



ALEXANDER & BALDWIN
PARTNERS FOR HAWAII

REVISED
2/11/2019

September 28, 2018

Mr. Jeff Pearson
Deputy Director, Commission on Water Resource Management
Hawaii Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

RECEIVED
COMMISSION ON WATER
RESOURCE MANAGEMENT
2018 FEB -7 AM 7:29

**Subject: Stream Diversion Works Permit Applications ("Category 3" Diversions)
East Maui Irrigation Company "Taro Stream" Diversion Abandonment**

Dear Mr. Pearson:

East Maui Irrigation Company (EMI) has previously submitted to the Commission on Water Resource Management (CWRM) a Stream Diversion Works Permit Application (SDWPA) for the abandonment of seventy of its existing irrigation system stream diversions in furtherance of its commitment to make existing stream flow restorations in several East Maui "taro streams" complete and permanent. Concurrently, EMI has made submittals to other governmental agencies (specifically, the Office of Conservation and Coastal Lands (OCCL), the United States Army Corps of Engineers (USACE), and the County of Maui Department of Planning) to secure approvals for the work to proceed.

Pursuant to guidance provided by your office, EMI is amending its original SDWPA by splitting it into separate, smaller applications in order to facilitate review and approval of the proposed abandonment work. The second such application, covering abandonment of eleven diversions, is enclosed, along with the required filing fee. Additional applications will be submitted as they are completed.

Thank you for your consideration of these applications, and please feel free to contact me at (808) 877-2959 with any questions.

Sincerely,

Sean M. O'Keefe
Director, Environmental Affairs
Alexander & Baldwin, Inc.

Enclosures

cc: M. Vaught, M. Ching, N. Chun, Y. Izu



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
STREAM DIVERSION WORKS
PERMIT APPLICATION

For Official Use Only:
RECEIVED
COMMISSION ON WATER
RESOURCE MANAGEMENT
2010 FEB -7 AM 7:23

Instructions: Please print in ink or type and send one (1) completed hardcopy and one (1) digital copy of the application with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Applications must be accompanied by a non-refundable filing fee of \$25.00 payable to the Department of Land and Natural Resources. The Commission may not accept incomplete applications without the required signatures. For assistance, call the Stream Protection and Management Branch at 587-0234. For further information and updates to this application form, visit <http://dlnr.hawaii.gov/cwrm>.

Check here to allow Commission staff to communicate primarily via e-mail.
 Legally required and other key correspondence will still be transmitted via postal mail.

PERMIT TYPE

1. **Permit Status:** New After-The-Fact
 2. **Type of Construction:** Installation Modification Removal / Abandonment

APPLICANT INFORMATION

3. **APPLICANT'S NAME / COMPANY**
 East Maui Irrigation Company
 Applicant's Contact Person: Mark Vaught
 Applicant's Phone: (808) 579-9516
 Applicant's Mailing Address: PO Box 791628 Paia, Hawaii 96779
 Applicant's E-mail Address: mvaught@abhi.com

Check here if project will impact multiple landowners. If project impacts multiple landowners, skip Item 4 below, then complete and attach Form LND-APP to identify and verify landowner's approval of proposed stream diversion work.

4. **LANDOWNER'S NAME / COMPANY**
 Landowner's Contact Person: _____ Landowner's Phone: _____
 Landowner's Mailing Address: _____ Landowner's E-mail Address: _____

5. **CONSULTANT'S NAME / COMPANY**
 N/A
 Consultant's Contact Person: _____ Consultant's Phone: _____
 Consultant's Mailing Address: _____ Consultant's E-mail Address: _____

6. **CONTRACTOR'S NAME / COMPANY**
 N/A
 Contractor's Contact Person: _____ Contractor's Phone: _____
 Contractor's Mailing Address: _____ Contractor's E-mail Address: _____

STREAM INFORMATION

7. **Island:** (Check only one) Kauai Oahu Molokai Lanai Maui Hawaii
 8. **Tax Map Key(s)** List all affected tax map key parcels.
 29003042, 29004038, 29004039, 29006033, 29009019, 29014009 (EMI)
 11002002, 29006028, 29014001 (State of Hawaii)
 9. **Stream / Gulch Name(s)** List all affected streams and/or gulches.
 Honopou, Pi'ina'au, Palauhulu, Hanehoi, Puolua (Huelo)

FOR OFFICIAL USE ONLY:
 SWHU ID: _____ FILE ID: _____
 LAT: _____ GWHU ID: _____ DOC ID: _____
 LON: _____ REACH ID: _____

GENERAL PROJECT INFORMATION

10. Diversion No: (if already assigned) see attached 11. Diversion Name: see attached

12. Project Site Location(s): Provide site coordinates of downstream-most point of project in degrees, minutes, seconds (NAD83).

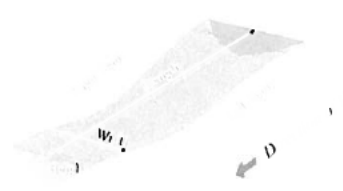
Latitude: see attached° ' " Longitude: see attached° ' " Elevation: see attached ft. above mean sea level

13. Diversion Structure Type: (Check all that apply)

- Unlined channel Hand-built rock Concrete masonry Dam/weir Pipe
 Metal Plastic Wood Pump Direct use
 Other - Describe: multiple; see attached

STREAM DIVERSION WORKS SPECIFICATIONS (For Abandonments, skip to Legal Requirements section, Item #32.)

14. Structure Dimensions: (feet) Width: Height: Length: Diameter:
Provide generalized dimensions for the entire project / structure area. If the project includes a pipe (e.g., culvert, drain, etc.), provide the pipe diameter.



15. Diversion Location:
Provide the general location of the diversion intake structure in relation to the streambank.
 Left bank (downstream view)
 Right bank (downstream view)
 Across entire stream channel

16. Intake Dimensions: (feet) Width: Height: Length: Diameter:

17. Average diversion amount: (cubic feet per second)

18. Diversion is part of a system of diversions: Yes No

19. Diverted flow can be controlled: Yes No

Control Dimensions: (feet) Width: Height: Length: Diameter:

20. Water will be pumped from the stream: Yes No
If yes, identify pump capacity: (gallons per minute) Daily average pumping time: (hours)

21. Water will be impounded in the stream channel: Yes No

22. Water diversion capacity will be measured daily: Yes No

23. Water will be returned to the stream: Yes No
If yes, average amount of return flow: (cubic feet per second)

24. Water will be stored off-stream: Yes No Storage capacity: (gallons)
Describe storage facility:

25. State Land Use Classification: (Check all that apply) Agriculture Conservation Rural Urban

WATER USE INFORMATION

Check all water use categories below that are intended for the proposed diversion, then describe the proposed use in more detail.

- 26. Agriculture
 27. Domestic
 28. Industrial
 29. Irrigation
 30. Military
 31. Municipal

LEGAL REQUIREMENTS

If required, the permits or approvals below must be obtained before the Commission on Water Resource Management can legally issue a permit. Visit the Commission's Applications & Forms webpage (http://dlnr.hawaii.gov/cwrm/info/forms/) for links to agency websites/contact information.

32. Conservation District Use Permit (CDUP): To find out if your stream diversion works is located in a Conservation District (CD), you may visit to the Land Use Commission (LUC) website at http://luc.hawaii.gov/maps to view Land Use District Boundary maps. If the stream diversion works will be located in a CD, contact the Department of Land and Natural Resources' Office of Conservation and Coastal Lands (OCCL) at (808) 587-0377 to determine if a CDUP is required.

- Stream diversion works is in a Conservation District.
 Required. CDUP #: Date CDUP approved:
 Not Required. Attach documentation from Office of Conservation and Coastal Lands (OCCL), Department of Land and Natural Resources.
 I have not checked with the OCCL about whether or not a CDUP is required.
 Stream diversion works is not in a Conservation District.

33. Special Management Area Permit (SMAP): To determine if an SMAP is necessary, contact your County Planning Department.

- Required. SMAP #: _____ Date SMAP approved: _____
- Not Required. Attach documentation from applicable County agency.
- I have not checked with the County about whether or not an SMA Permit is required.

34. State Historic Preservation Division (SHPD), Department of Land and Natural Resources: If the parcel(s) affected by the stream alteration has been reviewed by the State Department of Land and Natural Resources Historic Preservation Division (SHPD or through an OEQC Environmental Review, Special Management Area Permit, etc.), check "yes" and attach any relevant documentation from SHDP. If the affected parcel(s) has not undergone SHDP review, attach a photograph of the affected area, a schematic diagram (showing the location, access road and infrastructure for the alteration), and a short description of the prior use(s) of the land on which the alteration resides.

Please note: You are **strongly advised to contact the SHPD to obtain a pre-review of your project. In the event that you do not get an HP pre-review and if during the course of either review or the permit itself it is determined that you need SHPD's concurrence, your application or permit may be held in abeyance or denied until issues with HP are resolved. To contact SHPD, please call (808) 692-8015.*

- I have consulted the SHPD regarding potential impacts of stream channel alteration activities on historic sites. I have attached applicable documentation from the SHPD.
- I have not consulted with the SHPD regarding potential impacts of stream channel alteration activities on historic sites.

35. Chapter 343, Hawaii Revised Statutes, Hawaii Environmental Policy Act:

- An Environmental Assessment was completed, and
- An Environmental Impact Statement was required and has been accepted (attach letter of acceptance).
Publication date in The Environmental Notice: _____
- A Finding of No Significant Impact has been determined (attach letter).
Publication date in The Environmental Notice: _____

This project proposes:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Use of state or county lands, or use of state or county funds | <input type="checkbox"/> A wastewater treatment unit |
| <input checked="" type="checkbox"/> Use within a state conservation district | <input type="checkbox"/> Waste-to-energy facility |
| <input type="checkbox"/> Use within a shoreline setback area | <input type="checkbox"/> Landfill |
| <input type="checkbox"/> Use within a national or Hawaii registered historic site | <input type="checkbox"/> Oil refinery |
| <input type="checkbox"/> Use within the Waikiki Special District | <input type="checkbox"/> Power-generating facility |
| <input type="checkbox"/> The construction, expansion or modification of helicopter facility | <input type="checkbox"/> None of the above 11 items |

OTHER REGULATORY REQUIREMENTS

If the proposed stream channel alteration is subject to the following permits or approvals, indicate by checking the appropriate box below and submit either the approval letter from the appropriate agency or attach a copy of the application form. If the proposed stream channel alteration is not subject to the following permits or approvals, indicate by checking the "N/A" (Not Applicable) field.

	<u>Attached</u>	<u>N/A</u>
36. U.S. Army Corps of Engineers (Harbors and Rivers Act, Section 404, Clean Water Act)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
37. State Department of Health, Clean Water Branch (Section 401, Clean Water Act, Water Quality Certification, Best Management Practices Plan)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
38. Right-of-Entry or Right-of-Way Permit if the proposed stream channel alteration includes State lands. (Chapter 171, Hawaii Revised Statutes)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
39. Hawaii Environmental Policy Act (Chapter 343, Hawaii Revised Statutes; Title 11, Chapter 200, Hawaii Administrative Rules)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
40. Soil and Water Conservation District	<input type="checkbox"/>	<input checked="" type="checkbox"/>
41. County Certification of "No-Rise"	<input type="checkbox"/>	<input checked="" type="checkbox"/>
42. County Grading Permit	<input type="checkbox"/>	<input checked="" type="checkbox"/>
43. County Discretionary Permit(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CULTURAL IMPACTS

Articles IX and XII of the State Constitution, other state laws, and the courts of the State, require government agencies to promote and preserve cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups. If there is not enough space available, please make a note in the field (e.g., "See attached") and attach all information with this application as requested.

44. Please provide the identity and scope of cultural, historical, and natural resources in which traditional and customary native Hawaiian rights are exercised in the area.

Refer to the following:

County of Maui Planning Department, Kalo Kanu O Ka'a'ina: A Cultural Landscape Study of Ke'anae and Wailuanui, Island of Maui, July 1995

Kepa Maly and Onaona Maly, Wai O Ke Ola: He Wahi Mo'olelo No Maui Hikina, 2001

45. Identify the extent to which those resources, including traditional and customary Native Hawaiian rights, will be affected or impaired by the proposed action.

The proposed action will have a positive impact on stream resources due to the total restoration of flows in affected streams. This in turn will have a positive effect on traditional and customary Native Hawaiian rights, including but not limited to kalo cultivation in areas downstream of the diversions.

46. What feasible action, if any, could be taken by the Commission on Water Resource Management in regards to your application to reasonably protection Native Hawaiian rights?

The Commission's expedited approval of this application will advance the project's work schedule.

PROJECT DESCRIPTION

Please complete the following sections by providing detailed information on the project components identified below. If there is not enough space available, please make a note in the field (e.g., "See attached") and attach all information with this application as requested.

47. Describe the overall project scope and objectives.

See attached.

48. Describe existing stream channel dimensions and median streamflow conditions at the site of the proposed stream diversion works.

Not applicable as no stream diversion works are proposed.

49. Identify and describe the project components outlined below

A. Materials

Principally concrete/grout and stream rocks

B. Quantities

To be determined based on work plans for each diversion. See attached.

C. Excavation

None anticipated.

D. Fill

To be determined based on work plans for each diversion. See attached.

E. Disposal

With the exception of stream rocks and boulders, materials removed from diversion structures will be transported off-site for proper disposal.

F. Construction methods

Work will be done primarily by hand. Heavy equipment may be utilized only when absolutely necessary in the interests of safety and practicality. See attached.

G. Temporary facilities

None anticipated except as necessary to divert stream flows around work areas (e.g., using sand bags, pipes).

H. Expected period of time required for construction

Estimated three to six months, dependent upon weather conditions.

I. Liability during construction

None anticipated.

50. Describe the project's consistency with county zoning and development plans.

Not applicable. No new uses are proposed.

51. Identify potential alternatives (sources of water) to the project and describe the relative costs and benefits of each alternative.

Not applicable. Project is intended to restore stream flow.

SUBMITTALS

Please submit the following plans, maps, or drawings in legible form, preferably on 8.5" by 11" sheets.

52. **Location Map:** Provide a location map of the proposed project relative to major roadways.

53. **Plans / Elevations / Sections:** Provide a plan view of the proposed stream diversion works structure in relation to the stream channel and property boundaries. Elevation and section views of the diversion structure in relation to the stream channel should also be provided if available.

SIGNATURES

Signing below indicates that the signatories understand and swear that the information provided is accurate and true to the best of their knowledge. Further, the signatories understand that if the permit requested is granted by the Commission on Water Resource Management (Commission), the permit shall be subject to the following conditions:

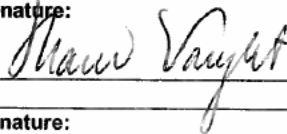
- 1) The proposed work is to be completed within two (2) years from the date of permit approval.
- 2) The permittee shall notify the Commission, by letter, of the actual dates of project initiation and completion.
- 3) The permittee shall submit a set of as-built plans and photographs to the Commission upon completion of the project.
- 4) The permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months.
- 5) If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

54. APPLICANT

Print Name:

Mark Vaught

Signature:



Date:

7/20/18

55. CONSULTANT

Print Name:

NA

Signature:

Date:

56. CONTRACTOR

Print Name:

NA

Signature:

Date:

57. **LANDOWNER** (If multiple landowners, skip Section 53, then complete and attach Form SCAP-LND with appropriate landowner signatures.)

Print Name:

Signature:

Date:

Attachment to Stream Diversion Works Permit Application
East Maui Irrigation Company, LLC

- Boxes 10 through 13: This application is for abandonment of multiple (11) existing diversions on multiple streams. See attached spreadsheet for details relating to individual diversions.
- Boxes 14 through 31: Not applicable to abandonments.
- Box 32: Five diversions covered by this application are located outside the Conservation District, while the remaining six are within, or potentially within, the Conservation District. For those located within the Conservation District, no CDUP is required because the planned activities are either exempt from permitting or require only a Site Plan Approval. An application for a Site Plan Approval has been submitted to OCCL.
- Box 33: Ten of the diversions covered by this application are located outside the SMA, therefore no SMA Permit is required for these diversions. For the one diversion that is located within the SMA, the County of Maui Department of Planning has confirmed that no SMA Permit is required. Relevant correspondence is attached.
- Box 34: Some diversions covered by this application are considered historic structures because they are more than 50 years old, but none are listed on either the State or National Register of Historic Places. While no formal consultation with SHPD has been initiated for this project, consultation with SHPD has been completed for similar projects in the past. Relevant documentation is attached. Based on mitigation suggested for similar projects conducted previously, we anticipate SHPD recommendations for mitigation, if any, will be limited to scaled photographs of each diversion.
- Boxes 35 and 39: While portions of the proposed project will occur on state lands and/or within a state conservation district, the water diversions are existing uses and the proposed removal/abandonment of existing diversions is an exempt class of action under HAR Section 200-8(a)(8).
- Box 36: The proposed project is exempt from permitting under Section 404 of the Clean Water Act pursuant to Section 404(f)(1)(c) of the Act. For each project otherwise potentially subject to Section 404 permitting requirements, concurrence with this exemption has been obtained from the U.S. Army Corps of Engineers as is attached.
- Box 37: A Section 401 Water Quality Certification is not required for the proposed project because EMI is not an applicant for a federal license or permit to conduct these activities. Appropriate Best Management Practices will be implemented during the work.

Attachment to Stream Diversion Works Permit Application
East Maui Irrigation Company, LLC

- Box 38: No Right-of-Entry or Right-of-Way Permit is required for this project because all of the diversions on state land are existing diversions and EMI already has permission to access state land for the purpose of operating and maintaining these diversions.
- Box 52: Not applicable, as no new stream diversion works are proposed.



**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
MULTIPLE LANDOWNERS/LOCATIONS FORM**

For Official Use Only:

Instructions: Please print in ink or type and send completed form attached to stream channel alteration or stream diversion works permit application to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete applications without the required landowner signatures. For assistance, contact the Stream Protection and Management Branch at 587-0234. For further information and updates to this application form, visit <http://dlnr.hawaii.gov/cwrm>.

A. LANDOWNER INFORMATION

For proposed stream channel alterations and stream diversion works affecting multiple landowners, complete the sections below for each individual landowner. **Form LND-APP** provides space for information on five (5) landowners. Complete as many forms as necessary to identify all, and only those, landowners affected by the proposed stream channel alteration or stream diversion works.

1. LANDOWNER'S NAME/COMPANY East Maui Irrigation Company, LLC		Landowner's Contact Person Mark Vaught	Landowner's Phone (808) 579-9516
Landowner's Mailing Address PO Box 791628 Paia, Hawaii 96779		Tax Map Key Parcel(s) (2) 2-9-04:038, 2-9-04:039, 2-9-09:019, 2-9-14:009, 2-9-06:033, Landowner's E-mail Address mvaught@abhi.com	2-9-03:042
Print Name: Mark Vaught	Signature: <i>Mark Vaught</i>	Date: 7/20/18	
2. LANDOWNER'S NAME/COMPANY State of Hawaii		Landowner's Contact Person Suzanne Case, BLNR Chair	Landowner's Phone (808) 587-0404
Landowner's Mailing Address State of Hawaii Department of Land and Natural Resources Kalanimoku Building 1151 Punchbowl Street Honolulu, Hawaii 96813		Tax Map Key Parcel(s) (2) 1-1-002:002, 2-9-06:028, 2-9-014:001 Landowner's E-mail Address dlnr@hawaii.gov	
Print Name: Suzanne Case	Signature: <i>Suzanne Case</i>	Date: JUL 26 2018	
3. LANDOWNER'S NAME/COMPANY		Landowner's Contact Person	Landowner's Phone
Landowner's Mailing Address		Tax Map Key Parcel(s)	
		Landowner's E-mail Address	
Print Name:	Signature:	Date:	
4. LANDOWNER'S NAME/COMPANY		Landowner's Contact Person	Landowner's Phone
Landowner's Mailing Address		Tax Map Key Parcel(s)	
		Landowner's E-mail Address	
Print Name:	Signature:	Date:	
5. LANDOWNER'S NAME/COMPANY		Landowner's Contact Person	Landowner's Phone
Landowner's Mailing Address		Tax Map Key Parcel(s)	
		Landowner's E-mail Address	
Print Name:	Signature:	Date:	

ALAN M. ARAKAWA
Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director



COUNTY OF MAUI
DEPARTMENT OF PLANNING

November 27, 2017

Mr. Rick W. Volner, Jr., Vice President
Alexander & Baldwin, LLC Series T
P.O. Box 791628
Paia, Hawaii 96779

Dear Mr. Volner:

**SUBJECT: SPECIAL MANAGEMENT AREA (SMA) ASSESSMENT FOR
ABANDONMENT OF STREAM DIVERSIONS AT THREE
LOCATIONS, HUELO, ISLAND OF MAUI, HAWAII;
TMK: (2) 2-9-006:002, (2) 2-9-006:004, AND (2) 2-9-003:042
(SMX 2017/0338) (SM5 2017/0224)**

In response to your application received on October 17, 2017, and in accordance with the SMA Rules for the Maui Planning Commission (Commission), Sections 12-202-12, a determination has been made relative to the above project that:

1. The project is not a development, pursuant to Section 205-A-22 and may be issued a SMA Exemption;
2. The project has a valuation not in excess of \$500,000.00;
(Valuation: \$16,060.00)
3. The proposed scope of work consists solely abandoning stream diversion facilities at Haiku Ditch "Pancho" intake at East Hanehoi Stream (East Maui Irrigation (EMI) Diversion Number H-3) by sealing the intake grates with rocks and concrete and removing the sluice gate from the diversion; and Haiku Ditch "School" intake at West Hanehoi Stream (also known as Huelo Stream or Puolua Stream, EMI Diversion Number H-4) by sealing the ditch intake opening with rocks and concrete and removing the sluice gate from the diversion; and Haiku Ditch intake at Honopou stream (EMI Diversion Number H-8), by sealing intake grates with rocks and concrete, seal openings below the grate on the downstream side with rocks and concrete, and extending an existing wingwall on the west end of the diversion to just beyond the downstream edge;
4. The proposed action is in Flood Zone X and will not have an adverse impact on a flood zone or streamway.
5. The project has no significant adverse environmental or ecological effects, provided Best Management Practices (BMPs) are implemented;

Mr. Rick W. Volner, Jr.
November 27, 2017
Page 2

6. The project is consistent with the objectives, policies, and Special Management Area guidelines set forth in the Hawaii Revised Statutes (HRS), Chapter 205-A, and is consistent with the County General Plan and Zoning.

