FED. ROAD DIST. NO.

STATE

FED. AID PROJ. NO.

FISCAL SHEET TOTAL SHEETS

HAWAII HAW.

BR-019-2(47)

1999

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## PROPOSED BEST MANAGEMENT PRACTICE (BMP) PLAN

Within 14 calendar days after the contract award, the Contractor shall prepare and submit a water quality site—specific BMP and monitoring plan to the Engineer for approval by the Department of Health. If dewatering is involved for the footing retrofit, the Contractor shall prepare and submit NPDES site—specific BMP and dewatering plan to the Engineer for approval by the Department of Health. The Contractor will not be allowed to do retrofit work in the water until the water quality site—specific BMP and monitoring plan and NPDES site—specific BMP and dewatering plan, if dewatering is involved for footing retrofit, are approved.

#### 1. Construction Sequence

- a. Initially, the Contractor shall install a DOH approved silt screen down stream from the construction site. Construction equipment will not be allowed within the stream bed until the silt screen is installed.
- The stream flow shall also be diverted around the construction site via all debris and/or excavated materials shall be properly removed from the aquatic environment and disposed of at the upland State or County approved sites. No construction material or construction—related materials shall be stockpiled, stored or placed in the aquatic environment or stroed or placed in ways that will disturb the aquatic environment. If stockpiling of excavated materials is required prior to transporting to the State or County approved site, transporting the excavated materials from the site

to an approved stockpile area shall be done with a watertight equipment.

#### 2. Construction Method

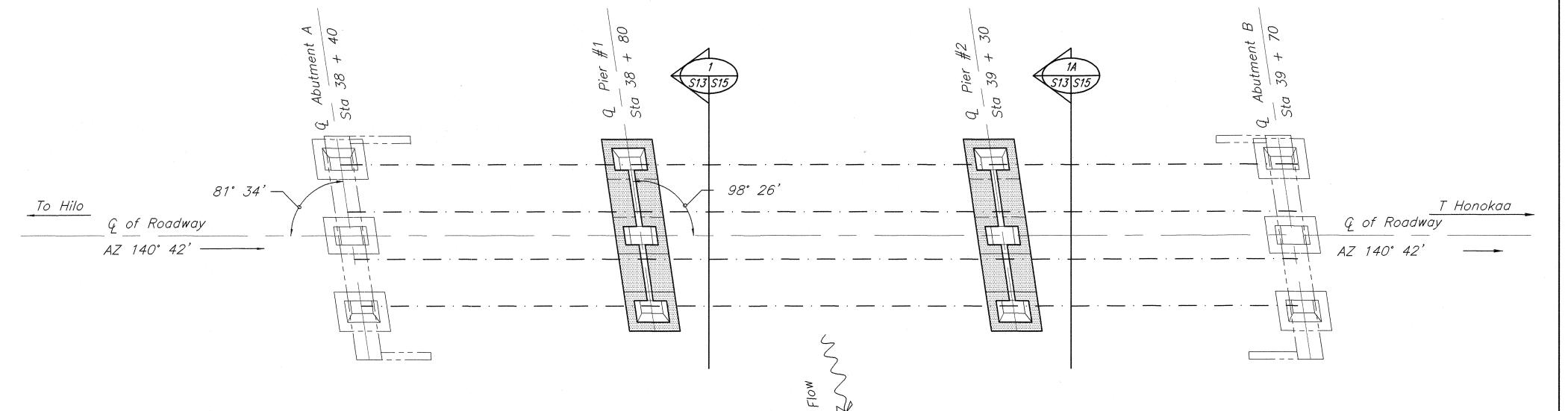
- a. After possible stream flow has been diverted and the construction site is protected, a backhoe will be used to excavated the streambed to expose the existing footing.
- b. Reinforcement will be placed and the concrete will be pumped into place.
  c. After all construction material and equipment are removed from the stream bed, the stream diversion will be removed and finally the silt screen will be removed.
- 3. Characteristics of the Discharge and Potential Pollutants Associated with the Proposed Construction Activity.
  - n. Material temporarily placed may include silt screen, plastic or steel pipes, coarse gravel, plastic lining, form material, berms, dikes, cofferdams, and sand bags.
  - b. Material permanently placed include reinforcement and concrete.
  - . Material that may enter State waters due to the proposed construction activity includes soil erosion, construction debris, and removed vegetation.
  - Discharges associated with the operation of the equipment include oil leak, and spills from the equipment fueling operation. Maintenance of equipment and fuel storage will not be allowed within the stream bed.

