

The Replacement of Makaha Bridges 3 and 3A

Ben Garde, P.E. and Chord Medeiros

Oct 14, 2024 at 2:44:12 PM
Farrington Hwy
Mākaha Valley HI 96792
United States

Makaha Bridges 3 and 3A

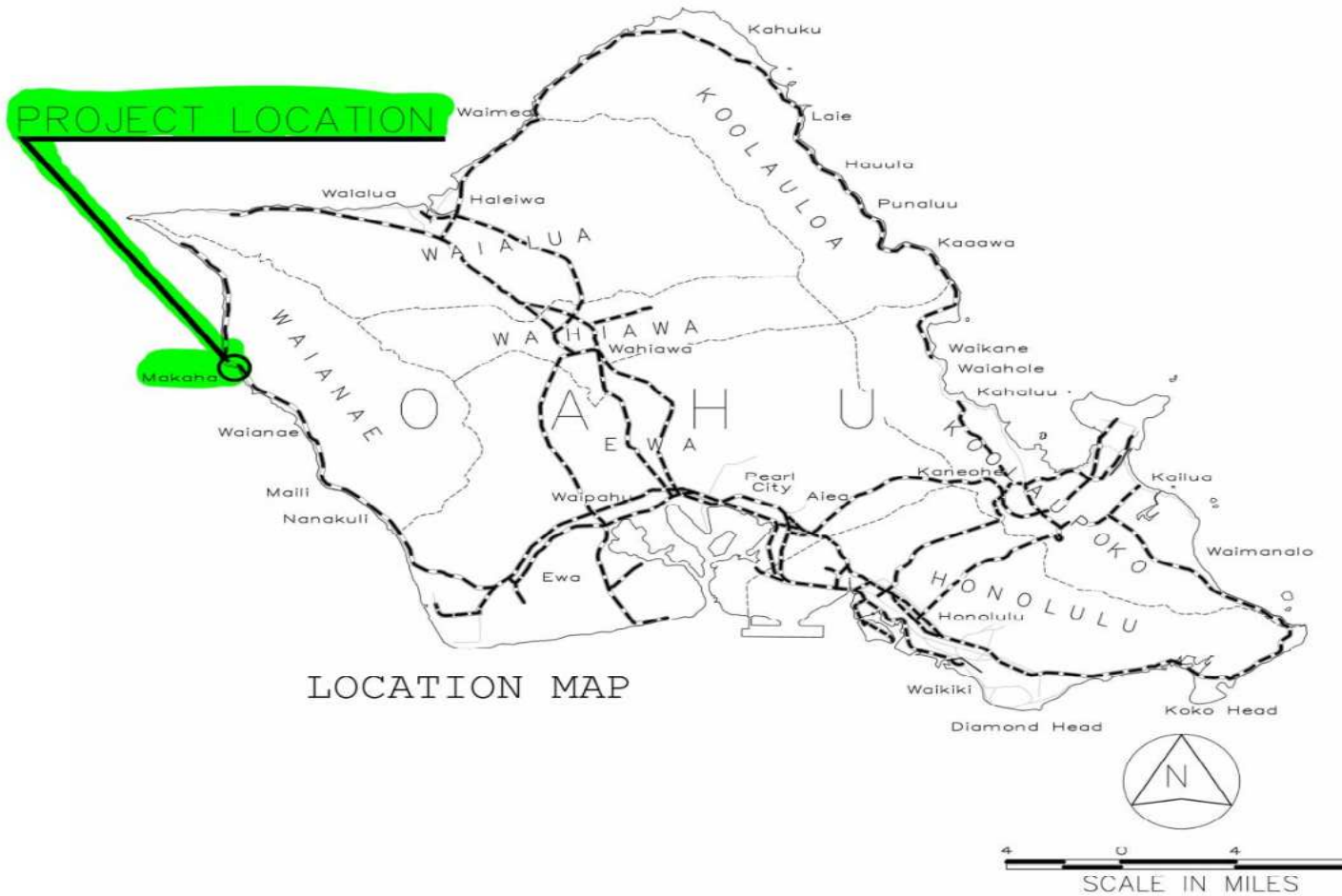
- ▶ Project Background
 - ▶ Existing Structures
 - ▶ Design of New Structures
 - ▶ Assembly and Placement of Trusses
- ▶ Work Area Conditions
- ▶ Types of Best Management Practices (BMPs) Utilized
 - ▶ Temporary BMPs
 - ▶ **Permanent BMPs**
- ▶ Environmental Obstacles
 - ▶ Predetermined Obstacles
 - ▶ Discharges
 - ▶ Channel Work
 - ▶ Hazardous Materials

