

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**

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DEPUTY DIRECTOR

November 17, 2021

2021/SMA-45(JS)

The Honorable Tommy Waters  
Chair and Presiding Officer  
and Members  
Honolulu City Council  
530 South King Street, Room 202  
Honolulu, Hawaii 96813

Dear Chair Waters and Councilmembers:

SUBJECT: Special Management Area (SMA) Use Permit Application  
File No. 2021/SMA-45  
Punaluu Watershed - Koolauloa  
Tax Map Keys 5-3-001: 041 and 052, and 5-3-003: 001

We recommend approval of this application for an SMA application for the Punaluu Stream Restoration Project. Our recommendation includes the standard conditions relating to archaeological resources, protected species, and approvals from other governmental agencies.

Attached for your consideration are: 1) Our Findings, Recommendation, and draft Resolution; and 2) the Transcript of the public hearing held on October 15, 2021.

Pursuant to Chapter 25, Revised Ordinances of Honolulu, the City Council must act within 60 calendar days after receipt of our Findings and Recommendation; however, the City Council may extend this period of time upon receipt of a request from the Applicant for an extension. The extension is not automatic and thus, if an extension of time is not requested in a timely manner, the application may be denied due to Council's time deadline.

**DEPT. COM. 767**

The Honorable Tommy Waters  
Chair and Presiding Officer  
and Members  
November 17, 2021  
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Should you should have any questions, please contact me at (808) 768-8000.

Very truly yours,



Digitally signed by Uchida, Dean  
Date: 2021.11.15 08:43:49 -10'00'

Dean Uchida  
Director

Attachments

APPROVED BY



Michael D. Formby  
Managing Director

DEPARTMENT OF PLANNING AND PERMITTING  
OF THE CITY AND COUNTY OF HONOLULU

STATE OF HAWAII

IN THE MATTER OF THE	)	
APPLICATION	)	
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BY	)	
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BERNICE PAUAHI BISHOP	)	
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FOR A	)	
	)	
SPECIAL MANAGEMENT AREA	)	
USE PERMIT	)	

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FINDINGS OF FACT, CONCLUSIONS  
OF LAW AND RECOMMENDATION

I. GENERAL INFORMATION

A. Basic Information:

APPLICANT/LANDOWNER:	Trustees of the Estate of Bernice Pauahi Bishop - Kamehameha Schools
AGENT:	ICF International (Brendan Belby)
LOCATION:	Punaluu Watershed – Koolau Loa (Exhibit A)
TAX MAP KEYS:	5-3-001: 041 and 052, and 5-3-003: 001
LAND AREA:	599 Acres
PROJECT AREA IN SPECIAL MANAGEMENT AREA (SMA):	53.1 Acres (Exhibit B)
EXISTING ZONING DISTRICTS:	AG-2 General Agricultural, Country, and P-1 Preservation Districts (Exhibit C)
STATE LAND USE DISTRICTS:	Urban, Agricultural, and Conservation Districts (Exhibit D)
SURROUNDING LAND USES:	Agricultural uses to the north, preservation lands to the west and south, and residential uses and Punaluu Beach to the east

- B. Proposal: The Applicant proposes work within the Punaluu watershed to provide flood mitigation measures, restore Punaluu Stream, and enhance the surrounding ecosystem. The restoration work includes cutting, grading, and fill operations to lower elevations on the floodplain and create new setback berms that will allow the Punaluu Stream to naturally meander and allow high flows to spill out of the Punaluu Stream channel and spread out into a designated floodway. All work will contribute to a larger floodplain and stream corridor than currently exists to temporarily store floodwaters. It is designed to trap sediment on the floodplain and estuary before it reaches Kamehameha Highway and nearshore environments, improve flood conveyance, and restore geomorphic and ecologic processes. Additionally, chronically flooded agricultural lands will be relocated to the floodplain margins on elevated terraces, and Green Valley Road will be relocated (see Exhibits F through V). This work collectively will be referred to as the Project.

The primary restoration objective of the Project is to develop sustainable flood protection and restore hydrologic processes in the Punaluu watershed altered by previous users, with a focus on the lower reach of Punaluu Stream and its floodway. The comprehensive restoration design would reduce flooding along Punaluu Stream using natural materials and methods that augment natural physical processes, are aesthetically pleasing, are sustainable with little to no maintenance, and are acceptable to the Punaluu community, all while enhancing aquatic and wetland habitats. Key components of the restoration design are to restore a natural valley floodplain and terrace landscape; re-designate land uses so that farm fields on chronically flooded agricultural lands are relocated to the floodplain margins on elevated terraces; and create a new stream corridor with a new riparian forest that restores a floodplain connection with Punaluu Stream.

The Project area encompasses 121 acres; about 53.1 acres are located within the SMA. The 121 acres include approximately 76-acres where earthwork would occur to recontour the topography, as well as acreage on the site designated for construction access, equipment staging, and land that would be re-vegetated without cutting or filling the ground surface. Although the SMA Use Permit will only authorize development within the 53.1-acre area along the lower reaches of the Punaluu Stream and its floodplain, potential impacts to coastal resources related to the entire Project area were also analyzed as part of the SMA Use Permit process. The total cut within the SMA will be about 114,510 cubic yards over 26 acres and the total fill within the SMA will be about 61,056 cubic yards over 13 acres.

The construction components of the Project include the following:

1. Create new estuary channel and improve Kahana sub-basin drainage. The Project will convert Punaluu Ditch into a new estuary channel located in the SMA with a riparian forest corridor that conveys the vast majority of Kahana runoff into the newly created corridor and estuary on Punaluu Stream, thus



allowing sediment loads generated from the Kahana sub-basins to deposit in the estuary instead of direct transport into the coral reefs of the nearshore environment. According to the Applicant, this will dramatically reduce the amount of flow conveyed to the undersized highway culvert. The new estuary channel will be created in natural floodplain soils by excavating on approximately 0.5 acres of the floodplain along the Punaluu Stream. In addition, 2,005 linear feet of turbidity curtains will be installed along the edge of the existing stream channel to further isolate the work area from active stream flow. Continuous stream flow will be maintained in the channel during any in-stream and adjacent stream channel construction activities to provide connection to the ocean. Once the floodplain excavation is complete, the berm will be removed to complete the channel excavation. The turbidity curtains will be removed when the turbidity has settled and the water has clarified in the estuary channel. All earthwork in and along the channel will occur within the lower reach that is tidally controlled. No major diversions or discharge of water is proposed as part of the channel excavation (see Exhibit F).

2. Remove artificial stream bank berms. The Project will remove about 7,000 linear feet of berms, with about 4,000 linear feet of which are located within the SMA, to restore natural channel bank heights. Elimination of the berms will remove an artificial constraint to the stream's ability to naturally meander. This will enable the channel to gradually regain a more natural channel path into the new floodplain corridor. Sections of the stream banks will be lowered to reconnect the channel to the floodway (see Exhibit F).
3. Excavate historic floodplain fill and create a floodplain corridor. This element of the Project involves excavating approximately 29 acres of floodplain between the Punaluu Stream and the proposed relocated Green Valley Road to restore natural floodplain elevations and contours. Most of the excavated material will consist of fill placed on the floodplain to artificially raise the floodplain elevations to the point that the floodplain hydrologically functions now more as a terrace than a floodplain. Much of this fill removal will occur within the SMA. Punaluu Stream's floodplain corridor will be changed from the existing 100- to 125-foot-wide corridor into a new corridor that is over 700 feet wide, on average. This new corridor landscape within the SMA is based on the natural way the river sediments change the geology of the area over time, so the Kahana (southern) hill slope transitions naturally into a terrace, elevated above the floodplain that, in turn, transitions into a lower elevation floodplain and stream channel (see Exhibit F).
4. Raise ground to create areas for agricultural uses. Much of the soil from the excavation of the historic floodplain fill will be placed in another area of the SMA south of Punaluu Ditch to create an elevated area where farmers

can continue with agriculture. This feature is also a part of the natural way the river sediments would change the geology of the area, because field terraces are naturally formed at elevations above the new floodplain. The new farm fields will be more productive agricultural lands than the ones currently found along Punaluu Stream because they will be elevated above the flood flows (see Exhibit F).

5. Relocate Green Valley Road. The unpaved Green Valley Road currently aligned along the stream's south bank in the SMA will be relocated away from the channel to the top of a newly-constructed berm that will elevate the road out of the floodplain. The new road will be unpaved. About two-thirds of the relocated road will be located within the SMA. This berm will be approximately 20 feet wide and extend approximately 2,800 feet long from the Kamehameha Highway starting point. The berm will be constructed of materials excavated from other areas, with the top one foot of material composed of gravel or sand wrapped with geotextile material. The relocated road will form the southern boundary of the new approximately 4,200 feet long, 70-acre floodplain corridor. The road will be elevated about three to five feet, on average, within the SMA to prevent floodwaters from entering the southern side of the valley where excavated fill will be placed on the upland side of the berm to create new productive agricultural lands. Five culverts (four within the SMA) will be constructed under the relocated road to route Kahana runoff into the new estuary channel and Punaluu Ditch (see Exhibit F).
6. Create a Punaluu Stream estuary. Historic imagery shows Punaluu Stream used to have a larger and more open estuary than currently exists. The Project will excavate approximately two acres of land to a depth of three feet to create a new estuary entirely within the SMA. Much of the existing Hau bush will be removed to create an open estuary that will not only improve flood conveyance, but will also trap sediment before it can be delivered to coral reefs in the nearshore environment (see Exhibit F).
7. Create ancillary agricultural use area. Excess material excavated from the Punaluu floodplain will be used to construct an elevated pad within the SMA of approximately five acres immediately south of where Punaluu Ditch intersects Kamehameha Highway. The site will be elevated three to four feet above the existing ground to keep it dry during low to moderate flood events and keep all existing soils on site and out of local landfills (see Exhibit F).
8. Modify wetlands. One existing wetland within the SMA will be adversely impacted as part of the Project. The Hau wetland will have 0.10 acres of cut (removal) and 0.30 acres of permanent fill placed in it as part of grading to elevate the land for agriculture and the proposed ancillary agricultural center (a total loss of 0.40 acres). The source of fill will be soil

from floodplain and estuary excavation. The Project will also put 0.53 acres of permanent fill composed of natural alluvium (silt) in the open water of Punaluu Ditch as part of site grading. The source of fill will be soil from floodplain and estuary excavation. Of this, only 0.06 acres of the existing ditch will lose its aquatic function in a section immediately downstream of the proposed estuary channel. In the other 0.47 acres the fill will be placed to improve conveyance of the existing ditch.

Enhancements of existing aquatic features include removal of 0.47 acres of material from Punaluu estuary open water to enhance existing wetland function. The Project will create new wetlands as well. Excavation to expand the existing estuary will create an additional 0.78 acres of estuary, which when combined with the 0.47 acres of enhancement, will lead to restoration of 1.25 acres of estuarine wetland. Furthermore, construction of the new estuary channel will restore 0.49 acres of new freshwater-emergent acres. Therefore, in total, the Project will restore 1.74 acres of new estuarine and freshwater wetland habitat within the SMA, for a net gain of 1.28 acres after the loss of 0.40 acres of the Hau wetland and 0.06 acres of Punaluu Ditch open water.

9. Replant with native vegetation. The existing riparian corridor surrounding the Punaluu Stream is comprised almost entirely of non-native and overabundant invasive species. The non-native vegetation in this area will be cleared and grubbed as part of the Project. After construction work is complete, native vegetation will be planted in the new estuary and in a 50-foot-wide corridor along both banks of Punaluu Stream and in the Punaluu Estuary Channel.

Earthwork will involve clearing, grubbing, grading, excavation, dredging, and fill operations. All earthworks will occur in and along previously altered areas of the Punaluu Stream channel. Construction activities will include the use of heavy earthmoving equipment; work hours will be restricted to weekdays between 7:00 a.m. and 6:30 p.m. As active farming will be occurring mauka of the site, construction areas will be designed to provide continual access for farmers to active farmlands.

Prior to conducting any grading operations, land will be cleared and grubbed. Clearing will include removal and disposal of all unwanted surface material, such as non-native trees, brush, grass, weeds, downed trees, and other material. Some trees may be retained and protected during construction (e.g., Polynesian, introduced species and large trees important to the structural integrity of the stream bank). Prior to the start of construction, tree protection zones will be established around these trees so that they are retained and protected from injury or damage. Grubbing activities will include removal and disposal of all unwanted vegetative matter from underground, such as stumps, roots, buried logs, and other debris. Cleared debris, as well as non-native and invasive

vegetation, will be disposed of at an authorized disposal site. Cleared native vegetation will be chipped into slash and stockpiled as mulch on cleared land.

Fill will be composed of on-site native floodplain material, including a granular fine-grained sand/silt mix with periodic cobbles and boulders. Fill work will only occur in areas beyond the river bank (riparian zone). All floodplain cut and fill areas will be covered with mulch or slash, as final grade is achieved to prevent erosion of exposed soil. Cut areas may need to be dewatered, as needed, to install culverts in dry conditions. There will be no long-term stockpile areas; as areas are cut and excavated, temporary stockpiles may be created in the immediate vicinity of the excavation, but will be hauled to permanent fill placement areas soon after. When transporting excavated fill material, the exposed surface will be covered completely with a tarp or similar device to prevent the fill from becoming a source of fugitive dust. Exposed soil on the site will also be covered to prevent soil erosion during rain and flooding events.

Construction is expected to commence in May 2022; construction activities could last up to 18 months.

- C. Background: The Project (File No. 2016/SMA-2) was previously approved via Resolution No. 16-130 (2016 Resolution) by City Council on May 11, 2016. The Resolution granted the Applicant two years from the date of approval to obtain building permits. On July 3, 2018, the Department of Planning and Permitting (DPP) granted a one-year time extension for the Project to July 6, 2019. On June 21, 2019 the DPP received a request from the Agent for a second extension. A time extension beyond one-year requires the approval by the City Council. Regrettably, the request was not submitted in time to provide the DPP adequate time to transmit a draft resolution to the City Council for their consideration. The time extension could not be processed, therefore, the Resolution was rendered null and void, requiring a new SMA Use Permit for the Project.

## II. FINDINGS OF FACT

On the basis of the evidence presented, the Director has found:

A. Site and Surrounding Area:

1. Site: The Project is located in the Punaluu watershed, which includes 6.7 square miles of primarily steep and undeveloped forest terrain. The Project site is a 53.1-acre portion of the site which is located in the SMA and in the AG-2 General Agricultural and P-1 Restricted Preservation Districts. Punaluu Stream, the primary drainage in the watershed, traverses the SMA and travels under Kamehameha Highway before entering the ocean.

Nearly all of the land within the SMA is currently either in agriculture, fallow former agricultural land, or non-native riparian vegetation along Punaluu Stream and in the estuary. There are very few structures in the Project area. No structures within the SMA are proposed to be removed.

The valley floor topography within the SMA is nearly flat and gently slopes downward toward Punaluu Stream and the coast. Elevations within the SMA boundary range from 15 feet (above sea level) at the far southwest corner, to sea level near the Kamehameha Highway Bridge.

Green Valley Road is a private agricultural access road that currently traverses from Kamehameha Highway through the SMA and into the upper watershed, providing access to farmers and other residents in the watershed. The road is elevated on fill, aligned close to Punaluu Stream's south bank in many locations, and contributes to the lack of connectivity between the stream and the floodplain by creating a barrier between the two. The loss of floodplain connectivity is exacerbated by several feet of fill that has been placed on the floodplain over the past 100 years or more.

The alteration of Punaluu Valley floor resulted in the channelization of Punaluu Stream through berming and the Green Valley Road construction, loss of floodplain hydrologic function due to placement of fill on the floodplain, and construction of the Punaluu Ditch that channelized Kahana runoff directly into the ocean rather than allowing it to enter into an estuary floodplain environment.

2. Surrounding Area: The surrounding areas to the north are zoned AG-2 General Agricultural and are developed with agricultural uses. The areas to the west and south are zoned P-1 Restricted Preservation District and consist of preservation land in state parks and forest reserves. The areas to the east along Kamehameha Highway are zoned Country and R-5 Residential District and are developed with residential uses. Also, Punaluu Beach Park is located on the makai side of Kamehameha Highway to the west and is zoned P-2 General Preservation District (see Exhibit C).
- B. Flood and Coastal Hazards: The Federal Emergency Management Agency Flood Insurance Rate Map, effective June 2, 2005, indicates that the portion of the site closest to the shoreline is within Flood District VE, with determined 10-foot base flood elevation (BFE). The VE Zone corresponds with the Coastal High Hazard Area, which is defined in Chapter 21A of the Revised Ordinances of Honolulu (ROH) as an area subject to high velocity wave action from storms or seismic sources. The remainder of the site is designated Flood Zone AEF, AE, XS, and X. The AEF Flood Zone is a layer around Punaluu Stream that must be kept free to ensure that the one percent annual chance flood can be carried

without increasing the BFE. The AE flood zone is the next layer outside the VE and AEF Flood Zones and the determined BFE is eight feet. The Flood Zones VE, AEF, and AE are subject to inundation by the one percent annual chance flood. The next layers out from the AE Flood Zone are XS and X, which are areas in low to moderate risk flood zones (see Exhibit E).

According to the Hawaii Sea Level Rise (SLR) Viewer, portions of the site would be inundated by 3.2 feet of SLR. According to the National Oceanic and Atmospheric Administration (NOAA) National Storm Surge Hazard Maps, the site may flood due to storm surges above a Category 1 Hurricane.

- C. Environmental Compliance: The Project requires an SMA Use Permit; therefore, the Applicant was required to prepare an EA pursuant to Chapter 25, ROH. The Applicant completed an FEA for the Project and on November 24, 2015, the DPP issued a Finding of No Significant Impact (FONSI), which was published in “The Environmental Notice” on December 8, 2015.

On June 21, 2021 the DPP determined that the previous FONSI is sufficient as the Project does not have substantive changes in size, scope, intensity, use location, or timing. The amount of grading for the Project has decreased from an average depth of four to five feet to an average depth of three feet. The determination was published in the July 8, 2021 edition of the “The Environmental Notice.”

- D. State and County Plans and the Land Use Ordinance (LUO):

1. State Land Use District: The site is in the State Land Use Agricultural and Conservation Districts. Agricultural uses currently exist; the restoration of the stream will not establish any new land uses.
2. Oahu General Plan (GP): The Project is consistent with the objectives and policies of the GP relating to the natural environment. The Project is designed to protect, preserve, and enhance the natural environment and monuments (Objectives A and B) by: restoring environmentally damaged areas (Policy 2); protecting plants, birds, and other animals unique to Hawaii (Policy 8); designing surface drainage and flood-control systems in a manner which will help preserve their natural settings (Policy 6); and protecting Oahu’s well-known resources such as its forests, watershed areas, marches, and streams (Policy 1).
3. Koolau Loa Sustainable Communities Plan (KLSCP): The Project site is within the KLSCP Area. Section E.4.2 of KLSCP establishes policies for water systems and includes the following: “Policies and guidelines emphasize the importance of responsible management of water resources, including stream and natural drainage systems, watersheds, and coastal areas; the need for water conservation measures (including

recycling); and the protection of all water sources.” On the Land Use Map, the Project site is mostly designated Agriculture, with a small portion designated Rural Residential. The Project is consistent with the KLSCP including preserving and enhancing natural resources and preserving agricultural lands. By restoring and enhancing the ecological function and providing flood mitigation within the Punaluu watershed, the Project is consistent with Land Use Policy 3.1.2 (Natural Gulches, Streams and Drainageways). The Project will:

- Restore and protect ecologically sensitive areas and ecosystems which should be maintained and enhanced as open space elements; and
- Minimize soil erosion, runoff of pesticides, fertilizers and other non-point contaminants into streams, wetlands and marine habitats.

LUO: The site is in the AG-2 General Agricultural, Country and P-1 Preservation Districts. Crop production is a permitted use in the AG-2 Agricultural and Country Districts. The City does not have zoning or land use jurisdiction in the P-1 Preservation District; development is governed by the appropriate State agencies.

E. Other Permits and Approvals: According to the Applicant, the Project is likely to require the following permits: National Pollutant Discharge Elimination System permit and Water Quality Certification from the State Department of Health (SDOH); Stream Channel Alteration permit from the Hawaii Commission on Water Resource Management; Nationwide Permit 27 and Section 10 permit from Army Corps of Engineers; Biological Opinion from U. S. Fish and Wildlife Service (USFWS); and National Historic Preservation Act Section 106 review and Safe Harbor Agreement from the Department of Land and Natural Resources (DLNR). Various City construction permits, including grubbing, grading and stockpiling permits, and a Flood Hazard District Variance will also be required.

F. Agency Comments: Comments concerning the Project were solicited and received from various government agencies during the EA phase, as well as during the processing of the SMA Use Permit. Agency comments relevant to the SMA Use Permit were considered, and are discussed under the Analysis section of this report. Comments were received from the following agencies:

1. City: Board of Water Supply, Department of Parks and Recreation, and Honolulu Fire Department.
2. State of Hawaii: Office of Planning, DLNR, SDOH.
3. Federal: USFWS.

- G. Public Hearing and Community Comments: A public hearing was held on October 15, 2021, at 10:30 a.m. at the Mission Memorial Auditorium to receive testimony concerning the SMA Use Permit application. The hearing was attended in-person by the Agent, DPP staff and a staff member from the Department of Information Technology. The Applicant attended remotely. There were no in-person or remote attendees from the public, therefore, no testimony was presented. A copy of the transcript from the hearing is included as an attachment.

### III. ANALYSIS

The proposed Project was analyzed in accordance with the objectives, policies, and guidelines established in ROH Sections 25-3.1 and 25-3.2, as well as Hawaii Revised Statutes (HRS) Sections 205A-2 and 205A-26.

- A. SMA Objectives and Policies: The Project was analyzed based on the objectives and policies of the Coastal Zone Management (CZM) regulations and the SMA (HRS Section 205A-2 and ROH Section 25-3.1, respectively).
1. Recreational Resources: *Development in the SMA should provide coastal recreational opportunities to the public.* The site is entirely on private property and will not impact access to public recreational resources. Since the site is mauka of the coastal highway, the Project will not alter or inhibit public access to the shoreline or do anything to diminish public access to the coastal area. The Final EA indicated that the Applicant is considering allowing eco-cultural educational opportunities for school groups to learn about sustainable agriculture and ecosystem function at the site. This will increase access to the natural coastal areas and will have a positive impact on coastal resources through sustainability education.
  2. Historic and Cultural Resources: *Development within the SMA should protect, preserve, and restore natural or manmade historical and cultural resources.* An archaeological inventory survey (AIS) was conducted and a cultural impact assessment was prepared for the site as part of the Applicant's EA for the Project. The AIS was submitted to the State Historic Preservation Division (SHPD) on December 29, 2014 (SHPD Log No. 201405784). The AIS was accepted by SHPD on December 21, 2015. According to the AIS, six archaeological sites were identified within the overall proposal area, and four are located within the SMA. The AIS also stated that data potential has been realized for the six sites and does not recommend preservation. However, archaeological monitoring will be conducted on the six archaeological sites as a mitigation measure. During construction, if any previously unidentified archaeological sites or remains are encountered, the Applicant will have to stop work and contact the



SHPD immediately. Although this is required by applicable law, it is also a standard condition of approval for SMA permits.

3. Scenic and Open Space Resources: *Development should protect coastal scenic and open space resources.* The property has agricultural uses on it but is largely undeveloped and will remain so. Therefore, the proposed development is consistent with the scenic and open space resource goals of the SMA and State Coastal Zone Management Program.
4. Coastal Ecosystems: *Development within the SMA should minimize impacts to valuable coastal ecosystems.* Impacts to marine species are expected to be minimal, as no work will occur in the shoreline area, and the Project work will be entirely mauka of the Kamehameha Highway. There is the potential for a small discharge of turbid water generated during construction activities to reach nearshore ocean waters, but this discharge would be temporary, and will be minimized through the implementation of Best Management Practices (BMPs) such as the installation of turbidity curtains. No significant impacts to coastal ecosystems within the SMA are expected as a result of the Project.

In the long term, the Project will result in beneficial impacts to nearshore Class A waters and coral communities by reducing the amount of sediment that is currently transported from upstream reaches to nearshore waters. By converting the Punaluu Ditch to a new estuary channel with a riparian forest corridor, sediment loads generated from the Kahana sub-basins will be deposited in the estuary instead of being directly transported into the coral reefs. Removing the berms along Punaluu Stream and recreating a floodplain will also reduce sediment loads transported into coastal ecosystems.

The Project will create net benefits for ecosystems mauka of Kamehameha Highway within the SMA. Non-native vegetation will be removed and replaced with native vegetation that creates new habitat for terrestrial and freshwater species. Potential adverse effects to freshwater communities within the SMA will be at least in part, if not completely, offset by the long-term beneficial impacts of the habitat restoration work. Restoring the natural geomorphic processes of the stream will result in a more natural meandering stream which provides important habitat for aquatic organisms throughout a variety of life stages. In addition, creating a larger floodplain and stream corridor will result in an increase in the amount of high quality wetland and riparian habitat on the site. The Applicant has conducted three separate biological surveys in support of the Project. They include a wetland survey, a wildlife biological survey and a tree survey. The Army Corps 404 Permit, issued June 8, 2018 for the Project also requires biological monitoring during construction and environmental compliance training for the construction contractors.

5. Economic Uses: *Development in the SMA should provide public or private facilities and improvements important to the economy in appropriate locations.* The Project valuation exceeds \$500,000 and will provide some short-term economic benefits to those in the construction industry. The restoration will create areas of fill for agricultural uses; the new farm fields will be more productive as they will be elevated above the flood flows.
6. Coastal Hazards: *Development in the SMA should reduce hazards to life and property from coastal hazards.* The restoration work will occur within designated flood hazard districts and the tsunami evacuation zone as the primary objective is to develop sustainable flood protection and restore hydrologic process in the Punaluu watershed thereby reducing the potential for damaging floods.
  - a. Flood: The site is not a shoreline lot; however, a portion of the site is in the Flood Zone VE (the coastal high hazard area). No impacts to coastal hazards are anticipated, though, because no new structures are proposed in Flood Zone VE. The Applicant indicated a Flood Hazard District Variance may be required; this will be determined during the processing of the construction plans.
  - b. SLR: The site is subject to 3.2 SLR. The excavation of material from the floodway and elevating new farm fields with fill will make the site less vulnerable to SLR. The new Green Valley Road will be elevated between three to five feet above its existing level.
  - c. Tsunami and Storm Surge: The Project site is within the tsunami evacuation zone. Current technology would allow workers to evacuate the site in the event of a tsunami event. According to the NOAA National Storm Surge Hazard Map, the site may be vulnerable to storm-surge flooding above a Category 1 Hurricane. However, the Project does not involve any structures that would need to be designed to withstand the horizontal forces.
7. Managed Development and Public Participation: *Development in the SMA should take measures to improve development review processes and increase public awareness of coastal management.* During the EA process, the Applicant presented the Project to the Punaluu Community Association and Punaluu Watershed Alliance. Public hearings were held for SMA Use Permit No. 2016/SMA-2 and this SMA Use Permit application. Additional public hearings will be held at the City Council. Therefore, the Applicant has taken measures for public awareness of their proposal.