In consideration of the above determination, you are hereby granted a SMA Exemption (SM5 2017/0224).

Furthermore, in accordance with the Shoreline Rules for the Maui Planning Commission, Sections 12-203-3, 12-203-6, 12-203-10, 12-203-11, and 12-203-12, a determination has been made relative to the above-referenced project that:

1. The site is not a shoreline property and is not subject to the Maui Planning Commission Shoreline Rules;

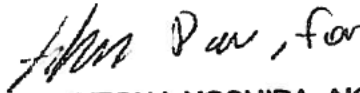
Accordingly, no Shoreline Setback Approval is required.

Moreover, the Department finds that the proposed action does not trigger compliance with environmental review, Hawaii Revised Statutes Chapter 343.

In summary, the Department grants a SMA Exemption (SM5 2017/0224) for the work described in your SMA Assessment Application (SMX 2017/0338). No Shoreline Setback Approval or environmental review are required. PLEASE NOTE THAT OTHER PERMITS OR APPROVALS MAY BE REQUIRED.

Thank you for your cooperation. If additional clarification is required, please contact Staff Planner Keith Scott by email at keith.scott@mauicounty.gov or by phone at (808) 463-3867.

Sincerely,



CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

for WILLIAM SPENCE
Planning Director

xc: John S. Rapacz, Planning Program Administrator (PDF)
Keith C. Scott, Staff Planner (PDF)
Rick Volner (PDF)
CZM File (SMX)
Project File
General File

WRS:CIY:KCS:lk
K:\WP_DOCS\PLANNING\SM5\2017\0224_East\MauiIrrigation_StreamDiversion\SM5StreamDiversionAbandonment.doc

EAST MAUI IRRIGATION COMPANY, LLC
P.O. BOX 791628, PAIA, MAUI, HAWAII 96779

October 11, 2017

Mr. William Spence, Director
County of Maui
Department of Planning
200 South High Street
Wailuku, HI 96793

**Subject: Special Management Area (SMA) Assessment Application for Stream
Diversion Abandonment Work: Honopou and Hanehoi/Puolua Streams
TMK Numbers (2) 2-9-003:042, (2) 2-9-006:002 and (2) 2-9-006:004**

Dear Mr. Spence:

East Maui Irrigation Company, LLC (EMI) operates an extensive system of stream diversions and ditches in East Maui in order to bring irrigation water to agricultural operations and other water users in Central Maui. EMI, through its parent company Alexander & Baldwin, Inc. (A&B) announced on April 20, 2016 its decision to fully and permanently restore flow in priority taro streams in East Maui, and to continue to participate in the current East Maui interim instream flow standard (IIFS) proceedings to address appropriate restoration of other streams. Among the streams to be permanently restored are Honopou and Hanehoi (Puolua) Streams.

As part of its stream flow restoration effort, EMI proposes to abandon the following water diversions located on the Haiku ditch within the Special Management Area (SMA):

Diversion Description	EMI Diversion Number	TMK Number
Haiku Ditch "Pancho" intake at East Hanehoi Stream	H-3	(2) 2-9-006:002
Haiku Ditch "School" intake at West Hanehoi Stream (also known as Huelo Stream or Puolua Stream)	H-4	(2) 2-9-006:004
Haiku Ditch intake at Honopou Stream	H-8	(2) 2-9-003:042

At the East Hanehoi diversion (H-3), EMI proposes to seal the intake grates with rocks and concrete and remove an existing sluice gate from the diversion.

At the Puolua diversion (H-4), EMI proposes to seal the ditch intake opening with rocks and concrete and remove an existing sluice gate from the diversion.

At the Honopou Stream diversion (H-8), EMI proposes to seal the intake grate with rocks and concrete, seal openings below the grate on the downstream side with rocks and concrete, and extend an existing wing wall on the west end of the diversion to just beyond the downstream edge (the latter two actions are required on this diversion in order to prevent water which passes over the sealed grate from entering the ditch at other points).

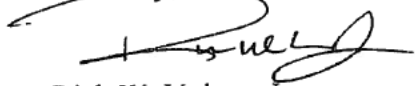
All work will be conducted within the existing footprints of the diversions, and most of the work will occur on or within the ditch itself.

The Haiku Ditch will remain in service providing irrigation water to agricultural operations from other stream diversions along the ditch. Since the diversion structures are integral to the ditch itself, it is not possible to completely remove the diversions without compromising the integrity and continuity of the ditch. The proposed work is necessary to allow the ditch to continue to operate without withdrawing any water at these three diversions. EMI believes that the proposed work can be properly characterized as operation, maintenance, repair, or interior alteration of an existing structure and is therefore not a "development" under Section 205A-22, Hawaii Revised Statutes (HRS). Further, the proposed work, in combination with similar work to be conducted at other diversions outside the SMA, will completely and permanently restore flow in these streams and will therefore provide a significant environmental and ecological benefit to the SMA. As such, EMI believes that an SMA Permit is not required for this project and requests your concurrence with this determination.

In the event that the County determines that the proposed action is considered a development, EMI believes that it is eligible for an SMA Minor Permit because it has a valuation well below \$500,000, will provide a significant environmental and ecological benefit, and is fully consistent with the objectives, policies, and SMA guidelines set forth in Chapter 205A, HRS, and with the countywide policy plan, applicable island plan, zoning and subdivision codes, and other applicable ordinances. In that case, we request that you issue a SMA Minor Permit so that the work can proceed.

Thank you for your attention to this request. If you have any questions, please feel free to contact Mark Vaught at (808) 579-9516.

Sincerely,



Rick W. Volner, Jr.
Vice-President, Alexander & Baldwin, LLC Series T
(Sole Member and Manager, East Maui Irrigation Company, LLC)

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF COMPLIANCE
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAOHOLA WATERSHED COMMISSION
LAND
STATE PARKS

December 15, 2008

Mr. Sean O'Keefe
Director, Environmental Affairs
Alexander and Baldwin, Inc.
PO Box 266
Pu'unene, Hawai'i 96784

LOG NO: 2008.4842
DOC NO: 0812PC04
Archaeology

Dear Mr. O'Keefe:

SUBJECT: Request for Information Regarding Mandatory Interim In-Stream Flow Standard Modifications for Historic Era East Maui Irrigation Ditches -- Wailoa, Haiku and New Hamakua Ditches at Honopou and Hanehoi Streams; Lowrie Ditch at Hanapou, Hanehoi and Huelo (Puolua) Streams; and Hauolo Tunnel at Lalahai, Lalapipi, Ka'auau and Hauoli Wahine Streams, Makawao and Ko'olau Districts, Island of Maui
TMK: (2) 2-2-008:007; (2) 2-9-014:001; (2) 2-9-009:019; (2) 2-9-006:001

Thank you for the opportunity to comment on proposed interim in-stream flow standard (IIFS) modifications for the above historic period irrigation ditches. We understand that the modifications to specified portions of the ditches have been mandated by the State of Hawai'i Commission on Water Resource Management (CWRM). The purpose of the modifications is to ensure that certain minimum stream flows are maintained at all times at various points within the above named streams, as well as to consider the upstream migration of native aquatic species across the diversions. We further understand that because the proposed work is considered repair of existing infrastructure which will cost far below the replacement cost of the entire ditch system, a permit is not required and the Department of Land and Natural Resources (DLNR) Office of Conservation and Coastal Land (OCCL) has determined that it is exempt from environmental review under Hawai'i Administrative Rules §11-200-8(a) (1) due to negligible or no expansion or change in use beyond what the ditches are already used for and has authorized it, provided you consult with this office regarding the historic importance of the ditches themselves.

Proposed changes to the New Hamakua Ditch at Honopou Stream include sealing the inlet opening in an existing divider wall by bolting a steel plate over it. The height of the divider wall will be raised by 6" at its lowest point with a 1 to 2 foot wide notch cut into the dam and a steel control gate installed. All work will be done by hand during periods of low or no flow with no mechanized equipment used in the stream.

Proposed changes to the New Hamakua Ditch at Hanehoi Stream include cutting a 1 to 2 foot notch into the existing dam and installing a metal control gate. Work here will also include repairing an existing 6 foot berm adjacent to the intake gate by encasing a steel rail in concrete. All work will be done by hand during periods of low or no flow with non-mechanized equipment used in the stream.

000016

Proposed changes to Wailoa Ditch at Honopou and Hanehoi Streams include the installation of prefabricated "low flow channels" which will be bolted into place on top of existing diversion gates. All work will be done by hand during periods of low or no flow with non-mechanized equipment used in the streams.

Proposed changes to the Hauolo Tunnel in four tributaries of the Palauhulu Stream (Lalahai, Lalapipi, Ka'auau and Hauoli Wahine Streams), all of which are located in the Conservation District, involves placing rocks into the open ditches which lead into the tunnel so that water flow will back up and overflow the existing diversions.

Although modification to the Lowrie and Haiku Ditches where they cross Honopou and Hanehoi Streams also appears necessary, there is no description of the proposed alterations at these locations included in your correspondence.

Several of the East Maui Irrigation ditches, such as the Lowrie Ditch (ca. 1900) are included on the State Inventory of Historic Places under Site Number #50-50-06-1508, with the New Hamakua Ditch (ca. 1904), Wailoa Ditch (ca. 1923) and Hauolo Tunnel old enough to also be included. Therefore, we believe that the best way to mitigate the structural changes necessary to meet the State Commission on Water Resource Management's (CWRM) Interim In-Stream Flow Standards (IIFS) mandate is to for your agency to take or arrange for the taking of scaled before and after photographs of the areas to be affected by the proposed modifications. The photographs may either be black and white prints or digital files on CD which are clearly labeled with the subject, date and cardinal direction of the image.

Please forward the photos to the attention of Dr. Astrid Liverman, SHPD Architecture Branch Chief at the above address.

Aloha,



Nancy McMahon, Deputy SHPO/State Archaeologist
State Historic Preservation Division

c: Jeff Hunt, Director, Dept. of Planning, 250 S. High Street, Wailuku, Hawai'i 96793
Maui CRC, Dept. of Planning, 250 S. High Street, Wailuku, Hawai'i 96793



DEPARTMENT OF THE ARMY
HONOLULU DISTRICT, U.S. ARMY CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

January 26, 2018

SUBJECT: Determination of No Permit Required, Abandonment of Water Diversions in Seven East Maui Streams, Island of Maui, Hawaii, Department of the Army File No. POH-2017-00230

Sean M. O'Keefe
East Maui Irrigation Co., LLC
PO Box 266
Puunene, HI 96784

Dear Mr. O'Keefe:

The Honolulu District, U.S. Army Corps of Engineers (Corps), Regulatory Branch has received your request for a determination whether a Department of the Army (DA) permit is required for the proposed Abandonment of Water Diversions in Seven East Maui Streams located on the Island of Maui, Hawaii. Your request has been assigned Department of the Army (DA) file number POH-2017-00230. Please reference this number in all future correspondence with our office relating to this action.

We have reviewed your submittal pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344; "Section 404") and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403; "Section 10"). Section 404 requires DA authorization for the discharge (placement) of dredged and/or fill material into waters of the U.S., including wetlands. Section 10 requires DA authorization for the placement of structures in, under or over navigable waters of the U.S. and/or other work affecting the course, location, condition or navigable capacity of such waters. To determine if a DA permit is required for a proposed action, the Corps must first determine whether the proposed project is located within the Corps' geographic jurisdiction (i.e., whether the activity is located within a water of the U.S.). If the activity is within a water of the U.S., the Corps must then determine whether the proposed activity is a regulated activity under Section 10 and/or Section 404, or if the activity is exempt under Section 404(f) and is not recaptured. The determination provided in this letter pertains only to whether your proposed project is an activity we regulate; it does not address geographic jurisdiction.

While we have not made a determination of the jurisdictional status of the aquatic resource(s) affected, based on the information you provided, we have determined that your proposed project is an activity that is exempted under Section 404(f) of the Clean Water Act and therefore, a DA permit is not required. This determination of no permit required addresses only the proposed work activities described in your submitted

000018

documentation and does not convey our determination of the jurisdictional status of the East Maui streams. Should you require a geographic jurisdictional determination (JD) for this project, you must complete and return a JD Request Form, which can be requested from our office.

While a DA permit is not required for your proposed project, you are responsible for obtaining all other applicable Federal, state, or local authorizations required by law. Be advised, a DA permit may be required if you alter the method, scope, or location of your proposed work. You should contact our office if you are considering modifying your project.

Thank you for your cooperation with the Honolulu District Regulatory Program. Should you have any questions related to this determination, please contact me at 808-835-4307 or via e-mail at Rebecca.m.fragers@usace.army.mil. You are encouraged to provide comments on your experience with the Honolulu District Regulatory Office by accessing our web-based customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. For additional information about our Regulatory Program, please visit our web site at <http://www.poh.usace.army.mil/Missions/Regulatory.aspx>.

Sincerely,

**FRAGER.REBECCA.M
ABLE.1508149111**

**Becca Frager
Regulatory Specialist**

Digitally signed by
FRAGER.REBECCA.MABLE.1508149111
DN: c=US, o=U.S. Government, ou=DoD,
ou=PKI, ou=USA,
cn=FRAGER.REBECCA.MABLE.1508149111
Date: 2018.01.26 15:57:35 -10'00'



ALEXANDER & BALDWIN, INC.

October 6, 2017

Ms. Shelly Lynch
Chief, Regulatory Branch, CEPOH-EC-R
Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Ft. Shafter, HI 96858-5440

Subject: Abandonment of Water Diversions in Seven East Maui Streams

Dear Ms. Lynch:

As has previously been discussed with Ms. Joy Animizu of your staff, East Maui Irrigation Company, LLC (EMI), a subsidiary of Alexander & Baldwin, LLC (A&B), has committed to permanently restoring flow in seven streams in East Maui that have historically been diverted for the irrigation of sugarcane (Honopou, Hanehoi/Puolua, Pi'ina'au, Palauhulu, Waiokamilo, and East and West Wailuanui Streams). A Stream Diversion Works Permit Application for abandonment of the diversions (copy attached) was submitted to the State of Hawaii Commission on Water Resource Management (CWRM) in 2016, and flow has been substantially restored in each of the streams primarily through operation of the diversions, while flow in Waiokamilo Stream was permanently restored in 2007. In order to make the flow restorations in the remaining streams permanent, EMI needs to make alterations to 41 diversions located in or near these six streams. Because the majority of the major diversion structures are integral to the associated irrigation ditches, and because these ditches will remain in operation for the foreseeable future transporting irrigation water from other East Maui streams, in most cases the diversions cannot be completely removed without compromising the integrity of the ditch.

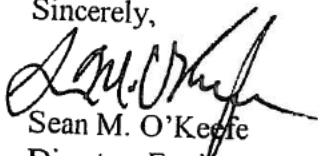
A&B has preliminarily determined that the proposed work is exempt from the Section 404 permitting program under Clean Water Act Section 404(f)(1)(c), which provides that "the discharge of dredged or fill material for the purpose of construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance of drainage ditches...is not prohibited by or otherwise subject to regulation" under Section 404. Clarification is provided at 33 CFR Section 323.4(a)(3) that "discharges associated with siphons, sumps, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant and functionally related to irrigation ditches are included in this exemption". Exceptions to this exemption relate only to the discharge of toxic pollutants (not relevant to this project), and to activities whose purpose is to convert an area of waters of the United States to a use to which it was not previously subject. Pursuant to 33 CFR Section 320.1(a)(6), A&B requests your concurrence with our determination that a Clean Water Act Section 404 Permit is not required for the planned work described herein.

Each of the subject diversion intakes is "appurtenant to and functionally related to" one of four existing irrigation ditches (i.e., the Koolau/Wailoa, New Hamakua, Lowrie, and Haiku Ditches) which historically provided water to the former Hawaiian Commercial and Sugar Company (HC&S) plantation and to other Maui farming operations. All of these ditches are intended to remain in operation to provide irrigation water for ongoing agricultural operations on the former HC&S lands and elsewhere. The proposed work is solely intended to allow these ditches to continue to transport water from other existing stream diversions in East Maui without diverting any water from the subject streams and their tributaries. The work will not result in the conversion of any area of waters of the United States to a use to which it was not previously subject, since its objective is to restore flow these streams.

HC&S has obtained several previous determinations from your office that similar projects involving alterations to irrigation diversions in both East Maui and West Maui Streams did not require permits from the Corps of Engineers in order to proceed. The most relevant of these, issued on March 27, 2009 (POH-2008-284), related to the alteration of seven diversion structures for the purpose of meeting Interim Instream Flow Standards established by CWRM; each of these seven structures is among those now proposed for further alteration.

Details of each of the planned diversion alterations are provided in the enclosed attachments. A&B requests that you kindly provide formal written concurrence with our determination for each of the 41 subject diversions so that we may proceed with these permanent flow restorations. We thank you for your assistance, and look forward to your response. Should you require any additional information regarding this matter, please feel free to contact me at (808) 877-2959.

Sincerely,



Sean M. O'Keefe
Director, Environmental Affairs
Alexander & Baldwin, LLC

Enclosures

cc: Rick Volner, Jr., A&B
Nelson Chun, A&B
Meredith Ching, A&B
M. Vaught, EMI

Additional Attachments – Description of Work

Stream Flow Restoration in Honopou Stream
Summary of Relevant Information

1. Parties involved in the work:

Organization: East Maui Irrigation Company, LLC
Contact: Sean O'Keefe
Address: P.O. Box 266, Puunene, HI 96784
Telephone: (808) 877-2959
2. Project name or title: Stream Flow Restoration at Wailoa, New Hamakua, Lowrie, and Haiku Ditch Diversions on Honopou Stream
3. Name of water body: Honopou Stream
4. Project street address: Not applicable
5. Location of project: Haiku (Hamakualoa moku), Maui County, Hawaii
6. Other location descriptions: See attached Table of Honopou Stream Diversions for latitude and longitude, elevation, and Tax Map Key Number of each individual diversion.
7. Directions to the site: Please contact East Maui Irrigation Company for directions.
8. Nature of activity: See Description of Work on attached Table of Honopou Stream Diversions. Except as otherwise noted, all work will be done by hand and no mechanized equipment will be used in the stream. Work will be conducted during low stream flows in order to minimize the potential for any short-term water quality impacts.
9. Project purpose: The purpose of the project is to permanently restore flow in Honopou Stream.
10. Reason for discharge of dredged and/or fill material: Seal openings in existing diversion structures and/or allow stream to pass over irrigation ditch; see attached Table of Honopou Stream Diversions.
11. Types of material being discharged and the amount in cubic yards: See attached Table of Honopou Stream Diversions. In addition to any materials used to permanently alter the configuration of the diversions, sandbags and/or pipes may be temporarily placed in the stream as necessary to divert stream flow around work areas; any such materials will be removed from the stream upon completion of the work. Alternatively, where feasible, stream rocks may be re-positioned in the stream for this purpose.

