



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

STAFF SUBMITTAL

COMMISSION ON WATER RESOURCE MANAGEMENT

October 19, 2021  
Honolulu, Hawai'i

Approve Amendment to Commission Order to Maui Land & Pineapple  
For Modification to Diversion 770 on Honokōhau Stream (Honokōhau Ditch Intake #1)  
Originally Approved on November 20, 2019 in Order to Meet the Instream Flow Standard for  
Honokōhau Stream, Surface Water Hydrologic Unit of Honokōhau (6014), Honokōhau, Maui

SUMMARY OF REQUEST

Staff is requesting that the Commission on Water Resource Management (Commission) consider amending the Order to Maui Land & Pineapple (MLP) made on November 20, 2019 to install a new, remotely-operated, control gate on the intake of Diversion 770 on Honokōhau Stream to Honokōhau Ditch. Following site visits by consultants, installation of required power supply and communications was deemed infeasible, and staff are in support of an alternative to this Order: installation of low-flow and high-flow restrictor plates on the intake grating to keep high stream flows in Honokōhau Stream and remotely-operated control gate on Adit 16.

LEGAL AUTHORITY

Under the Water Code (Code), the Commission as the responsibility of regulating the construction or alteration of stream diversion works. HRS § 174C-93. The Commission may impose such reasonable conditions as are necessary to ensure that the construction or alteration of such stream diversion works will not be inconsistent with the general plan and land use policies of the State and the affected county, or be inconsistent with the protection of instream uses. See HRS § 174C-71 ("Protection of instream uses"). In order to avoid or minimize the impact on existing uses of preserving, enhancing, or restoring instream values, the Commission shall consider physical solutions, including water exchanges, modifications of project operations, changes in points of diversion, changes in time and rate of diversion, uses of water from alternative sources, or any other solution. HRS § 174C-71(E).

## HISTORIC CONTEXT

In 1904, the original Honokōhau Ditch was completed to bring water from Honokōhau and Honolua streams to Māhinahina and Lahaina.

In 1913, the ditch was rebuilt mostly in tunnel to increase efficiency and reduce maintenance costs. The ditch supplied up to 50 million gallons per day (mgd) to Baldwin Packers (and later MLP) and Pioneer Mill. The primary source of water was Diversion 770, also known as Aotaki Weir, a concrete dam across the stream channel and a grated intake at the start of Honokōhau Ditch (Table 1, a and b).

In 1999, Pioneer Mill ceased sugarcane operations.

In 2009, MLP ceased pineapple operations.

In 2018, two hurricanes (Lane and Olivia) caused localized flooding resulting in substantial damage to Diversion 770, both to the release gate at Aotaki Weir and to the intake grate to Honokōhau Ditch (see Table 1, c and d). Flooding also carved a new channel on the east side of the valley around Aotaki Weir, providing for a continuous wetted pathway mauka to makai.

In April 23, 2019, Ka Malu o Kahalawai and West Maui Preservation Association (community groups) filed a formal complaint with the Commission regarding water diverted from Honokōhau Stream and wasted in areas extending south to the Wahikuli hydrologic unit. The waste was tied to the inability of MLP to control the flow diverted by Diversion 770.

In November 2019, at a regularly scheduled Commission meeting, the Commission ordered MLP to upgrade the intake on Diversion 770 with a remotely-operated control gate to regulate the flow diverted (Order). The purpose of this Order was to force MLP to control the intake such that only the volume of water needed by MLP, Department of Hawaiian Home Lands, Maui Department of Water Supply, or others would be diverted from Honokōhau Stream.

In 2020, MLP replaced the damaged intake grates with new ones (see Table 1, e and f).

In June 2021, the Commission established an interim instream flow standard of 8.6 mgd in Honokōhau Stream at McDonald's Dam (elevation 340 feet).

In subsequent discussions with MLP, Kapalua Water (which was then sold to Hawaii Water Service), and their consultant following site visits, it was deemed impractical to supply the energy and communications necessary to operate such an upgrade to intake.

Adit 16 was identified as a location that is more easily accessible for the installation and maintenance of complex power and communications systems (Table 2).

**Table 1.** Images of intake on Diversion 770 at Honokōhau Stream from 2017 (a and b), 2018 post-hurricane Lane (c and d) and 2021 (e and f).

(a)



(b)



(c)



(d)



(e)



(f)



**Table 2.** Images of Adit 16 at Honokōhau Ditch from outside the tunnel (a), the pipeline intake inside the tunnel (b), and the original pipeline going back to the stream (c).



