, Staff Planner  
Project File

General File (K:\WP\_Docs\PLANNING\EA\2002\02EA5401HamoaWell-2\PreconLtr.wpd)

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793  
PLANNING DIVISION (808) 270-7735; ZONING DIVISION (808) 270-7253; FACSIMILE (808) 270-7634

*Quality Seamless Service - Now and for the Future*

JAMES "KIMO" APANA  
Mayor

DAVID C. GOODE  
Director

MILTON M. ARAKAWA, A.I.C.P.  
Deputy Director

Telephone: (808) 270-7845  
Fax: (808) 270-7955



COUNTY OF MAUI  
DEPARTMENT OF PUBLIC WORKS  
AND WASTE MANAGEMENT  
200 SOUTH HIGH STREET  
WAILUKŪ, MAUI, HAWAII 96793

RALPH NAGAMINE, L.S., P.E.  
Land Use and Codes Administration

TRACY TAKAMINE, P.E.  
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.  
Engineering Division

BRIAN HASHIRO, P.E.  
Highways Division

JOHN D. HARDER  
Solid Waste Division

October 22, 2002

Mr. Carl Takumi  
C. TAKUMI ENGINEERING, INC.  
18 Central Avenue  
Wailuku, Maui, Hawaii 96793

Dear Mr. Takumi:

SUBJECT: EARLY CONSULTATION  
HAMOA WELL & WATERLINE  
.TMK: (2)1-4-008:002/1-4

We have reviewed the summary description of the subject project and have no comments.

If you have any questions regarding this memorandum, please call Milton Arakawa at 270-7845.

Sincerely,

  
for DAVID GOODE  
Director

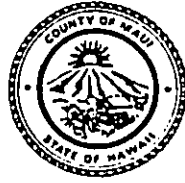
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*Quality Seamless Service – Now and for the Future*

**APPENDIX B: DRAFT ENVIRONMENTAL ASSESSMENT COMMENT LETTERS**

ORGINIZATION	COMMENT LETTER DATE	RESPONSE LETTER DATE
Department of Planning	1/09/03	1/29/03
Commission on Water Resource Management	1/15/03	1/29/03
Development Services Administration	1/21/03	N/A
Office of Environmental Quality Control	1/21/03	1/30/03

Alan Arakawa  
Mayor  
Michael W. Foley  
Director  
Wayne A. Boteilho  
Deputy Director



COUNTY OF MAUI  
**DEPARTMENT OF PLANNING**

January 9, 2003

Mr. George Tengan  
Department of Water Supply  
P.O. Box 1109  
Wailuku, Maui, Hawaii 96793-6109

Dear Mr. Tengan:

RE: Draft Environmental Assessment for the Proposed Hamoa Well 2 and the Hamoa to Hana Waterline at TMK (2) 1-4-009:002 and (2) 1-4-002:003, 007, and 009, Hana, Maui, Hawaii

We have reviewed the Draft Environmental Assessment (DEA) and have the following comments:

***General - Project Entirety***

1. The project concurs with the objectives and policies of the Maui County General Plan and the Hana Community Plan.
2. The DEA states the proposed project is anticipated to begin in early 2003. What is the estimated timeframe to complete construction?
3. What means were used to verify that no rare, endangered, or threatened plants and wildlife are located within the project site?
4. The Department recommends that as a mitigative measure a Best Management Practices (BMP) and Pollution (Spill) Prevention Plan should be developed, approved, and implemented for the project prior to construction.

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793  
PLANNING DIVISION (808) 270-7735; ZONING DIVISION (808) 270-7253; FACSIMILE (808) 270-7634

*Quality Seamless Service - Now and for the Future*

***Hamoia to Hana Waterline***

1. Discuss the method of disinfection.
  - a. Will booster stations be required along the length of the waterline? Where will these stations be located, and how many will be required? Provide a description.
  - b. What type of disinfectant will be used? What is the estimated quantity of disinfectant to be stored at each station or location?
  - c. Discuss the impacts of potential releases of disinfected (i.e. chlorinated) water into the environment resulting from waterline breaks near potentially sensitive areas (i.e. streams, aquaculture, etc.).
2. Discuss the immediate impact of traffic disturbances during the waterline construction. Provide a discussion of mitigative measures.
3. The Department recommends that the State Historic Preservation Division (SHPD) be contacted prior to initiation of construction for comments and mitigative measures.

***Groundwater Aquifer and Hamoia Well 2***

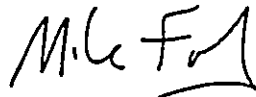
1. The DEA states that Hamoia Well 2 will be located 250 feet from Hamoia Well 1, but no direction is given. In addition, the DEA states that the existing buildings, systems, and appurtenances will be used for Hamoia Well 2, *or* a second building will be constructed to house the necessary equipment.
  - a. Provide a site plan depicting the location of the existing well; buildings, and access roads. In addition, provide the location of the proposed Hamoia Well 2, new buildings, structures, equipment, and access roads to the proposed well.

Mr. George Tengan  
January 9, 2003  
Page 3

- b. What is the approximate square footage estimated for the construction of a second building?
2. The DEA states that Wakiu Well A, the former back-up source for Hana Town, was abandoned "due to increasing high salinity with *constant use*." Discuss the projected demand or yield on the aquifer with the construction of Hamoa Well 2. Can the aquifer sustain the yield?
3. Discuss the impacts to surrounding wells within the Zone of Influence of Hamoa Well 2. Identify any surrounding wells, location, ownership, and type of use.
4. The Department recommends that the State of Hawaii, Department of Health, Safe Drinking Water Branch be contacted prior to initiation of construction for comments and mitigative measures.
5. Discuss the impacts on the proposed Hamoa Well 2 of any existing wastewater systems located within the 1,000 foot radius.
6. Discuss the water quality of the aquifer underlying Hamoa Well 2.

Thank you for the opportunity to comment. If additional clarification is required, please contact Ms. Kivette A. Caigoy, Staff Planner, of this office at 270-7735.

Sincerely,



MICHAEL W. FOLEY  
Planning Director



Mr. George Tengan  
January 9, 2003  
Page 4

MWF:KAC:tlm

c: Wayne A. Boteilho, Deputy Planning Director  
Kivette A. Caigoy, Staff Planner  
Carl Takumi, C. Takumi Engineering  
OEQC  
Project File  
General File  
(K:\WP\_DOCS\PLANNING\EA\2002\02EA5401Hamoawell-2\DEAComments.wpd)

**C. TAKUMI ENGINEERING, INC.**

18 Central Avenue

Wailuku, Hawaii 96793

Ph. (808) 249-0411

Fax: (808) 249-0311

DATE: January 29, 2003

TO: Attn.: Ms. Kivette A. Caigoy  
Department of Planning, County of Maui  
250 South High Street  
Wailuku, Maui, Hawaii 96793

JOB NO.: CWS-007EA

SUBJECT: Hamoa to Hana Waterline & Hamoa Well 2 Environmental Assessment  
Hana, Maui, Hawaii  
TMK: (2) 1-4-009:002 & (2) 1-4-02, 03, 07, 09

---

Dear Sir:

Thank you for comments on the Draft Environmental Assessment for the above referenced project. The following are responses to your office's comments.

General:

1. The DEA states the proposed project is anticipated to begin in early 2003. What is the estimated time frame to complete construction?  
Six months is the estimated time to complete construction.
2. What means were used to verify that no rare, endangered, or threatened plants and wildlife are located within the project site?  
In addition to a site reconnaissance on October 24, 2002, the following resources were referenced in regards to wildlife in the project area: Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii and Atlas of Hawaii.
3. A Best Management Practices (BMP) and Pollution (Spill) Prevention Plan will be developed and included with the construction plans.

Hamoa to Hana Waterline:

1. Discuss the method of disinfection. Booster stations? Type of disinfectant?  
Because the new 12-inch waterline is a replacement for an existing 4-inch waterline, preliminary plans propose to use the existing disinfection system. The existing disinfection

system, which pumps chlorine gas into the influent line to the reservoir. The same volume of chlorine gas will be used since the volume of water being pumped into the reservoir will not change. As such, no booster stations will be required.

**Discuss the impacts of potential releases of disinfected water into the environment resulting from waterline breaks near potentially sensitive areas.**

Since the water is being chlorinated in the reservoir rather than in the waterline, the residual chlorine will be insignificant. Any spillage into the environment would be negligible and cause little if any damage. The only time that chlorine levels would be significant would be during super chlorination, when the new waterline is disinfected.

Stream beds would be the most sensitive area to be impacted by chlorinated water. Possible effects would be the elimination of bacteria and/or algae that other aquatic life feed. This could effect the food chain and all aquatic and non-aquatic life that subsists on this chain. However, the project proposes to concrete jacket the waterline through these types of areas, which will significantly decrease the likelihood of damage to the pipe, and therefore the release of chlorinated water.

2. **Discuss the immediate impact of traffic disturbances during the waterline construction. Provide discussion of mitigative measures.**  
The new 12-inch waterline's proposed location is along Hana Highway. In general, the new waterline will be on one side of the road, there by limiting construction to one lane of the two lane highway. Traffic will be impacted, but given the limited traffic in this area and that construction will be completed in segments, two-way traffic will easily be controlled through one lane.
3. State Historic Preservation Division (SHPD) has been sent a copy of the Draft EA and will be responded to in the appropriate manner.

