STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STREAM CHANNEL ALTERATION PERMIT APPLICATION

For Official Use Only:

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 Applying For: ☒ New ☐ After-The-Fact

2. Type of Construction: ☐ Installation ☒ Modification ☐ Removal

APPLICANT INFORMATION

3. APPLICANT'S NAME / COMPANY	Applicant's Contact Person	Applicant's Phone
U.S. Fish & Wildlife Service	Eldridge E. Naboa	808-435-9754
Applicant's Mailing Address PO Box 1128 Kilauea, Hawaii, 96772	Applicant's E-mail Address eldridge_naboa@fws.gov	

☐ **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 channel alteration work.*

4. LANDOWNER'S NAME / COMPANY	Landowner's Contact Person	Landowner's Phone
Hanalei National Wildlife Refuge, USFWS	Eldridge E. Naboa	808-435-9754
Landowner's Mailing Address PO Box 1128 Kilauea, Hawaii, 96772	Landowner's E-mail Address eldridge_naboa@fws.gov	

5. CONSULTANT'S NAME / COMPANY	Consultant's Contact Person	Consultant's Phone
PND Engineers, Inc.	Brenna Hughes	907-561-1011
Consultant's Mailing Address 1506 W. 36th Avenue Anchorage, AK 99503	Consultant's E-mail Address bhughes@pndengineers.com	

6. CONTRACTOR'S NAME / COMPANY	Contractor's Contact Person	Contractor's Phone
Ahtna Infrastructure & Technologies, LLC	James (JJ) Christy	907-952-6687
Contractor's Mailing Address 110 W. 38th Avenue, Suite 200M Anchorage, AK 99503	Contractor's E-mail Address jchristy@ahtna.net	

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.*
530010070000 and 540030070000 are both federally owned parcels separated by the Hanalei River.

9. Stream / Gulch Name(s) *List all affected streams and/or gulches.*
Hanalei River

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

GENERAL PROJECT INFORMATION

10. Project Type: *Check all that apply.*

☒ Bank Stabilization	☐ Bridge	☐ Channel Alignment	☐ Channel Lining	☐ Culvert	☐ Dam / Dike / Weir
☐ Desilting Area	☐ Drainage Outlet	☐ Dredging	☐ Ford Crossing	☐ Grading	☐ Levee / Flood Wall
☐ Restoration	☐ Retaining Wall	☐ Retention Basin	☐ Stream Gage	☐ Sewer Line	☐ Water Line

☐ Other - Describe:

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

Latitude: 22.1949 N Longitude: -159.4679W Elevation: ft. above mean sea level

12. Structure Dimensions: *(feet)*

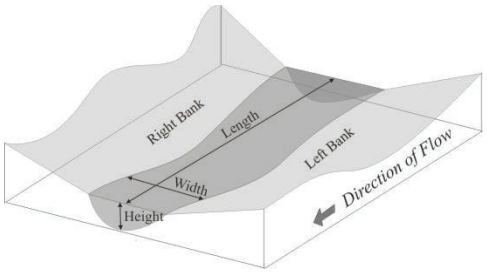
Provide generalized dimensions for the entire project / structure area. If the project includes a pipe (e.g., culvert, drain, etc.), provide the pipe diameter.

Width: 120
Height: 9
Length: 60
Diameter:

13. Structure Location:

Provide the general location of the stream channel alteration structure in relation to the streambank.

☒ Left bank *(downstream view)*
☐ Right bank *(downstream view)*
☐ Across entire stream channel



14. State Land Use Classification: *(Check all that apply)* ☒ Agriculture ☐ Conservation ☐ Rural ☐ Urban

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.

15. Conservation District Use Permit (CDUP): *To find out if your stream channel alteration project 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 channel alteration 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 is a CDUP is required.*

☐ Stream channel alteration 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 channel alteration is not in a Conservation District.

16. 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.* Project is on Refuge land and does not require a county permit.
☐ I have not checked with the County about whether or not an SMA Permit is r

17. 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.

18. 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: _____

The project is on federal lands and a Categorical Exclusion was issued.

This project proposes:

- ☐ Use of state or county lands, or use of state or county funds
- ☐ Use within a state conservation district
- ☐ Use within a shoreline setback area
- ☐ Use within a national or Hawaii registered historic site
- ☐ Use within the Waikiki Special District
- ☐ The construction, expansion or modification of helicopter facility
- ☐ A wastewater treatment unit
- ☐ Waste-to-energy facility
- ☐ Landfill
- ☐ Oil refinery
- ☐ Power-generating facility
- ☒ 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.

	Attached	N/A
19. **U.S. Army Corps of Engineers** (Harbors and Rivers Act, Section 404, Clean Water Act) (in progress)	☒	☐
20. **State Department of Health, Clean Water Branch** (Section 401, Clean Water Act, Water Quality Certification, Best Management Practices Plan)	☐	☒
21. **Right-of-Entry or Right-of-Way Permit** if the proposed stream channel alteration includes State lands. (Chapter 171, Hawaii Revised Statutes)	☐	☒
22. **Hawaii Environmental Policy Act** (Chapter 343, Hawaii Revised Statutes; Title 11, Chapter 200, Hawaii Administrative Rules)	☐	☒
23. **Soil and Water Conservation District**	☐	☒
24. **County Certification of "No-Rise"**	☐	☒
25. **County Grading Permit**	☐	☒
26. **County Discretionary Permit(s)**	☐	☒

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.

27. 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.

Please see attached documentation of Refuge findings during Section 106 consultation.

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

Assessment found that there were no archaeological resources within the Area of Potential Effect, the project would have no effect on characteristics qualifying Hanalei Valley as a traditional cultural place (TCP), and there would be no adverse effect on cultural resources. The attached Section 106 memo describes consultations regarding traditional and customary Native Hawaiian rights.

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

Per the attached Section 106 consultation, the Refuge continues to collaborate with the Commission on Water Resource Management. The USFWS has mandates and processes that have been carefully followed to ensure that Native Hawaiian rights and cultural resources are protected.

