Department of Health
National Pollutant Discharge Elimination System (NPDES)

INDIVIDUAL PERMIT APPLICATION FOR DISCHARGE OF STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY

KAMEHAMEHA V HIGHWAY

KAWELA BRIDGE REPLACEMENT

TMK: Fifth Division, 4-1-23; 24; 27
Molokai, Hawaii

October 2010

Prepared for:

State of Hawaii
Department of Transportation
601 Kamokila Boulevard Room 688
Kapolei, Hawaii 96707

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STATE OF HAWAII
Department of Health
National Pollutant Discharge Elimination System (NPDES)

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FOR
KAMEHAMEHA V HIGHWAY
KAWELA BRIDGE REPLACEMENT

DISCHARGES OF STORM WATER ASSOCIATED
WITH CONSTRUCTION ACTIVITY

State of Hawaii, Department of Health, Clean Water Branch

CWB-Individual NPDES Form C

Application for HAR, Chapter 11-55 - NPDES Individual Permit Authorizing Discharges of Storm Water Associated With Construction Activities (as defined in 40 CFR §§122.26(b)(14)(x) and 122.26(b)(15)(i))

Before completing this form, read the *Guidelines for CWB-Individual NPDES Form C*. Alteration of the text in this form may delay the processing of this submittal. The $1000 filing fee and CWB-NPDES Signatory and Certification Statement shall be submitted with this form. The EPA Form 3510-1 is not required to be submitted with this form.

1. Owner Information (see Guidelines for CWB-Individual NPDES Form C - Note 1)

Legal Name: State of Hawaii Department of Transportation

Mailing Address: 601 Kamokila Boulevard, Room 688

City, State and Zip Code+4: Kapolei, Hawaii 96707

Street Address: State of Hawaii, Department of Transportation

City, State and Zip Code+4: Kapolei, Hawaii, 96707

Contact Person & Title: Vincent Llorin, Project Engineer

Phone No.: (808) 692-7568 Fax No.: (808) 692-7555

2. Owner Type (see Guidelines for CWB-Individual NPDES Form C - Note 2)

City [ ] County [ ] State [x] Federal [ ] Private [ ] Other [ ]

If "Other" is checked, specify the type below:

_____

3. General Contractor Information (see Guidelines for CWB-Individual NPDES Form C - Note 3)

Legal Name: Contractor not yet selected

Mailing Address: _____

City, State and Zip Code+4: _____

Street Address: _____

City, State and Zip Code+4: _____

Contact Person & Title: _____

Phone No.: ( ) _____ Fax No.: ( ) _____

[x] The general contractor information will be submitted 30 days before the start of construction activities.

4. Project Information (see Guidelines for CWB-Individual NPDES Form C - Note 4)

Legal Name: Kawela Bridge Replacement

Mailing Address: 601 Kamokila Boulevard, Room 688

City, State and Zip Code+4: Kapolei, Hawaii 96707

Street Address: Kamehameha V Highway (Route 450) from Mile post 5.110 to Mile post 5.118

City, State and Zip Code+4: Kawela Bridge

Contact Person & Title: Vincent Llorin, Project Engineer

Phone No.: (808) 692-7568 Fax No.: (808) 692-7555

Island: District of Maui, Island of Molokai

Tax Map Key No(s).			
Zone	Section	Plat	Parcel(s)
5	4	01	23, 24, 27

5. Receiving State Water(s) Information (see Guidelines for CWB-Individual NPDES Form C - Note 5)

a. Receiving State Water Name: Pacific Ocean, tidally influenced portion of Kawela Stream (Discharge Point "DP-A")

Discharge Point Coordinates into the Receiving State Water:

Latitude: 21 ° 03 ' 47 " N Longitude: 156 ° 56 ' 57 " W

Classification: (check the appropriate space(s))

Inland: Class 1 [ ] and Estuary [ ]

Marine: Class AA [X] and Embayment [ ]

b. Are there additional discharge points into receiving State waters?

No [ ] Yes [X] If yes, provide the information requested in Item 5.a. on a separate sheet. → **Refer to Attachment Item No. 5.b**

c. Does the discharge enter a storm water drainage system before discharging into the receiving State waters?

No [X] Yes [ ] If yes, provide the following information. Attach a separate sheet with the requested information if there is more than one (1) discharge point into the storm water drainage system.

i. Drainage System Owner's name: N/A

ii. Discharge Point Coordinates into the Drainage System:

Latitude: [ ] ° [ ] ' [ ] " N Longitude [ ] ° [ ] ' [ ] " W

iii. A copy of the permit, license, or equivalent written approval granted by the owner(s) of the drainage system(s) allowing the subject discharge to enter their drainage system(s) is attached.

Yes ☐ No ☐, an explanation is attached.

6. Quantity of Storm Water Discharge (see Guidelines for CWB-Individual NPDES Form C - Note 6)

5.85 cfs / 3,780,954 gdp (cfs/gpd) **→Refer to Attachment Item No. 6**

7. Non-Storm Water Information (see Guidelines for CWB-Individual NPDES Form C - Note 7)

a. Source(s) of the non-storm water: Hydrotesting and Dewatering. NOI Forms F and G are appended with this application

b. Non-storm water handling method: Does the non-storm water discharge from the construction site?

☒ Yes If yes, where is the non-storm water discharged? The construction activity may require additional forms. Contact the CWB for details.

☐ No If no, indicate the non-storm water handling method(s):

8. Location Map(see Guidelines for CWB-Individual NPDES Form C - Note 8)**→Refer to Exhibit A1**

a. A location map which shows the following is attached: Yes ☒ No ☐

i. Island on which the project site is located, and

ii. Location of the project site.

b. A topographic map or maps of the area which clearly show the following is/are attached:

Yes ☒ No ☐

i. Legal boundaries of the project site,

ii. Location and identification number of each of the project site's existing and/or proposed outfalls or discharge points, and

iii. Receiving State water(s) and receiving storm water drainage system(s), if applicable, identified and labeled.

9. Flow Chart (see Guidelines for CWB-Individual NPDES Form C - Note 9)**→Refer to Exhibit A16**

A flow chart or line drawing showing the general route taken by storm water through the project site is attached.

Yes ☒ No ☐

10. Existing or Pending Permits, Licenses, or Approvals (see Guidelines for CWB-Individual NPDES Form C - Note 10)

Provide the status and corresponding file numbers on any existing or pending environmental permits.

a. Other NPDES Permit or NGPC File No.: N/A

b. DA Permit: Section 404 Clean Water Act, POH-2006-0050, in review

c. Section 401 WQC: WQC0000778, in review

d. SHPD file number: A copy of the transmittal letter will be submitted to DOH

e. Others (Specify): Refer to Attachment Item No. 10.e.

11. Construction Site Characterization (see Guidelines for CWB-Individual NPDES Form C - Note 11)

a. Describe the scope of the construction activity, including a proposed timetable for major activities with the date when the contractor will begin the site disturbance

Refer to Attachment Item No.11

b. Describe the history of the land use

Refer to Attachment Item No.11

c. Describe the pollution source(s) in the history and corrective measures

Refer to Attachment Item No.11

12. Construction Site Area (see Guidelines for CWB-Individual NPDES Form C - Note 12)
→ Refer to Attachment Item No. 6

a. Total area of the site: 1.97 acres

b. Total disturbance area (i.e., clearing, excavating, grading, grubbing, storage, staging, etc.):

1.97 acres

c. Impervious area of the site after construction is completed: 0.96 acres

13. Construction Best Management Practices (BMPs) Plan (see Guidelines for CWB-Individual NPDES Form C - Note 13) **→Refer to Attachment Item No. 13.b**

a. Project Site Map (see Guidelines for CWB-NPDES Form C - Note 13.a.)

i. Will construction be done in phases?

No [X] Yes [ ] If yes, a phasing map identifying each phase of the multi-phase construction project and the boundaries of each phase is attached:

Yes [ ] No [ ]

ii. A facility site map(s) which shows the following information is attached:

Yes [X] No [ ]

(1) Approximate slopes anticipated after major grading activities and pre-construction, during-construction, and post-construction drainage patterns;
(2) Areas of soil disturbance;
(3) Construction Baseyard and/or staging areas;
(4) The location(s) of impervious structures (including buildings, roads, parking lots, etc.) after construction is completed;
(5) Wetlands and other State water(s);
(6) The boundaries of 100-year flood plans, if determined;
(7) Areas used for the storage of soils, construction materials, or wastes and areas for the disposal of wash water from washing down of construction equipment and vehicles, concrete truck drum wash water, treated dewatering effluent, hydrotesting effluent discharge, etc.;
(8) The location(s) where stabilization practices are expected to occur;
(9) The location(s) and descriptions of all structural controls including those that will be used to divert the offsite storm water from flowing into the constructions site and;
(10) The areas where vegetative practices are to be implemented.

Note: **Items (1) through (6) shall be submitted with the application. If Items (7) through (10) are not available at the time of submittal, the information may be submitted at least 30 days before the start of construction activities.**

iii. Indicate which items are not applicable (use item numbers above):

N/A

iv. Indicate which items will be submitted 30 days before the start of construction activities (use item numbers above):

(7), (8), (9), (10)

b. The construction BMPs plan is attached on separate sheets with reference to Item 13.b.

Yes [X] No [ ]

The construction BMPs plan shall provide information requested in the Guidelines for CWB-Individual NPDES Form C - Note 13.b. by describing methods to minimize erosion of soil and discharge of other pollutants into State waters and, after completion of the construction activity, removal procedures for the construction site BMPs.

i. Construction Activity - Describe the nature of the construction activity.

(1) What is to be constructed and the construction sequence?

(2) If the project is a multi-phase construction project, include a list of each phase.

(3) What type of materials and heavy equipment will be used for the construction activity?

ii. Quality of Discharge - Describe the nature of the fill material to be used and existing data describing the soil or the quality of any discharge from the project site.

iii. Potential Pollutant(s) - Identify all the potential pollutant(s) that will be generated by the proposed construction activities and the proposed control measures or treatment, as applicable. These pollutants may include, but are not limited to:

(1) Construction debris, removed vegetation;

(2) Discharges associated with the operation and maintenance of the equipment, such as oil, fuel and hydraulic fluid leakage;

(3) Soil erosion from the disturbed areas and stockpile areas;

(4) Location(s) of oil, fuel or any hazardous material storage site(s) and containment structure(s); and

(5) Other.

iv. Controls for Land Disturbances - The owner and/or general contractor shall comply with the Special Conditions for Land Disturbances (from HAR, Chapter 11-55, Appendix C). The Department suggests including the language described in Note 13.b.iv. of the Guidelines for CWB-Individual NPDES Form C in the BMPs plan. It may be amended to be site-specific (i.e., type of cover to be used).

v. Erosion and Sediment Control Requirements - If applicable, submit the county-approved erosion and sediment control plan and/or the county-approved grading permit as appropriate for the activity and a schedule for implementing each control with the application or 30 days before the start of construction activities.

vi. Construction Schedule - Attach the proposed construction schedule which shall include, at a minimum:

(1) The date when the general contractor will begin and end the site disturbance;

(2) Dates when erosion control measures will be implemented and removed; and

(3) The dates when major construction activities begin and end.

c. [ ] The Site-Specific Construction BMPs Plan is submitted as an attachment to the CWB-Individual NPDES Form C.

[X] The Site-Specific Construction BMPs Plan will be submitted 30 days before the start of construction activities.

14. Post-Construction Pollutant Control Measures (see Guidelines for CWB-Individual NPDES Form C - Note 14) **→Refer to Attachment Item No.14.**

The description of measures that will minimize the discharge of pollutants via storm water discharge after construction operations have been completed are attached on a separate sheet with reference to Item 14.

Yes [X] No [ ]

15. Additional Information (see Guidelines for CWB-Individual NPDES Form C - Note 15)

Contractor to provide if applicable

16. Authorization of Representative (see Guidelines for CWB-Individual NPDES Form C - Note 16)

Alteration of this item will result in the invalidation of the authorization statement(s).

a. This statement authorizes the named individual or any individual occupying the named position of the company/organization listed below to act as our representative to process the required application for coverage under the NPDES permit to discharge to State waters from the subject facility. This authorization begins with NPDES permit application processing and ends upon the Owner's receipt of the NPDES Permit. The Owner hereby agrees to comply with and be responsible for all NPDES permit conditions.

Company/Organization Name: Austin Tsutsumi and Associates, Inc.

Mailing Address: 501 Sumner Street, Suite 521

City, State and Zip Code+4: Honolulu, HI 96817

Street Address: 501 Sumner Street, Suite 521

City, State and Zip Code+4: Honolulu, HI 96817

Authorized Contact Person & Title: DeAnna Hayashi, Assistant Chief Engineer

Phone No.: (808) 533-3646 Fax No.: (808) 526-1267

b. This statement authorizes the named individual or any individual occupying the named position of the company/organization listed below to act as our representative to process the required application for coverage under the NPDES permit to discharge to State waters from the subject facility. Our representative is further authorized to fulfill all conditions of the NPDES permit. This authorization begins with NPDES permit application processing and ends upon receipt of the CWB-NOC Form by the CWB. The Owner hereby agrees to comply with and be responsible for all NPDES permit conditions.

Company/Organization Name: _____

Mailing Address: _____

City, State and Zip Code+4: _____

Street Address: _____

City, State and Zip Code+4: _____

Authorized Contact Person & Title: _____

Phone No.: (___) _____ Fax No.: (___) _____

c. This statement authorizes the named individual or any individual occupying the named position of the company/organization listed below to act as our representative to fulfill all conditions of the NPDES permit for the subject facility. This authorization begins upon the Owner's receipt of the NPDES Permit and ends upon receipt of the CWB-NOC Form by the CWB. The Owner hereby agrees to comply with and be responsible for all NPDES permit Conditions.