8. Beach Protection: *Development within the SMA should protect beaches for public use and recreation.* The Project will not impact any beach. The site is entirely on private property and located mauka of Kamehameha Highway. The Project will not impact access to public recreational resources, alter or inhibit public access to the shoreline or diminish public access to the coastal area. The Final EA indicated that the Applicant is considering allowing eco-cultural educational opportunities for school groups to learn about sustainable agriculture and ecosystem function at the site. This will increase access to the natural coastal areas and will have a positive impact on coastal resources through sustainability education.
  9. Marine Resources: *Development within the SMA should promote the protection of marine and coastal resources, such as coastal land, coastal ecosystems, minerals, oil, gas, and sand, to ensure their sustainability.* The Project will not impact marine or coastal resources within the SMA because it is not adjacent to the ocean or any streams, rivers, marshes, or delineated wetlands. The Project involves grading, grubbing, and excavation, and will be reviewed for compliance with the relevant Rules Relating to Water Quality during the grading, grubbing, and building permit review. The Project has the potential to benefit coral reef ecosystems by reducing the amount of sediment transported from upstream reaches to the nearshore environment.
- B. SMA Guidelines: The Project was analyzed based on the guidelines of the CZM regulations and the SMA (HRS Section 205A-26 and ROH Section 25-3.2, respectively).
1. Access to Beaches and Natural Areas, Open Space, and Recreational Resources: The Project will not restrict access to beaches, natural areas, open spaces, or recreational resources because the site is mauka of the beach and will not prevent access to any nearby parks or beaches.
  2. Solid and Liquid Waste Provisions: The Project will not generate any new solid or liquid waste within the SMA. During construction the Applicant will be responsible to ensure that no petroleum products, hydraulic fluid, sediments, sediment-laden water, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the streams or wetlands.
  3. Alterations to Existing Landforms: Much of the work included in the restoration to undo previous human alteration of the Punaluu Valley floor that resulted in channelization of Punaluu Stream through berming and Green Valley Road construction, loss of floodplain hydrologic function due

to placement of fill on the floodplain, and construction of the Punaluu Ditch that channelized Kahana runoff directly into the ocean rather than allowing it to enter into an estuary floodplain environment.

The primary restoration objective of this Project is to develop sustainable flood protection and restore hydrologic processes in the Punaluu watershed, with a focus on the lower reach of Punaluu Stream and its floodway. The comprehensive restoration design will reduce flooding along Punaluu Stream, using natural materials and methods that augment natural physical processes, are aesthetically pleasing, are sustainable with little to no maintenance, and that will enhance aquatic and wetland habitats. Therefore, a net improvement to the area is anticipated as a result of the alterations to land forms.

4. Substantial or Cumulative Environmental Impact and Compelling Public Interest: The Proposed Action would restore the natural hydrologic and ecological processes of Punaluu Stream and provide significant benefit to the environment. The Project will reduce the amount of sediment entering the ocean, remove non-native vegetation and replace with native vegetation, creating new habitats for terrestrial and freshwater species, and increase groundwater recharge. The Project provides a compelling public benefit for the community and will not have any substantial or cumulative environmental impacts on the SMA, provided basic conditions related to lighting and archaeological finds are imposed.
5. Consistency with Plans and Regulations: The Project is consistent with the Vision and Land Use and Infrastructure (Water Systems) Policies of the KLSCP. The agricultural use of the AG-2 Agricultural and Country Districts is consistent with the development standards of the LUO.
6. Alterations to Bays, Estuaries, and Other Water Features: Punaluu Ditch will be converted into a new estuary channel, thus allowing sediment loads generated from the Kahana sub-basins to deposit in the estuary instead of into the coral reefs of the nearshore environment. By excavating approximately two acres of land to a depth of three feet, a new estuary will be created for the Punaluu Stream. This will improve flood conveyance and trap sediment before it enters the ocean. The modification of the Hau wetland will enhance 1.59 acres of estuarine wetland and enhance 3.24 acres of freshwater wetland within the SMA by removing berms on the stream bank, restoring natural drainage paths, planting native vegetation, and improving hydrologic connections to these existing area.
7. Reductions or Restrictions to Beach, Recreation, Ocean or Tidal Area Access: As previously mentioned, the Project will not reduce or restrict access to beach, recreation, ocean, or tidal areas. The Project site is mauka of the shoreline.

8. Scenic Resources and View Sheds: The property has agricultural uses on it but is largely undeveloped and will remain so. Therefore, the proposed development is consistent with the scenic and open space resource goals of the SMA and State Coastal Zone Management Program.
9. Water Quality and Habitats: No lasting impacts to the Class A nearshore waters are anticipated. However, construction activities that occur in or along Punaluu Stream will result in temporary impacts to the stream, including displacement of sediment and increased turbidity in the water column that may reach the ocean. These impacts will be temporary, lasting only during the duration of work. Additionally, BMPs will be used to reduce turbidity during construction, and turbidity curtains will be installed.

The Project will also be required to comply with all SDOH water quality standards. Furthermore, the Project requires a National Pollutant Discharge Elimination System (NPDES) permit and/or a Section 401 Water Quality Certification. All discharge into State waters during Project construction and/or operational activities will follow an “anti-degradation policy,” which essentially requires that the quality of nearshore waters be maintained and protected for the existing uses of those waters. Any potential construction-related impacts will be addressed through the NPDES permit.

- a. Flora: A comment letter, dated September 21, 2015, from the State DLNR, Division of Aquatic Resources (DAR) was received during the EA process. The comments were about the lack of information regarding the revegetation of the estuarine wetlands with native species. Therefore, the 2016 Resolution associated with 2016/SMA-2 imposed the following as a condition of approval:

Prior to any site work, the Applicant shall have a revegetation plan reviewed and approved by DAR.

The Applicant has coordinated with the DLNR in 2017 on the revegetation plan and the DLNR DOFAW provided the Applicant with a plant list for the revegetation. A condition related to the revegetation plan is not necessary.

- b. Fauna: A comment letter, dated August 25, 2015, from the USFWS was received during the EA process. The comments were related to specific endangered species in the area and BMPs to decrease impacts to these endangered species. The USFWS identified several species of Hawaiian waterbirds, the Hawaiian Hoary Bat, and the Oahu Elepaio. The primary concerns were about the loss of habitat and disturbance during breeding seasons for the

identified endangered species. Therefore, the following should be required as conditions of this approval:

- i. Prior to any site work, a qualified biological monitor shall conduct Hawaiian waterbirds and nest surveys at the site;
- ii. The USFWS shall be notified of, and provided with the results of the pre-construction Hawaiian waterbirds survey immediately prior to Project initiation;
- iii. Any observed or documented nests or broods within the Project vicinity shall be reported to the USFWS within 48 hours of discovery;
- iv. A 100-foot buffer shall be established and maintained around all active nests and broods until the chicks/ducklings have fledged. No potentially disruptive activities or habitat alteration may occur within this buffer;
- v. If a listed Hawaiian waterbird is observed within the Project site, or flies into the site while activities are occurring (within 100 feet), all potentially disruptive activities (including human activity, mechanical or construction disturbance) shall be stopped until the animal(s) voluntarily leave the area;
- vi. A biological monitor shall be present on the Project site during all construction or earth moving activities to ensure that Hawaiian waterbirds and nest are not adversely impacted;
- vii. To minimize impacts to the Hawaiian hoary bat's habitat, woody plants greater than 15 feet in height shall not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15); and
- viii. Prior to site work, a qualified biologist shall survey the site for potential nesting Oahu Elepaio. No potentially disruptive activities during the breeding season shall occur.

During construction, a qualified biologist will be hired to monitor potential construction impacts on species. The Applicant will comply with the biological monitoring and conduct BMPs specified by the DOFAW and USFWS. Should any protected species be identified, the Applicant will coordinate with the agencies and avoid impacts to the protected species and habitat.

#### IV. CONCLUSIONS OF LAW

The proposed development was reviewed under the provisions of Sections 25-3.1 and 25-3.2, ROH, and Sections 205A-2 and 205A-26, HRS, and found to be consistent with established SMA objectives, policies, and guidelines. Based on the analysis, the proposed Punaluu Stream restoration, flood mitigation measures, and enhancement of the surrounding ecosystem will not adversely impact SMA resources.

#### V. RECOMMENDATION

It is recommended that the application for a Special Management Area (SMA) Use Permit be APPROVED, subject to the following conditions:

- A. Construction shall be in general conformity with the Project described herein and shown on the plans attached hereto as Exhibits F through V. Any changes in the size or nature of the Project, which have a significant effect on coastal resources addressed in Chapter 25, Revised Ordinances of Honolulu, and Chapter 205-A, Hawaii Revised Statutes (HRS), shall require a new application. Any changes which do not have a significant effect on coastal resources shall be considered a minor modification and, therefore, permitted under this resolution, upon review and approval of the Director of the Department of Planning and Permitting (DPP).
- B. If, during construction, any previously unidentified archaeological sites or remains (such as artifacts, shell, bone, or charcoal deposits, human burials, rock or coral alignments, pavings, or walls) are encountered, the Applicant shall stop work and contact the Department of Land and Natural Resources, State Historic Preservation Division (SHPD) immediately. Work in the immediate area shall be stopped until the SHPD is able to assess the impact and make further recommendations for mitigative activity.
- C. Artificial light from exterior light fixtures, including, but not necessarily limited to floodlights, uplights, or spotlights used for decorative or aesthetic purposes, shall be prohibited if the light directly illuminates or is directed to project across property boundaries toward the shoreline and ocean waters, except as may otherwise be permitted pursuant to Section 205A-71(b), HRS.
- D. The Applicant shall coordinate with the U. S. Fish and Wildlife Service (USFWS) to comply with all of the following conditions relating to flora and fauna mitigation measures:
  - 1. Prior to any site work, a qualified biological monitor shall conduct Hawaiian waterbirds and nest surveys at the site;

2. The USFWS shall be notified of, and provided with the results of the pre-construction Hawaiian waterbirds survey immediately prior to Project initiation;
  3. Any observed or documented nests or broods within the Project vicinity shall be reported to the USFWS within 48 hours of discovery;
  4. A 100-foot buffer shall be established and maintained around all active nests and broods until the chicks/ducklings have fledged. No potentially disruptive activities or habitat alternation may occur within this buffer;
  5. If a listed Hawaiian waterbird(s) is observed within the Project site, or flies into the site while activities are occurring (within 100 feet), all potentially disruptive activities (including human activity, mechanical or construction disturbance) shall be stopped until the animal(s) voluntarily leave the area;
  6. A biological monitor shall be present on the Project site during all construction or earth moving activities to ensure that Hawaiian waterbirds and nest are not adversely impacted;
  7. To minimize impacts to the Hawaiian hoary bat's habitat, woody plants greater than 15 feet in height shall not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15); and
  8. Prior to site work, a qualified biologist shall survey the site for potential nesting Oahu Elepaio. No potentially disruptive activities during the breeding season shall occur.
- E. Approval of this SMA Use Permit does not constitute compliance with any other Land Use Ordinance (LUO) or other governmental requirements, including grading and grubbing permits. They are subject to separate review and approval. The Applicant will be responsible for insuring that the final plans for the Project approved under this permit comply with all applicable LUO and other governmental provisions and requirements.
- F. **The Applicant shall obtain a development permit for the proposed development within two years of the date of this permit.** Failure to obtain a development permit within this period shall render this permit null and void, provided that this period may be extended as follows: The Director of the DPP may extend this period if the Applicant demonstrates good cause, but the period shall not be extended beyond one year from the initial deadline set by the City Council.


If the Applicant demonstrates good cause for an extension exceeding one year, the Director shall prepare and submit to the Council a report on the proposed extension, which the report shall include the Director's findings and



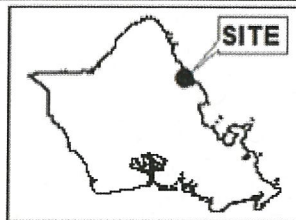
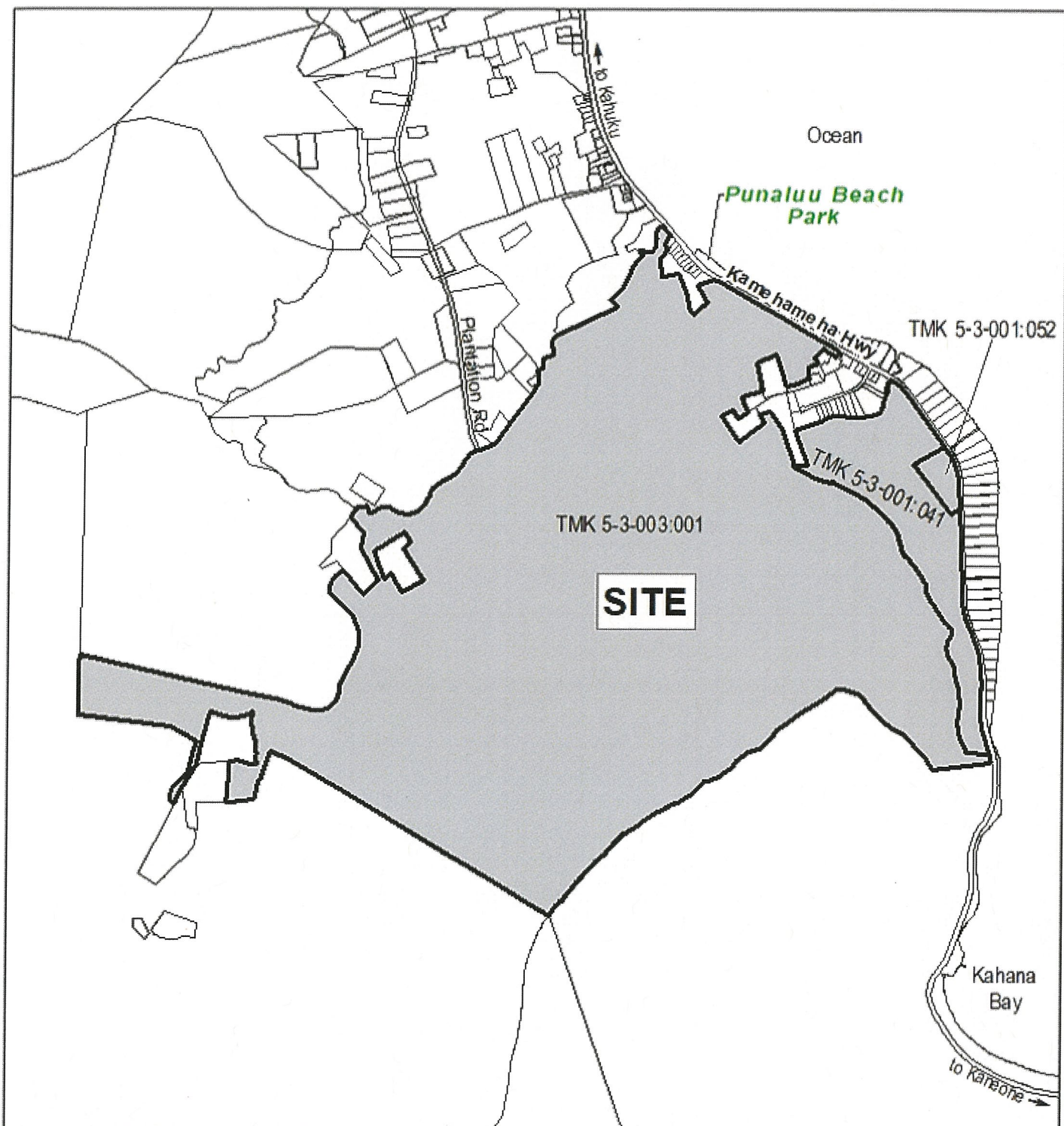
recommendations thereon. The Council may approve the proposed extension or an extension for a shorter or longer period, or deny the proposed extension, by adoption of a committee report or resolution. If the Council fails to take final action on the proposed extension within the first to occur of: (a) 60 days after receipt of the Director's report; or, (b) the Applicant's then-existing deadline for obtaining a building permit, the extension shall be deemed to be denied.

Dated at Honolulu, Hawaii, this 15th day of November, 2021.

Department of Planning and Permitting  
City and County of Honolulu  
State of Hawaii

By   
\_\_\_\_\_  
Dean Uchida  
Director

Attachments



VICINITY MAP

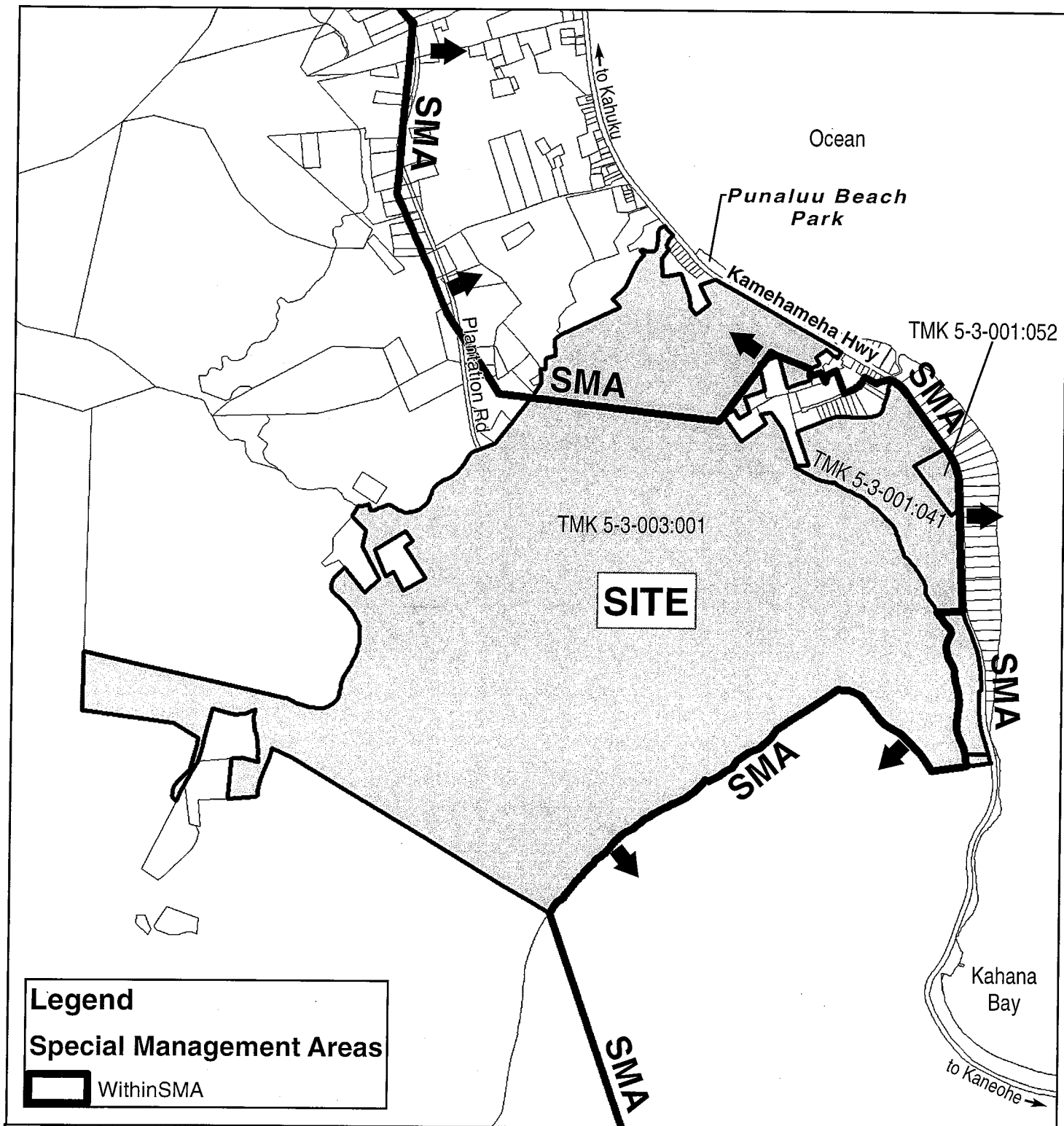
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Scale in feet



## LOCATION MAP PUNALUU

TAX MAP KEY(S): 5-3-001:041, 5-3-001:052, and  
5-3-003:001

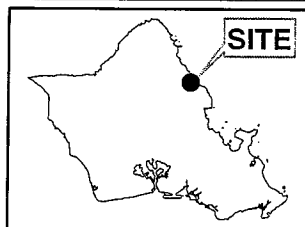
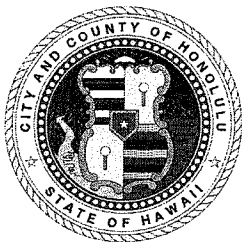
FOLDER NO.: 2021/SMA-45



### Legend

#### Special Management Areas

Within SMA



VICINITY MAP

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Scale in feet

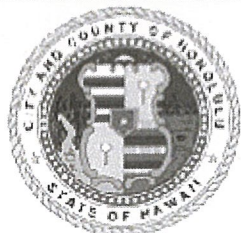
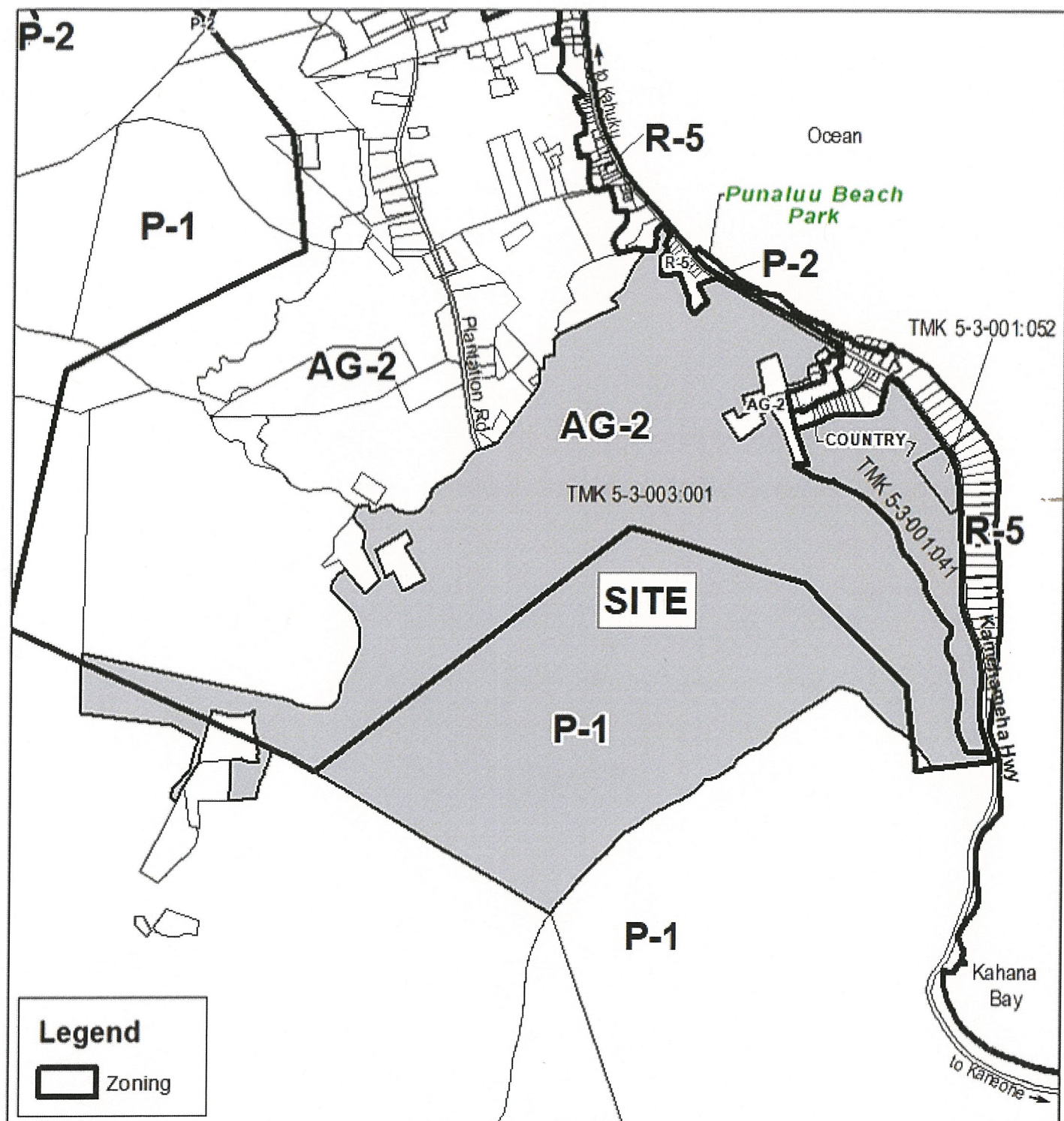


## Special Management Area Map PUNALUU

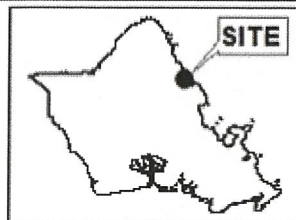
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FOLDER NO.: 2021/SMA-45





