

Welcome

Kaua'i Emergency Flood Repairs and Cleanup

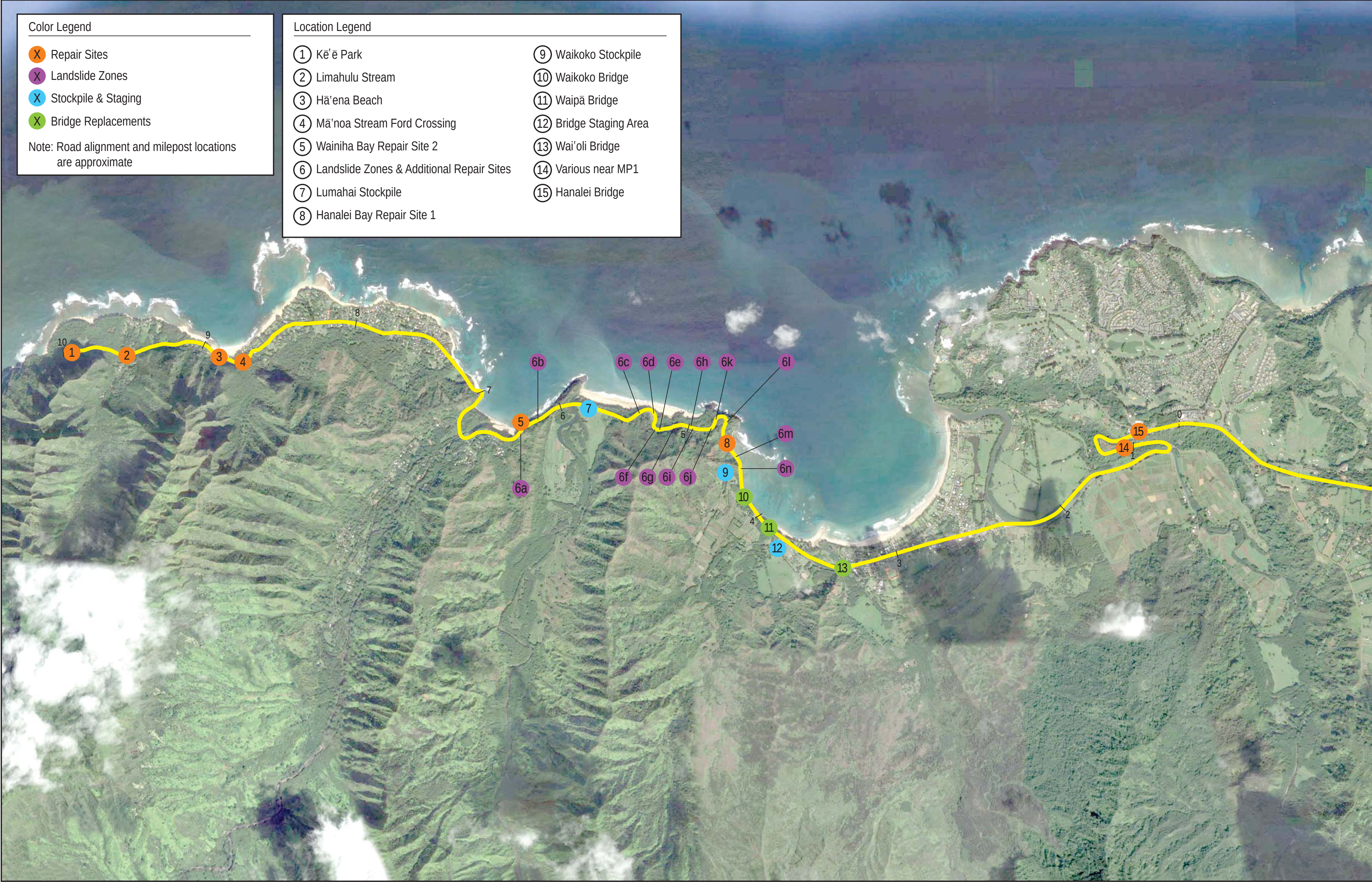
Various Locations

April 2018

Public Informational Meeting



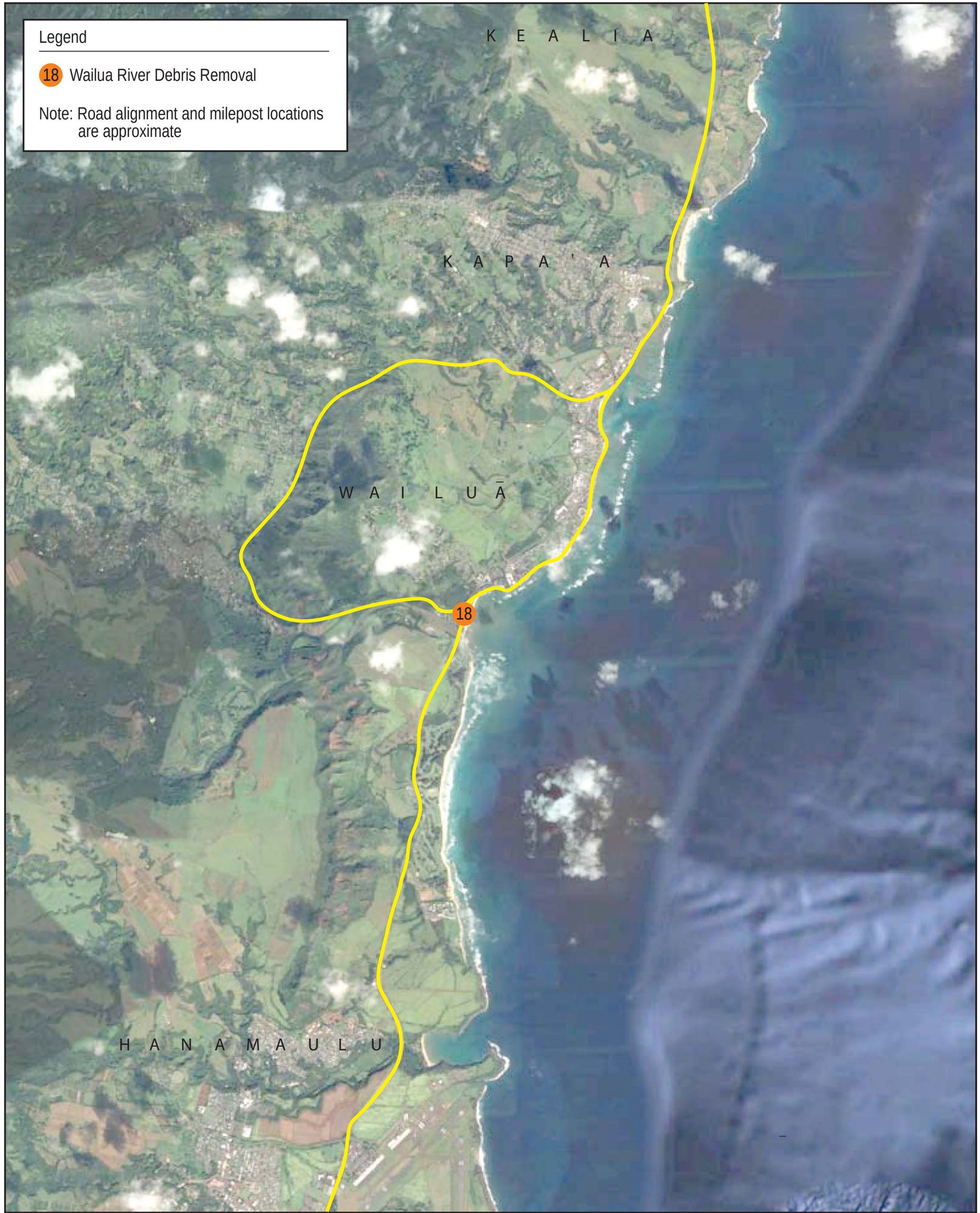
Kūhiō Highway Repair Locations



Hā'ena to Hanalei



Kalihiwai



Wailua



Kūhiō Highway Repairs near Hā'ena



1. Kūhiō Highway (Route 560), MP 10 at Kē'e State Park:
Reconstruct roadway;

Status: Federal Permits & Environmental Review in Progress

Est. Construction Start: Mid-Late June

2. Limahuli Stream Crossing (Route 560), MP 9.55:

Repair concrete section lost in flooding.
Resurface entire ford crossing.

Status: Environmental Review in Progress
Est. Construction Start: Mid-Late June

3. Kūhiō Highway (Route 560), MP 8.87 at Hā'ena Beach Park:

Repair roadway shoulder;

Status: Federal Permits & Environmental Review in Progress

Est. Construction Start: Mid-Late June

4. Mānoa Stream Ford Crossing (Route 560), MP 8.76 near Hā'ena Beach Park:

Repair the entire crossing.

Status: Federal Permits & Environmental Review in Progress

Est. Construction Start: Mid-Late June



Kūhiō Highway Repairs at Wainiha

Landslide and Repair Sites



Repair Description

Over 15 locations from MP 6.5 through MP 4.4 along Kūhiō Highway (Route 560). Landslide zones are noted as Zones A thru N. Individual Repair Sites also occur in this area. All repairs include debris removal, slope scaling, slope stabilization, guardrail replacement, pavement repairs.

Status: All landslide repairs are in progress. Repair sites number 1 and 2 are in progress, but require additional permits; heavy equipment and heavy materials to complete.

Estimated Construction: Landslide repairs and repair sites in construction. Repair sites to be fully complete after bridge replacements.

