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IN REPLY REFER TO:

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

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April 2, 1990

OFC. OF ENVIRONMENTAL
QUALITY CONTROL

Dr. Marvin T. Miura
Office of Environmental Quality Control
465 South King Street, Room 104
Honolulu, Hawaii 96813

Dear Dr. Miura:

Hana Highway, Hoolawa Bridge Replacement
Project No. BR-036-1(5)

We are transmitting a completed OEQC form for Publication of EIS Documents in the OEQC Bulletin, and four (4) copies of the Environmental Assessment/Negative Declaration dated March 1990, for your further processing.

Very truly yours,

A handwritten signature in dark ink, appearing to read "T. Harano".

T. HARANO
Chief
Highways Division

Enclosure

1990-04.23-MA-FEA

FILE COPY

ENVIRONMENTAL IMPACT ASSESSMENT/
NEGATIVE DECLARATION

FOR

~~H~~HOOLAWA BRIDGE REPLACEMENT ~~A~~
PROJECT NO. BR-03601(5)
TMK: 2ND DIV 2-9-04:POR. 76

AT

HANA BELT ROAD
FAS NO. 360
HOOLAWA, MAKAWAO, MAUI, HAWAII

MARCH 1990

PROPOSING AGENCY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

ACCEPTING AUTHORITY:

GOVERNOR, STATE OF HAWAII

PREPARED BY

AKINAKA & ASSOCIATES, LTD.
250 NORTH BERETANIA STREET, SUITE 300
HONOLULU, HAWAII 96817-4716

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1990-04.23-MA-~~FEA~~

FILE COPY

ENVIRONMENTAL IMPACT ASSESSMENT/
NEGATIVE DECLARATION

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PROJECT NO. BR-03601(5)
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FOR
HOOLAWA BRIDGE REPLACEMENT
HANA BELT ROAD, FAS NO. 360
HOOLAWA, MAKAWAO, MAUI, HAWAII
PROJECT NO. BR-3601(5)

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5. TYPICAL SECTIONS
6. STATE LAND USE PLAN
7. PAIA - HAIKU COMMUNITY PLAN

I. INTRODUCTION

A. Project Description

The Department of Transportation, Highways Division (DOTH) proposes to construct a concrete highway bridge across Hoolawa Stream in Makawao, Maui. Approach roadways from the existing highway to the new bridge will also be constructed. The new bridge and approach roadways will be integrated into the State's Hana Highway system.

The bridge and roadway will support two lanes (one each way) of traffic. The existing wooden bridge will serve for traffic management during the construction period and be removed upon completion of the new bridge.

B. Project Location

The Project is located on Hana Highway (Route 36), in the Makawao District, on the island of Maui. The Hoolawa Bridge is situated approximately 3.6 miles west of the Makawao/Hana District boundary (See EXHIBIT 1: PROJECT LOCATION MAP) and crosses the Hoolawa Stream about 1.3 miles upstream from its mouth at Hoolawa Bay (See EXHIBIT 2: PROJECT VICINITY MAP).

C. Project Objectives

The Project will provide a reinforced concrete bridge crossing over Hoolawa Stream. Current standards of highway speed, loading, sight distances and other safety measures will be used in the design of the Project. Included in the Project are highway shoulders, superelevated pavement sections and roadway drainage features normally lacking in older highway construction.

II. DESCRIPTION OF PROPOSED PROJECT

A. Background and Existing Conditions

The existing bridge was built in 1941 of timber and steel construction. It is 210 feet long with a maximum span of 57 feet and eight spans at 19 feet. There are two 12-foot asphalt concrete surfaced lanes (no shoulders) with timber railings.

Recommendations within the Bridge Inspection Report of June 24, 1988 include: "Bridges advanced age, it's numerous, difficult to correct, deficiencies indicate a need for replacement." The deficiencies include raveling wearing surfaces, deteriorated timber, rusted steel beams and non-standard guard rails.

B. Proposed Improvements

The project includes the construction of a reinforced concrete bridge across Hoolawa Stream to replace the existing wooden structure. The new bridge will be approximately 210 feet long and have a stream span of 60 feet (See EXHIBIT 3: PLAN - PROPOSED HIGHWAY IMPROVEMENTS and EXHIBIT 4: PROFILE - PROPOSED HIGHWAY IMPROVEMENTS). Approach roadways from the existing Hana Highway to the new bridge is included in the project. Typical road and bridge sections are shown in EXHIBIT 5: TYPICAL SECTIONS. Upon completion of the concrete bridge, the existing wooden structure will be removed.

C. Project Funding

Funding for this project will be provided by the Department of Transportation, State of Hawaii. The federal government will contribute 80 percent of the construction cost towards completion of the Project. The preliminary construction cost estimate for this project is \$2,500,000.

III. RELATIONSHIP TO EXISTING LAND USE PLANS AND CONTROLS

A. State Land Use Plan

The State Land Use Commission designates properties in four categories: Agriculture, Rural, Urban, and Conservation. The Project is located in lands designated as Agriculture. (See EXHIBIT 6: STATE LAND USE MAP).

B. County of Maui General Plan

The General Plan for the County of Maui, adopted June 24, 1988 mandated the formulation of the Paia-Haiku Community Plan. This community plan provides a relatively detailed scheme for implementing the objective and policies of the County General Plan relative to the Paia-Haiku region.