Company/Organization Name: Department of Transportation, Highway Division

Mailing Address: 650 Palapala Drive

City, State and Zip Code+4: Kahului, HI 96732

Street Address: 650 Palapala Drive

City, State and Zip Code+4: Kahului, HI 96732

Authorized Contact Person & Title: Ferdinand Cajijal, Maui District Engineer

Phone No.: (808) 873-3538 Fax No.: (808) 873-3544

d. ☐ A separate statement is attached.

CWB-Individual NPDES Form C Checklist			
If any item (except for Item 15) is listed as "no," attach a sheet with the reason for its exclusion from the CWB-Individual NPDES Form C submittal.			
Item Number	**Description**	**Is info. provided?**	
		yes	**no**
1.	Owner Information	X	
2.	Owner Type	X	
3.	General Contractor Information		X
4.	Project Information	X	
5.	Receiving State Water(s) Information	X	
6.	Quantity of Storm Water Discharge	X	
7.	Non-Storm Water Information	X	
8.	Location Maps are attached	X	
9.	Flow Chart is attached	X	
10.	Existing or Pending Permits, Licenses, or Approvals	X	
	a. Submit one (1) copy of the NPDES permit application to SHPD (see Guidelines for CWB-NPDES Form C - Note 10.d.)	X	
11.	Construction Site Characterization	X	
12.	Construction Site Area	X	
13.	Construction BMPs Plan	X	
	a. Project Site Map(s)	X	
	b. Construction Activity	X	
	c. Quality of Discharge	X	
	d. Potential Pollutant(s) and Control Measures	X	
	e. Controls for Land Disturbances	X	
	f. Erosion and Sediment Control Requirements (i.e., county-approved erosion control plan)	X	
	g. Proposed Construction Schedule is attached	X	
14.	Post-Construction Erosion Control Measures is attached	X	
15.	Additional Information		X
16.	Authorization of Representatives	X	
17.	CWB-NPDES Signatory and Certification Statement is attached	X	

CWB-Individual NPDES Form C Checklist			
If any item (except for Item 15) is listed as "no," attach a sheet with the reason for its exclusion from the CWB-Individual NPDES Form C submittal.			
Item Number	**Description**	**Is info. provided?**	
		yes	**no**
18.	Filing Fee ($1,000) is attached	X	
19.	Number of copies with supporting documents submitted		
	a. Two (2) copies for projects on the island of Oahu		X
	b. Four (4) copies for projects on the island of Hawaii		X
	c. Three (3) copies for projects on islands other than Oahu and Hawaii	X	
20.	Submit a list of all supporting documents (see Guidelines for CWB-Individual NPDES Form C - Note VI.)	X	

EXCLUSIONS FROM CWB-INDIVIDUAL FORM C

Exclusions from CWB – Individual Form C

Exclusions:

Item 3. **General Contractor Information – To be submitted within 30 days before the start of construction activities.**

Item 19.a. **Two (2) copy for projects on the island of Oahu – This project is on Molokai.**

Item 19.b. **Four (4) copy for projects on the island of Hawaii – This project is on Molokai.**

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS

CWB – NOI FORM F
FOR
KAMEHAMEHA V HIGHWAY
KAWELA BRIDGE REPLACEMENT

DISCHARGES OF HYDROTESTING WATERS

State of Hawaii, Department of Health, Clean Water Branch	Previously Assigned NGPC File No. (for renewal NOI only): HI _____
CWB NOI Form F	
Notice of Intent for HAR, Chapter 11-55, Appendix F - NPDES General Permit Coverage Authorizing Discharges of Hydrotesting Waters	

Before completing this form, read the *General Guidelines for NOI Forms B through L* and *Guidelines for CWB NOI Form F*. Alteration of the text in this form may delay the processing of this submittal.

F.1. Location Map (see Guidelines for CWB NOI Form F - Note 1) →**Refer to Exhibit B1**

a. A location map which shows the following is attached: Yes [X] No [ ]

i. Island on which the project or activity is located, and

ii. Location of the project or activity.

b. A topographic map or maps of the area which clearly show the following is/are attached:

Yes [X] No [ ]

i. Legal boundaries of the project or activity,

ii. Location and identification number of each of the project's or activity's existing and/or proposed outfalls or discharge points, and

iii. Receiving State water(s) and receiving storm water drainage system(s), if applicable, identified and labeled.

F.2. Flow Chart (see Guidelines for CWB NOI Form F - Note 2) →**Refer to Exhibit B2**

A flow chart or line drawing showing the general route taken by hydrotesting water through the project or activity from intake to the discharge point is attached.

Yes [X] No [ ]

F.3. Existing or Pending Permits, Licenses, or Approvals (see Guidelines for CWB NOI Form F - Note 3)

Provide the status and corresponding file numbers on any existing or pending environmental permits.

a. Other NPDES Permit or NGPC File No.: N/A

b. DA Permit: Section 404 Clean Water Act, POH-2006-0050, pending review

c. Section 401 WQC: WQC0000778, in review

d. RCRA Permit (Hazardous Wastes): N/A

e. Facility on SARA 313 List (identify SARA 313 chemicals on site):

N/A

f. Other (Specify): Refer to Attachment No. 10.e

F.4. Project or Activity Description (see Guidelines for CWB NOI Form F - Note 4)

a. Overview of the hydrotesting activities. Include an 8-1/2 by 11 inches sized plan or a plan folded to 8-1/2 by 11 inches showing the location of the tank, waterlines and/or sewer lines to be hydrotested.

The purpose of this activity is to pressure test and chlorinate the newly installed 8-inch waterline. The chlorinated testing water will be discharged into Kawela Stream by natural sheet flow or by Vactor trucks.

b. Estimated timetable for major construction activities:

i. Begin construction

January 2011

ii. End construction

March 2012

c. Date(s) on which the hydrotesting activities are expected to occur:

i. Begin hydrotesting activities

to be submitted by Contractor

ii. End hydrotesting activities

to be submitted by Contractor

d. Rates of Effluent Discharge **→Refer to B3**

i. Estimated average daily flow rates

395 gpd (cfs/gpd)

ii. Estimated maximum daily flow rates

395 gpd (cfs/gpd)

iii. Total Quantity of Discharge

791 gallons (gallons)

e. List the pollutants that may be present in the hydrotesting water before any treatment and provide an explanation of its origins (e.g., silt introduced during installation, chlorine from disinfection activities, etc.)

Potential pollutants include chlorine due to the disinfecting of the waterline

F.5. Physical Hydrotesting Water Quality (see Guidelines for CWB NOI Form F - Note 5)

a. Source of Hydrotesting Water

Potable water, Maui Department of Water Supply Kawela Wells / Kualapuu Well

b. Check the appropriate column.

Parameter	Believe Present	Believe Absent
Floating Debris		X
Scum or Foam		X
Color		X
Odor		X

F.6. Water Quality Parameters (see Guidelines for CWB NOI Form F - Note 6) **→The source water is potable.**

a. All parameters must be tested and reported. Provide laboratory data sheets in addition to completing the following table.

Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54
Turbidity (0.1 NTU)		NTU			
Total Suspended Solids (1 mg/l)		mg/l			
pH (0.1 standard units)					
Dissolved Oxygen (0.1 mg/l)		mg/l			
Oxygen Saturation (1%)		%			
Temperature (0.1 EC)		EC			
Salinity (0.1 ppt)		ppt			
or Chloride (0.1 mg/l)*		mg/l			
or Conductivity (1 :mhos/cm)*		:mhos/cm			

Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54
Oil and Grease (1 mg/l)		mg/l			

* Fresh waters and effluent samples

F.7. Toxic Parameters (see Guidelines for CWB NOI Form F - Note 7 and Glossary of Chemicals in General Guidelines for NOI Forms B through L - Note V) →**The source water is potable.**

Provide laboratory data sheets in addition to completing the following tables. In cases when test results are not available at the time of the NOI submission, complete the columns for Test Method, Method Detection Limit, and HAR, §11-54-03(b)(3) for parameters believed to be present. For parameters not believed present, indicate "N/A" for "not applicable" in the Test Result column. If the Test Result column is left blank, the CWB will consider the parameter to be present and test results will be required.

a. Metals **N/A**

Total Recoverable Metal Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-04(b)(3)
Aluminum		:g/l			
Antimony		:g/l			
Arsenic		:g/l			
Beryllium		:g/l			
Cadmium		:g/l			
Chromium (VI)		:g/l			
Copper		:g/l			
Lead		:g/l			
Mercury		:g/l			
Nickel		:g/l			
Selenium		:g/l			
Silver		:g/l			
Thallium		:g/l			
Tributyltin		:g/l			
Zinc		:g/l			

b. Organonitrogen Compounds **N/A**

Organonitrogen Compound Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-04(b)(3)
Benzidine		µg/l			
2,4-Dinitro-o-cresol		µg/l			
Dinitrotoluenes		µg/l			
1,2-Diphenylhydrazine		µg/l			
Nitrobenzene		µg/l			
Nitrosamines		µg/l			
N-Nitrosodibutylamine		µg/l			
N-Nitrosodiethylamine		µg/l			
N-Nitrosodimethylamine		µg/l			
N-Nitrosodiphenylamine		µg/l			
N-Nitrosopyrrolidine		µg/l			

c. Pesticides **N/A**

Pesticide Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-04(b)(3)
Aldrin		:g/l			
Chlordane		:g/l			
Chlorpyrifos		:g/l			
DDT		:g/l			
Demeton		:g/l			
Dieldrin		:g/l			
Endosulfan		:g/l			
Endrin		:g/l			
Guthion		:g/l			
Heptachlor		:g/l			
Lindane		:g/l			
Malathion		:g/l			
Methoxychlor		:g/l			
Mirex		:g/l			
Parathion		:g/l			
TDE - metabolite of DDT		:g/l			
Toxaphene		:g/l			

d. Phenols **N/A**

Phenol Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-04(b)(3)
2-Chlorophenol		µg/l			
2,4-Dichlorophenol		µg/l			
2,4-Dimethylphenol		µg/l			
Nitrophenols		µg/l			
Pentachlorophenol		µg/l			
Phenol		µg/l			
2,3,5,6-Tetrachlorophenol		µg/l			
2,4,6-Trichlorophenol		µg/l			

e. Phthalates **N/A**

Phthalate Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-04(b)(3)
Bis (2-ethylhexyl) phthalate		:g/l			
Dibutyl phthalate (esters)		:g/l			
Diethyl phthalate (esters)		:g/l			
Dimethyl phthalate (esters)		:g/l			

f. Polynuclear Aromatic Hydrocarbons **N/A**

Polynuclear Aromatic Hydrocarbon Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-04(b)(3)
Acenaphthene		:g/l			
Fluoranthene		:g/l			
Naphthalene		:g/l			
Polynuclear aromatic hydrocarbons		:g/l			

g. Volatile Organics **N/A**

Volatile Organic Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-04(b)(3)
Acrolein		:g/l			
Acrylonitrile		:g/l			
Benzene		:g/l			
Carbon tetrachloride		:g/l			
Bis(2-chloroethyl)ether		:g/l			
Bis(chloroethers-methyl)		:g/l			

Volatile Organic Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-04(b)(3)
Bis(chloroisopropyl)ether		:g/l			
Chloroform		:g/l			
Dichlorobenzenes		:g/l			
Dichlorobenzidine		:g/l			
1,2-Dichloroethane		:g/l			
1,1-Dichloroethylene		:g/l			
Dichloropropanes		:g/l			
1,3-Dichloropropene		:g/l			
Ethylbenzene		:g/l			
Hexachlorobenzene		:g/l			
Hexachlorobutadiene		:g/l			
Hexachlorocyclohexane, alpha		:g/l			
Hexachlorocyclohexane, beta		:g/l			
Hexachlorocyclohexane, technical		:g/l			
Hexachlorocyclopentadiene		:g/l			
Hexachloroethane		:g/l			
Isophorone		:g/l			
Pentachlorobenzene		:g/l			
Pentachloroethanes		:g/l			
1,2,4,5-Tetrachlorobenzene		:g/l			
1,1,2,2-Tetrachloroethane		:g/l			
Tetrachloroethanes		:g/l			
Tetrachloroethylene		:g/l			
Toluene		:g/l			
1,1,1-Trichloroethane		:g/l			
1,1,2-Trichloroethane		:g/l			
Trichloroethylene		:g/l			
Vinyl chloride		:g/l			

h. Others **N/A**

Other Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-04(b)(3)
Chlorine		:g/l			
Cyanide		:g/l			
Dioxin		:g/l			
Polychlorinated biphenyls		:g/l			

F.8. Hydrotesting Best Management Practices (BMPs) Plan (see Guidelines for CWB NOI Form F - Note 8)

Attach Hydrotesting BMPs Plan on separate sheets with reference to Item 15. The Hydrotesting BMP Plan shall ensure that the hydrotesting water discharge will meet the conditions of the General Permit, basic water quality criteria, and applicable specific water quality parameters. List good housekeeping measures and BMPs that shall be performed to minimize pollutants entering State waters.

[ ] The Hydrotesting BMP Plan is submitted as an attachment to the CWB NOI Form F.

[X] The Hydrotesting BMP Plan will be submitted 30 days before the start of construction activities.

F.9. Additional Information (see Guidelines for CWB NOI Form F - Note 9)

To be submitted by Contractor if applicable

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS

CWB – NOI FORM G
FOR
KAMEHAMEHA V HIGHWAY
KAWELA BRIDGE REPLACEMENT

DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY DEWATERING

State of Hawaii, Department of Health, Clean Water Branch	Previously Assigned NGPC File No. (for renewal NOI only): HI _____
CWB NOI Form G	
Notice of Intent for HAR, Chapter 11-55, Appendix G - NPDES General Permit Coverage Authorizing Discharges Associated With Construction Activity Dewatering	

Before completing this form, read the *General Guidelines for NOI Forms B through L and Guidelines for CWB NOI Form G.* Alteration of the text in this form may delay the processing of this submittal.