11/ 13/ 2024

Project Background



Project Location





Existing Bridges 3 and 3A Descriptions

SPANS –

Bridge 3 – Three

Bridge 3A – Four

SUPERSTRUCTURE –

Wood Plank Deck on Wood Beams

SUBSTRUCTURE –

Abutments - Concrete

Piers – Wood Caps and Columns

11/ 13/ 24



Existing Bridge 3



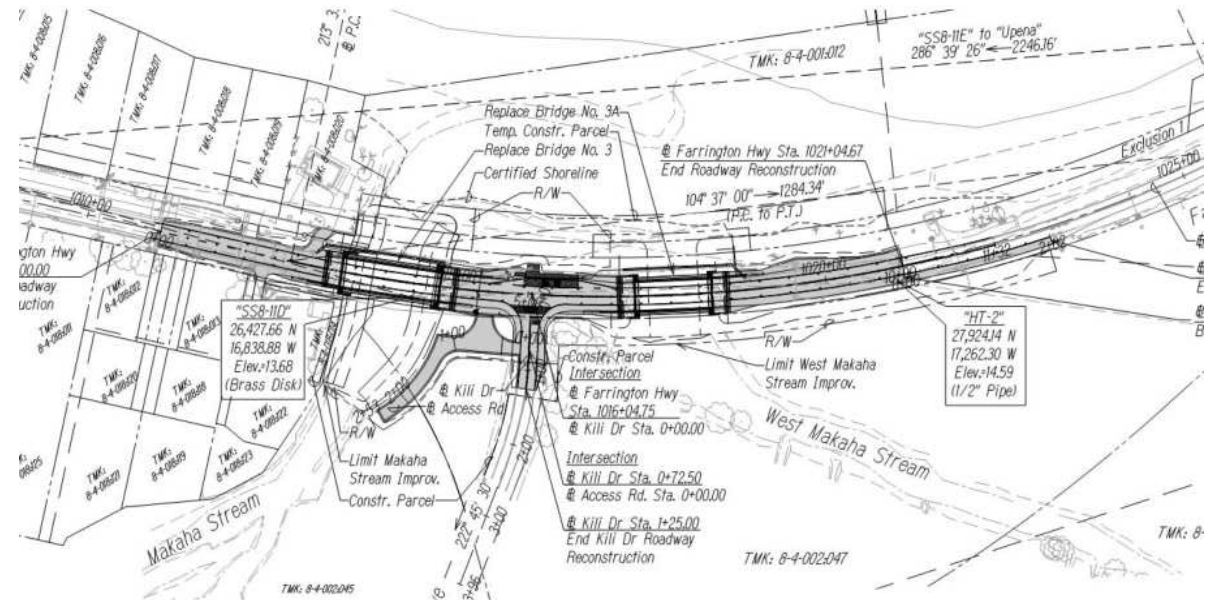
11/ 13/ 2024

Existing Bridge 3A



Design of New Bridges

- ▶ Single Span Prefabricated Steel Trusses
- ▶ Bridge Improvements
 - ▶ Designed for Current Live Loads
 - ▶ Adequate Hydraulic Opening
 - ▶ Provide Shoulders





Assembly and Placement of Trusses











Work Area Conditions









Types of BMPs

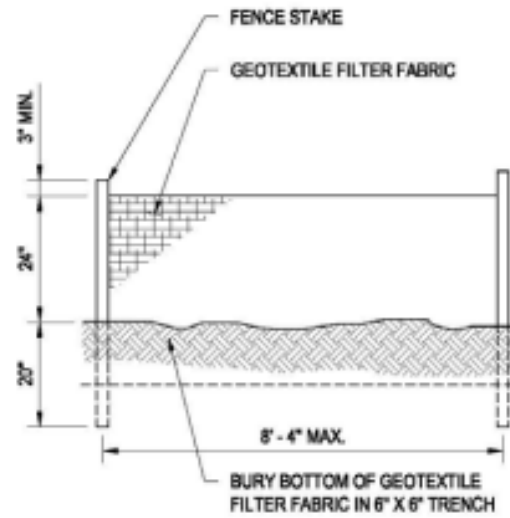
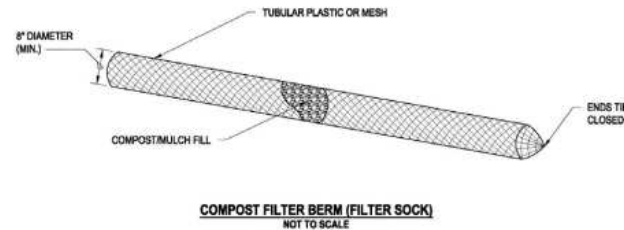
Perimeter Control