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.

30. Describe the overall project scope and objectives.

U.S. Fish & Wildlife Service (USFWS) seeks to stabilize a section of streambank along the Hanalei River in the Hanalei National Wildlife Refuge (Refuge), adjacent to a concrete water supply pipeline inverted air siphon riser. This water supply pipeline provides water for taro farming operations at Refuge wetland management units. The island of Kauaʻi suffered major flooding as a result of several large storms that resulted in emergency proclamations in 2018, 2020, and 2021. These storms caused substantial damage to infrastructure at the Kauaʻi National Wildlife Refuge Complex including the inverted siphon riser and the surrounding areas at Hanalei, therefore, this is a storm damage repair project.

Stabilization of the streambank is necessary to repair damage and prevent further erosion around the siphon riser. Continued erosion could lead to collapse of the siphon riser, which would result in a cutoff of water to irrigation intake system and a loss of water for taro farming and waterfowl habitat. Over the past 10 years, significant flooding events have caused erosion of the Hanalei River and has resulted in an estimated 28,000 tons of sediment deposited into Hanalei Bay.

The Refuge proposes to clear proposed project area as necessary to repair rip rap revetment around the existing ford access road and siphon riser. New materials will include geotextile fabric, crushed aggregate rock, and gravel fill. Fill volumes are predominantly riprap; gravel fill will be incidental in small areas and will be will be clean rock with relatively few fines sourced from on-site or from an established, permitted source. The siphon riser will be shortened by cutting off the top portion and installing a new cover. Cut material from the bank will be reused as fill wherever appropriate. The project will be constructed in one phase, with the north fork of the river being diverted into the south fork temporarily. Supersack cofferdams with plastic sheeting will be used to divert the river into the south fork. Permanent fill will be placed in the river under portions of the upstream cofferdam to allow for diversion feasibility.

31. Describe existing stream channel and streamflow conditions at the site of the proposed stream channel alteration.

The proposed stream channel diversion will utilize an existing channel to route flow around the project area. The project is located on the bank of the river where the channel is split by an island. A cofferdam will be installed from the bank to the island upstream of the work area to redirect flow to the channel on the other side of the island. The channels vary in width and depth but are similar between the two. The channels are approximately 5 feet deep on average at their deepest point, but are also wadeable in some locations. They are approximately 50 feet wide each. According to USGS gage, median monthly flows range from 170 cubic feet per second during summer months and up to 350 cubic feet per second in March.

32. Identify and describe the project components outlined below

A. Materials

- Rock riprap for bank revetment
- Gravel fill for creating a uniform subgrade beneath the riprap
- Geotextile fabric for separating the fine grained native soil from entering the riprap layer
- Supersacks and PVC liner for temporary cofferdam
- Portland cement concrete (PCC) and rebar for manhole repair and modifications

B. Quantities

- Fill (gravel and riprap): 490 cy
- Geotextile fabric: 3,700 sf
- PCC: less than 5 cy

C. Excavation

Excavation is limited to grading bank to revetment subgrade elevations in plans

D. Fill

Fill will include gravel fill to revetment subgrade, riprap revetment, and select gravel fill for temporary diversion

E. Disposal

Materials unsatisfactory for reuse in the project will be placed in the uplands or landfilled off-site

F. Construction methods

Revetment will be placed by:

- dewatering left channel of river by placing filled supersacks with an excavator
- using an excavator to excavate soil, fill to subgrade, and place riprap

G. Temporary facilities

Supersack cofferdams will be used on the left fork of the river to divert flow to the right fork. Pumps will be used to dewater the site at project start and as needed to deal with seepage.

H Expected period of time required for construction

Total time including mobilization, stockpiling, construction and demobilization is anticipated to take 3 months.

I. Liability during construction

33. Describe the project's consistency with county zoning and development plans.
The project is within the Hanalei National Wildlife Refuge and does not impact county zoning or development plans.

34. Identify potential alternatives to the project and describe the relative costs and benefits of each alternative.
N/A. This is a temporary diversion of water away from the structure and bank undergoing repair necessary to provide a work area. The air siphon is an existing structure, so any alternative means of repair would require significantly more stream disruption and cost. Not performing the work would result in ongoing erosion and the eventual failure of the siphon.

SUBMITTALS

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

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

36. Plans / Elevations / Sections: Provide a plan view of the proposed stream channel alteration structure in relation to the stream channel and property boundaries. Elevation and section views of the 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.

37. APPLICANT

Print Name:	Signature:	Date:
Heather Abbey (acting for Eldridge Naboa)	HEATHER ABBEY Digitally signed by HEATHER ABBEY Date: 2026.04.08 15:10:51 -10'00'	4/8/2026

38. CONSULTANT

Print Name:	Signature:	Date:
Brenna Hughes	Brenna Hughes	4/8/2026

39. CONTRACTOR

Print Name:	Signature:	Date:

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

Print Name:	Signature:	Date:

CHECKLIST FOR A COMPLETE APPLICATION and ITEM DESCRIPTIONS (ITEMS 1 - 14)

- □ Fill in the most recent application form (check **http://dlnr.hawaii.gov/cwrm** or call 587-0234 for updates).
- □ Fill in every line which includes Items 1-40, as indicated (total 8 pages).
- □ Enclose a check for $25 payable to the Department of Land and Natural Resources.
- □ Mark the proposed stream channel alteration location on: the appropriate USGS quad map, TMK map, photo and schematic, and attach to the application.
- □ Attach Form LND-APP to identify and obtain authorizations for the project if multiple landowners will be impacted.
- □ Attach a grading plan and cross section profiles showing existing and finish grades, if available.
- □ Attach documentation from CDUP, SMAP, SHPD when applicable regarding Items 15-17.
- □ Attach letters from U.S. Army Corps of Engineers, Hawaii Department of Health, Office of Conservation and Coastal Lands, and appropriate county agencies regarding Items 18-26.
- □ Provide digital copies on CD-ROM or via e-mail, if available.
- □ Obtain the necessary signatures for the application form.