#### **Groundwater Aquifer and Hamoa Well 2:**

1. **The DEA states that Hamoa Well 2 will be located 250 feet from Hamoa Well 1, but no direction is given. In addition, the DEA states that the existing buildings, systems, and appurtenances will be used for Hamoa Well 2, or a second building will be constructed to house the necessary equipment.**  
**Provide a site plan depicting the location of the existing well; buildings, and access roads. In addition, provide the location of the proposed Hamoa Well 2, new buildings, structures, equipment, and access roads to the proposed well.**  
Following the "September 11" terrorist attacks, new security measures have been taken with regards to public water systems. Due to this heightened security, only limited information on waterlines, wells, reservoir tanks, and other water distribution accessories is allowed for public record. As such, only general information about the existing and new wells and their related equipment can be presented in this report.  
Moreover, the Hamoa Well 2 is being considered as an exploratory well. At which time the well is developed into a source well, a new environmental assessment will be conducted and include detailed information on the new buildings, structures, equipment, etc.

What is the approximate square footage estimated for the construction of a second building?

The Hamoa Well 2 is being considered as a exploratory well. At which time the well is developed into a source well, a new environmental assessment will be conducted and include more information on the new buildings, structures, equipment, etc.

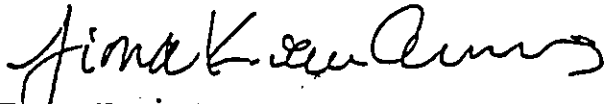
2. **The DEA states that Wakiu Well A, the former back-up source for Hana Town, was abandoned "due to increasing high salinity with constant use." Discuss the projected demand or yield on the aquifer with the construction of Hamoa Well 2. Can the aquifer sustain the yield?**  
Current groundwater conditions in the Hamoa area are significantly better than that of the Wakiu area. The groundwater body that the Hamoa Well 1 and the proposed Hamoa Well 2 are in a basal lens. The top of the lens in the vicinity of the well is 6.5 to 7.0 feet above mean sea level. The lens is thicker and has significantly less salinity intrusion at this location than at the Wakiu wells located 3.7 miles to the north. Data from the Hamoa Well 1 indicate that the groundwater is high quality source with a chloride level of only 10 milligrams per liter (mg/l). The Waiku wells, on the other hand, produce groundwater with approximately 200 mg/l chlorides.
3. **Discuss the impacts to surrounding wells within the Zone of Influence of Hamoa Well 2. Identify any surrounding wells, location, ownership, and type of use.**  
There are only a few wells in the general vicinity of the project. The Hamoa Well 1 was developed to serve the communities of Puuiki, Hamoa and South Hana. The only other wells in the area are the two wells at Wakiu and a private (Hana Ranch) well at Kawaiapapa. These wells should not be significantly impacted, since the new Hamoa well 2 is being developed only as an exploratory well.
4. **The Department of Health, Safe Drinking Water Branch's signature will be required for completion of the construction plans.**
5. **Discuss the impacts on the proposed Hamoa Well 2 of any existing wastewater systems located within the 1,000 foot radius.**  
Since Hamoa Well 2 is being considered as a exploratory well, it should not have an effects on existing wastewater systems in the area. During testing of the exploratory well, water quality samples will be taken. Results from these test should indicated wastewater instrution from near by wastewater systems. At which time the well is developed into a source well, a new environmental assessment will be conducted and include more information on wastewater systems in a 1,000 foot radius.
6. **Discuss the water quality of the aquifer underlying Hamoa Well 2.**  
Only a limited amount of information on groundwater quality for this area is available. As mentioned previously, data from the Hamoa Well 1 indicate that the groundwater is high quality source with a chloride level of only 10 milligrams per liter (mg/l). The Waiku wells, on the other hand, produce groundwater with approximately 200 mg/l chlorides. A November 1985 grab sample taken from the Hamoa Well 1 was analyzed for inorganic constituents by

the U.S. Geological Survey. All of the inorganic constituents were below the maximum contaminant levels specified in Chapter 20 of Title 11 of the Department of Health (DOH) Administrative Rules.

Moreover, the Hamoa Well 2 is being considered as a exploratory well. The DWS will conduct a through water sampling analysis to aquire additional and updated information on the aquifer. At which time the well is developed into a source well, a new environmental assessment will be conducted and include new information regarding the water quality of the aquifer.

If you have any questions, please do not hesitate to call me at (808) 249-0411.

Very truly yours,

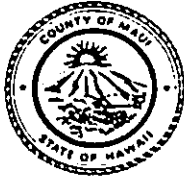


Fiona K. van Ammers  
C. Takumi Engineering, Inc.

ALAN M. ARAKAWA  
Mayor

MICHAEL W. FOLEY  
Director

WAYNE A. BOTEILHO  
Deputy Director



COUNTY OF MAUI  
**DEPARTMENT OF PLANNING**

February 14, 2003

Ms. Fiona K. Van Ammers  
C. Takumi Engineering, Inc.  
18 Central Avenue  
Wailuku, Maui, Hawaii 96793

Dear Ms. Van Ammers:

RE: Draft Environmental Assessment for the Proposed Hamoa Well 2  
and the Hamoa to Hana Waterline at TMK (2) 1-4-009:002 and  
(2) 1-4-002:003, 007, and 009, Hana, Maui, Hawaii

The Maui Planning Department (Department) is in receipt of your response addressing the Department's comments on the above referenced project.

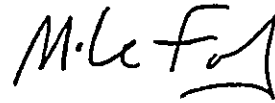
The Department notes that the scope of the subject Draft Environmental Assessment (DEA) includes the development of an *exploratory well* and that public information pertaining to the underlying aquifer and associated waterlines, reservoir tanks, buildings, systems, appurtenances, etc. are limited at this stage.

The Department understands that at which time the *exploratory well* is developed into a *source well*, a separate and new DEA will be provided. Please be advised that developing the *source well* would be considered an intensification of use, and as such, the new DEA should thoroughly address the characteristics of the aquifer, as well as, the impacts of the *proposed source well* on the underlying aquifer and the surrounding environment. This information is pertinent to adequately assess the proposed action's impact on the surrounding environment.

Ms. Fiona K. Van Ammers  
February 14, 2003  
Page 2

Thank you for the opportunity to comment. If additional clarification is required, please contact Ms. Kivette A. Caigoy, Staff Planner, of this office at 270-7735.

Sincerely,



MICHAEL W. FOLEY  
Planning Director

MWF:KAC:tlm

c: Wayne A. Boteilho, Deputy Planning Director  
Kivette A. Caigoy, Staff Planner  
Department of Water Supply  
OEQC  
Project File  
General File  
(K:\WP\_DOCS\PLANNING\EA\2002\02EA5401HamoWell-2\DEAComments-2.wpd)

LINDA LINGLE  
GOVERNOR OF HAWAII



PETER T. YOUNG  
CHAIRPERSON

MEREDITH J. CHING  
CLAYTON W. DELA CRUZ  
CHIYOME L. FUKINO, M.D.  
BRIAN C. NISHIDA  
HERBERT M. RICHARDS, JR.

DEAN A. NAKANO  
ACTING DEPUTY DIRECTOR

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

January 15, 2003

Ms. Fiona K. van Ammers  
C. Takumi Engineering, Inc.  
18 Central Avenue  
Wailuku, HI 96793

Dear Ms. van Ammers:

Thank you for allowing us to review the Draft Environmental Assessment for the Hamoa to Hana Waterline and Hamoa Well 2 project.

As described in figures 1 and 2 in the Draft Environmental Assessment, the waterline will cross Moomoonui and Haneoo Gulches. It would be beneficial if the Final Environmental Assessment would describe whether these gulches support instream uses (eg. aquatic life). This information would be useful in determining whether a stream channel alteration permit would be required for this project.

If you have any questions regarding this letter, please call David Higa at 587-0249 or toll-free at 984-2400, extension 70249.

Sincerely,

A handwritten signature in black ink, appearing to read "Dean A. Nakano".

DEAN A. NAKANO  
Acting Deputy Director

DH:ss



**C. TAKUMI ENGINEERING, INC.**  
18 Central Avenue  
Wailuku, Hawaii 96793  
Ph. (808) 249-0411  
Fax: (808) 249-0311

**DATE:** January 29, 2003

**TO:** Attn.: David Higa  
State of Hawaii  
Department of Land and Natural Resources,  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, HI 96809

**JOB NO.:** CWS-007EA

**SUBJECT:** Hamoa to Hana Waterline & Hamoa Well 2 Environmental Assessment  
Hana, Maui, Hawaii  
TMK: (2) 1-4-009:002 & (2) 1-4-02, 03, 07, 09

---

Dear Sir:

Thank you for comments on the Draft Environmental Assessment for the above referenced project. The following are our response to your office's comments.

1. **The waterline will cross Moomoonui and Haneoo Gulches. It would be beneficial if the FEA would describe whether these gulches support in stream uses.**

On January 16, 2003, our office sent a request for stream bed determination to your office, the US Army Core Engineers and Clean Water Branch of the Department of Health. Although we have evidence to believe that these streams are in fact dry, if the previously mentioned agencies find otherwise, we plan to fulfill all requirements necessary to obtain a stream alteration permit.

If you have any questions, please do not hesitate to call me at (808) 249-0411.

Very truly yours,

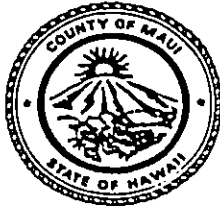


Fiona K. van Ammers  
C. Takumi Engineering, Inc.