As a result, Commission staff have worked with MLP, their consultant, and the community groups to come up with an alternative to this Order. The alternative requires that new metal plates be installed to restrict low and high stream flows from flowing into Honokohau Ditch (i.e., a coarse adjustment) while installing a remotely-operable valve on a pipeline at Adit 16 (i.e., a fine adjustment) to return flow back to Honokōhau Stream. That is:

- 1) MLP, coordinated by Hawaii Water Service, will install a plywood restrictor plate to serve as a temporary mitigation measure to keep the highest flows in Honokōhau Stream until a permanent restrictor plate can be installed.
- 2) MLP will install a restrictor plate on the new intake grates to keep the lowest flows in Honokōhau Stream from flowing into Honokōhau Ditch.
- 3) MLP will install a restrictor plate on the new intake grates to keep the highest flows in Honokōhau Stream from flowing into Honokōhau Ditch.

- 4) MLP will install a remotely-operable valve and associated power source and communications system to return flow from Honokōhau Ditch back to Honokōhau Stream at Adit 16.

Based on preliminary design plans, Commission staff believes that this modification to the existing infrastructure will not require a Stream Diversions Works Permit to be issued.

This modification to the Order will align with the intentions of the original Order (e.g., keep more water in the stream at the source) and provide for improved management (e.g., remotely operable return flow), while being more practicable in implementation. Installation of complex power, communications, and associated electrical systems and having access to service such systems is more feasible at Adit 16, which can be accessed via a short hike from a jeep road, versus Aotaki Weir, which requires helicopter access.

### RECOMMENDATIONS

Staff recommends that the Commission:

- 1) Approve the modification to the original order from November 20, 2019 to now require the following related to Aotaki Weir and Adit 16:
  - a. MLP, coordinated by Hawaii Water Service, will install a plywood restrictor plate to serve as a temporary mitigation measure to keep the highest flows in Honokōhau Stream until a permanent restrictor plate can be installed.
  - b. MLP will install a restrictor plate on the new intake grates to keep the lowest flows in Honokōhau Stream from flowing into Honokōhau Ditch.
  - c. MLP will install a restrictor plate on the new intake grates to keep the highest flows in Honokōhau Stream from flowing into Honokōhau Ditch.
  - d. MLP will install a remotely-operable valve and associated power source and communications system to return flow from Honokōhau Ditch back to Honokōhau Stream at Adit 16.
- 2) All other orders from November 20, 2019 not explicitly modified by recommendation 1 above remain in full effect.
- 3) Within 90 days, MLP will submit final engineering plans for all plans for approval by staff and modifications to be completed within 1 year.

Ola i ka wai,

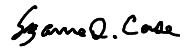


M. KALEO MANUEL  
Deputy Director

Exhibit:

1. Conceptual Restrictor Plate Plan for Honokōhau Diversion 770 from Akinaka & Associates, Ltd., dated October 7, 2021.

APPROVED FOR SUBMITTAL:



SUZANNE D. CASE  
Chairperson



**AKINAKA & ASSOCIATES, LTD.**  
Consulting Civil Engineers

October 7, 2021

Mr. Kaleo Manuel  
Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
State of Hawaii  
1151 Punchbowl St. #227  
Honolulu, HI 96813

Subject: Conceptual Restrictor Plate Plan for Honokohau Diversion 770  
Kapalua, Maui, Hawaii

Dear Mr. Manuel,

In accordance with the conditions established in the Staff Submittal and subsequent decision by the Department of Land and Natural Resources (DLNR), Commission on Water Resource Management (CWRM), we are submitting this conceptual design plan for review and approval based on various discussions with CWRM staff. The property owner, Maui Land & Pineapple Company, retained Akinaka & Associates, Ltd. to perform engineering services and conceptual modifications to the existing Honokohau Stream Diversion 770 to be in compliance with some of the directives made by the Commission on November 19, 2019. The proposed modification is to provide a restrictor plate at the bar screen of the intake to restrict excess water from flowing into the ditch during periods of higher flow.