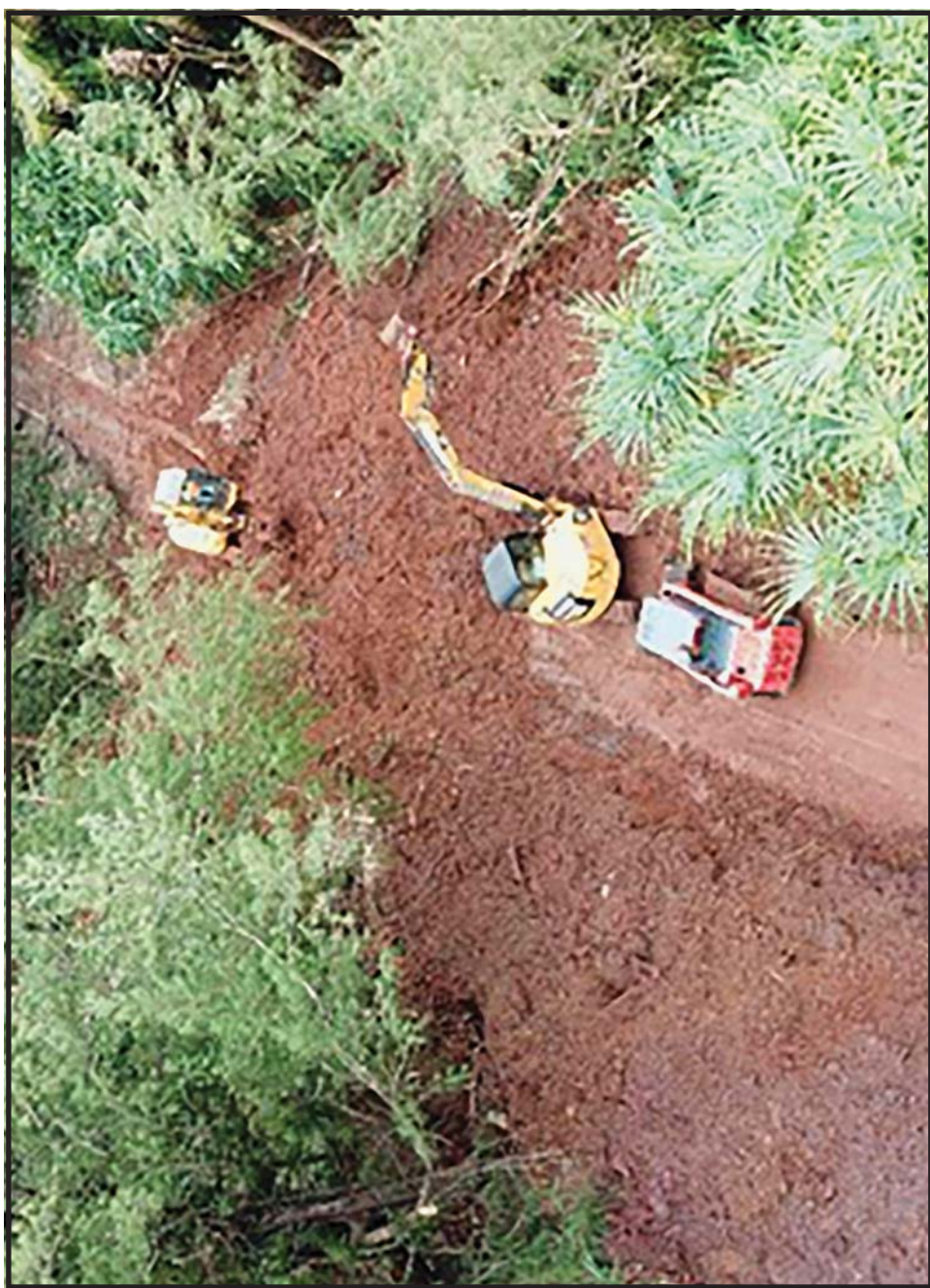
Landslide Photos



Landslide Site C



Landslide Site G



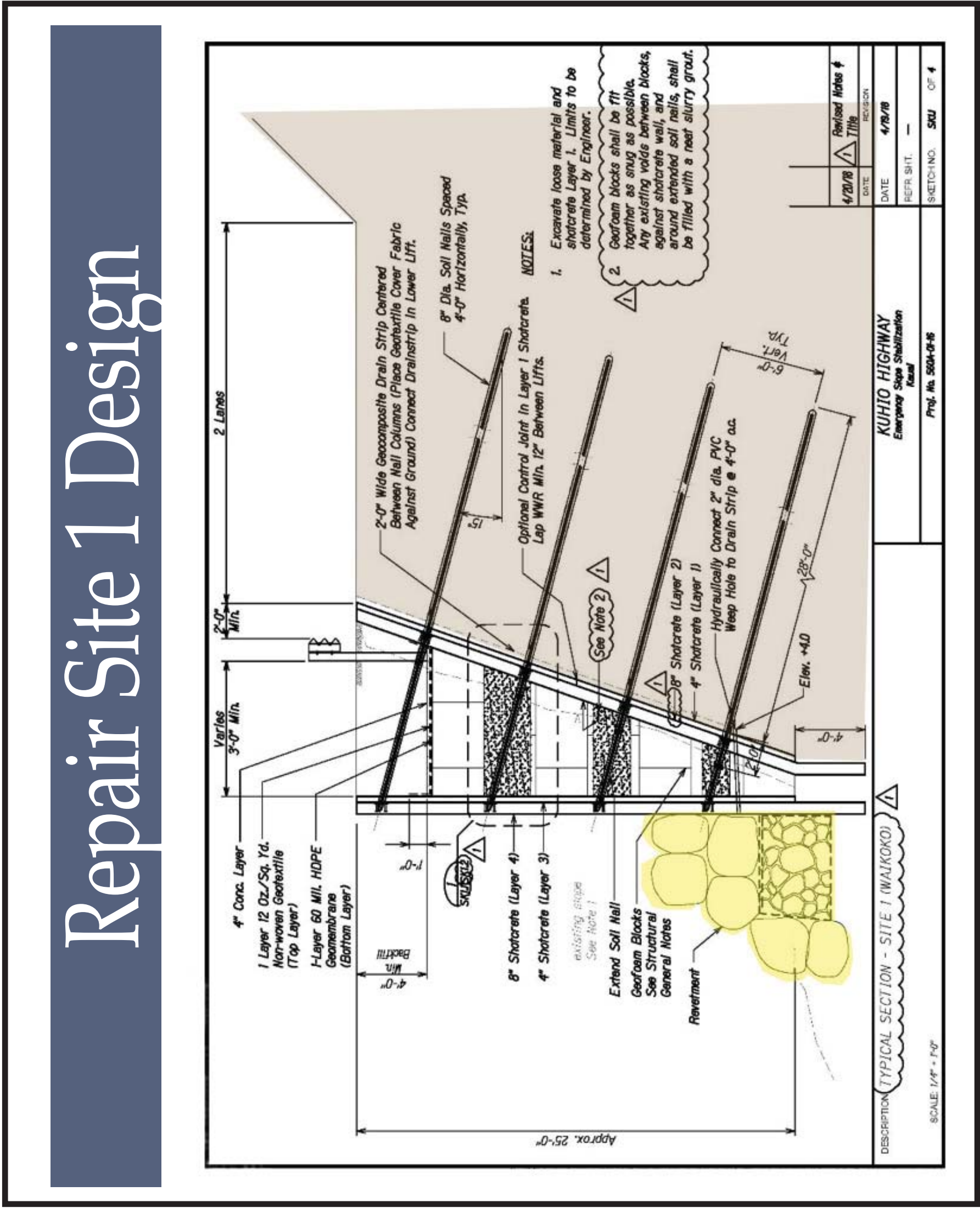
Landslide Site L



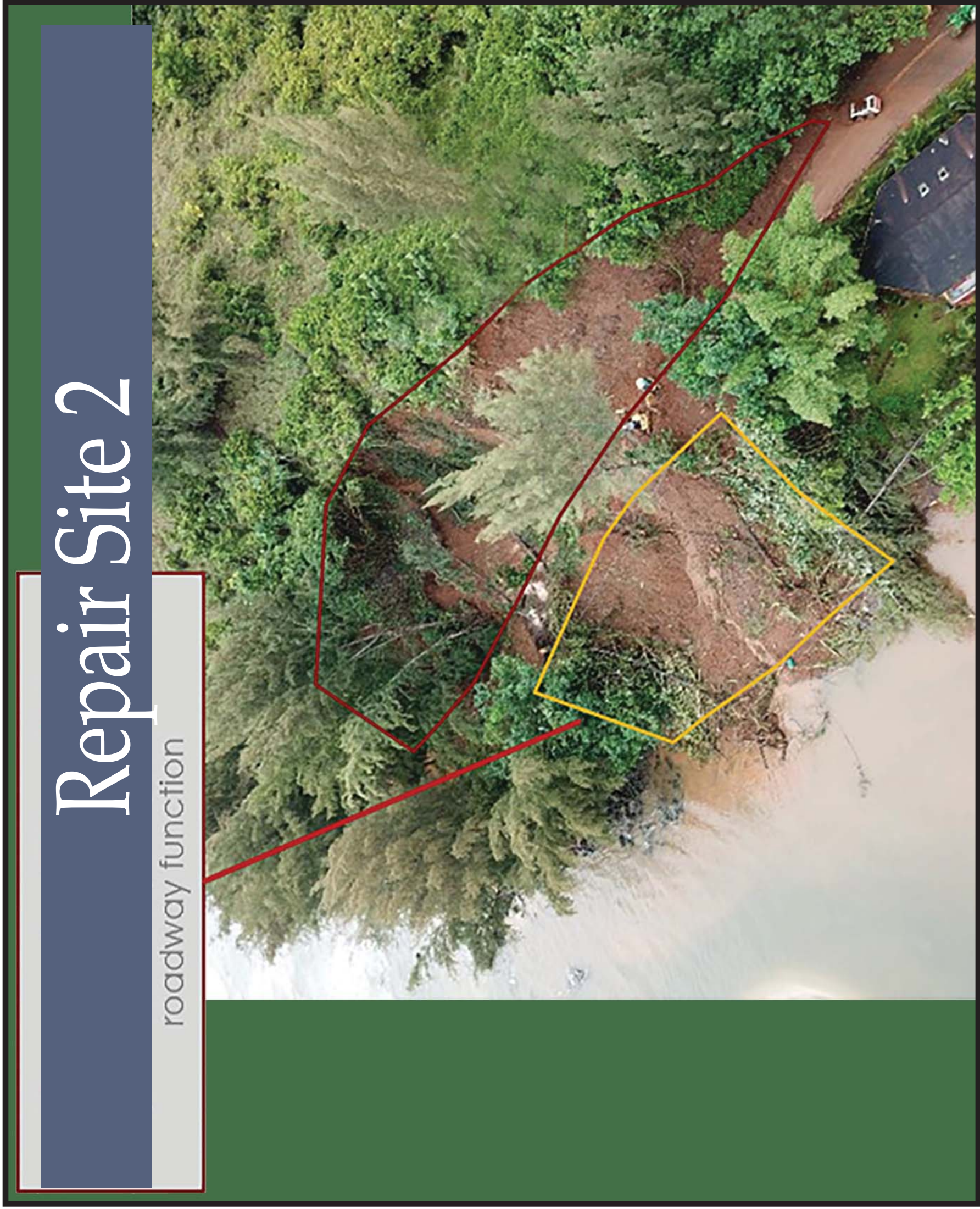
Kūhiō Highway Repairs at Wainiha



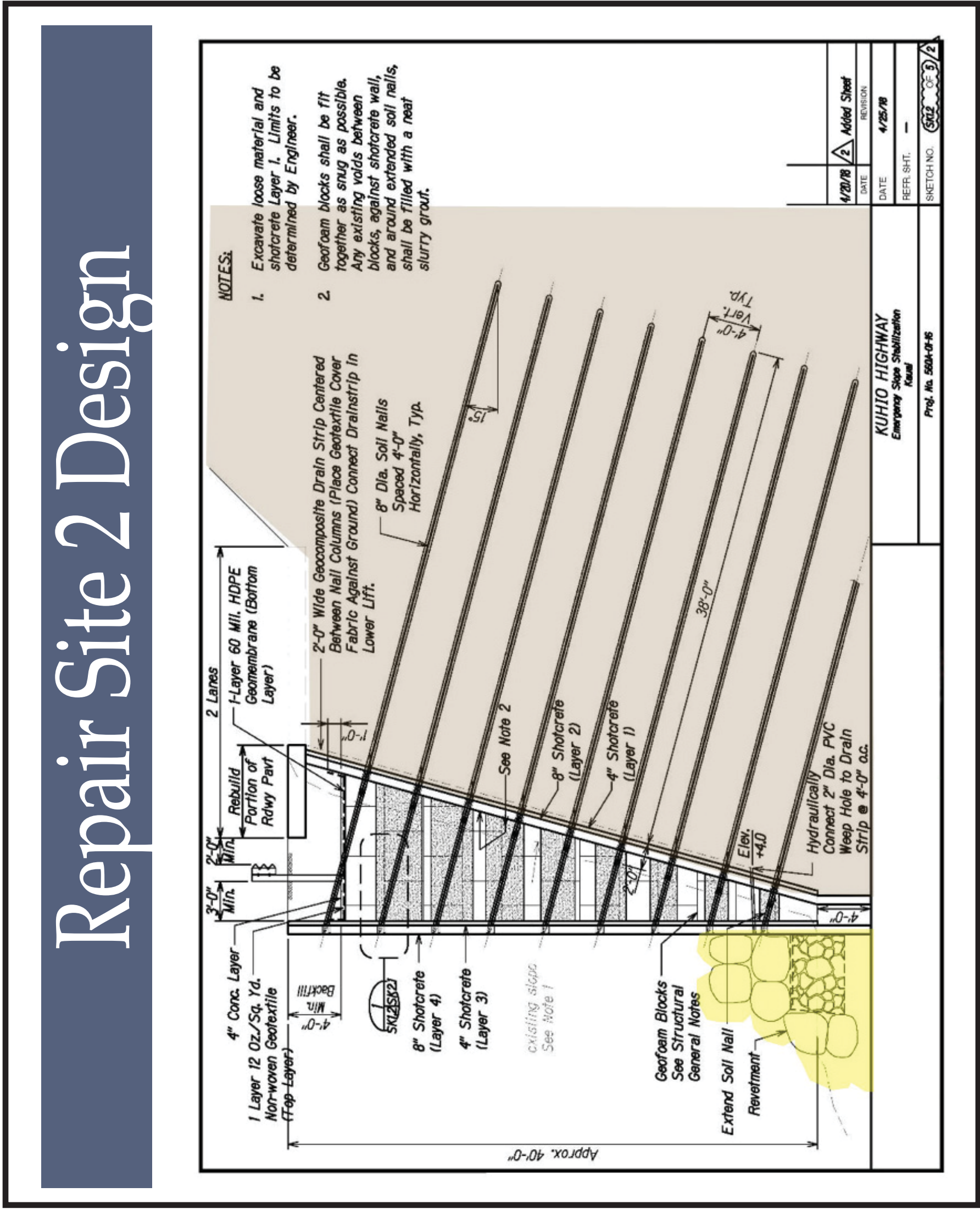
Repair Site 1



Repair Site 1 in Progress



Repair Site 2



Description of Repair Site 1:
Located at MP 4.5 on Kūhiō Highway, Repair Site 1 is a roadway stabilization area that requires debris removal, slope wall installation including soil nails, foot of slope revetment, guardrail /sign replacement, and pavement repair.