Send the application and maps, copies, and the filing fee to:
Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

PERMIT TYPE

1. **Permit Status:** Indicate whether this application is for a new stream channel alteration project (including medication or abandonment) or if the project has already been completed and an after-the-fact permit is being applied for.
2. **Type of Construction:** Is the permit application for the installation of a new stream channel alteration, or modification or removal of an existing stream channel structure.

APPLICANT INFORMATION

3. **Applicant's Information:** Fill in the information for the applicant. This should be the entity that will be responsible for the maintenance of the stream channel alteration when the project is completed.
4. **Landowner's Information:** Fill in the information for the landowner of the property where the stream channel alteration will be located.
5. **Consultant's Information:** Fill in the information for the consultant who will assist with plan and design preparation for the subject project.
6. **Contractor's information:** Fill in the information for the contractor who will perform the work on the subject stream channel alteration project.

STREAM INFORMATION

7. **Island:** The island name where the stream channel alteration will be located.
8. **TMK:** Tax Map Key number (generally there is no lot number, but where a parcel is divided into two lots, fill in the lot number)
9. **Stream / Gulch Name:** Name of the stream or gulch where the stream channel alteration will be located.

GENERAL PROJECT INFORMATION

10. **Project Type:** Identify the type of work being performed, and select all that apply to the project.
11. **Project Site Location(s):** Fill in stream channel alteration location coordinates taken from a GPS unit at the project site. Units are Degrees, Minutes and Seconds (seconds should be filled out to at least one decimal place; e.g. 19°59'32.8"N, 155°14'51.5"W). If more than one site, attach separate sheet. Elevations should be provided in feet above mean sea level.
12. **Structure Dimensions:** What are the physical dimensions of the stream channel alteration structure that will be located in or adjacent to the stream channel?
13. **Structure Location:** Will the structure be located on the right or left bank (facing downstream) or across the entire stream channel?
14. **State Land Use Classification:** Identify the current State Land Use Classification.

Please see header descriptions for remaining Sections in completing Items 15 to 40.

PROJECT DESCRIPTION

HANALEI RIVER STREAMBANK STABILIZATION

1. PURPOSE

U.S. Fish & Wildlife Service (USFWS) seeks to stabilize a section of streambank along the Hanalei River in the Hanalei National Wildlife Refuge (Refuge), adjacent to a concrete water supply pipeline inverted siphon riser. This water supply pipeline provides water for taro farming operations at Refuge wetland management units. The island of Kaua‘i suffered major flooding as a result of several large storms that resulted in emergency proclamations in 2018, 2020, and 2021. These storms caused substantial damage to infrastructure at the Kaua‘i National Wildlife Refuge Complex including the inverted siphon riser and the surrounding areas at Hanalei, therefore, this is a storm damage repair project.

2. NEED

The Refuge covers 917 acres and was established in 1972 to conserve threatened and endangered species, including five endangered waterbirds. The Refuge contains one of the first protected wetlands in the State of Hawai‘i and partners directly with local farmers to provide waterfowl habitat through the use of irrigation systems in taro fields.

The Hanalei Valley has been used for wetland agriculture for several hundred years. To irrigate the Refuge wetlands and taro patches, water at the southeastern end of the Refuge is diverted from the Hanalei River into an irrigation pipeline which supplies flow to an east and west supply ditch. It then flows northwest and irrigates approximately 115 acres of wetland impoundments (including dikes and ditches) and 160 acres of taro patches.

Water at the Refuge is conveyed beneath the Hanalei River by a 48-inch diameter inverted siphon, which discharges the water into a 48-inch pipeline that feeds multiple lateral Refuge pipelines.

Stabilization of the streambank is necessary to repair damage and prevent further erosion around the siphon riser. Continued erosion could lead to collapse of the siphon riser, which would result in a cutoff of water to irrigation intake system and a loss of water for taro farming and waterfowl habitat. Over the past 10 years, significant flooding events have caused erosion of the Hanalei River and has resulted in an estimated 28,000 tons of sediment deposited into Hanalei Bay.

3. LOCATION

The proposed project is located on the Hanalei National Wildlife Refuge, on the north side of the island of Kaua‘i, Hawai‘i. The Refuge is on federally owned land, and construction activities will only impact USFWS assets and property. In 1998, the Hanalei River was designated as an American Heritage River by Executive Order (EO) 13061. This designation fosters cooperative, community-based efforts for preservation.

Latitude	Longitude	USGS Quad
22.1949 N	-159.4679 W	Hanalei

Zone	Section	Plat	Parcel
5	4	03	4-B

4. ADJACENT LAND OWNERSHIP

Adjacent landowners are listed below.

Landowner	Parcel Number
Princeville Agricultural LLC	540030010000
Hanalei Bison Ranch Land Holdings LLC	540040100002
State of Hawai‘i (Halale‘a Forest Reserve)	540010010000

5. DESCRIPTION

The Refuge proposes to clear proposed project area as necessary to repair rip rap revetment around the existing ford access road and siphon riser. New materials will include geotextile fabric, crushed aggregate rock, and gravel fill. Fill volumes are predominantly riprap; gravel fill will be incidental in small areas and will be will be clean rock with relatively few fines sourced from onsite or from an established, permitted source. The siphon riser will be shortened by cutting off the top portion and installing a new cover. Cut material from the bank will be reused as fill wherever appropriate. The project will be constructed in one phase, with the north fork of the river being diverted into the south fork temporarily. Supersack cofferdams with plastic sheeting will be used to divert the

river into the south fork. Permanent fill will be placed in the river under portions of the upstream cofferdam to allow for diversion feasibility.