Compost Filter Berm/Sock

SC-6

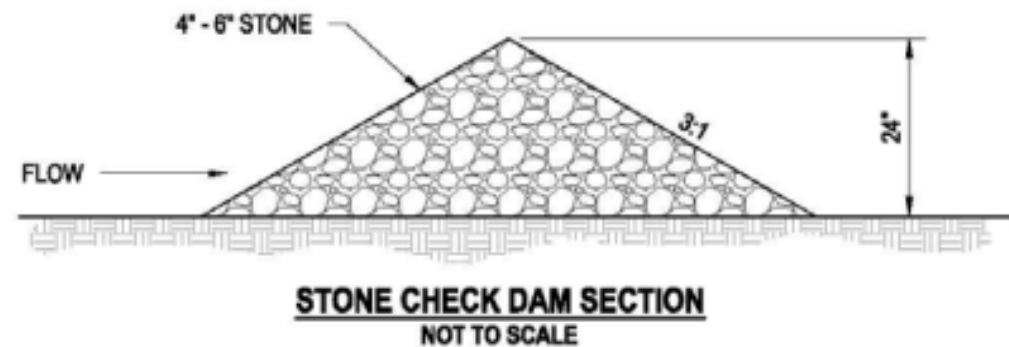
- ▶ Compost Filter Sock (SC-6)
 - ▶ Reduce Flow Velocity
 - ▶ Retains Sediment and Other Pollutants
- ▶ Silt Fence (SC-7)
 - ▶ Permeable Fabric
 - ▶ Intercept and Slow Storm Water That Has Sediment
- ▶ Challenge to Maintain in a Popular/ Frequented Area
 - ▶ Often Run Over or Ripped





Check Dams (SC-3)

- ▶ Two Designated Locations
 - ▶ Makaha Stream (Br. 3)
 - ▶ West Makaha Stream (Br. 3A)
- ▶ Reduce Erosion
- ▶ Slows Velocity of Water
- ▶ Catches Sediment