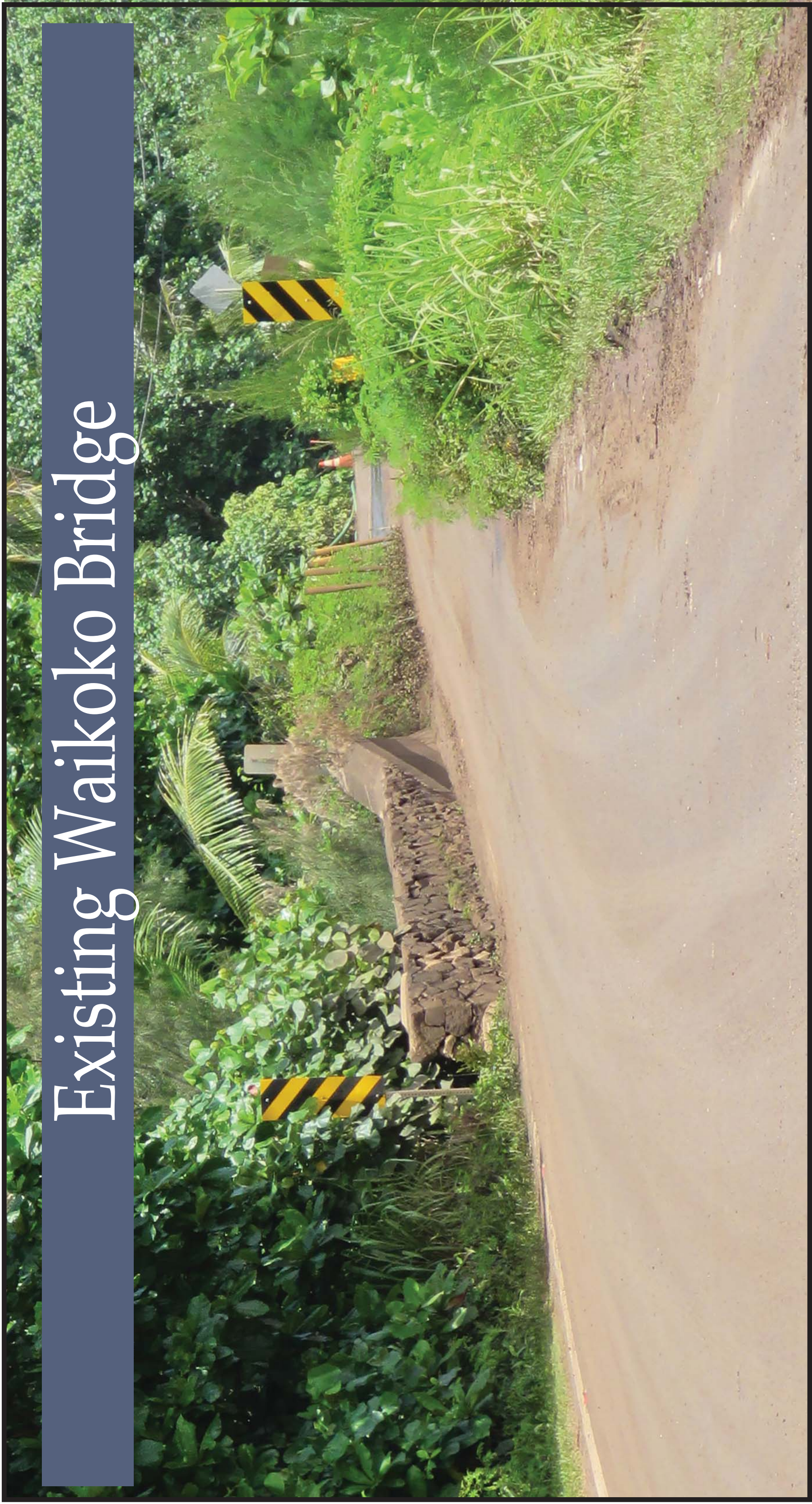
Description of Repair Site 2:
Site 2 is a stabilization area with only 1 lane remaining. Similar to Site 1, repairs include debris removal, slope wall installation with soil nails, foot of slope revetment, guardrail/sign replacement, and pavement repair.

Status:
Construction is in progress for both sites. Environmental review and permitting is being pursued at the same time as the construction repairs occur.

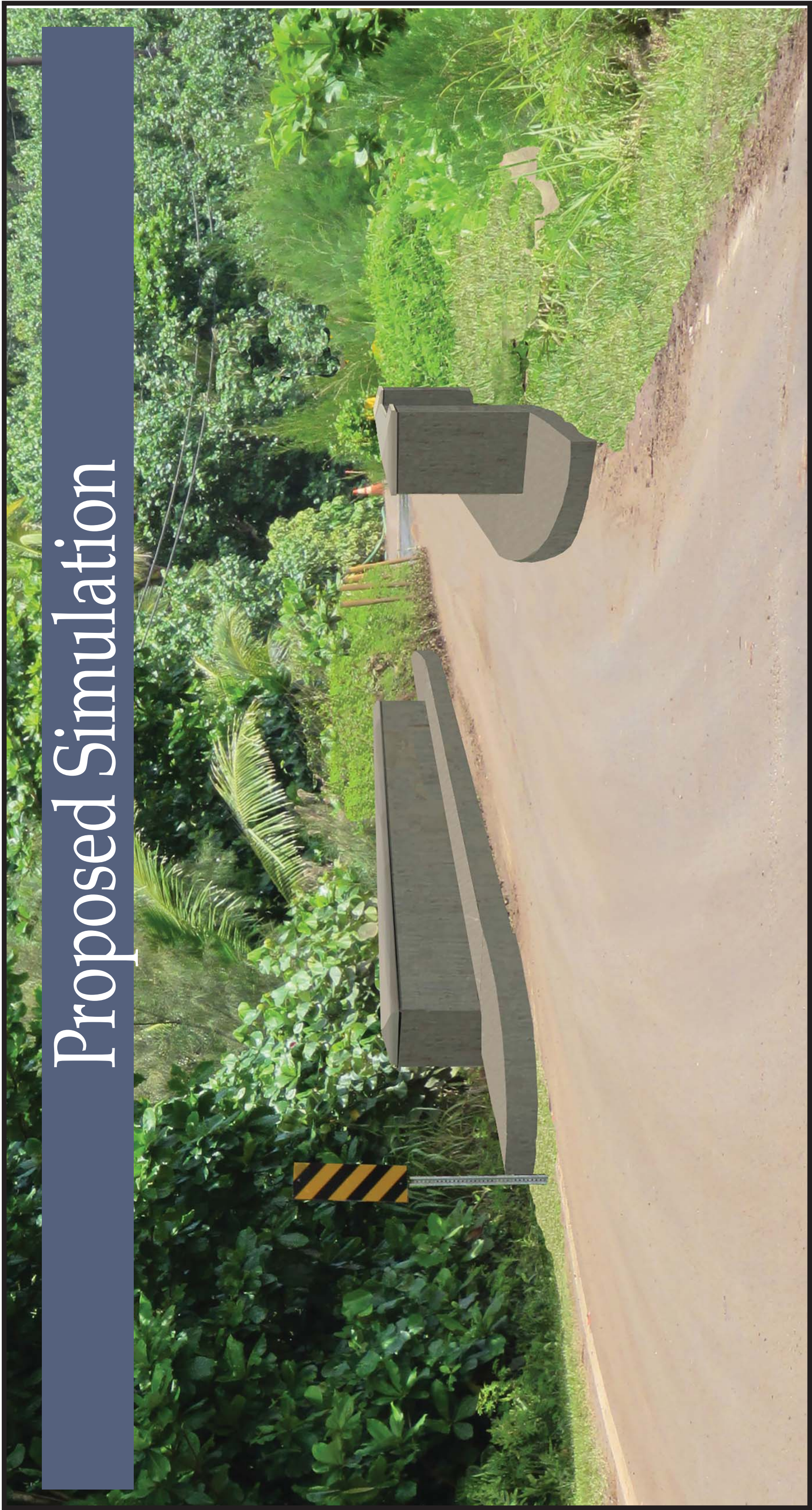
Est. Construction Completion:
Completion is dependent on bridge replacements to allow heavy materials and equipment for revetments.