ALAN M. ARAKAWA  
Mayor

GILBERT S. COLOMA-AGARAN  
Director

MILTON M. ARAKAWA, A.I.C.P.  
Deputy Director



COUNTY OF MAUI  
DEPARTMENT OF PUBLIC WORKS  
AND ENVIRONMENTAL MANAGEMENT  
**DEVELOPMENT SERVICES ADMINISTRATION**  
250 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

RALPH M. NAGAMINE, L.S., P.E.  
Development Services Administration

TRACY TAKAMINE, P.E.  
Wastewater Reclamation Division

LLOYD P.C.W. LEE, P.E.  
Engineering Division

BRIAN HASHIRO, P.E.  
Highways Division

JOHN D. HARDER  
Solid Waste Division

January 21, 2003

Mr. Carl Takumi  
C. TAKUMI ENGINEERING, INC  
18 Central Avenue  
Wailuku, Hawaii 96793

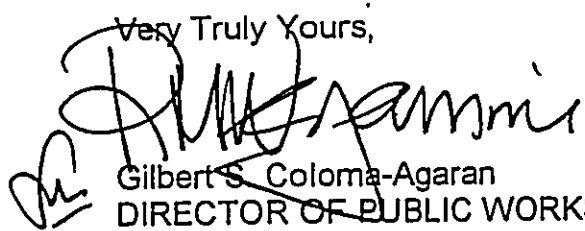
SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT  
HAMOA WELL 2 AND HAMOA TO HANA WATERLINE  
TMK: (2)1-4-009:002 & 1-4-002, 003, 009

Mr. Takuma:

We reviewed the subject Draft Environmental Assessment and have no comments at this time.

If you have any questions, please call Milton Arakawa at 270-7845.

Very Truly Yours,

  
Gilbert S. Coloma-Agaran  
DIRECTOR OF PUBLIC WORKS  
AND ENVIRONMENTAL MANAGEMENT

RMN:msc

S:\LUCA\GZM\hamoawell-dea.wpd

LINDA LINGLE  
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL  
235 SOUTH BERETAMA STREET  
SUITE 702  
HONOLULU, HAWAII 96813  
Telephone (808) 586-4185  
Facsimile (808) 586-4186  
Email: eeqc@health.state.hi.us

January 21, 2003

Mr. David Craddick, Director  
Department of Water Supply  
County of Maui  
200 South High Street  
Wailuku, Hawaii 96793

Dear Mr. Craddick:

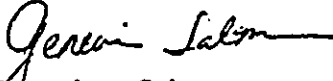
Subject: Draft Environmental Assessment for the Hamoa to Hana Waterline and Hamoa Well 2, Maui

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

1. Please describe the purpose for:
  - a. establishing Hamoa Well 2; and
  - b. the increase in the size of the waterline from 4" to 12".
2. Please review the attached guidelines for well development and answer the pertinent questions.
3. In the findings of no significant impacts section, please address the whether the project "involves a substantial degradation of environmental quality" as required under section 11-200-12(b)(7), Hawai'i Administrative Rules.

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

Sincerely,

  
Genevieve Salmonson  
Director

c: C. Takumi Engineering

**C. TAKUMI ENGINEERING, INC.**

**18 Central Avenue  
Wailuku, Hawaii 96793  
Ph. (808) 249-0411  
Fax: (808) 249-0311**

**DATE:** January 30, 2003

**TO:** Attn.: Jeyan Thirugnanam  
Office of Environmental Quality Control  
State of Hawaii  
235 South Beretania Street, Suite 702  
Honolulu, HI 96813

**JOB NO.:** CWS-007EA

**SUBJECT:** Hamoa to Hana Waterline & Hamoa Well 2 Environmental Assessment  
Hana, Maui, Hawaii  
TMK: (2) 1-4-009:002 & (2) 1-4-02, 03, 07, 09

---

Dear Sir:

Thank you for comments on the Draft Environmental Assessment for the above referenced project. The following are our responses to your office's comments.

1. Please describe the purpose for establishing Hamoa Well 2 and increasing the size of the waterline from 4" to 12".  
The Department of Water Supply (DWS) Water System Standards for pumping capacity state: "1. Meet maximum day demand with an operating time of 16 hours simultaneously with maximum fire flow required independent of the reservoir."

The projected average daily demand in 2025 for the Hana area is 200,000 gallons per day (gpd). The maximum day demand would be 1.5 times the average day demand based on DWS Water System Standards. This would make the maximum daily demand for the Hana area approximately 300,000 gpd. Moreover, the highest fire flow anticipated using the DWS Water System Standards is 2,000 gpm for 2 hours. The total volume required for fire protection is 240,000 gallons. The required pumping capacity, maximum day demand plus maximum fire flow, is 540,000 gpd or 375 gallons per minute (gpm). Compare this value to the pumping capacity of Wakiu Well B and Hamoa Well 1, which are 350 gpm and 200 gpm respectively. Working together these two wells meet DWS System Standards; however, if one of these wells becomes dysfunctional for any reason, the system will not meet requirements. Hence, an additional source well is needed at least for stand-by. Note however, at this time, the Hamoa Well 2 is being considered as a exploratory well and there is no commitment to establishing it as a source well.

Moreover, the 4-inch pipe is not adequate to supply the required fire flow of 2,000 gpm to Hana Town. According to the DWS System Standards, for Maui only, the maximum velocity in mains shall not exceed 20ft/s for fire flow. Using Darcy's Law ( $Q=vA$ ), the velocity through a 4-inch pipe would be 51ft/s. A 12-inch pipe would bring down the velocity to 5.66 ft/s. Furthermore, since a 12-inch pipe already exist at either ends of the proposed project, a new 12-inch waterline will provide continuity with in the Hana water distribution system.

2. Please review the attached guidelines for well development and answer the pertinent questions.

Paragraph four of the introduction states, "Environmental assessments for exploratory wells should not need to comply with all the information requirements below because some of the information will not be available until the well is tested." The Hamoa Well 2 is being considered as an exploratory well. The DWS will conduct a through water sampling analysis to acquire additional and updated information on the aquifer. At which time the well is developed into a source well, a new environmental assessment will be conducted and include detailed information required in the above referenced guideline.

3. In the findings of no significant impacts section, please address the whether the project "involves a substantial degradation of environmental quality" as required under section 11-200-12(b)(7), Hawaii Administrative Rules.

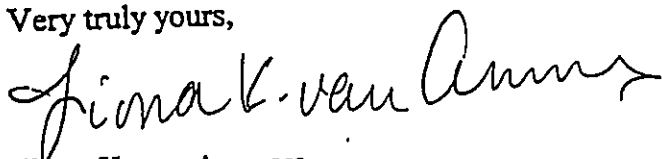
The following was added to Environmental Assessment under Section 7. FINDING OF NO SIGNIFICANT IMPACT (FONSI)

(7) Involves a substantial degradation of environmental quality;

Once the Project is completed, impacts on air, noise, and water quality will be insignificant or not detectable. Overall, the improvements will not substantially degrade the area's environmental quality.

If you have any questions, please do not hesitate to call me at (808) 249-0411.

Very truly yours,



Fiona K. van Ammers  
C. Takumi Engineering, Inc.

**APPENDIX C: MEMO REQUEST FOR STREAM BED DETERMINATION**

**C. TAKUMI ENGINEERING, INC.**

**18 Central Avenue  
Wailuku, Hawaii 96793  
Ph. (808) 249-0411  
Fax: (808) 249-0311**

**MEMORANDUM**

**TO:** Attn: David Higa  
Commission on Water Source Management, State of Hawaii  
P.O. Box 621  
Honolulu, Hawaii 96809

**CC:** US Army Engineer District, Honolulu  
Building 230  
Fort Shafter, Hawaii 96858

Clean Water Branch  
Environmental Management Division  
Department of Health  
Room 301  
919 Ala Moana Blvd.  
Honolulu, HI 96814

**FROM:** Fiona K. van Ammers

**DATE:** January 16, 2003

**JOB NO.:** CWS-007

**SUBJECT:** HAMOA TO HANA WATERLINE & HAMOA WELL 2  
Hana, Maui, Hawaii  
TMK: (2) 1-4-009:002 & (2) 1-4-02, 03, 07, 09

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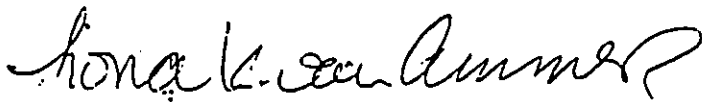
The Maui Department of Water Supply proposes to replace a 4-inch waterline with a 12-inch waterline in the Hana area. The new 12-inch waterline will connect at the Hana Highway end of the Hamoa Well 1 waterline, run along Hana Highway to Hana Town for a distance of about 13,000 feet through TMK (2) 1-4-02, 03, 07 and 09. The waterline will then connect to an existing 12-inch waterline at the south edge of Hana Town.

The proposed waterline location crosses through several culverts. Two of these culverts are for streams that are classified as intermittent water by the USGS. The first stream bed comes out of Haneoo Gulch and the second stream bed comes out of Moomoonui Gulch. Plans for the waterline

through these areas include burial a minimum of 3 feet below the ground surface and a concrete jacket through the stream bed. Typically, the construction of the waterline would require a Stream Alteration Permit; however, a site reconnaissance suggest that this is not necessary. As seen in the attached photos, both stream beds appear to be dry. Furthermore, because the existing 4-inch waterline that runs parallel to the proposed 12-inch waterline is located over 1000 feet maka of the proposed waterline, it can be inferred that the streams are dry or of minimal aquatic life up to the location of the existing 4-inch waterline.

We would appreciate your comments and or suggestions in regards to the stream alteration permit and these two stream beds.