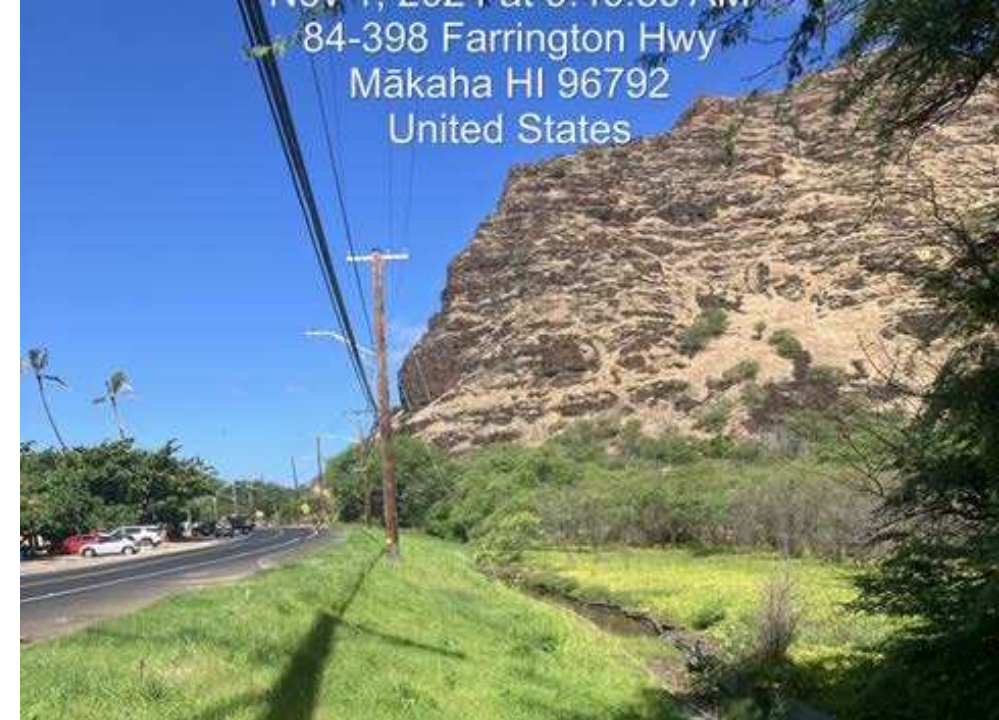


Stockpiles (SM-3)

- ▶ Materials:
 - ▶ Asphalt
 - ▶ Aggregate
 - ▶ Spoil Piles
 - ▶ Reinforcing Steel
 - ▶ Racked and Covered
- ▶ Reduce the Potential for Air and Water Pollution
 - ▶ Covered and Surrounded By Perimeter Control

Hydro Seed and Mulch (EC-13, EC-15)

- ▶ Earthwork along new bridges and highway
 - ▶ Embankments
 - ▶ Exposed Soil
 - ▶ Dry Area
- ▶ Apply mixture of loose bulk material, seeds, fertilizer and more
 - ▶ Protects bare soil
 - ▶ Increasing Infiltration
 - ▶ Promotes vegetation
 - ▶ Irrigation
 - ▶ Reducing Runoff



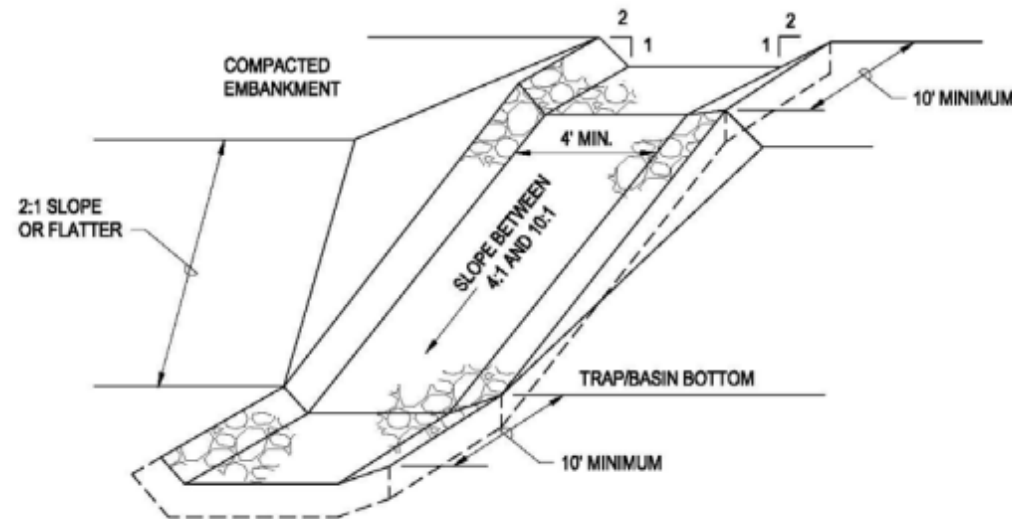
Riprap (EC-10)

- ▶ Permanent BMP
- ▶ Along Embankments
 - ▶ Makaha Stream (Br. 3)
 - ▶ West Makaha Stream (Br. 3A)
- ▶ Large, Irregular Size Rocks
 - ▶ Stabilizes Slopes
 - ▶ Protects Soil Surface
 - ▶ Slows Velocity of Runoff



Channel Slab and Slope Wall

- ▶ Permanent BMP
- ▶ Under Bridge 3
 - ▶ Makaha Stream
- ▶ Concrete
 - ▶ Stabilizes Slopes
 - ▶ Protects Soil Surface
 - ▶ Erosion Protection