The Project is located in lands designated for agricultural uses as shown in EXHIBIT 7: PAIA - HAIKU COMMUNITY PLAN.

C. County of Maui Special Management Area

The Special Management Area Boundary Map for the Hoolawa Bridge area shows the Special Management Area (SMA) running from the shoreline to the makai side of Hana Highway. Since the new bridge will be constructed makai (downstream) of the existing bridge, the Project is within the SMA and will require a SMA permit.

D. County of Maui Subdivision Ordinance

The Project will require additional right-of-way in order to construct the new bridge and maintain traffic over the existing bridge during the construction period.

IV. ENVIRONMENTAL SETTING

A. Topography

This project is located 1.3 miles above Hoolawa Bay on the northern coastline of Maui. Hoolawa Stream flows through the project site. Topographic information is available on the Haiku Quadrangle Map published by the U.S. Geological Survey.

A topographic survey of the Project site was completed to aid the design of the improvements, study of the stream and right-of-way acquisition. Roadway elevations vary between 510 - 520 feet above sea level. Hoolawa Stream at the bridge site is approximately 465 feet above sea level.

B. Geology/Soils

The Island of Maui was formed by the merger of two volcanoes - Haleakala and West Maui. The project site is located on the northern slopes of Haleakala - a 210,000 foot dormant volcano. Honomanu Volcanic Series form the primitive shield which was a subsequent overlain by the Kula Volcanic Series. The Kula Volcanic Series is composed mostly of hawaiite with lesser amounts of alkalic olivine basalt and ankarite. Aa lava flow is predominant.

Based on the "Soil Survey of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii" by the Soil Conservation Service, August 1972, the soils at the Project site consists of Pauwela clays. These soils are well-drained with moderately rapid permeability, slow runoff and slight erosion hazard.

C. Climate

The climate is comfortably uniform and is characterized by the northeast tradewinds. Uniform temperatures result from the tempering affect of the surrounding ocean. The average monthly temperatures in Makawao are within the range of 66°F in August and 61°F in December. The mean temperature decreases about 3 degrees for every 1,000 foot increase in elevation.

Windward Maui receives larger amounts of rainfall as the result of the condensation of water vapor as it is forced up into the atmosphere by the mountain mass. The project site, located in the windward side of the island at a 520 foot mean elevation, receives an average of 100 inches of rainfall per year (Ref: Rainfall Atlas of Hawaii, Department of Land and Natural Resources, June 1986).

D. Biology

The site is an existing wooden bridge served by an improved asphalt-concrete road with grassed shoulders. The surrounding area consists of pasture lands with introduced flora species such as eucalyptus, guava, christmas berry and kikuyu and bermuda grasses.

No threatened or endangered birds are known to inhabit the area. Common urban birds, such as mynahs, doves, ricebirds and sparrows were observed in the project area. Wildlife inhabiting the area include stray cats, mongoose, and rats which are common in open agricultural areas.

The pool formed by the "Twins Falls" of Hoolawa Stream is a popular swimming area. This activity has impacted the aquatic life of the stream. No threatened or endangered species of aquatic life were found during a cursory survey along the Project site.

E. Air Quality

Although no information on air quality at the Project site was obtained, it is generally assumed that the air is relatively clear and low in pollution. This is because of the elevation and distance from the major urban centers.

F. Noise

Noise levels were not measured at the Project site. The noise levels are basically normal rural highway traffic and agricultural activities of the adjacent areas. The current average daily traffic = 4,800 vehicles, with the design daily traffic (for year 2012) = 8,900 vehicles.

G. Archaeology

There are no identified historic or archeologically significant locations at the site or immediate vicinity. Major disturbance of the Project site occurred during the construction of the existing bridge and highway and any significant archaeological have been destroyed. However, should any unanticipated sites, artifacts or remains, such as shell, bone or charcoal deposits, be discovered during construction, the work will be halted and the State Historic Preservation Office will be contacted.

H. Flood Hazard

Discussions within flood damage reports do not include the drainage basin since improvements are sparse. As an example, the January 27-28, 1971 storms deposited 8 - 9 inches of rainfall in the Project area but the Corps of Engineers/Department of Land and Natural Resources report C31 which covered the storm, makes no mention of the Hoolawa Stream drainage basin.

According to Division of Highways, Maui District maintenance personnel, the highest stream flow observed during heavy storms was only a few feet above the stream bank. No records of flood damages to the bridge structure exists. Bridge maintenance records also do not show evidence of bridge repairs resulting from flood damages.

A stream study will be performed as part of the Project development. The study will develop hydrologic criteria, determine flood conditions and recommend appropriate design features to mitigate damages.

I. Seismic Risk

The island of Maui is in Seismic Zone 2, as established by the Uniform Building Code, indicating moderate damage risk from earthquake, corresponding to intensity VII of the Modified Mercalli Intensity Scale of 1931. Range of seismic risk varies from Zone 0, indicating no damage, to Zone 4, indicating major damage.

V. SOCIO-ECONOMIC SETTING

The residential population of the island of Maui as of 1980 was 71,191 of which 9,979 lived in the Makawao District. The population of the Haiku-Pauwela census tract (#302) was 3,567 at the same time. Forecasts within the County of Maui Community Plans combines census tract #302 with #305 (Paia) with year 2000 projected at 6,800 people. If the population ratio between the census tracts remain constant, there will be 4,709 people in the Haiku-Pauwela tract in year 2000.