**Project Background**

Diversion 770 is located on Honokohau Stream within Honokohau Valley (**see Exhibit 1 – Honokohau Ditch Users**). On April 23, 2019, a Formal Complaint was filed by Ka Malu o Kahalawai and West Maui Preservation Association alleging Maui Land & Pineapple Company (MLP) of water waste. In response to the Complaint, CWRM addressed the issue during a Commission meeting on November 19, 2019. During the meeting, CWRM directed MLP to upgrade diversion 770 infrastructure so that it will only divert the water necessary to meet non-instream uses. CWRM also ordered MLP to upgrade the intake at diversion 770 to prevent higher flows from entering Honokohau Ditch that are in excess of non-instream uses. Furthermore, CWRM requested MLP to allow for a remote monitoring and remote operation for water release from Honokohau Ditch back in to Honokohau Stream. It should be noted that there is ongoing coordination to resolve this second issue; however, this submittal only speaks to action items regarding the first issue in preventing high flows from entering the ditch.

On May 18, 2021 CWRM approved to amend the Interim Instream Flow Standards (IIFS) for Honokohau and Kaluanui Streams. The IIFS on Honokohau Stream is to be implemented in two (2) phases. The first phase would take place prior to DHHL implementation of Regional Plan<sup>1</sup> and requires a flow<sup>2</sup> of 8.6 MGD to remain in-stream. MLP is required to meet the IIFS 100% of the time. The second phase would take place upon DHHL initial implementation of Regional Plan. Details of the second phase can be found in the May 18, 2021 CWRM meeting submittals for item B2.

<sup>1</sup> Information on the DHHL Regional Plan can be found in CWRM's April 20, 2021 meeting submittals under item C5

<sup>2</sup> Flow is measured at MacDonalds Dam



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**Conceptual Design**

Based on discussion with CWRM staff, the bar screen at the entrance of diversion 770 was deemed the most feasible place for modifications to restrict higher flows from entering the diversion (**See Exhibit 2 – Site Plan**). The proposed action includes the conceptual design of a metal restrictor plate, running across the entire length of the bar screen (**see Exhibit 3 – Restrictor Plate Detail**). Since the design is still in conceptual phase and we do not have actual dimensions of the bar screen, actual measurements/dimensions were not used. Instead, the restrictor plate was sized relative to existing pictures.

During a September 17, 2021 meeting with representatives from CWRM, MLP, Hawaii Water Service, Akinaka, and Honokohau Valley residents, it was agreed that a temporary mitigation measure would be deployed until the permanent restrictor plate solution was approved and ready to be installed. This temporary mitigation measure includes the installation of a plywood restrictor in lieu of the metal restrictor plate as proposed in this conceptual design. This temporary mitigation measure will be coordinated by Hawaii Water Service.

**Permitting**

It was previously discussed that the work described in this submittal does not require a Stream Channel Alteration Permit (SCAP) or Stream Diversion Works Permit (SDWP); however, we are still getting verification from CWRM on this. It is still unknown whether the work will require other regulatory agency approvals; however, once CWRM approves of a conceptual design plan, the final design/construction plans will go through complete agency review and obtain all necessary approvals.

**Schedule**

A proposed schedule was also created to give an estimate on the amount of time that would be needed to complete all necessary work for the improvements (**see Exhibit 4 – Proposed Schedule**). As mentioned within the exhibit, the schedule assumes no permitting requirements. The schedule also assumes that very few agencies would be required to review the construction plans. This schedule was based on the improvements and work described in this submittal. If CWRM rejects or modifies the conceptual design plan or there are permitting requirements, the schedule would need to be re-evaluated and another tentative schedule would have to be created.





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**Summary**

In response to the order made by CWRM in November of 2019 to restrict excess higher flows from being diverted into the Honokohau Ditch, we respectfully ask for CWRM to approve of this conceptual design plan to install a metal restrictor plate at the bar screen at Diversion 770.

Should you have any questions or need further clarification, please feel free to contact me at 808-836-1900.

Sincerely,



Ken C. Kawahara, P.E.