G.1. Dewatering Discharge Information (see Guidelines for CWB NOI Form G - Note 1)
→ **Refer to Exhibit C3**

a. Quantity of Discharge: 12,600 (**gallons**/million gallons)

b. Rate of Discharge: 151,200 (cfs/**gpd**)

c. Frequency of Discharge (check the appropriate space(s)

Continuous ☐ Emergency ☐ Daily ☐ Intermittent ☒

G.2. Location Map (see Guidelines for CWB NOI Form G - Note 2) → **Refer to Exhibit C1**

a. A location map which shows the following is attached: Yes ☒ No ☐

i. Island on which the project is located, and

ii. Location of the project.

b. A topographic map or maps of the area which clearly show the following is/are attached:

Yes ☒ No ☐

i. Legal boundaries of the project,

ii. Location and identification number of each of the project's existing and/or proposed outfalls or discharge points,

iii. Receiving State water(s) and receiving storm water drainage system(s), if applicable, identified and labeled, and

iv. Location(s) where the water quality sample was collected in relation to the proposed project.

G.3. Flow Chart (see Guidelines for CWB NOI Form G - Note 3) → **Refer to Exhibit C2**

A flow chart or line drawing showing the general route taken by the dewatering effluent through the project from intake to the discharge point is attached.

Yes ☒ No ☐

G.4. Existing or Pending Permits, Licenses, or Approvals (see Guidelines for CWB NOI Form G - Note 4)

Provide the status and corresponding file numbers on any existing or pending environmental permits.

a. Other NPDES Permit or NGPC File No.: N/A

b. DA Permit: Section 404 Clean Water Act, POH-2006-0050, in review

c. Section 401 WQC: WQC0000778, in review

d. RCRA Permit (Hazardous Wastes): N/A

e. Facility on SARA 313 List (identify SARA 313 chemicals on site):

N/A

f. Other (Specify): Refer to Attachment No. 10.e

G.5. Site Characterization (see Guidelines for CWB NOI Form G - Note 5)

a. The history of the land use at the proposed construction site and surrounding area.

The land use at the project site and its surrounding area was conservation in the makai and mostly fallow agriculture. We believe that there have been no gasoline spills at the bridge, former gas stations in the project area, or any other industrial pollutants being introduced into the environment in the past.

b. The potential pollutant(s) that may be present and its source(s) at the proposed construction site and surrounding area.

Potential post pollutant(s) may include asphalt/petroleum-based releases from existing roadway asphalt pavement washed into the stream during rainfall event.

G.6. Project Description (see Guidelines for CWB NOI Form G - Note 6)

a. General description of the construction activity, including the quantity of disturbed area (in acres)

The existing Kawela Bridge will be removed and the new roadway/bridge will be constructed. To allow traffic during construction, a temporary detour road will be constructed over the stream adjacent to the existing highway. These improvements will be removed once the permanent bridge and highway are operational.

b. Portion of the project involving construction dewatering

Portion of surrounding area of the project site requires dewatering to construct the bridge abutments. A portion of the stream will need to be temporarily diverted while the bridge support structures and lining are being constructed.

c. Construction Schedule → **Refer to Exhibit A15**

☒ A proposed construction schedule is attached. An updated construction schedule will be submitted before the construction activity begins.

☐ The final schedule is attached.

d. The time frame of the proposed discharges (24 hours/day, working hours, etc.)

Discharge will be intermittent during working hours.

G.7. Physical Source Water Quality (see Guidelines for CWB NOI Form G - Note 7)

Check the appropriate column.

Parameter	Believe Present	Believe Absent
Floating Debris		X
Scum or Foam		X
Color		X
Odor		X

G.8. Water Quality Parameters (see Guidelines for CWB NOI Form G - Note 8)

a. All parameters must be tested and reported. Provide laboratory data sheets in addition to completing the following table. → **Refer to Exhibit C5**

Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54
Total Nitrogen	<500	µg/l	4500 NO3E	500	150
Ammonia Nitrogen	110	µg/l	4500 NH3	100	3.5
Nitrate + Nitrite	<100	µg/l	4500 NO3	100	5
Total Phosphorus	<100	µg/l	4500 P	100	20
Turbidity	5.58	NTU	180.1	0.01	0.5
Total Suspended Solids	22	mg/l	2540D	0.1	
pH	8.05		150	0.1	7 min.
Dissolved Oxygen	10.56	mg/l	360	0.1	

Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54
Oxygen Saturation	168	%	360	1	>75
Temperature	29.3	EC	170	0.1	±1°from Ambient Temp.
Salinity	38	ppt	Refractive Index	1	
or Chloride		mg/l			
or Conductivity		:mhos/cm			
Oil and Grease	<1.0	mg/l	1664A	1.0	

* Fresh waters and effluent samples

b. Provide explanation and evaluation of the source water quality data with respect to the applicable specific numeric criteria for the receiving water(s) specified under the HAR, Chapter 11-54.

Water quality results for Ammonia Nitrogen and Turbidity exceed the geometric mean per HAR Section 11-54-6(b) (3) for open coastal waters, Class AA. Water quality results for pH and Oxygen Saturation are within the geometric mean per HAR Section 11-54-6(b) (3) for open coastal waters, Class AA. It should be noted that a minimum of three separate samples per sampling location would be needed to compute a geometric mean. Nonetheless, the data can be evaluated with the water quality criteria for open coastal waters as long as limitations regarding a possible lack of representatitives are realized.

c. Quality Assurance/Quality Control (QA/QC) and Chain of Custody Documents

[X] The QA/QC and chain of custody documents are submitted as an attachment to CWB NOI Form G. → **Refer to Exhibit C5**

If not, explain why:

_____

_____

G.9. Toxic Parameters (see Guidelines for CWB NOI Form G - Note 9 and Glossary of Chemicals in General Guidelines for NOI Forms B through L - Note V)

Provide laboratory data sheets in addition to completing the following tables. In cases when test results are not available at the time of the NOI submission, complete the columns for Test Method, Method Detection Limit, and HAR, §11-54-4(b)(3) for parameters believed to be present. For parameters not believed present, indicate "N/A" for "not applicable" in the Test Result column. If the Test Result column is left blank, the CWB will consider the parameter to be present and test results will be required.

a. Metals **N/A**

Total Recoverable Metal Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-4(b)(3)
Aluminum		:g/l			
Antimony		:g/l			
Arsenic		:g/l			
Beryllium		:g/l			
Cadmium		:g/l			
Chromium (VI)		:g/l			
Copper		:g/l			
Lead		:g/l			
Mercury		:g/l			
Nickel		:g/l			
Selenium		:g/l			
Silver		:g/l			
Thallium		:g/l			
Tributyltin		:g/l			
Zinc		:g/l			

b. Organonitrogen Compounds **N/A**

Organonitrogen Compound Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-4(b)(3)
Benzidine		:g/l			
2,4-Dinitro-o-cresol		:g/l			
Dinitrotoluenes		:g/l			
1,2-Diphenylhydrazine		:g/l			
Nitrobenzene		:g/l			
Nitrosamines		:g/l			
N-Nitrosodibutylamine		:g/l			
N-Nitrosodiethylamine		:g/l			
N-Nitrosodimethylamine		:g/l			
N-Nitrosodiphenylamine		:g/l			
N-Nitrosopyrrolidine		:g/l			

c. Pesticides **N/A**

Pesticide Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-4(b)(3)
Aldrin		:g/l			
Chlordane		:g/l			
Chlorpyrifos		:g/l			
DDT		:g/l			
Demeton		:g/l			
Dieldrin		:g/l			
Endosulfan		:g/l			
Endrin		:g/l			
Guthion		:g/l			
Heptachlor		:g/l			
Lindane		:g/l			
Malathion		:g/l			
Methoxychlor		:g/l			
Mirex		:g/l			
Parathion		:g/l			
TDE - metabolite of DDT		:g/l			
Toxaphene		:g/l			

d. Phenols **N/A**

Phenol Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-4(b)(3)
2-Chlorophenol		:g/l			
2,4-Dichlorophenol		:g/l			
2,4-Dimethylphenol		:g/l			
Nitrophenols		:g/l			
Pentachlorophenol		:g/l			
Phenol		:g/l			
2,3,5,6-Tetrachlorophenol		:g/l			
2,4,6-Trichlorophenol		:g/l			

e. Phthalates **N/A**

Phthalate Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-4(b)(3)
Bis (2-ethylhexyl) phthalate		:g/l			

Phthalate Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-4(b)(3)
Dibutyl phthalate (esters)		:g/l			
Diethyl phthalate (esters)		:g/l			
Dimethyl phthalate (esters)		:g/l			

f. Polynuclear Aromatic Hydrocarbons **N/A**

Polynuclear Aromatic Hydrocarbon Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-4(b)(3)
Acenaphthene		:g/l			
Fluoranthene		:g/l			
Naphthalene		:g/l			
Polynuclear aromatic hydrocarbons		:g/l			

g. Volatile Organics **N/A**

Volatile Organic Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-4(b)(3)
Acrolein		:g/l			
Acrylonitrile		:g/l			
Benzene		:g/l			
Carbon tetrachloride		:g/l			
Bis(2-chloroethyl)ether		:g/l			
Bis(chloroethers-methyl)		:g/l			
Bis(chloroisopropyl)ether		:g/l			
Chloroform		:g/l			
Dichlorobenzenes		:g/l			
Dichlorobenzidine		:g/l			
1,2-Dichloroethane		:g/l			
1,1-Dichloroethylene		:g/l			
Dichloropropanes		:g/l			
1,3-Dichloropropene		:g/l			
Ethylbenzene		:g/l			
Hexachlorobenzene		:g/l			
Hexachlorobutadiene		:g/l			
Hexachlorocyclohexane, alpha		:g/l			
Hexachlorocyclohexane, beta		:g/l			

Volatile Organic Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-4(b)(3)
Hexachlorocyclohexane, technical		:g/l			
Hexachlorocyclopentadiene		:g/l			
Hexachloroethane		:g/l			
Isophorone		:g/l			
Pentachlorobenzene		:g/l			
Pentachloroethanes		:g/l			
1,2,4,5-Tetrachlorobenzene		:g/l			
1,1,2,2-Tetrachloroethane		:g/l			
Tetrachloroethanes		:g/l			
Tetrachloroethylene		:g/l			
Toluene		:g/l			
1,1,1-Trichloroethane		:g/l			
1,1,2-Trichloroethane		:g/l			
Trichloroethylene		:g/l			
Vinyl chloride		:g/l			

h. Others **N/A**

Other Parameter	Test Result	Units	Test Method	Method Detection Limit	HAR, §11-54-4(b)(3)
Chlorine		:g/l			
Cyanide		:g/l			
Dioxin		:g/l			
Polychlorinated biphenyls		:g/l			

i. Provide an explanation addressing the evaluation of the toxic pollutants analyzed and an evaluation of the source water quality data collected with respect to the numeric standards for the toxic pollutants for the receiving water(s) as specified under HAR, Chapter 11-54.

N/A

G.10. Dewatering Facility Designer Information (see Guidelines for CWB NOI Form G - Note 10)

Legal Name: Contractor not yet selected

Mailing Address: _____

City, State and Zip Code+4: _____

Street Address: _____

City, State and Zip Code+4: _____

Contact Person & Title: _____

Phone No.: ( ) _____ Fax No.: ( ) _____

G.11. Treatment Facility Designer Information (see Guidelines for CWB NOI Form G - Note 11)

Legal Name: Contractor not yet selected

Mailing Address: _____

City, State and Zip Code+4: _____

Street Address: _____

City, State and Zip Code+4: _____

Contact Person & Title: _____

Phone No.: ( ) _____ Fax No.: ( ) _____

G.12. Dewatering Plan (see Guidelines for CWB NOI Form G - Note 12)

a. Dewatering Plan shall be designed to ensure the discharge will comply with the basic water quality criteria specified under HAR, Chapter 11-54.

i. The pumping devices to be used, their pumping capacity, and the number of devices to be used

to be submitted by Contractor

ii. Treatment design

to be submitted by Contractor

iii. Design concerns

to be submitted by Contractor

iv. Calculations used in the treatment design

Contractor shall confirm the actual ground water intrusion flow rate and submit calculations.

v. Proposed mitigative measures

In the event that the dewatered effluent does not meet the conditions of the permit, Contractor shall make appropriate provisions to meet the conditions of the permit.

Contractor shall submit site-specific mitigative measures.

b. [ ] The Site-Specific Dewatering Plan is submitted as an attachment to CWB NOI Form G.

[X] The Site-Specific Dewatering Plan will be submitted 30 days before the start of the construction dewatering activities.

G.13. Dewatering System Maintenance Plan (see Guidelines for CWB NOI Form G - Note 13)

a. The dewatering system maintenance plan shall ensure that the dewatering effluent discharge will meet conditions of this General Permit, basic water quality criteria, and applicable specific water quality parameters.

i. Schedule of activities

To be submitted by Contractor

ii. Operation and maintenance procedure to prevent or reduce the pollution of state water, including:

(1) Responsible field person of the system, by title or name

To be determined

(2) Operations plan

To be submitted by Contractor.

(3) Maintenance scheduling or action criteria

To be submitted by Contractor.

(4) Maintenance program

To be submitted by Contractor.

(5) Sediment Handling and Disposal Plan

Sediment shall be collected and held on-site until hauled away and disposed of in a sanitary landfill. Proper BMP's shall be implemented to protect sediment from waterways. Contractor shall submit site-specific handling and disposal plan within 30 days before the start of dewatering.

(6) Monitoring and visual inspection program

To be submitted by Contractor.

(7) Cessation of discharge plan

Discharges shall cease during events of effluent non-compliance to the conditions of the permit, maintenance of the system, and during storm events.

(8) Effluent control plan

Upon permit compliance, the effluent shall be discharged into Kawela Stream, Ensuring proper BMP's to control erosion at the discharge point. If the effluent does not meet conditions of the permit, discharge to State waters shall cease.

iii. Treatment requirements

The water treatment system shall accept, treat and discharge dewatering effluent that meets the conditions of the permits

b. ☐ The Site-Specific Dewatering System Maintenance Plan is submitted as an attachment to CWB NOI Form G.