Agriculture is the primary economic activity of the area, particularly cattle ranching and taro production. Other primary industries for the residential population are service and retail. Household incomes in the northeast Maui area ranged from \$2,000 to \$25,000 or more, with half falling in the \$12,000 to \$25,000 or more category.

The immediate vicinity to the Project site is sparsely populated by agriculture associated dwellings. These dwellings are makai of the highway and are accessed through the old government main road. It is estimated that less than 100 people live within a one mile radius of the project site.

VI. PROBABLE IMPACTS OF THE PROPOSED ACTION TO THE ENVIRONMENT

A. Short Term Impacts

Short term impacts related to construction activities of the proposed project can be anticipated for the duration of the road and bridge construction. These include impacts on noise, air and water quality, and vehicular traffic.

Noise along the project site will be generated by internal combustion engine vehicles. The work will be limited to daylight hours and restricted to the road right-of-way. Exhaust emissions from construction vehicles will impact the immediate adjoining area.

Dust and erosion from the construction efforts will be insignificant considering the volume of earth manipulated. Conformance to the County's Soil Erosion and Sedimentation Control ordinance should mitigate any adverse effects.

Disruption of vehicular traffic due to construction of the project is expected to take about 12 months. Traffic control devices and/or flagmen will control traffic through the construction area. The existing bridge will provide traffic management during construction with one lane of traffic kept open at all times.

B. Long Term Impacts

There are no negative long term impacts from this project. Motorists on Hana Highway will not notice the completed project after completion other than a smoother ride, wider roadway, and greater sight distances. Maintenance of the existing timber bridge will be eliminated.

No increase in flood elevations is expected to occur as a result of this project. Current drainage patterns will be maintained, with no increase in storm water generation due to this project.

VII. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED

The noise level will increase during the construction period. This effect will be of short duration, lasting only for the construction phase. The noise level can be reduced by the contractor by ensuring proper functioning of mufflers on all equipment, and conducting construction activity only during daylight hours, between 8:00 a.m. to 5:00 p.m.

Traffic along Hana Highway will be disrupted for short periods during construction of the projects. The disruptions will be short as the existing bridge will be maintained during construction for traffic management.

The few residents within the Project vicinity will be inconvenienced by noise, dust and traffic delays. Motorists proceeding to or returning from the Hana area will experience delays as the Hana Highway is the only access to that area.

During the construction process, sediments may enter the stream when the bridge foundation is excavated. Should the excavated/graded area indicate a potential substantial erosion concern, mitigating measures such as silt fences or berms will be constructed.

VIII. ALTERNATIVES TO THE PROPOSED ACTION

A. Alternative Route

Consideration of an alternative route would be an inefficient use of the existing public right-of-way. An alternative route would require extensive road construction to upgrade an existing system to meet current highway standard.

B. No Action

This alternative is not acceptable as the existing bridge cannot be feasibly repaired and modified to meet current standards.

IX. MITIGATION MEASURES TO MINIMIZE ADVERSE IMPACTS

The short term impacts occurring during the construction work will be minimized by applying current techniques and methods. In addition, restrictions of operational hours will minimize noise impacts to the adjoining area. Considering the sparse population in vicinity of the Project, the option of working longer hours to shorten the construction period may be considered.

Dust generated during grading activities will be controlled by water sprinkling and compliance with the Air Pollution Control Regulations of the Department of Health and applicable portions of the County ordinances relating to grading and material handling operations.

The impact of construction activities increasing downstream sedimentation can be mitigated by conforming to strict erosion control measures as specified in the County grading ordinances and the State Department of Health's Water Quality Standards.

To minimize pollutant emissions from internal construction engines, the Contractor will be responsible for proper maintenance of all construction equipment and vehicles.

The Contractor will be required to provide proper traffic control devices and/or flagmen to minimize any disruption of traffic flow. Temporary paving may serve as a roadway surfacing to maintain traffic flow until the permanent pavement section is constructed.

X. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The construction of the proposed project will involve the commitment of certain natural and fiscal resources. The commitment of construction materials, manpower, and energy are mostly unrenowable and irretrievable. Lands used to construct the roadway can be restored to its existing conditions and therefore are not irretrievable commitments. The impacts of using these resources should, however, be weighed against the benefits to the residents and visitors of the County for a safe dependable highway and access to the Hana Area cultural resources.

XI. DETERMINATION

Based on the preceding paragraphs, it is anticipated that the proposed action will result in no significant adverse impacts other than those described in this assessment. In evaluating the impacts described in this assessment, it appears that the proposed action will not have any significant negative effect on the environment. Consequently, a Negative Declaration is recommended.

XII. REASONS SUPPORTING RECOMMENDED DETERMINATION

In considering the significance of potential environmental effects, the proposing agency has considered the sum of effects on the quality of the environment and evaluated the overall cumulative effects of the proposed action. The proposing agency has considered every phase of the proposed action, the expected consequences, both primary and secondary and the cumulative as well as the short- and long-term effects of the proposed action. As a result of these considerations, the applicant has determined that:

A. The proposed action does not involve an irrevocable commitment or loss of or destruction of any natural cultural resource:

There are no natural or cultural resources associated with the project site. Prior use of the Project site for road/bridge construction has substantially altered the area from its natural condition.