5.1 MOBILIZATION

Project material will be trucked from on-island sources to the Refuge via the Kuhio Highway. Material will enter the refuge south of the Hanalei bridge. Material will be stockpiled and staged at, and immediately north of, the project site near the taro fields, via Ohiki Road. Material will be moved and installed onsite using an excavator.

5.2 DEMOBILIZATION

Refuse and excess materials from the project will be reclaimed, recycled, or disposed of as necessary in accordance with applicable regulations. Project equipment will be demobilized to the port of origin according to the contractor's needs and means.

6. QUANTITIES

Material quantities for project activities with the potential to impact protected species are summarized in Table 1. These quantities will be used to support calculations of impact ranges and durations and for analysis of project effects. Fill volumes are predominantly riprap. Gravel fill will be incidental in small areas and will be sourced from project cut volumes or from an established, permitted source if necessary. Permanent impacts include the fill beneath the upstream cofferdam.

Table 1. Permanent Impacts

	Fill Volume (cy)	Cut Volume (cy)	Impact Area (sf)	Impact Area (acres)
Wetlands	130	50	1840	0.04
River	360	160	3350	0.08
Total	490	210	5190	0.12

Table 2. Temporary Impacts

	Fill Volume (cy)	Cut Volume (cy)	Impact Area (sf)	Impact Area (acres)
Wetlands	70	30	2000	0.05
River	330	90	10,000	0.23
Total	400	120	12,000	0.28

7. SCHEDULE AND DURATION:

Construction will occur during the dry season of 2026 to avoid and mitigate delays, danger, and damages from flood events on the Hanalei River. The dry season normally occurs between the beginning of April and the end of September. The duration of the project will last throughout the dry season.

8. BEST MANAGEMENT PRACTICES

Construction will use the following best management practices (BMPs) to prevent impacts to waters of the U.S. (WOTUS):

- Fill/riprap materials placed in WOTUS will be clean blasted rock with relatively few fines to reduce impacts from turbidity and/or sedimentation.
- Fuels, lubricants, and other hazardous substances used during construction will not be stored below the ordinary high-water mark.
- Work will be performed during low stream flows to the extent practicable.
- Construction equipment will be free of leaks, damage, and pollutants.
- Review of best available data on migratory bird nesting will be conducted prior to construction to prevent impacts to protected bird species. If possible, construction will be performed outside of seasonal nesting windows.
- The following BMPs will be utilized to prevent stormwater run-off during construction:
    - Projects impacting more than one acre will have a Stormwater Pollution Prevention Plan (SWPPP) on file with the State.
    - Staking of sensitive areas prior to construction to identify areas to be avoided, including wetlands without planned development.
    - A Stabilized Construction Entrance (a temporary stone-stabilized pad located at points of vehicular ingress and egress on a construction site will mitigate sedimentation and stormwater pollution.).
    - Installation of perimeter control BMPs, providing a temporary barrier to sediment and reducing the runoff velocities of sheet flow from non-vegetated surfaces.
    - Use of weed-free straw wattles to intercept sheet flow and detain small amounts of sediment from disturbed areas.
    - Establishment of a vegetative cover on disturbed areas by seeding with appropriate seed mixes supported with fertilizer and mulch to protect bare soil and bind the soil with roots, thereby providing long-term erosion control.

9. MITIGATION

9.1 AVOIDANCE

WOTUS could not be entirely avoided for this project because the purpose of the project is to protect existing infrastructure that is in WOTUS.

9.2 MINIMIZATION

Incorporation of the proposed BMPs listed above will avoid and minimize impacts to WOTUS to the extent possible.

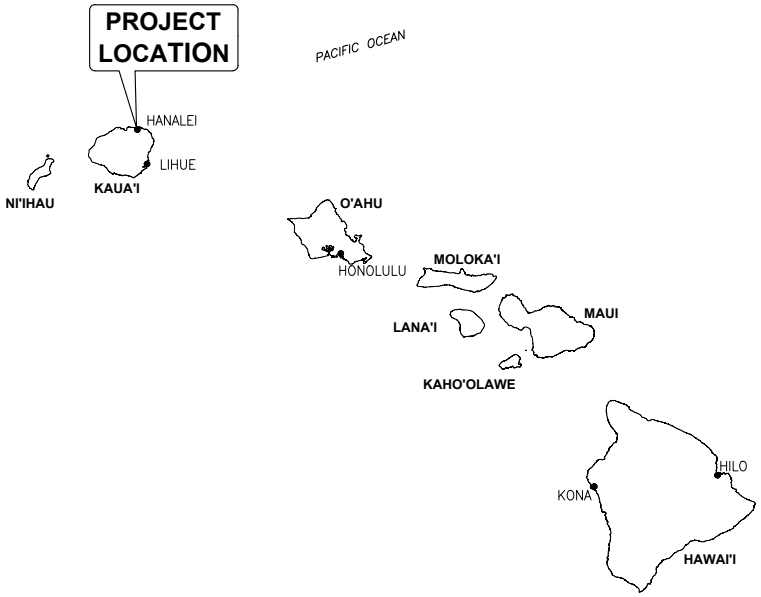
9.3 COMPENSATION

The project results in a very small change to WOTUS. The change does not impact any important habitats, and the project is being constructed in a previously disturbed area. As such, no compensatory mitigation is proposed.