☒ The Site-Specific Dewatering System Maintenance Plan will be submitted 30 days before the start of construction dewatering activities.

G.14. Construction Pollution Prevention Plan (see Guidelines for CWB NOI Form G - Note 14)

Construction pollution prevention plan to prevent or reduce the pollution of State waters due to other discharges. The construction pollution prevention plan shall include:

a. Prohibited practices,

No discharges to State waters shall commence until the appropriate permits from the State Department of Health is obtained. Should the effluent quality not meet the conditions of the Permit, discharges into State waters shall cease. Dewatering shall be suspended during Storm events and if physical changes to the dewatering effluent are discovered.

b. Other management practices to prevent or reduce the pollution of state waters, and

Contractor shall comply with proper BMPs such as preventing erosion at the dewatering effluent point discharge and preventing pollutants from vehicle and equipment cleaning by washing in designated contained areas.

c. Practices to control project site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage or stockpiling area(s).

Contractor shall implement BMPs plans to control project site runoff as described in Item No. 13.b in CWB-Individual NPDES Form C. Potential fuel spills and leaks shall be prevented by using off-site facilities, fueling in designated, contained areas only, enclosing or covering stored fuels, and implementing spill control and training to employees and subcontractors.

☐ The Site-Specific Construction Pollution Prevention Plan is submitted as an attachment to CWB NOI Form G.

☒ The Site-Specific Construction Pollution Prevention Plan will be submitted 30 days before the start of construction dewatering activities.

G.15. Additional Information (see Guidelines for CWB NOI Form G - Note 15)

To be submitted by Contractor

SIGNATORY AND CERTIFICATION STATEMENT TO NPDES PERMIT APPLICATION

State of Hawaii, Department of Health, Clean Water Branch

Signatory and Certification Statement to National Pollutant Discharge Elimination System (NPDES) Permit Applications

Alteration of the following text will result in the invalidation of this Statement. The person signing this Statement must meet one of the following descriptions.

Date of Cover Letter: October 22, 2010

Name of Facility: Kawela Bridge Replacement

Description of Document: CWB-Individual NPDES Form C, NOI Form F, and NOI Form G

- [ ] I certify that for a municipal agency, I am a principal executive officer or ranking elected official.
- [X] I certify that for a state agency, I am a principal executive officer or ranking elected official.
- [ ] I certify that for a non-federal public agency, I am a principal executive officer or ranking elected official.
- [ ] I certify that for a federal agency, I am the chief executive officer of the agency, or I am the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
- [ ] I certify that I am a general partner for a partnership.
- [ ] I certify that I am the proprietor for a sole proprietorship.
- [ ] I certify that for a corporation, I am the President, Vice President, Secretary, or Treasurer of the corporation and in charge of a principal business function, or I perform similar policy or decision-making functions for the corporation.
- [ ] I certify that for a corporation, I am the Manager of one or more manufacturing, production, or operating facilities and am authorized to make management decisions which govern the operation of the regulated facility or facilities including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations. I can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements and authority to sign documents has been assigned or delegated to me in accordance with corporate procedures.
- [ ] I certify that for a trust, I am a trustee.
- [ ] I certify that for a limited liability company (LLC), I am the Manager or a Member authorized to make management decisions for the LLC and am in charge of a principal business function, or I perform similar policy or decision-making functions for the LLC.

~~**Certification Statement continued on next page**~~.

Certification Statement (continued)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: OCT 22 2010

Printed Name & Title: Michael D. Formby, Interim Director of Transportation

Company/Organization Name: State of Hawai`i, Department of Transportation

Phone No.: (808) 587-2150 Fax No.: (808) 587-2167

LIST OF ALL SUPPORTING DOCUMENTS

Attachment Item No. 5.b - Additional Discharge Points

Project Name: Kamehameha V Highway, Kawela Bridge Replacement

5.b.i Additional Receiving Waters Name: Pacific Ocean, tidally influenced portion of Kawela Stream (Discharge Point "DP-B")

Receiving Waters Classification: AA, Marine Water

Latitude Degrees (N)	21	Latitude Minutes	3	Latitude Seconds	54
Longitude Degrees (W)	156	Longitude Minutes	56	Longitude Seconds	53

5.b.ii Additional Receiving Waters Name: Pacific Ocean, tidally influenced portion of Kawela Stream (Discharge Point "DP-C")

Receiving Waters Classification: AA, Marine Water

Latitude Degrees (N)	21	Latitude Minutes	3	Latitude Seconds	54
Longitude Degrees (W)	156	Longitude Minutes	56	Longitude Seconds	55

5.b.iii Additional Receiving Waters Name: Pacific Ocean, tidally influenced portion of Kawela Stream (Discharge Point "DP-D")

Receiving Waters Classification: AA, Marine Water

Latitude Degrees (N)	21	Latitude Minutes	3	Latitude Seconds	52
Longitude Degrees (W)	156	Longitude Minutes	56	Longitude Seconds	56

5.b.iv Additional Receiving Waters Name: Pacific Ocean, tidally influenced portion of Kawela Stream (Discharge Point "DP-E")

Receiving Waters Classification: AA, Marine Water

Latitude Degrees (N)	21	Latitude Minutes	3	Latitude Seconds	53
Longitude Degrees (W)	156	Longitude Minutes	56	Longitude Seconds	55

5.b.v Additional Receiving Waters Name: Pacific Ocean, tidally influenced portion of Kawela Stream (Discharge Point "DP-F")

Receiving Waters Classification: AA, Marine Water

Latitude Degrees (N)	21	Latitude Minutes	3	Latitude Seconds	52
Longitude Degrees (W)	156	Longitude Minutes	56	Longitude Seconds	56

5.b.vi Additional Receiving Waters Name: Pacific Ocean, tidally influenced portion of Kawela Stream (Discharge Point "DP-G")

Receiving Waters Classification: AA, Marine Water

Latitude Degrees (N)	21	Latitude Minutes	3	Latitude Seconds	53
Longitude Degrees (W)	156	Longitude Minutes	56	Longitude Seconds	56

Attachment Item No. 5.b - Additional Discharge Points (Continued)

Project Name: Kamehameha V Highway, Kawela Bridge Replacement

5.b.vii Additional Receiving Waters Name: Pacific Ocean, tidally influenced portion of Kawela Stream (for hydrotesting effluent)

Receiving Waters Classification: AA, Marine Water

Latitude Degrees (N)	21	Latitude Minutes	3	Latitude Seconds	54
Longitude Degrees (W)	156	Longitude Minutes	56	Longitude Seconds	55

5.b.viii Additional Receiving Waters Name: Pacific Ocean, tidally influenced portion of Kawela Stream (for dewatering effluent)

Receiving Waters Classification: AA, Marine Water

Latitude Degrees (N)	21	Latitude Minutes	3	Latitude Seconds	54
Longitude Degrees (W)	156	Longitude Minutes	56	Longitude Seconds	55

Attachment Item No. 6 - Storm Water Calculations

Project: Kamehameha V Highway, Kawela Bridge Replacement
Date: 07/22/10
By: RE/SA/SK

Recurrence Interval (Tm)= 25 year

25 yr, 1 hr Rainfall Intensity (in/hr)= 2.3
Conversion Factor: 1 cfs= 646,317 gpd

Rational Method: Q = CIA

Q = flow rate in cubit feet per second (cfs);
C = weighted runoff coefficient
I = rainfall intensity in inches per hour for a duration equal to the time of concentration;
A = drainage area in acres

Temporary Detour Road

Drainage Area	Discharge To	(A) Drainage Area (Acre)	(C) Runoff Coeff.	10-Yr., 1-Hr. Rainfall (in)	(I) Adj. Intensity (in/hr)	(Q) Flow Rate (cfs)
A	DP-A	0.260	0.30	2.3	4.8	0.37
B	DP-B	0.400	0.30	2.3	4.8	0.58
C	DP-C	0.210	0.86	2.3	4.8	0.86
D	DP-D	0.130	0.35	2.3	4.8	0.22
E	DP-E	0.130	0.80	2.3	4.8	0.50
F	DP-F	0.330	0.48	2.3	4.8	0.76
TOTAL AREA =		**1.46**			**TOTAL Q =**	**3.29**

Kamehameha V Highway

Drainage Area	Discharge To	(A) Drainage Area (Acre)	(C) Runoff Coeff.	10-Yr., 1-Hr. Rainfall (in)	(I) Adj. Intensity (in/hr)	(Q) Flow Rate (cfs)
A	DP-A	0.437	0.84	2.3	4.8	1.77
B	DP-B	0.167	0.39	2.3	4.8	0.31
C	DP-C	0.281	0.69	2.3	4.8	0.93
D	DP-D	0.221	0.36	2.3	4.8	0.39
E	DP-E	0.479	0.80	2.3	4.8	1.85
F	DP-F	0.127	0.34	2.3	4.8	0.21
G	DP-G	0.263	0.32	2.3	4.8	0.40
TOTAL AREA =		**1.97**			**TOTAL Q =**	**5.85**
					TOTAL Q =	**3,780,954 gpd**

Note: Temporary Detour Road will be removed once the permanent bridge and highway are operational.

Storm Water Calculations (Continued)

Project: Kawela Bridge Replacement
Date: 07/22/10
By: RE/SA/SK

LAND USES OR SURFACE TYPES AT SITE:

Pavement/Concrete/GRP	C = 0.95
Unimproved Area	C = 0.30

WEIGHTED RUNOFF COEFFICIENT CALCULATIONS:

Drainage Area (Temporary Detour Road)

Drainage Area "A"		**Percent**	**Area (SF)**	**Area (AC)**
Unimproved Area	C = 0.30	100.0%	11,109	0.260
	C = 0.30	100.0%	11,109	**0.260**
Drainage Area "B"				
Unimproved Area	C = 0.30	100.0%	14,757	0.400
	C = 0.30	100.0%	14,757	**0.400**
Drainage Area "C"				
Unimproved Area	C = 0.30	13.7%	1,263	0.030
Pavement	C = 0.95	82.1%	7,591	0.170
GRP	C = 0.95	4.2%	393	0.010
	C = 0.86	100.0%	9,247	**0.210**
Drainage Area "D"				
Unimproved Area	C = 0.30	93.0%	5,146	0.120
GRP	C = 0.95	7.0%	388	0.010
	C = 0.35	100.0%	5,534	**0.130**
Drainage Area "E"				
Unimproved Area	C = 0.30	21.0%	1,140	0.030
Pavement	C = 0.95	63.3%	3,430	0.080
GRP	C = 0.95	15.7%	849	0.020
	C = 0.80	100.0%	5,419	**0.130**
Drainage Area "F"				
Unimproved Area	C = 0.30	72.9%	10,547	0.240
Pavement	C = 0.95	27.1%	3,918	0.090
	C = 0.48	100.0%	14,465	**0.330**

Drainage Area (Kamehameha V Highway) - Continued

Drainage Area "A"		**Percent**	**Area (SF)**	**Area (AC)**
GRP	C = 0.95	5.2%	986	0.023
Pavement	C = 0.95	78.4%	14,904	0.342
Unimproved Area	C = 0.30	16.4%	3,128	0.072
	C = 0.84	100.0%	19,018	**0.437**

Drainage Area "B"		**Percent**	**Area (SF)**	**Area (AC)**
GRP	C = 0.95	13.2%	956	0.022
Unimproved Area	C = 0.30	86.8%	6,300	0.145
	C = 0.39	100.0%	7,257	**0.167**

Drainage Area "C"		**Percent**	**Area (SF)**	**Area (AC)**
Concrete	C = 0.95	60.3%	7,395	0.170
Unimproved Area	C = 0.30	39.7%	4,860	0.112
	C = 0.69	100.0%	12,255	**0.281**

Drainage Area "D"		**Percent**	**Area (SF)**	**Area (AC)**
GRP	C = 0.95	9.8%	945	0.022
Unimproved Area	C = 0.30	90.2%	8,662	0.199
	C = 0.36	100.0%	9,607	**0.221**

Drainage Area "E"		**Percent**	**Area (SF)**	**Area (AC)**
GRP	C = 0.95	5.6%	1,169	0.027
Pavement	C = 0.95	71.7%	14,961	0.343
Unimproved Area	C = 0.30	22.7%	4,736	0.109
	C = 0.80	100.0%	20,866	**0.479**

Drainage Area "F"		**Percent**	**Area (SF)**	**Area (AC)**
GRP	C = 0.95	5.8%	324	0.007
Unimproved Area	C = 0.30	94.2%	5,222	0.120
	C = 0.34	100.0%	5,546	**0.127**

Drainage Area "G"				
GRP	C = 0.95	3.2%	363	0.008
Unimproved Area	C = 0.30	96.8%	11,087	0.255
	C = 0.32	100.0%	11,450	**0.263**

Attachment Item No. 10.e – (Existing or Pending Permits, Licenses, or Approvals)

AGENCY	TYPE APPROVAL	IDENFICIATION NUMBER	DATE APPROVED
State Department of Transportation	Chapter 343, HRS FONSI	Federal Aid Project No. BR-0450(8)	7.23.09
Federal Highway Administration	Categorical Exclusion	Federal Aid Project No. BR-0450(8)	8.12.09
Molokai Planning Commission	Special Management Area Use Permit	SM1 2009/0002	9.28.09
Board of Land and Natural Resources	Conservation District Use Permit	CDUA: MO-3537	5.13.10
Commission on Water Resource Management	Stream Channel Alteration Permit	SCAP 2588.4	In review
DBEDT, Office of Planning	Coastal Zone Management Consistency Approval	To be determined	In review

Attachment Item No. 11 – (Construction Site Characterization)

a. Describe the scope of the construction activity, including a proposed timetable for major activities with the date when the contractor will begin the site disturbance.