B. The proposed action does not curtail the range of beneficial uses of the environment:

The proposed project is consistent with the County's General Plan and the Department of Transportation, Highways Division standards and would not curtail beneficial uses of the environment in the area. The proposed project will be compatible with the uses of the surrounding area.

C. The proposed action is in concert with the State's long-term environmental policies, goals and guidelines as expressed in Chapter 343, HIS, and any revisions and amendments thereto, court decisions and executive orders:

The proposed project is consistent with the State Land Use Plan which is in concert with all applicable policies, goals and guidelines. No long-term environmental conflicts are foreseen.

D. The proposed action does not substantially affect the economic or social welfare of the community or state:

The economic impact will be affected by the short-term, construction related activities. Cash infusion during the construction phase will be the primary short-term economic impact. Upon completion of the project, the economic situation should return to the existing condition.

- E. The proposed action does not involve substantial secondary impacts, such as population changes or effects on public facilities:

The proposed project will not directly result in an increase of population in the area. The proposed construction, when completed, will provide a safer and more dependable access to the Hana area.

- F. The proposed action does not substantially affect public health:

Construction activities will be regulated to minimize adverse noise, dust and erosion concerns.

- G. The proposed action does not involve a substantial degradation of environmental quality:

The existing physical aspects of the surrounding area will be preserved.

- H. The proposed action is individually limited and cumulatively, does not have a considerable effect upon the environment or involve a commitment for larger actions:

The proposed action, either individually or cumulatively, will not have a considerable effect on the environment, nor will it involve a commitment to larger actions.

- I. The proposed action does not substantially affect rare, threatened or endangered species or habitats:

There are no known rare, threatened or endangered species or habitats associated with the project site.

- J. The proposed action does not detrimentally affect air or water quality or ambient noise levels:

No significant detrimental effects on air or water quality or ambient noise levels are anticipated. Because the project area is small, fugitive dust will not be a problem.

Storm runoff will not be increased and the direction of flow will not be altered. The bridge foundation will be designed and constructed as not to impede stream flow or cause a backwater condition.

At the completion of construction, noise levels will return to levels comparable with existing ambient conditions.

- K. The proposed action does not affect an environmentally sensitive area such as flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary or coastal waters.

The proposed project is not located in an environmentally sensitive area. The project is not located within a tsunami zone. A stream study will determine flood limits and only critical construction (bridge foundation) will be allowed within the floodway. The project is not located on unique geologically hazardous lands. It is also not expected to have any significant adverse impacts on fresh or coastal waters.

XIII. LIST OF NECESSARY REVIEW/APPROVALS

A. County of Maui

1. Department of Planning
 - a. Special Management Area Permit.
 - b. Subdivision and consolidation for highway right-of-way
2. Department of Public Works
 - a. Grading and Erosion Control Measures.

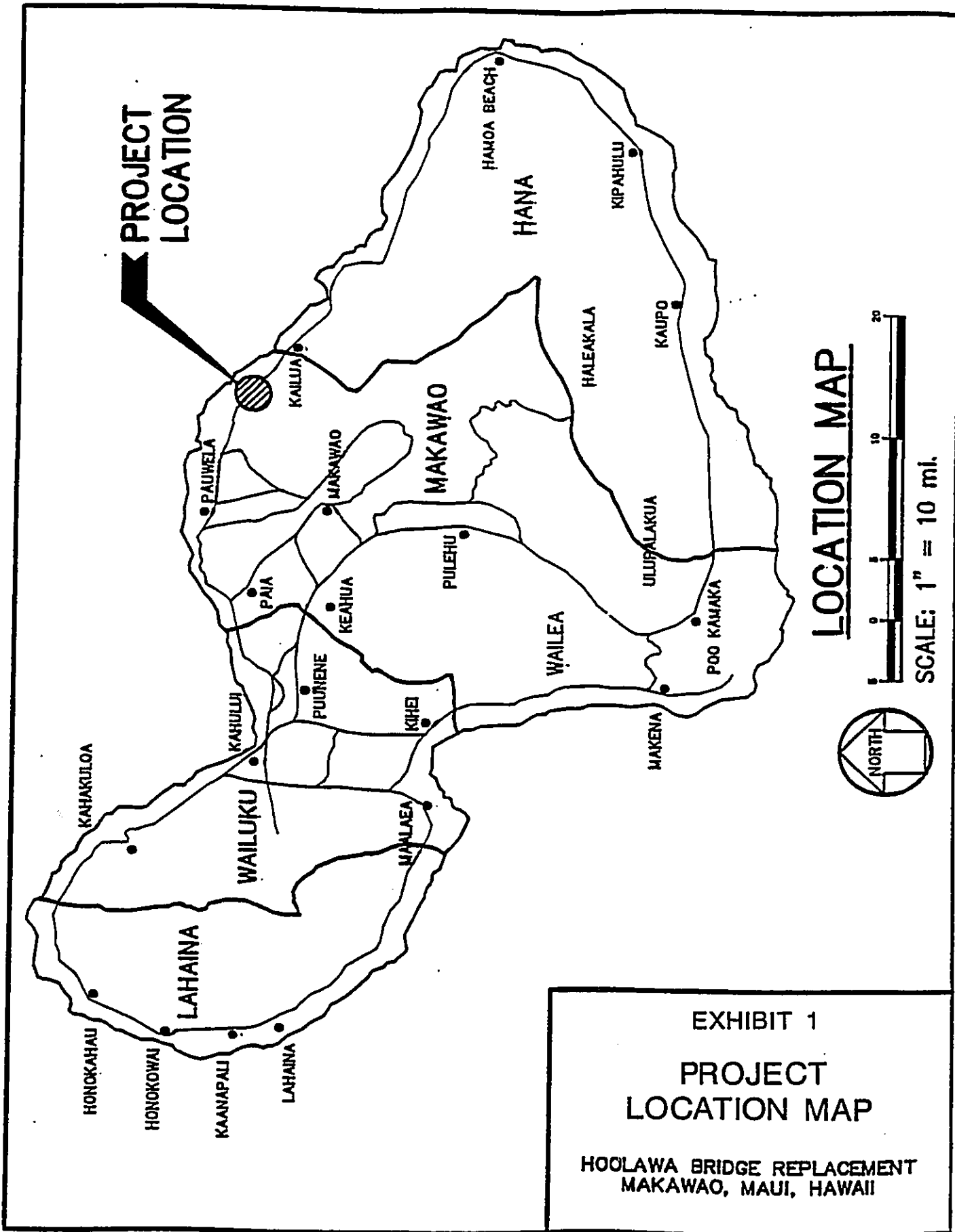
XIV. ORGANIZATIONS AND PERSONS CONTACTED