Stream Flow Restoration in Honopou Stream
Summary of Relevant Information
(continued)

12. Surface areas of wetlands or other areas filled: None – this work is intended to restore flow in the stream and will not result in filling of any wetlands

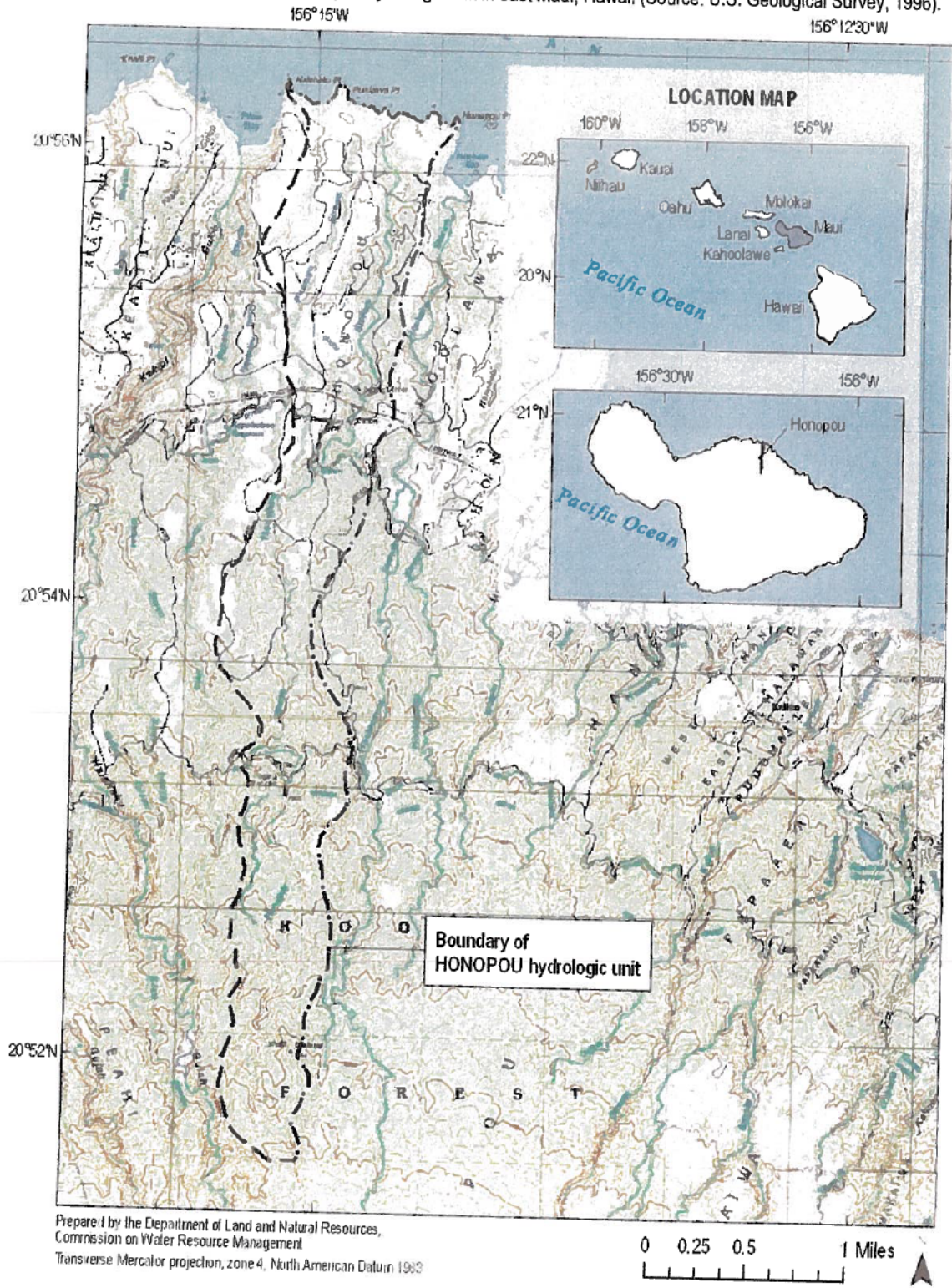
13. Attachments:
 - Honopou Hydrologic/Watershed Unit Maps
 - USGS Haiku Quadrangle Map, Site Locations – Honopou Stream Diversions
 - Table of Honopou Stream Diversions
 - Site Photographs, Honopou Stream Diversions
 - Conceptual Sketches, Honopou Stream Diversions

Table of Honopou Stream Diversions

Description of Work and Amount/Type of Fill Material

Diversion	EMI Map #	Latitude Longitude Elevation	TMK No. (owner)	Diversion Structure Type	Description of Work and Amount/Type of Fill Material
Honopou long strainer at Lowrie Ditch	L-15	20° 54' 32.71" N 156° 14' 47.26" W 615 feet	2-9-4:039 (EMI)	Unlined channel	This diversion is installed on a small ephemeral tributary of Honopou Stream and consists of an unlined channel within the stream bed which cuts across the stream bed and intercepts flow. In order to prevent flow from being intercepted by the ditch, a concrete headwall with wingwalls will be constructed at the edge of the ditch where it intercepts the stream and a concrete pipe, no more than 24 inches in diameter, will be installed through which the stream can pass over the ditch. The pipe will extend under an existing access road located below (makai of) the ditch, and will discharge into the stream bed downstream of the road. This will require partial excavation of the road to lay the pipe, followed by backfilling and compaction. Any excess soil from the excavation will be applied to the surrounding road and compacted. See Photo 1 and Figures 1 through 3, attached. Note that only a portion of the overpass would be installed within the existing stream bed on the upstream side of the ditch, while the majority of the structure will span the ditch and the access road. It is estimated that less than one cubic yard of concrete will be needed to construct the intake on the upstream side of the ditch. This work may require the use of a small excavator, which would operate from the stream bank.
Honopou siphon at Lowrie Ditch (Honopou siphon intake at Lowrie Ditch)	L-16	20° 54' 33.97" N 156° 14' 55.28" W 638 feet	2-9-4:038 (EMI)	Unlined channel	This diversion consists of an unlined channel within the stream bed which cuts across the stream bed and intercepts flow. In order to prevent flow from being intercepted by the ditch, a "stream overpass" must be constructed over the ditch that will allow water to flow over the channel and continue downstream. See Photo 3 and Figure 4, attached. The design of the "stream overpass" for this location has not yet been finalized, but it is anticipated to be constructed of concrete and similar in configuration to that shown in Photo 2, attached. Note that only a small portion of the overpass will be installed within the stream bed on either side of the ditch, while the majority of the structure will span the ditch. Additional details can be provided once the design has been finalized.
Honopou at Haiku Ditch (Honopou intake at Haiku Ditch)	H-8	20° 54' 53.41" N 156° 14' 47.53" W 399 feet	2-9-3:042 (EMI)	Concrete masonry (with grate)	In order to prevent flow into the ditch via this diversion, the grate in the top of the diversion must be sealed. This will be accomplished by filling the grate openings with concrete/grout (an existing plate bolted in place on this diversion was installed to provide a low-flow channel over the diversion and will be removed). Additionally, openings below the grate on the downstream side will be filled with stream rocks and concrete. Finally, to prevent water from overflowing into the ditch during high flows, an existing wingwall on the west end of the diversion will be extended to just beyond the downstream edge of the ditch using concrete and stream rocks. The amount of fill material (including concrete/grout and rocks already in the stream) is anticipated to be on the order of five to ten cubic yards in volume. See Photo 4 and Figure 5, attached.

Figure 1-3. Topographic map of the Honopou hydrologic unit in east Maui, Hawaii (Source: U.S. Geological Survey, 1996).



Honopou Watershed Unit



1/30/17

Photographs – Alterations to Honopou Stream Diversions

(Photos 1 through 4)

Site Photographs – Honopou Stream Diversions

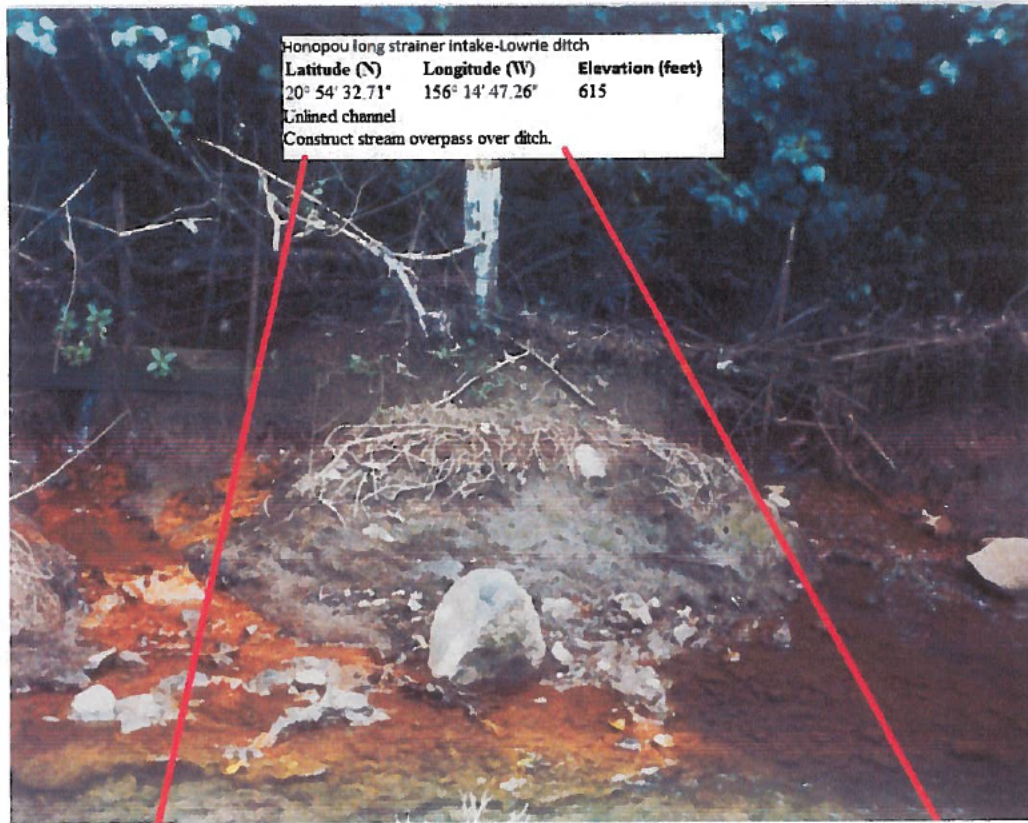


Photo 1 (above): Honopou long strainer at Lowrie Ditch (L-15)

Photo 2 (below): Typical "stream overpass" intended to prevent the ditch from intercepting a stream



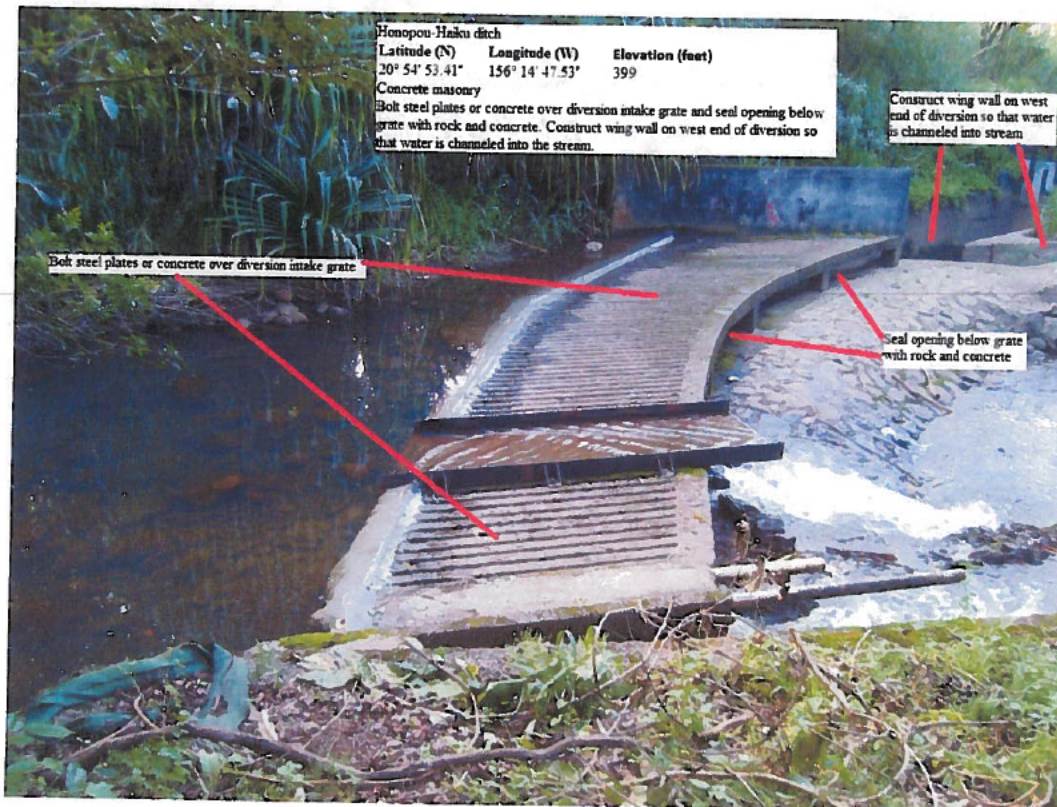
Site Photographs – Honopou Stream Diversions



Photo 3 (above): Honopou siphon at Lowrie Ditch (L-16)

Photo 4 (below): Honopou at Haiku Ditch (H-8)

(Note: Disregard references to bolted steel plates. Intakes will be sealed with concrete/grout.)



Conceptual Sketches – Alterations to Honopou Stream Diversions

(Figures 1 through 5)

ve

ve

Honopou
long strainer
at
Lowrie Ditch

Honopou long strainer-Lowrie Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 54' 32.71"	156° 14' 47.26"	615

Diversion Structure Type - Unlined channel

General Description of Work - Construct stream overpass over ditch.

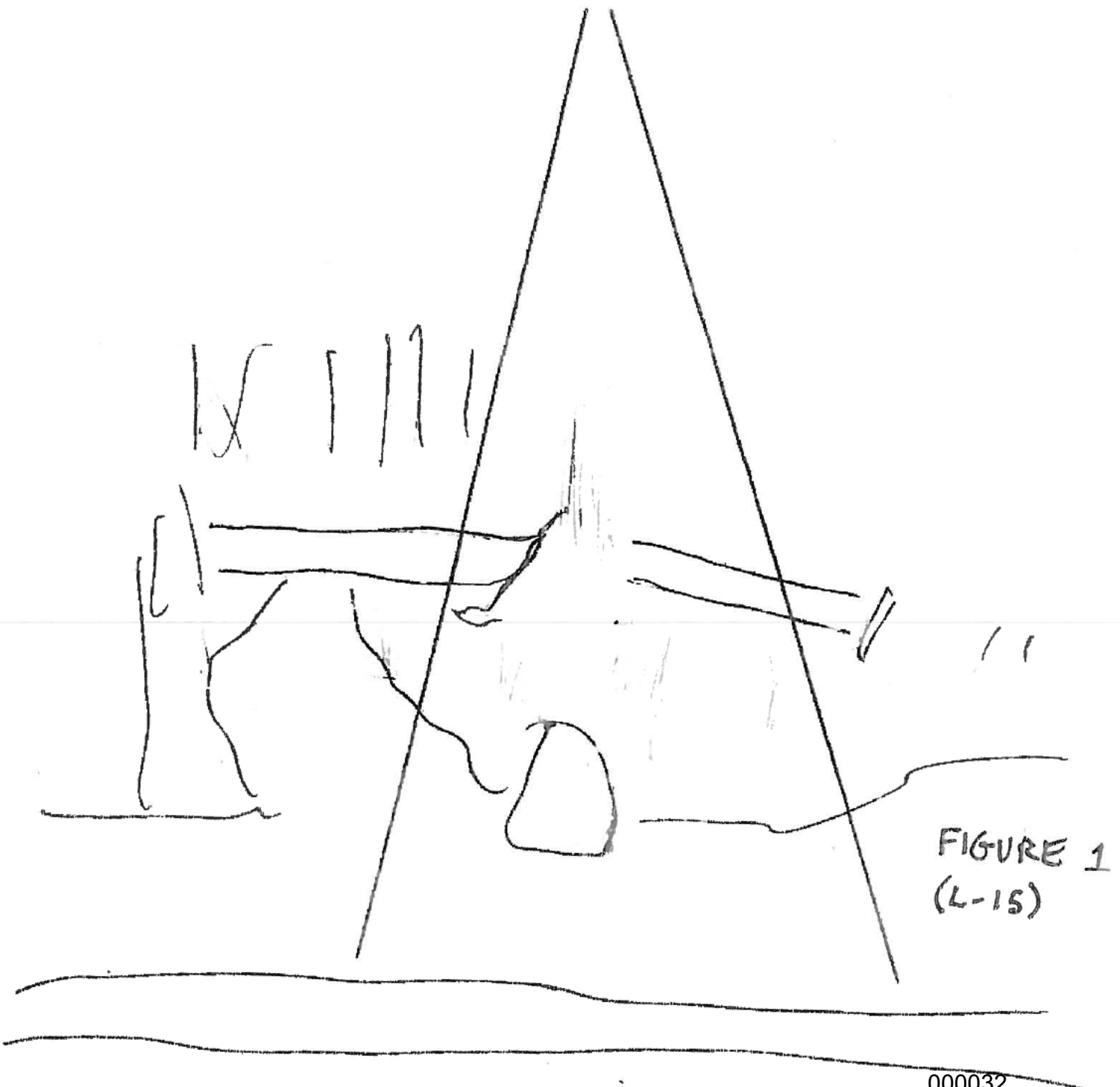


FIGURE 1
(L-15)

FIGURE 2
(L-15)

Honopou long strainer
at Lowrie Ditch

Honopou Stream
Tributary Flow

PROPOSED
CONCRETE
INTAKE
AT EDGE
OF DITCH

LOWRIE DITCH

PIPE OVER
DITCH

DITCH BANK

ACCESS ROAD

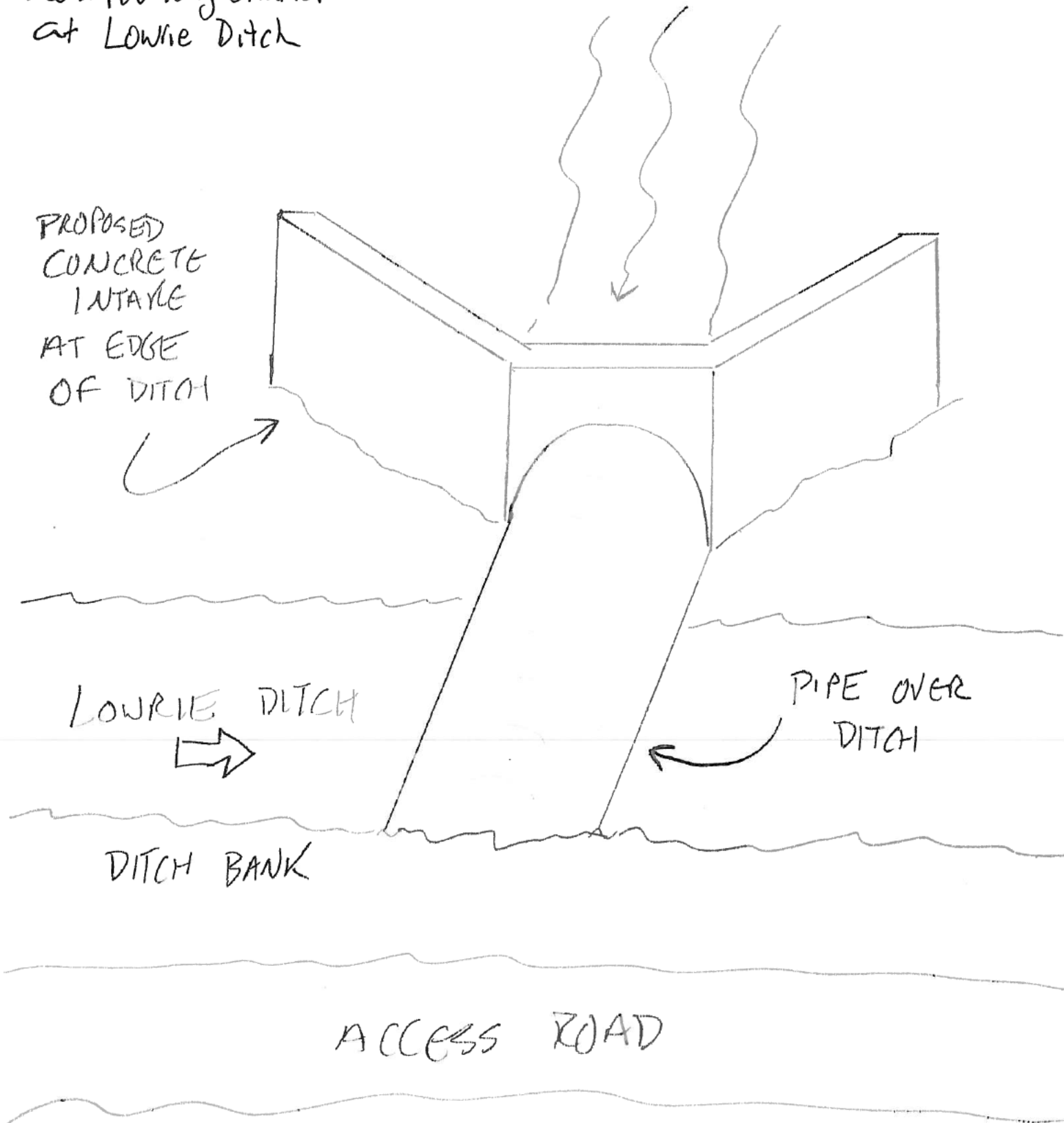
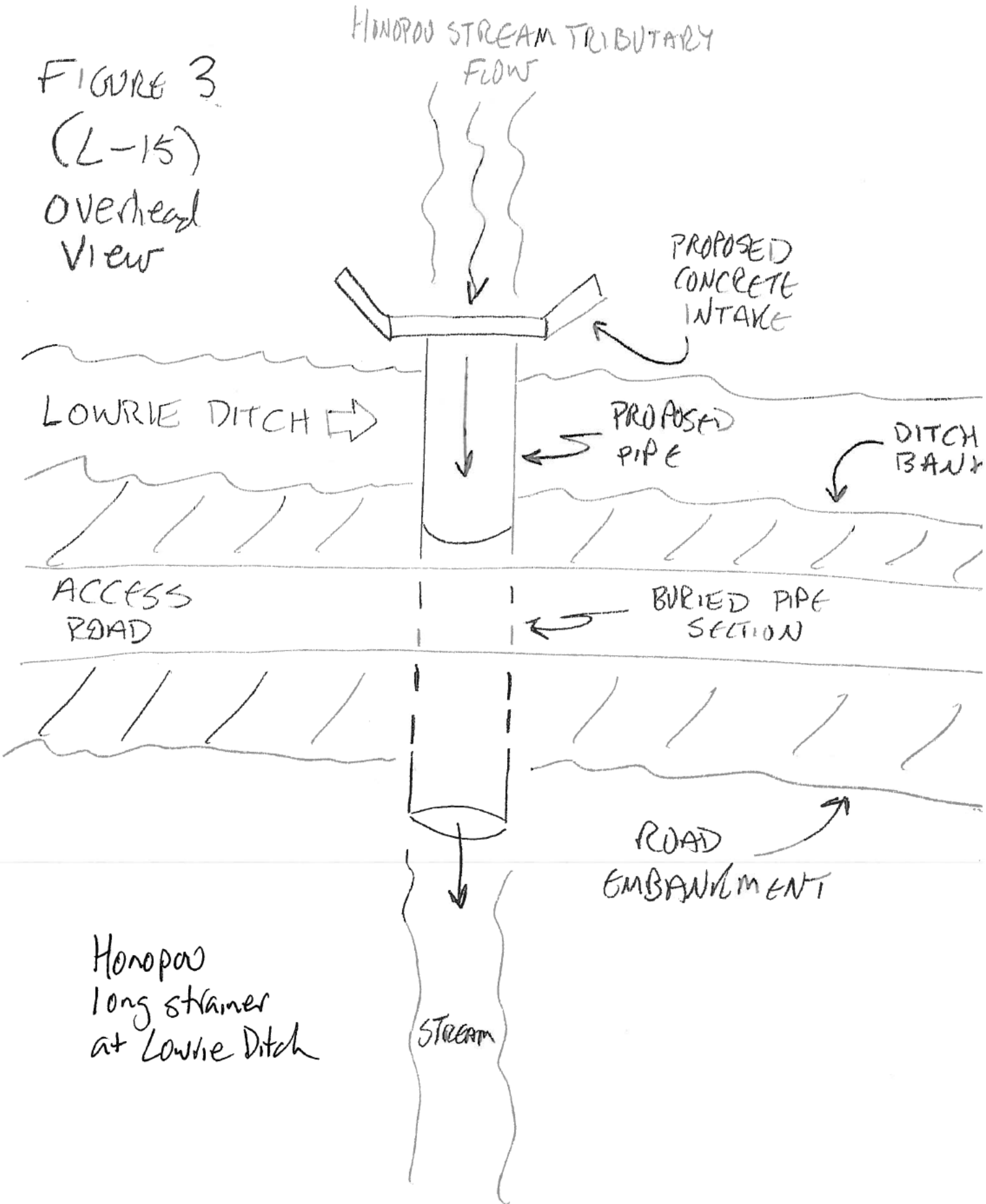


FIGURE 3
(L-15)
OVERHEAD
VIEW



Honopou Siphon
at Lowrie Ditch

Honopou siphon- Lowrie Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 54' 33.97"	156° 14' 55.28"	638

Diversion Structure Type – Unlined channel

General Description of Work – Construct stream overpass over ditch.