- **The existing Kawela Bridge will be removed and the new roadway/bridge will be constructed. To allow traffic during construction, a temporary detour road will be constructed over the stream adjacent to the existing highway. These improvements will be removed once the permanent bridge and highway are operational.**

- **Kawela Stream will be concrete lined approximately 69-feet upstream and 71-feet downstream from the roadway baseline. Dumped rip-rap will be placed downstream of concrete lining.**

- **Construction is expected to start in October 2010. A detailed construction schedule will be submitted 30 days before the start of construction activities.**

b. Describe the history of the land use.

- **According to land use/land cover data that were obtained from the NOAA Coastal Service Center (2001), the adjacent area to the bridge is mainly designated as "Evergreen Forest", unimproved area.**

- **The existing Kawela Brdige was built in 1940.**

c. Describe the pollution source(s) in the history and corrective measures.

- **Potential past pollutants may include asphalt/petroleum-based releases from the existing roadway pavement and natural discharges of sediments from surface runoff. To filter pollutants, silt fence and temporary gravel bag berm will be installed. Potential and actual pollution sources within the existing project area are not believed to be present. If there should be discovery of harmful concentrations of contaminants, the operator will immediately notify Department of Health (DOH) so that the contaminant can be curtailed.**

Attachment Item No. 13.b – (Construction BMP)

BEST MANAGEMENT PRACTICES (BMP) PLAN
KAMEHAMEHA V HIGHWAY, KAWELA BRIDGE REPLACEMENT

KAWELA, MOLOKAI, HAWAI`I

July 2010

INTRODUCTION

The project site is along Kamehameha V Highway (Route 450) at Milepost (MP) 5.110 to MP 5.118 on the island of Molokai, Hawaii. The existing bridge, Kawela Bridge, built in 1940, measuring 46 feet long by 26 feet wide serves both the inbound and outbound traffic on Kamehameha V Highway. Based on field observations and hydraulic analysis, it is acknowledged that the existing bridge is hydraulically inadequate and does not conform to current State of Hawaii, Department of Transportation (HDOT) and Federal Highway Administration (FHWA) design and seismic standards.

i. Construction Activity

(1) What is to be constructed and the construction sequence?

- **The construction activity includes demolition of the existing bridge and replacing with a new concrete bridge. A temporary detour road using pipe culverts at the stream crossing will be installed to allow traffic during construction. After the completion of constructing the new bridge, a portion of the highway will be reconstructed to transition from the existing roadway to the new bridge structure.**

  During construction, a new 8" waterline and service laterals will be installed parallel to Kamehameha V Highway crossing Kawela Stream underground. Temporary 2" waterline will be adjacent to bridge, not below.

(2) If the project is a multi-phase construction project, include a list of each phase.

- **Construction will be done in one (1) phase.**

(3) What type of materials and heavy equipment will be used for the construction activity?

- **To be submitted within 30 days before the start of construction activities.**

ii. Quality of Discharge

- **The project is located on unimproved land. The area is mostly covered with small shrubs, trees and grass. Discharge from the project site is expected to remain the same and will contain sediment from the existing soils and maintain the same flow pattern flowing into the Kawela Stream.**

The soil classification for this area is Pulehu stony sandy loam (PoaB) with 0 to 7 percent slopes as described in the U.S. Department of Agriculture Soil Conservation Service's publication entitled "Soil Sruvey of the Island of Kauai, Oahu, Maui, Molokai and Lanai".

iii. Potential Pollutant(s)

- **Clearing and Grubbing Work: Remove vegetation, oil and hydraulic fluid leakage associated with the operation and maintenance of the clearing equipment. Tracking of sediment from clearing equipment.**

- **Replacing Bridge Work/Waterline Work: Demolished bridge debris and tracking of sediment from construction equipment. Washwater from washing down of construction equipment and concrete trucks. Hydrotesting effluent from waterline testing.**

- **Grading Work: Soil erosion from the disturbed areas**

iv. Controls for Land Disturbances

- **In accordance with Section 9 of Hawaii Administrative Rules (HAR), Chapter 11-55 Appendix C, the following activities will be employed in order to comply with conditions of the NPDES permit program:**

(a) Construction Management Techniques

1. **Clearing and grubbing shall be held to a minimum necessary for grading equipment operation.**

2. **Erosion and sediment control measures will be in place and functional before earth moving operations begin, and will be maintained throughout the construction period. Temporary measures may be removed at the beginning of the work day, but shall be replaced at the end of the work day.**

3. **All control measures shall be checked and repaired as necessary, for example, weekly in dry periods and within twenty-four hours after any rainfall of 0.5 inches or greater within a 24-hour period. During prolonged rainfall, daily checking is necessary. Contractor shall maintain records of checks and repairs to structural and vegetative controls.**

4. **Construction shall be sequenced to minimize the exposure time of cleared surface areas. Areas of one phase shall be stabilized before another phase can be initiated. Stabilization shall be accomplished by protecting the disturbed soils surface from rainfall impacts and runoff by use of structural controls such as geotextile filter fabric, berms, or sediment basins, or vegetative controls such as grass seedlings or hydromulch.**

5. **Maintenance and fueling of construction equipment and vehicles shall be performed only in designated area(s) protected by a containment to contain potential spillage of fuel or lubricants.**

(b) Vegetation Controls

1. **Existing ground cover will not be destroyed, removed or disturbed more than 20 calendar days prior to start of grading operation.**

2. **Temporary soil stabilization with appropriate vegetation shall be applied on areas that remain unfinished for more than thirty (30) calendar days, and permanent soil stabilization using vegetative controls shall be applied as soon as practical after final grading.**

3. **Permanent soil stabilization with perennial vegetation shall be applied as soon as practical after final grading.**

v. Erosion and Sediment Control Requirements

- **County and State-approved erosion and sediment control plan will be submitted within 30 days before the start of construction activities. A copy of the pre-final erosion and sediment control plan is included for your reference.**

vi. Construction Schedule

- **Refer to Exhibit 12. An updated construction schedule will be submitted before the construction activity begins.**

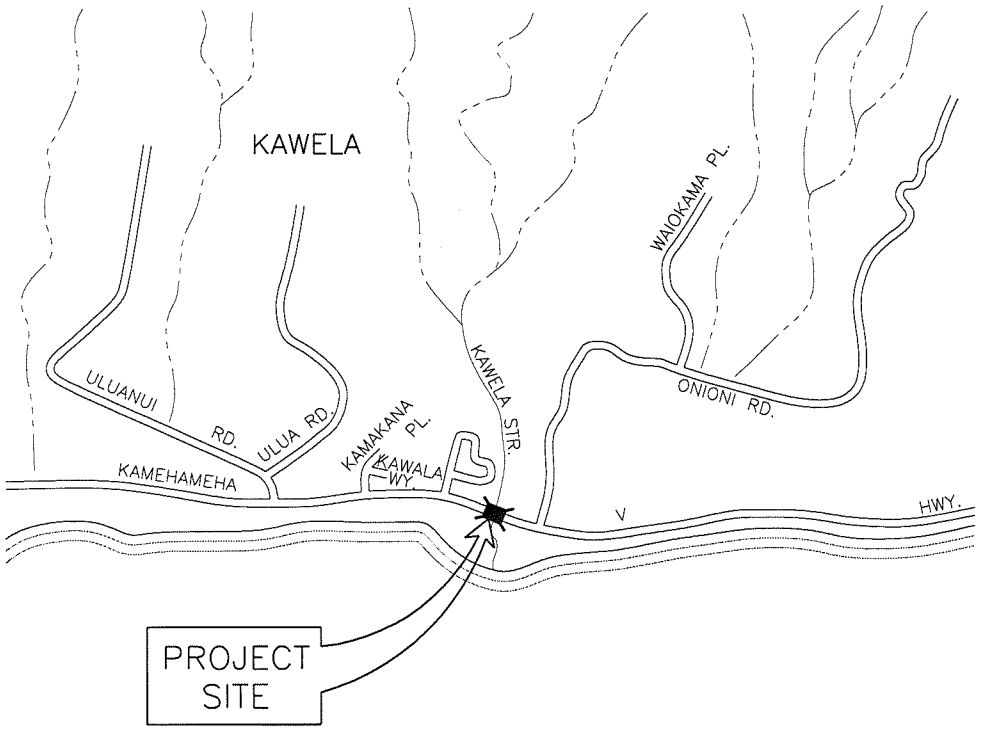
Attachment Item No. 14 – (Post-Construction Pollutant Control Measures)

To reduce potential pollutant(s) caused by erosion, the channel bed will be lined with concrete upstream and downstream of the bridge. The channel banks in the project area will be protected by CRM. Dumped rip-rap will be placed downstream on each side of the bridge to help protect it during large overtopping flood events. In addition, removed existing vegetation during construction will be re-vegetated.

APPENDICES

APPENDIX A

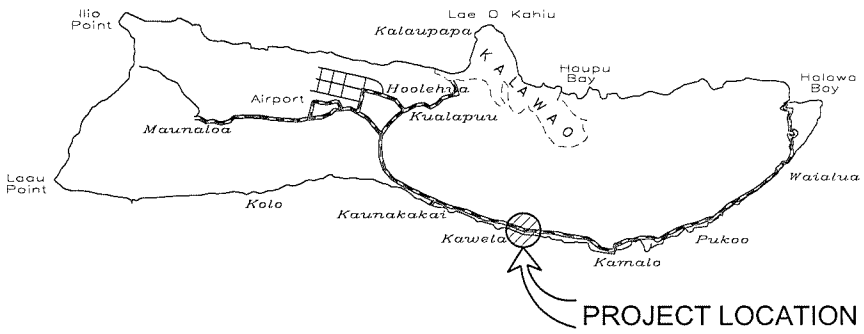
EXHIBITS – INDIVIDUAL FORM C



NOT TO SCALE

LOCATION MAP

NOT TO SCALE



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NOT TO SCALE

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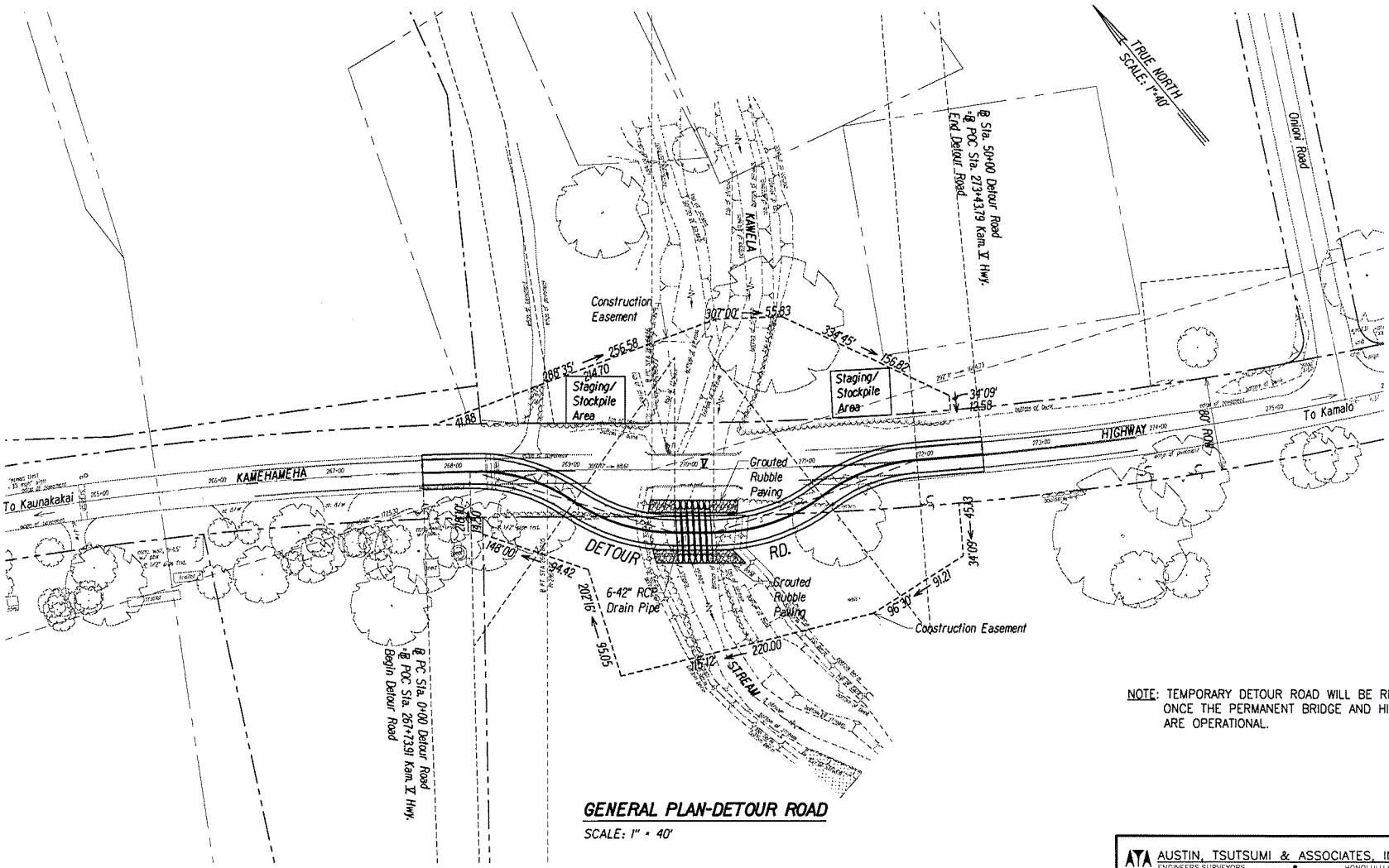
LOCATION MAP

EXHIBIT A1



GENERAL PLAN-DETOUR ROAD

SCALE: 1" = 40'

NOTE: TEMPORARY DETOUR ROAD WILL BE REMOVED ONCE THE PERMANENT BRIDGE AND HIGHWAY ARE OPERATIONAL.