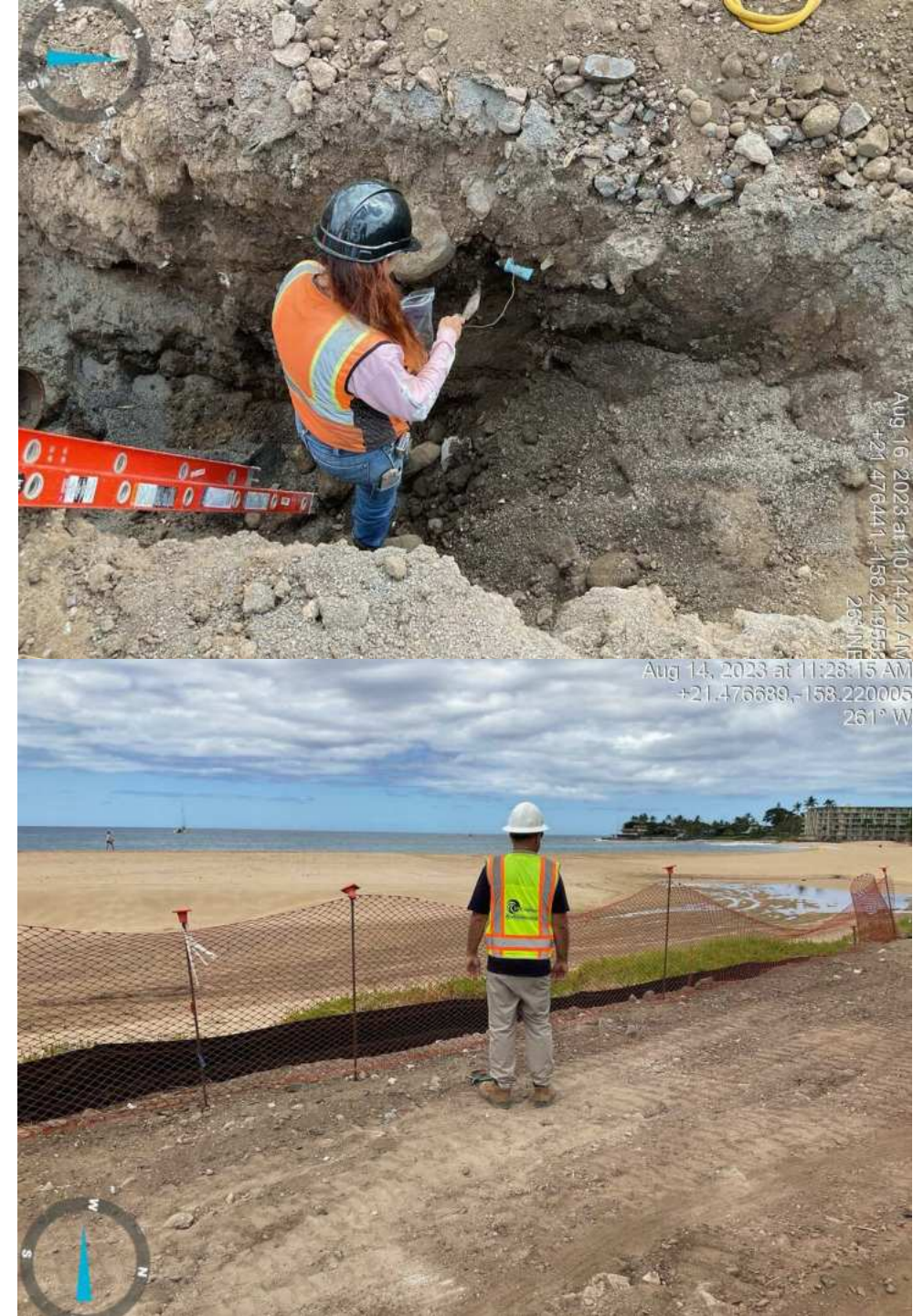


The background features a large, dark grey trapezoidal shape on the left and center. To its right is a complex, layered composition of various shades of green, ranging from light lime to dark forest green, creating a sense of depth and movement. On the far left, a white area is partially framed by a green shape. A thin white line runs diagonally across the bottom right corner of the image.