## 4. Proposed Control Measures or Treatment

- a. Effective silt containment devices shall be installed around the work site prior to any construction activity. They shall be maintained until the footing retrofit construction activity is completed. Details will be submitted after Contractor is selected.
- b. Stream flow shall be diverted away from, or around, the construction site prior to any construction activity.
- c. A designated upland area away from the aquatic environment for the selected Contractor to store or stockpile construction related materials and equipment will be assigned prior to start of construction activity.
- d. All loose material and small tools and equipment will be removed from the construction site after every work day is completed.
- Equipment shall be inspected daily to make sure oil leaks do not occur. Equipment shall be stored upland away from the aquatic environment. Fueling and lubricating of equipment and motor vehicles will be conducted away from the aquatic environment and in a manner to protect against spills and evaporation. Lubricants and excess oils will be disposed of in accordance with applicable federal, state and local regulations.
- f. Skilled masonry workers will be used to finish the concrete footing.

## 5. Water Quality Monitoring Plan

- a. The monitoring plan will consist of a control station and monitoring station at the location from the construction site approved by the Department of Health. Turbidity, pH, and total suspended solids (TSS) shall be monitored.
- the monitoring schedule shall involve collecting samples every day for five days prior to start of construction at the control station and monitoring station. During the construction period, representative samples shall be taken twice a week at the control station and monitoring station. Samples shall be taken after construction work has started for that day, at least after 1 to 2 hours after the workday begins. If the results exceed the geometric mean established from the baseline pre—construction water quality monitoring or applicable water quality standards, modifications shall be made to the water pollution controls.
- c. Samples shall be taken at mid-depth of water or as recommended by the Department of Health. Sample results shall be submitted to the Department of Health, Clean Water Branch. If the results exceed the applicable water quality standards, the Clean Water Branch will be notified within 24 hours after the availability of the analytical results. Notification will include mitigation measures. The pre-construction, and during construction monitoring results shall be submitted to the Department of Health as soon as they become available or no later than 1 week after the availability of the analytical results.
- d. The State of Hawaii, Department of Health, Clean Water Branch (Phone 586—4309) shall be notified 3 days prior to start of construction and at the end of construction.