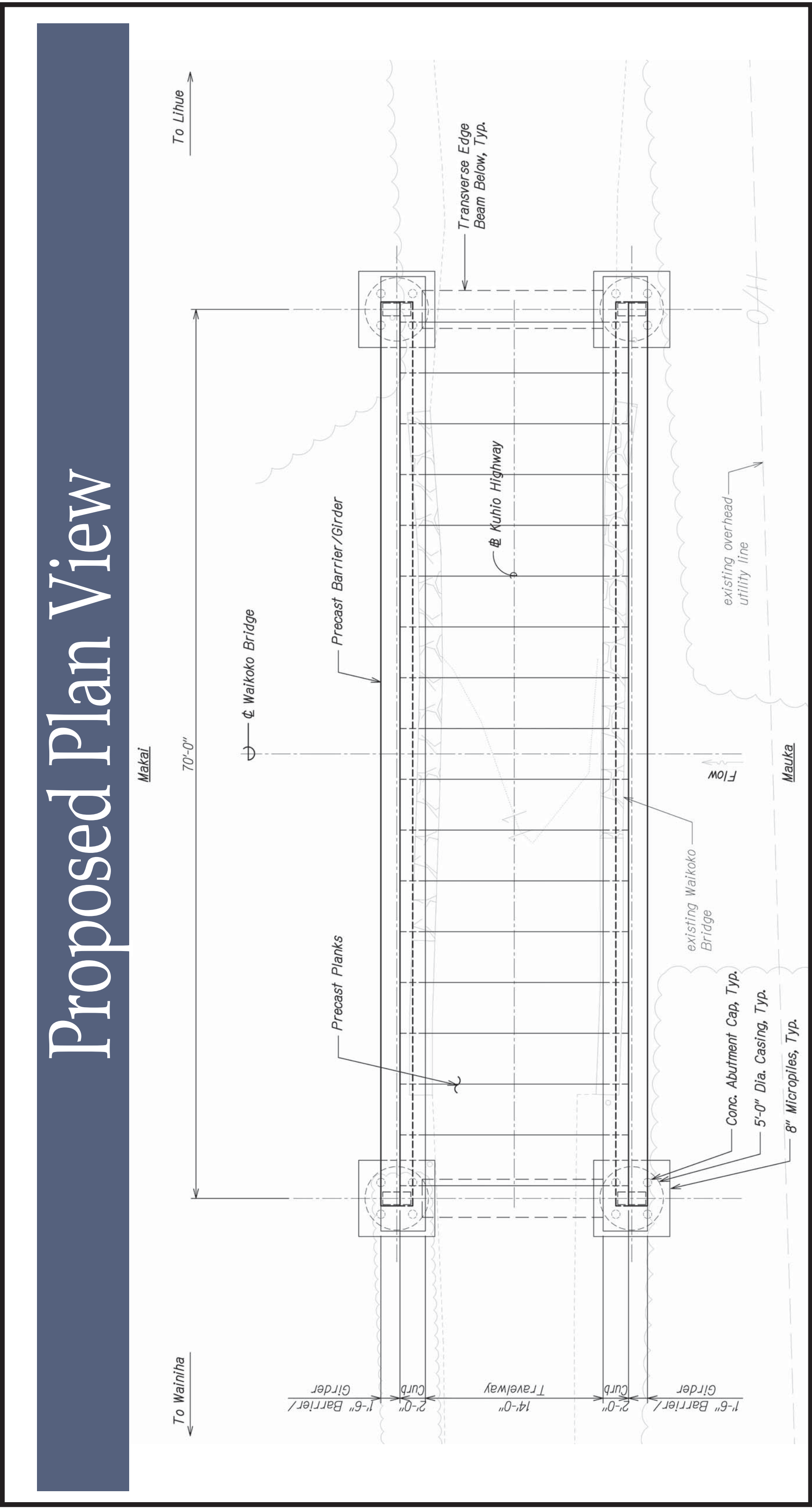
Waikoko Bridge Replacement



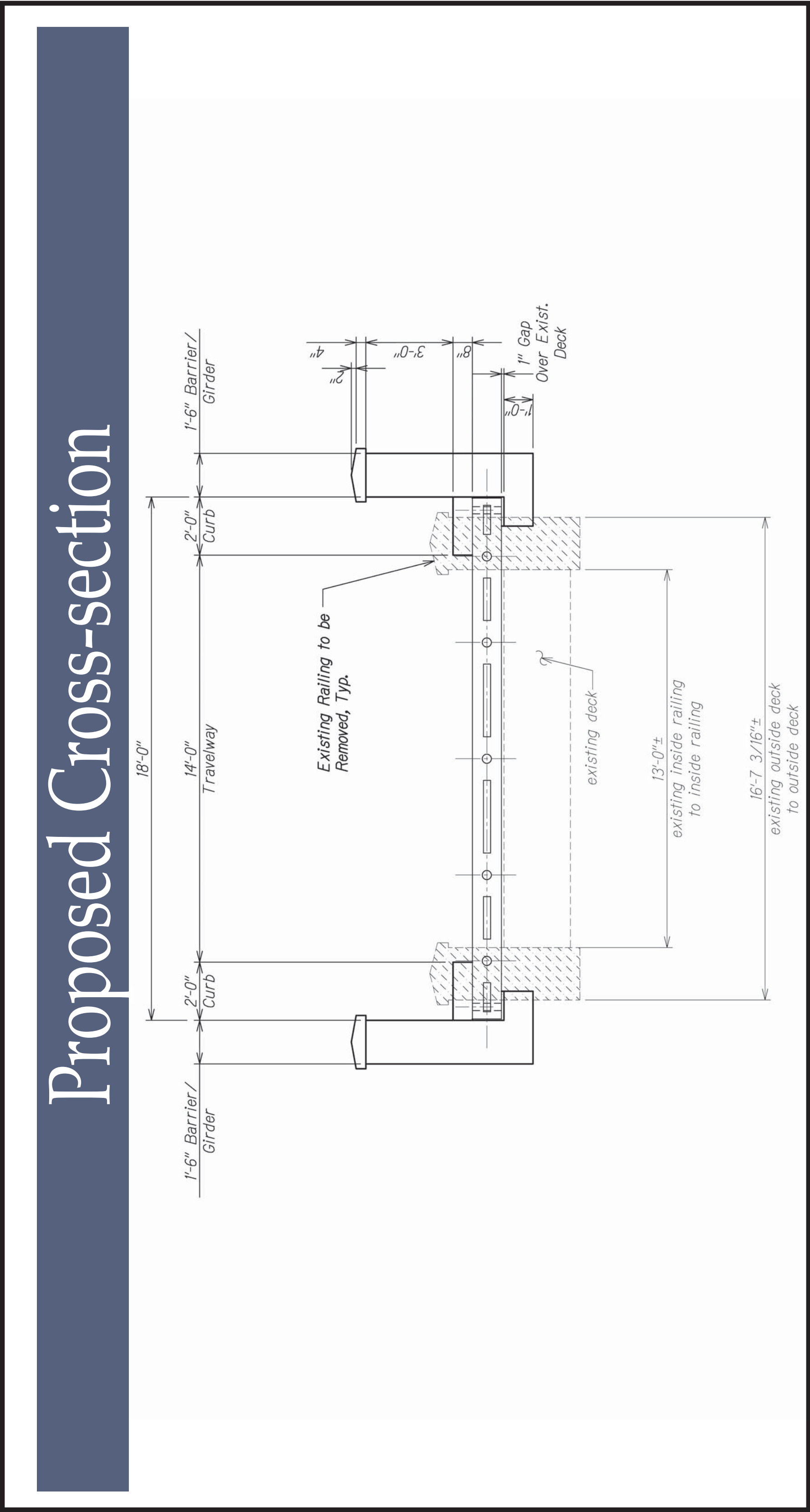
Existing Waikoko Bridge



Proposed Simulation