Environmental Obstacles

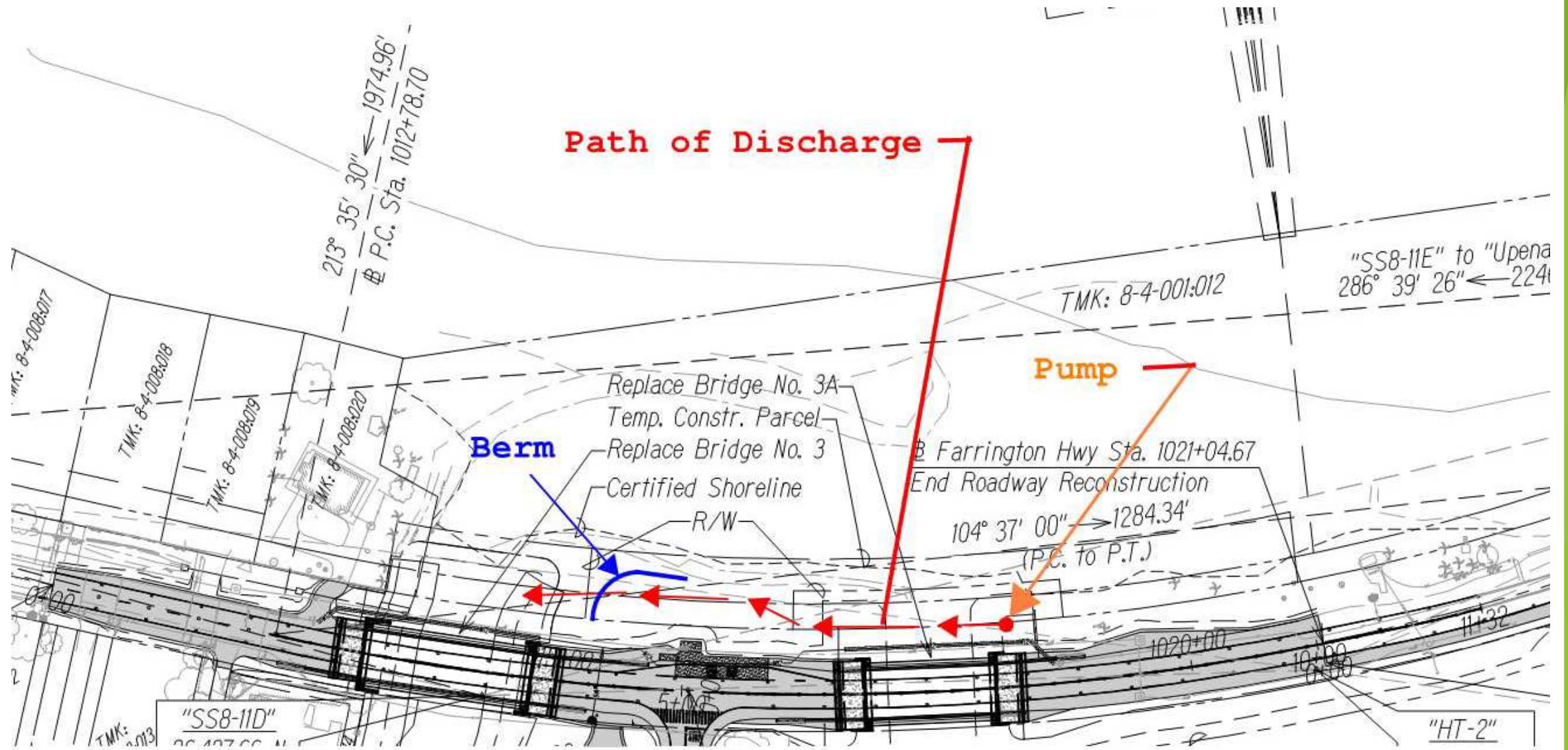
Predetermined Obstacles

- ▶ Biological Monitoring
 - ▶ Endangered Species Act per Fish and Wildlife Service
 - ▶ Section 7
- ▶ Archaeological Monitoring
 - ▶ State Historic Preservation Division



Discharge Issues

- ▶ Examples
 - ▶ Water Valve Leak
 - ▶ Groundwater Discharge
 - ▶ Dewatering Pit