Please let me know if you have any questions or concerns 249-0411,



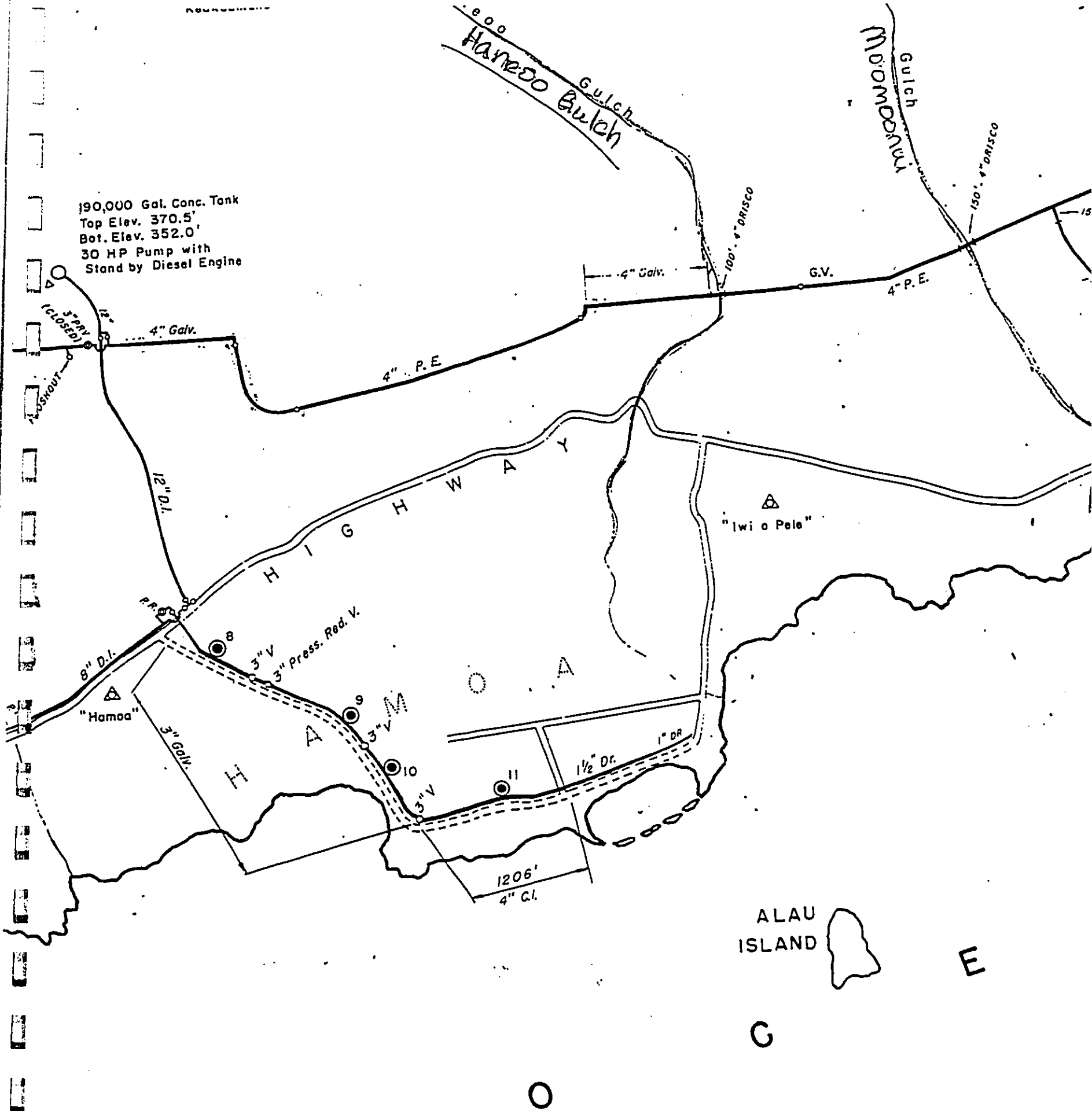
Fiona K. van Ammers

Attachments:

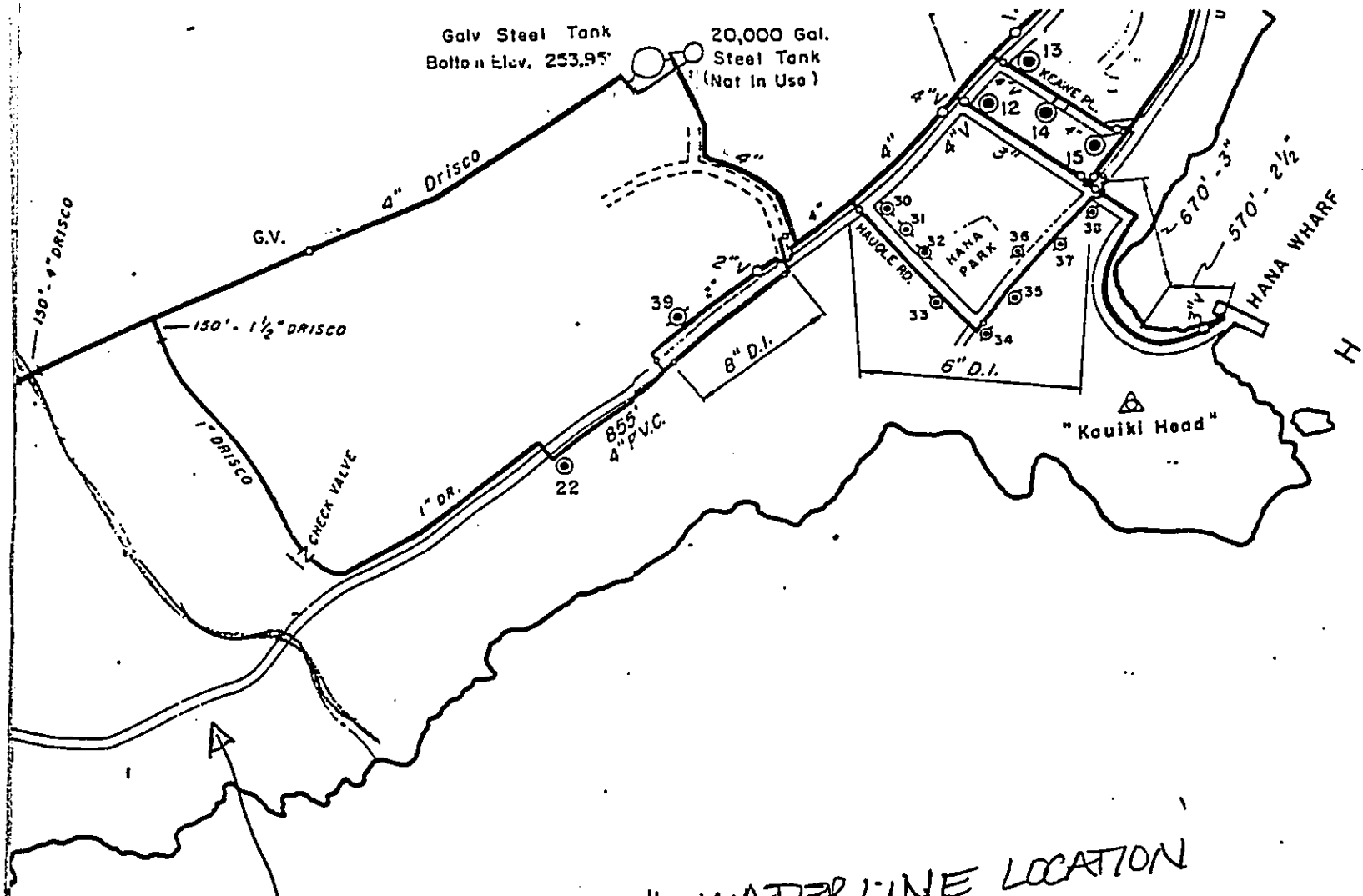
- 1 - Map Waterline location
- 1 - USGS Map showing Intermittent Water
- 1 - Topo Drawing Hana Hwy at Culvert for Haneoo Gulch
- 1 - Topo Drawing Hana Hwy at Culvert for Moomoonui Gulch
- 1 - Photos of Culverts



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DOCUMENT CAPTURED AS RECEIVED