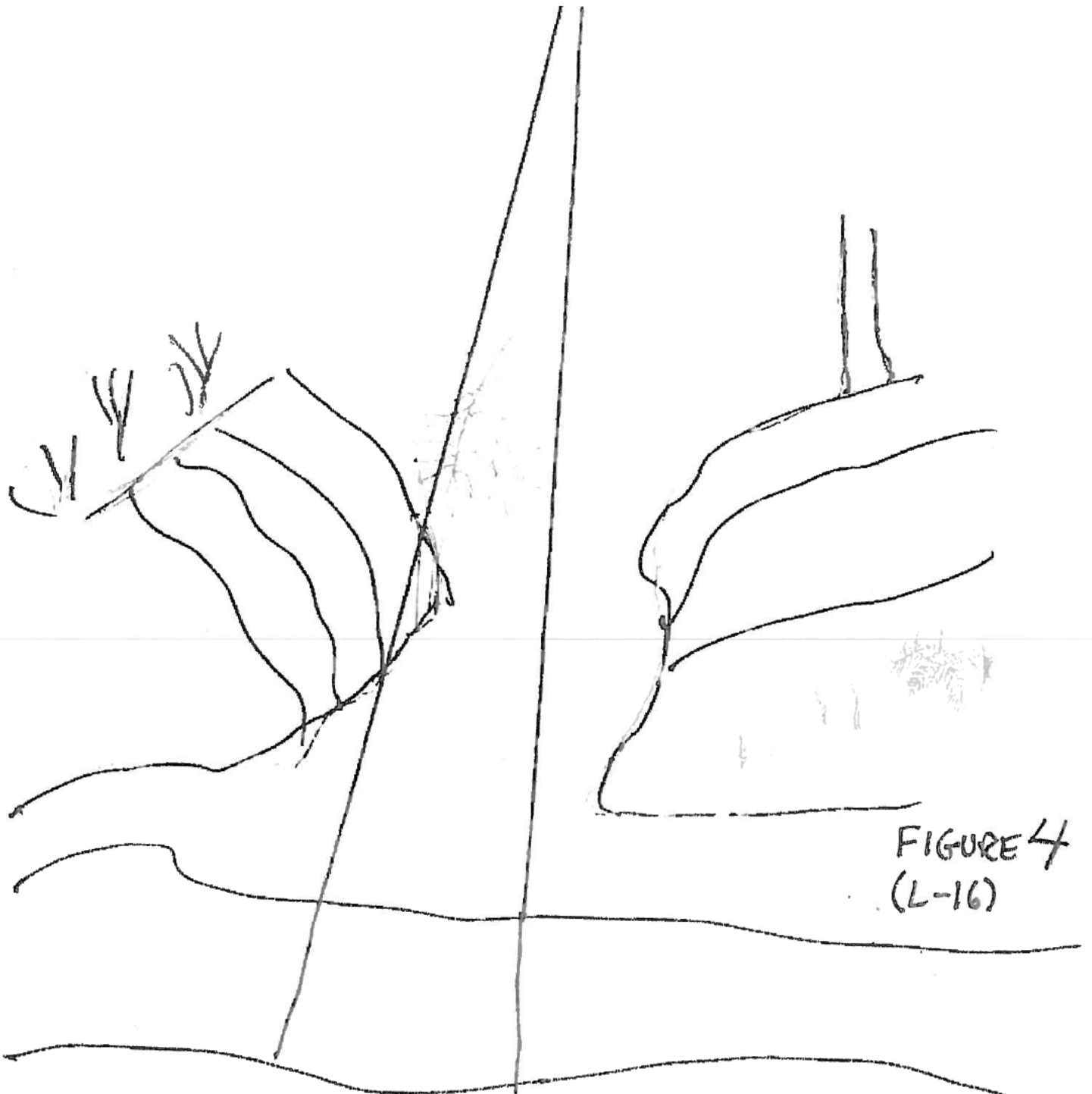


FIGURE 4
(L-16)

Honopou at Haiku Ditch

Honopou-Haiku Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 54' 53.41"	156° 14' 47.53"	399

Diversion Structure Type – Concrete masonry

General Description of Work – Bolt steel plates or concrete over diversion intake grate and seal opening below grate with rock and concrete. Construct wing wall on west end of diversion so that water is channeled into stream.

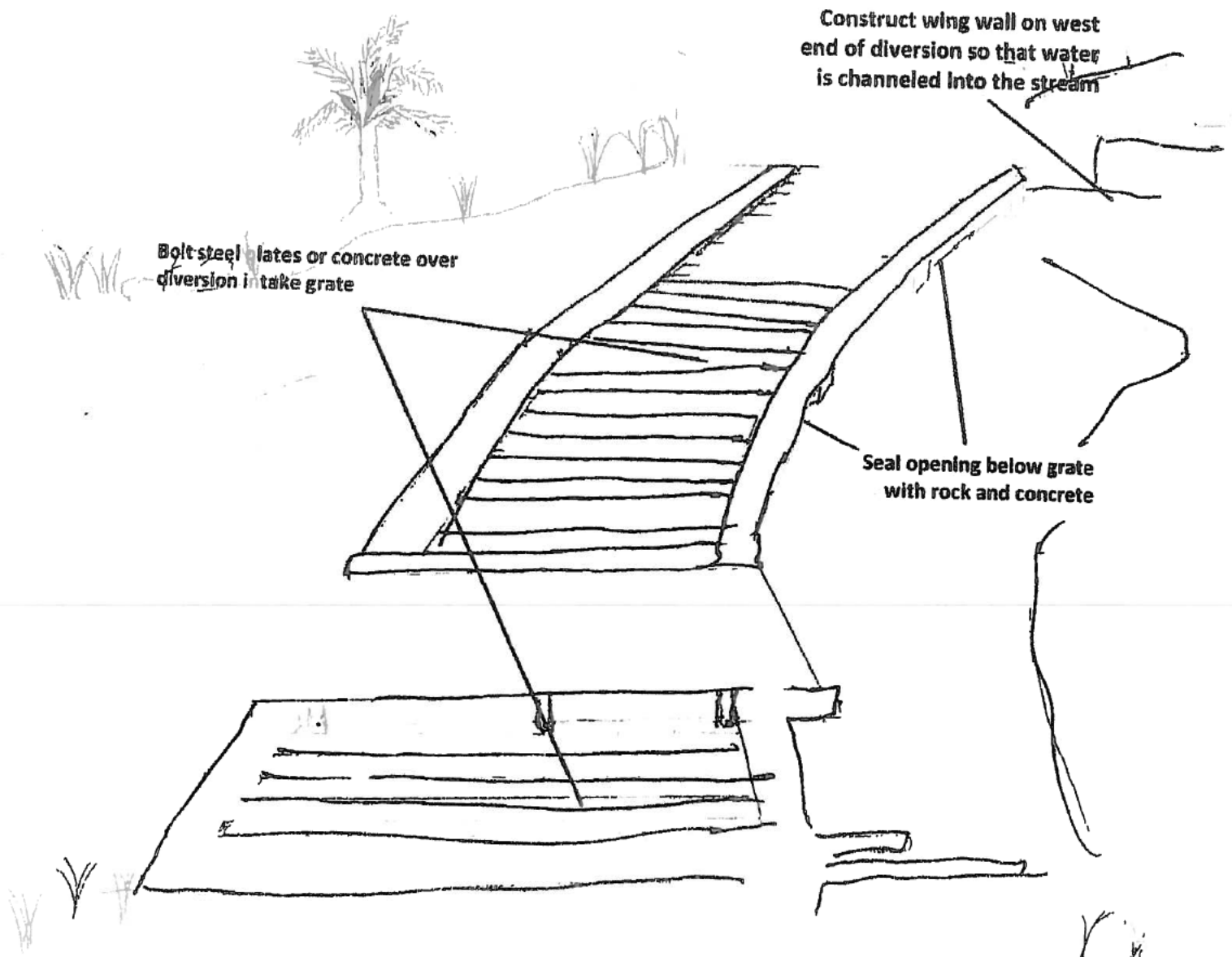


FIGURE 5
(H-8) 000036

Stream Flow Restoration in Hanehoi (Puolua) Stream
Summary of Relevant Information

1. Parties involved in the work:

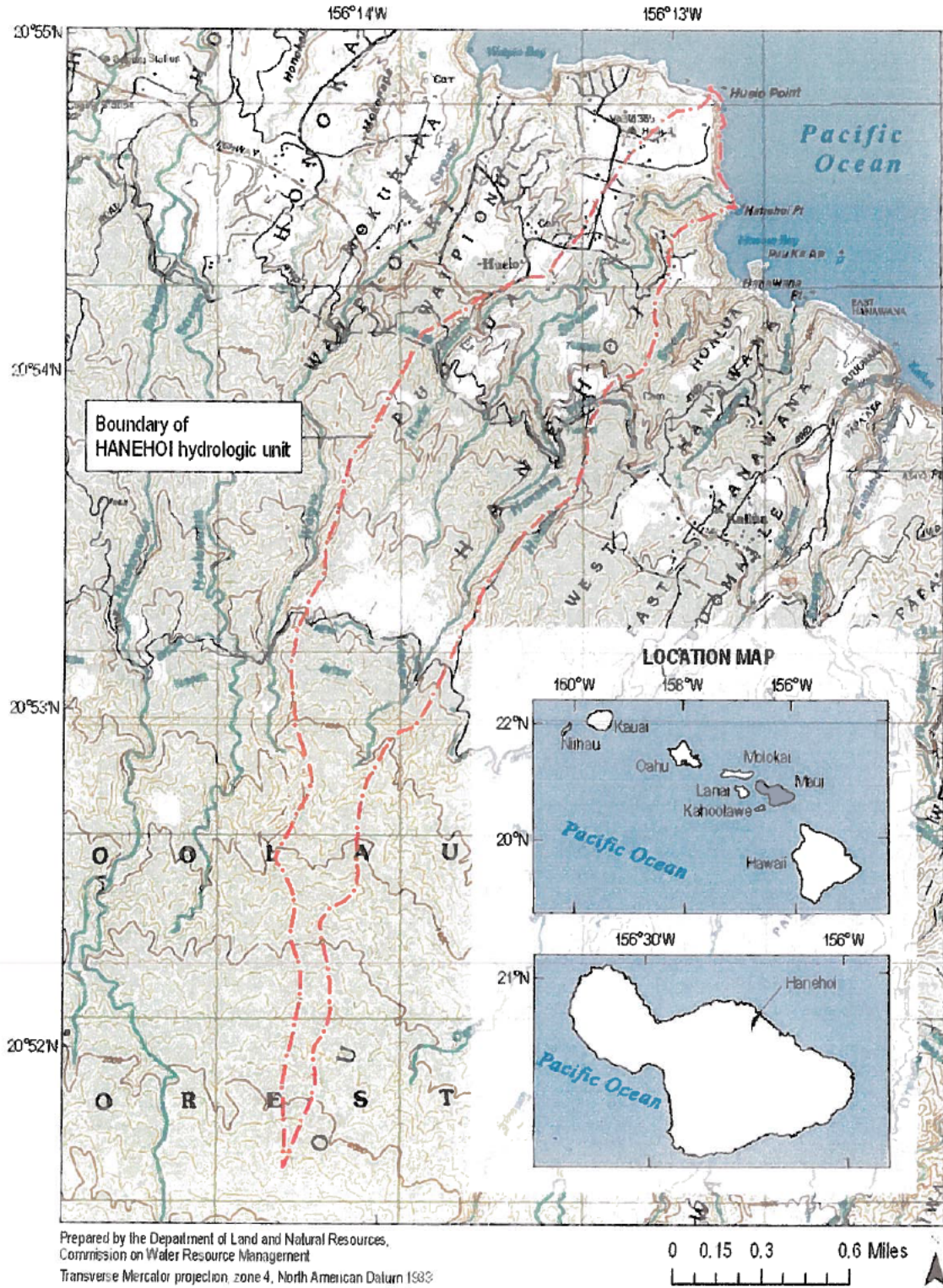
Organization: East Maui Irrigation Company, LLC
Contact: Sean O'Keefe
Address: P.O. Box 266, Puunene, HI 96784
Telephone: (808) 877-2959
2. Project name or title: Stream Flow Restoration at Wailoa, New Hamakua, Lowrie, and Haiku Ditch Diversions on Hanehoi Stream
3. Name of water body: Hanehoi Stream (including tributary Puolua (Huelo) Stream)
4. Project street address: Not applicable
5. Location of project: Haiku (Hamakualoa moku), Maui County, Hawaii
6. Other location descriptions: See attached Table of Hanehoi (Puolua) Stream Diversions for latitude and longitude, elevation, and Tax Map Key Number of each individual diversion.
7. Directions to the site: Please contact East Maui Irrigation Company for directions.
8. Nature of activity: See Description of Work on attached Table of Hanehoi (Puolua) Stream Diversions. Except as otherwise noted, all work will be done by hand and no mechanized equipment will be used in the stream. Work will be conducted during low stream flows in order to minimize the potential for any short-term water quality impacts.
9. Project purpose: The purpose of the project is to permanently restore flow in Hanehoi (Puolua) Stream.
10. Reason for discharge of dredged and/or fill material: Seal openings in existing diversion structures and/or allow stream to pass over irrigation ditch; see attached Table of Hanehoi (Puolua) Stream Diversions.
11. Types of material being discharged and the amount in cubic yards: See attached Table of Hanehoi (Puolua) Stream Diversions. In addition to any materials used to permanently alter the configuration of the diversions, sandbags and/or pipes may be temporarily placed in the stream as necessary to divert stream flow around work areas; any such materials will be removed from the stream upon completion of the work. Alternatively, where feasible, stream rocks may be re-positioned in the stream for this purpose.

Stream Flow Restoration in Hanehoi (Puolua) Stream
Summary of Relevant Information
(continued)

12. Surface areas of wetlands or other areas filled: None – this work is intended to restore flow in the stream and will not result in filling of any wetlands

13. Attachments:
 - Hanehoi Hydrologic/Watershed Unit Maps
 - USGS Haiku Quadrangle Map, Site Locations – Hanehoi (Puolua) Stream Diversions
 - Table of Hanehoi (Puolua) Stream Diversions
 - Site Photographs, Hanehoi (Puolua) Stream Diversions
 - Conceptual Sketches, Hanehoi (Puolua) Stream Diversions

Figure 1-3. Topographic map of the Hanehoi hydrologic unit in east Maui, Hawaii (Source: U.S. Geological Survey, 1996).



Hanehoi Watershed Unit



- Puolua (Huelo) ● Haiku Ditch
- Hanehoi ● Haiku Ditch
- Hanehoi West #2 ● Lowrie Ditch
- Puolua (Huelo) ● Lowrie Ditch
- Hanehoi #3 ● Lowrie Ditch
- Hanehoi #2 ● Lowrie Ditch
- Hanehoi Small ● Lowrie Ditch
- Hanehoi West #1 ● Lowrie Ditch
- Hanehoi #1 ● Lowrie Ditch
- East Hanehoi ● Lowrie Ditch
- Puolua (Huelo) ● New Hamakua Ditch
- Hanehoi ● New Hamakua Ditch
- Hanehoi ● Wailoa Ditch

1/30/17

Table of Hanehoi (Puolua) Stream Diversions

Diversion	EMI Map #	Latitude Longitude Elevation	TMK No. (owner)	Diversion Structure Type	Description of Work and Amount/Type of Fill Material
East Hanehoi at Lowrie Ditch (Hanehoi intake at Lowrie Ditch)	L-5a	20° 53' 42.4" N 156° 13' 27.19" W 704 feet	2-9-14:009 (EMI) 2-9-9:019 (EMI)	Unlined channel	This diversion consists of an unlined channel intercepting seeps tributary to Hanehoi Stream. In order to prevent flow from being intercepted by the ditch, a "stream overpass" must be constructed over the ditch that will allow water to flow over the channel and continue downstream. See Photo 5 and Figure 6, attached. The design of the "stream overpass" for this location has not yet been finalized, but it is anticipated to be constructed of concrete and similar in configuration to that shown in Photo 6, attached. Note that only a small portion of the overpass will be installed within the stream bed on either side of the ditch, while the majority of the structure will span the ditch. Additional details can be provided once the design has been finalized.
Hanehoi West #1 at Lowrie Ditch (Hanehoi intake at Lowrie Ditch)	L-5b	20° 53' 47.43" N 156° 13' 28.52" W 629 feet	2-9-14:009 (EMI) 2-9-9:019 (EMI)	Unlined channel	This diversion consists of an unlined channel intercepting seeps tributary to Hanehoi Stream. In order to prevent flow from being intercepted by the ditch, a "stream overpass" must be constructed over the ditch that will allow water to flow over the channel and continue downstream. See Photo 7 and Figure 7, attached. The design of the "stream overpass" for this location has not yet been finalized, but it is anticipated to be constructed of concrete and similar in configuration to that shown in Photo 6, attached. Note that only a small portion of the overpass will be installed within the stream bed on either side of the ditch, while the majority of the structure will span the ditch. Additional details can be provided once the design has been finalized.
Hanehoi small at Lowrie Ditch (Hanehoi intake at Lowrie Ditch)	L-5c	20° 53' 49.56" N 156° 13' 32.28" W 653 feet	2-9-14:009 (EMI) 2-9-9:019 (EMI)	Unlined channel	This diversion consists of an unlined channel intercepting seeps tributary to Hanehoi Stream. In order to prevent flow from being intercepted by the ditch, a "stream overpass" must be constructed over the ditch that will allow water to flow over the channel and continue downstream. See Photo 8 and Figure 8, attached. The design of the "stream overpass" for this location has not yet been finalized, but it is anticipated to be constructed of concrete and similar in configuration to that shown in Photo 6, attached. Note that only a small portion of the overpass will be installed within the stream bed on either side of the ditch, while the majority of the structure will span the ditch. Additional details can be provided once the design has been finalized.
Puolua (Huelo) at New Hamakua Ditch (West Hanehoi intake (Puolua) at New Hamakua Ditch)	NH-17a	20° 53' 11.5" N 156° 13' 57.15" W 1,187 feet	2-9-14:001 (State of Hawaii)	Unlined channel	This diversion consists of an unlined channel intercepting a tributary to Hanehoi Stream. In order to prevent flow from being intercepted by the ditch, a "stream overpass" must be constructed over the ditch that will allow water to flow over the channel and continue downstream. See Photo 9 and Figure 9, attached. The design of the "stream overpass" for this location has not yet been finalized, but it is anticipated to be constructed of concrete and similar in configuration to that shown in Photo 6, attached. Note that only a small portion of the overpass will be installed within the stream bed on either side of the ditch, while the majority of the structure will span the ditch. Additional details can be provided once the design has been finalized.