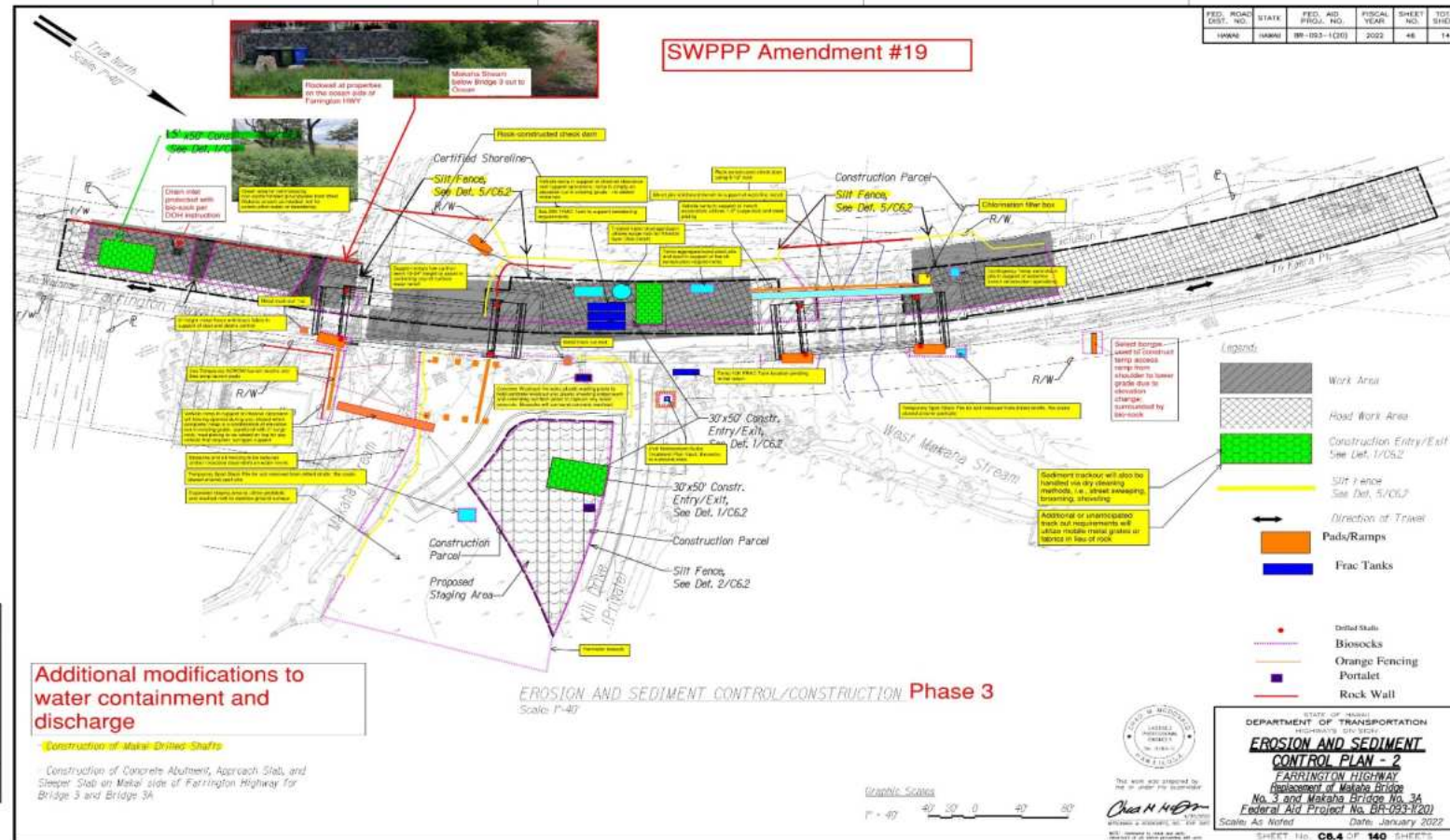
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SWPPP

30 Amendments



Dewatering Pit

Groundwater from
Excavating Channel Slab



Pump Groundwater to
Allow Forming and
Setting of Rebars



Farrington Hwy
Makaha HI 96792
United States
Makaha Beach Park
Jul 12, 2024 at 2:39:51 PM



















Hazardous Material

Location

West Makaha Stream at Bridge 3A

Material

Oily-Type Liquid Not Related to
Construction Work

Supervision

Environmental Consultant – Inclusion, LLC

Contact

DOH HEER Office as per HRS 128D and HAR 11-451

Submittal

Report submitted by Environmental Consultant

Solution

Deploy Petroleum Sorbent Pads







3/10/2022: Petroleum absorbent pads deployed onto, and extending beyond release area.

New Bridges





Nov 12, 2024 at 8:45:35 AM
Kili Dr
Mākaha Valley HI 96792
United States