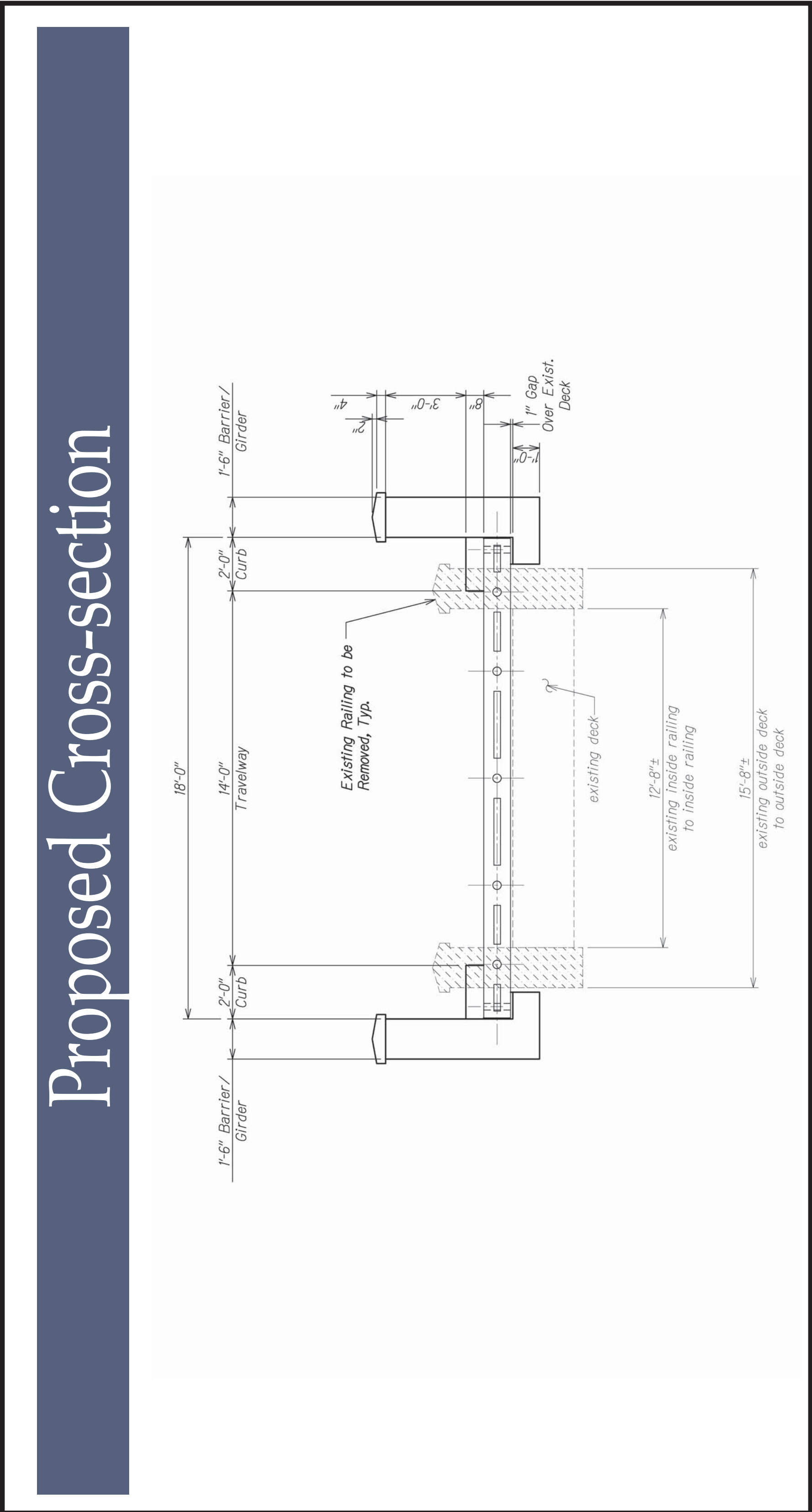
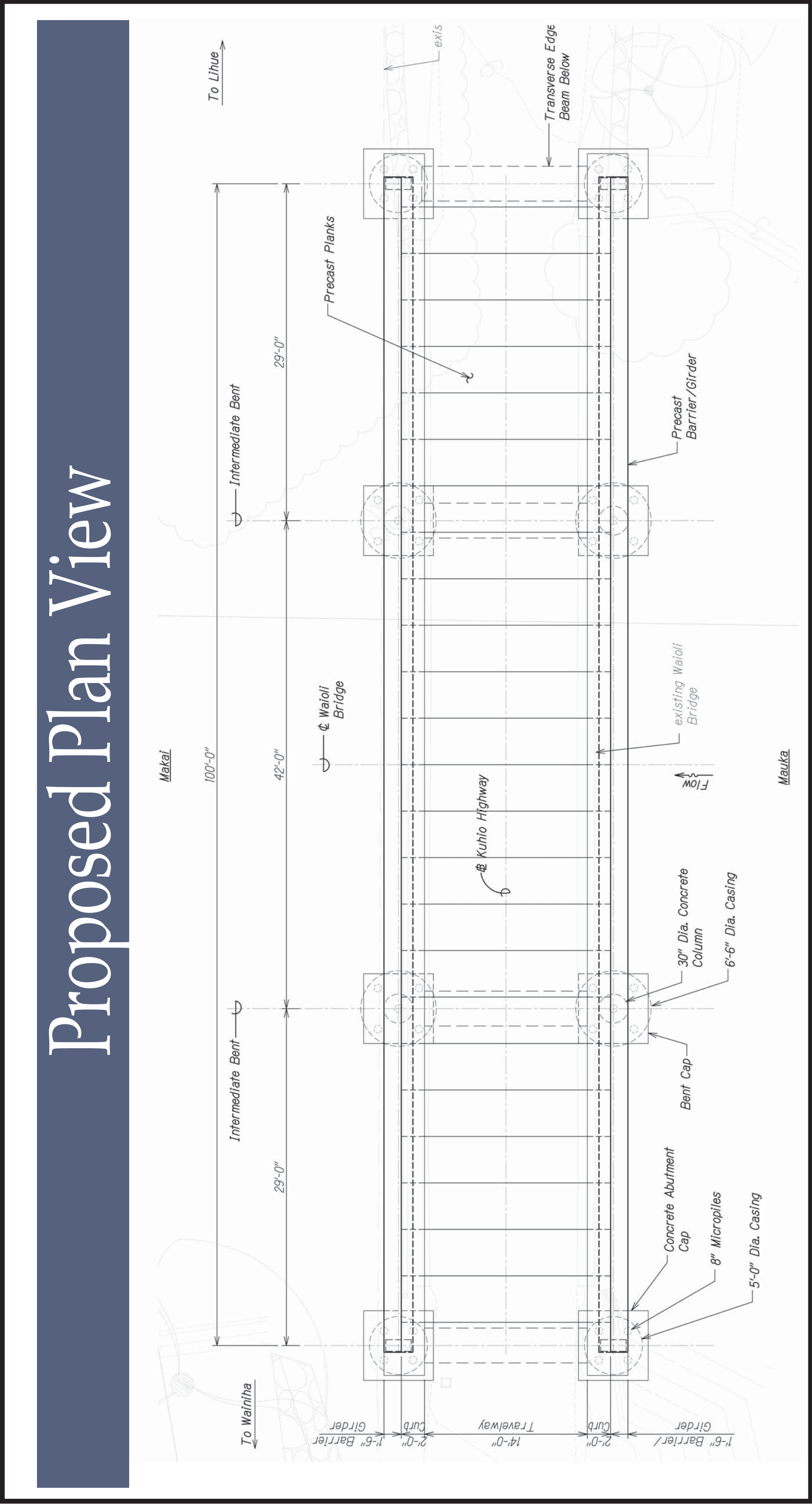
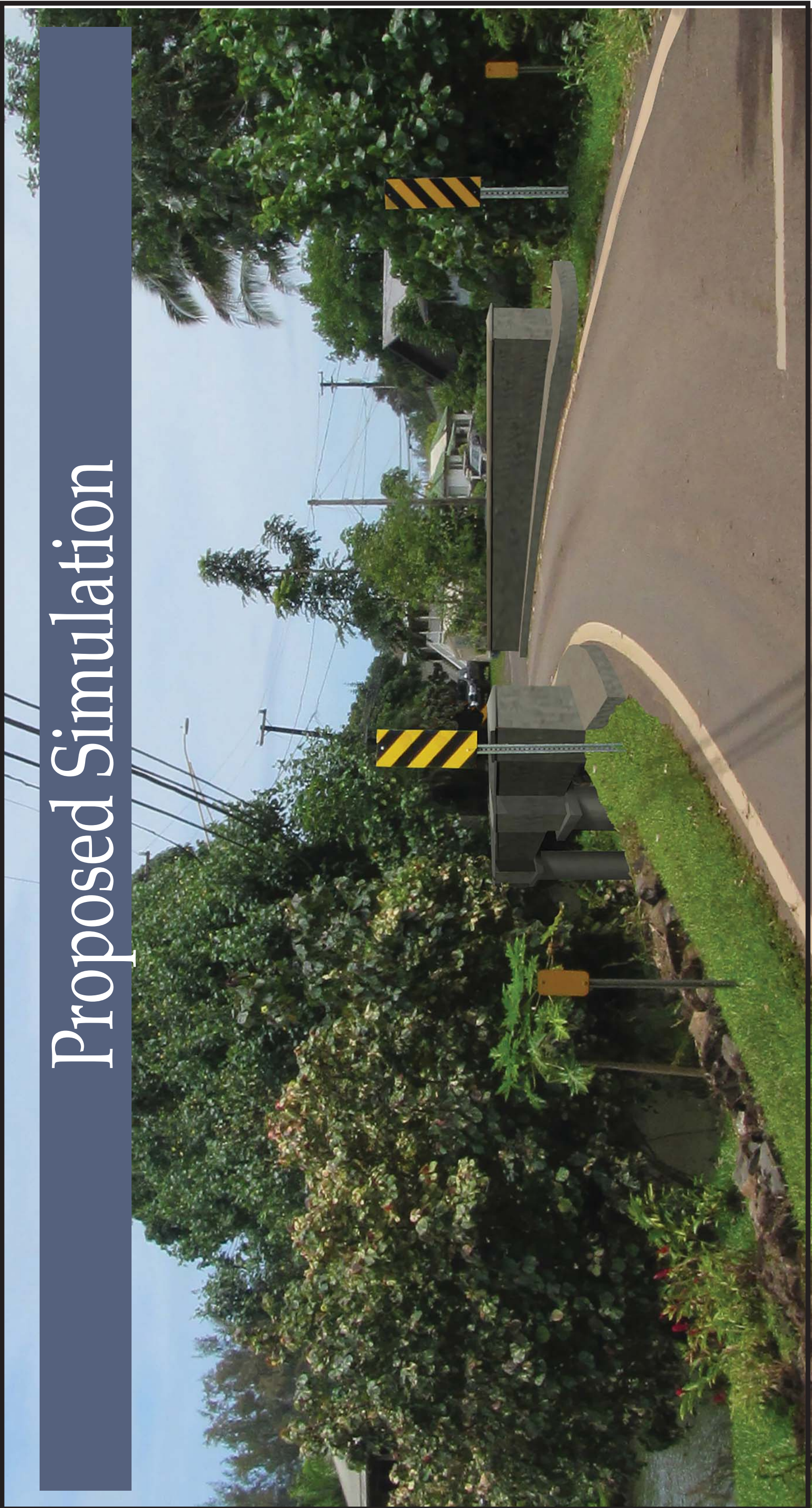
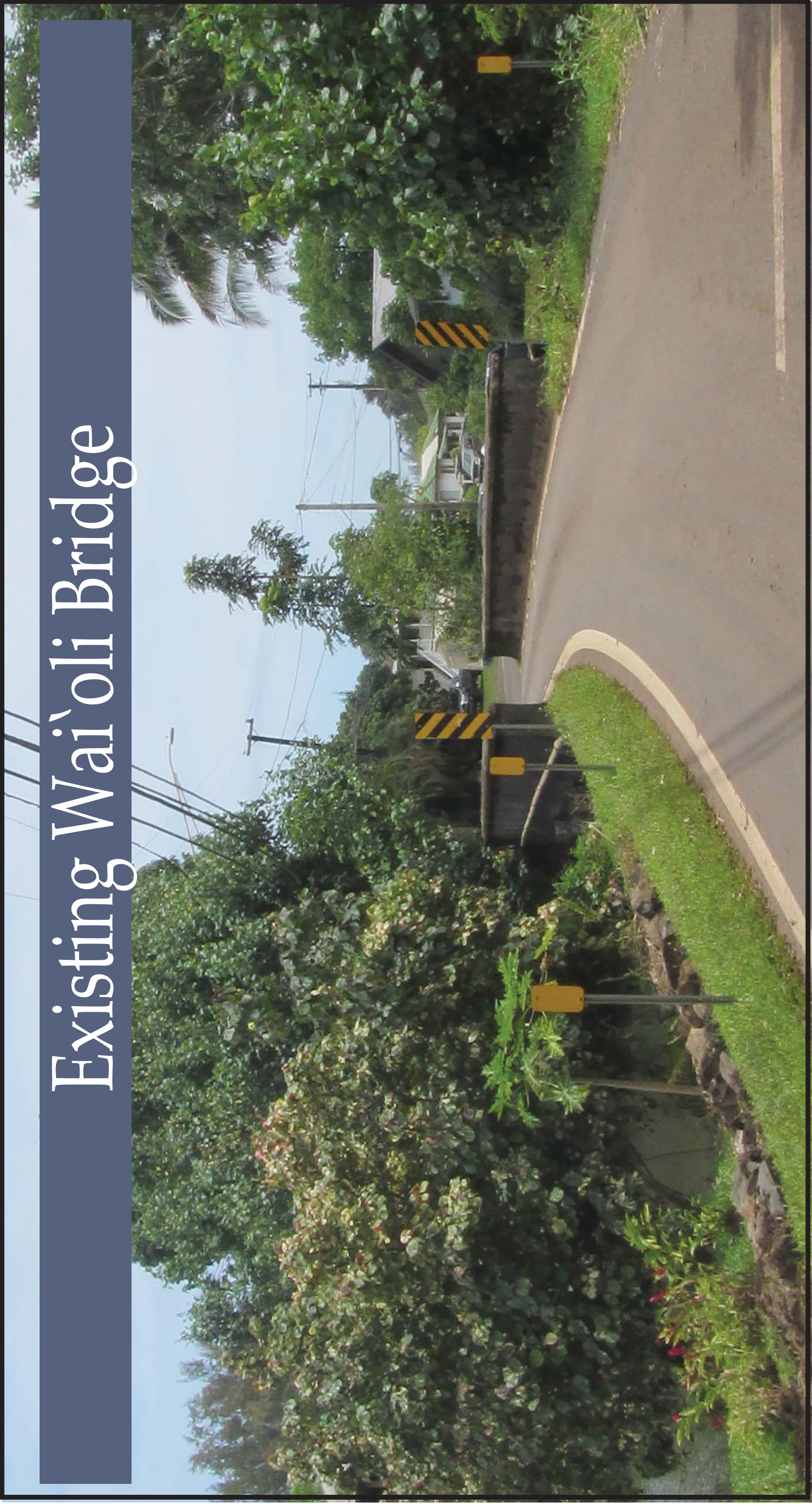
Proposed Plan View