Attachments:

- 1) Exhibit 1: Honokohau Ditch Users
- 2) Exhibit 2: Site Plan
- 3) Exhibit 3: Restrictor Plate Detail

References:

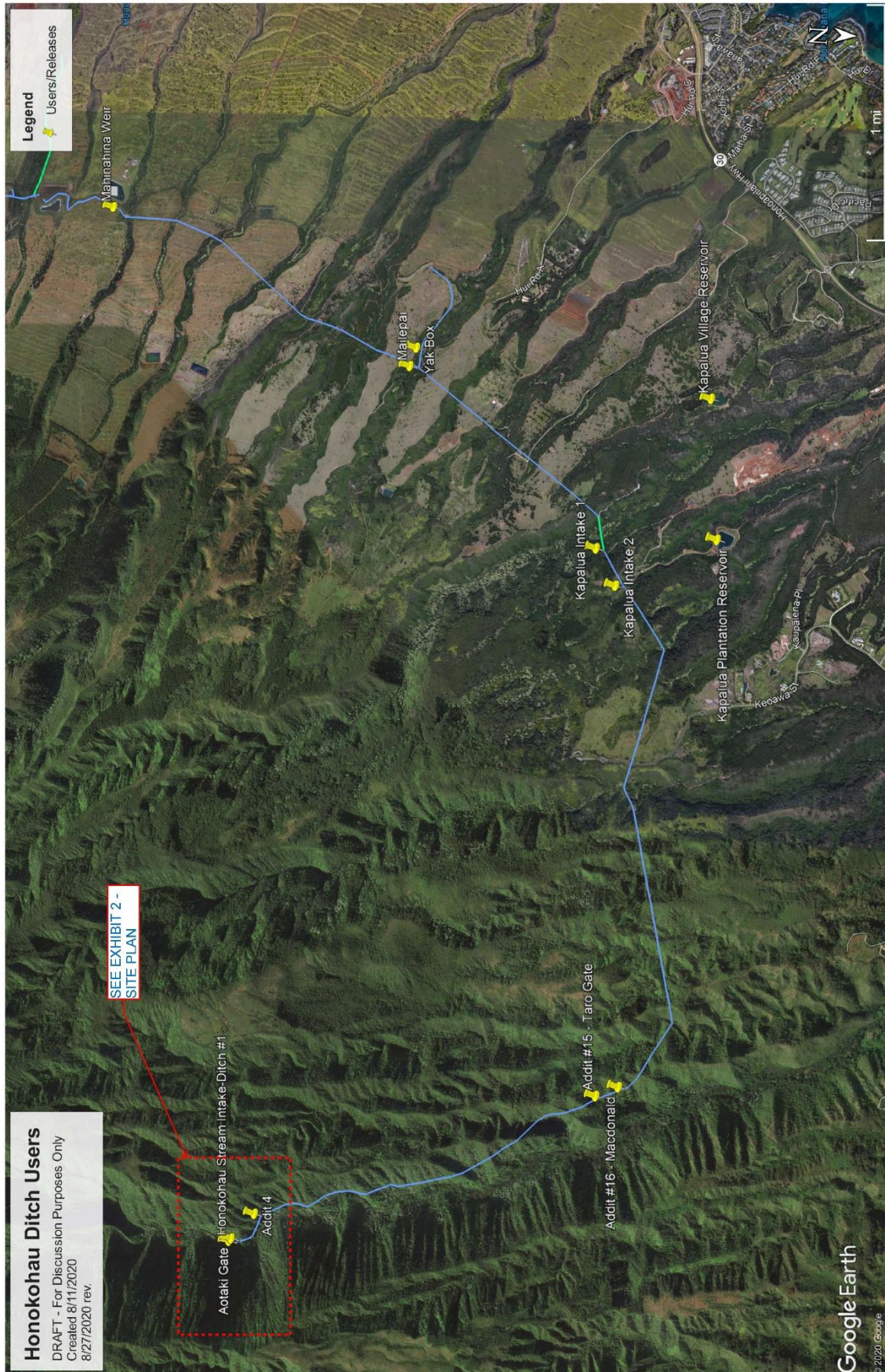
- 1) Reference 1: Staff Submittal from CWRM meeting on November 19, 2019
- 2) Reference 2: Minutes from CWRM meeting on May 18, 2021