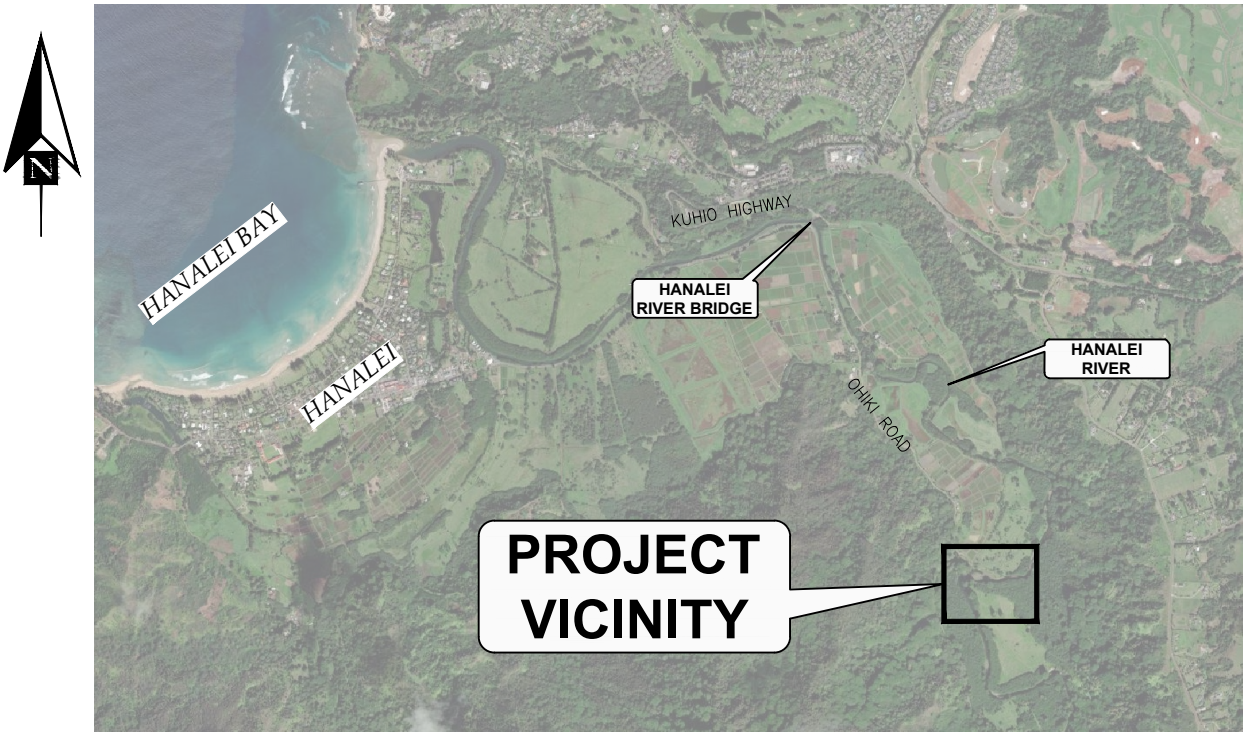
DRAWING INDEX

HANALEI RIVER STREAMBANK STABILIZATION

1. LOCATION AND VICINITY MAP
2. SITE PLAN
3. TEMPORARY DIVERSION PLAN
4. SUPERSACK COFFERDAM DETAIL
5. REVETMENT DETAILS
6. REVETMENT DETAILS