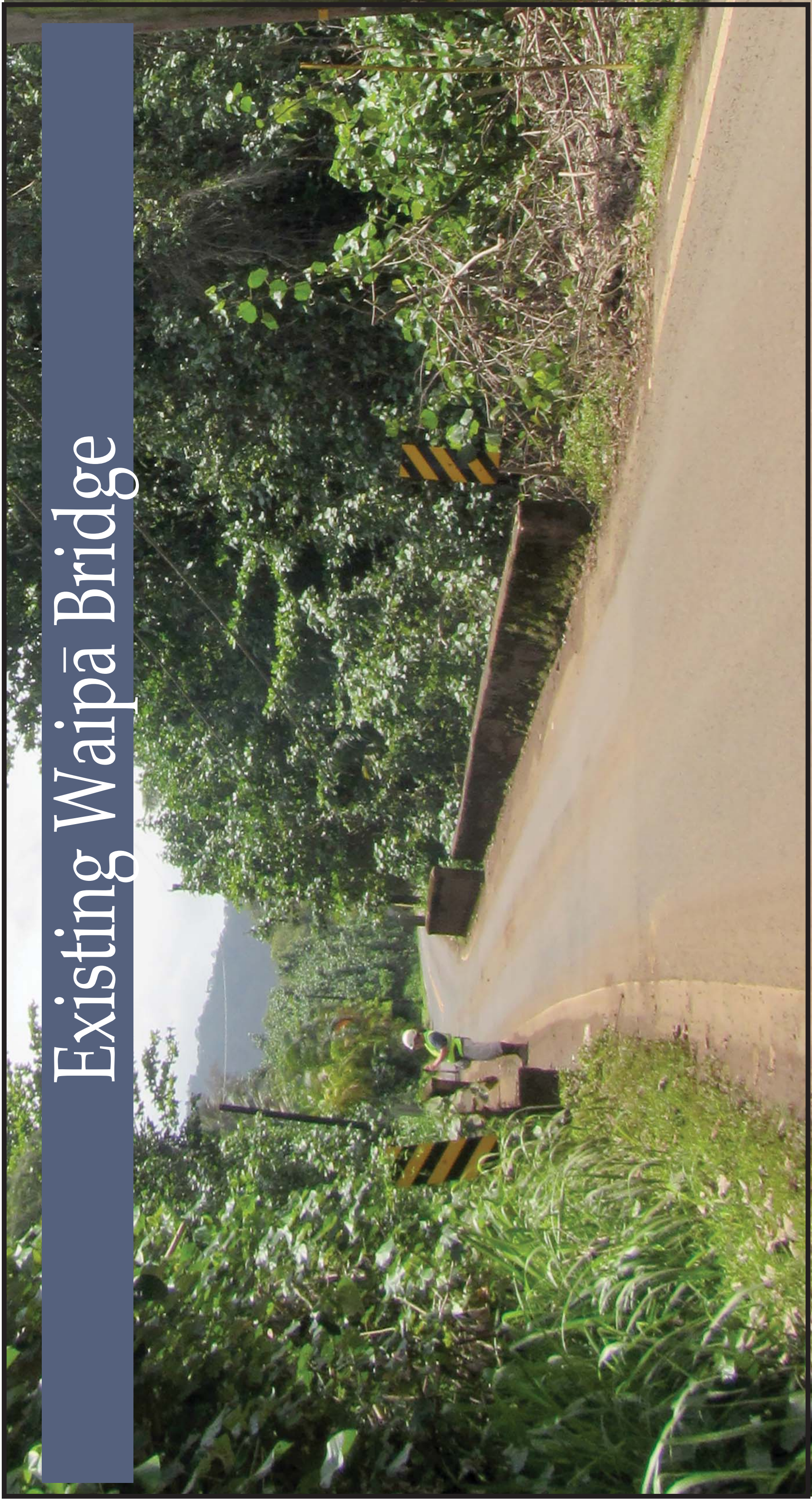
Proposed Cross-section



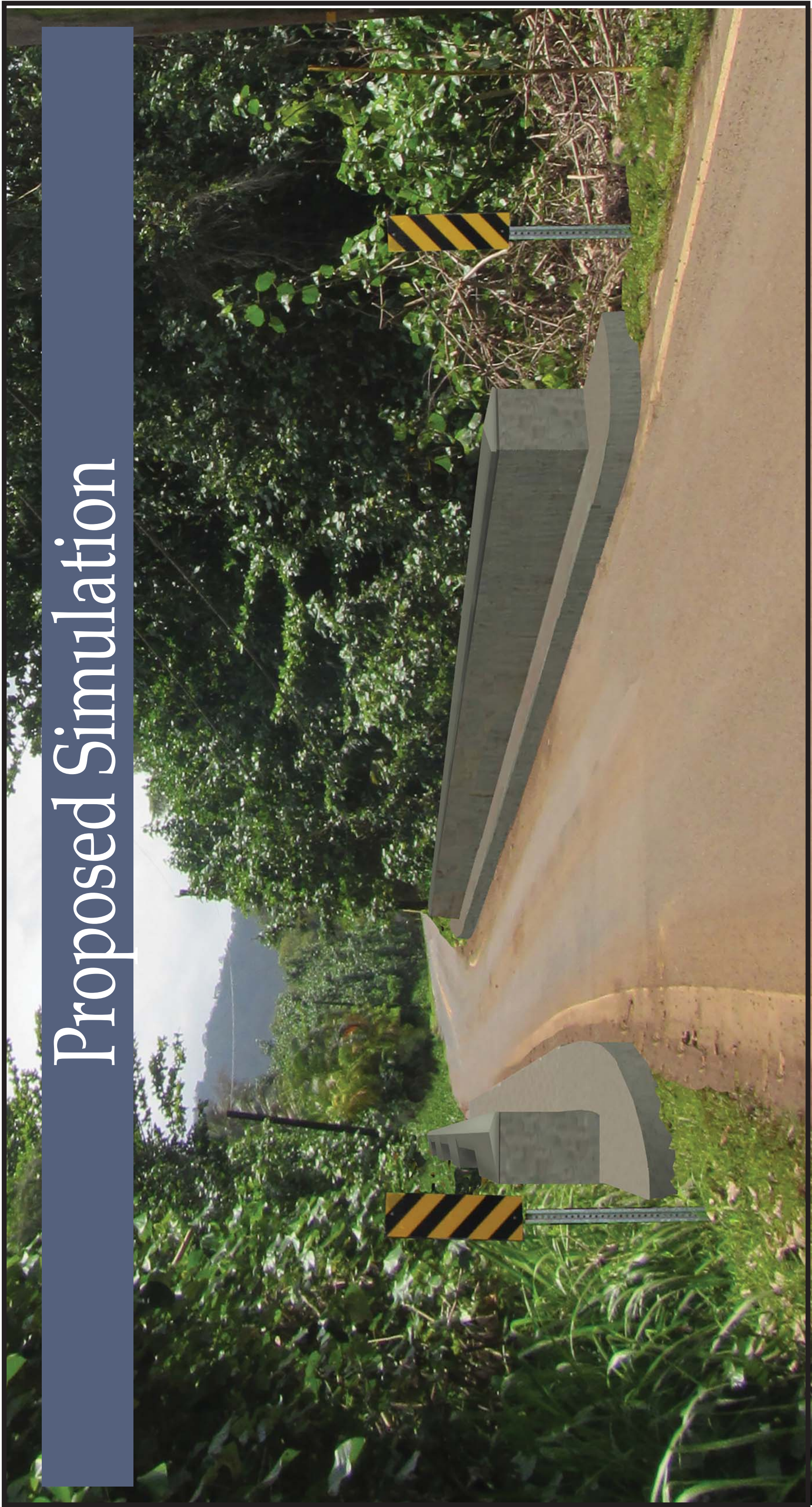
Wai'oli Bridge Replacement



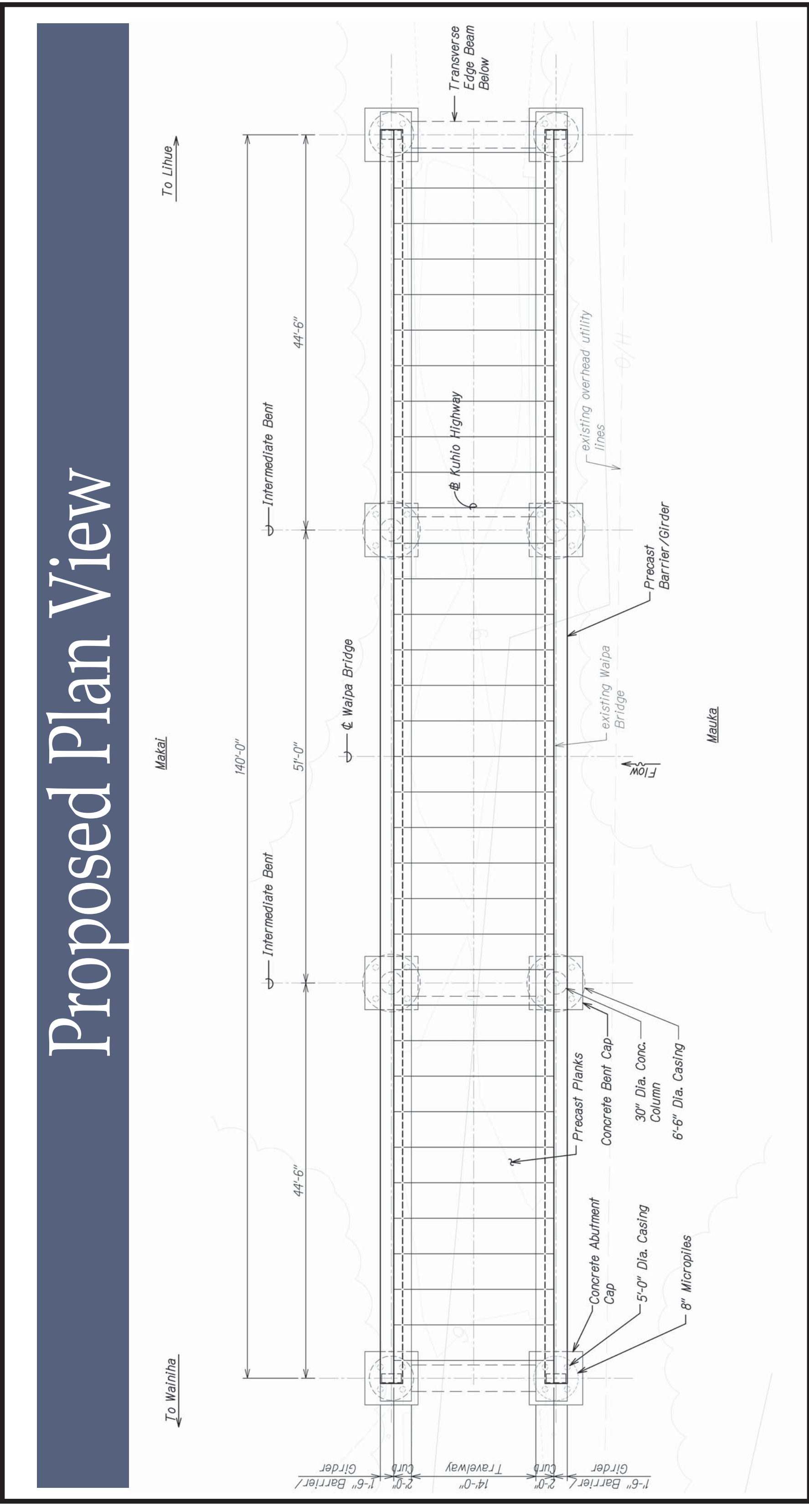
Waipa Bridge Replacement



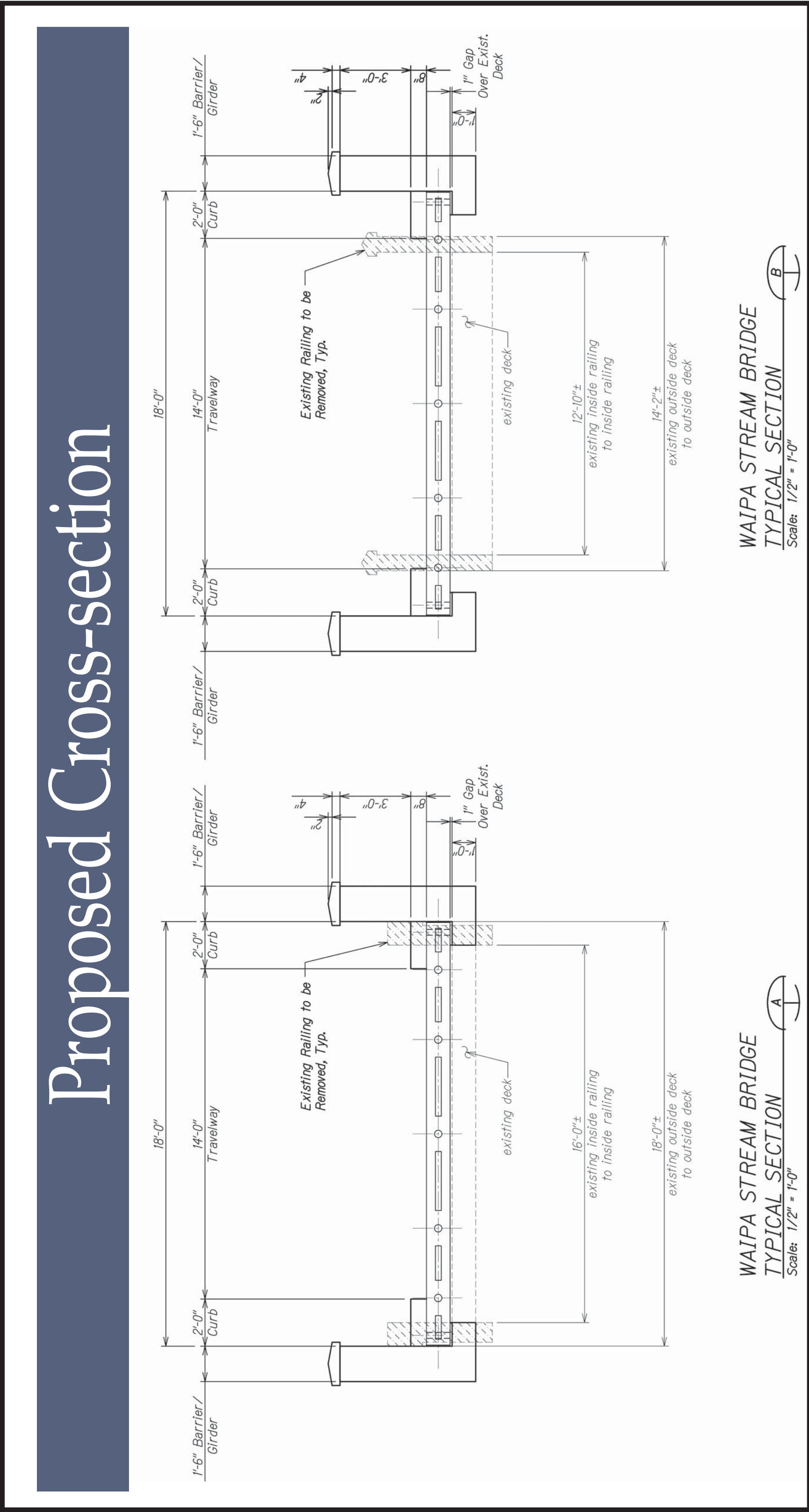
Existing Waipa Bridge



Proposed Simulation



Proposed Plan View

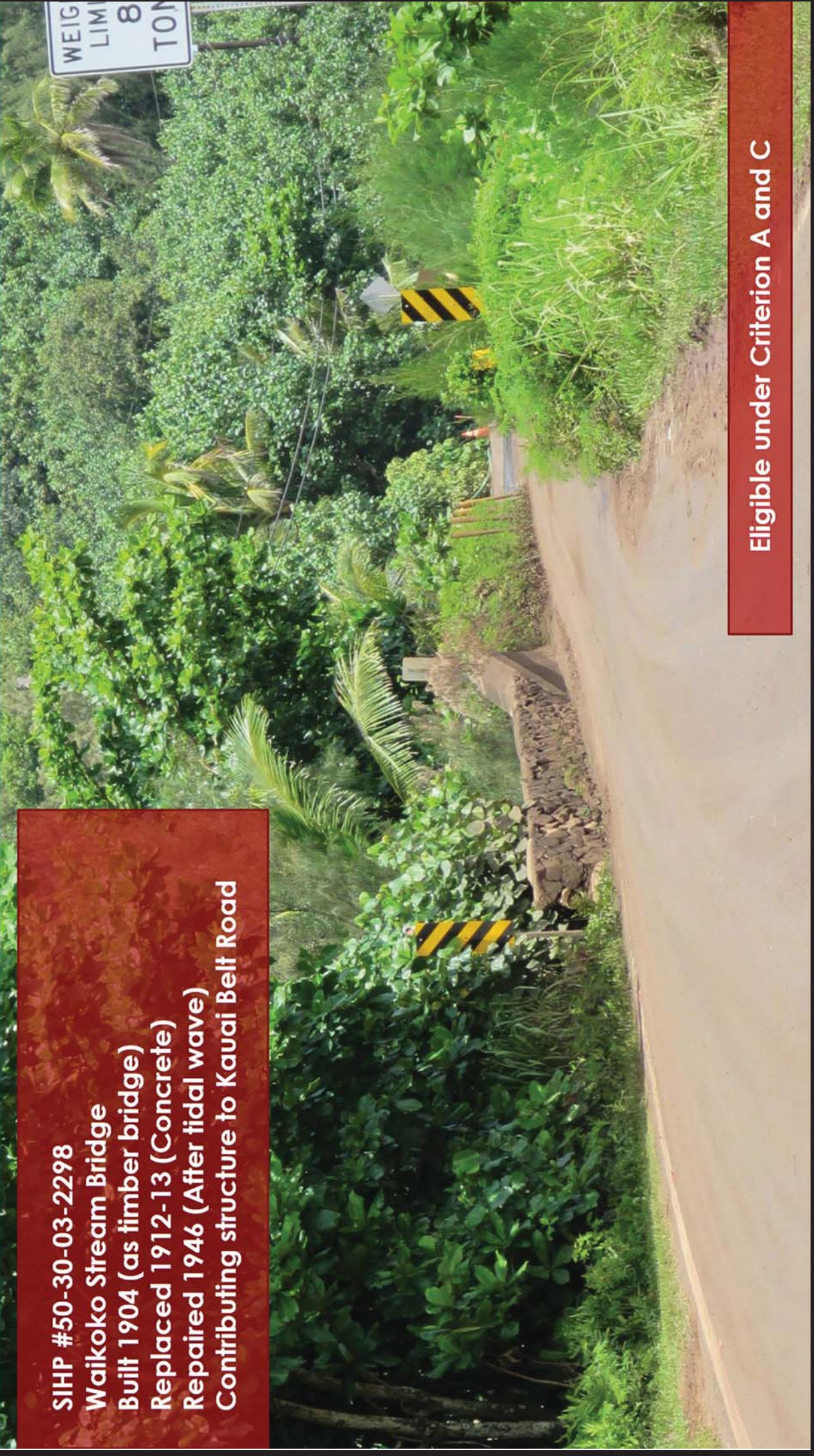


Proposed Cross-section



Historic Resources

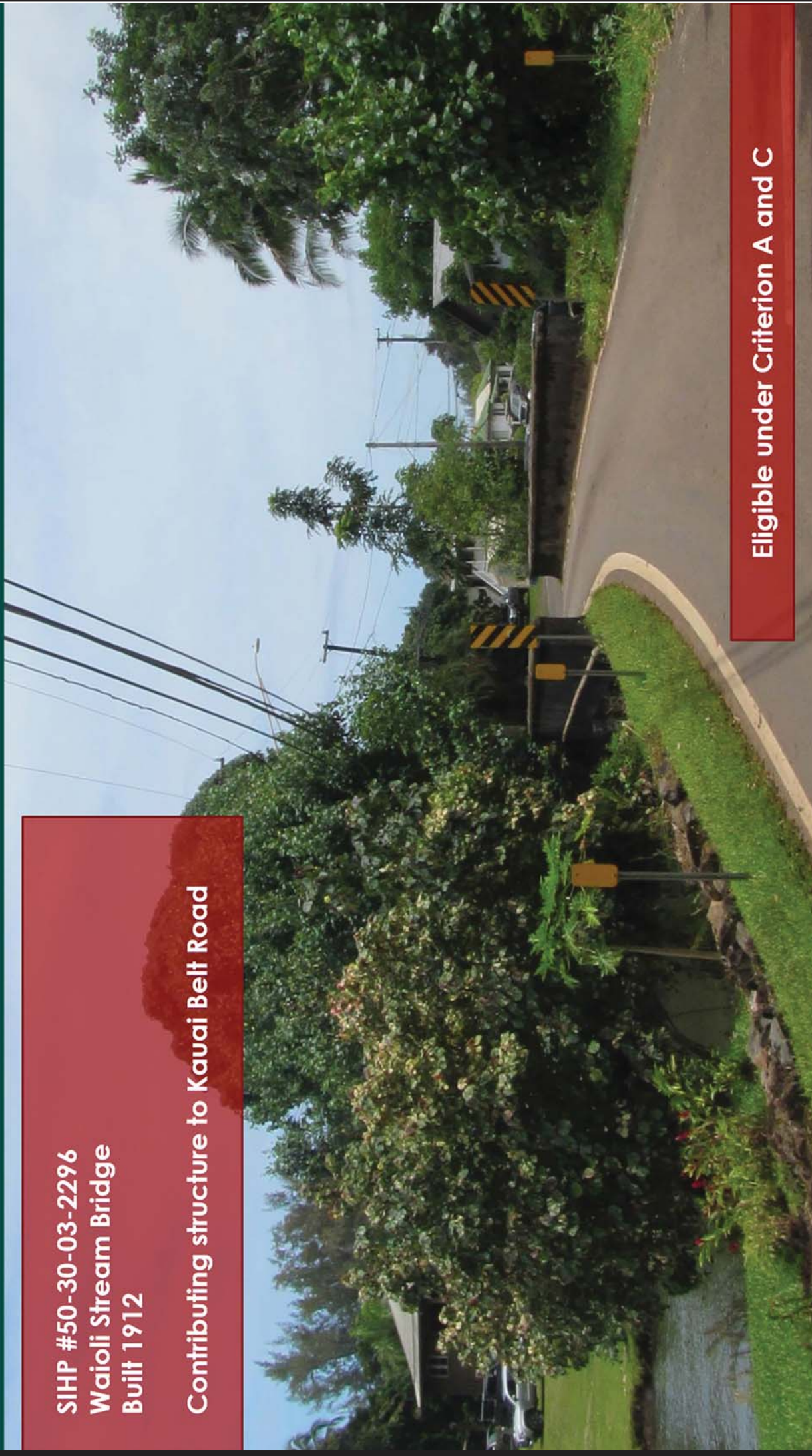
Waikoko National Register