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Scale in feet



VICINITY MAP

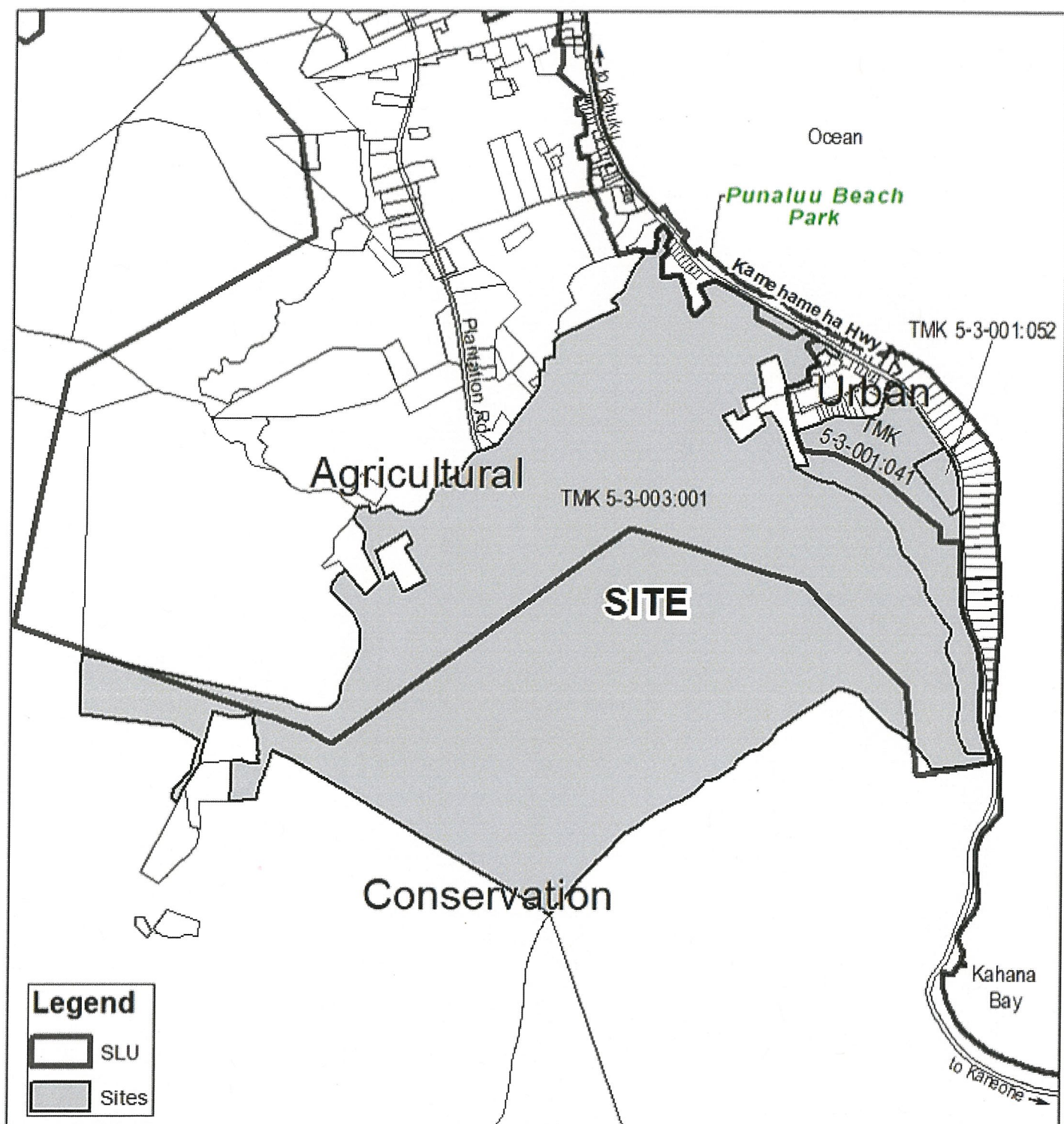


Portion of  
**EXISTING ZONING MAP**  
Hauula-Punaluu-Kaaawa

TAX MAP KEY(S): 5-3-001:041, 5-3-001:052, and  
5-3-003:001

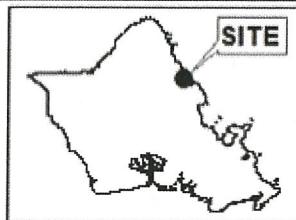
FOLDER NO.: 2021/SMA-45





**Legend**

- SLU
- Sites



VICINITY MAP

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Scale in feet

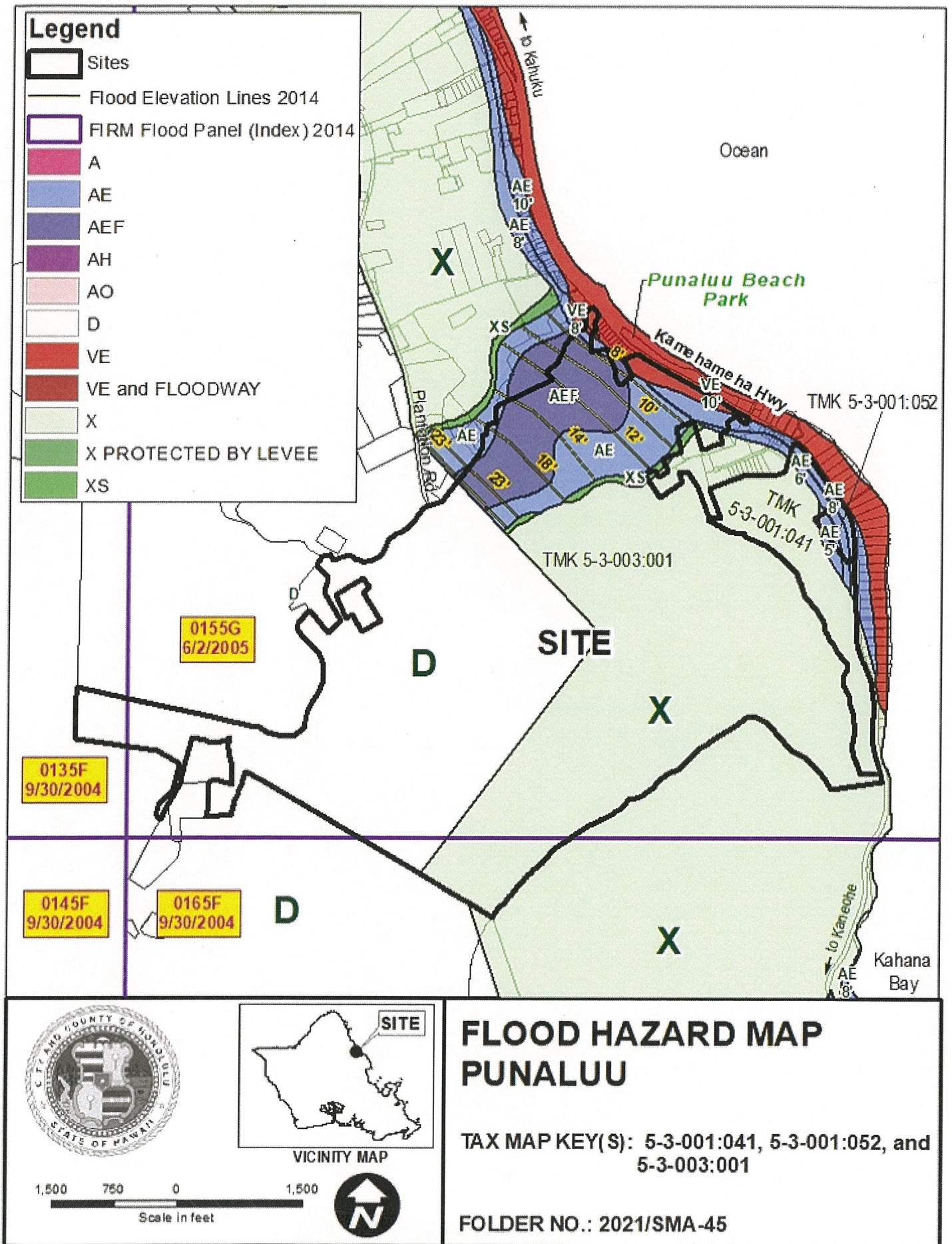


## PORTION OF STATE LAND USE PUNALUU

TAX MAP KEY(S): 5-3-001:041, 5-3-001:052, and  
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FOLDER NO.: 2021/SMA-45

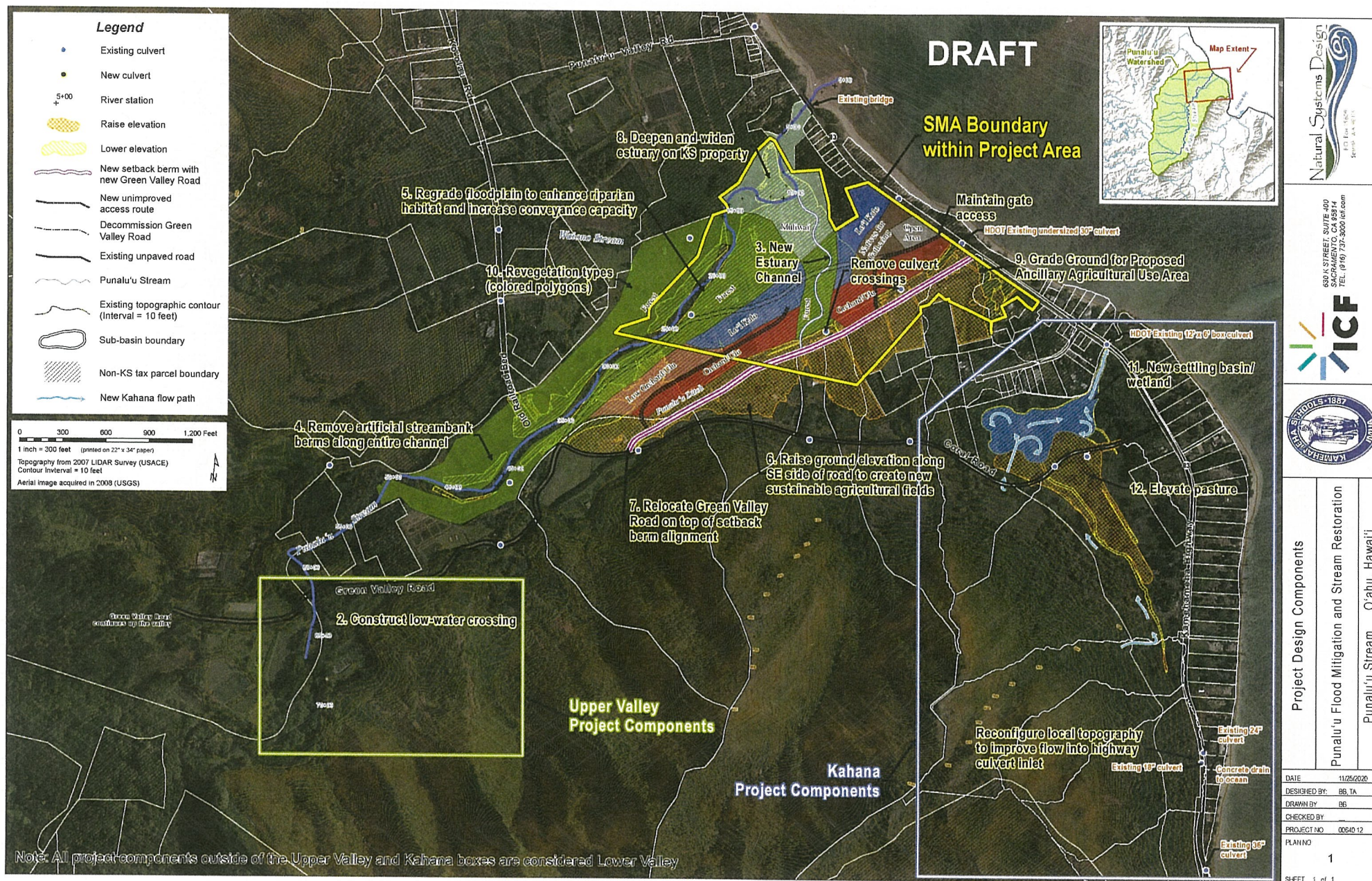




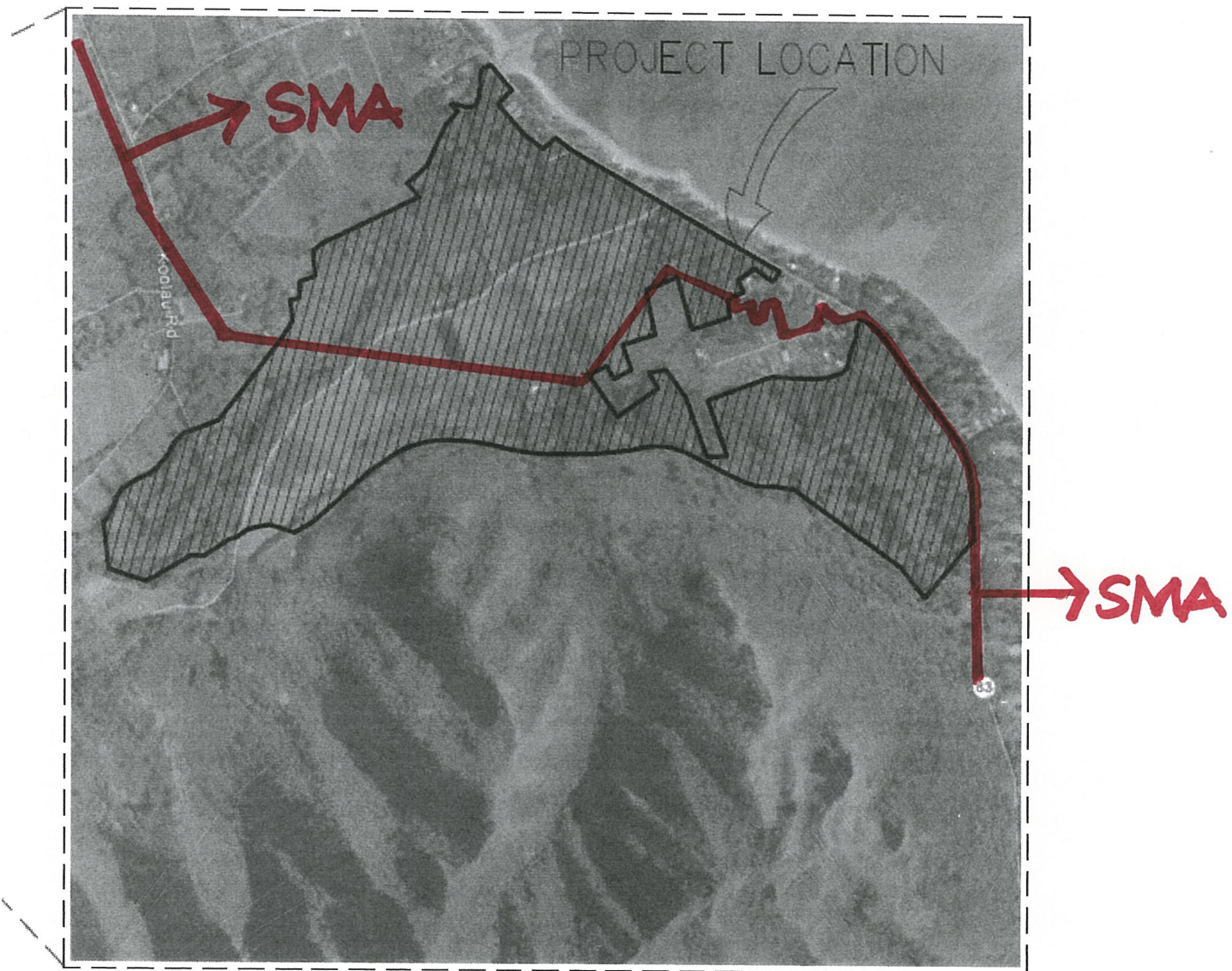
## EXHIBIT E



Exhibit 2-2. Punalu'u Flood Mitigation and Stream Restoration Project Elements





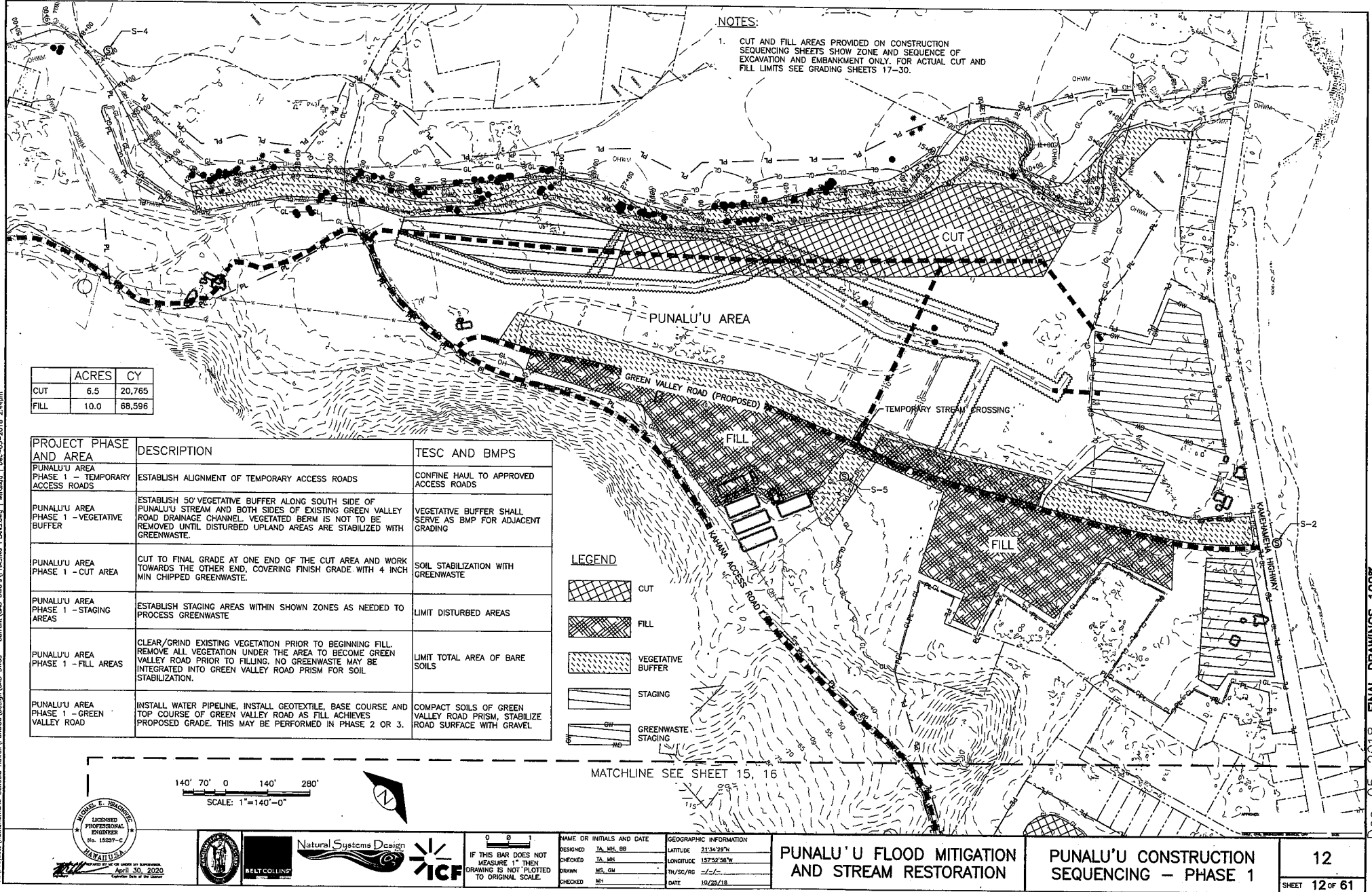


**PROJECT SITE**

**EXHIBIT G**

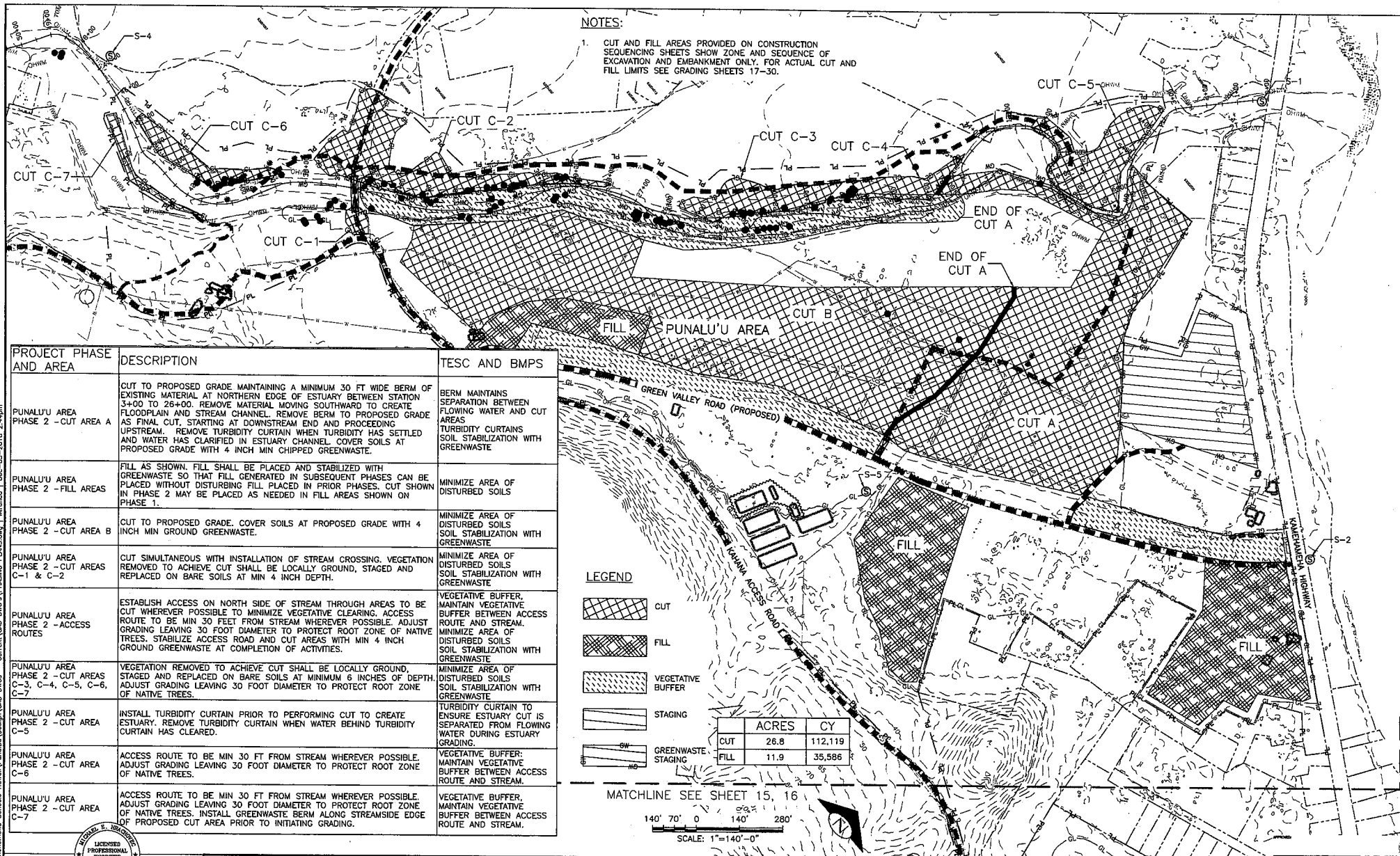


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# EXHIBIT H

N:\Projects\Koradachurnas Schools Howell\Punulu'u Design\CAD DWGs - Current\CAD DWG's\PHASING PLANS.dwg | Mirrored | Dec-05-2018 2:44pm



NOTES:  
1. CUT AND FILL AREAS PROVIDED ON CONSTRUCTION SEQUENCING SHEETS SHOW ZONE AND SEQUENCE OF EXCAVATION AND EMBANKMENT ONLY. FOR ACTUAL CUT AND FILL LIMITS SEE GRADING SHEETS 17-30.

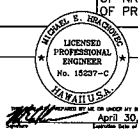
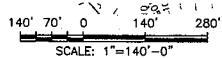
PROJECT PHASE AND AREA	DESCRIPTION	TESC AND BMPS
PUNALU'U AREA PHASE 2 - CUT AREA A	CUT TO PROPOSED GRADE MAINTAINING A MINIMUM 30 FT WIDE BERM OF EXISTING MATERIAL AT NORTHERN EDGE OF ESTUARY BETWEEN STATION 3+00 TO 26+00. REMOVE MATERIAL MOVING SOUTHWARD TO CREATE FLOODPLAIN AND STREAM CHANNEL. REMOVE BERM TO PROPOSED GRADE AS FINAL CUT. STARTING AT DOWNSTREAM END AND PROCEEDING UPSTREAM. REMOVE TURBIDITY CURTAIN WHEN TURBIDITY HAS SETTLED AND WATER HAS CLARIFIED IN ESTUARY CHANNEL. COVER SOILS AT PROPOSED GRADE WITH 4 INCH MIN CHIPPED GREENWASTE.	BERM MAINTAINS SEPARATION BETWEEN FLOWING WATER AND CUT AREAS TURBIDITY CURTAINS SOIL STABILIZATION WITH GREENWASTE
PUNALU'U AREA PHASE 2 - FILL AREAS	FILL AS SHOWN. FILL SHALL BE PLACED AND STABILIZED WITH GREENWASTE SO THAT FILL GENERATED IN SUBSEQUENT PHASES CAN BE PLACED WITHOUT DISTURBING FILL PLACED IN PRIOR PHASES. CUT SHOWN IN PHASE 2 MAY BE PLACED AS NEEDED IN FILL AREAS SHOWN ON PHASE 1.	MINIMIZE AREA OF DISTURBED SOILS
PUNALU'U AREA PHASE 2 - CUT AREA B	CUT TO PROPOSED GRADE. COVER SOILS AT PROPOSED GRADE WITH 4 INCH MIN GROUND GREENWASTE.	MINIMIZE AREA OF DISTURBED SOILS SOIL STABILIZATION WITH GREENWASTE
PUNALU'U AREA PHASE 2 - CUT AREAS C-1 & C-2	CUT SIMULTANEOUS WITH INSTALLATION OF STREAM CROSSING. VEGETATION REMOVED TO ACHIEVE CUT SHALL BE LOCALLY GROUND, STAGED AND REPLACED ON BARE SOILS AT MIN 4 INCH DEPTH.	MINIMIZE AREA OF DISTURBED SOILS SOIL STABILIZATION WITH GREENWASTE
PUNALU'U AREA PHASE 2 - ACCESS ROUTES	ESTABLISH ACCESS ON NORTH SIDE OF STREAM THROUGH AREAS TO BE CUT WHEREVER POSSIBLE TO MINIMIZE VEGETATIVE CLEARING. ACCESS ROUTE TO BE MIN 30 FEET FROM STREAM WHEREVER POSSIBLE. ADJUST GRADING LEAVING 30 FOOT DIAMETER TO PROTECT ROOT ZONE OF NATIVE TREES. STABILIZE ACCESS ROAD AND CUT AREAS WITH MIN 4 INCH GROUND GREENWASTE AT COMPLETION OF ACTIVITIES.	VEGETATIVE BUFFER. MAINTAIN VEGETATIVE BUFFER BETWEEN ACCESS ROUTE AND STREAM. MINIMIZE AREA OF DISTURBED SOILS SOIL STABILIZATION WITH GREENWASTE
PUNALU'U AREA PHASE 2 - CUT AREAS C-3, C-4, C-5, C-6, C-7	VEGETATION REMOVED TO ACHIEVE CUT SHALL BE LOCALLY GROUND, STAGED AND REPLACED ON BARE SOILS AT MINIMUM 6 INCHES OF DEPTH. ADJUST GRADING LEAVING 30 FOOT DIAMETER TO PROTECT ROOT ZONE OF NATIVE TREES.	MINIMIZE AREA OF DISTURBED SOILS SOIL STABILIZATION WITH GREENWASTE
PUNALU'U AREA PHASE 2 - CUT AREA C-5	INSTALL TURBIDITY CURTAIN PRIOR TO PERFORMING CUT TO CREATE ESTUARY. REMOVE TURBIDITY CURTAIN WHEN WATER BEHIND TURBIDITY CURTAIN HAS CLEARED.	TURBIDITY CURTAIN TO ENSURE ESTUARY CUT IS SEPARATED FROM FLOWING WATER DURING ESTUARY GRADING.
PUNALU'U AREA PHASE 2 - CUT AREA C-6	ACCESS ROUTE TO BE MIN 30 FT FROM STREAM WHEREVER POSSIBLE. ADJUST GRADING LEAVING 30 FOOT DIAMETER TO PROTECT ROOT ZONE OF NATIVE TREES.	VEGETATIVE BUFFER. MAINTAIN VEGETATIVE BUFFER BETWEEN ACCESS ROUTE AND STREAM.
PUNALU'U AREA PHASE 2 - CUT AREA C-7	ACCESS ROUTE TO BE MIN 30 FT FROM STREAM WHEREVER POSSIBLE. ADJUST GRADING LEAVING 30 FOOT DIAMETER TO PROTECT ROOT ZONE OF NATIVE TREES. INSTALL GREENWASTE BERM ALONG STREAMSIDE EDGE OF PROPOSED CUT AREA PRIOR TO INITIATING GRADING.	VEGETATIVE BUFFER. MAINTAIN VEGETATIVE BUFFER BETWEEN ACCESS ROUTE AND STREAM.