STATE OF HAWAII



PURPOSE:
INSTALL REVETMENT TO PREVENT BANK EROSION AND PROTECT EXISTING SIPHON

DATUM:
NAVD88

FILE NO.: POA-XXXX-XXXX

APPLICANT:
US FISH AND WILDLIFE SERVICE

LOCATION:
TMK 454003007

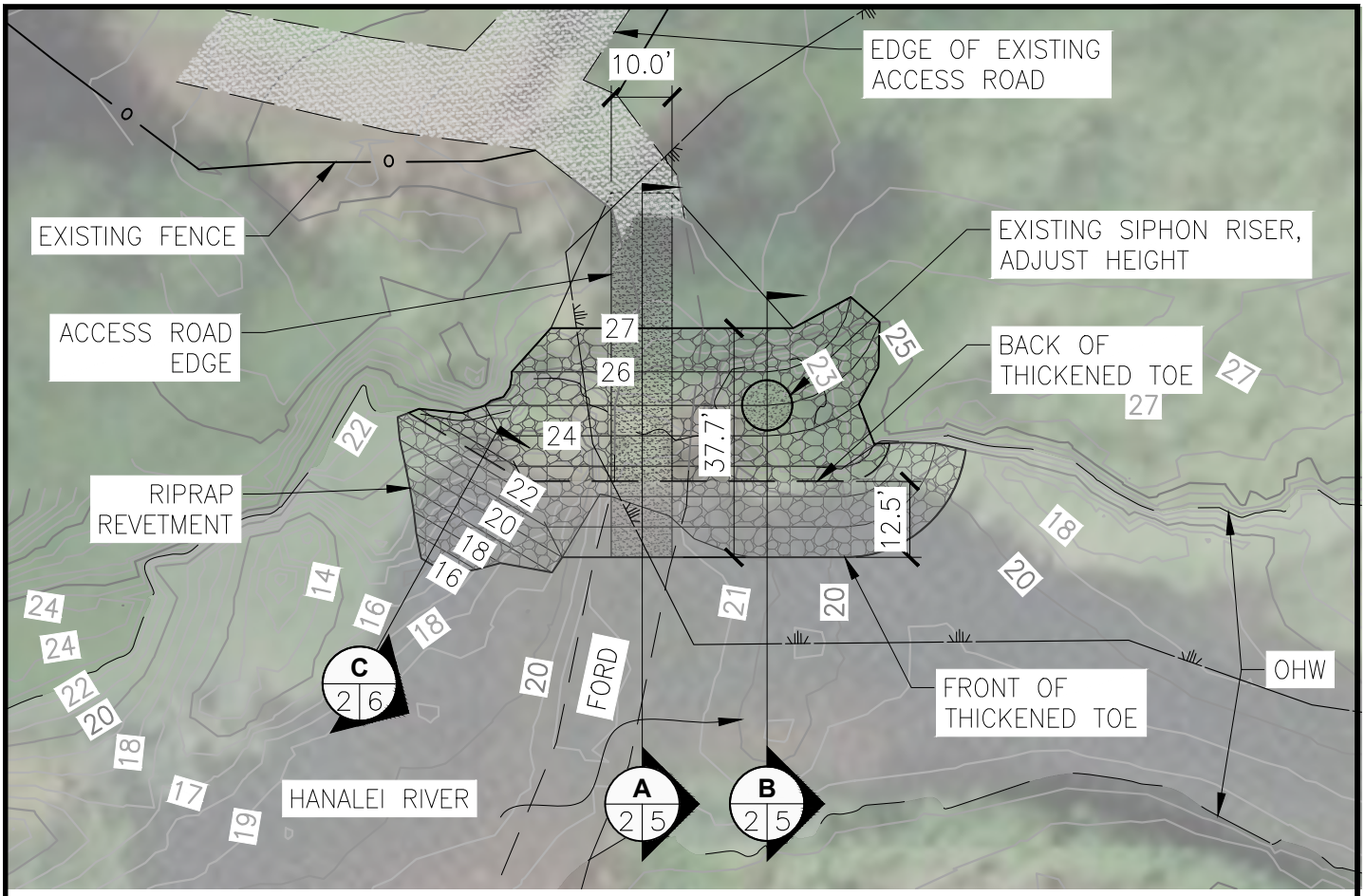
REFERENCE:
APPLICANT: USFWS
PROPOSED: HANALEI RIVER STREAMBANK STABILIZATION

LATITUDE: 22.1949° N

LONGITUDE: -159.4679° W

AT: HANALEI, HI

9/3/25



LEGEND

- PROPOSED RIPRAP FILL
- PROPOSED ACCESS RAMP
- HANALEI RIVER
- ORDINARY HIGH WATER (OHW)
- GRADING CONTOURS
- NATIONAL WETLAND INVENTORY (NWI) WETLAND BOUNDARY
- RIVER FORD PATH

PERMANENT IMPACTS

WOTUS TYPE	FILL VOLUME (CY)	CUT VOLUME (CY)	IMPACT AREA (SQFT)	IMPACT AREA (ACRES)
NWI-MAPPED WETLANDS	130	50	1840	0.04
HANALEI RIVER	360	160	3350	0.08
TOTAL	490	210	5190	0.12

TEMPORARY IMPACTS

WOTUS TYPE	FILL VOLUME (CY)	CUT VOLUME (CY)	IMPACT AREA (SQFT)	IMPACT AREA (ACRES)
NWI-MAPPED WETLANDS	70	30	2000	0.05
HANALEI RIVER	330	90	10,000	0.23
TOTAL:	400	120	12,000	0.28

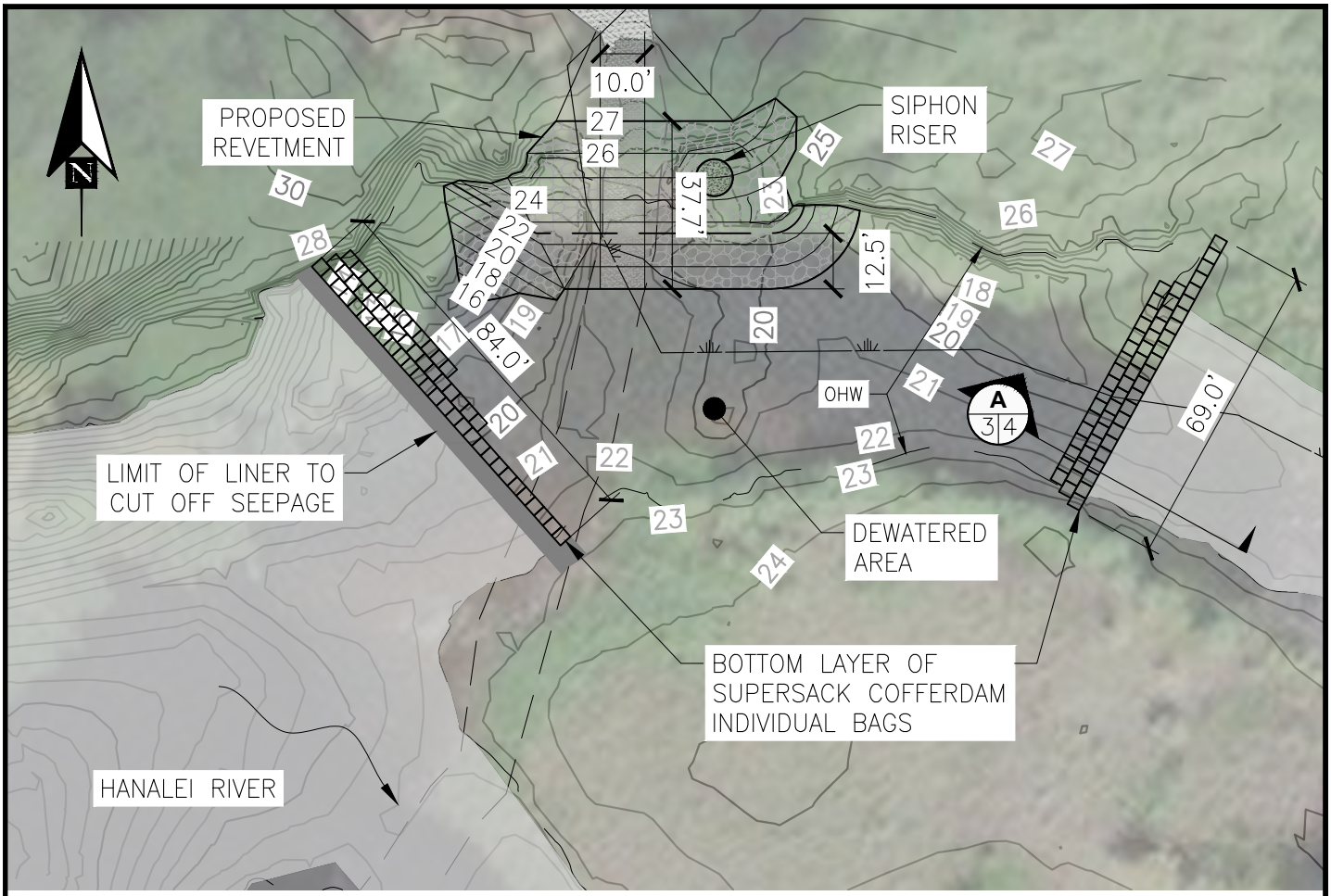
N

0 10 20 30 60 90 FT

SITE OVERVIEW

REFERENCE:
APPLICANT: USFWS
PROPOSED: HANALEI RIVER STREAMBANK STABILIZATION
LATITUDE: 22.1949° N
LONGITUDE: −159.4679° W
AT: HANALEI, HI