PROPOSED 12" WATERLINE LOCATION

N

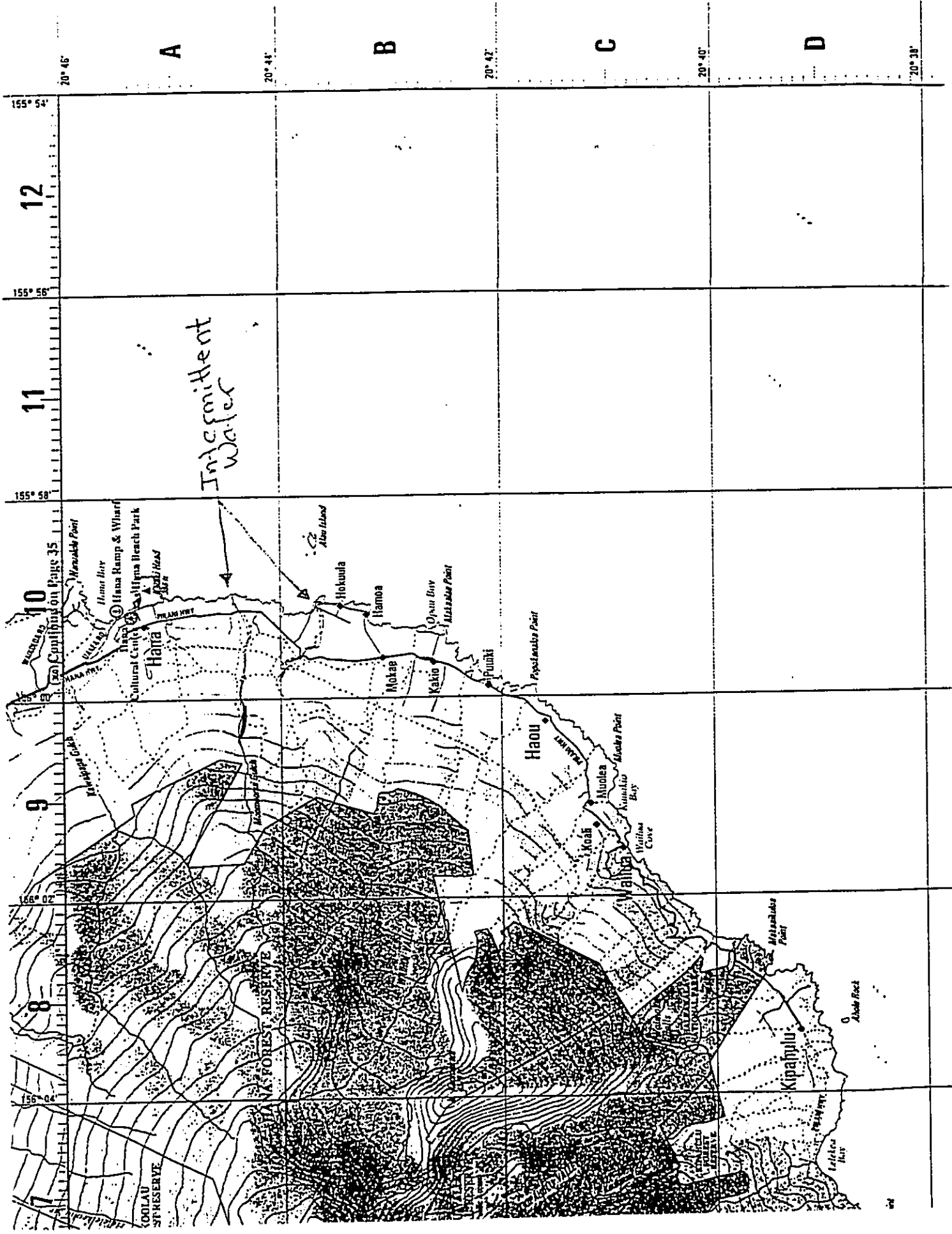
NORTH

SCALE: 1" = 1000'

E

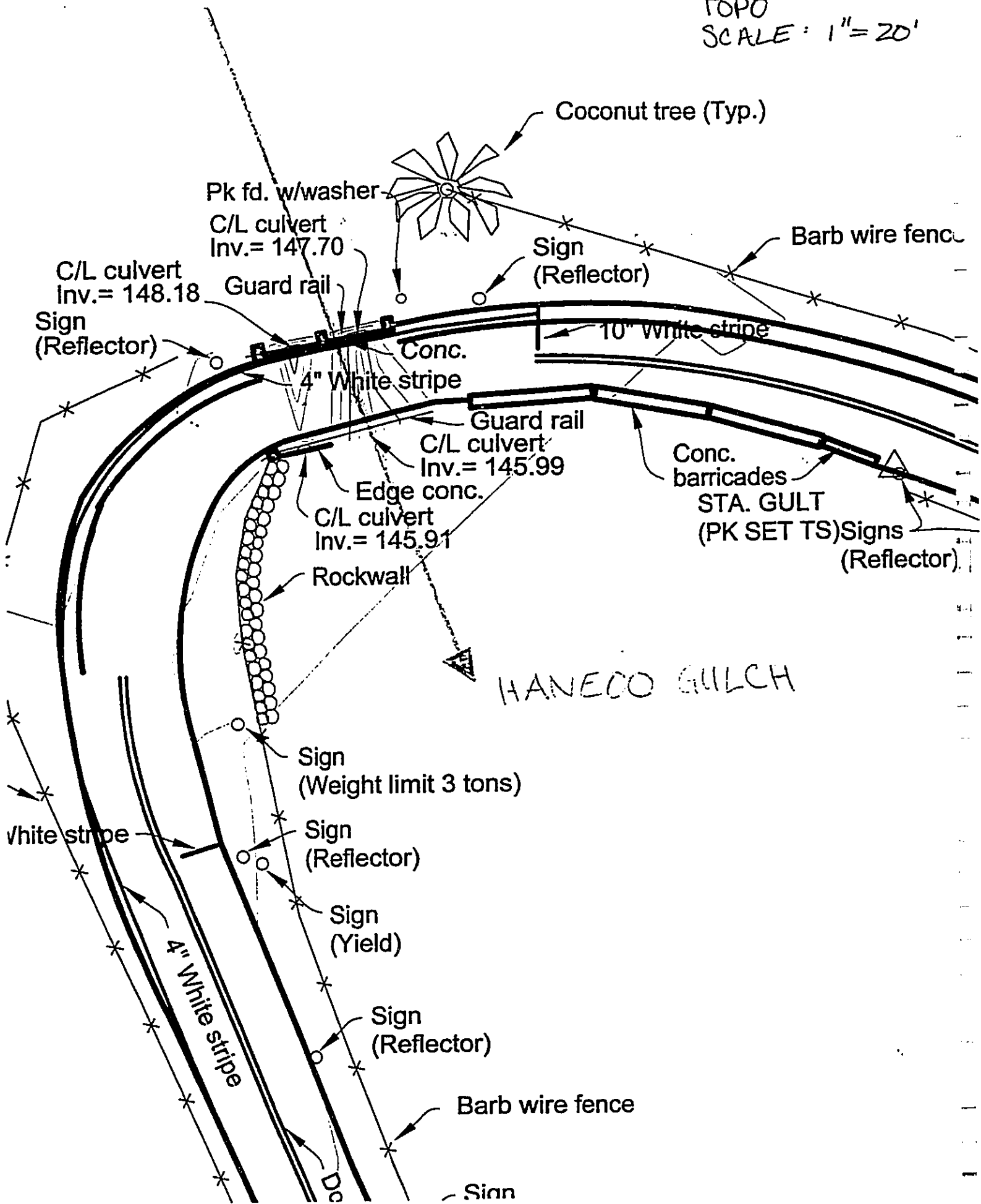
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H



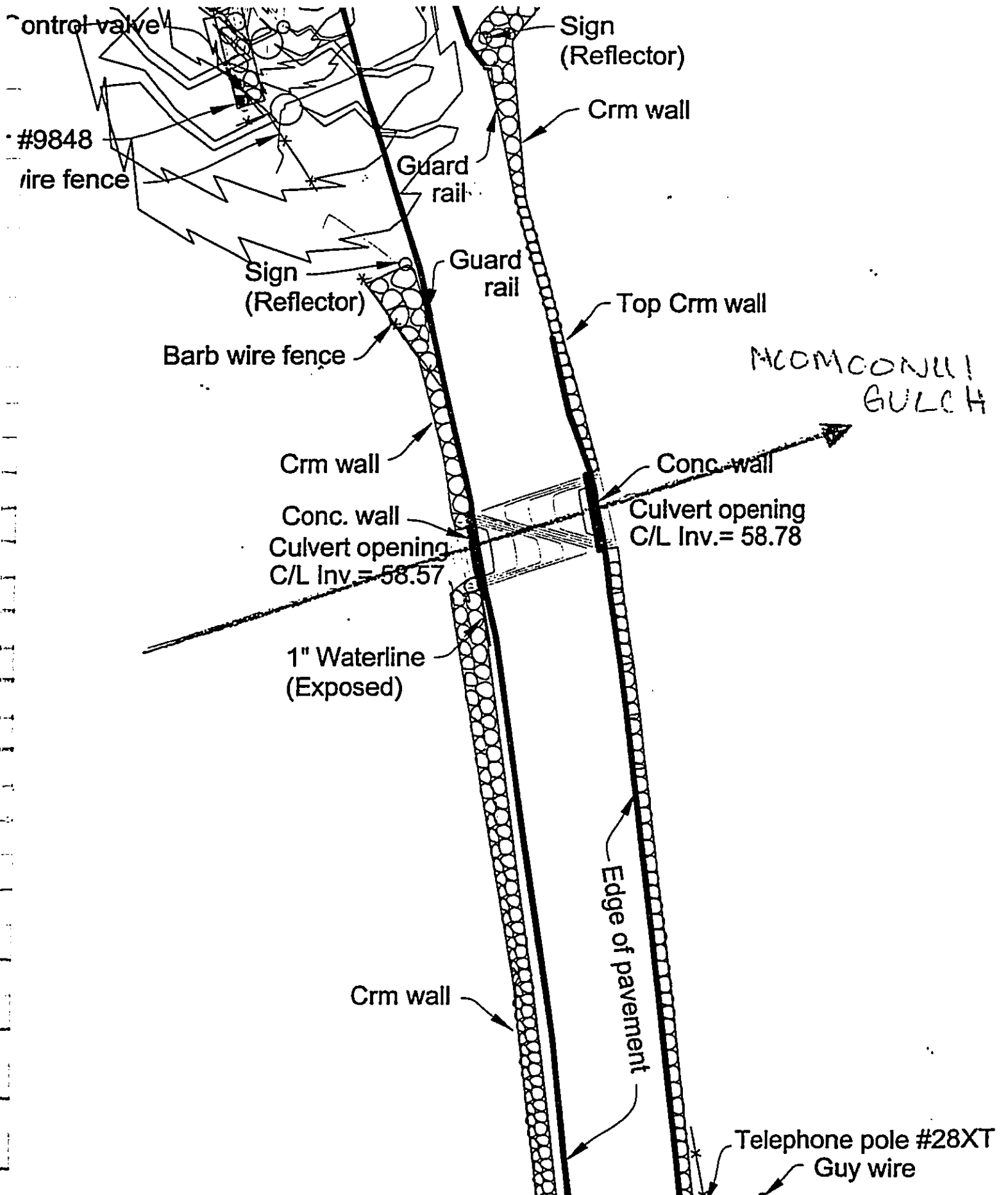
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TOPO  
SCALE: 1" = 20'