Table of Hanehoi (Puolua) Stream Diversions (continued)

Diversion	EMI Map #	Latitude Longitude Elevation	TMK No. (owner)	Diversion Structure Type	Description of Work and Amount/Type of Fill Material
Puolua (Huelo) at Lowrie Ditch (Hanehoi (Puolua) Roseapple intake at Lowrie Ditch)	L-7a	20° 53' 58.4" N 156° 13' 45.6" W 638 feet	2-9-6:033 (EMI)	Unlined channel	<p>This diversion consists of an unlined channel intercepting the stream. In order to prevent flow from being intercepted by the ditch, two options are being considered. Under the preferred option, a concrete headwall with wingwalls will be constructed at the edge of the ditch where it intercepts the stream and a concrete pipe, approximately 24 inches in diameter, will be installed through which the stream can pass over the ditch. The pipe will extend under an existing access road located below (makai of) the ditch, and will discharge into the stream bed downstream of the road. This will require partial excavation of the road to lay the pipe, followed by backfilling and compaction. Any excess soil from the excavation will be applied to the surrounding road and compacted. Under the second alternative, a pipe and headwalls will be laid in the ditch itself where it intercepts the stream and a concrete "stream overpass" similar in configuration to that shown in Photo 13 will be constructed over the ditch to allow water to flow over the ditch and continue downstream. In this case, the existing access road below (makai of) the ditch would need to be partially excavated to allow the stream to flow over the road after it passes over the ditch. Concrete riprap will be added to the road where the stream will flow over it to armor the road and prevent it from washing out. See Photo 10 and Figures 10 through 14 attached. Note that only a portion of the overpass would be installed within the existing stream bed on the upstream side of the ditch, while the majority of the structure will span the ditch and the access road. It is estimated that less than one cubic yard of concrete will be needed to construct the intake on the upstream side of the ditch under either option, while an additional less than one cubic yard of riprap (comprised of concrete and stream rocks) will be used to armor the access road in what will become part of the stream bed under the second option. This work may require the use of a small excavator, which would operate from the stream bank. Once the work is completed, and existing 8-inch PVC pipe currently installed as a temporary bypass will be removed and disposed off-site.</p>
Hanehoi West #2 at Lowrie Ditch (West Hanehoi intake at Lowrie Ditch)	L-7b	20° 53' 59.83" N 156° 13' 47.01" W 638 feet	2-9-6:033 (EMI) 2-9-6:028 (State of Hawaii)	Unlined channel	<p>This diversion consists of an unlined channel intercepting seeps tributary to Hanehoi Stream. In order to prevent flow from being intercepted by the ditch, a "stream overpass" must be constructed over the ditch that will allow water to flow over the channel and continue downstream. See Photo 11 and Figure 15, attached. The design of the "stream overpass" for this location has not yet been finalized, but it is anticipated to be constructed of concrete and similar in configuration to that shown in Photo 6, attached. Note that only a small portion of the overpass will be installed within the stream bed on either side of the ditch, while the majority of the structure will span the ditch. Additional details can be provided once the design has been finalized.</p>

Photographs – Alterations to Hanehoi (Puolua) Stream Diversions

(Photos 5 through 11)

Site Photographs – Hanehoi (Puolua) Stream Diversions

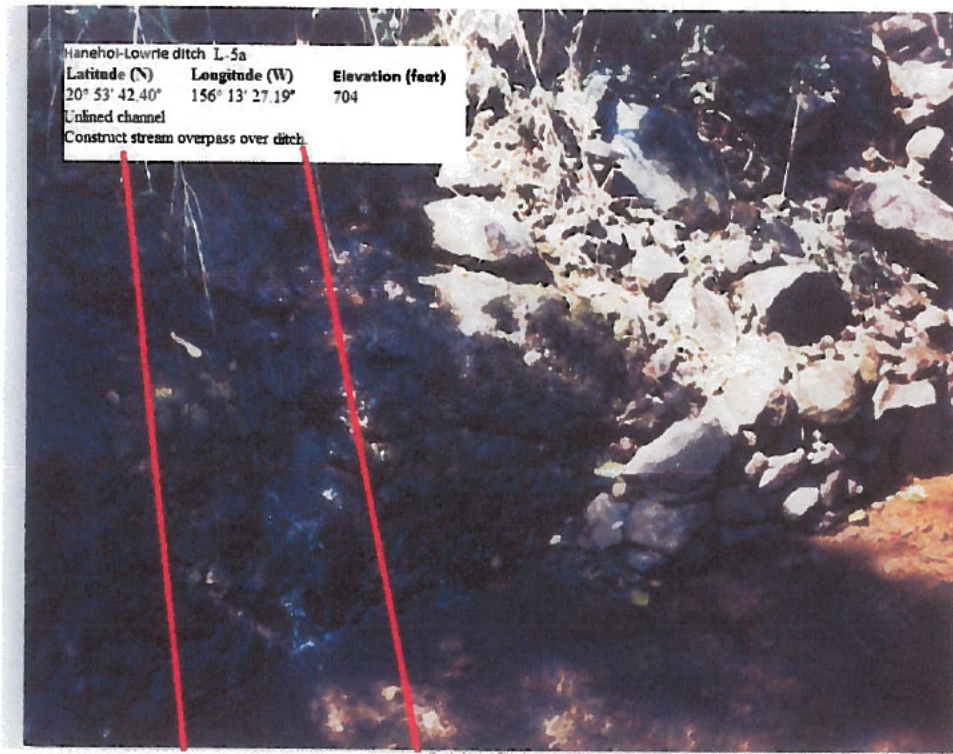


Photo 5 (above): East Hanehoi at Lowrie Ditch (L-5a)

Photo 6 (below): Typical “stream overpass” intended to prevent the ditch from intercepting a stream



Site Photographs – Hanehoi (Puolua) Stream Diversions

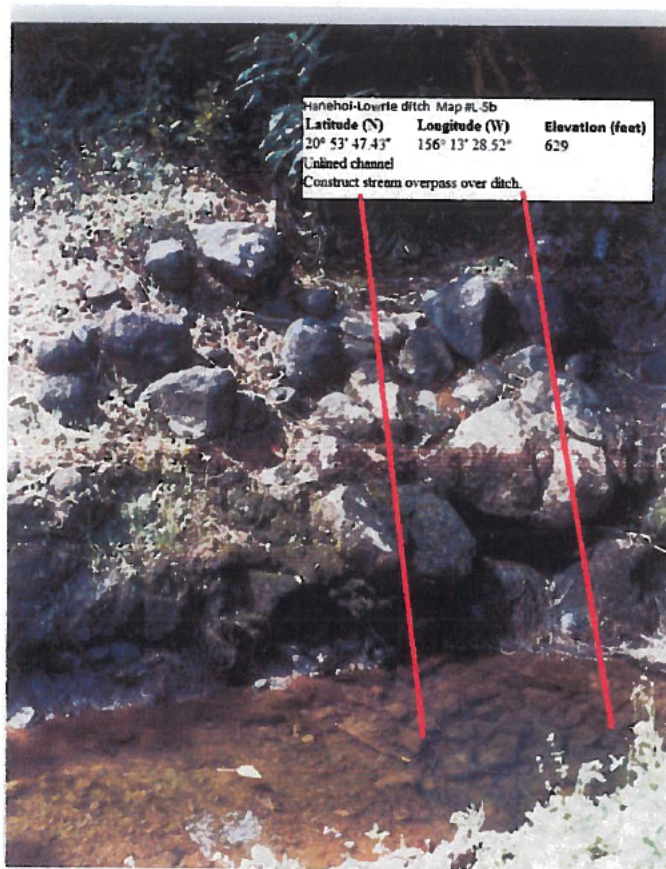


Photo 7 (above): Hanehoi West #1 at Lowrie Ditch (L-5b)

Photo 8 (below): Hanehoi small intake at Lowrie Ditch (L-5c)



Site Photographs – Hanehoi (Puolua) Stream Diversions



Photo 9 (above): Puolua (Huelo) at New Hamakua Ditch (NH-17a)

Photo 10 (below): Puolua (Huelo) at Lowrie Ditch (Hanehoi Roseapple) (L-7a)



Site Photographs – Hanehoi (Puolua) Stream Diversions

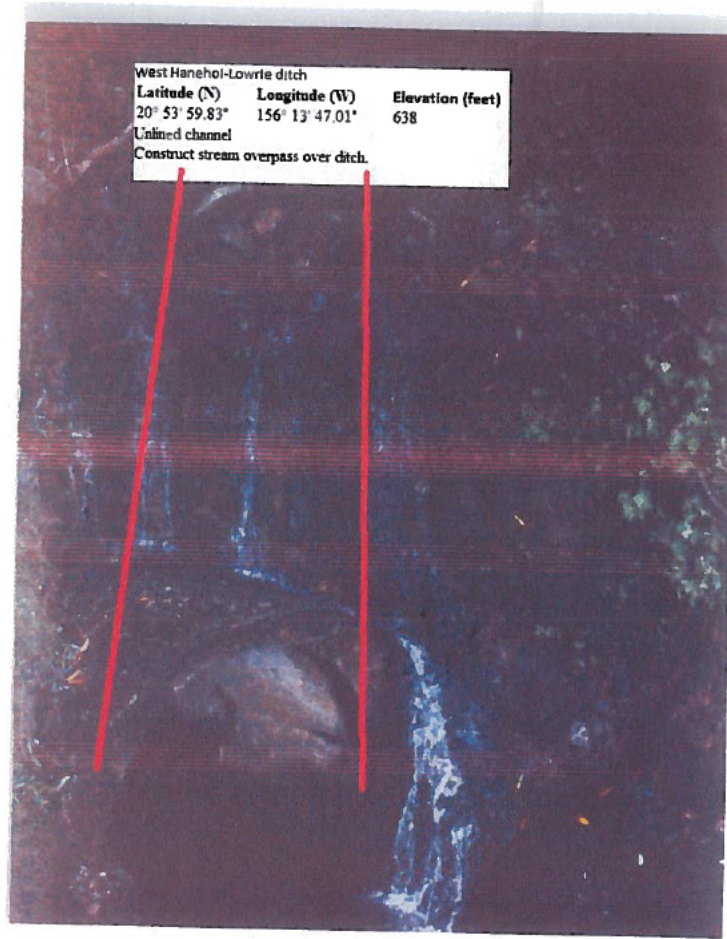


Photo 11 (above): Hanehoi West #2 at Lowrie Ditch (L-7b)

Conceptual Sketches – Alterations to Hanehoi (Puolua) Stream Diversions

(Figures 6 through 15)

East Hanehoi
at Lowrie Ditch

Hanehoi (Puolua)- Lowrie Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 53' 42.40"	156° 13' 27.19"	704

Diversion Structure Type - Unlined channel

General Description of Work - Construct stream overpass over ditch.

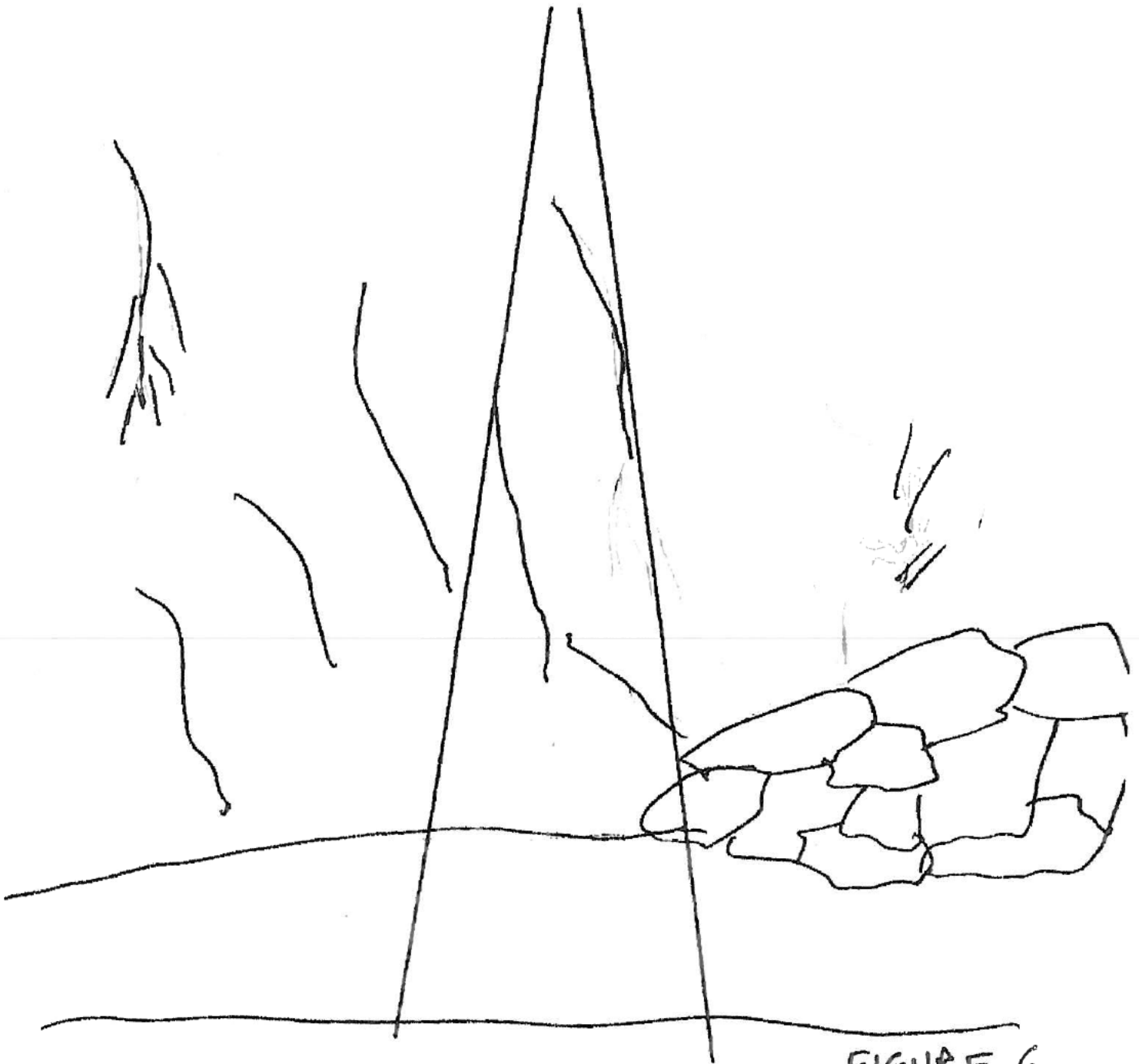


FIGURE 6

(L-5a) 000049

Hanehoi West #1
at Lowrie Ditch

Hanehoi - Lowrie Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 53' 47.43"	156° 13' 28.52"	629

Diversion Structure Type - Unlined channel

General Description of Work - Construct stream overpass over ditch.



FIGURE 7
(L-56)

Hanehoi- Lowrie Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 53' 49.56"	156° 13' 32.28"	653

Diversion Structure Type - Unlined channel

General Description of Work - Construct stream overpass over ditch.

Hanehoi
Small intake
at Lowrie Ditch

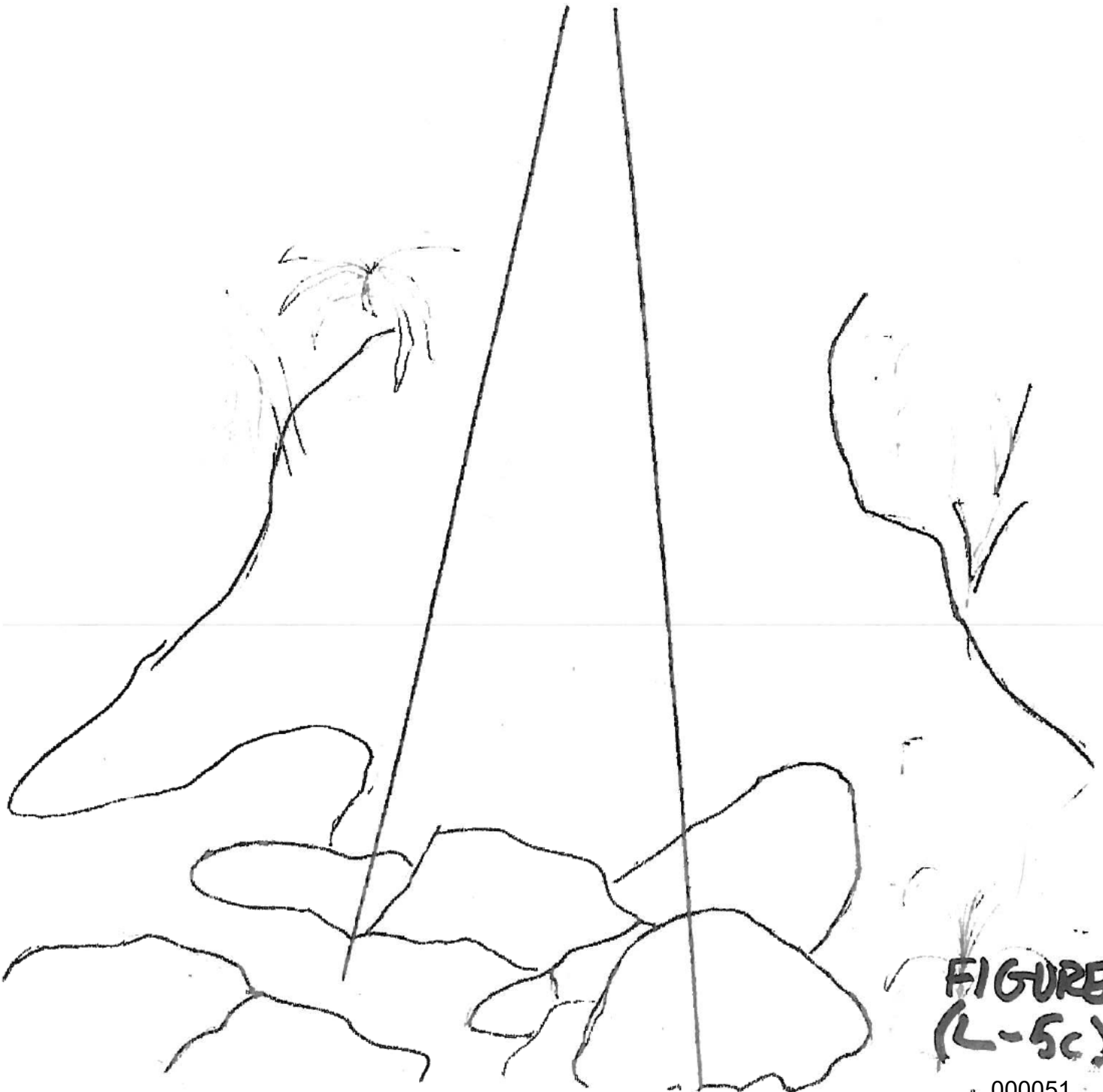


FIGURE 8
(L-5c)

000051

West Hanehoi intake (Puolua)-New Hamakua Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 53' 11.50"	156° 13' 57.15"	1,187

Diversion Structure Type – Unlined channel

General Description of Work – Construct stream overpass over ditch.

Puolua (Huelo)
at New
Hamakua Ditch

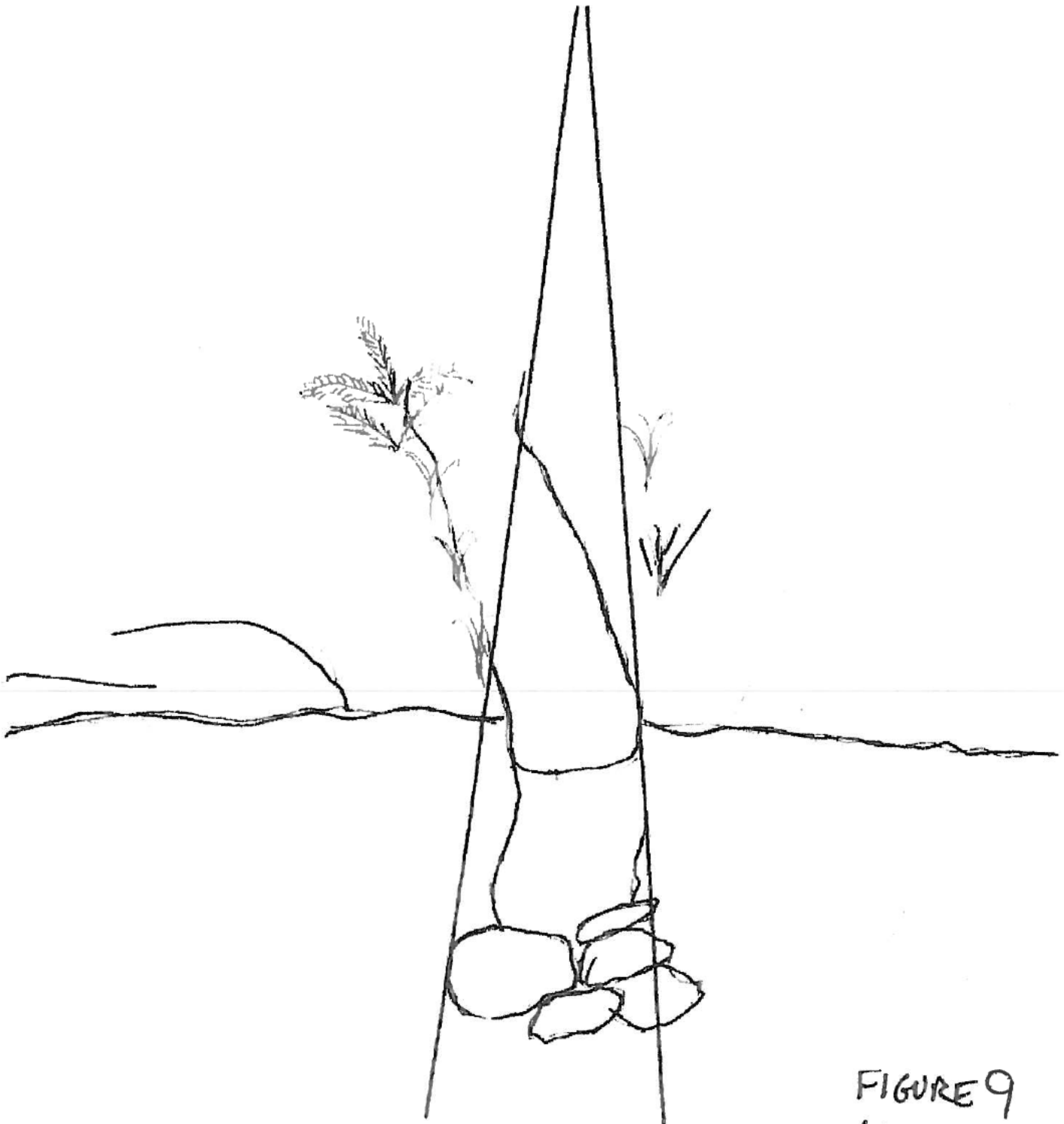


FIGURE 9
(NH-1700)052

Puolua (Huelo)
at Lowrie Ditch
(Haneho: Roseapple)

Haneho Roseapple (Puolua)-Lowrie Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 53' 58.40"	156° 13' 45.60"	638

Diversion Structure Type – Unlined channel

General Description of Work – Install pipe or box culvert with wing walls through which ditch can pass beneath stream or construct stream overpass over ditch.