LEGEND

- CUT
- FILL
- VEGETATIVE BUFFER
- STAGING
- GREENWASTE STAGING

	ACRES	CY
CUT	26.8	112,119
FILL	11.9	35,586

MATCHLINE SEE SHEET 15, 16



IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED: JA, MK, BB	LATITUDE: 21°34'28"N
CHECKED: JA, MK	LONGITUDE: 157°52'39"W
DRAWN: MS, CM	TM/SC/RC: -/-/-
CHECKED: MH	DATE: 10/25/18

PUNALU'U FLOOD MITIGATION AND STREAM RESTORATION	PUNALU'U CONSTRUCTION SEQUENCING - PHASE 2	13
		SHEET 13 of 61

EXHIBIT I





**GENERAL LEGEND**

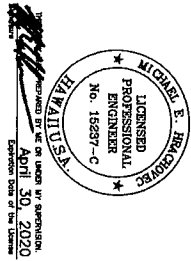
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	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	EXISTING ACCESS ROAD
	TEMPORARY ACCESS ROAD
	EXISTING ORDINARY HIGH WATER MARK
	PROPOSED ORDINARY HIGH WATER MARK
	EXISTING WATER LINE
	PROPOSED WATER LINE
	PROJECT LIMIT
	GRADING LIMIT
	GREEN WASTE STAGING AREA
	SILT FENCE OR GREENWASTE BERM
	TURBIDITY CURTAIN
	EXISTING OVERHEAD POWER LINE
	PROPOSED DITCH CENTERLINE
	PROPOSED STREAM BYPASS
	TEMPORARY STREAM CROSSING
	DEMOLITION/REMOVAL AREA
	STAGING AREA/GREENWASTE PROCESSING AREA
	REVEGETATION AREA TO BE CLEARED OUTSIDE OF GRADING LIMIT
	PROPOSED CULVERT
	EXISTING STRUCTURE
	EXISTING CULTURAL AREA
	EXISTING CULTURAL AREA
	NATIVE TREE TO PROTECT
	NATIVE TREE TO RELOCATE
	TURBIDITY MONITORING STATION AND NUMBER

**DETAIL A**

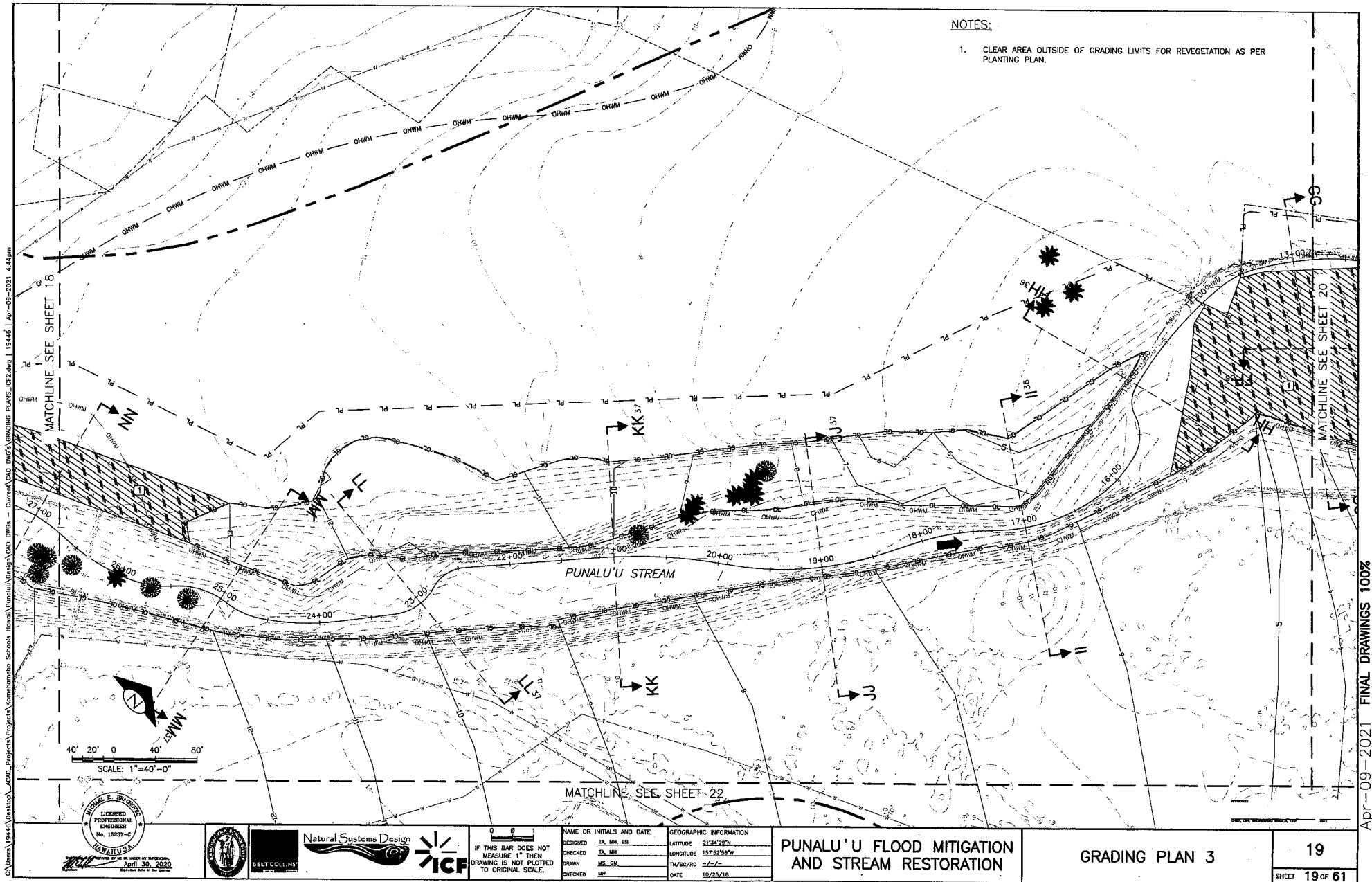
A  
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**SECTION**  
SCALE: 1"

**EXHIBIT L**

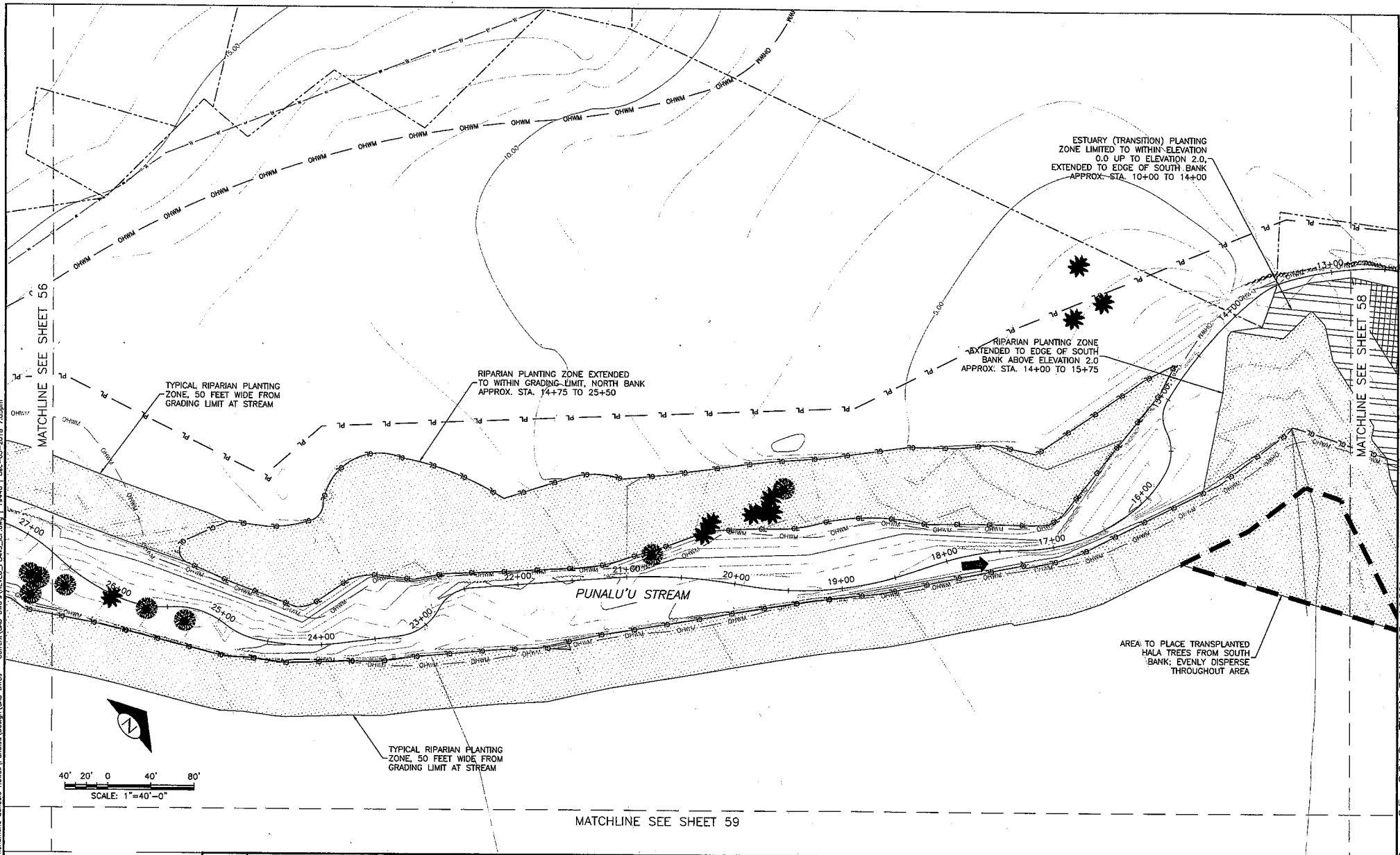


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**EXHIBIT M**

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

NAME OR INITIALS AND DATE  
DESIGNED: J.S. BH  
CHECKED: J.S. BH  
DRAWN: J.S. BH  
CHECKED: J.S. BH

GEOGRAPHIC INFORMATION  
LATITUDE: 21°34'20"N  
LONGITUDE: 157°55'36"W  
TM/SC/RG: J/S  
DATE: 10/25/18

PUNALUU FLOOD MITIGATION  
AND STREAM RESTORATION

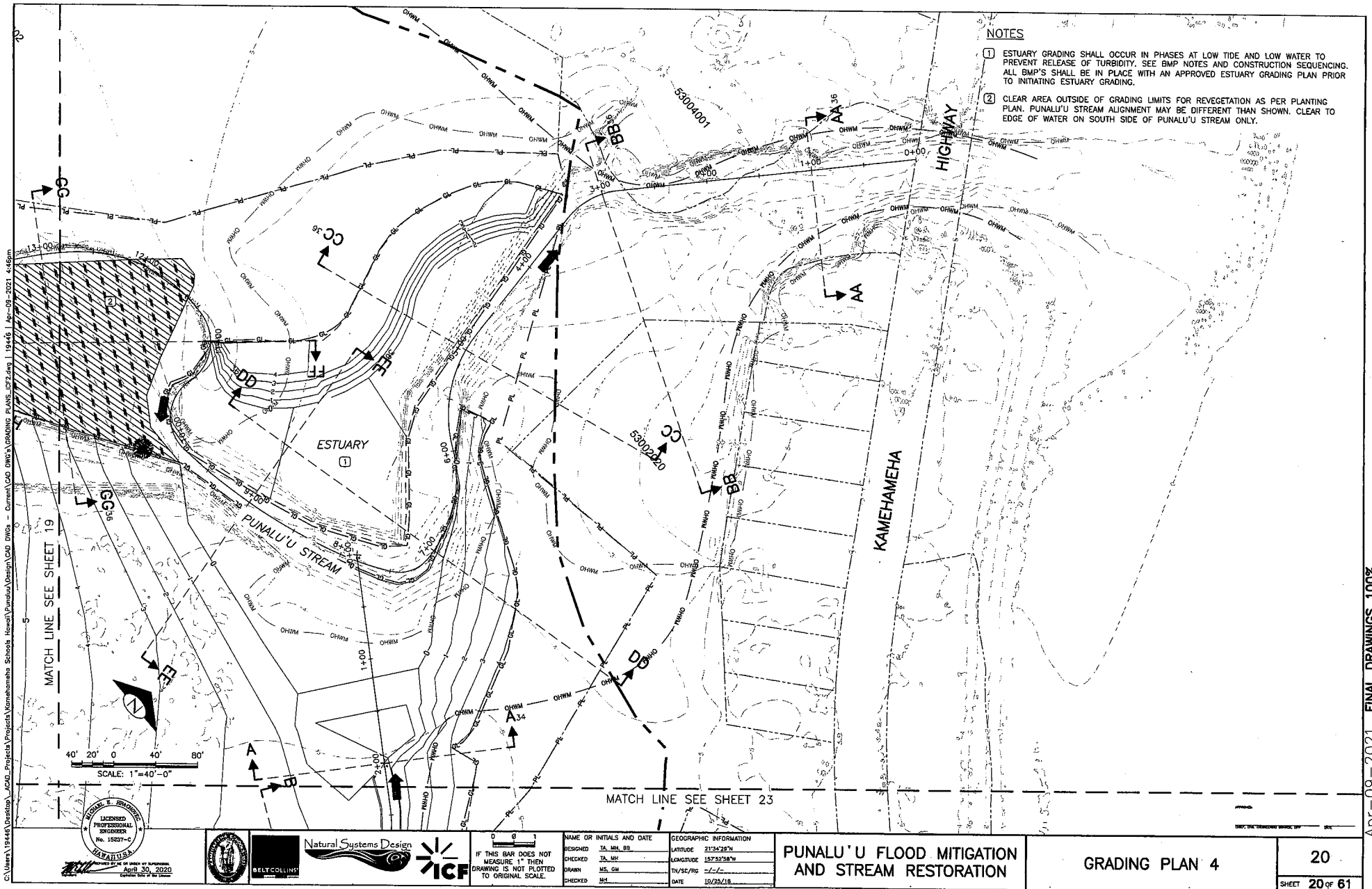
PLANTING PLAN 3

57  
SHEET 57 OF 61

EXHIBIT N

Dec-05-2018 FINAL DRAWINGS 100%

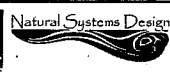
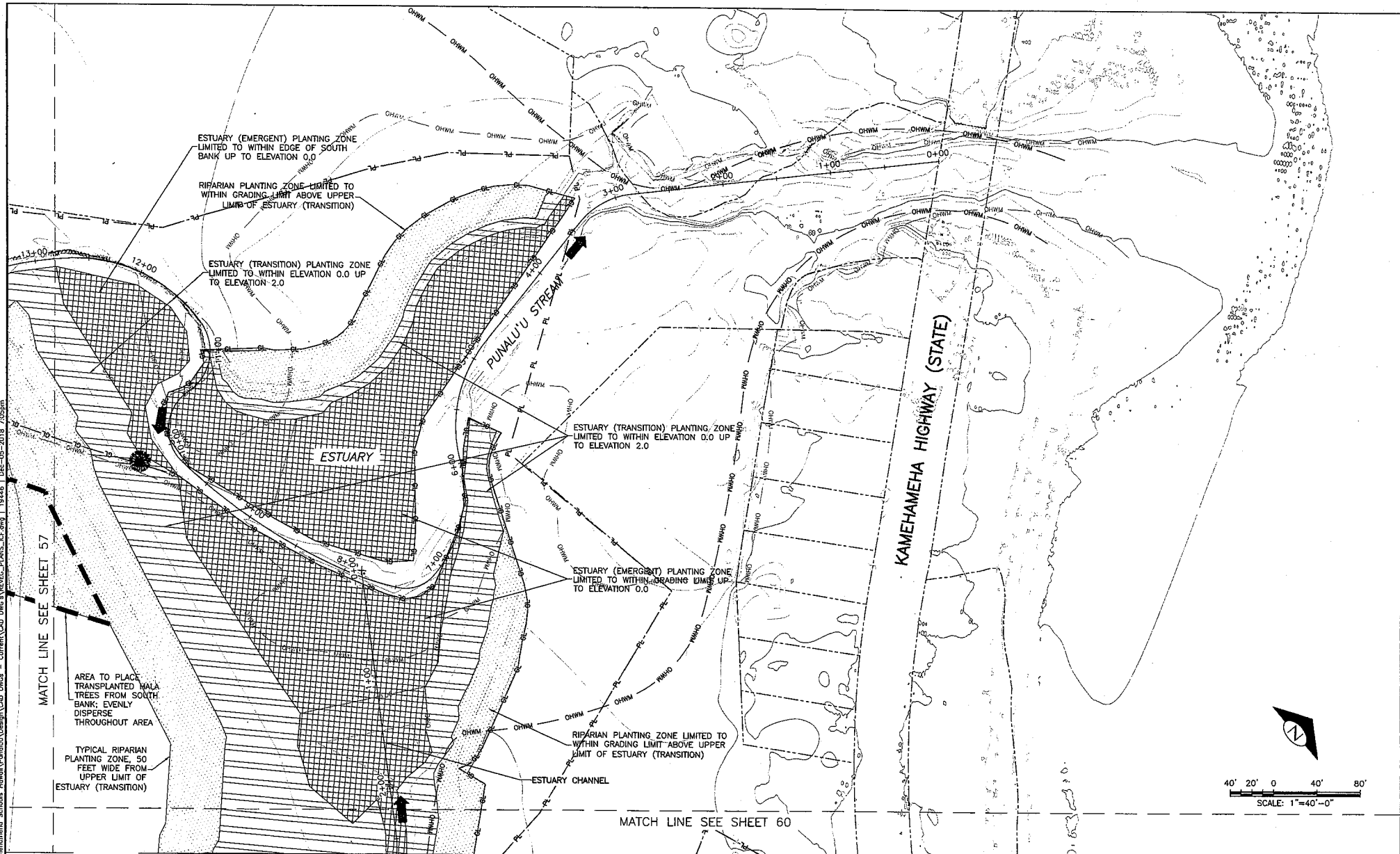




# EXHIBIT O



N:\Projects\Kamehameha Schools Hawaii\Punalu'u\Design\CAD\DWG - Current\CAD DWG\REVISED PLANS\CF.dwg | 18446 | Dec-05-2018 7:55pm



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NAME OR INITIALS AND DATE  
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CHECKED: J.A. M.H.  
DRAWN: M.S. EM  
CHECKED: M.H.

GEOGRAPHIC INFORMATION  
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LONGITUDE: 157°52'55"W  
TN/S&C/RC: -1-1-1-  
DATE: 10/26/18

PUNALU'U FLOOD MITIGATION AND STREAM RESTORATION

PLANTING PLAN 4

58

SHEET 58 OF 61

EXHIBIT P

Dec-05-2018 FINAL DRAWINGS 100%

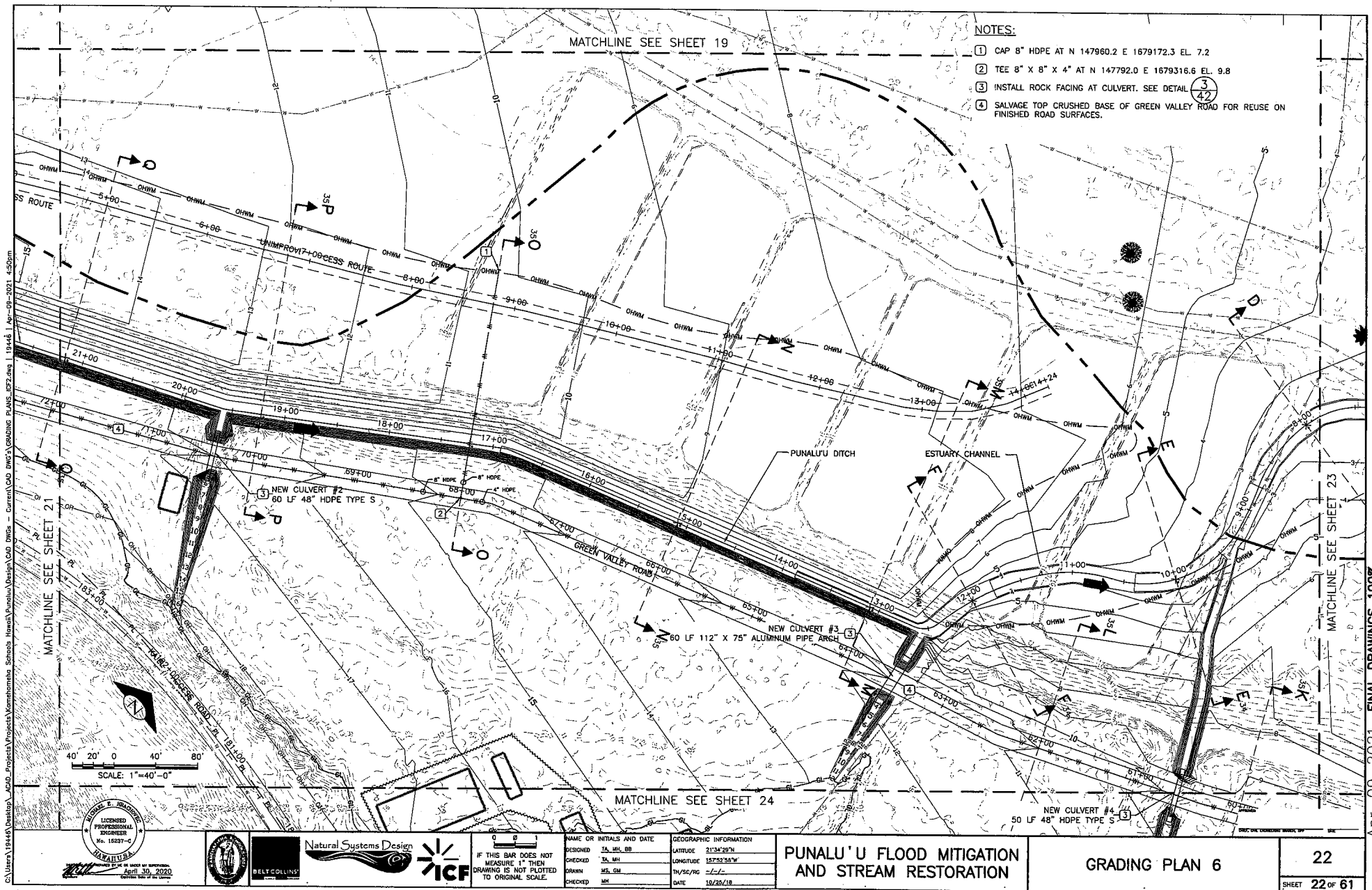






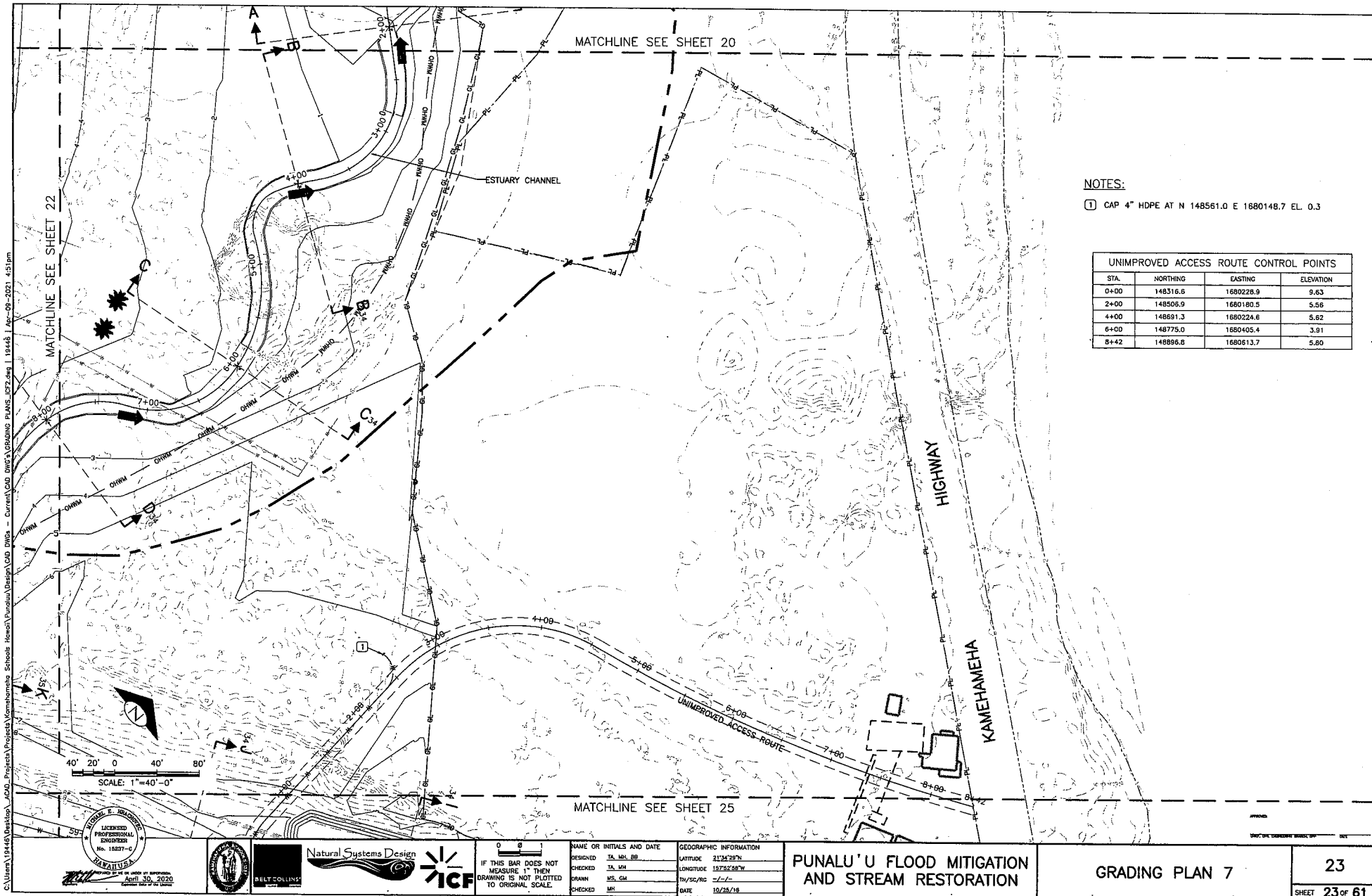
EXHIBIT Q

**Project/Venue/Date**



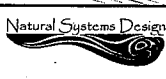
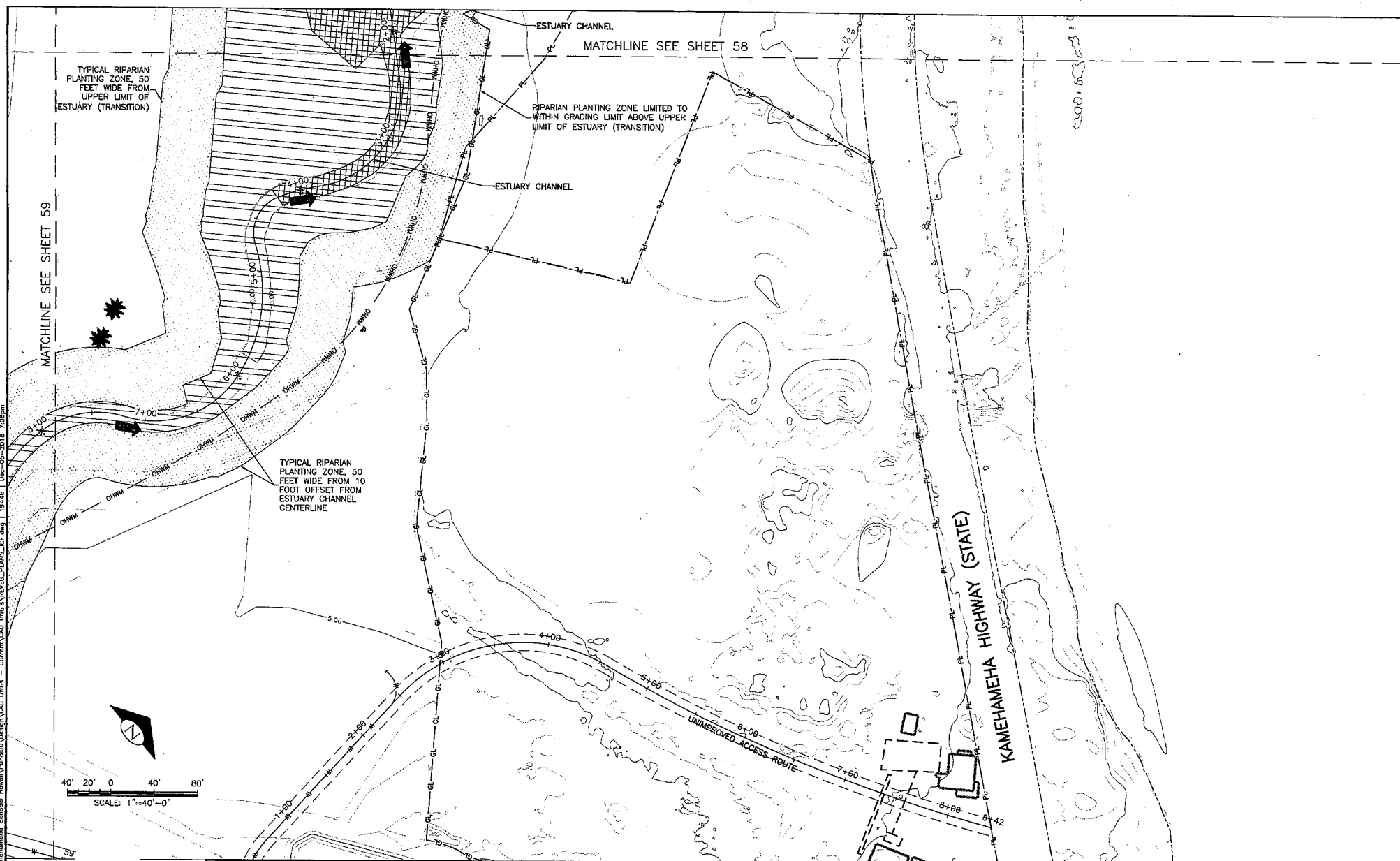
  	 <p>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.</p>	NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION	PUNALU'U FLOOD MITIGATION AND STREAM RESTORATION	PLANTING PLAN 5	59
		DESIGNED TA, MH, BS	LATITUDE 21°34'29"N			SHEET 59 OF 61
		CHECKED TA, MH	LONGITUDE 157°32'56"W			
		DRAWN MS, CM	TN/SC/IG 1-1-1			
		CHECKED MH	DATE 10/25/18			