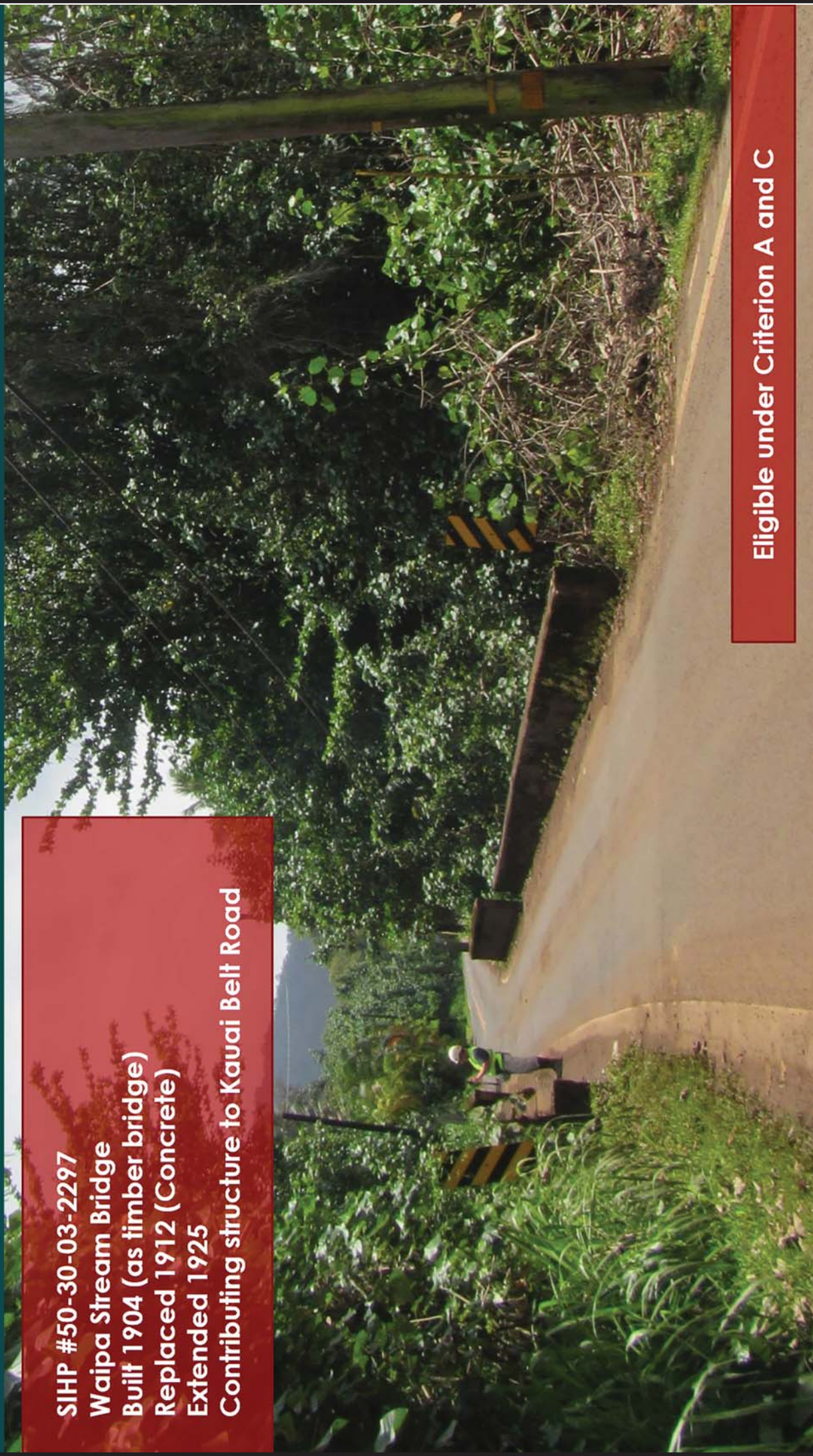
Bridge Locations



Wai`oli National Register



Waipā National Register



HDOT and FHWA is consulting with the State Historic Preservation Division, Hanalei Roads Committee, Hanalei Watershed Hui, Konohiki Restoration Project, and the Historic Hawai'i Foundation under Section 106 of the National Historic Preservation Act to identify historic resources, and avoid, minimize, or mitigate repair impacts.