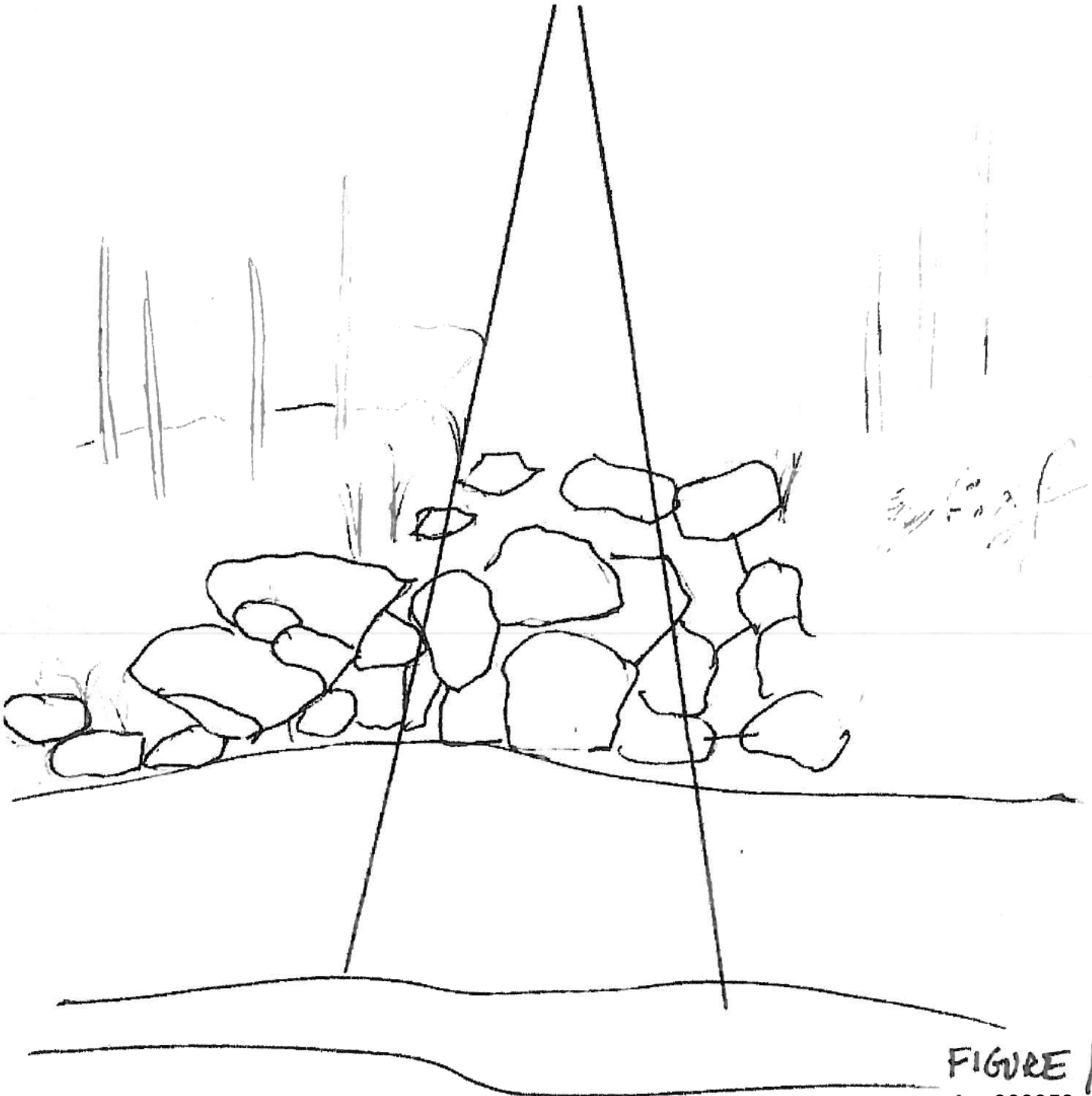


FIGURE 10
000953
(L-7a)

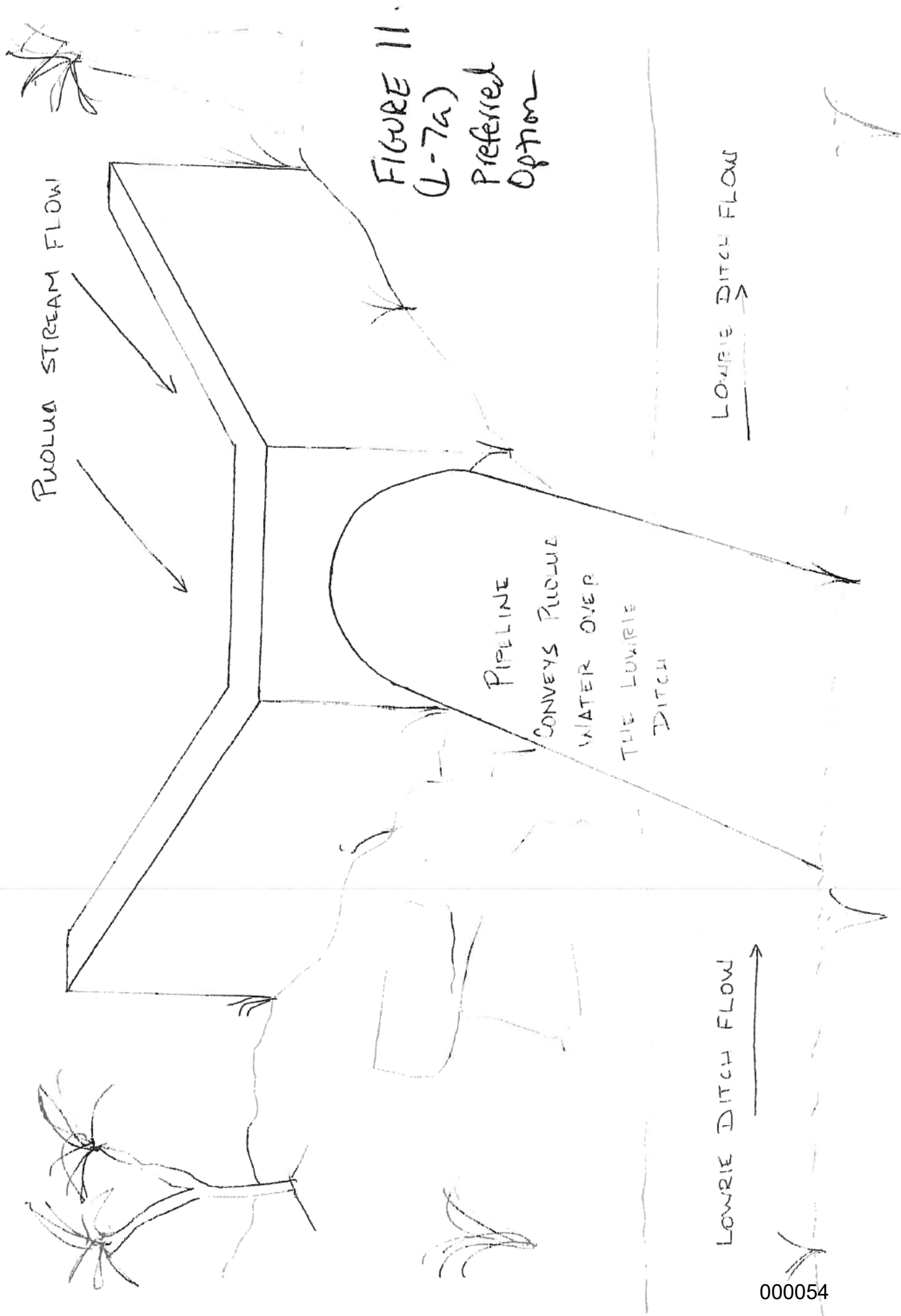
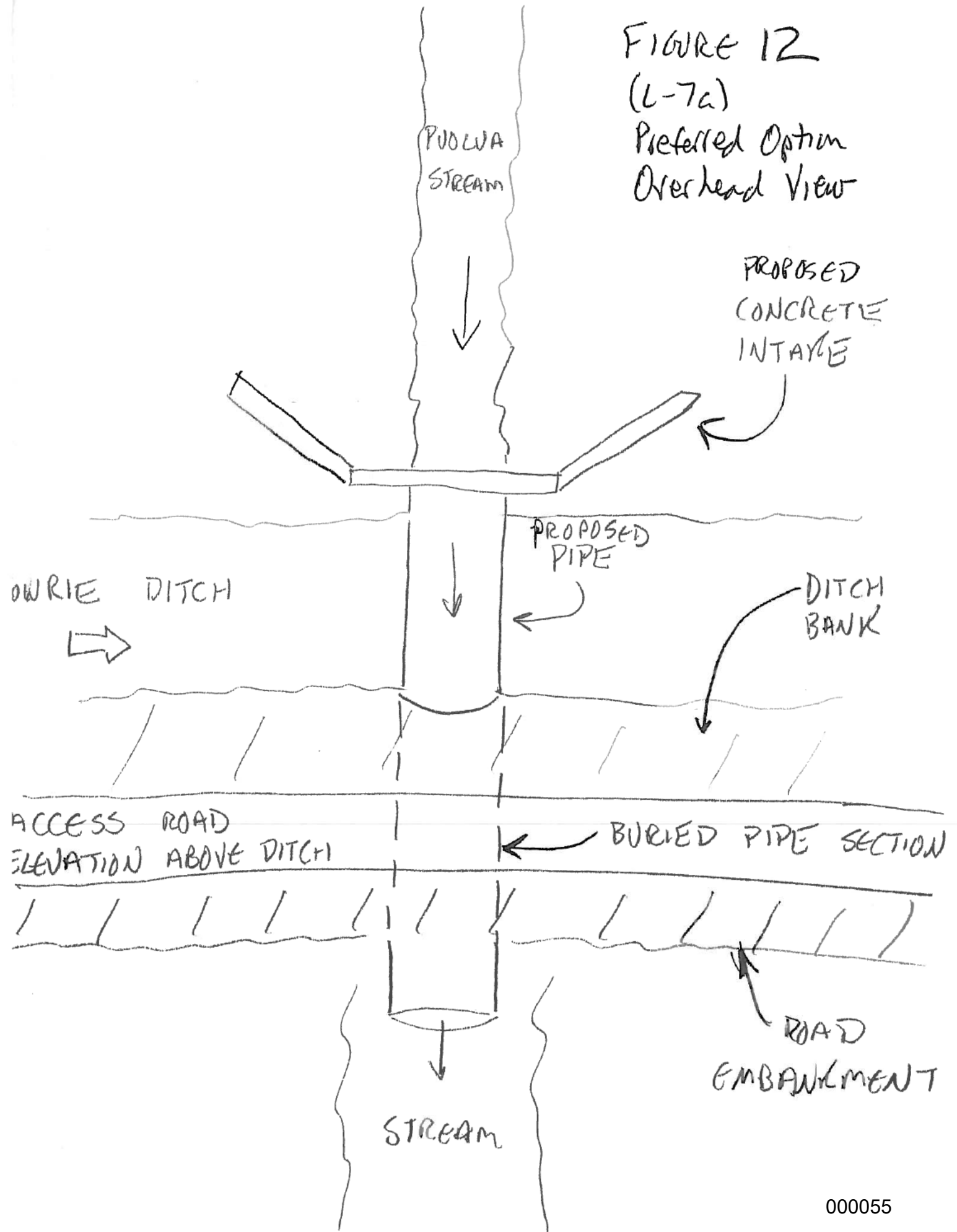
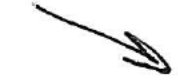


FIGURE 11.
(L-7a)
Preferred
Option

FIGURE 12
(L-7a)
Preferred Option
Overhead View



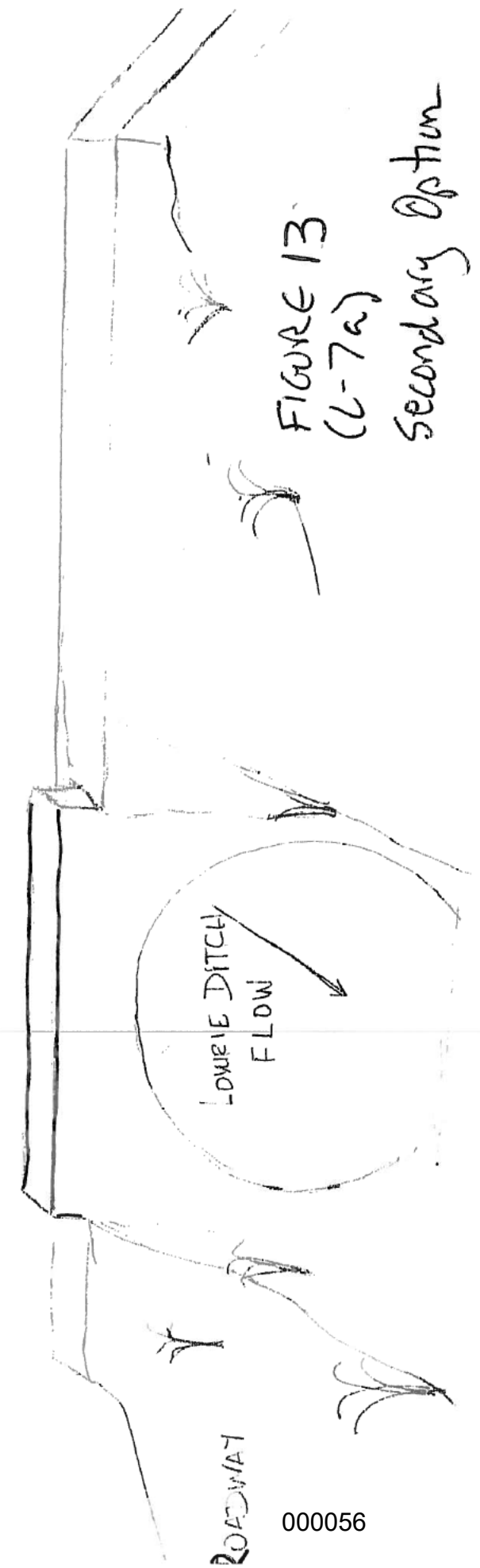
DITCH
FLOW



Puolua Stream Flow



(OVER LOWRIE DITCH)



LOWRIE DITCH
FLOW

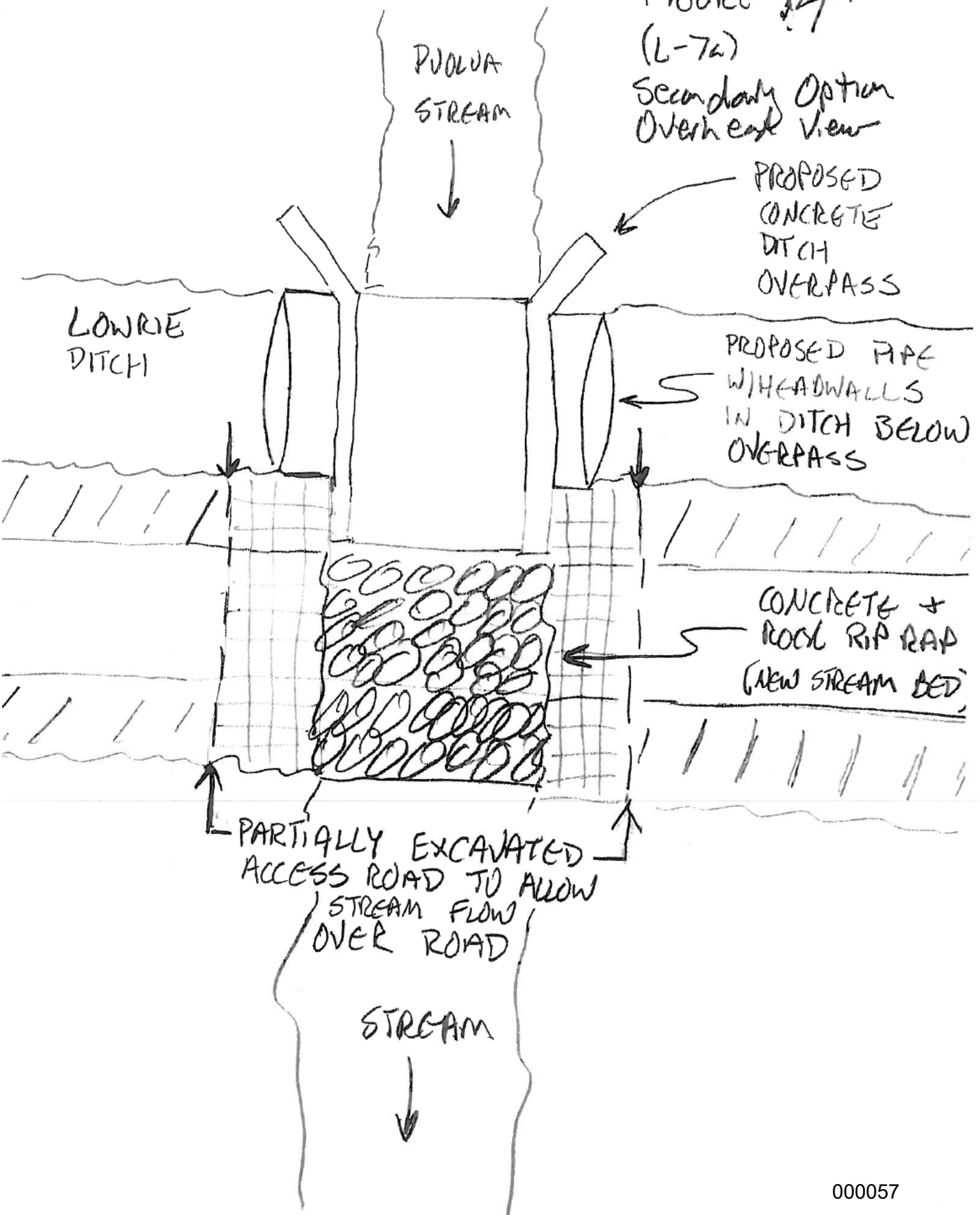
ROADWAY

FIGURE 13
(L-7a)
Secondary Option

FIGURE 14.

(L-7a)

Secondary Option
Overhead View



Hanehoi West #2
at Lowrie Ditch

West Hanehoi- Lowrie Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 53' 59.83"	156° 13' 47.01"	638

Diversion Structure Type - Unlined channel

General Description of Work - Construct stream overpass over ditch.

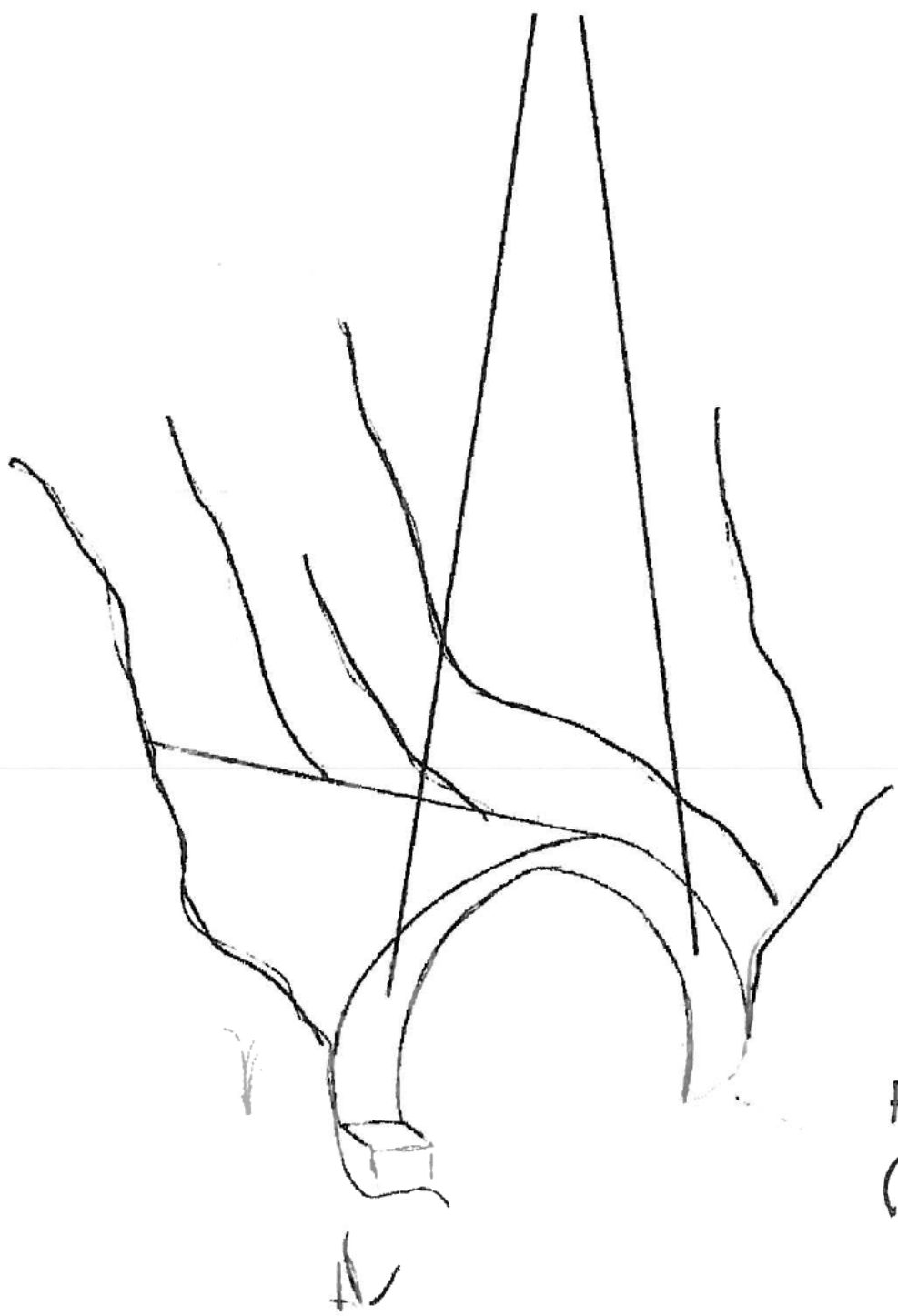


FIGURE 15
(L-7b)