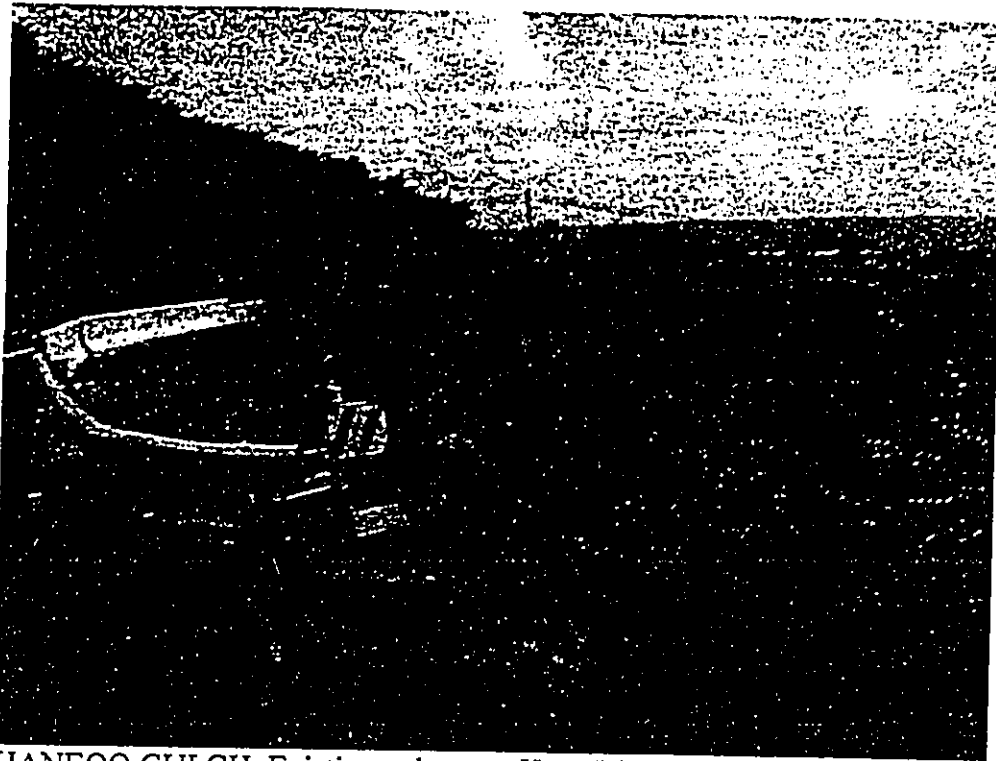
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TOPO  
SCALE: 1"=2'

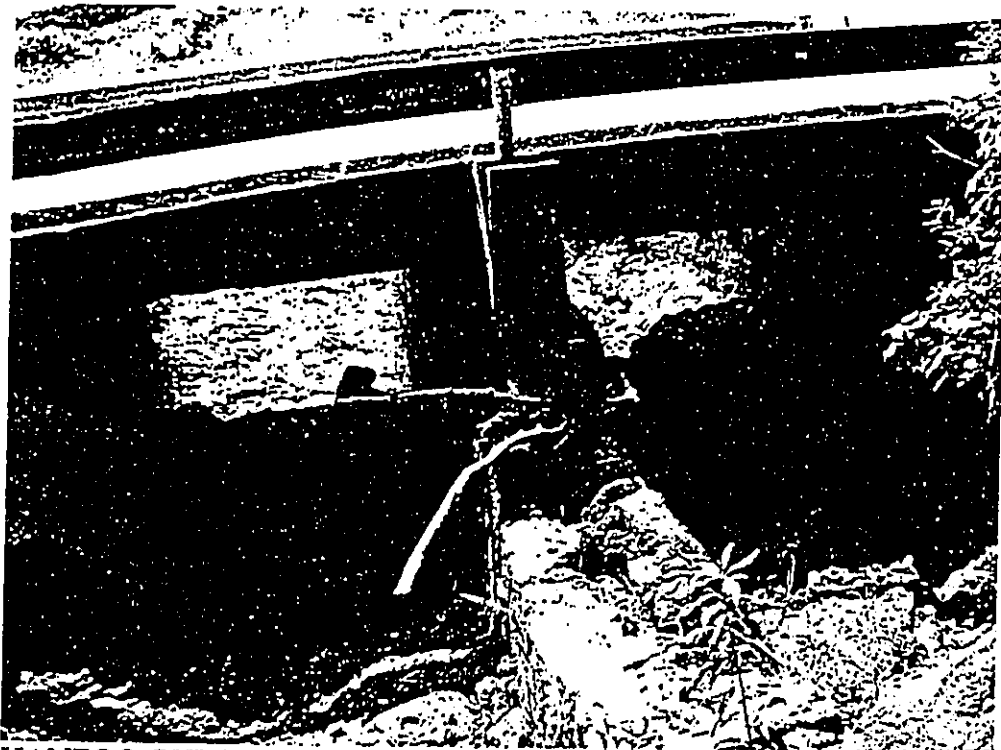


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HAMO A TO HANA WATERLINE  
Photos October 25, 2002



HANEOO GULCH: Existing culvert on Hana Highway



HANEOO GULCH: Existing conditions up stream of culvert – dry stream bed.

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MOOMOONUI GULCH: Existing Culvert on Hana Highway.

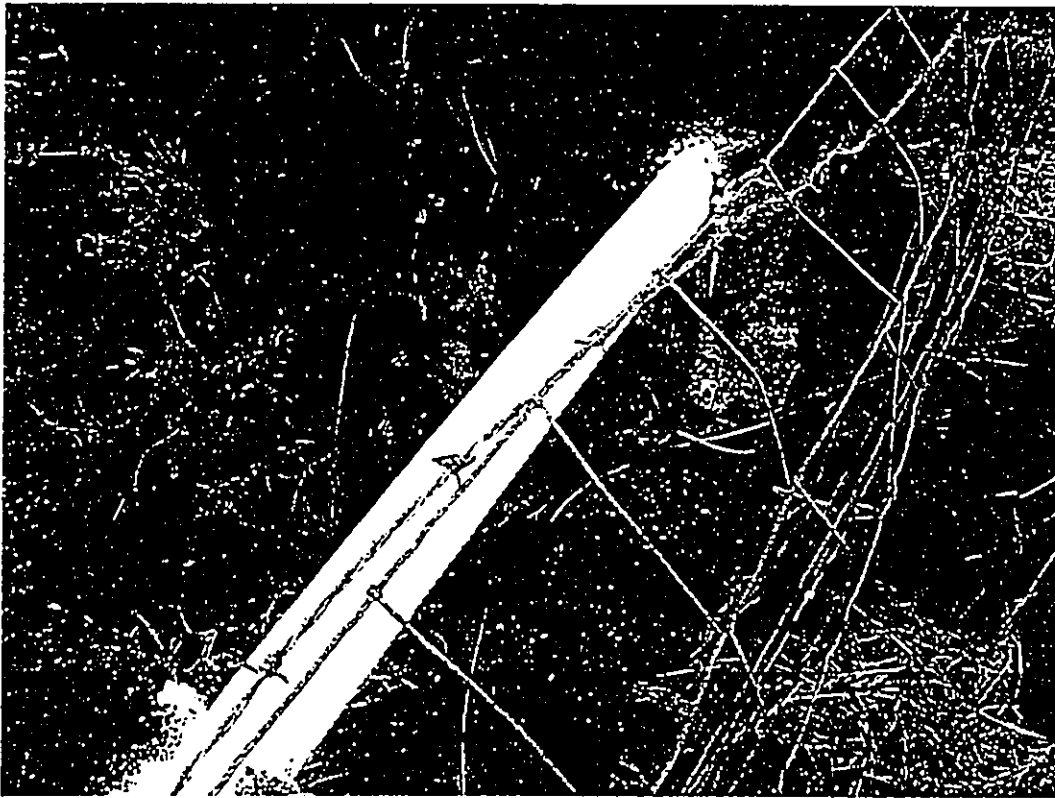


MOOMOONUI GULCH: Existing conditions on downstream of culvert - full vegetation.

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MOOMOONUI GULCH: Existing upstream side of culvert - exposed 1" waterline.



MOOMOONUI GULCH: Existing upstream conditions - dry stream bed.



**APPENDIX D: DEPARTMENT OF HEALTH, FEBRUARY 18, 2003, STREAM BED  
DETERMINATION**

LINDA LINGLE  
GOVERNOR OF HAWAII



CHIYOME L. FUKINO, M.D.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 3378  
HONOLULU, HAWAII 96801-3378

In reply, please refer to:  
EMD / CWB

02034PKP.03

February 18, 2003

Ms. Fiona K. van Ammers  
C. Takumi Engineering, Inc.  
18 Central Avenue  
Wailuku, Hawaii 96793

Dear Ms. van Ammers:

**Subject: Hamoa to Hana Waterline and Hamoa Well 2  
Hana, Maui, Hawaii**

The Department of Health, Clean Water Branch (CWB) has reviewed the subject submittal, dated January 16, 2003, and has the following comments:

1. The Army Corps of Engineers should be contacted to identify whether a Federal permit (including a Department of Army permit) is required for this project. If it is determined that a Federal permit is required for the subject project, then a Section 401 Water Quality Certification would also be required from our office.
2. If the construction project involves any of the following activities, National Pollutant Discharge Elimination System (NPDES) permit coverage is required for each activity:
  - a. Construction activities, including clearing, grading, and excavation that result in the disturbance of equal to or greater than one (1) acres of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. NPDES permit coverage is required before the commencement of the construction activities.
  - b. Discharges of hydrotesting water.
  - c. Discharges of construction dewatering effluent.
  - d. Discharges of treated effluent associated with well drilling activities.
3. If the operation of the proposed facility contributes to the discharge of process wastewater and/or storm water associated with industrial activity, then NPDES permit coverage is required.