The following agencies provided information in the preparation of the Environmental Impact Assessment on the subject project.

- A. Department of Planning
County of Maui
200 South High Street
Wailuku, Maui
- B. Department of Public Works
County of Maui
200 South High Street
Wailuku, Maui
- C. Office of Environmental Quality Control
State of Hawaii
465 South King Street, Room 4
Honolulu, Hawaii 96813

XV. BIBLIOGRAPHY

1. County of Maui, Department of Water Supply, Water System Standards, Vol. I, 1985.
2. MacDonald, Gordon A., Volcanoes in the Sea, University of Hawaii Press, 1983.
3. U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, 1972.
4. State of Hawaii, Department of Planning and Economic Development, State of Hawaii Data Book, 1987: A Statistical Abstract, 1987.
5. County of Maui, Paia-Haiku Community Plan, 1983.
6. County of Maui, Department of Water Supply, Environmental Impact Statement: Makawao - Kula Water Treatment Plants, 1982.



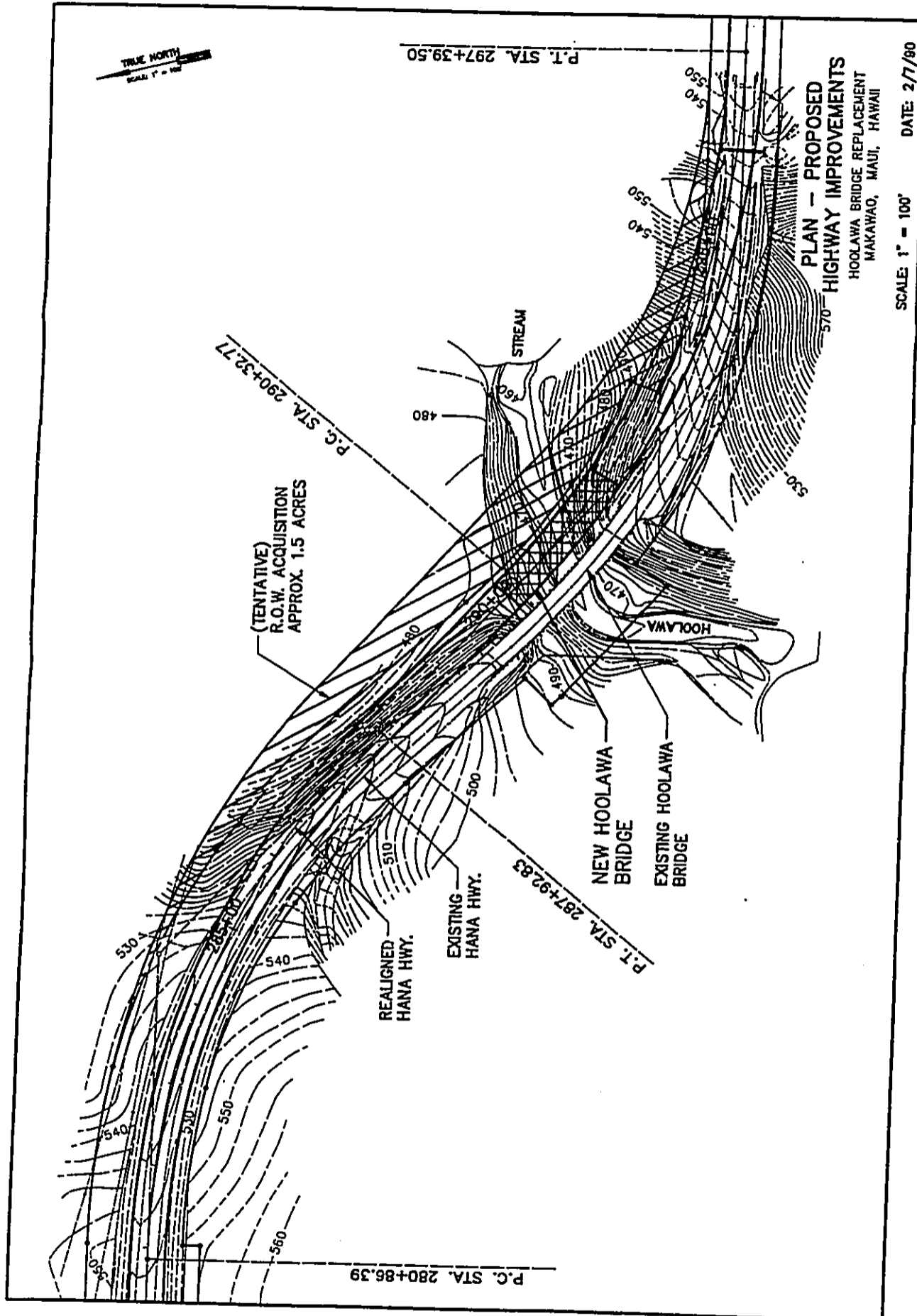
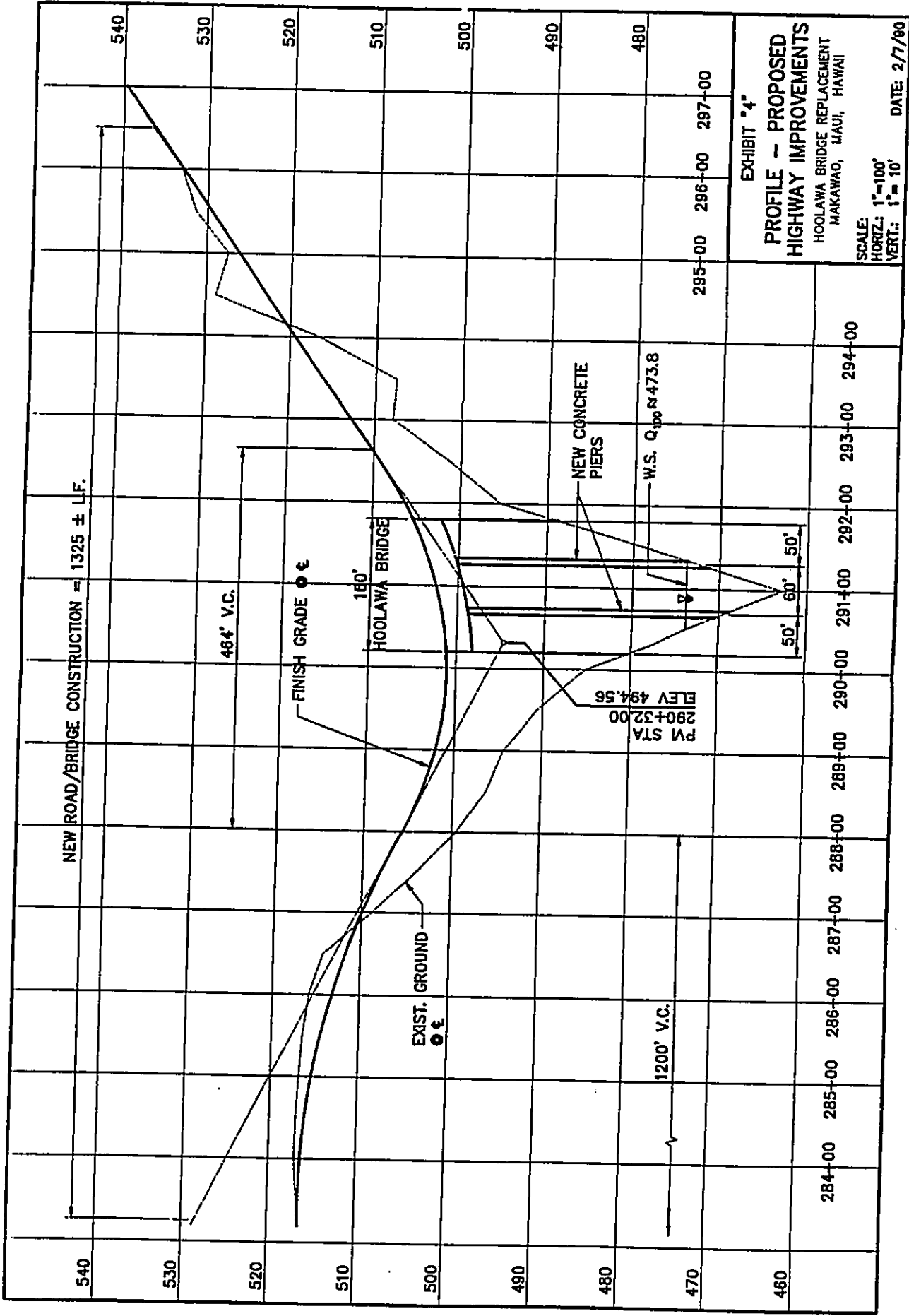
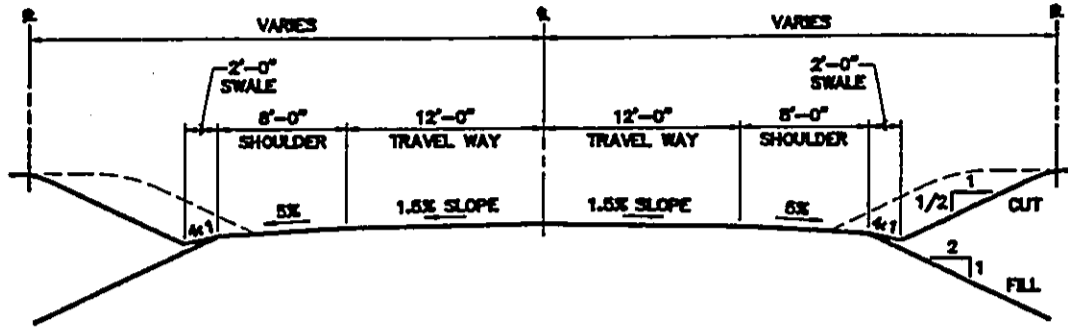