Stream Flow Restoration in Pi'ina'au (Palauhulu) Stream
Summary of Relevant Information

1. Parties involved in the work:

Organization: East Maui Irrigation Company, LLC
Contact: Sean O'Keefe
Address: P.O. Box 266, Puunene, HI 96784
Telephone: (808) 877-2959
2. Project name or title: Stream Flow Restoration at Koolau Ditch Diversions on Pi'ina'au (Palauhulu) Stream
3. Name of water body: Pi'ina'au Stream, Palauhulu Stream (and tributaries)
4. Project street address: Not applicable
5. Location of project: Keanae/Nahiku (Koolau moku), Maui County, Hawaii
6. Other location descriptions: See attached Table of Pi'ina'au (Palauhulu) Stream Diversions for latitude and longitude, elevation, and Tax Map Key Number of each individual diversion.
7. Directions to the site: Please contact East Maui Irrigation Company for directions.
8. Nature of activity: See Description of Work on attached Table of Pi'ina'au (Palauhulu) Stream Diversions. Except as otherwise noted in the table, all work will be done by hand and no mechanized equipment will be used in the stream. Work will be conducted during low stream flows in order to minimize the potential for any short-term water quality impacts.
9. Project purpose: The purpose of the project is to permanently restore flow in Pi'ina'au Stream, Palauhulu Stream (which joins with Pi'ina'au Stream just above Keanae), and their tributaries.
10. Reason for discharge of dredged and/or fill material: Seal openings in existing diversion structures and/or allow stream to pass over irrigation ditch; see attached Table of Pi'ina'au (Palauhulu) Stream Diversions. The majority of work proposed to be conducted on these diversions is not anticipated to result in a discharge of dredged and/or fill material.
11. Types of material being discharged and the amount in cubic yards: See attached Table of Pi'ina'au (Palauhulu) Stream Diversions. In addition to any materials used to permanently alter the configuration of the diversions, sandbags and/or pipes may be temporarily placed in the stream as necessary to divert stream flow around work

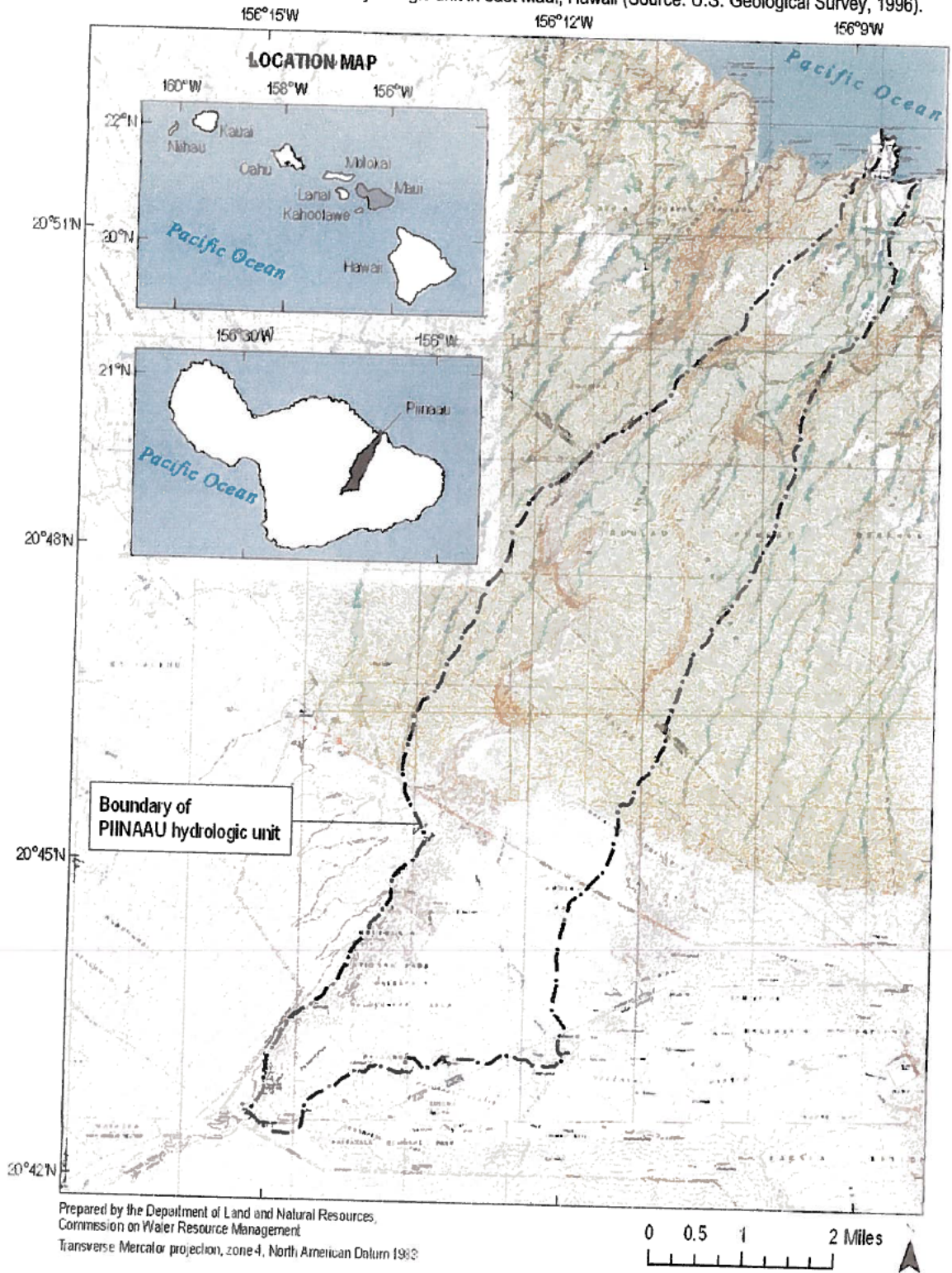
Stream Flow Restoration in Pi'ina'au (Palauhulu) Stream
Summary of Relevant Information
(continued)

areas; any such materials will be removed from the stream upon completion of the work. Alternatively, where feasible, stream rocks may be re-positioned in the stream for this purpose.

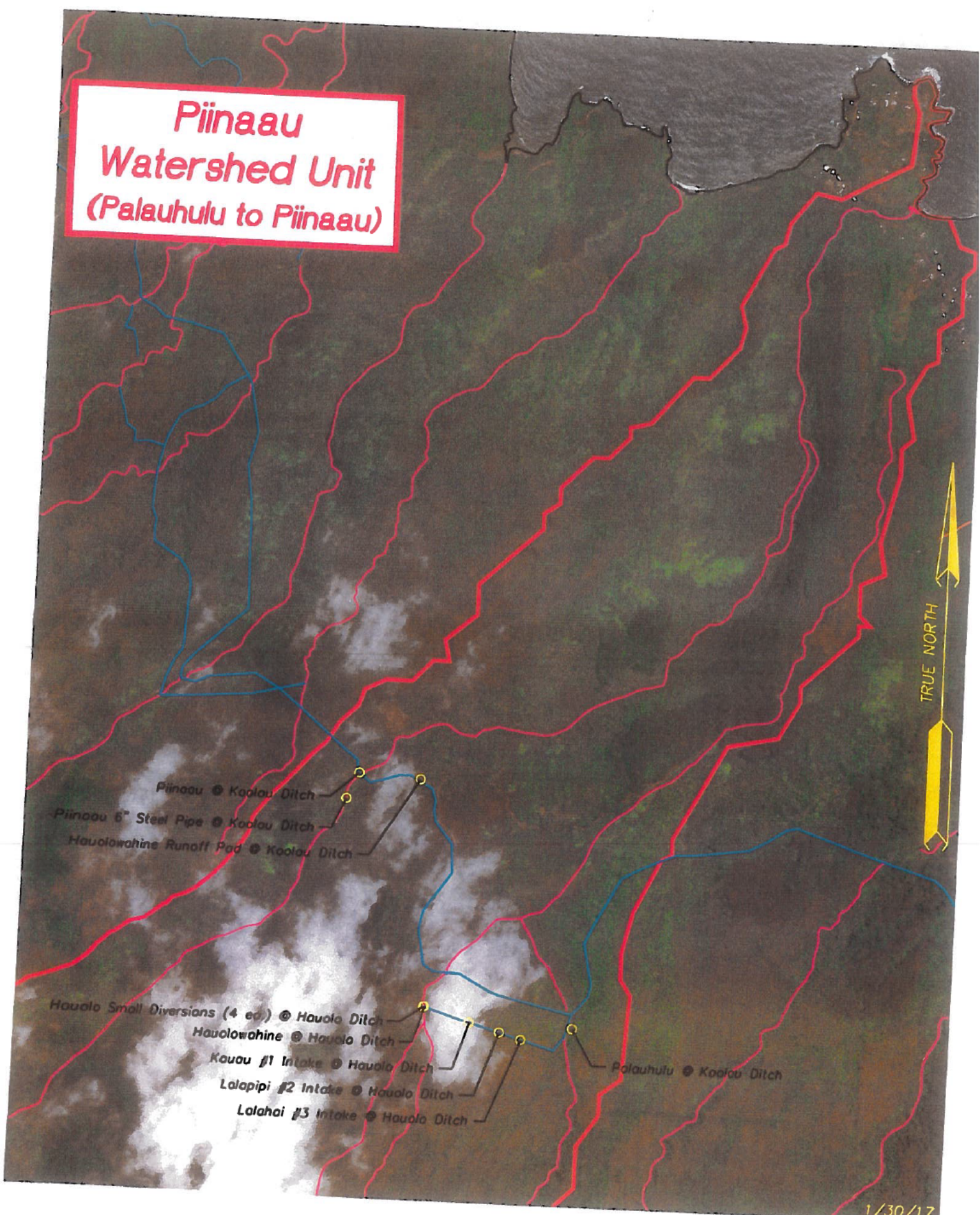
12. Surface areas of wetlands or other areas filled: None – this work is intended to restore flow in the stream and will not result in filling of any wetlands

13. Attachments:
 - Pi'ina'au Hyrdologic/Watershed Unit Maps
 - USGS Nahiku Quadrangle Map, Site Locations – Pi'ina'au (Palauhulu) Stream Diversions
 - Table of Pi'ina'au (Palauhulu) Stream Diversions
 - Site Photographs, Pi'ina'au (Palauhulu) Stream Diversions
 - Conceptual Sketches, Pi'ina'au (Palauhulu) Stream Diversions

Figure 1-3. Topographic map of the Piinaau hydrologic unit in east Maui, Hawaii (Source: U.S. Geological Survey, 1996).



Piinaau Watershed Unit (Palauhulu to Piinaau)



1/30/17

000062

Table of Pi'ina'au (Palauhulu) Stream Diversions

Diversion	EMI Map #	Latitude Longitude Elevation	TMK No. (owner)	Diversion Structure Type	Description of Work and Amount/Type of Fill Material
Hauolo small diversions (one of four) at Hauolo Ditch (Hauolowahine small intake)	K-30b	20° 48' 59.58" N 156° 10' 13.85" W 1,964 feet	1-1-2:002 (State of Hawaii)	Stone and concrete dam	A concrete and stone dam/ditch routes a tributary into the Hauolo Ditch. The diversion dam will be removed from the stream and deposited in an upland area. Removal of the dam will not require any discharge of fill material and Section 404 therefore does not apply. See Photo 12 and Figure 16.
Hauolowahine runoff pad at Koolau Ditch (Hauolowahine small intake runoff by gate)	K-30d	20° 49' 41.6" N 156° 10' 15.6" W 1,213 feet	1-1-2:002 (State of Hawaii)	Concrete masonry	This diversion routes runoff/tributary flows directly into the Koolau Ditch. In order to prevent flow from being intercepted by the ditch, a "stream overpass" must be constructed over the ditch that will allow water to flow over the channel and continue downstream. See Photo 13 and Figure 17, attached. The design of the "stream overpass" for this location has not yet been finalized, but it is anticipated to be constructed of concrete and similar in configuration to that shown in Photo 14, attached. Note that only a small portion of the overpass will be installed within the stream bed on either side of the ditch, while the majority of the structure will span the ditch. Additional details can be provided once the design has been finalized.

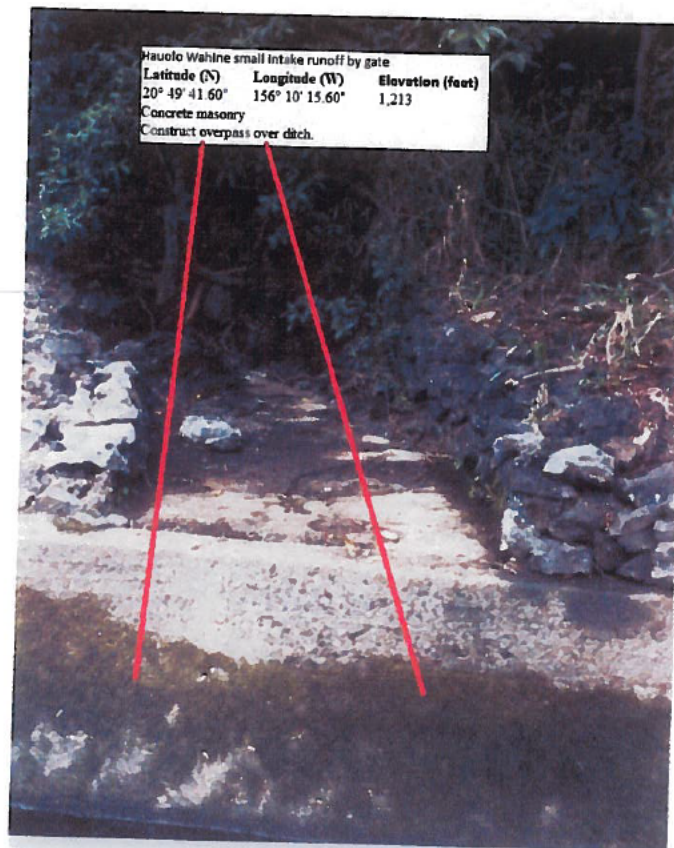
Photographs – Alterations to Pi'ina'au (Palauhulu) Stream Diversions

(Photos 12 through 14)

Site Photographs – Pi'ina'au (Palauhulu) Stream Diversions



Photo 12 (above): Hauolo small diversion (one of four) at Hauolo Ditch (K-30b)
Photo 13 (below): Haulowahine runoff by pad at Koolau Ditch (K-30d)



Site Photographs – Pi'ina'au (Palauhulu) Stream Diversions



Photo 14 (above): Typical “stream overpass” intended to prevent the ditch from intercepting a stream

Conceptual Sketches – Alterations to Pi’ina’au (Palauhulu) Stream Diversions

(Figures 16 through 17)

ar

ar

Hauolo Wahine small intake- Ko'olau Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 48' 59.58"	156° 10' 13.85"	1,964

Diversion Structure Type – Pipe

General Description of Work – Remove stone and concrete dam.

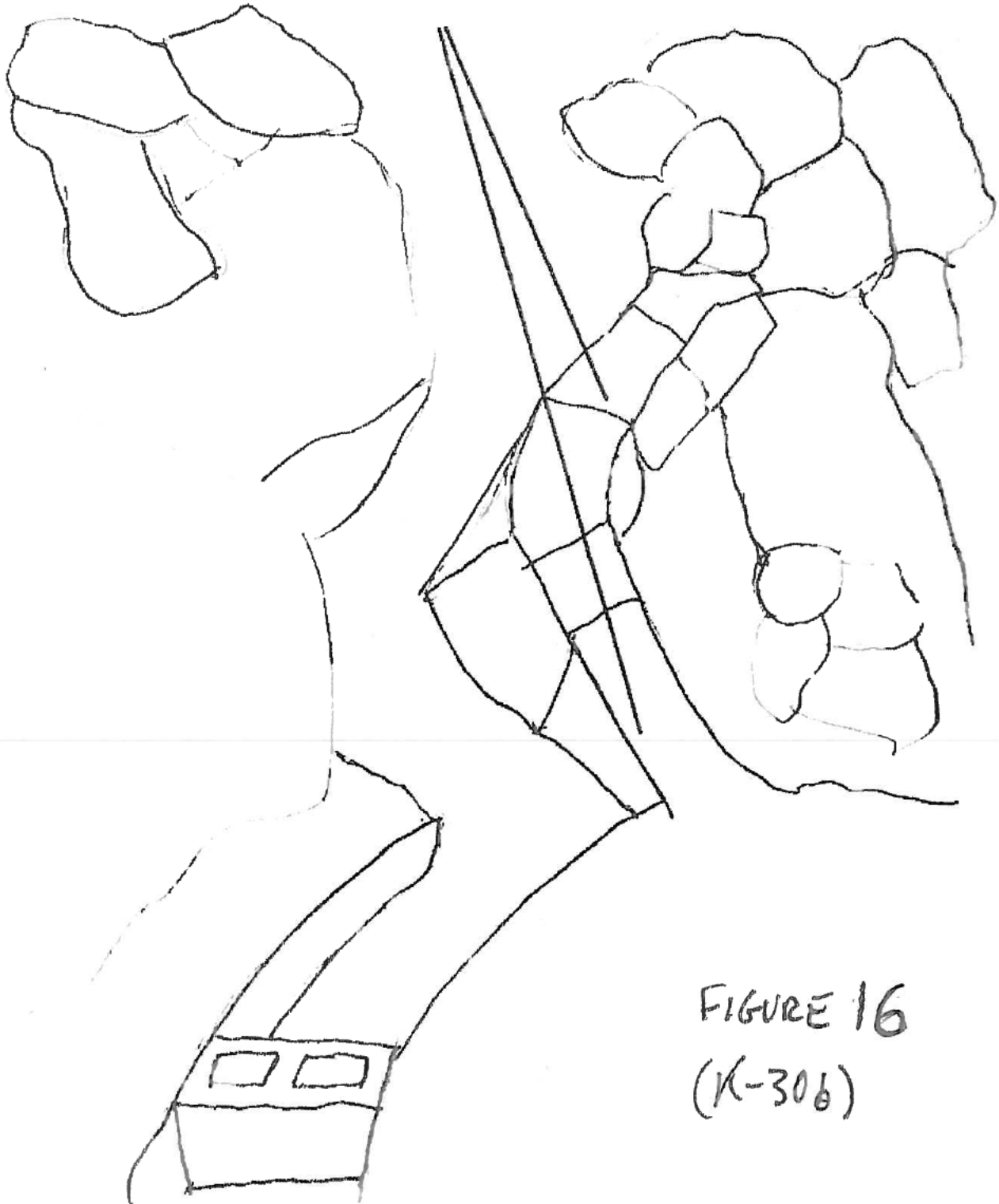


FIGURE 16
(K-306)

Haulo Wahine small intake runoff by gate- Ko'olau Ditch

Latitude (N)	Longitude (W)	Elevation (feet)
20° 49' 41.60"	156° 10' 15.60"	1,213

Diversion Structure Type – Concrete masonry

General Description of Work – Construct overpass over ditch.