9/3/25



LEGEND

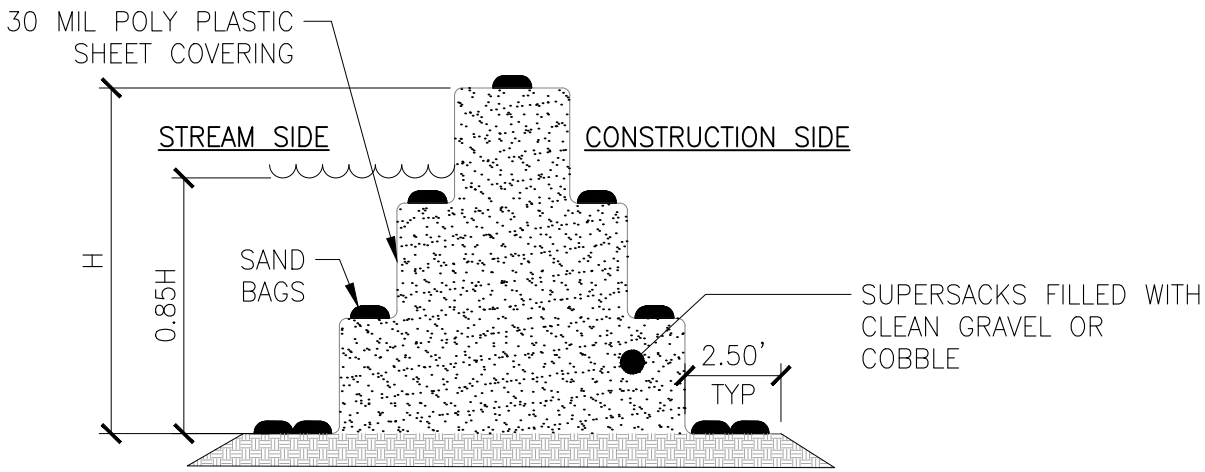
- PROPOSED RIPRAP FILL
- PROPOSED ACCESS RAMP
- HANALEI RIVER
- ORDINARY HIGH WATER (OHW)
- GRADING CONTOURS
- NATIONAL WETLAND INVENTORY WETLAND BOUNDARY

0 20 40 80 120 FT

TEMPORARY DIVERSION PLAN

REFERENCE:
APPLICANT: USFWS
PROPOSED: HANALEI RIVER STREAMBANK STABILIZATION
LATITUDE: 22.1949° N
LONGITUDE: −159.4679° W
AT: HANALEI, HI

9/3/25



A/3|4 **SUPERSACK COFFERDAM SECTION**

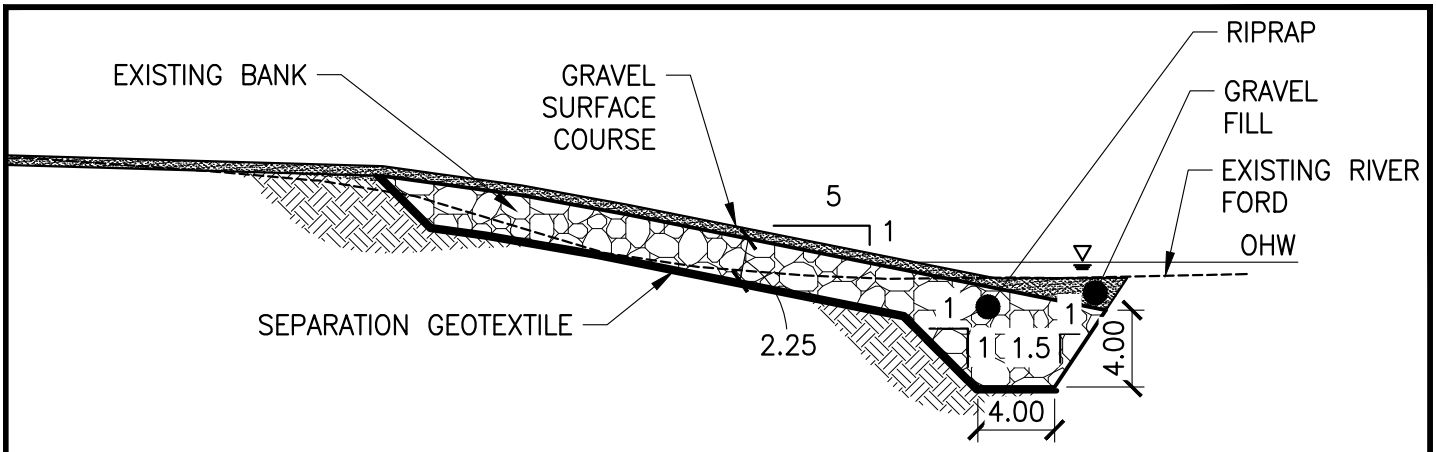
NOTES:

1. IF WATER LEVEL RISES ABOVE 0.85 TIMES THE HEIGHT OF THE SUPERSACK, ADDITIONAL SUPERSACKS ARE NEEDED. THE BOTTOM ROW SHOULD CONSIST OF THREE SUPERSACKS SIDE BY SIDE WITH TWO SUPERSACKS PLACED SIDE BY SIDE IN THE MIDDLE FOLLOWED BY A ROW OF SUPERSACKS ON TOP
2. PLACE SAND BAGS ALONG SUPERSACK COFFERDAM AS REQUIRED TO SECURE POLY PLASTIC SHEETING.
3. OVERLAP POLY PLASTIC SHEETING EDGES A MINIMUM OF 12". PLACE TOP OVERLAP ON THE UPSTREAM SIDE, SO THAT THE TOP OVERLAP IS IN THE DIRECTION OF FLOW.