EXHIBIT "3"

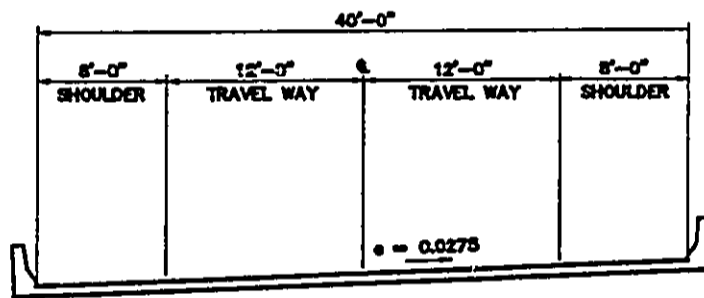


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SCALE: 1" = 100'

EXHIBIT "4"
PROFILE - PROPOSED
HIGHWAY IMPROVEMENTS
HOOLAWA BRIDGE REPLACEMENT
MAKAWAO, MAUI, HAWAII
SCALE:
HORIZ: 1" = 100'
VERT: 1" = 10'
DATE: 2/7/90



TYPICAL PROPOSED ROAD SECTION
NOT TO SCALE



TYPICAL PROPOSED BRIDGE SECTION
NOT TO SCALE

FILE: HTM0418
SCALE: 1/4" = 1'-0"
DATE: 3/23/90

EXHIBIT 5

TYPICAL SECTIONS

HOOLOWA BRIDGE REPLACEMENT
MAKAWAO, MAUI, HAWAII

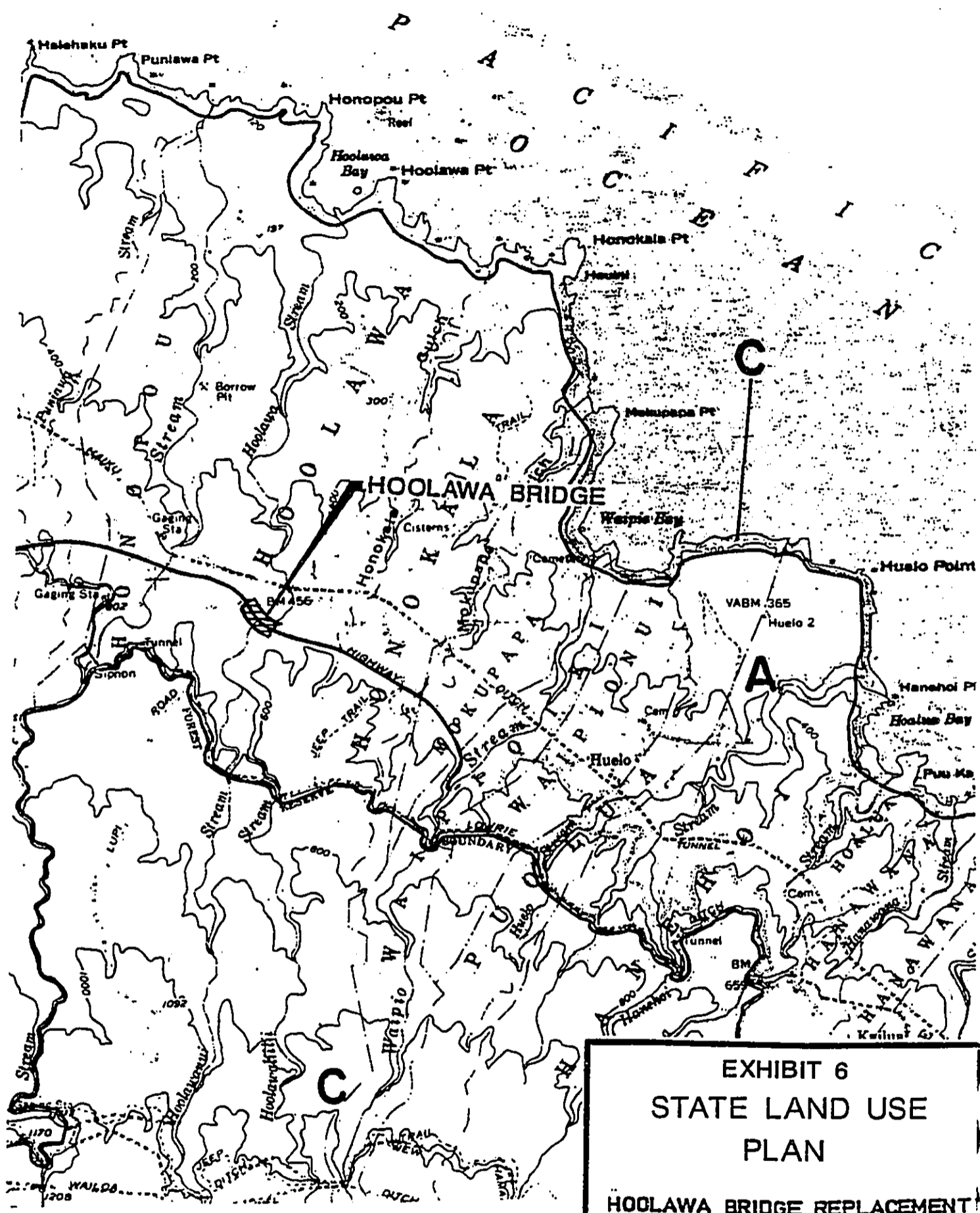


EXHIBIT 6
 STATE LAND USE
 PLAN
 HOOLAWA BRIDGE REPLACEMENT
 MAKAWAO, MAUI, HAWAII

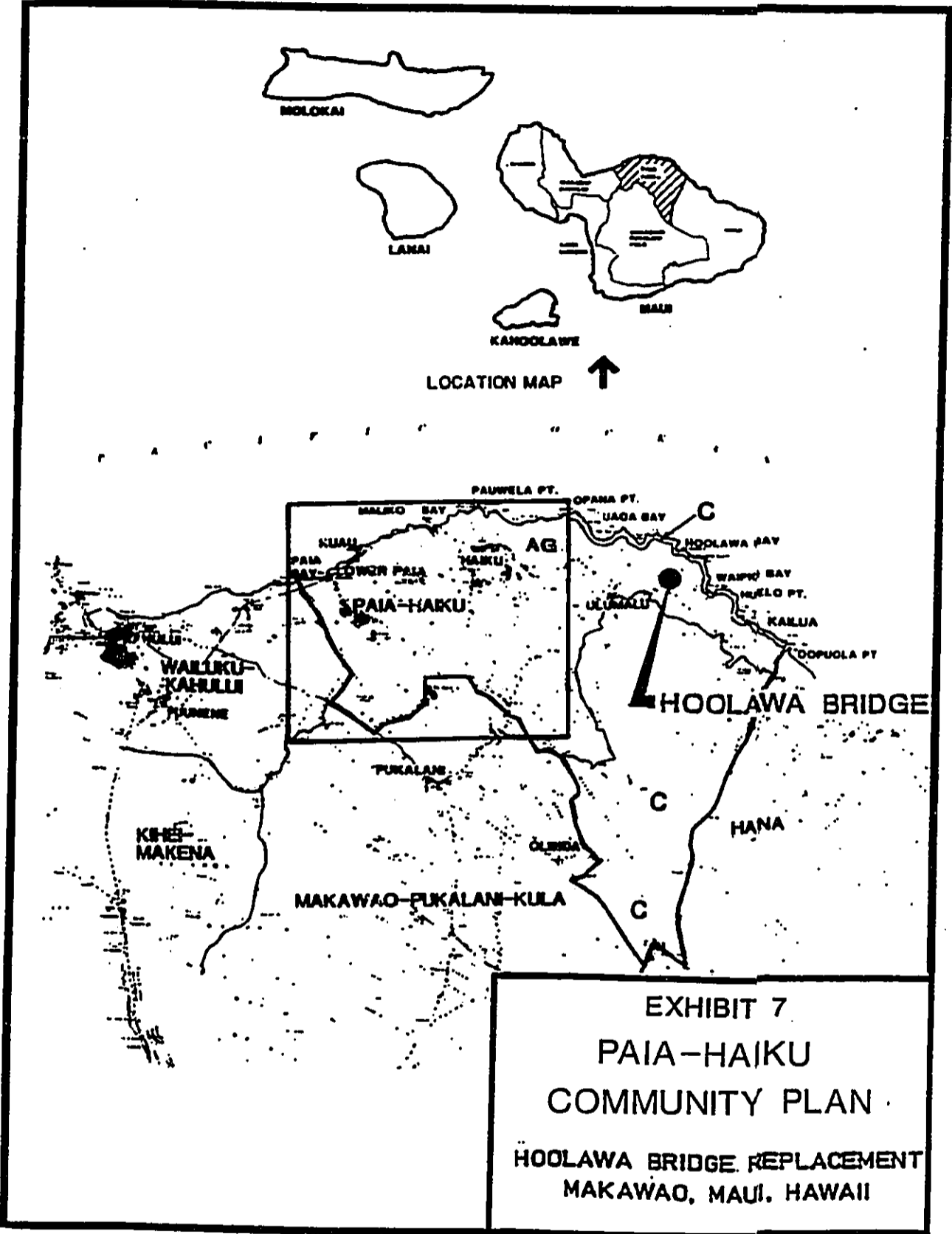


EXHIBIT 7
 PAIA-HAIKU
 COMMUNITY PLAN
 HOOLAWA BRIDGE REPLACEMENT
 MAKAWAO, MAUI, HAWAII