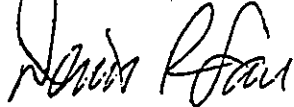
Ms. Fiona van Ammers  
February 18, 2003  
Page 2

4. If the discharges mentioned above enter Class 2 or Class A State waters, then NPDES general permit coverage for each type of discharge is required. If the discharges enter Class 1 or Class AA State waters, then one NPDES individual permit covering all discharges is required.

The CWB requires that Notices of Intent (NOI) for NPDES general permits and NPDES individual permit applications be submitted 30 days and 180 days, respectively, prior to the commencement of the discharges. The amendments to HAR, Chapter 11-55, may also require a copy of the NOI or NPDES permit application to be submitted to the State Department of Land and Natural Resources, State Historic Preservation Division. The NOI and NPDES permit application forms can be picked up at our office or downloaded from our website at <http://www.state.hi.us/doh/eh/cwb/forms/index.html>.

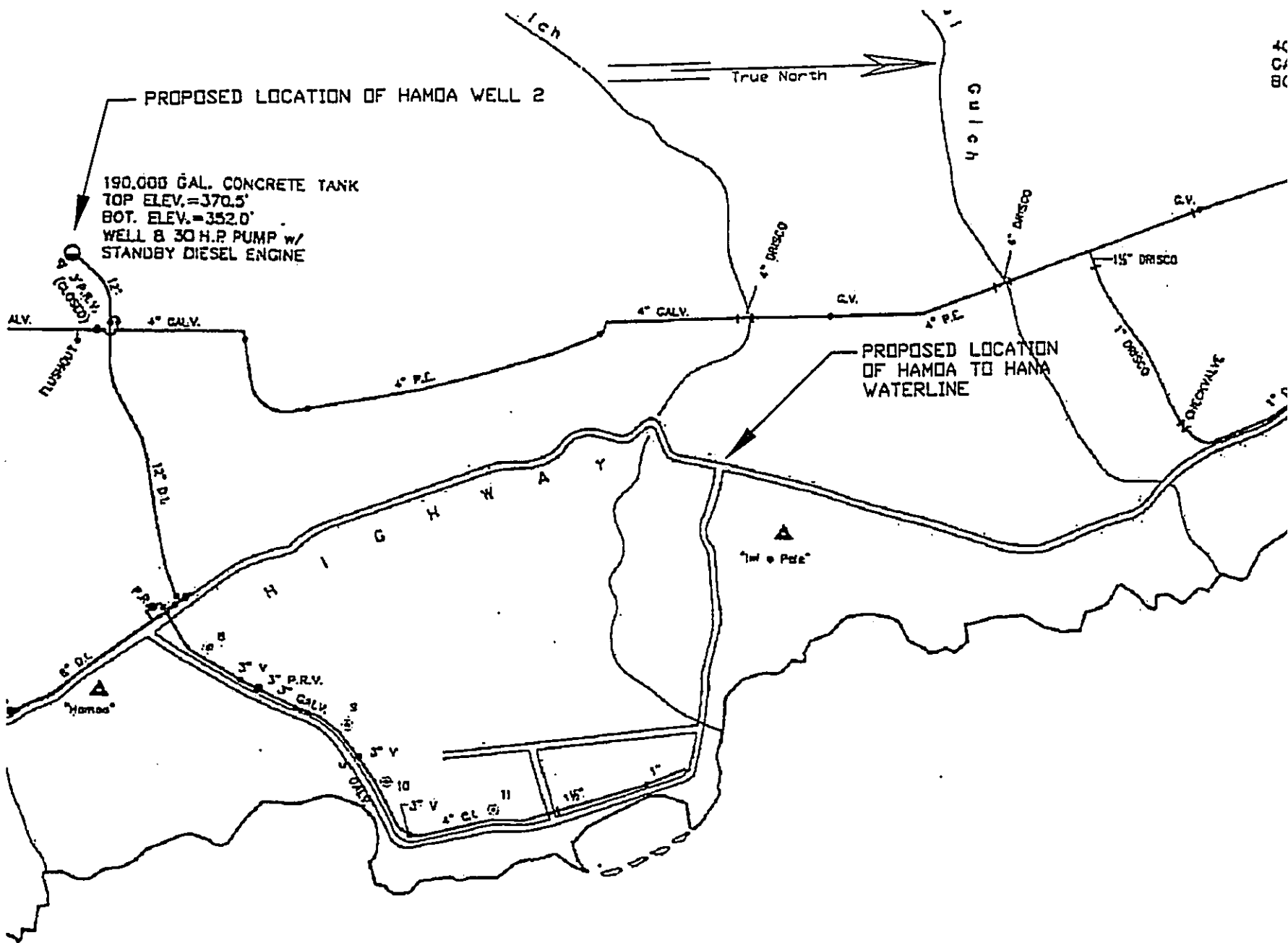
Should you have any questions, please contact Ms. Kris Poentis of the Engineering Section, CWB, at (808) 586-4309.

Sincerely,



DENIS R. LAU, P.E., CHIEF  
Clean Water Branch

KP:ndp



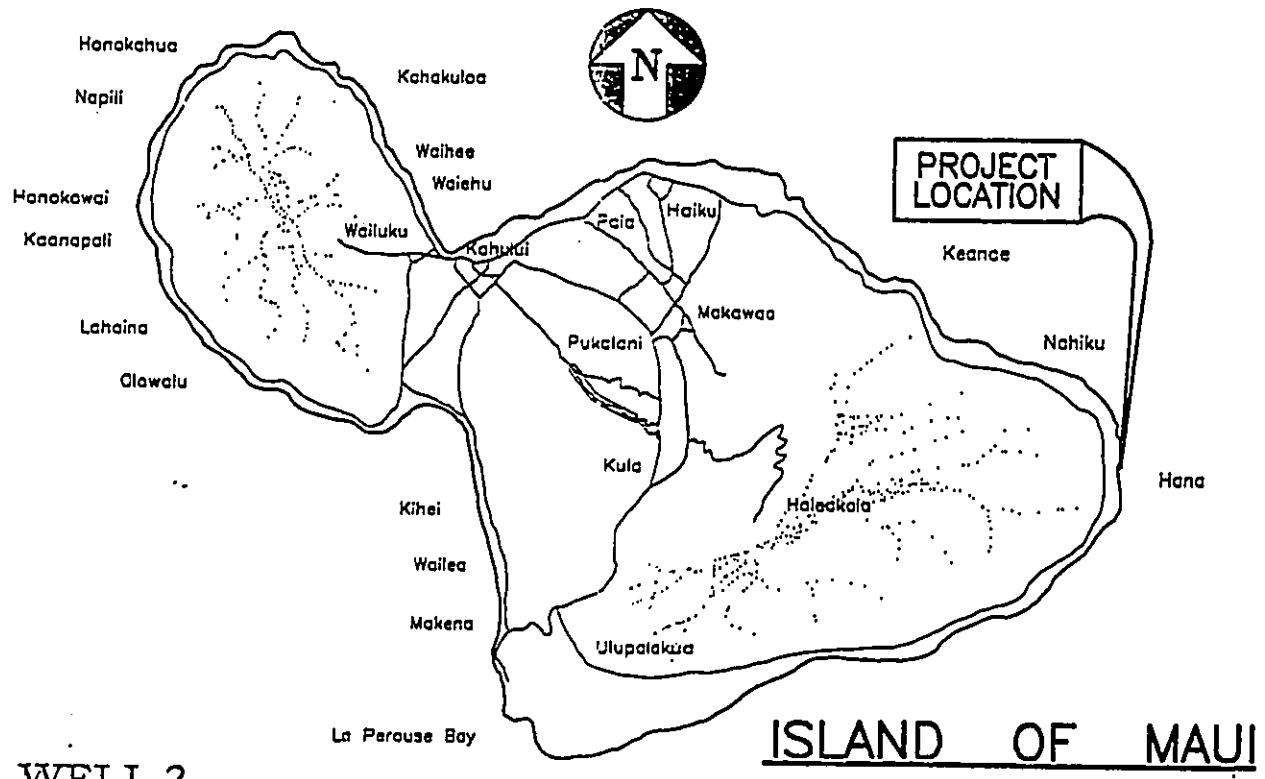
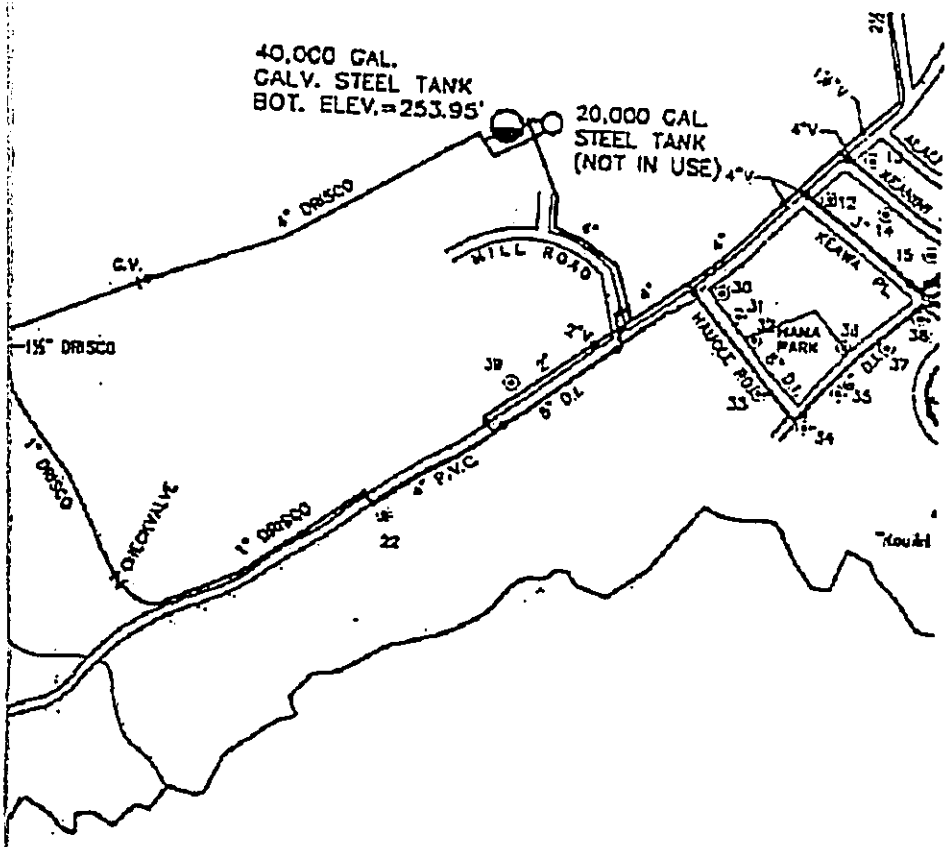
**C. TAKUMI  
ENGINEERING, INC.**  
18 CENTRAL AVENUE  
WAILUKU, MAUI, HAWAII