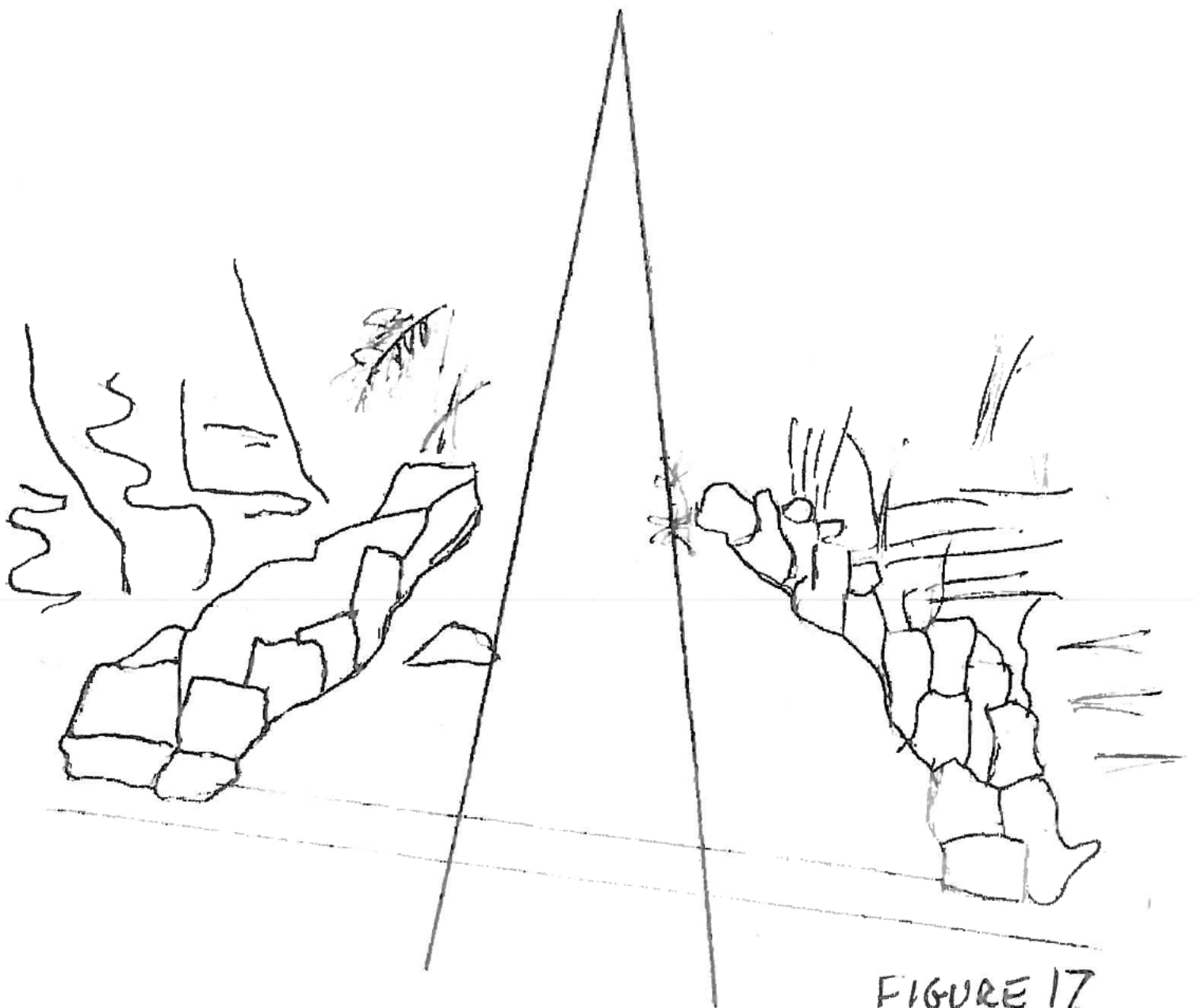
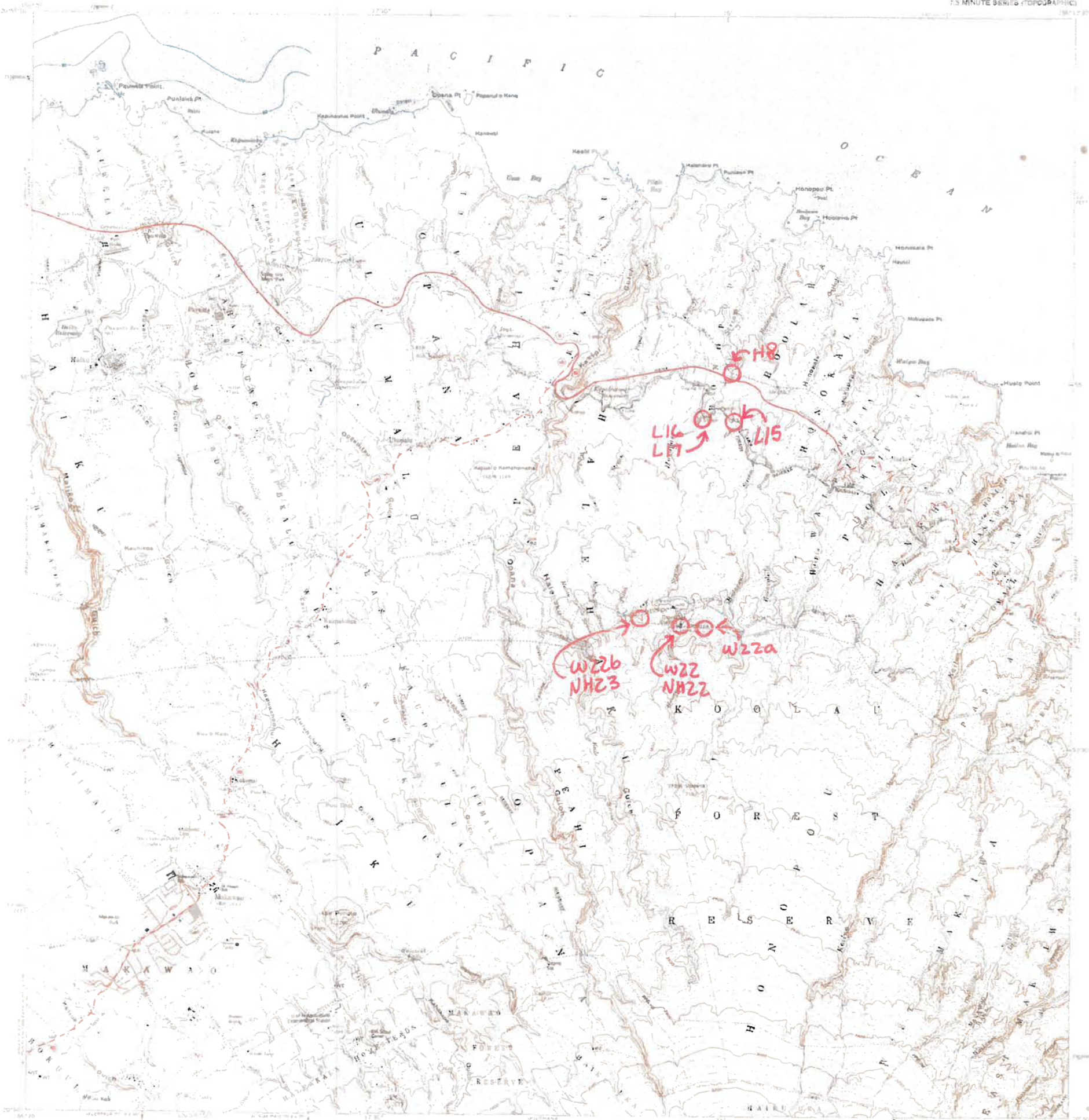


FIGURE 17
(K-30d)

000069

Possible Regulatory Approvals Required										EMI Taro Stream Diversions									
Hydrologic Unit	Stream	Army Corps	DLNR-OCCL	SMA	CWIRW category	DIVERSIONS BY DITCH	EMI Map #	Parcel	Owner	Approximate Location and Elevation of Diversion	On Ditch	Division Structure Type	General Description of Work						
		confirmed exempt under CWA 404(f)(1)(C); detailed design not provided					REG			Latitude (N)	Longitude (W)	Elevation (feet)							
Honopou (6034)	Honopou	confirmed exempt under CWA 404(f)(1)(C); detailed design not provided	Not in Conservation District	Not in SMA	Group Permit - Extensive Work (ditch overpass)	Honopou long strainer at Lowrie Ditch	L-15 266.6	2-9-004:039	EMI	20° 54' 32.71"	156° 14' 47.26"	615	YES Unlined channel	Construct stream overpass over ditch.					
Honopou (6034)	Honopou	confirmed exempt under CWA 404(f)(1)(C); detailed design not provided	Not in Conservation District	Not in SMA	Group Permit - Extensive Work (ditch overpass)	Honopou siphon at Lowrie Ditch	L-16 257.6	2-9-004:038	EMI	20° 54' 33.97"	156° 14' 55.28"	638	YES Unlined channel	Construct stream overpass over ditch.					
Honopou (6034)	Honopou	confirmed exempt under CWA 404(f)(1)(C); detailed design not provided	Not in Conservation District	SMA exemption confirmed	Group Permit - Extensive Work (extend wingwall)	Honopou at Haku Ditch	H-8 189.6	2-9-003:042	EMI	20° 54' 53.41"	156° 14' 47.53"	399	YES Concrete masonry	Concrete over diversion intake grate and seal opening below grate with rock and concrete; extend wingwall					
Hanehoi (6037)	Hanehoi	confirmed exempt under CWA 404(f)(1)(C); detailed design not provided	Site Plan - P Subzone	Not in SMA	Group Permit - Extensive Work (ditch overpass)	West Hanehoi intake (Puolua)	NH-17a minor	2-3-014:001	State of HI	20° 53' 11.50"	156° 13' 57.15"	1,187	YES Unlined channel	Construct stream overpass over ditch.					
Hanehoi (6037)	Hanehoi	confirmed exempt under CWA 404(f)(1)(C); detailed design not provided	Site Plan - R Subzone	Not in SMA	Group Permit - Extensive Work (ditch overpass)	East Hanehoi at Lowrie Ditch	L-5a minor	2-9-014:009	EMI	20° 53' 42.40"	156° 13' 27.19"	704	YES Unlined channel	Construct stream overpass over ditch.					
Hanehoi (6037)	Hanehoi	confirmed exempt under CWA 404(f)(1)(C); detailed design not provided	Possible Site Plan - R Subzone/AG	Not in SMA	Group Permit - Extensive Work (ditch overpass)	Hanehoi West #1 at Lowrie Ditch	L-5b minor	2-9-014:009	EMI	20° 53' 47.43"	156° 13' 28.52"	629	YES Unlined channel	Construct stream overpass over ditch.					
Hanehoi (6037)	Hanehoi	confirmed exempt under CWA 404(f)(1)(C); detailed design not provided	Possible Site Plan - R Subzone/AG	Not in SMA	Group Permit - Extensive Work (ditch overpass)	Hanehoi small at Lowrie Ditch	L-5c minor	2-9-014:009	EMI	20° 53' 49.56"	156° 13' 32.28"	653	YES Unlined channel	Construct stream overpass over ditch.					
Hanehoi (6037)	Puolua	likely exempt but may need to resubmit for Corps review once final design is developed	Not in Conservation District	Not in SMA	Group Permit - Extensive Work (ditch overpass or box culvert)	Puolua (Hualo) at Lowrie Ditch (Hanehoi/Receptacle)	L-7a minor	2-9-006:033	EMI	20° 53' 58.40"	156° 13' 45.60"	638	YES Unlined channel	Original: Install pipe or box culvert with wing walls through which ditch can pass beneath stream or construct stream overpass over ditch. Current plan is to lay pipe into ditch with headwalls at tunnel upstream and downstream, backfill ditch over pipe to make level with stream bed.					
Hanehoi (6037)	Puolua	confirmed exempt under CWA 404(f)(1)(C); detailed design not provided	Not in Conservation District	Not in SMA	Group Permit - Extensive Work (ditch overpass)	Hanehoi West #2 at Lowrie Ditch (West Hanehoi)	L-7b minor	2-9-006:033	EMI	20° 53' 59.83"	156° 13' 47.01"	638	YES Unlined channel	Construct stream overpass over ditch.					
Pi'ina'au (6053)	Pi'ina'au	confirmed exempt under CWA 404(f)(1)(C); detailed design not provided	Site Plan - R Subzone	Not in SMA	Group Permit - Extensive Work (ditch overpass)	Hauiohokahine runoff pond at Koolau Ditch	K-30d minor	1-1-002:002	State of HI (FR)	20° 49' 41.60"	156° 10' 15.60"	1,213	YES Concrete masonry	Construct overpass over ditch.					
Pi'ina'au (6053)	Palaehulu	confirmed exempt under CWA 404(f)(1)(C)	Site Plan - P Subzone	Not in SMA	Group Permit - Extensive Work (remove dam)	Hauio small diversions at Hauio Ditch (Hauiohokahine small intake)	K-30b minor	1-1-002:002	State of HI (FR)	20° 48' 59.58"	156° 10' 13.85"	1,964	NO Stone and concrete dam	Remove dam. Also plan to block small ditch downstream of dam.					

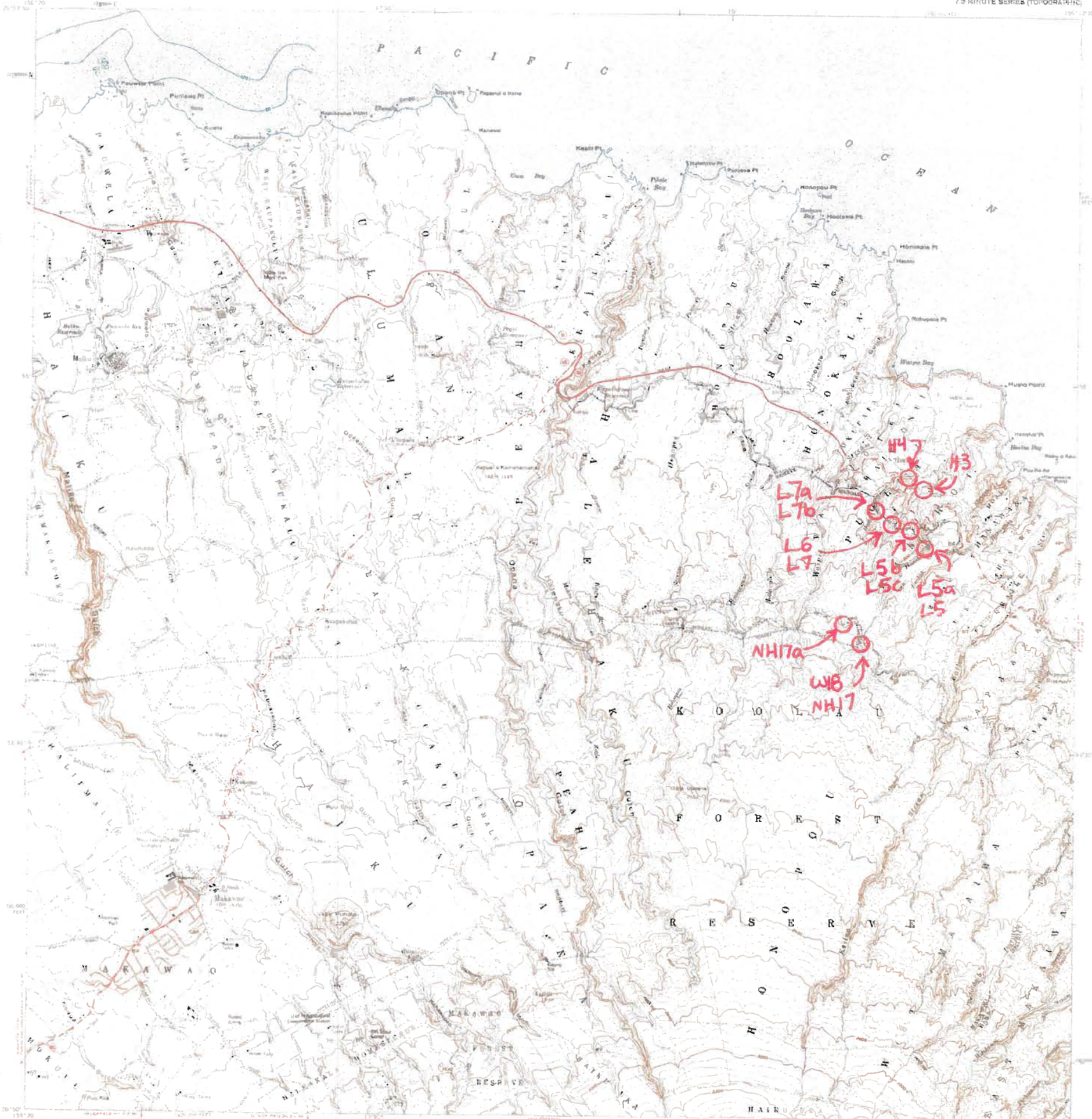


Map(s) edited and published by the Geological Survey
Revised in cooperation with Hawaii Dept. of Transportation
Compiled by USGS and NGS/MS/US
Photography by photogrammetric methods from aerial photographs
taken 1955. Field checked 1987. Revised from aerial photographs
taken 1976. Limestone field check 1987. Map edited 1988.
Schematic hydrographic data compiled from HDS-NGAS (sheet 4124 1982).
This information is not intended for navigational purposes.
Projection and 10,000-foot grid refer to Hawaiian coordinate system
with a spheroid of Mauryan (Cassini) spheroid 1859. One Hawaiian Chain
1000-meter (thousand) distance. Hawaiian grid uses, here, a spheroid
of the international spheroid. To state on the projected map.
American Datum 1983 (used for projection) uses 1983 meters north and
202 meters west as shown by dashed lines on map.
Red line indicates areas of volcanic material (lava flow) that
This map, by showing holdings within the boundaries of
the United States, is hereby placed in the public domain.

SCALE 1:24,000
VERTICAL INTERVAL 40 FEET
ELEVATION IN FEET, MEAN SEA LEVEL
DEPT. LIMITS IN FEET, MEAN SEA LEVEL
HAIKU, HAWAII
7.5 MINUTE SERIES (TOPOGRAPHIC)
A FOLDER SERIES OF TOPOGRAPHIC MAPS AND CHARTS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy Duty
Medium Duty
Light Duty
Unimproved Road
State Route
HAIKU, HAWAII
N 2001 W 10812 207 5
1987

SITE LOCATIONS-HONOPOU STREAM DIVERSIONS

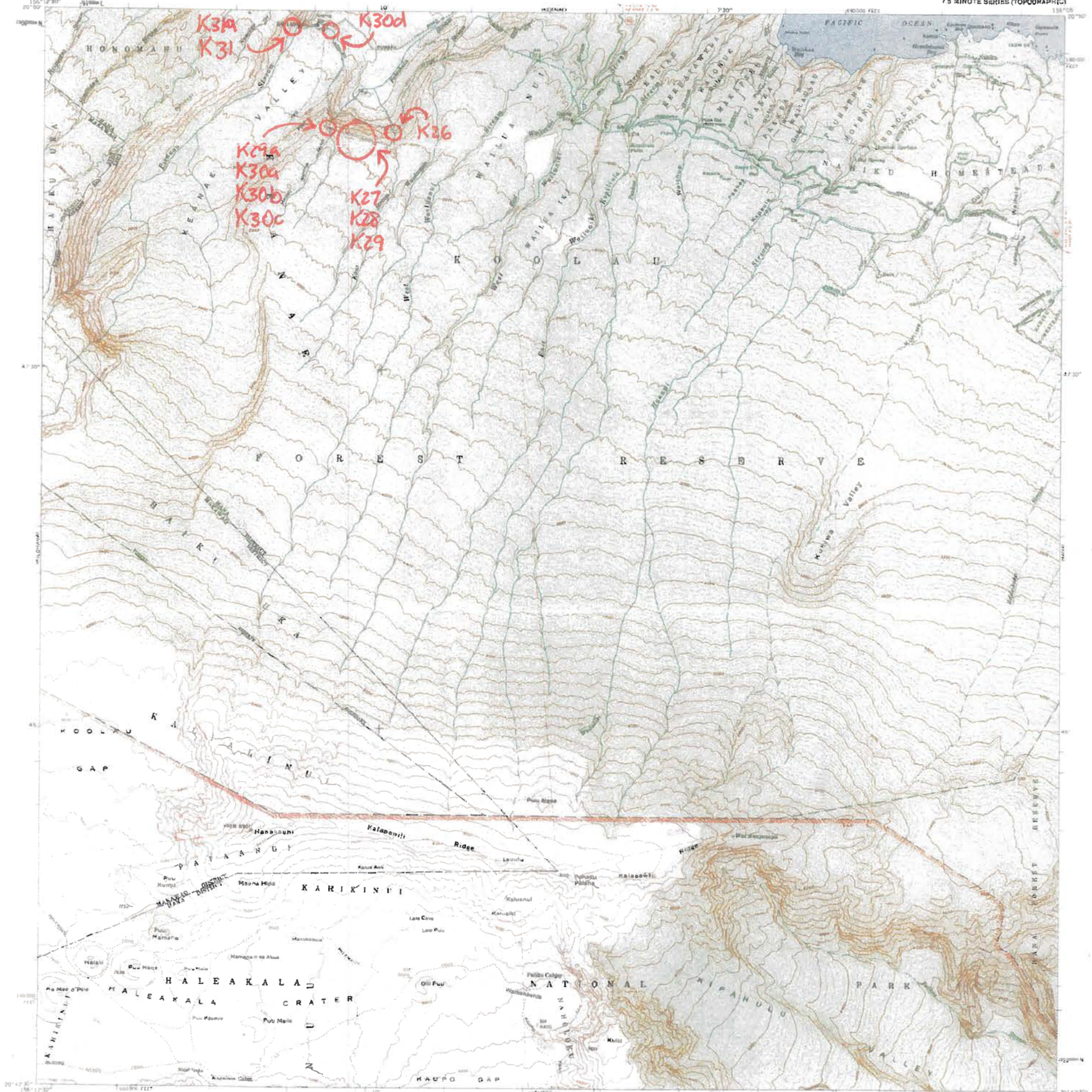


Map edited and published by the Geological Survey
Revised in cooperation with Hawaii Dept. of Transportation
Contract 1005 and 1015/MSA
Topography by photogrammetric methods from aerial photographs
taken 1950. Field checked 1967. Revised from aerial photographs
taken 1970. Contour data from 1961. Map edited 1982.
Selected hydrographic data collected from topographic chart 4124 (1982).
The information is not intended for navigational purposes.
Position and 15,000-foot grid (100) Hawaiian coordinate system
from 4 Hawaiian Islands Chart system 1966. Old Hawaiian Datum
1000-meter Universal Transverse Mercator grid (zone 6) shown
in blue. Transformation applied to data on this sheet from
Hawaiian Datum 1967 using the datum conversion 267 meters north and
323 meters west as shown by dashed corner ticks.
Red and yellow areas on which this sheet is based are shown.
There may be precise readings within the boundaries of
the National Aerial Photography Program on this map.

SCALE 1:24,000
CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL
DEPTH CONTOUR ON 1:24,000 SCALE IS NEAR LOWER LOW WATER
ELEVATION DATA ON THIS MAP IS FROM THE 1982 NATIONAL DATUM
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80226, OR RESTON, VIRGINIA, 20192
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy Rd. Light Rd.
Water Rd. Unimproved Rd.
State Road
HAIKU, HAWAII
1:25000 1982 473
1983

SITE LOCATIONS- HANEHOI (PUOLVA) STREAM DIVERSIONS



Mapped, edited, and published by the Geological Survey
Revised in cooperation with Hawaii Dept. of Transportation
Control by USGS and HDOA/HA
Topography by photogrammetric methods from aerial photographs
taken 1955. Data checked 1967. Revised from aerial photographs
taken 1975. Limited field check, 1981. Map revised 1983.
Projection and 10,000-foot grid data: Hawaii coordinate system,
zone 2 (Strawberry Meridian) Curve of Spheroid 1880. Old Hawaiian Datum
1000-meter Universal Transverse Mercator grid data, zone 4, shown
in blue. International datum, 72 Spheroid (1960) (United States
American Datum 1983) shows the projection lines 356 meters north and
292 meters west of those in dashed contour lines.
There may be slight misalignments with the boundaries of
the National or State Reservations shown on this map.



SCALE 1:24,000
CONTOUR INTERVAL 40 FEET
FOR SALE BY U.S. GEOLOGICAL SURVEY, P.O. BOX 2508, DENVER, COLORADO 80216
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
UNIMPROVED GR
STATE ROAD
RECEIVED
NOV 3 0 2001
NAHIKU, HAWAII
1983

SITE LOCATIONS — PI'INA'AU (PALAUHULU) STREAM DIVERSIONS