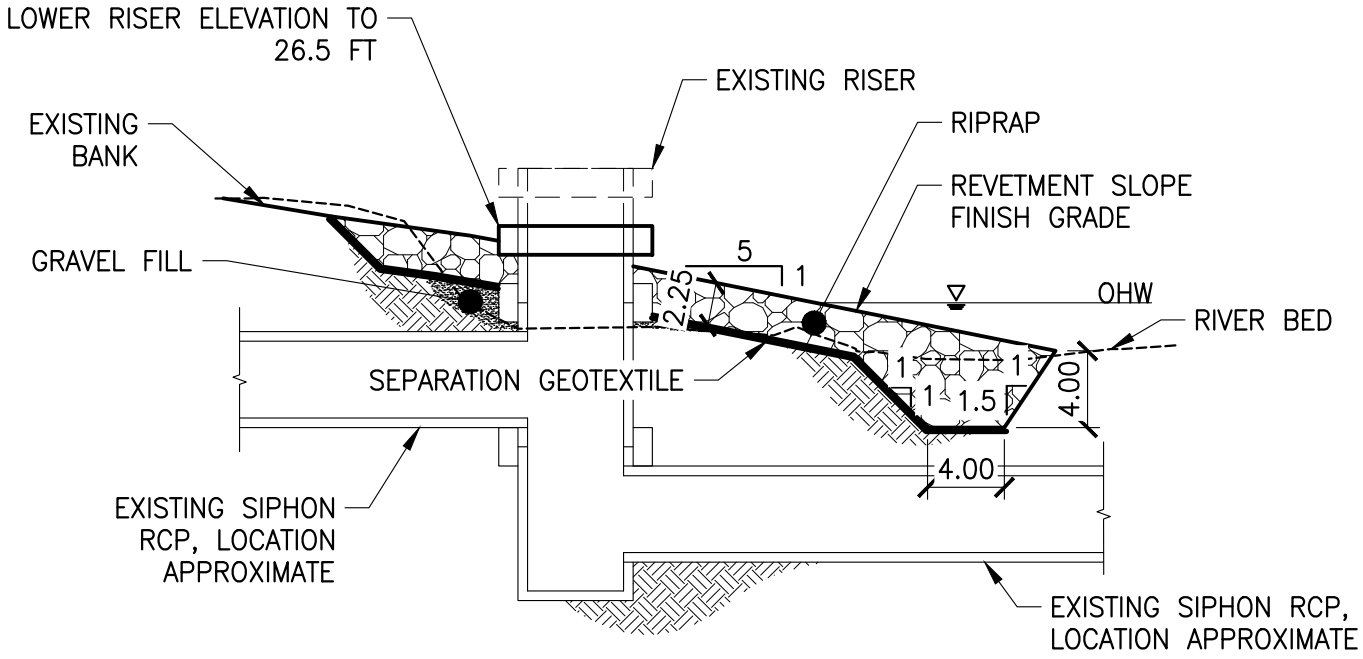
SUPERSACK COFFERDAM SECTION

SECTION NOT TO SCALE

REFERENCE:
APPLICANT: USFWS
PROPOSED: HANALEI RIVER STREAMBANK STABILIZATION
LATITUDE: 22.1949° N
LONGITUDE: −159.4679° W
AT: HANALEI, HI



A 2|5 **REVETMENT SECTION**

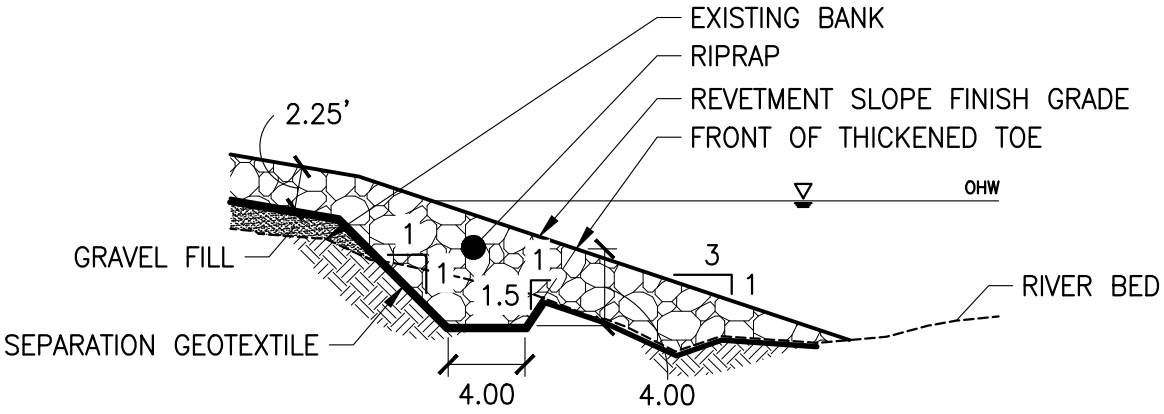


B 2|5 **REVETMENT SECTION**

REVETMENT SECTIONS

SECTIONS NOT TO SCALE

REFERENCE:
APPLICANT: USFWS
PROPOSED: HANALEI RIVER STREAMBANK STABILIZATION
LATITUDE: 22.1949° N
LONGITUDE: −159.4679° W
AT: HANALEI, HI



C 2|6 **REVETMENT SECTION**

REVETMENT SECTIONS

SECTIONS NOT TO SCALE

REFERENCE:
APPLICANT: USFWS
PROPOSED: HANALEI RIVER STREAMBANK STABILIZATION
LATITUDE: 22.1949° N
LONGITUDE: −159.4679° W
AT: HANALEI, HI

SHEET 6 of 6 9/3/25