DATE: 11/08/02

HAMOA TO HANA WATERLINE & HAMOA  
TMK:(2) 1-4-09:002, & (2) 1-4-02, 03, 07, 09  
HANA, MAUI, HAWAII

LOCATION MAP  
FIGURE-1

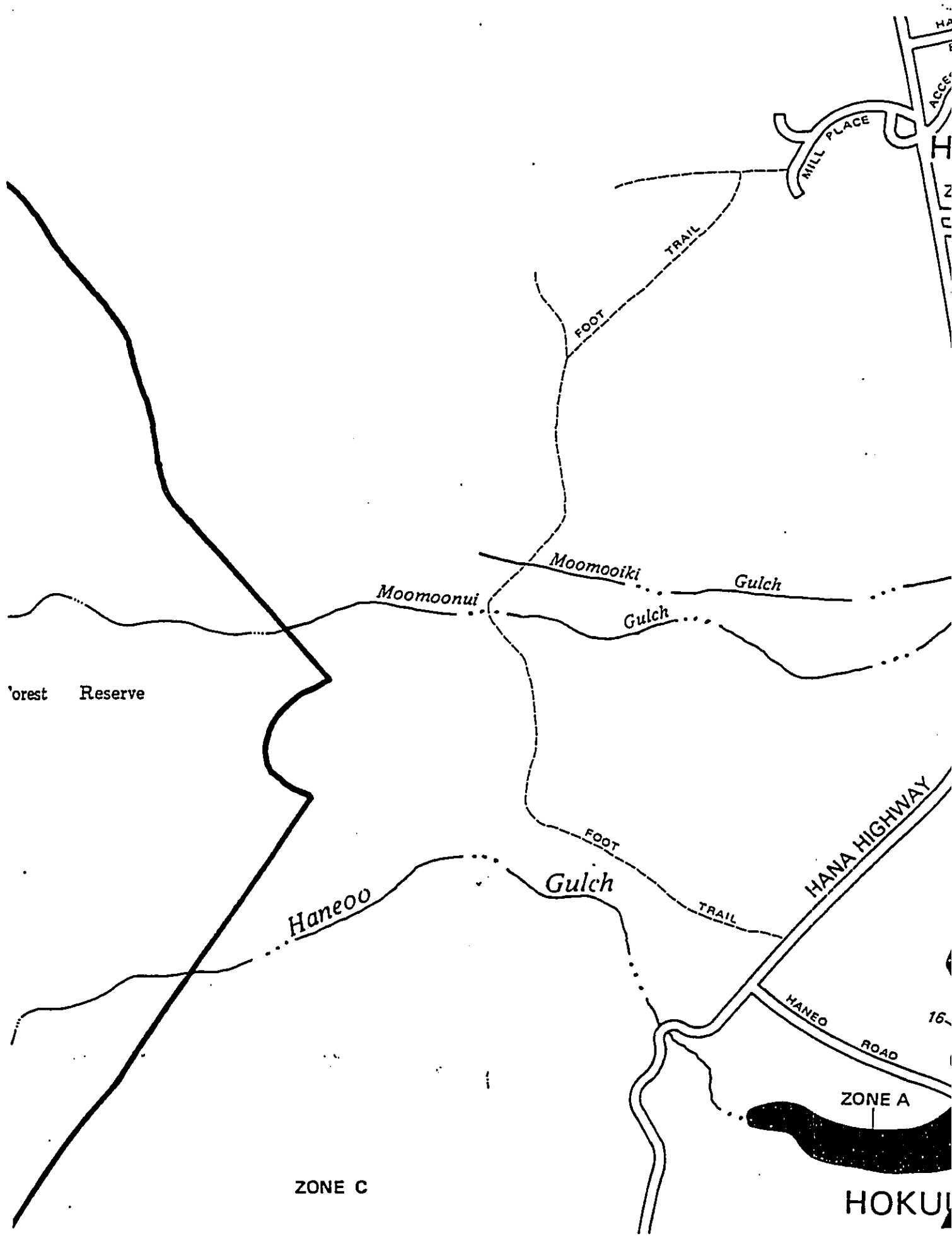
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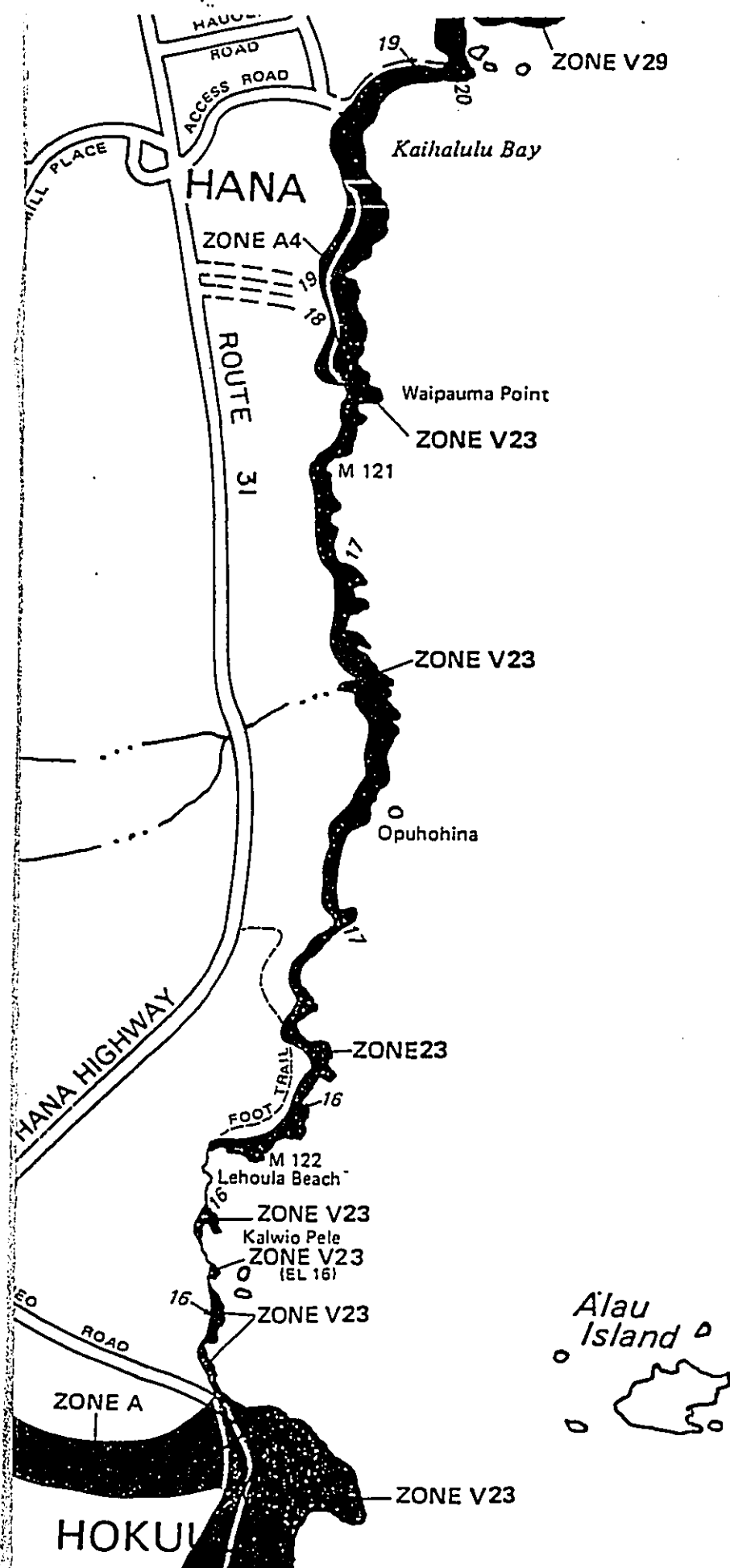


E & HAMOA WELL 2  
 -02, 03, 07, 09  
 WAI  
 AP

ISLAND OF MAUI

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NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**  
FLOOD INSURANCE RATE MAP

MAUI COUNTY, HAWAII

PANEL 320 OF 400  
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER  
150003 0320 B

EFFECTIVE DATE:  
JUNE 1, 1981



federal emergency management agency  
federal insurance administration

HAMO A TO HANA WATERLINE  
& HAMOA WELL 2  
HANA, MAUI, HAWAII  
FLOOD MAP  
FIGURE - 2