# EXHIBIT R



# EXHIBIT S

\\projects\kamehameha\schools\hawaii\punahoa\design\cad\dwg - current\cad\dwg\punas\punas\_07.dwg | 18446 | Dec-05-2018 7:08pm



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CHECKED MH

GEOGRAPHIC INFORMATION  
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TN/SC/RG  
DATE 10/26/18

PUNAHOA FLOOD MITIGATION  
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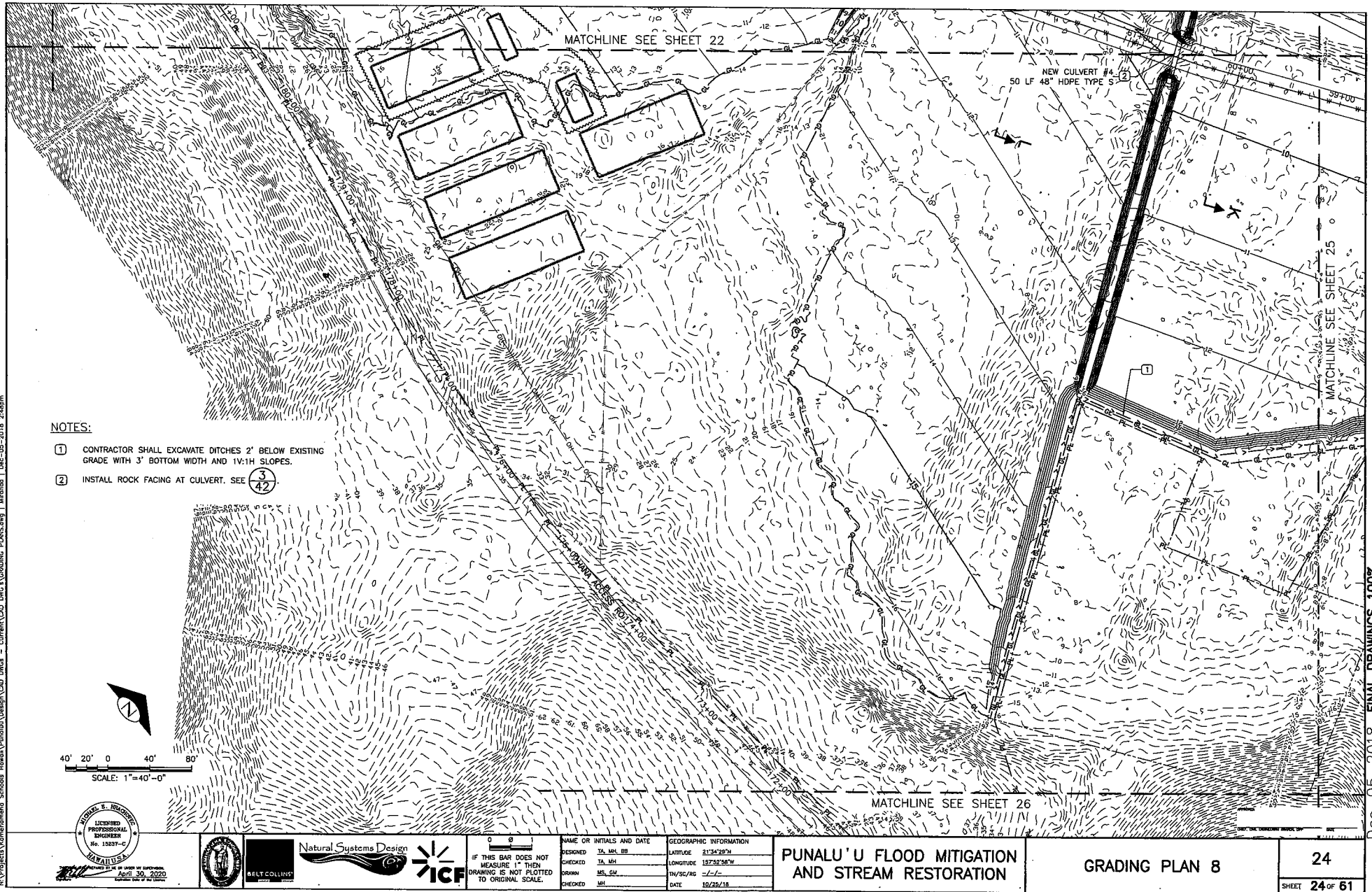
PLANTING PLAN 6

60  
SHEET 60 OF 61

EXHIBIT T

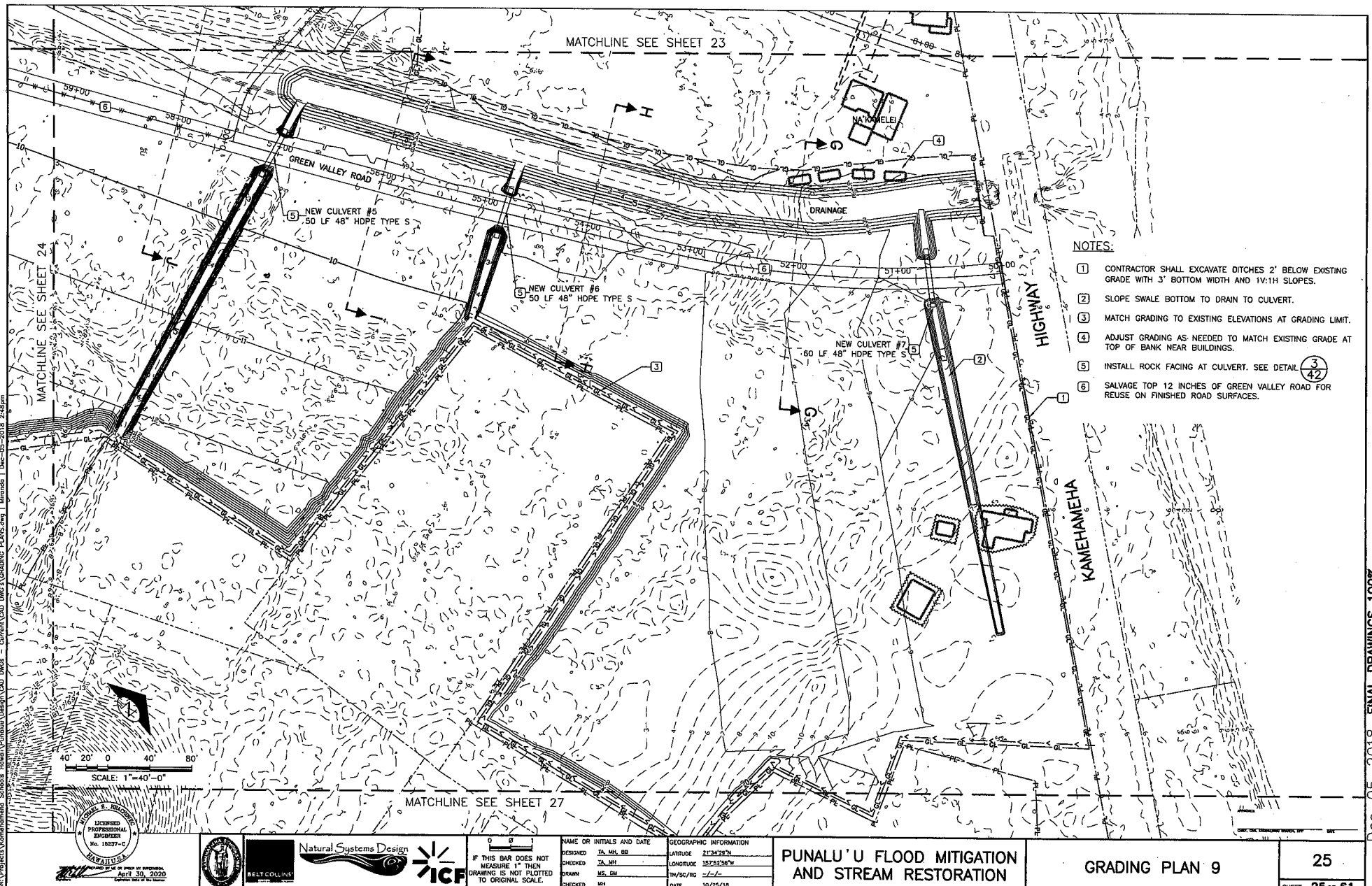
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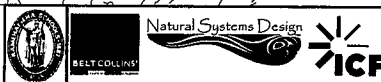
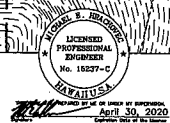
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- NOTES:**
- 1 CONTRACTOR SHALL EXCAVATE DITCHES 2' BELOW EXISTING GRADE WITH 3' BOTTOM WIDTH AND 1V:1H SLOPES.
  - 2 SLOPE SWALE BOTTOM TO DRAIN TO CULVERT.
  - 3 MATCH GRADING TO EXISTING ELEVATIONS AT GRADING LIMIT.
  - 4 ADJUST GRADING AS NEEDED TO MATCH EXISTING GRADE AT TOP OF BANK NEAR BUILDINGS.
  - 5 INSTALL ROCK FACING AT CULVERT. SEE DETAIL **(3/42)**
  - 6 SALVAGE TOP 12 INCHES OF GREEN VALLEY ROAD FOR REUSE ON FINISHED ROAD SURFACES.

SCALE: 1"=40'-0"



NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	DA, MS, 08	LATITUDE	21°34'29"N
CHECKED	MS, 04	LONGITUDE	157°53'28"W
DRAWN	MS, 04	TM/SC/IRG	2/6/18
CHECKED	MS, 04	DATE	10/25/18

**PUNALU'U FLOOD MITIGATION  
AND STREAM RESTORATION**

**GRADING PLAN 9**

**25**  
SHEET 25 OF 61

# **EXHIBIT V**

Dec-05-2018 FINAL DRAWINGS 100%

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DEPARTMENT OF PLANNING AND PERMITTING  
CITY AND COUNTY OF HONOLULU  
STATE OF HAWAII

IN THE MATTER OF THE )  
 )  
APPLICATION OF ) FILE NO. 2021/SMA-45  
 )  
KAMEHAMEHA SCHOOLS )  
\_\_\_\_\_ )

TRANSCRIPT OF PROCEEDINGS

The above-entitled matter came on for hearing at the Mission Memorial Auditorium, 550 South King Street, Honolulu, Hawaii on Friday, October 15, 2021, commencing at 10:31 a.m., pursuant to Notice.

BEFORE: JOYCE SHOJI, Hearings Officer  
WILLIAM AMMONS, Staff Planner



## P R O C E E D I N G S

1  
2 HEARINGS OFFICER SHOJI: Good morning everyone. My  
3 name is Joyce Shoji and I will be conducting today's public  
4 hearing.

5 We are here today to gather testimony on an  
6 application by the Kamehameha Schools for a Special  
7 Management Area Use Permit, DPP File No. 2021/SMA-45. The  
8 applicant requests a Special Management Area Use Permit to  
9 allow restoration work for the Punaluu Stream and the  
10 surrounding ecosystem, and the relocation of Green Valley  
11 Road.

12 For the record, we have the Department of Planning  
13 and Permitting staff planner William Ammons and hearings  
14 reporter Jeanne Sumida here in the auditorium. Also present  
15 is Greg Cieless from the Department of Information  
16 Technology to manage phone calls and remote testimonies.

17 Please understand that in light of the COVID-19  
18 pandemic and emergency proclamations by the Governor and  
19 Mayor, we've had to make some modifications to the way we  
20 conduct our meetings. For example, Revised Ordinances of  
21 Honolulu, Section 25-5.3(b), requiring public hearings to be  
22 held in the area in which the development is proposed is  
23 waived under the Governor's current emergency proclamation.  
24 We've also provided other options for public testimony which  
25 I'll discuss later.

1 I want to thank everyone in advance for being so  
2 flexible helping to keep everyone safe while maximizing the  
3 opportunity for members of the public to provide testimony  
4 and to be heard. Please note this meeting is being  
5 recorded. For those of you presenting testimony, please  
6 verbalize your presentation or testimony as much as possible  
7 for the audio recording.

8 The purpose of this hearing is to take testimony  
9 only. No decision will be made here today. However, all  
10 testimony received will be made a part of the record for the  
11 SMA application and will be taken into consideration by the  
12 director as part of his report and recommendation. The DPP  
13 has a maximum of 20 working days from this public hearing to  
14 transmit its report to the City Council. The transcript of  
15 this hearing will be attached to our transmittal to the City  
16 Council so they can consider what was heard today. You will  
17 have an opportunity to continue to provide testimony when  
18 the application goes to City Council for the actual  
19 decision-making. If you have further comments following the  
20 close of this hearing, you may submit them directly to the  
21 City Council. If you'd like to submit written comments to  
22 the Department of Planning and Permitting, please submit  
23 them by Friday, Octotober 22, 2021, which is one week from  
24 today.

25 You may provide testimony by computer or smartphone

1 via WebEx and by phone. We ask for your patience as there  
2 may be a delay. I would ask those of you from the public  
3 participating remotely to please mute your audio devices at  
4 this time and unmute yourself when you intend to speak. If  
5 you are testifying by phone, please press star six to mute  
6 and unmute yourself.

7 Our procedures will be as follows: I will describe  
8 the criteria for a Special Management Area Use Permit. Our  
9 staff planner will then present the basic facts behind the  
10 request. Then the applicant or agent will be allowed to  
11 describe the project in greater detail. Then we will take  
12 public testimony. At the end of public testimony, staff  
13 will have an opportunity to ask questions of the applicant.

14 Pursuant to Chapter 25 of the Revised Ordinances of  
15 Honolulu, number one, all development in the SMA shall be  
16 subject to reasonable terms and conditions to ensure that,  
17 one, adequate access is provided and properly located to  
18 publicly owned or used beaches, recreation areas and natural  
19 reserves; two, that provisions are made for solid and liquid  
20 waste treatment, disposition and management; and, three,  
21 that alterations to land forms and vegetation and  
22 construction of structures minimizes adverse effects to SMA  
23 resources and cause minimal potential danger relevant to  
24 natural disasters.

25 Secondly, no development in the SMA shall be

1 approved unless it is found that it will not have a  
2 substantial, adverse environmental or ecological effect.  
3 Development must be consistent with the Coastal Zone  
4 Management objectives, the General Plan, Development Plans  
5 and zoning.

6 Lastly, the City Council shall seek to minimize,  
7 where reasonable, altering any natural shoreline; any  
8 development which would reduce the size of any beach or  
9 public recreation area; any development which would reduce  
10 or risk public access to shoreline resources; any  
11 development which would substantially interfere with the  
12 line of sight toward the sea from the state highway; and any  
13 development which would adversely affect water, fishing  
14 grounds, wildlife habitats or agricultural uses.

15 Are the remote persons your agent? Okay.

16 At this point I'd like to note for the record that  
17 except for DPP staff, the Department of Information  
18 Technology staff, the applicant, agent and their associates,  
19 no one from the general public is present in the auditorium,  
20 on WebEx or on the phone to hear testimony.

21 The notice for this public hearing was published in  
22 the September 24, 2021 edition of the Honolulu  
23 Star-Advertiser and we have posted notices on the door  
24 leading to this room.

25 Would the applicant or the agent please come

1 forward and state your name for the record?

2 MR. FREY: My name is Jesse Frey. I'm the  
3 Kamehameha Schools project manager for this project.

4 HEARINGS OFFICER SHOJI: Thank you.

5 Our staff planner would normally present the  
6 relevant information behind the request. Being that  
7 everyone joining us today is familiar with the request,  
8 would you have any objections to foregoing William's  
9 presentation?

10 MR. FREY: No. No, I do not.

11 HEARINGS OFFICER SHOJI: Thank you.

12 Would the applicant or agent like to describe the  
13 project or stand on the information presented in the  
14 application?

15 MR. FREY: Given the circumstances today where  
16 there's no public participants, we'll elect to stand on the  
17 information.

18 HEARINGS OFFICER SHOJI: Thank you. Would you like  
19 to add any statements that are not already in the  
20 application?

21 MR. FREY: No, not at this time. Thank you.

22 HEARINGS OFFICER SHOJI: Thank you very much.

23 William, do you have any questions for the  
24 applicant?

25 MR. AMMONS: No questions at this time.

1           HEARINGS OFFICER SHOJI: Thank you, everyone. With  
2 no questions from the staff, this public hearing is closed.

3           (Whereupon, on Friday, October 15, 2021, at 10:39  
4 a.m., the hearing was adjourned.)

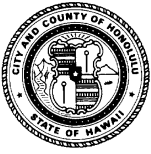
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1 STATE OF HAWAII

2 CITY AND COUNTY OF HONOLULU

3  
4 I, Jeanne Sumida, Secretary/Reporter, Department  
5 of Planning and Permitting, City and County of Honolulu,  
6 certify that the foregoing pages 1 through 7, inclusive,  
7 comprises true and accurate minutes of the entitled matter  
8 held on October 15, 2021.

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11 Jeanne Sumida  
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# CITY COUNCIL

CITY AND COUNTY OF HONOLULU  
HONOLULU, HAWAII

No. \_\_\_\_\_

## RESOLUTION

### GRANTING A SPECIAL MANAGEMENT AREA ("SMA") USE PERMIT FOR THE PUNALUU STREAM RESTORATION PROJECT.

WHEREAS, on August 26, 2021 the Department of Planning and Permitting ("DPP") accepted the application (DPP Reference Number 2021/SMA-45) from the Kamehameha Schools (the "Applicant") for a SMA Use Permit to allow restoration of the Punaluu Stream on an approximately 599-acre site zoned AG-2 General Agricultural District, Country District and P-1 Restricted Preservation District, located in the Punaluu watershed, Punaluu, Oahu, and identified by Tax Map Keys 5-3-001: 041 and 052, and 5-3-003: 001, as depicted in Exhibits A through E attached hereto; and

WHEREAS, the restoration activity will occur on a 121-acre portion of the site, 53.1 acres of which are located within the SMA (the "Project"); and

WHEREAS, on October 15, 2021, the DPP held a public hearing which was attended by the Agent, Applicant (attended remotely), DPP staff members, and the Department of Information Technology support staff. No member of the public was in attendance in person, virtually over the phone, or online; therefore, no one provided oral testimony in person or virtually at the hearing; and

WHEREAS, on November 15, 2021, within 20 working days after the close of the Public Hearing, the DPP, having duly considered all evidence and the objectives, policies, and guidelines, as established in Sections 25-3.1 and 25-3.2, Revised Ordinances of Honolulu, and Sections 205A-2 and 205A-26, Hawaii Revised Statutes ("HRS"), completed its report and transmitted its findings and recommendation and approval to the City Council by Departmental Communication \_\_\_\_\_; and

WHEREAS, the City Council, having received the findings and recommendation of the DPP on \_\_\_\_\_, and having duly considered all of the findings and reports on the matter, desires to approve the subject application for an SMA Use Permit with the conditions enumerated below; now, therefore,

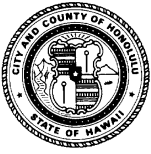
BE IT RESOLVED by the City Council of the City and County of Honolulu that an SMA Use Permit be issued to the Applicant for the Project, subject to the following conditions:

- A. Construction shall be in general conformity with the Project described herein and shown on the plans attached hereto as Exhibits F through V. Any changes in the size or nature of the Project, which have a significant effect on coastal resources addressed in Chapter 25, Revised Ordinances of Honolulu, and Chapter 205-A,

DPP21SMA45.R21

**D-767(21)**





# CITY COUNCIL

CITY AND COUNTY OF HONOLULU  
HONOLULU, HAWAII

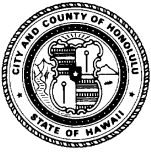
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## RESOLUTION

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Hawaii Revised Statutes (HRS), shall require a new application. Any changes which do not have a significant effect on coastal resources shall be considered a minor modification and, therefore, permitted under this resolution, upon review and approval of the Director of the DPP.

- B. If, during construction, any previously unidentified archaeological sites or remains (such as artifacts, shell, bone, or charcoal deposits, human burials, rock or coral alignments, paving, or walls) are encountered, the Applicant shall stop work and contact the Department of Land and Natural Resources, State Historic Preservation Division (SHPD) immediately. Work in the immediate area shall be stopped until the SHPD is able to assess the impact and make further recommendations for mitigative activity.
- C. Artificial light from exterior light fixtures, including, but not necessarily limited to floodlights, uplights, or spotlights used for decorative or aesthetic purposes, shall be prohibited if the light directly illuminates or is directed to project across property boundaries toward the shoreline and ocean waters, except as may otherwise be permitted pursuant to Section 205A-71(b), HRS.
- D. The Applicant shall coordinate with the U. S. Fish and Wildlife Service (USFWS) to comply with all of the following conditions relating to flora and fauna mitigation measures:
  - 1. Prior to any site work, a qualified biological monitor shall conduct Hawaiian waterbirds and nest surveys at the site;
  - 2. The USFWS shall be notified of, and provided with the results of the pre-construction Hawaiian waterbirds survey immediately prior to Project initiation;
  - 3. Any observed or documented nests or broods within the Project vicinity shall be reported to the USFWS within 48 hours of discovery;
  - 4. A 100-foot buffer shall be established and maintained around all active nests and broods until the chicks/ducklings have fledged. No potentially disruptive activities or habitat alternation may occur within this buffer;
  - 5. If a listed Hawaiian waterbird(s) is observed within the Project site, or flies into the site while activities are occurring (within 100 feet), all potentially disruptive activities (including human activity, mechanical or construction disturbance) shall be stopped until the animal(s) voluntarily leave the area;



# CITY COUNCIL

CITY AND COUNTY OF HONOLULU  
HONOLULU, HAWAII

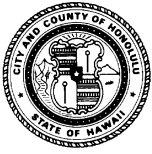
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## RESOLUTION

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6. A biological monitor shall be present on the Project site during all construction or earth moving activities to ensure that Hawaiian waterbirds and nests are not adversely impacted;
  7. To minimize impacts to the Hawaiian hoary bat's habitat, woody plants greater than 15 feet in height shall not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15); and
  8. Prior to site work, a qualified biologist shall survey the site for potential nesting Oahu Elepaio. No potentially disruptive activities during the breeding season shall occur.
- E. Approval of this SMA Use Permit does not constitute compliance with any other Land Use Ordinance (LUO) or other governmental requirements, including grading and grubbing permits. They are subject to separate review and approval. The Applicant will be responsible for insuring that the final plans for the Project approved under this permit comply with all applicable LUO and other governmental provisions and requirements.
- F. The Applicant shall obtain a development permit for the proposed development within two years of the date of this permit. Failure to obtain a development permit within this period shall render this permit null and void, provided that this period may be extended as follows: The Director of the DPP may extend this period if the Applicant demonstrates good cause, but the period shall not be extended beyond one year from the initial deadline set by the City Council.

If the Applicant demonstrates good cause for an extension exceeding one year, the Director shall prepare and submit to the Council a report on the proposed extension, which the report shall include the Director's findings and recommendations thereon. The Council may approve the proposed extension or an extension for a shorter or longer period, or deny the proposed extension, by adoption of a committee report or resolution. If the Council fails to take final action on the proposed extension within the first to occur of: (a) 60 days after receipt of the Director's report; or, (b) the Applicant's then-existing deadline for obtaining a building permit, the extension shall be deemed to be denied.