cc: *Maui Land and Pineapple Co., Gilbert Keith-Agaran, Hawaii Water Services*



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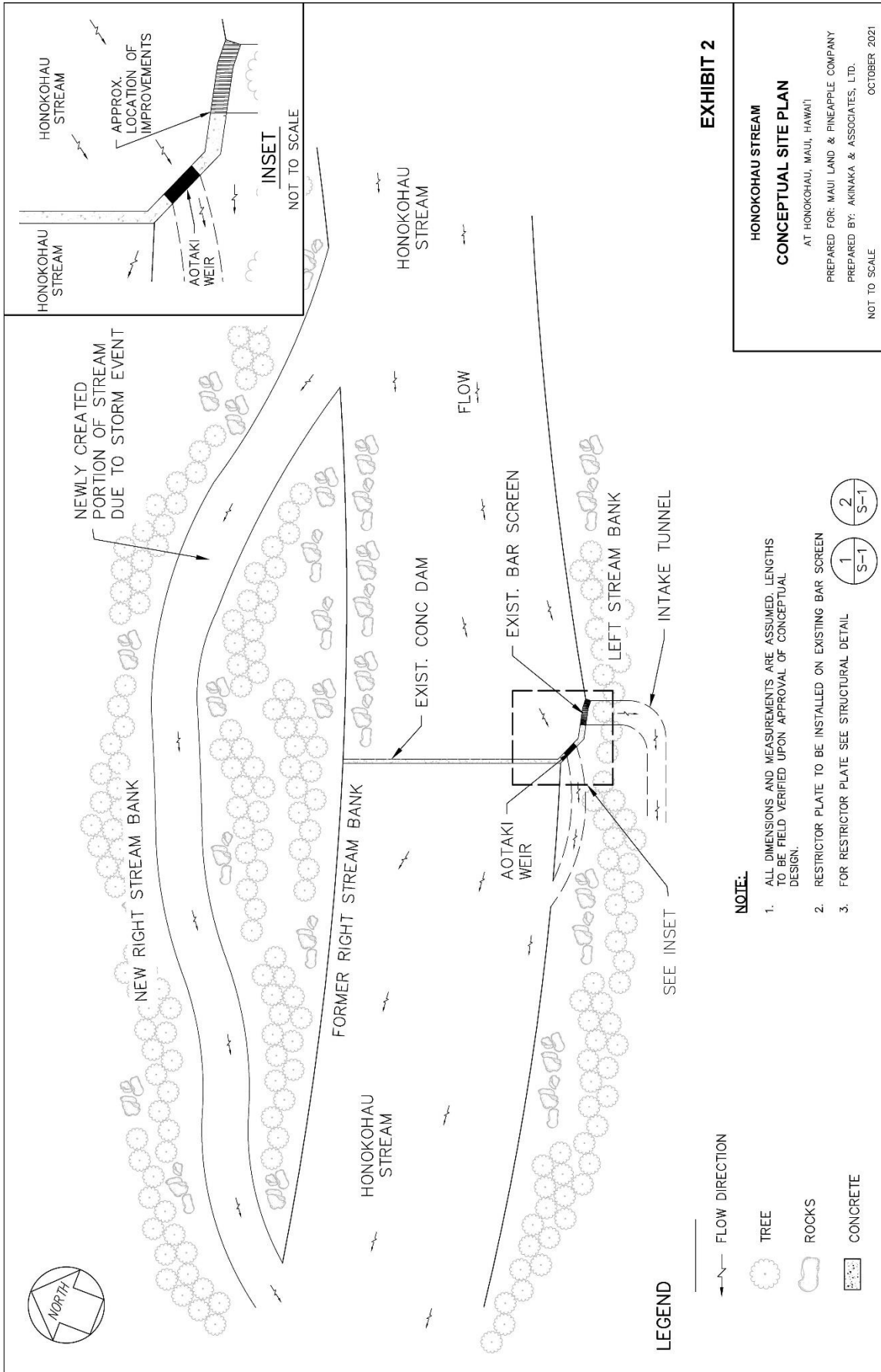
**EXHIBIT 1**





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**EXHIBIT 2**



**EXHIBIT 2**

**HONOKOHAU STREAM  
 CONCEPTUAL SITE PLAN**

AT HONOKOHAU, MAUI, HAWAII  
 PREPARED FOR: MAUI LAND & PINEAPPLE COMPANY  
 PREPARED BY: AKINAKA & ASSOCIATES, LTD.  
 OCTOBER 2021  
 NOT TO SCALE