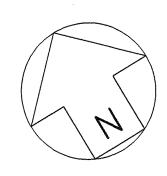


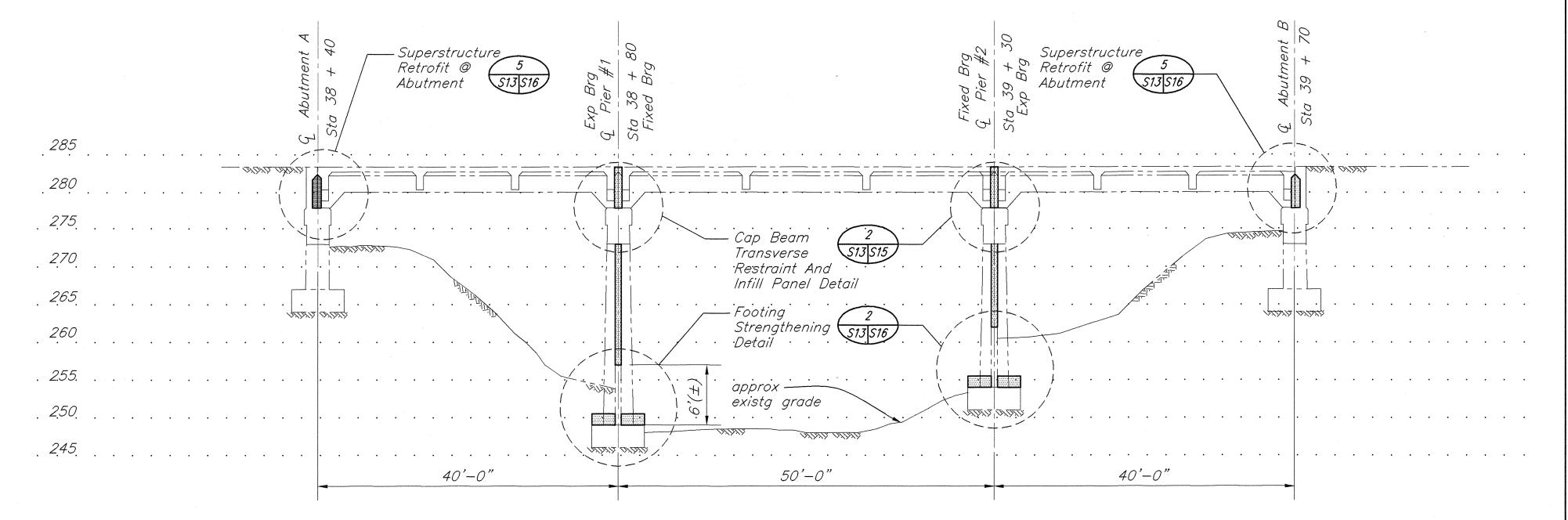
# FOUNDATION PLAN

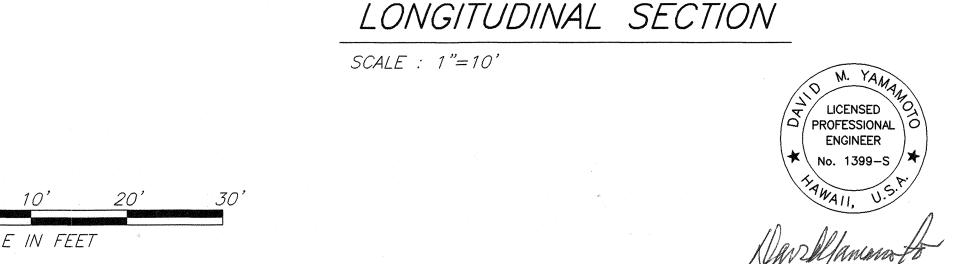
SCALE : 1"=10"

Note:

All finish elevations, stations and azimuths are approximate only. They are based on the original contract drawings dated March 1933. Contractor shall verify elevations, stations and azimuths as required.







THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIMESON

KAALAU BRIDGE-FOUNDATION PLAN AND LONGITUDINAL SECTION

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,

WEST OF NINOLE

FEDERAL AID PROJECT NO. BR-019-2(47)

SCALE: AS NOTED

DATE: November 1998

SHEET No. S13 OF 16 SHEETS

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FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
HAWAII	HAW.	BR-019-2(47)	1999	18	20

#### GENERAL:

- 1. The Existing Bridge Information Shown In This Drawings Was Obtained From The Original Bridge Drawings And Is Presented For Reference Purposes Only. No Responsibility Is Assumed For The Accuracy Of The Existing Information Presented. It Is The Contractor's Responsibility To Verify Independently All of The As-Built Information.
- 2. The Contractor Shall Visit The Construction Site And Shall Verify All Dimensions And Conditions Prior To Starting Any Work And Shall Be Responsible For Coordination Of All Work And Materials Including Those Furnished By Sub-Contractors. The Hawaii Department Of Transportation (D.O.T.) Representative Shall Be Notified Immediately Of Any Discrepancies Found
- 3. The Contract Structural Drawings And Specifications Represent The Finished Structure. They Do Not Indicate The Method Of Construction. The Contractor Shall Provide All Measures Necessary To Protect The Structure During Construction.
- 4. The Contractor Shall Provide Adequate Shoring For All Existing Adjacent Structures. Shoring For Construction Loads Shall Be Designed By a Hawaii Licensed Structural Engineer Experienced In This Kind Of Work.