# CITY COUNCIL

CITY AND COUNTY OF HONOLULU  
HONOLULU, HAWAII

No. \_\_\_\_\_

## RESOLUTION

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BE IT FINALLY RESOLVED that copies of this Resolution be transmitted to Joey Char, Land Asset Manager Community Engagement and Resources Group, Kamehameha Schools, 567 South King Street, Suite 200, Honolulu, Hawaii 96813; Brendan Belby, ICF Project Manager, ICF, 980 9<sup>th</sup> Street, Suite 1200, Sacramento, California 95814; Dean Uchida, Director of the Department of Planning and Permitting, 650 South King Street, 7<sup>th</sup> Floor, Honolulu, Hawaii 96813; and Mary Alice Evans, Director of the Office of Planning and Sustainable Development, Attention: Coastal Zone Management Branch, P.O. Box 2359, Honolulu, Hawaii 96804.

INTRODUCED BY:

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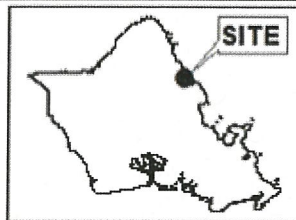
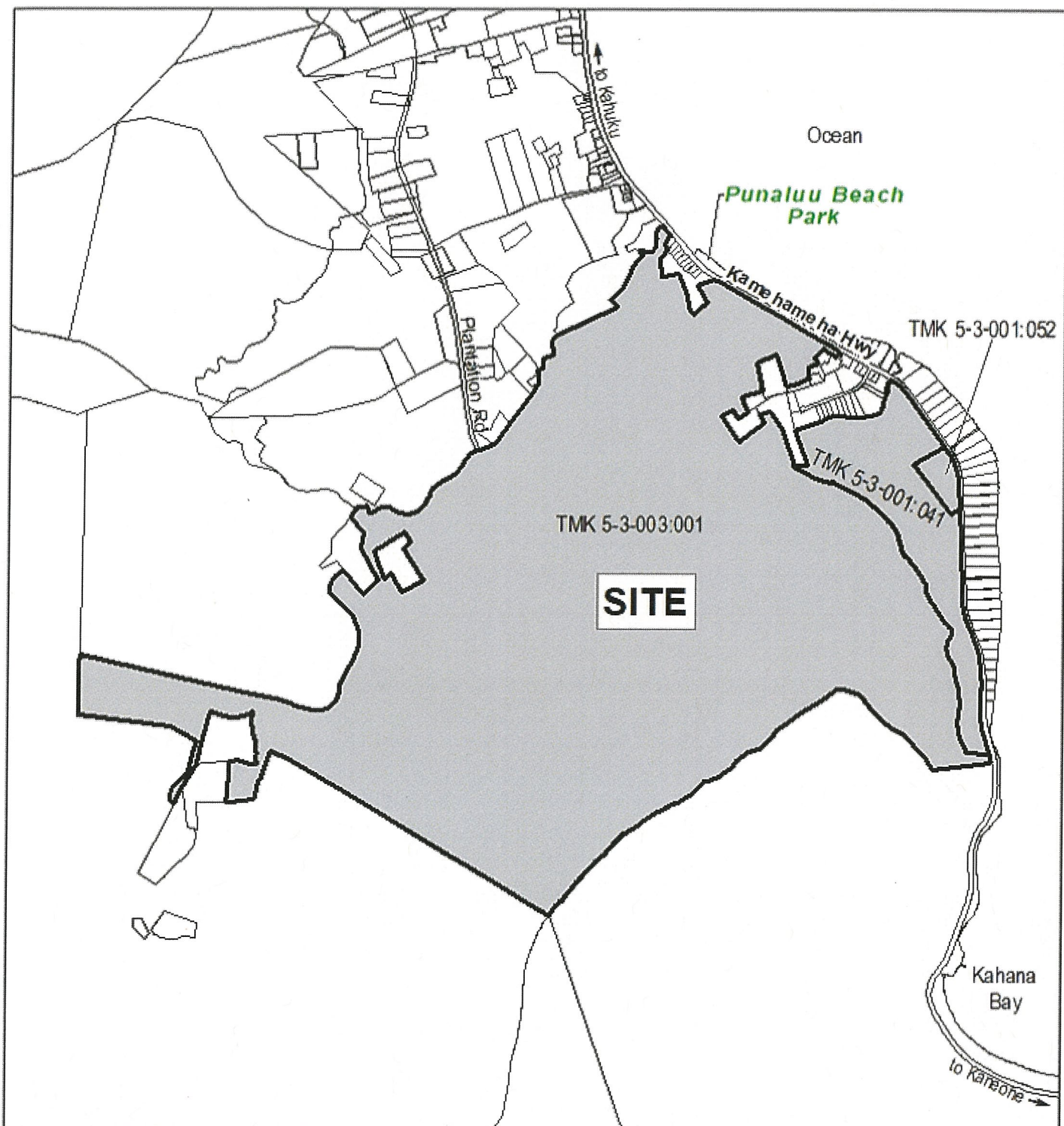
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Honolulu, Hawaii

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Councilmembers



VICINITY MAP

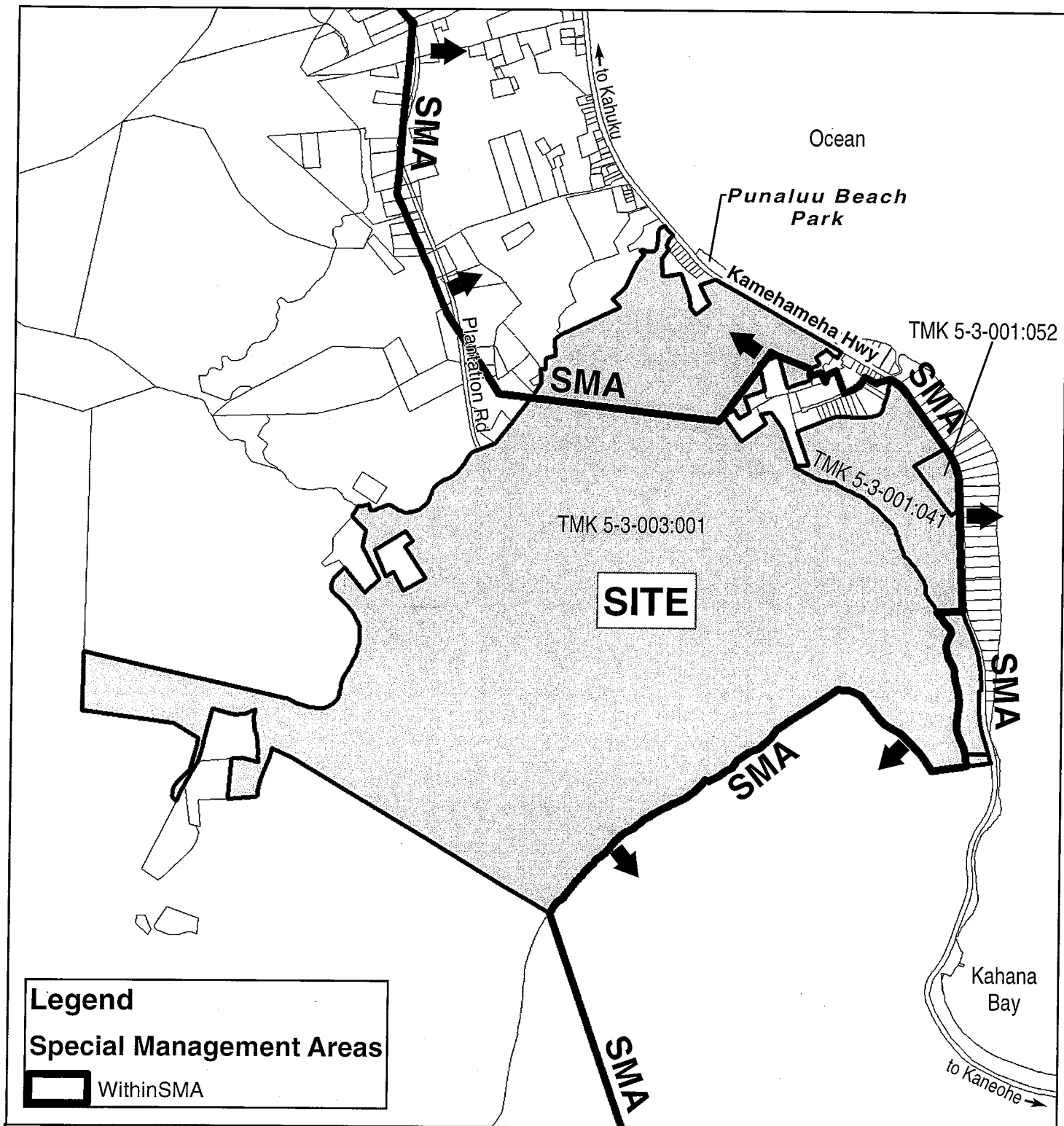
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## LOCATION MAP PUNALUU

TAX MAP KEY(S): 5-3-001:041, 5-3-001:052, and  
5-3-003:001

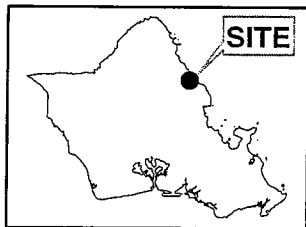
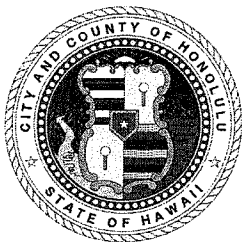
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**Legend**

**Special Management Areas**

Within SMA



VICINITY MAP

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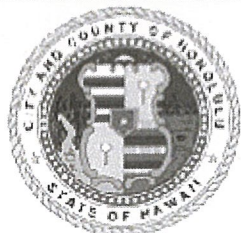
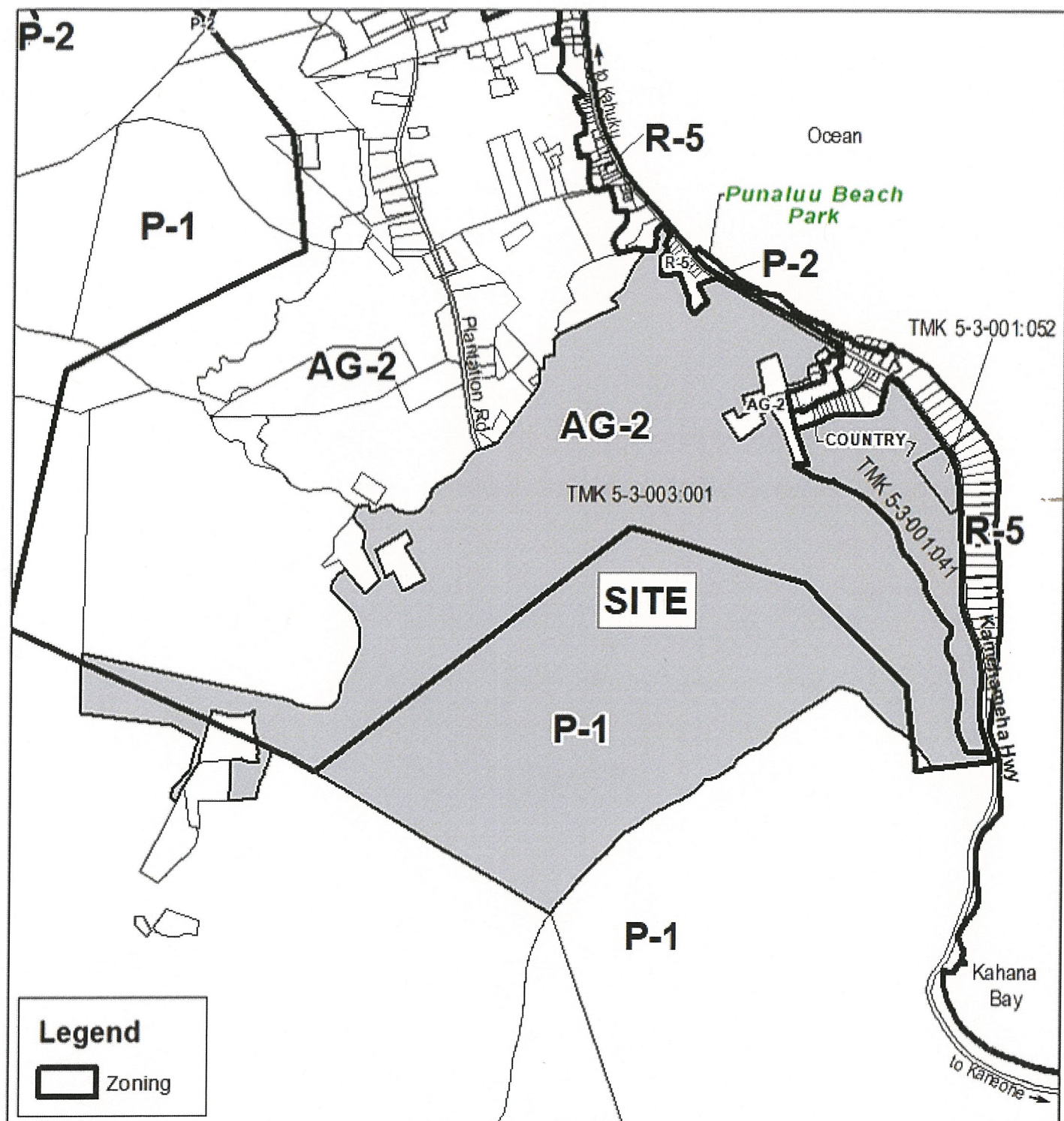


## Special Management Area Map PUNALUU

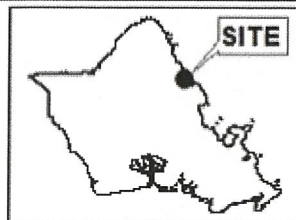
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FOLDER NO.: 2021/SMA-45





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VICINITY MAP

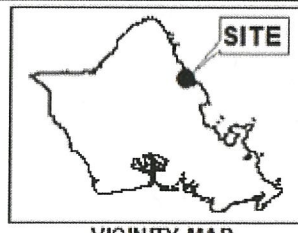
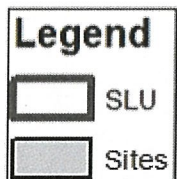
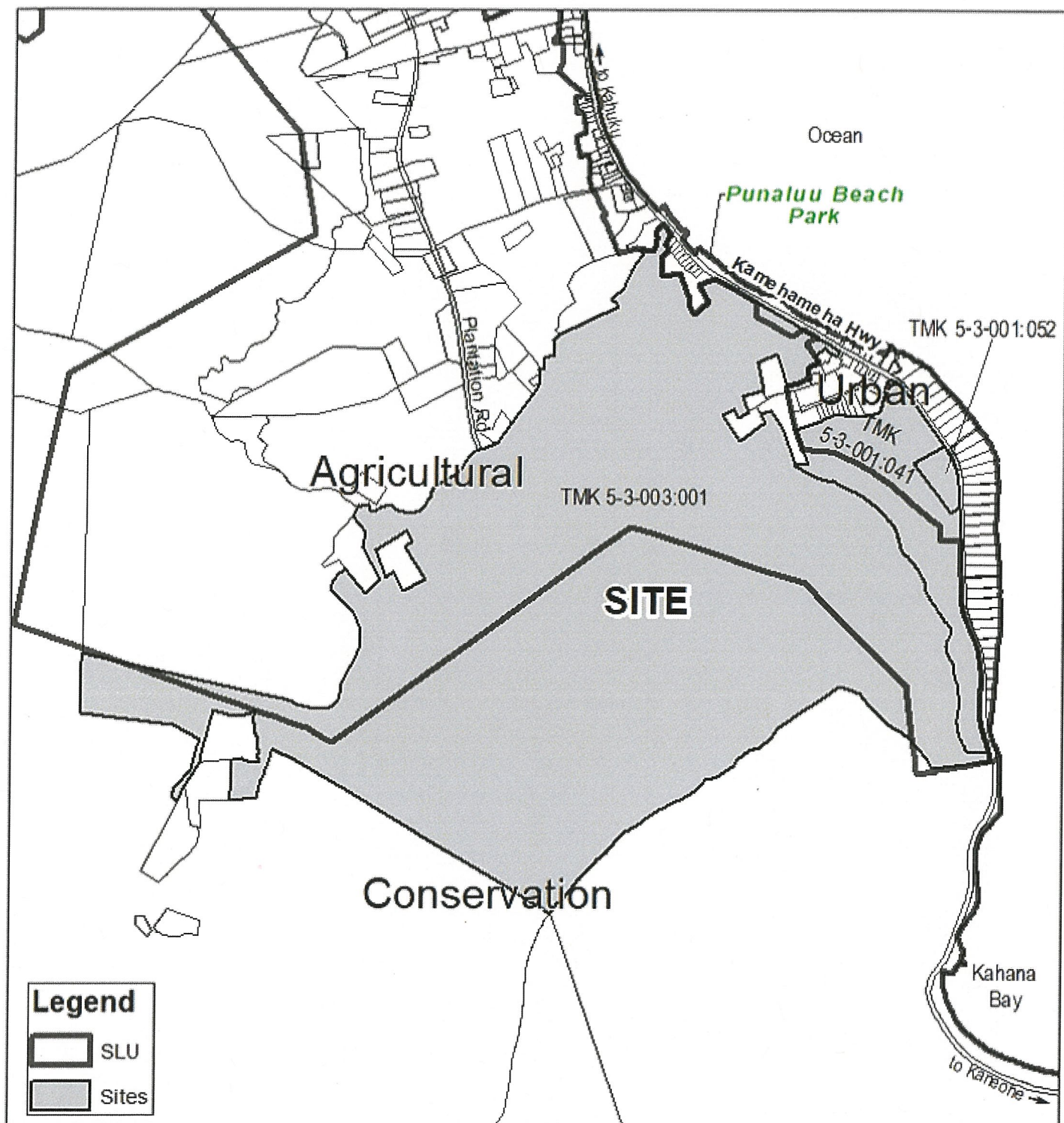


Portion of  
**EXISTING ZONING MAP**  
Hauula-Punaluu-Kaaawa

TAX MAP KEY(S): 5-3-001:041, 5-3-001:052, and  
5-3-003:001

FOLDER NO.: 2021/SMA-45





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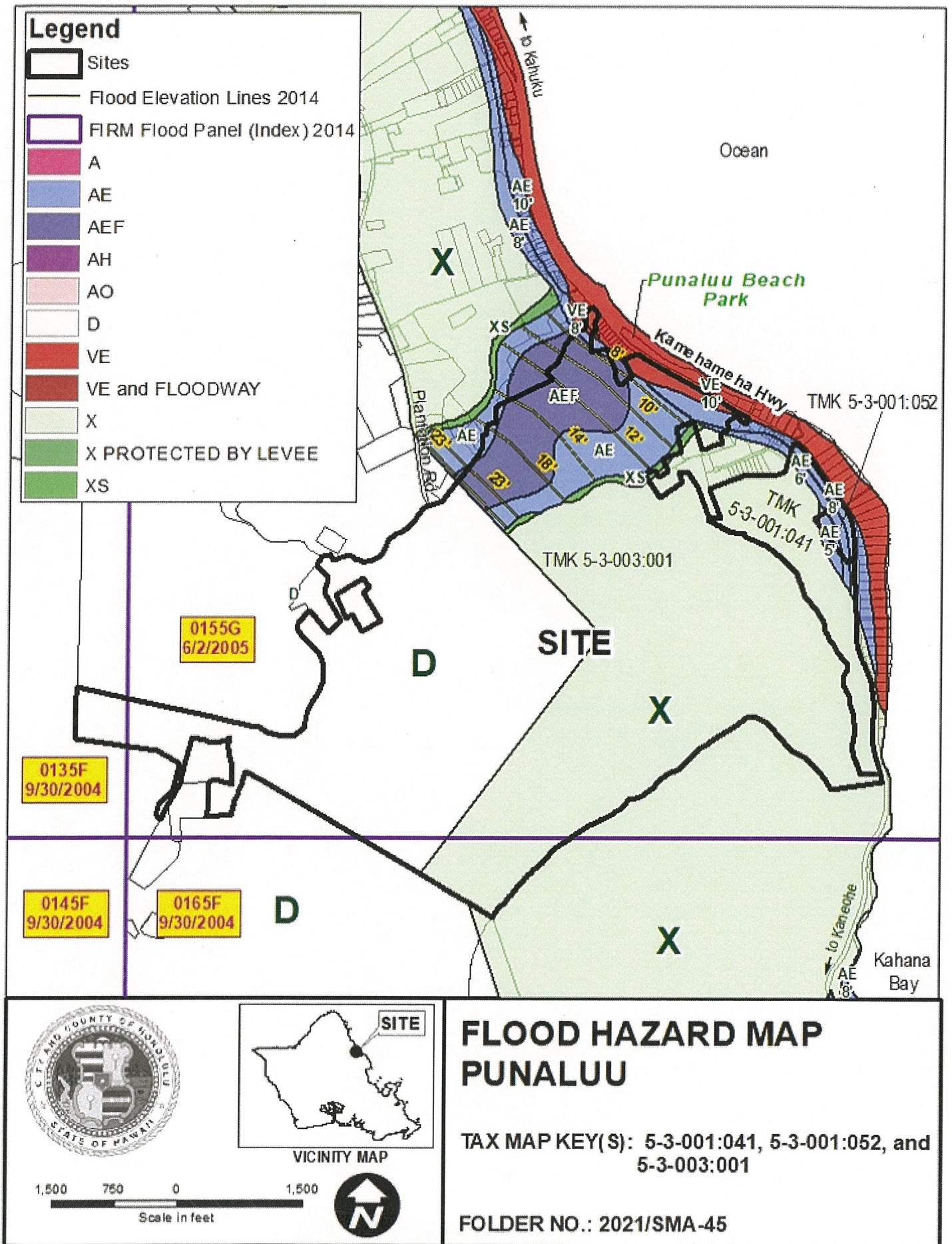


## PORTION OF STATE LAND USE PUNALUU

TAX MAP KEY(S): 5-3-001:041, 5-3-001:052, and  
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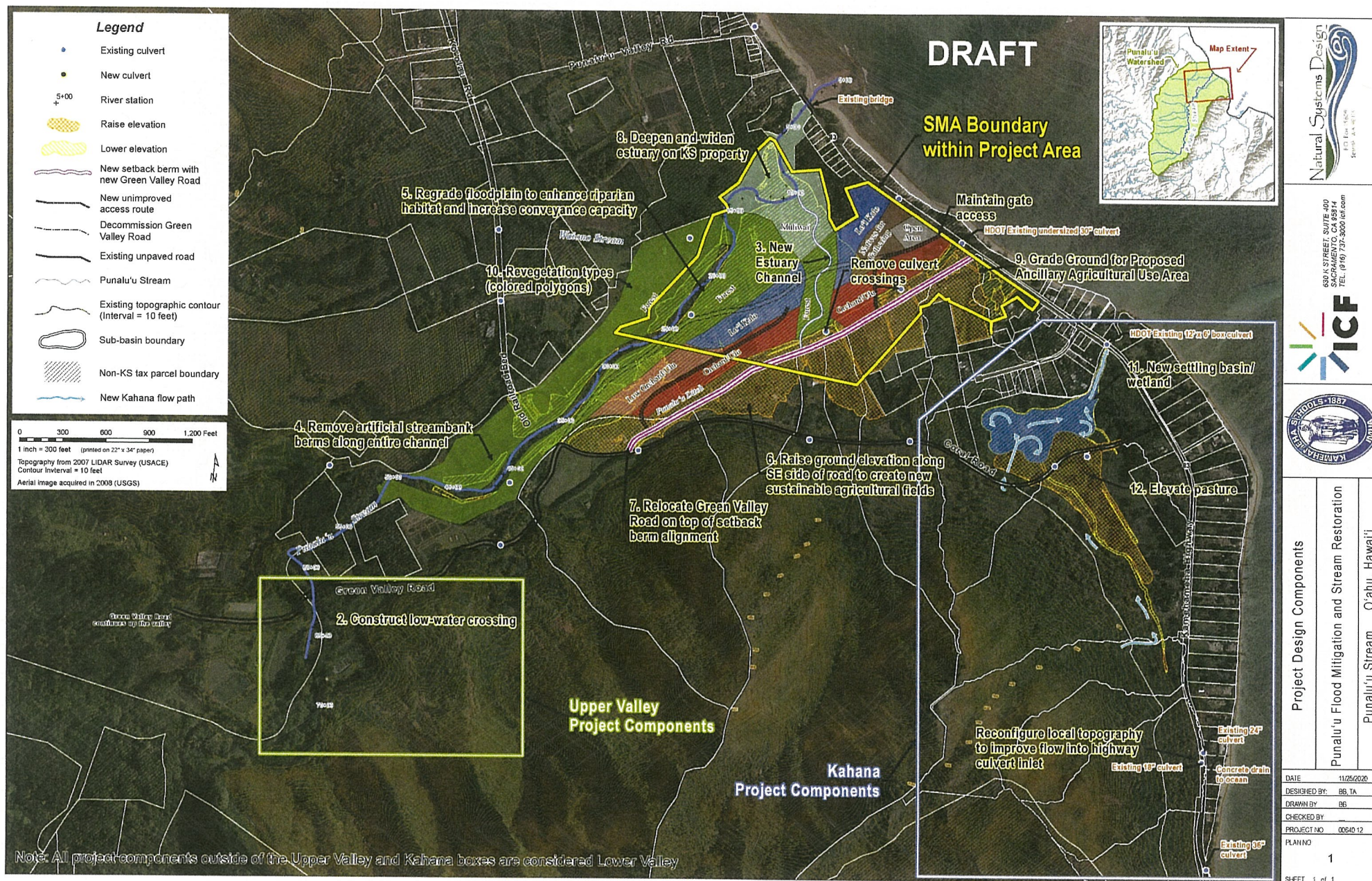