**NOTE:**

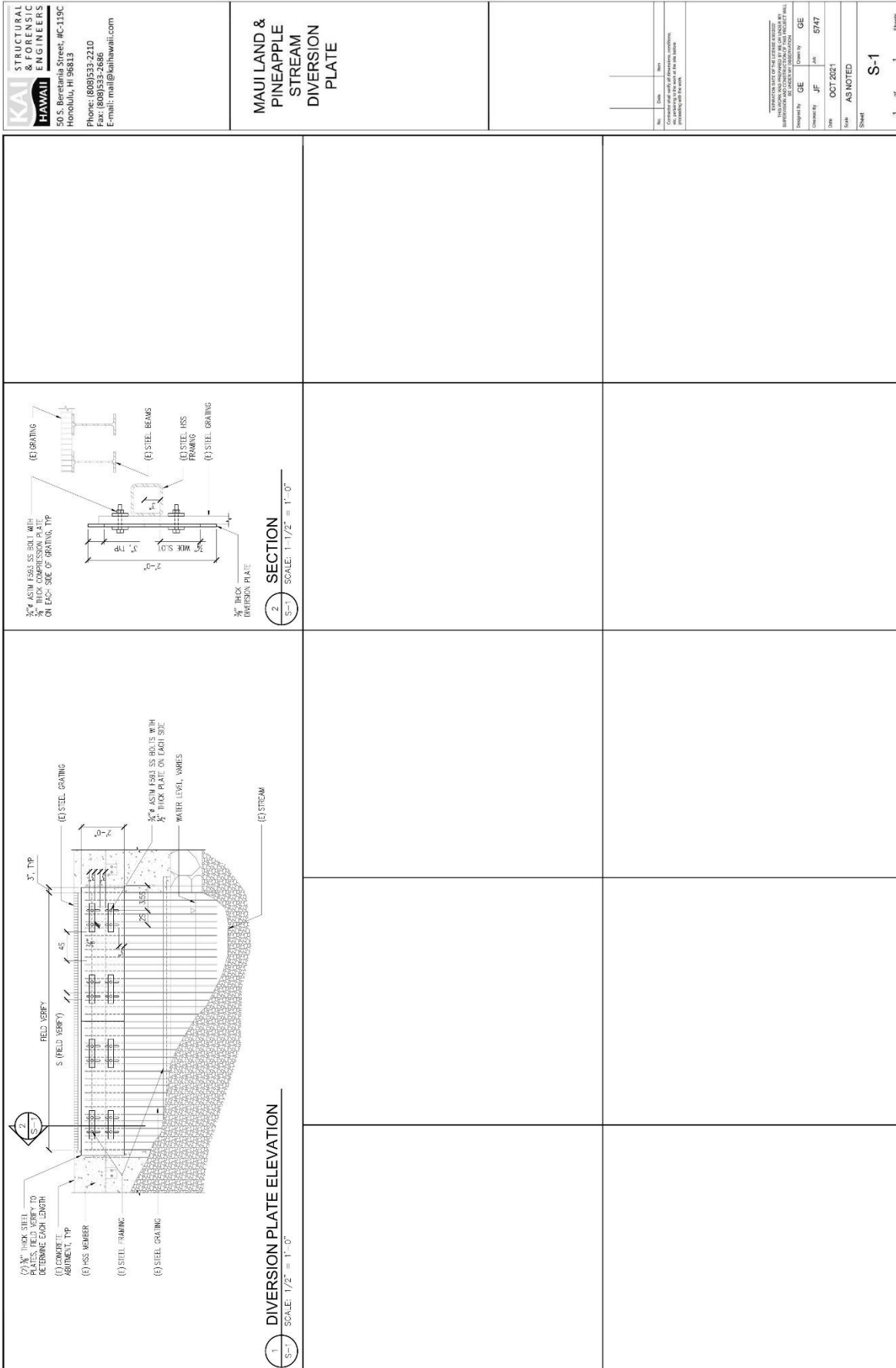
1. ALL DIMENSIONS AND MEASUREMENTS ARE ASSUMED. LENGTHS TO BE FIELD VERIFIED UPON APPROVAL OF CONCEPTUAL DESIGN.
2. RESTRICTOR PLATE TO BE INSTALLED ON EXISTING BAR SCREEN
3. FOR RESTRICTOR PLATE SEE STRUCTURAL DETAIL





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**EXHIBIT 3**





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**EXHIBIT 4**



**Proposed Schedule**

The estimated time frame to install the interim restrictor plate is listed below.

Task	Time to Complete
Inspect project location	2 weeks
Install temporary plywood restrictor plate	1.5 months

The interim restrictor plate can be installed while the permanent restrictor plate is under design.

The estimated time frame to complete the permanent Restrictor Plate Plan for Honokohau Diversion 770 is listed below.<sup>1</sup>

Task	Time to Complete
Complete Design (construction document preparation)	3 months
Bid Document Preparation	1 month
Request for Bids	2 months
Bidder Selection	1 month
Construction	6 months

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<sup>1</sup> Assume no permitting required