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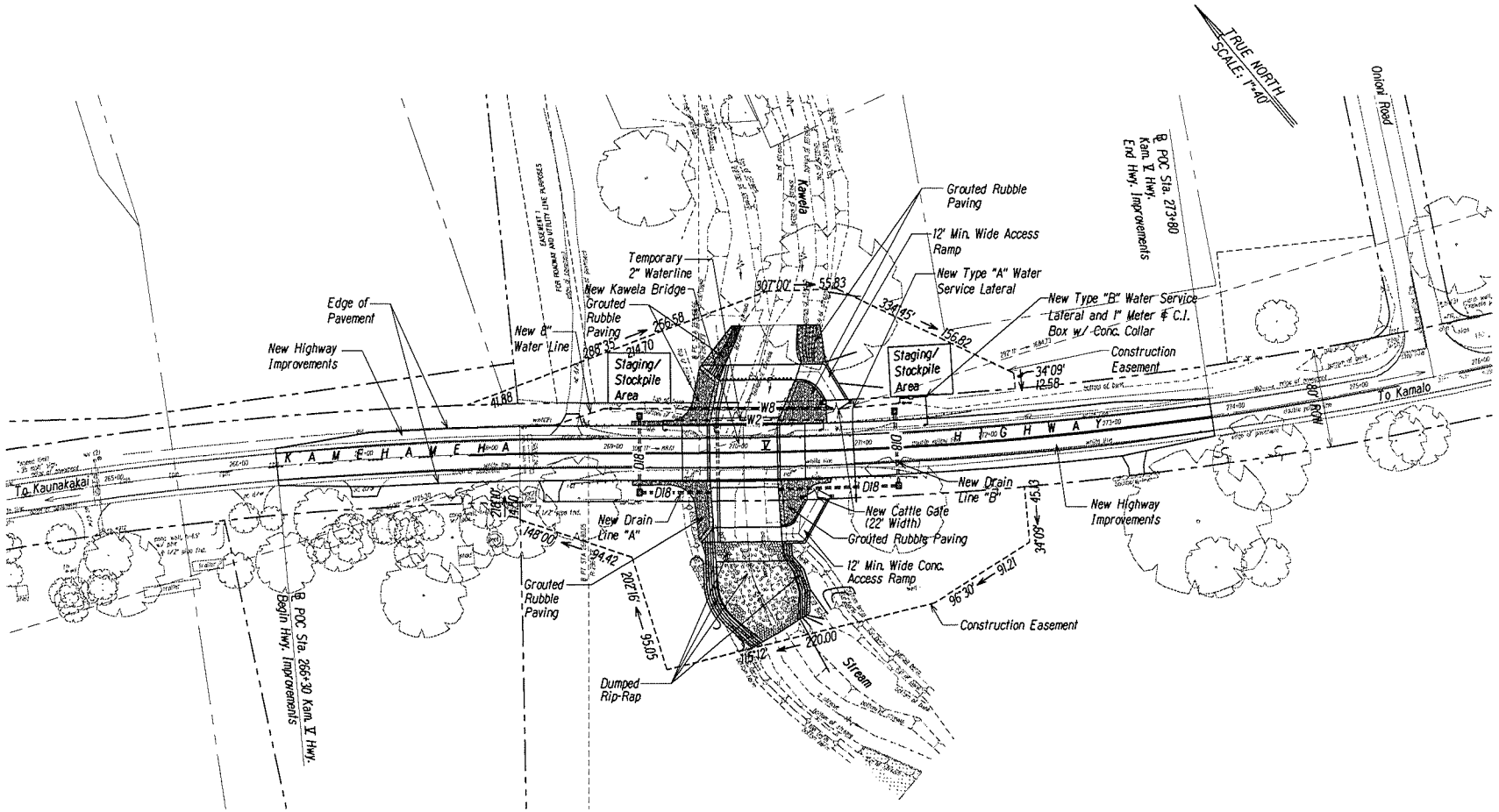
GENERAL PLAN
(TEMPORARY DETOUR ROAD)

EXHIBIT
A2



GENERAL PLAN-KAM. V HWY.

SCALE: 1" = 40'

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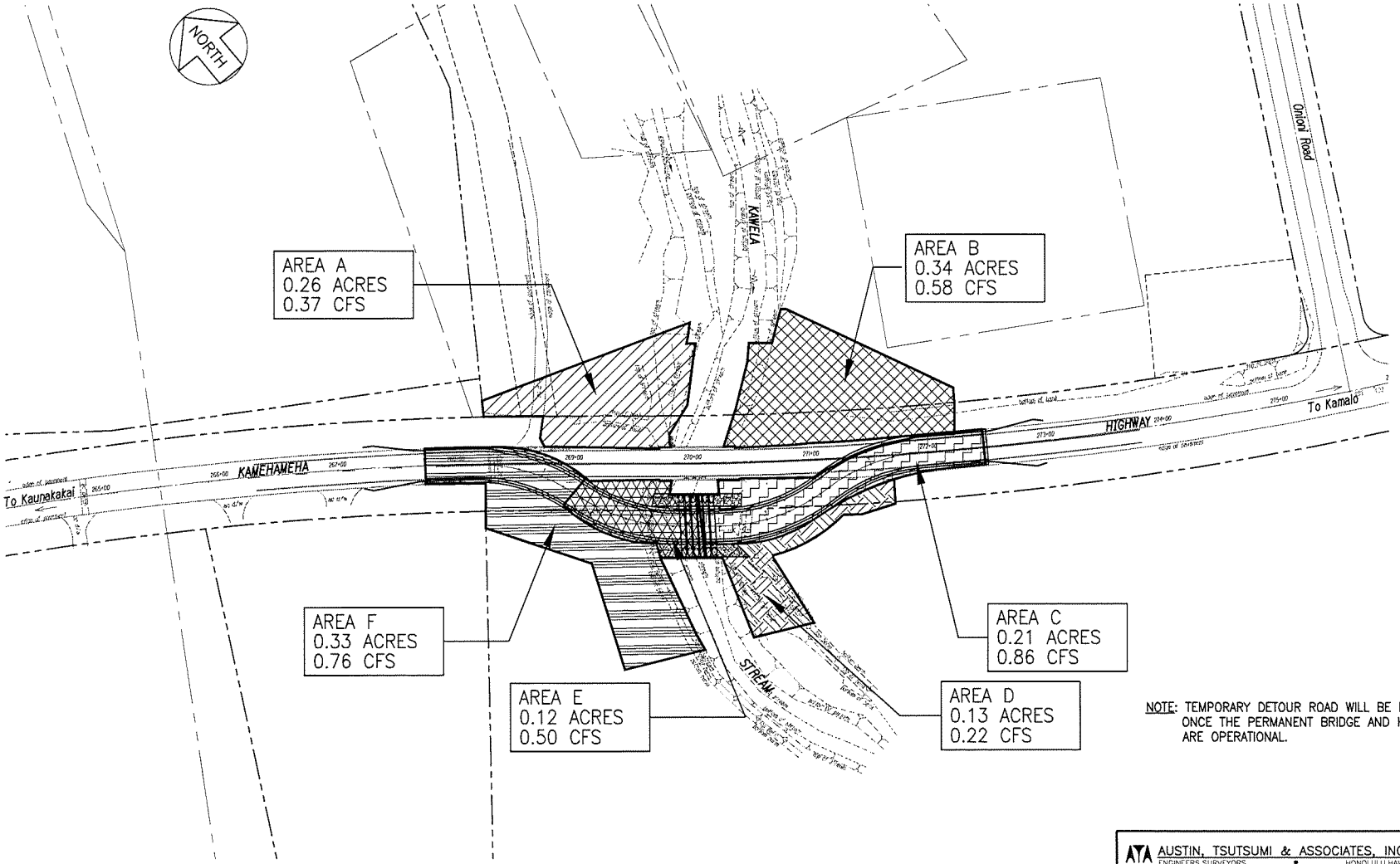
GENERAL PLAN
(KAMEHAMEHA V HIGHWAY)

EXHIBIT
A3



NOTE: TEMPORARY DETOUR ROAD WILL BE REMOVED ONCE THE PERMANENT BRIDGE AND HIGHWAY ARE OPERATIONAL.

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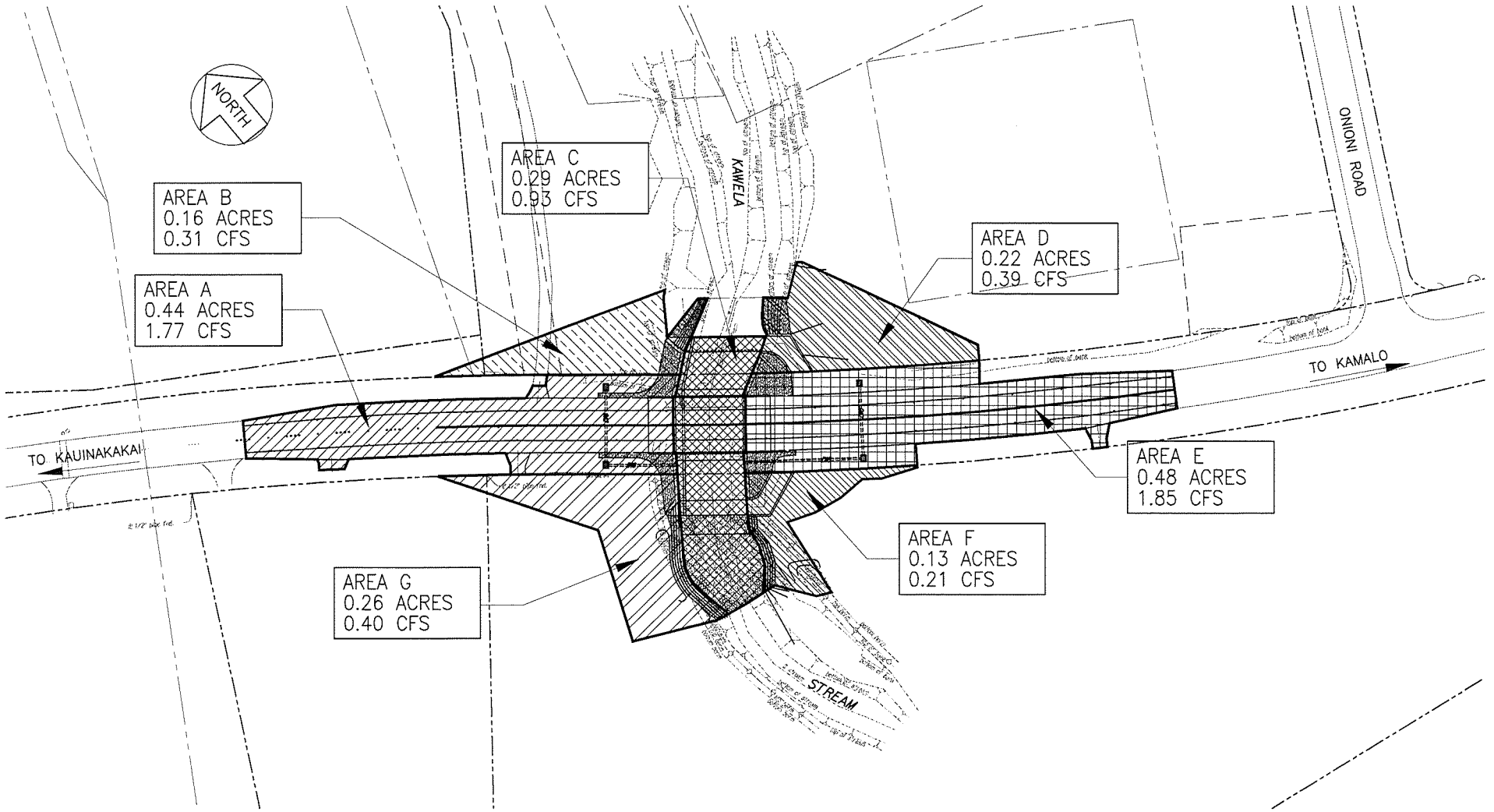
DRAINAGE AREA MAP
(TEMPORARY DETOUR ROAD)