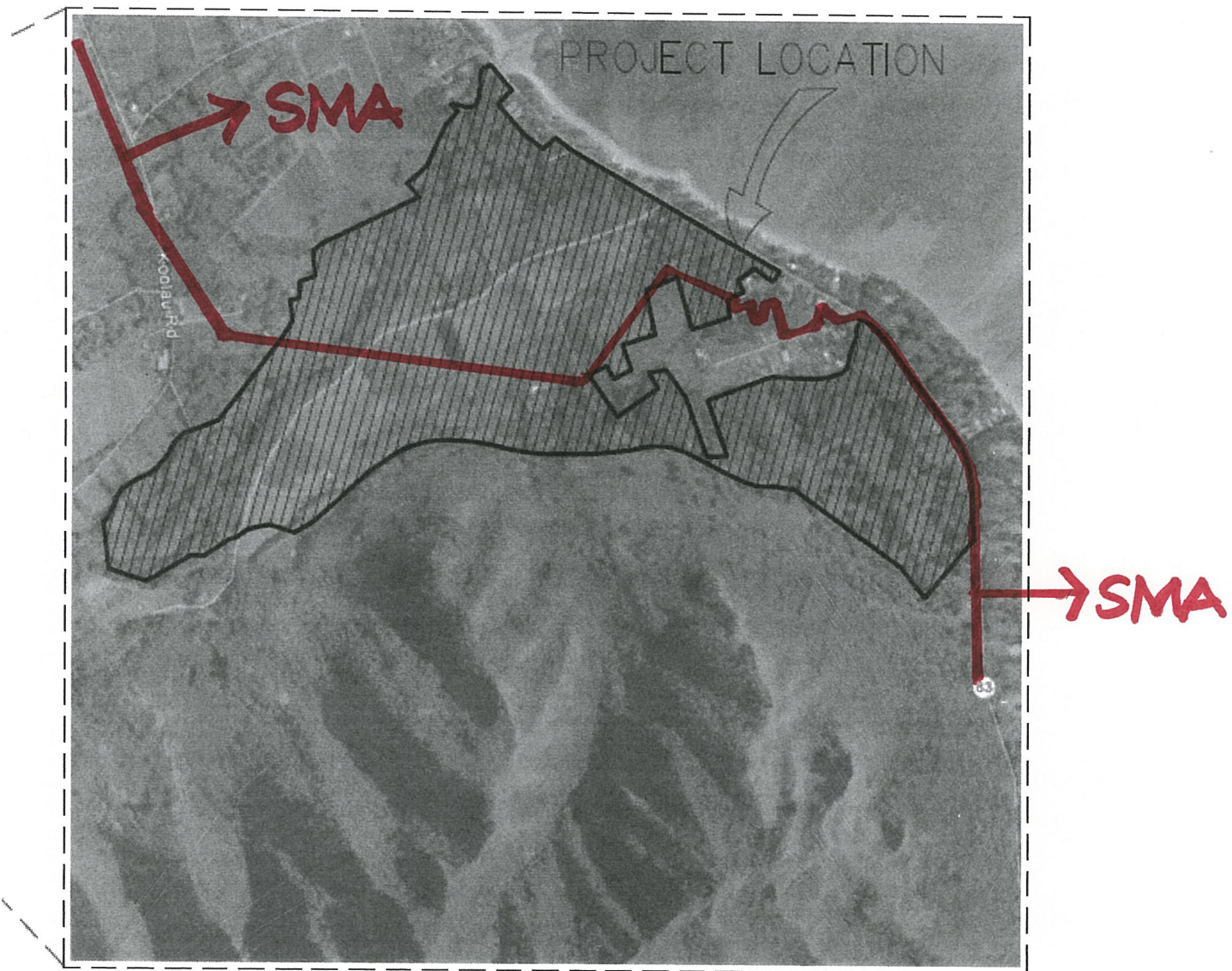
## EXHIBIT E



Exhibit 2-2. Punalu'u Flood Mitigation and Stream Restoration Project Elements



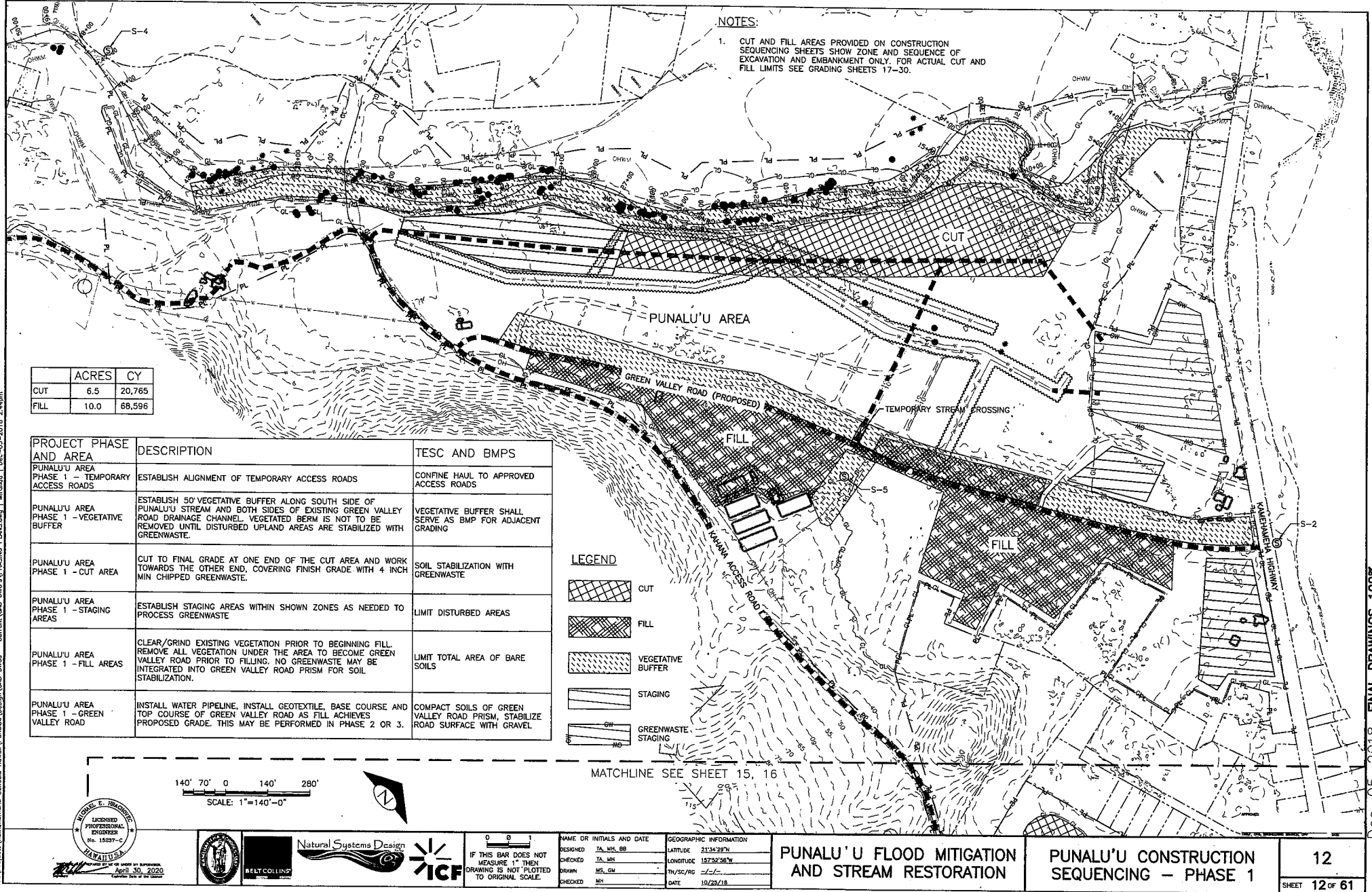




**PROJECT SITE**

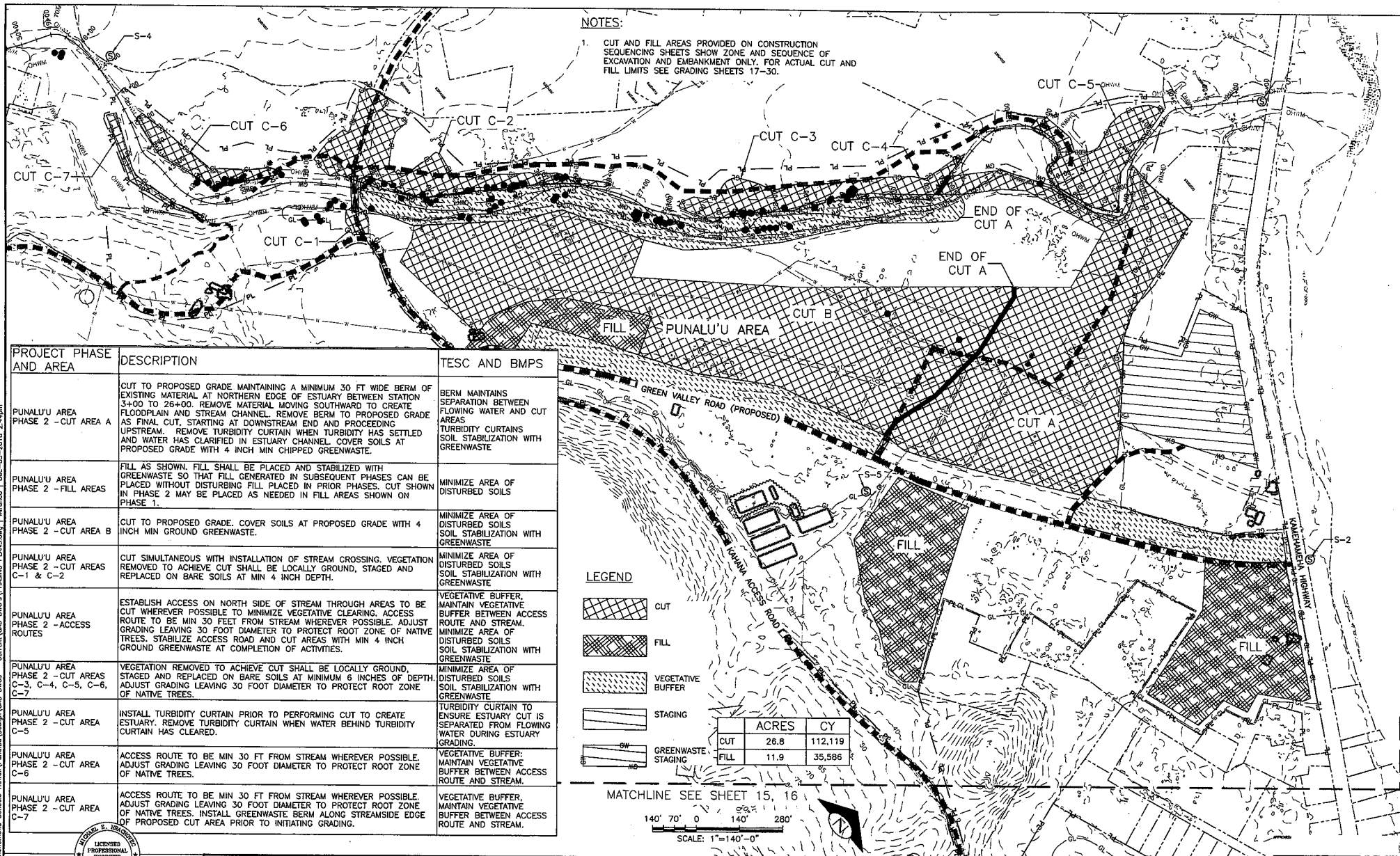
**EXHIBIT G**

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## EXHIBIT H

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NOTES:  
1. CUT AND FILL AREAS PROVIDED ON CONSTRUCTION SEQUENCING SHEETS SHOW ZONE AND SEQUENCE OF EXCAVATION AND EMBANKMENT ONLY. FOR ACTUAL CUT AND FILL LIMITS SEE GRADING SHEETS 17-30.

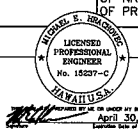
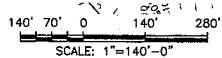
PROJECT PHASE AND AREA	DESCRIPTION	TESC AND BMPS
PUNALU'U AREA PHASE 2 - CUT AREA A	CUT TO PROPOSED GRADE MAINTAINING A MINIMUM 30 FT WIDE BERM OF EXISTING MATERIAL AT NORTHERN EDGE OF ESTUARY BETWEEN STATION 3+00 TO 26+00. REMOVE MATERIAL MOVING SOUTHWARD TO CREATE FLOODPLAIN AND STREAM CHANNEL. REMOVE BERM TO PROPOSED GRADE AS FINAL CUT. STARTING AT DOWNSTREAM END AND PROCEEDING UPSTREAM. REMOVE TURBIDITY CURTAIN WHEN TURBIDITY HAS SETTLED AND WATER HAS CLARIFIED IN ESTUARY CHANNEL. COVER SOILS AT PROPOSED GRADE WITH 4 INCH MIN CHIPPED GREENWASTE.	BERM MAINTAINS SEPARATION BETWEEN FLOWING WATER AND CUT AREAS TURBIDITY CURTAINS SOIL STABILIZATION WITH GREENWASTE
PUNALU'U AREA PHASE 2 - FILL AREAS	FILL AS SHOWN. FILL SHALL BE PLACED AND STABILIZED WITH GREENWASTE SO THAT FILL GENERATED IN SUBSEQUENT PHASES CAN BE PLACED WITHOUT DISTURBING FILL PLACED IN PRIOR PHASES. CUT SHOWN IN PHASE 2 MAY BE PLACED AS NEEDED IN FILL AREAS SHOWN ON PHASE 1.	MINIMIZE AREA OF DISTURBED SOILS
PUNALU'U AREA PHASE 2 - CUT AREA B	CUT TO PROPOSED GRADE. COVER SOILS AT PROPOSED GRADE WITH 4 INCH MIN GROUND GREENWASTE.	MINIMIZE AREA OF DISTURBED SOILS SOIL STABILIZATION WITH GREENWASTE
PUNALU'U AREA PHASE 2 - CUT AREAS C-1 & C-2	CUT SIMULTANEOUS WITH INSTALLATION OF STREAM CROSSING. VEGETATION REMOVED TO ACHIEVE CUT SHALL BE LOCALLY GROUND, STAGED AND REPLACED ON BARE SOILS AT MIN 4 INCH DEPTH.	MINIMIZE AREA OF DISTURBED SOILS SOIL STABILIZATION WITH GREENWASTE
PUNALU'U AREA PHASE 2 - ACCESS ROUTES	ESTABLISH ACCESS ON NORTH SIDE OF STREAM THROUGH AREAS TO BE CUT WHEREVER POSSIBLE TO MINIMIZE VEGETATIVE CLEARING. ACCESS ROUTE TO BE MIN 30 FEET FROM STREAM WHEREVER POSSIBLE. ADJUST GRADING LEAVING 30 FOOT DIAMETER TO PROTECT ROOT ZONE OF NATIVE TREES. STABILIZE ACCESS ROAD AND CUT AREAS WITH MIN 4 INCH GROUND GREENWASTE AT COMPLETION OF ACTIVITIES.	VEGETATIVE BUFFER. MAINTAIN VEGETATIVE BUFFER BETWEEN ACCESS ROUTE AND STREAM. MINIMIZE AREA OF DISTURBED SOILS SOIL STABILIZATION WITH GREENWASTE
PUNALU'U AREA PHASE 2 - CUT AREAS C-3, C-4, C-5, C-6, C-7	VEGETATION REMOVED TO ACHIEVE CUT SHALL BE LOCALLY GROUND, STAGED AND REPLACED ON BARE SOILS AT MINIMUM 6 INCHES OF DEPTH. ADJUST GRADING LEAVING 30 FOOT DIAMETER TO PROTECT ROOT ZONE OF NATIVE TREES.	MINIMIZE AREA OF DISTURBED SOILS SOIL STABILIZATION WITH GREENWASTE
PUNALU'U AREA PHASE 2 - CUT AREA C-5	INSTALL TURBIDITY CURTAIN PRIOR TO PERFORMING CUT TO CREATE ESTUARY. REMOVE TURBIDITY CURTAIN WHEN WATER BEHIND TURBIDITY CURTAIN HAS CLEARED.	TURBIDITY CURTAIN TO ENSURE ESTUARY CUT IS SEPARATED FROM FLOWING WATER DURING ESTUARY GRADING.
PUNALU'U AREA PHASE 2 - CUT AREA C-6	ACCESS ROUTE TO BE MIN 30 FT FROM STREAM WHEREVER POSSIBLE. ADJUST GRADING LEAVING 30 FOOT DIAMETER TO PROTECT ROOT ZONE OF NATIVE TREES.	VEGETATIVE BUFFER. MAINTAIN VEGETATIVE BUFFER BETWEEN ACCESS ROUTE AND STREAM.
PUNALU'U AREA PHASE 2 - CUT AREA C-7	ACCESS ROUTE TO BE MIN 30 FT FROM STREAM WHEREVER POSSIBLE. ADJUST GRADING LEAVING 30 FOOT DIAMETER TO PROTECT ROOT ZONE OF NATIVE TREES. INSTALL GREENWASTE BERM ALONG STREAMSIDE EDGE OF PROPOSED CUT AREA PRIOR TO INITIATING GRADING.	VEGETATIVE BUFFER. MAINTAIN VEGETATIVE BUFFER BETWEEN ACCESS ROUTE AND STREAM.

LEGEND

- CUT
- FILL
- VEGETATIVE BUFFER
- STAGING
- GREENWASTE STAGING

	ACRES	CY
CUT	26.8	112,119
FILL	11.9	35,586

MATCHLINE SEE SHEET 15, 16



IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

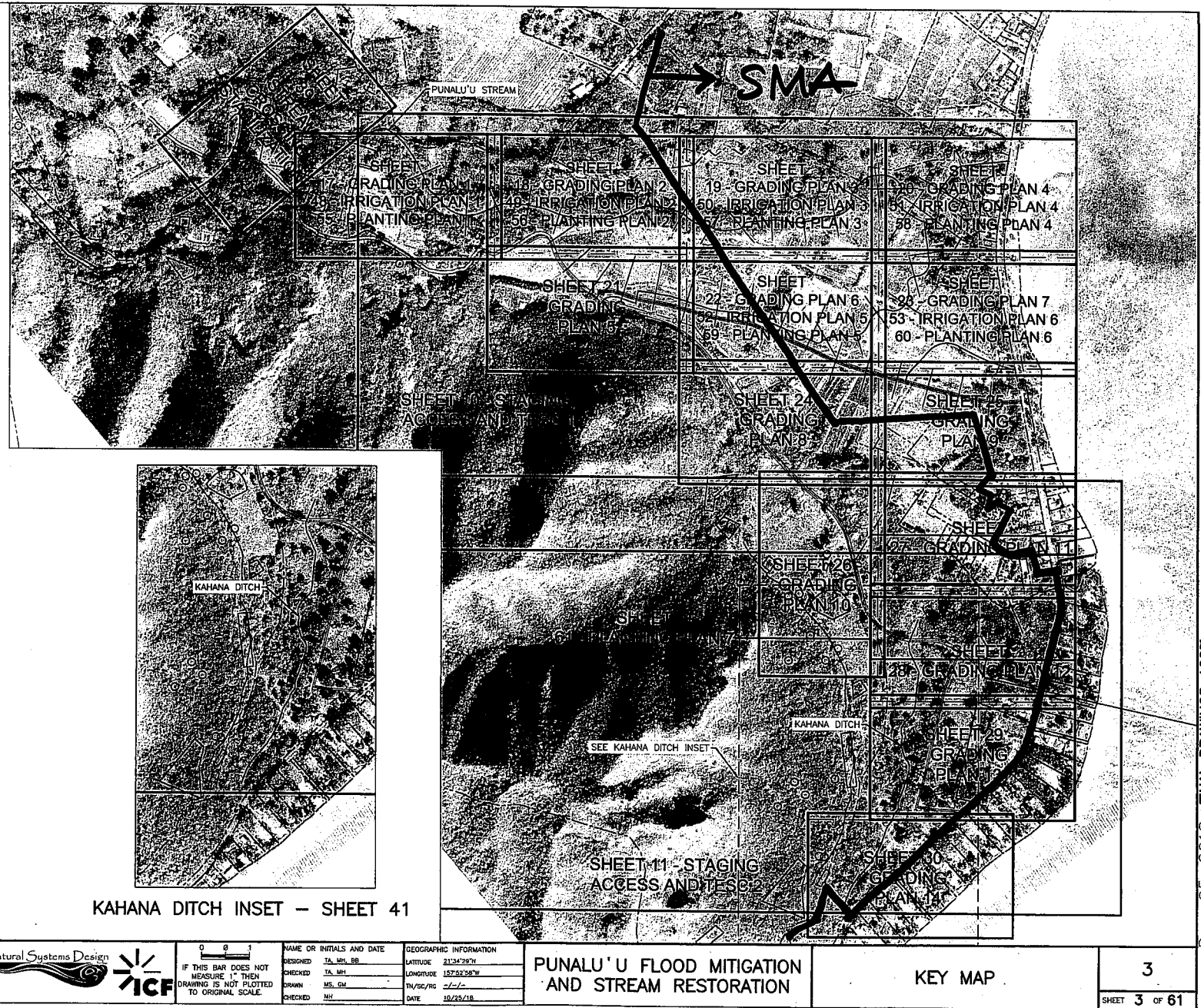
NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED: JA, MK, BB	LATITUDE: 21°34'28"N
CHECKED: JA, MK	LONGITUDE: 157°52'39"W
DRAWN: MS, CM	TM/SC/RC: -/-/-
CHECKED: MH	DATE: 10/25/18

PUNALU'U FLOOD MITIGATION AND STREAM RESTORATION	PUNALU'U CONSTRUCTION SEQUENCING - PHASE 2	13
		SHEET 13 of 61

EXHIBIT I







# EXHIBIT K



**GENERAL LEGEND**

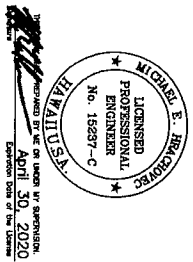
	PROPERTY/PARCEL LINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	EXISTING ACCESS ROAD
	TEMPORARY ACCESS ROAD
	EXISTING ORDINARY HIGH WATER MARK
	PROPOSED ORDINARY HIGH WATER MARK
	EXISTING WATER LINE
	PROPOSED WATER LINE
	PROJECT LIMIT
	GRADING LIMIT
	GREEN WASTE STAGING AREA
	SILT FENCE OR GREENWASTE BERM
	TURBIDITY CURTAIN
	EXISTING OVERHEAD POWER LINE
	PROPOSED DITCH CENTERLINE
	PROPOSED STREAM BYPASS
	TEMPORARY STREAM CROSSING
	DEMOLITION/REMOVAL AREA
	STAGING AREA/GREENWASTE PROCESSING AREA
	REVEGETATION AREA TO BE CLEARED OUTSIDE OF GRADING LIMIT
	PROPOSED CULVERT
	EXISTING STRUCTURE
	EXISTING CULTURAL AREA
	NATIVE TREE TO PROTECT
	NATIVE TREE TO RELOCATE
	TURBIDITY MONITORING STATION AND NUMBER

**DETAIL A**

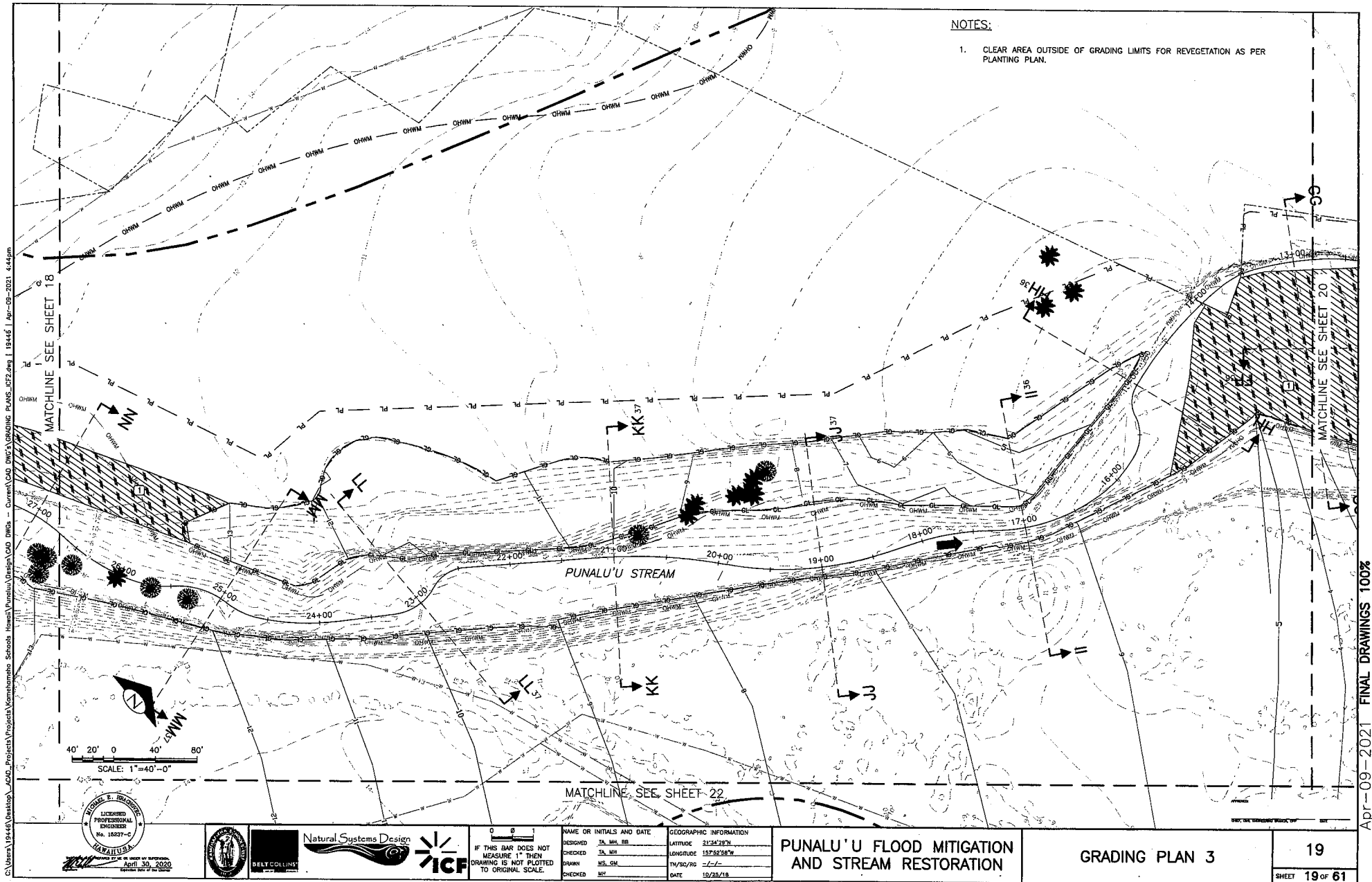
A  
↓

**SECTION**  
SCALE: 1"

**EXHIBIT L**

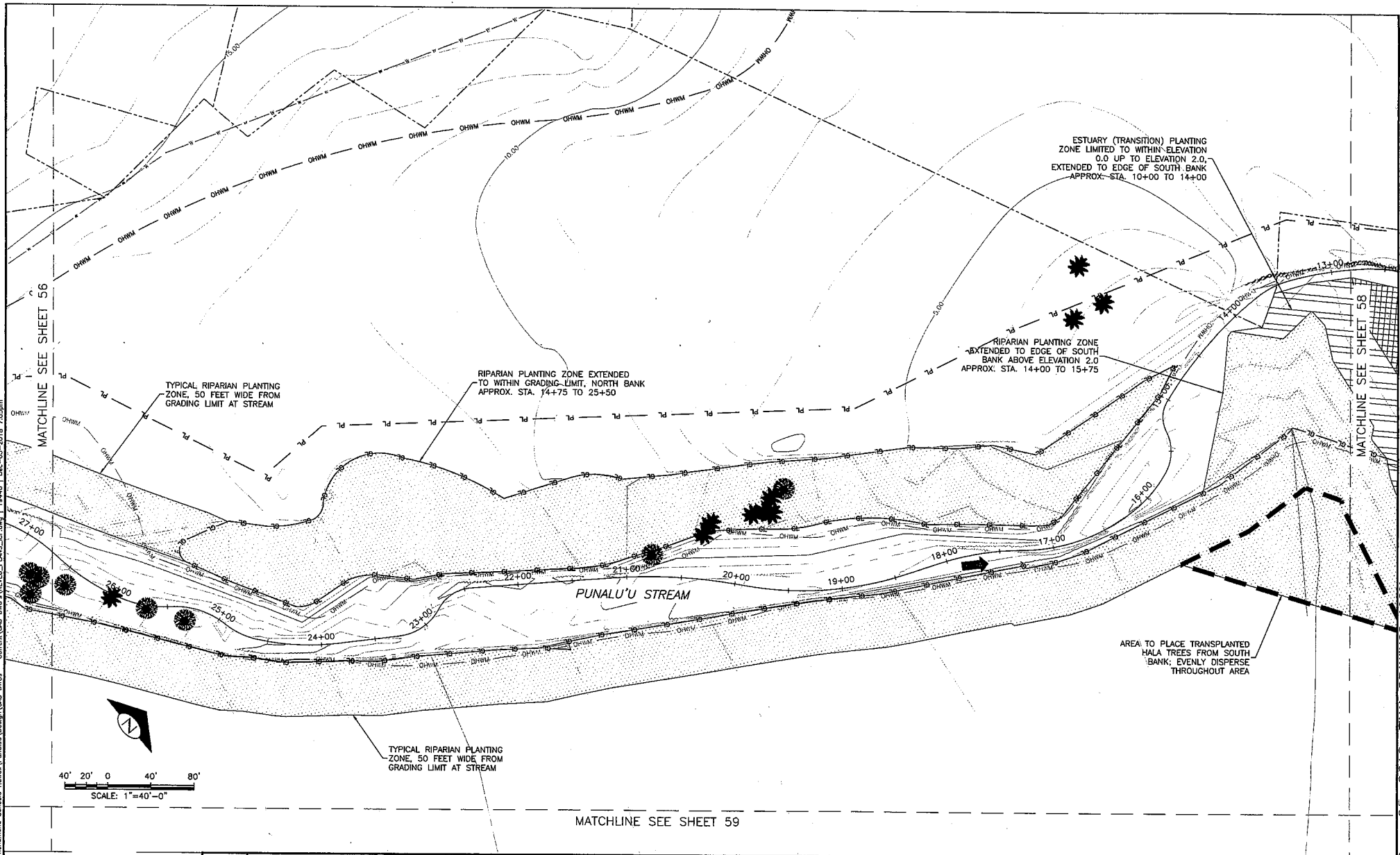


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**EXHIBIT M**

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Natural Systems Design



IF THIS BAR DOES NOT  
MEASURE 1" THEN  
DRAWING IS NOT PLOTTED  
TO ORIGINAL SCALE.