#### BASIS FOR SEISMIC RETROFIT:

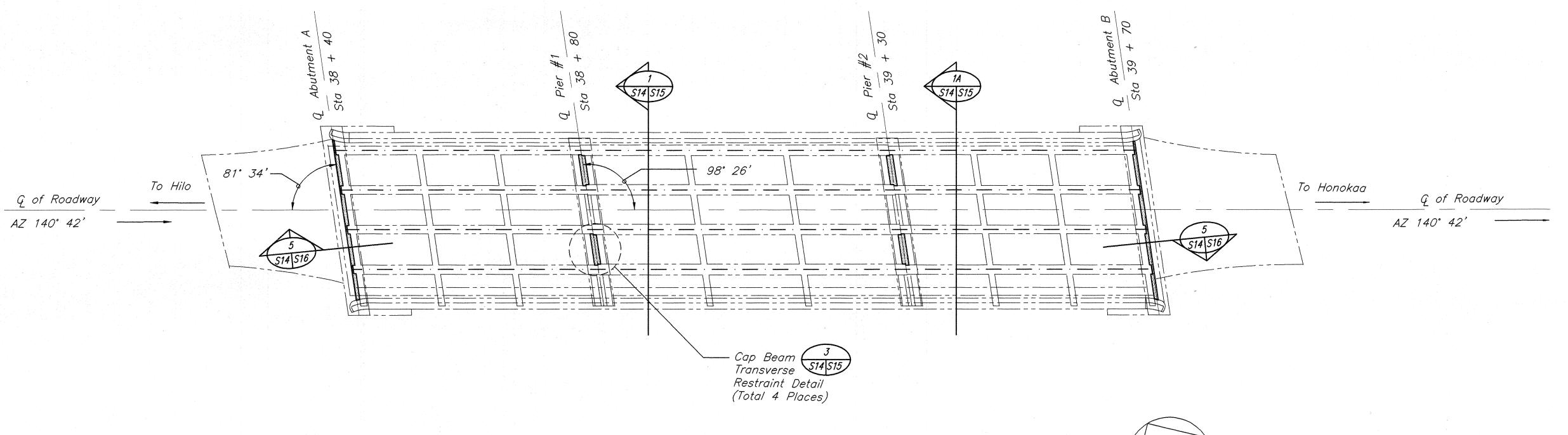
- 1. The Proposed Retrofit Work Addresses Two Apparent Weaknesses: A. The Possibility Of The Superstructure Sliding Transversely Off The Substructure During An Earthquake
- B. The Possibility Of The Superstructure Sliding Longitudinally At Abutment.
- 2. The Goal Of The Proposed Retrofit Work Is To Reduce The Risk Of Collapse During An Earthquake And Not The Prevention Of All Structural And Non-Structural Damage.
- 3. The Earthquake Loading Considered Is The ARS Curve For 5% Damping At O Feet To 10 Feet By Caltrans With An Expected Maximum Acceleration At Bedrock Of A = 0.4g.
- 4. The Design Methodology Is Per The Bridge Memo To Designers By The California Department Of Transportation, December 31, 1995.

#### GENERAL NOTES:

- 1. General Specifications: Hawaii Department Of Transportation Standard Specification For Road, Bridge And Public Works Construction, 1994 Together With Special Provisions Prepared For This Contract.
- 2. Design Specifications: AASHTO, Standard Specifications For Highway Bridges, 16th Edition (1996)
- 3. Caltrans Memo To Designers 20-4.

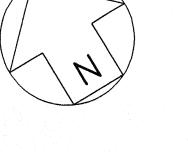
4. Seismic Loading: A. Seismic Performance Category	
5. Concrete: A. Existing: All Concrete. (Assumed)	
B. New Walls	

- 6. Reinforcing Steel: A. Existing: All Reinforcing Steel (Assumed) . . . . . . fy = 44,000 psi All Bars, Dowels & Stirrups . . . . . . . fy = 60,000 psi
- 7. The Contractor Shall Select Locations For And Employ Methods Of Storing Excavated Material So As To Preclude Pollution Of The Stream And Roadway. Upon Completion Of Filling Or Backfilling Work, The Contractor Shall Remove From The Site All Excess Excavated Material.



FRAMING PLAN

SCALE : 1"=10"



SCALE IN FEET

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

LICENSED

PROFESSIONAL \ ENGINEER

STATE OF HAWAE DEPARTMENT OF TRANSPORTATION

KAALAU BRIDGE-FRAMING PLAN

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
WEST OF NINOLE
FEDERAL AID PROJECT NO. BR-019-2(47) SCALE: AS NOTED DATE: November 1998

> SHEET No. S14 OF 16 SHEETS

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