EXHIBIT
A4



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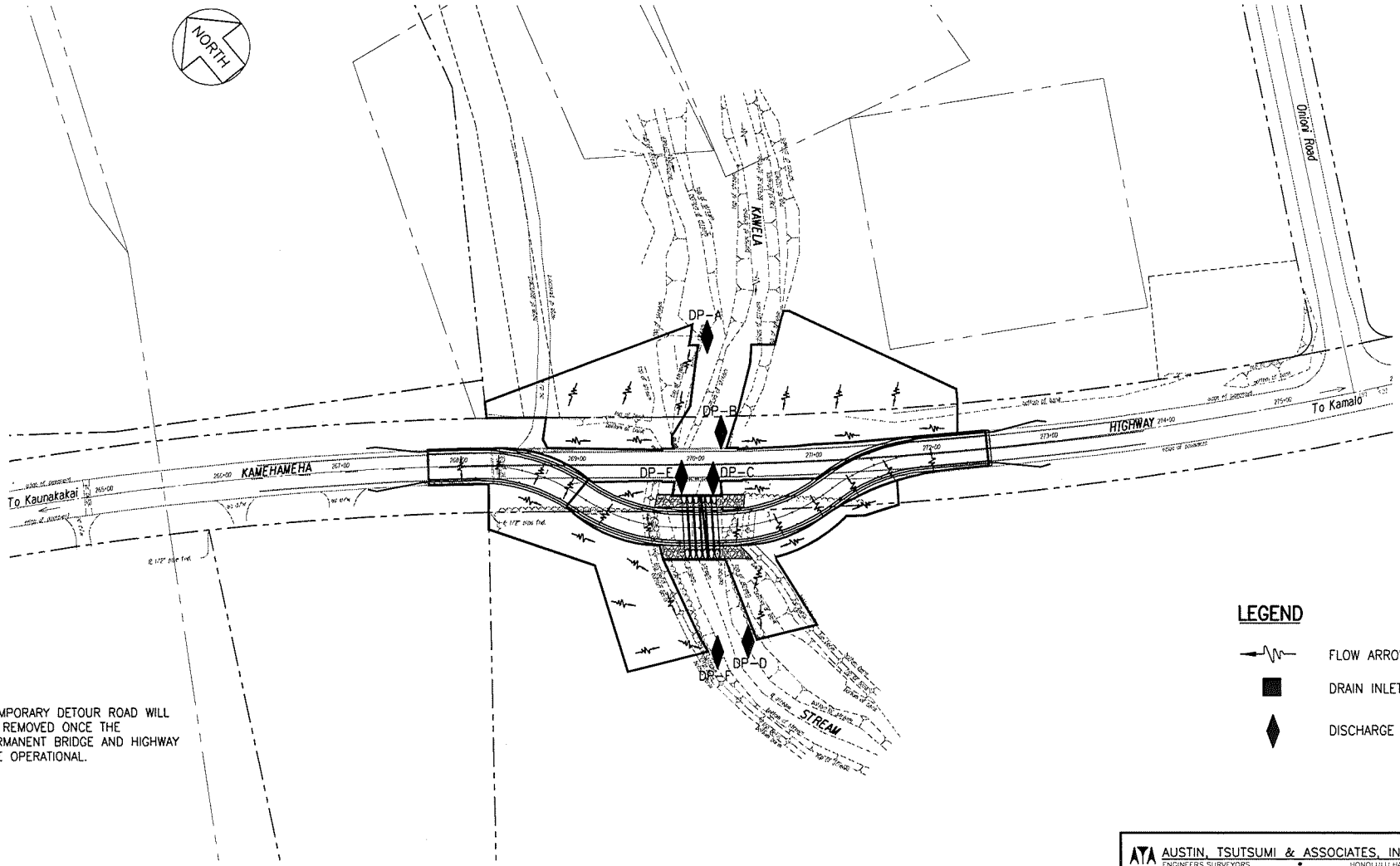
DRAINAGE AREA MAP
(KAMEHAMEHA V HIGHWAY)

EXHIBIT
A5



NOTE: TEMPORARY DETOUR ROAD WILL BE REMOVED ONCE THE PERMANENT BRIDGE AND HIGHWAY ARE OPERATIONAL.

LEGEND

- FLOW ARROW
- DRAIN INLET
- DISCHARGE POINT

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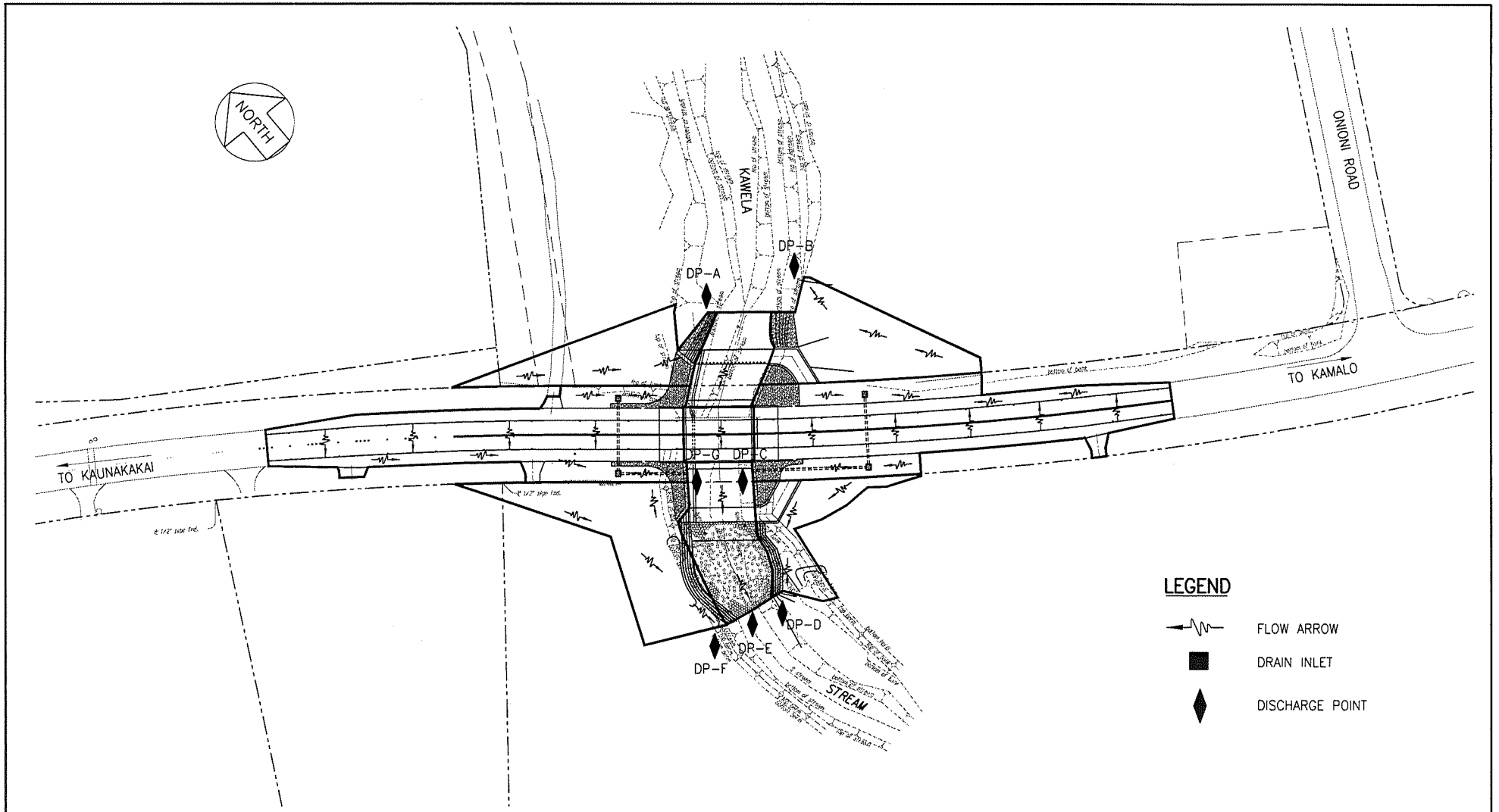
DRAINAGE MAP
(TEMPORARY DETOUR ROAD)

EXHIBIT
A6



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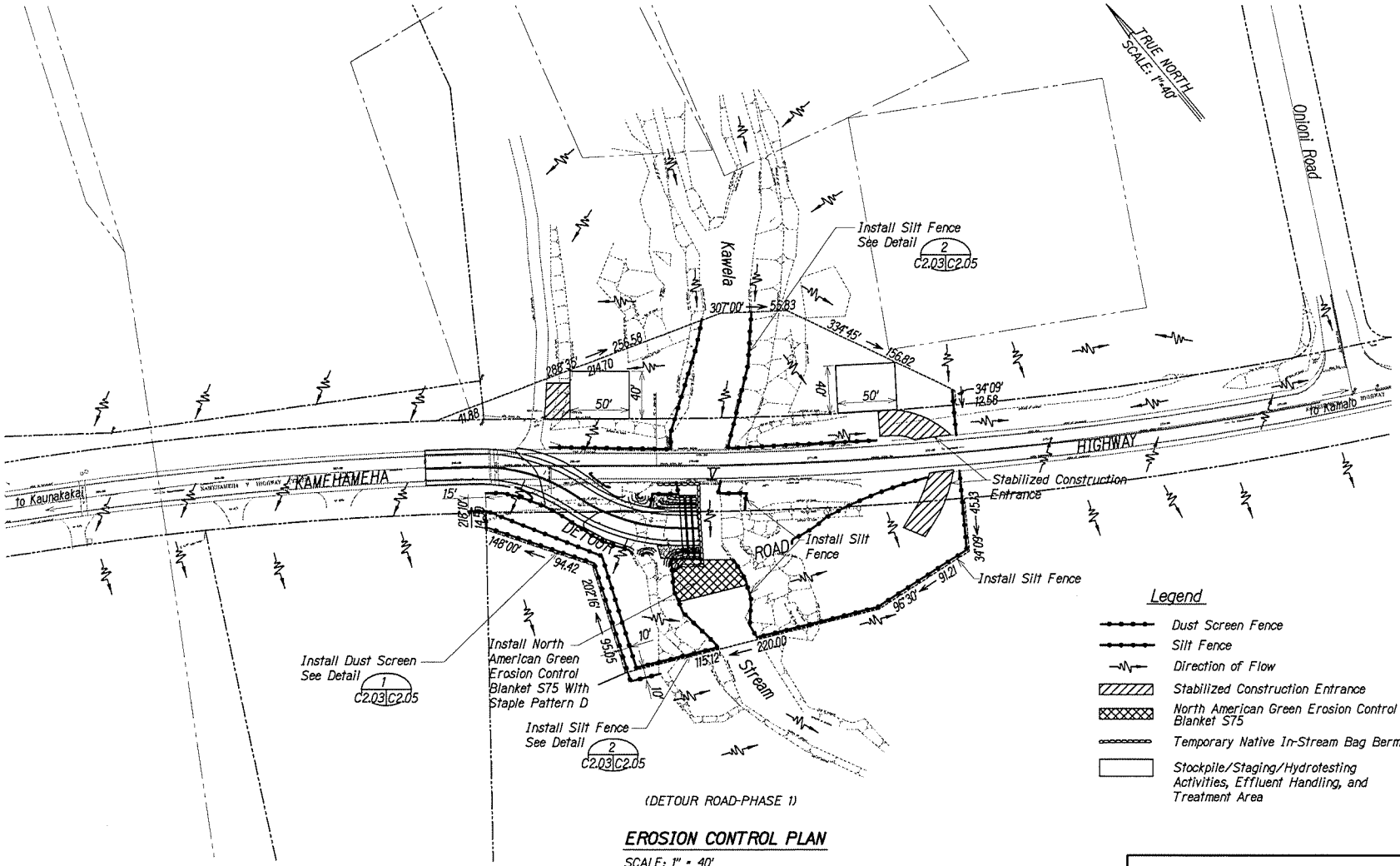
DRAINAGE MAP
(KAMEHAMEHA V HIGHWAY)

EXHIBIT
A7



(DETOUR ROAD-PHASE 1)

EROSION CONTROL PLAN

SCALE: 1" = 40'

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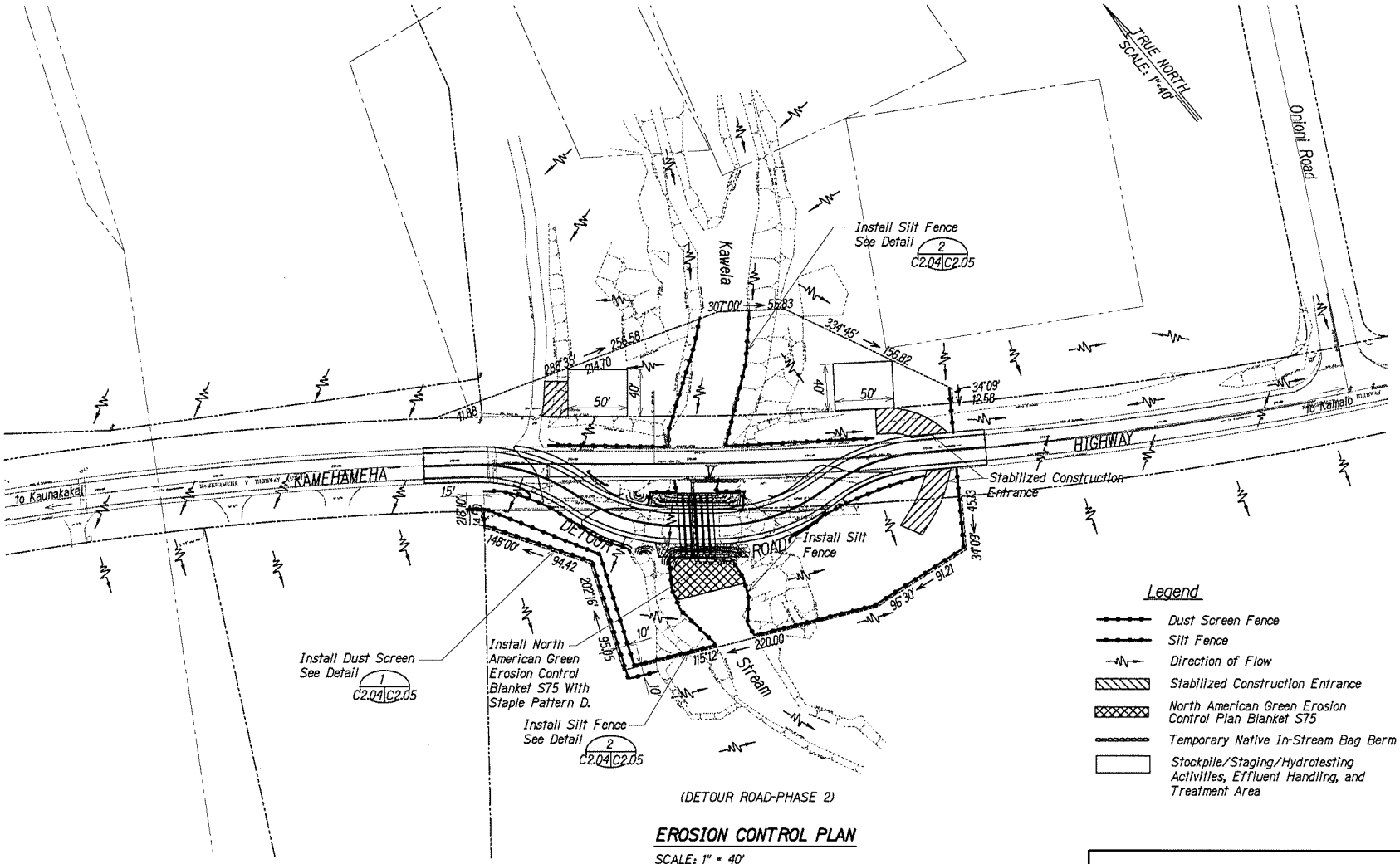
EROSION CONTROL PLAN