Waikoko, Waipā, Wai`oli Bridge Replacement:

- Kūhio Highway (Route 560) Historic Roadway Corridor Plan recognizes the deterioration, load-bearing deficiencies, and need for bridge replacement, particularly for Waikoko.
- Current 8-ton load capacity of these bridges do not allow for equipment with enough reach and capacity to remove the dirt material, and place the boulder revetments needed at the repair sites.
- In addition to the revetment repairs, it is anticipated that further stabilization of the up-slope reaches will be conducted over the next two years. Some of these failures reach as high as 70 feet.
- HDOT has considered numerous alternatives, however, those alternatives carry additional environmental impacts and do not address the long-term issues of the bridge deficiencies.
- Replacement of these bridges is considered an adverse effect to these historic resources.

- Designs will maintain the character-defining qualities of the existing bridges: single-lane operations; narrow width no sidewalks; solid reinforced-concrete parapets; and flat slab, or girder structural systems.
- Construction will occur primarily at night to minimize impacts to the community.

Kūhio Highway Rehabilitation:

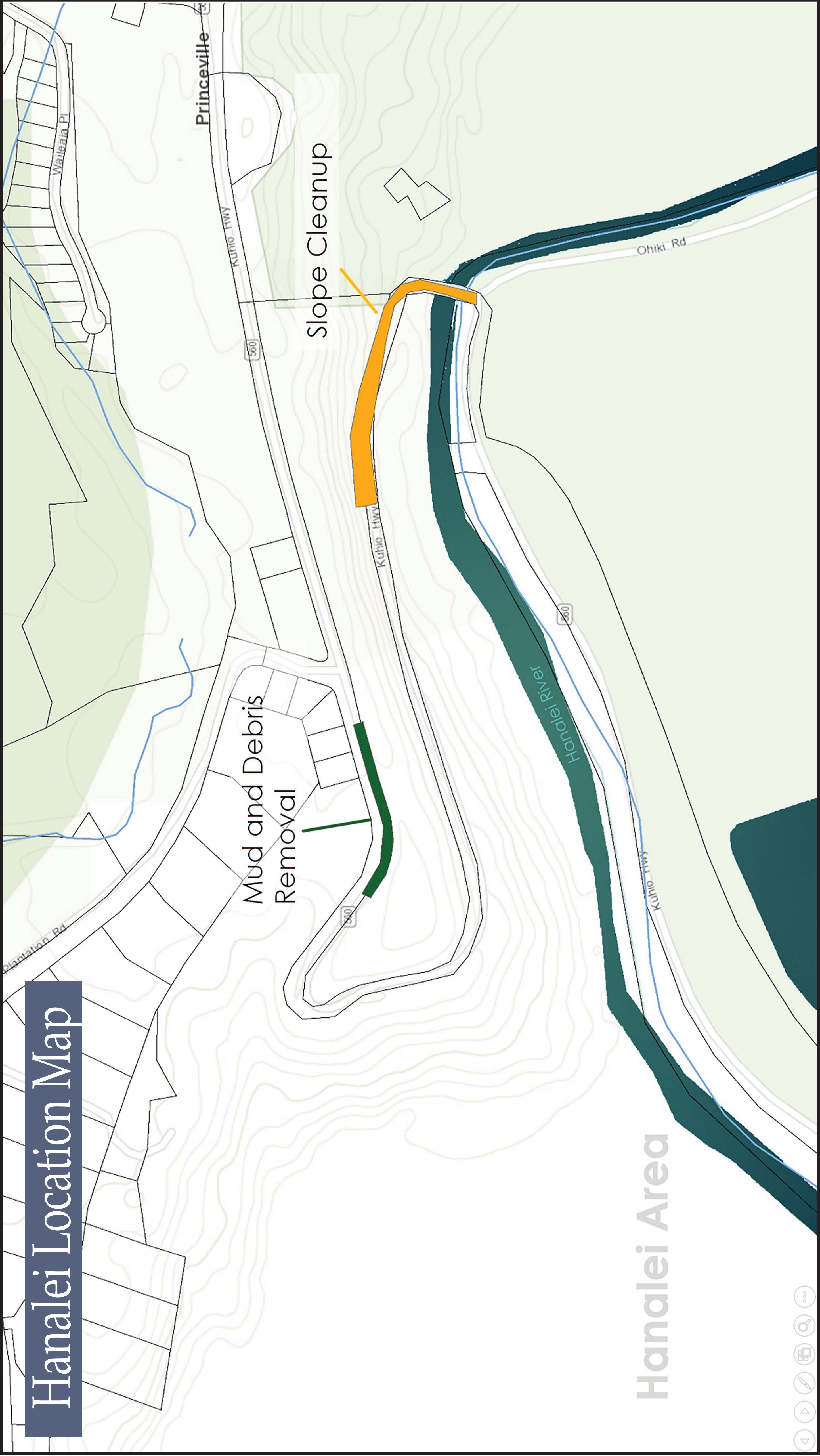
- Repairs will restore the historic roadway back to its historical function.
- Permanent bridge replacement rather than temporary Acrow bridges will maintain the historic alignment rather than create an additional bypass.

Archaeological and Cultural Resources:

- Archaeological monitoring will be conducted in areas that SHPD has identified as sensitive.



Kūhiō Highway Repairs at Hanalei



Bridge Repairs

Description of Repairs: Repairs at MP 1 include debris removal, slope scaling, guardrail replacement, minor pavement repair. Repairs at MP 0.5, near Hanalei Bridge involve debris removal and slope clean-up.

Status: Repairs are complete.

Location Photos



Debris from flooding on bridge



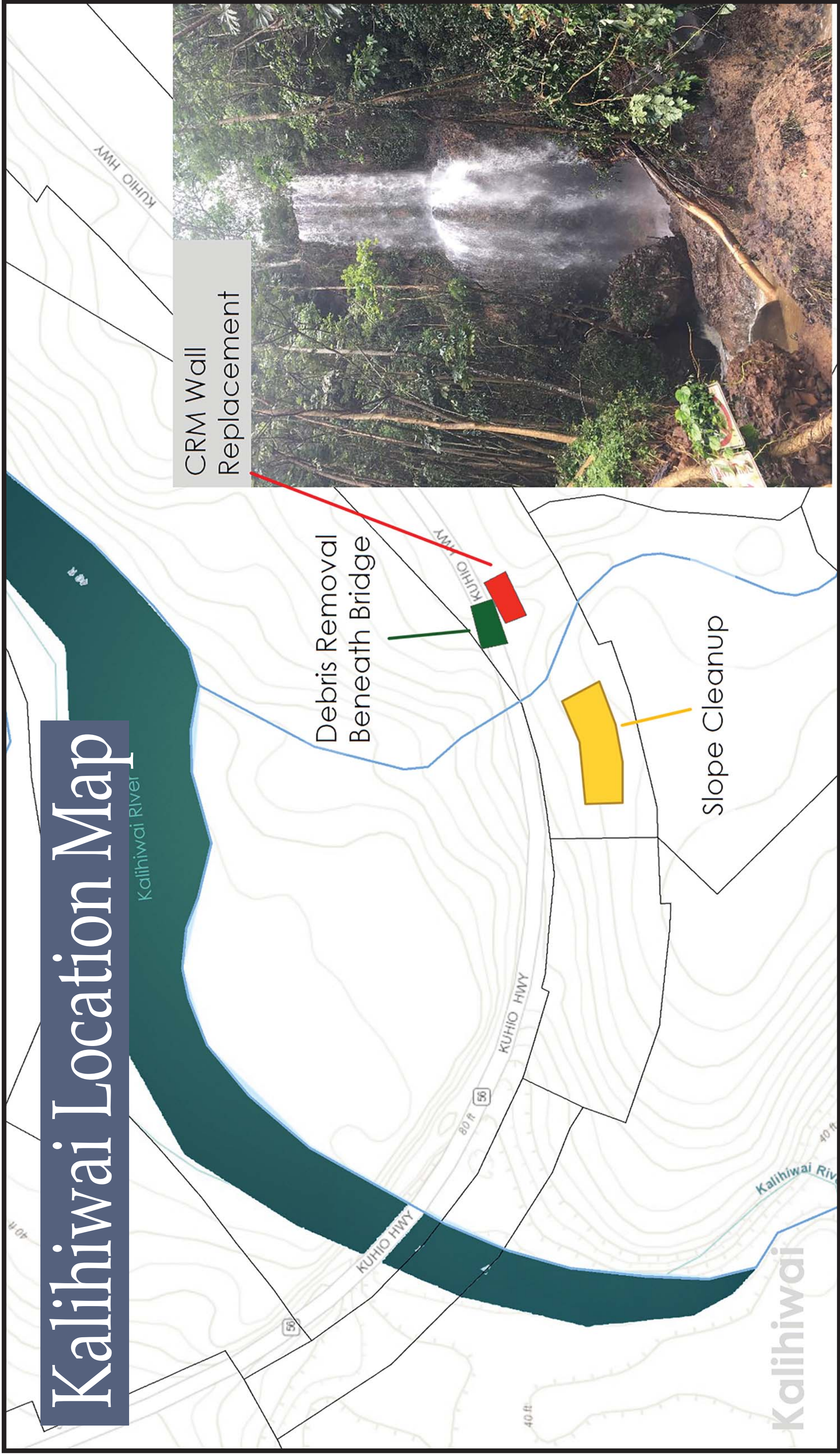
Endangered nene geese near bridge



Bridge access



Kūhiō Highway Repairs at Kalihiwai & Wailua



Kalihiwai

Kalihiwai Project Description:

Debris Removal and Scaling at MP 25. Debris Removal and CRM Wall Replacement.

Status:

Federal permitting in progress for CRM Wall replacement. Construction on wall replacement may begin as soon as permitted.

Wailua

Status:

Debris Removal from Wailua River is complete.



Kūhiō Highway Repair Status

No. Location on Kūhiō Highway		Repair Description	Progress
Hā'ena to Hanalei			
1	Route 560, MP 10 at Kē'e State Park	Reconstruct Roadway	Permitting in progress.
2	Route 560, MP 9.55 at Limahuli Stream Crossing	Repair concrete section lost in flooding. Resurface entire ford crossing	Permitting in progress.
3	Route 560, MP 8.7 at Hā'ena Beach Park	Repair roadway shoulder.	Permitting in progress.
4	Route 560, MP 8.76 at Mānoa Stream Ford Crossing near Hā'ena Beach Park	Repair the entire crossing.	Permitting in progress.
5	Route 560, MP 6.5 Repair Site 2	Roadway stabilization area with only 1 lane remaining. Debris removal, slope wall installation including soil nails, foot of slope revetment, guardrail/sign replacement, pavement repair	In progress. Revetment will be completed once bridge replacements are done.
6	Route 560, 15 locations or more from MP 6.5 through MP 4.4, (noted as Land Slide Zones A thru N):	Debris removal, slope scaling, slope stabilization, guardrail replacement, pavement repairs	Various stages of progress and completion. Full restoration and removal of debris contingent on bridge replacements.
7	Route 560, MP 5.8	Stockpile area	
8	Route 560, MP 4.5, Repair Site 1	Roadway stabilization area: Debris removal, slope wall installation including soil nails, foot of slope revetment, guardrail/sign replacement, pavement repair	
9	Route 560, MP 4.4	Stockpile area	In progress. Revetment will be completed once bridge replacements are done.
10	Waikoko Bridge (Route 560)	Replace existing bridge	In design and permitting, anticipated start late June.
11	Waipā Bridge (Route 560)	Replace existing bridge	In design and permitting, anticipated start late June.
12	Route 560, MP 3.7	Staging area	
13	Wai'oli Bridge (Route 560)	Replace existing bridge; debris removal from under bridge	In design and permitting, anticipated start late June.
14	Route 560, MP 1	Debris removal, slope scaling, guardrail replacement, minor pavement repair	Complete
15	Route 560, MP 0.5, near Hanalei Bridge	Debris removal and slope clean-up	Complete
Kalihiwai			
16	Route 56, MP 25	Debris removal, slope scaling	Complete
17	Route 56, MP 24.9	Debris removal from under bridge, and CRM wall replacement	Debris removal complete. CRM Wall in permitting.
Wailua			
18	Wailua Bridge (Route 56)	Debris removal from river under bridge	Complete