NAME OR INITIALS AND DATE	
DESIGNED	JA, BA, BB
CHECKED	JA, BH
DRAWN	JS, GM
CHECKED	MM

GEOGRAPHIC INFORMATION	
LATITUDE	21°34'20"N
LONGITUDE	157°52'36"W
TM/SC/RG	1111
DATE	10/25/18

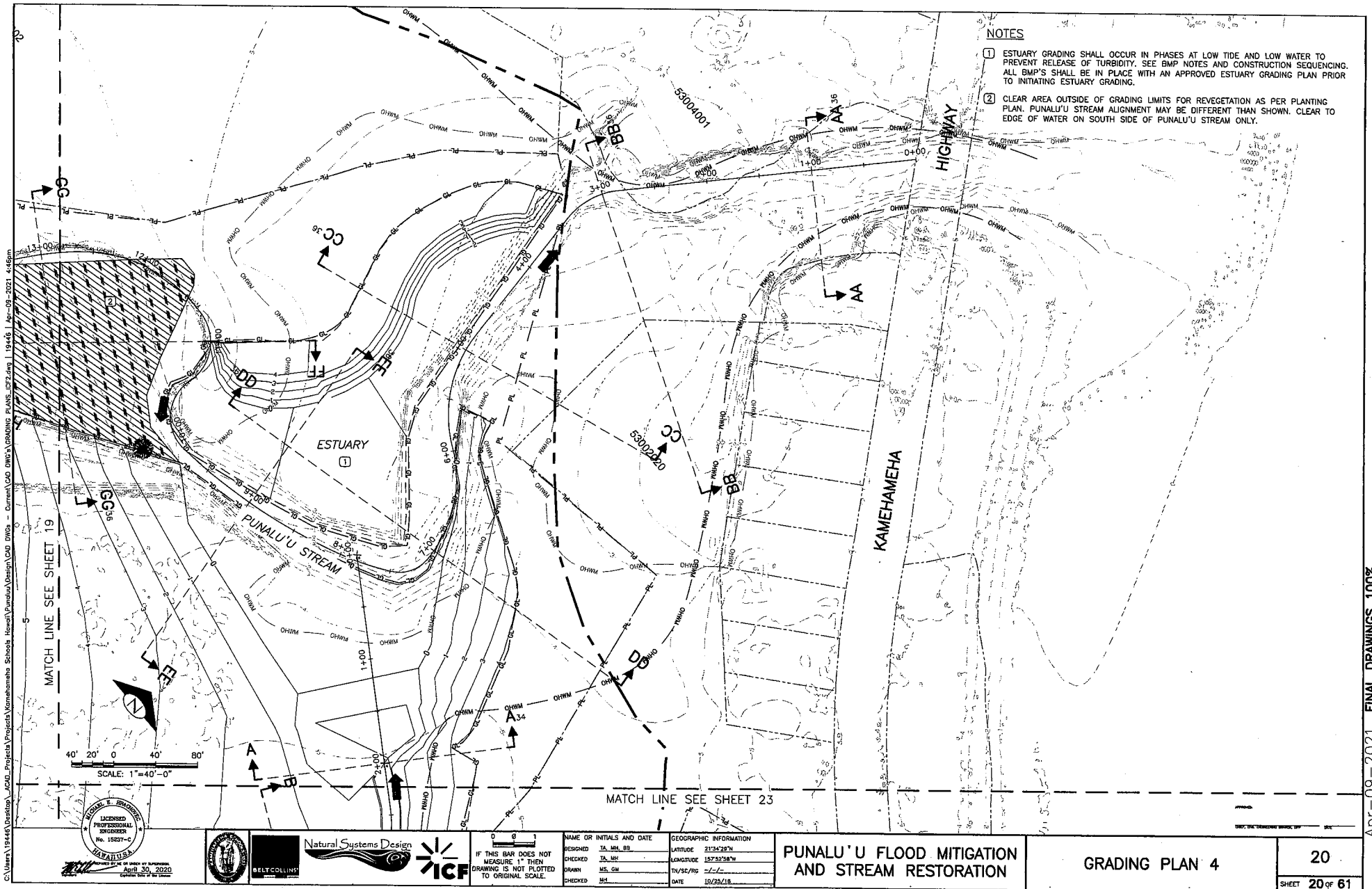
**PUNALUU FLOOD MITIGATION  
AND STREAM RESTORATION**

**PLANTING PLAN 3**

**57**  
SHEET 57 OF 61

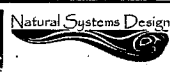
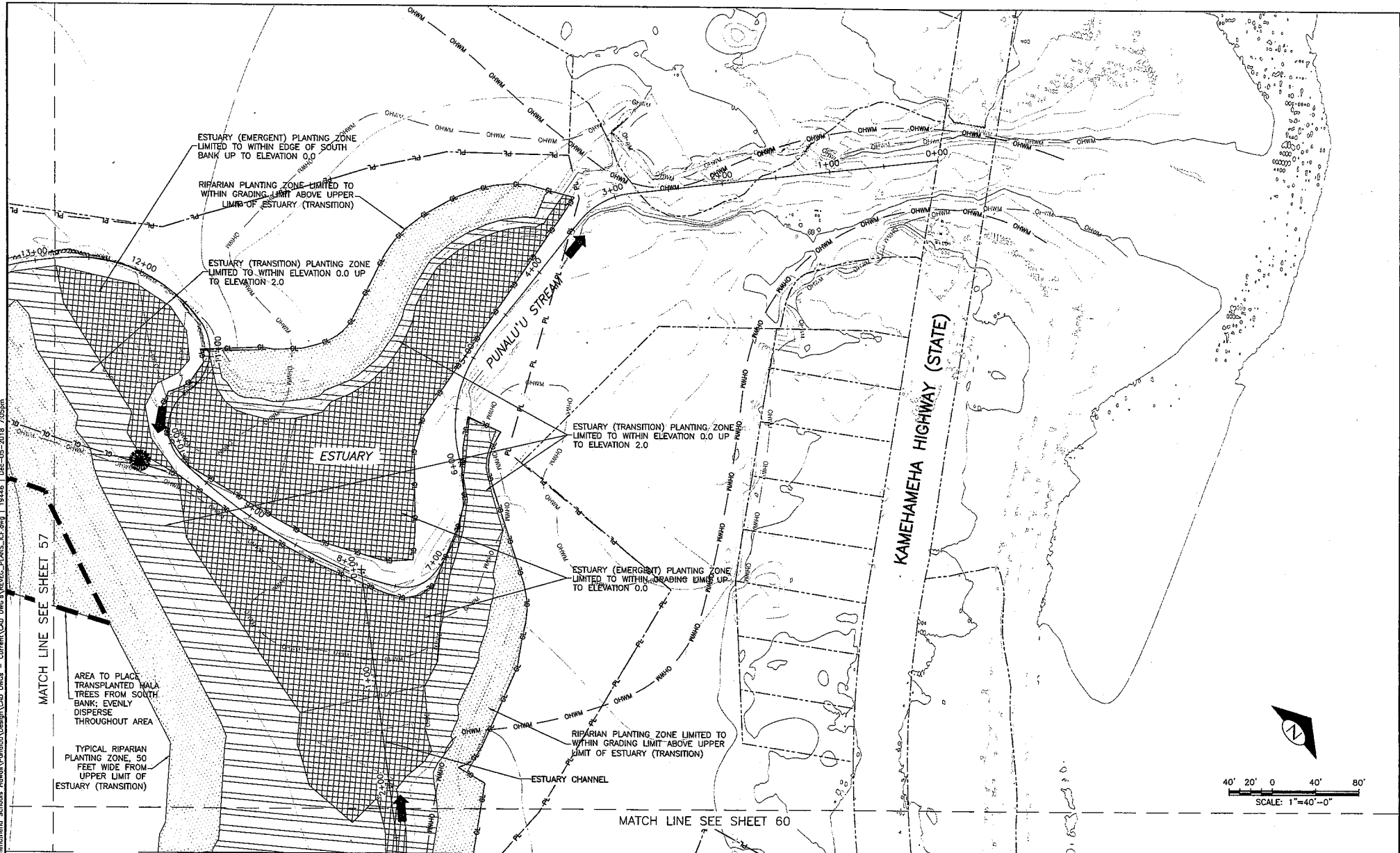
**EXHIBIT N**

Dec-05-2018 FINAL DRAWINGS 100%



# EXHIBIT O

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

NAME OR INITIALS AND DATE  
DESIGNED J.A. M.H. BS  
CHECKED J.A. M.H.  
DRAWN M.S. EM  
CHECKED M.H.

GEOGRAPHIC INFORMATION  
LATITUDE 21°34'29"N  
LONGITUDE 157°52'55"W  
TM/SC/RD 1-1-1  
DATE 10/26/18

PUNALU'U FLOOD MITIGATION AND STREAM RESTORATION

PLANTING PLAN 4

58  
SHEET 58 OF 61

EXHIBIT P

Dec-05-2018 FINAL DRAWINGS 100%

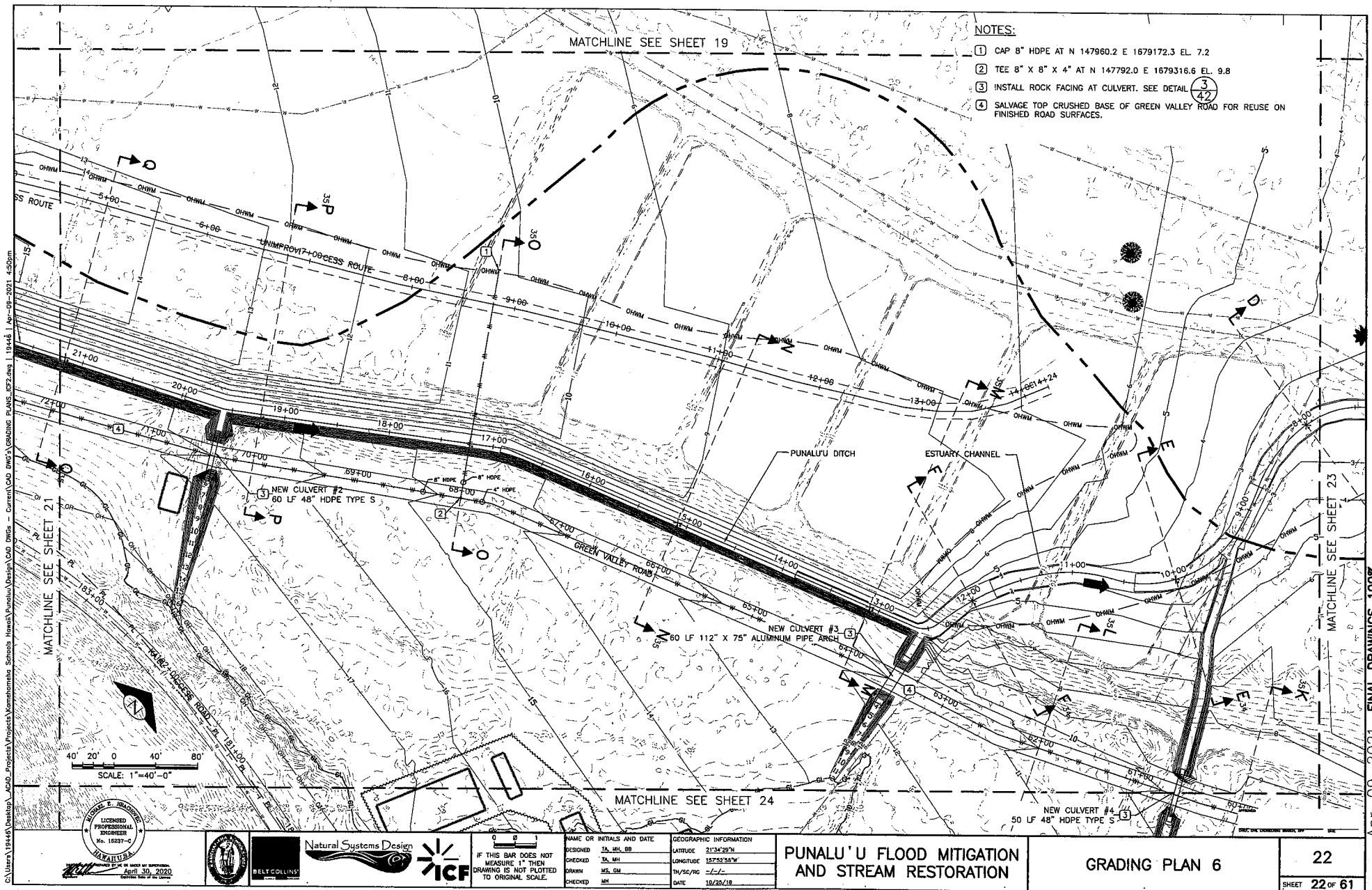






EXHIBIT Q



**Project/Venue/Date**



  	 <p>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.</p>	NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION	PUNALU'U FLOOD MITIGATION AND STREAM RESTORATION	PLANTING PLAN 5	59
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		CHECKED TA, MH	LONGITUDE 157°32'56"W			
		DRAWN MS, CM	TAZ/SC/RC 1-1-1			
		CHECKED MH	DATE 10/25/18			

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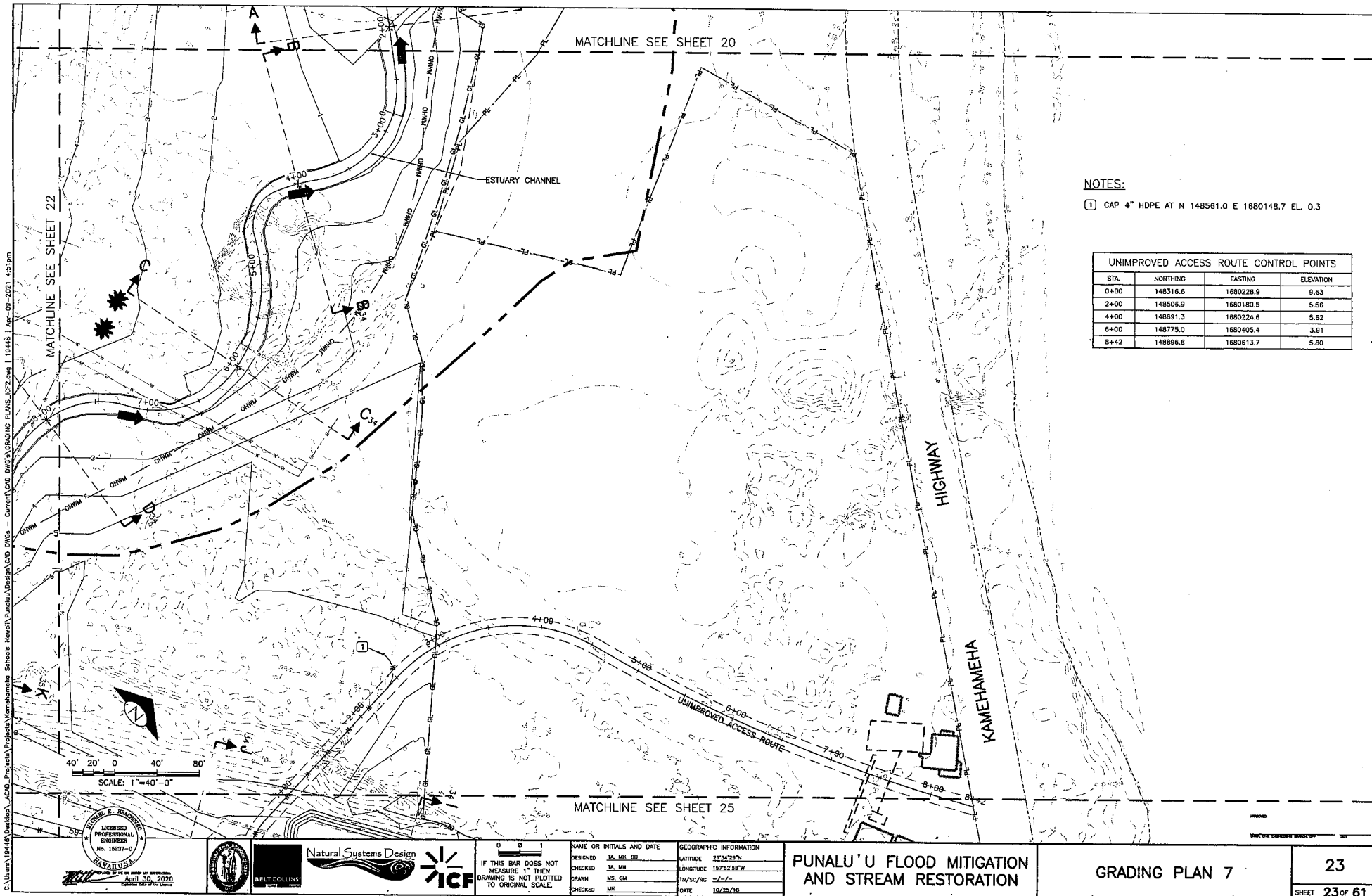
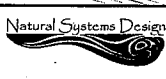
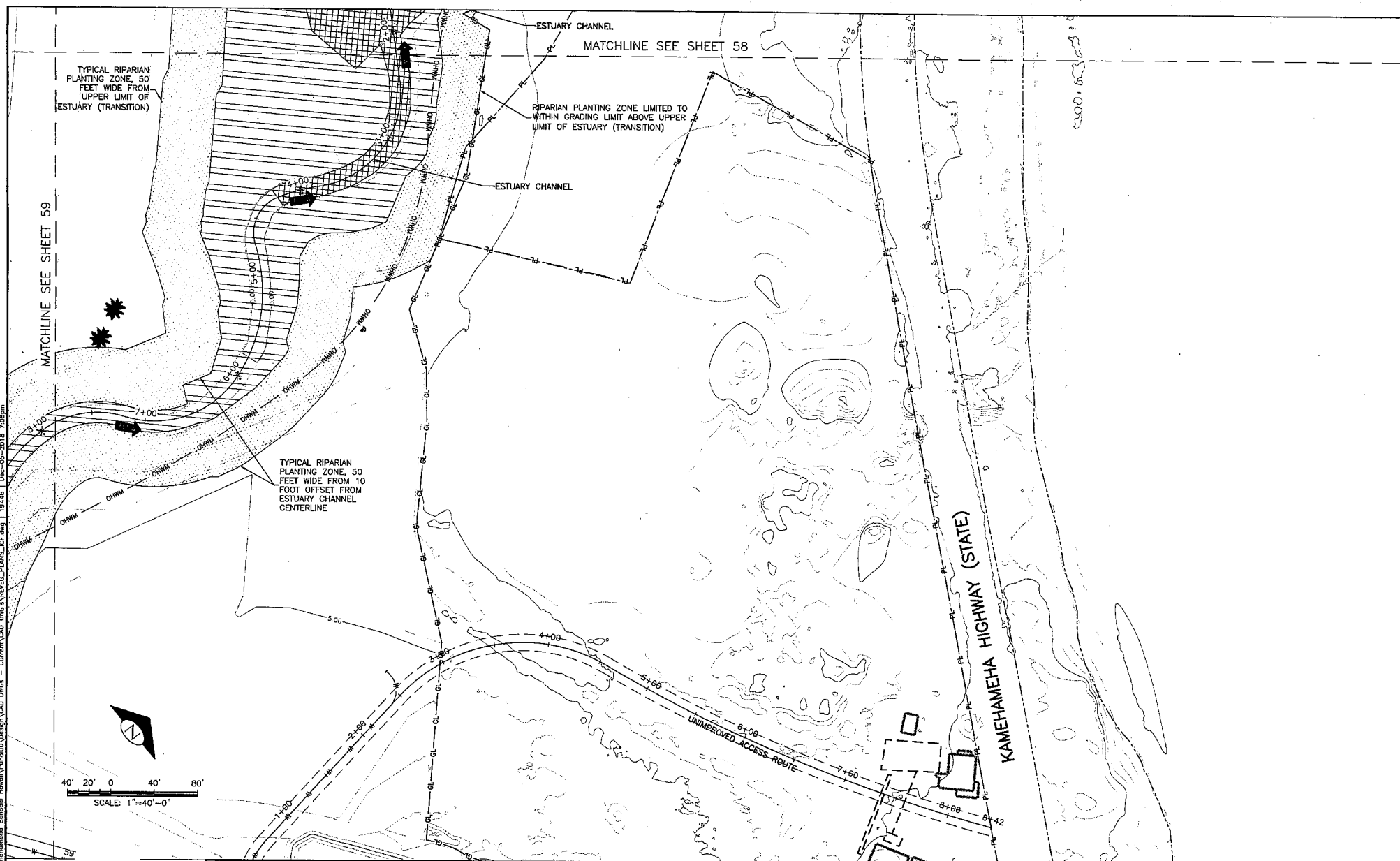


EXHIBIT S

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE

NAME OR INITIALS AND DATE  
DESIGNED TA, MH, SB  
CHECKED TA, MH  
DRAWN MS, CM  
CHECKED MH

GEOGRAPHIC INFORMATION  
LATITUDE 21°34'28"N  
LONGITUDE 157°22'38"W  
TN/SC/RG  
DATE 10/26/18

PUNALU'U FLOOD MITIGATION AND STREAM RESTORATION

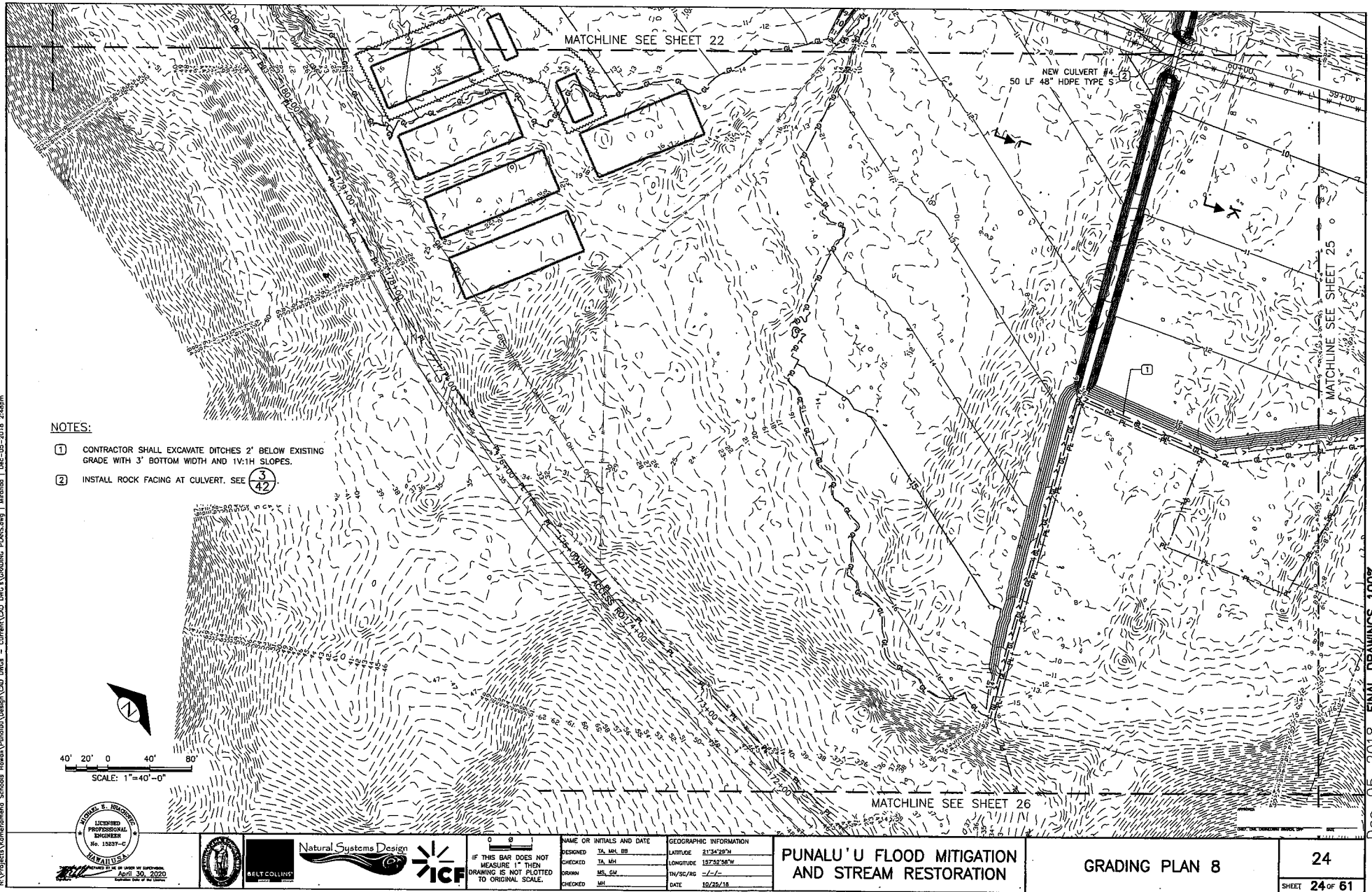
PLANTING PLAN 6

60  
SHEET 60 OF 61

EXHIBIT T

Dec-05-2018 FINAL DRAWINGS 100%

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# EXHIBIT U