EXHIBIT A8



(DETOUR ROAD-PHASE 2)

EROSION CONTROL PLAN

SCALE: 1" = 40'

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EROSION CONTROL PLAN

EXHIBIT

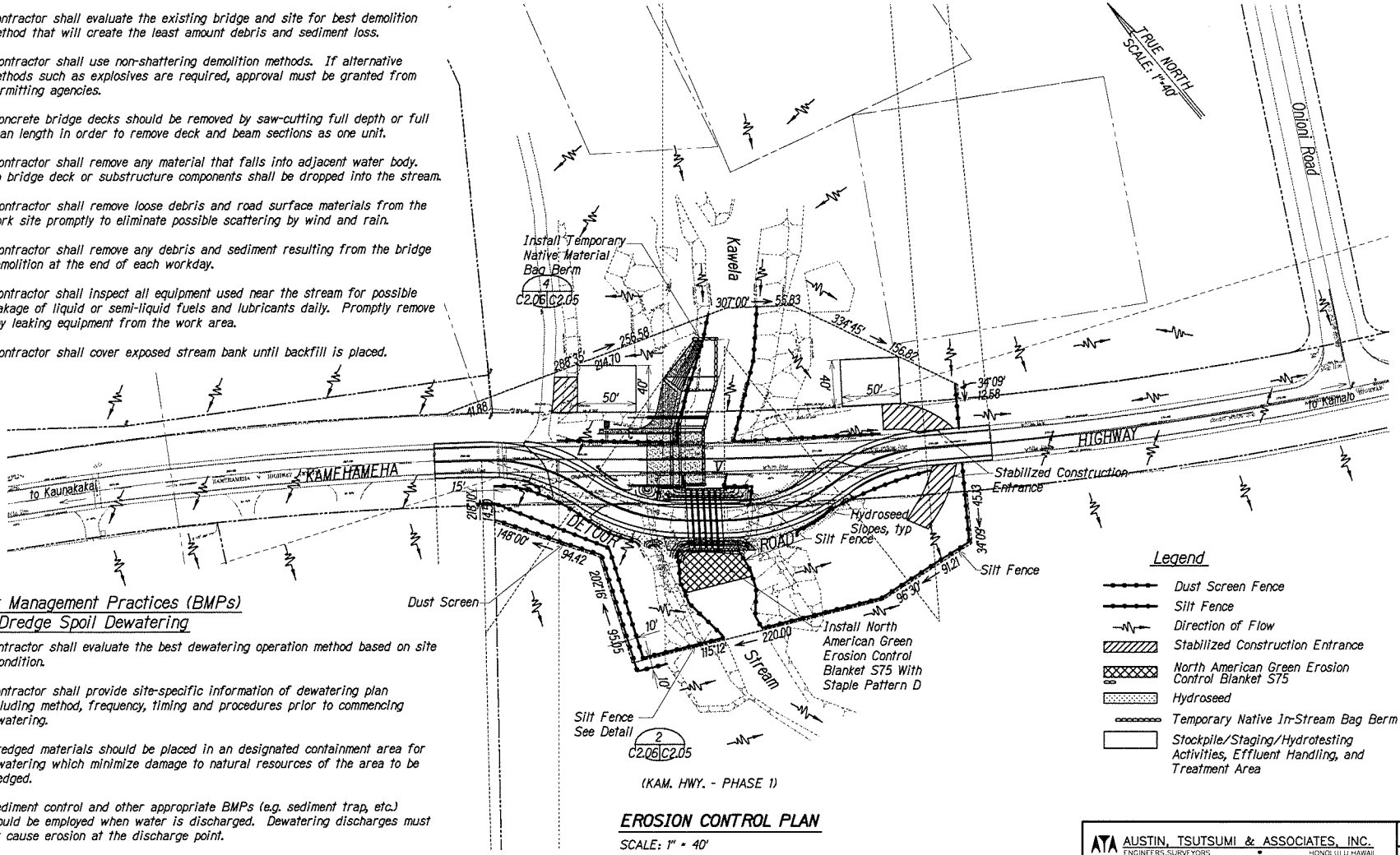
A9

Best Management Practices (BMPs) for Demolition of Existing Bridge

1. Contractor shall evaluate the existing bridge and site for best demolition method that will create the least amount debris and sediment loss.
2. Contractor shall use non-shattering demolition methods. If alternative methods such as explosives are required, approval must be granted from permitting agencies.
3. Concrete bridge decks should be removed by saw-cutting full depth or full span length in order to remove deck and beam sections as one unit.
4. Contractor shall remove any material that falls into adjacent water body. No bridge deck or substructure components shall be dropped into the stream.
5. Contractor shall remove loose debris and road surface materials from the work site promptly to eliminate possible scattering by wind and rain.
6. Contractor shall remove any debris and sediment resulting from the bridge demolition at the end of each workday.
7. Contractor shall inspect all equipment used near the stream for possible leakage of liquid or semi-liquid fuels and lubricants daily. Promptly remove any leaking equipment from the work area.
8. Contractor shall cover exposed stream bank until backfill is placed.

Best Management Practices (BMPs) for Dredge Spoil Dewatering

1. Contractor shall evaluate the best dewatering operation method based on site condition.
2. Contractor shall provide site-specific information of dewatering plan including method, frequency, timing and procedures prior to commencing dewatering.
3. Dredged materials should be placed in an designated containment area for dewatering which minimize damage to natural resources of the area to be dredged.
4. Sediment control and other appropriate BMPs (e.g. sediment trap, etc.) should be employed when water is discharged. Dewatering discharges must not cause erosion at the discharge point.
5. No dredge spoil shall be placed back into the stream.



(KAM. HWY. - PHASE 1)

EROSION CONTROL PLAN

SCALE: 1" = 40'

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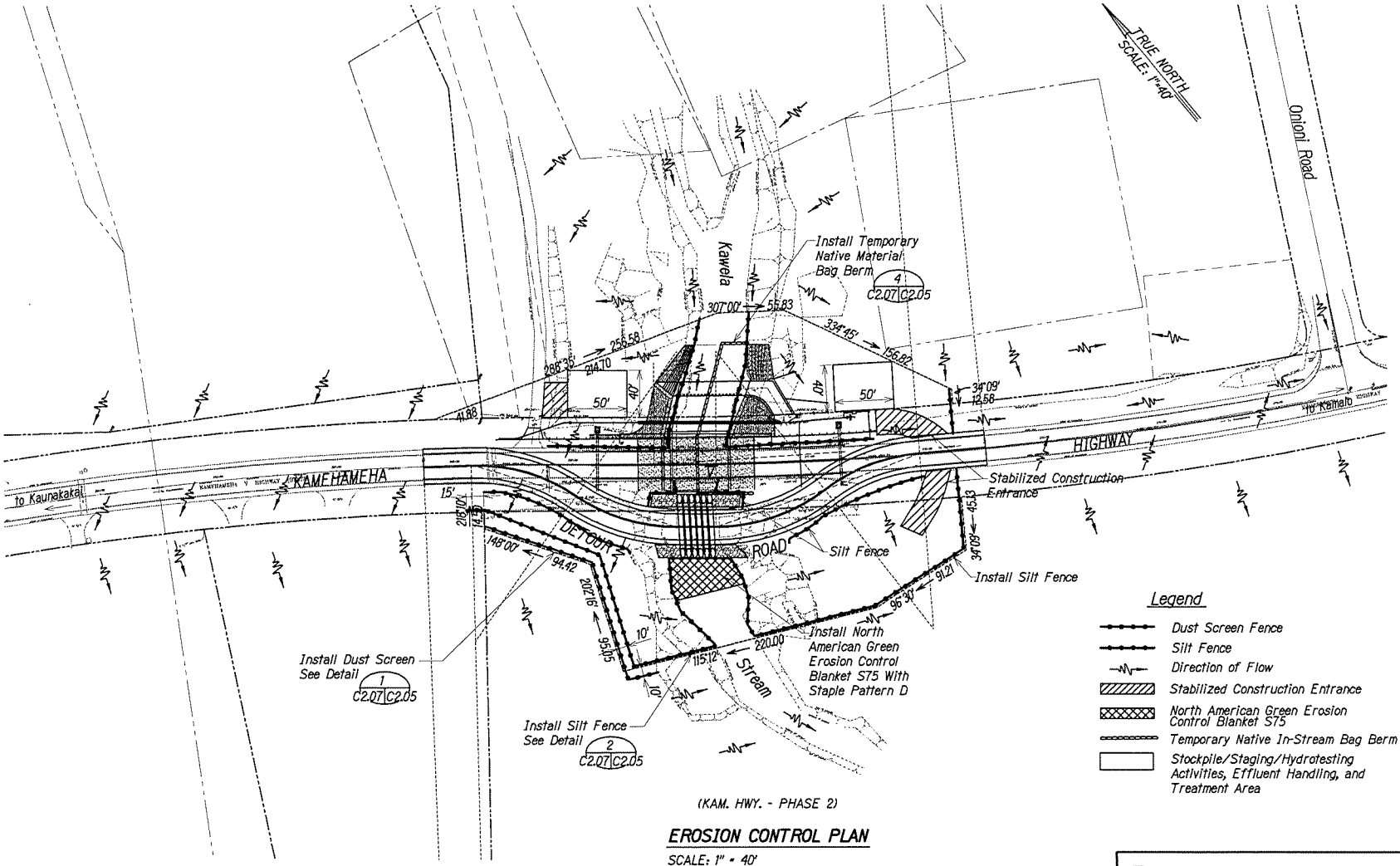
EROSION CONTROL PLAN

EXHIBIT A10



(KAM. HWY. - PHASE 2)

EROSION CONTROL PLAN

SCALE: 1" = 40'

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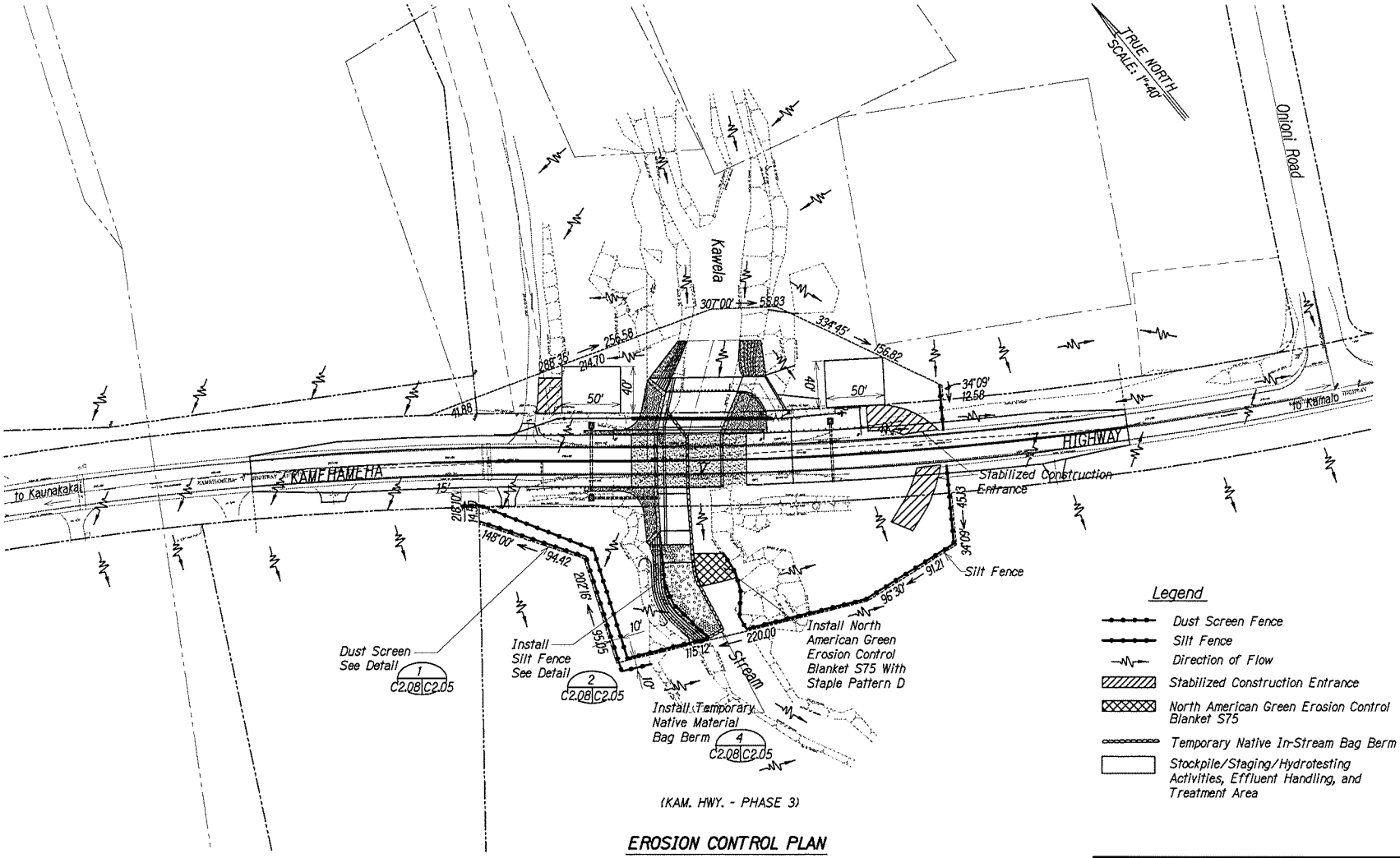
EROSION CONTROL PLAN

EXHIBIT A11



(KAM. HWY. - PHASE 3)

EROSION CONTROL PLAN

SCALE: 1" = 40'

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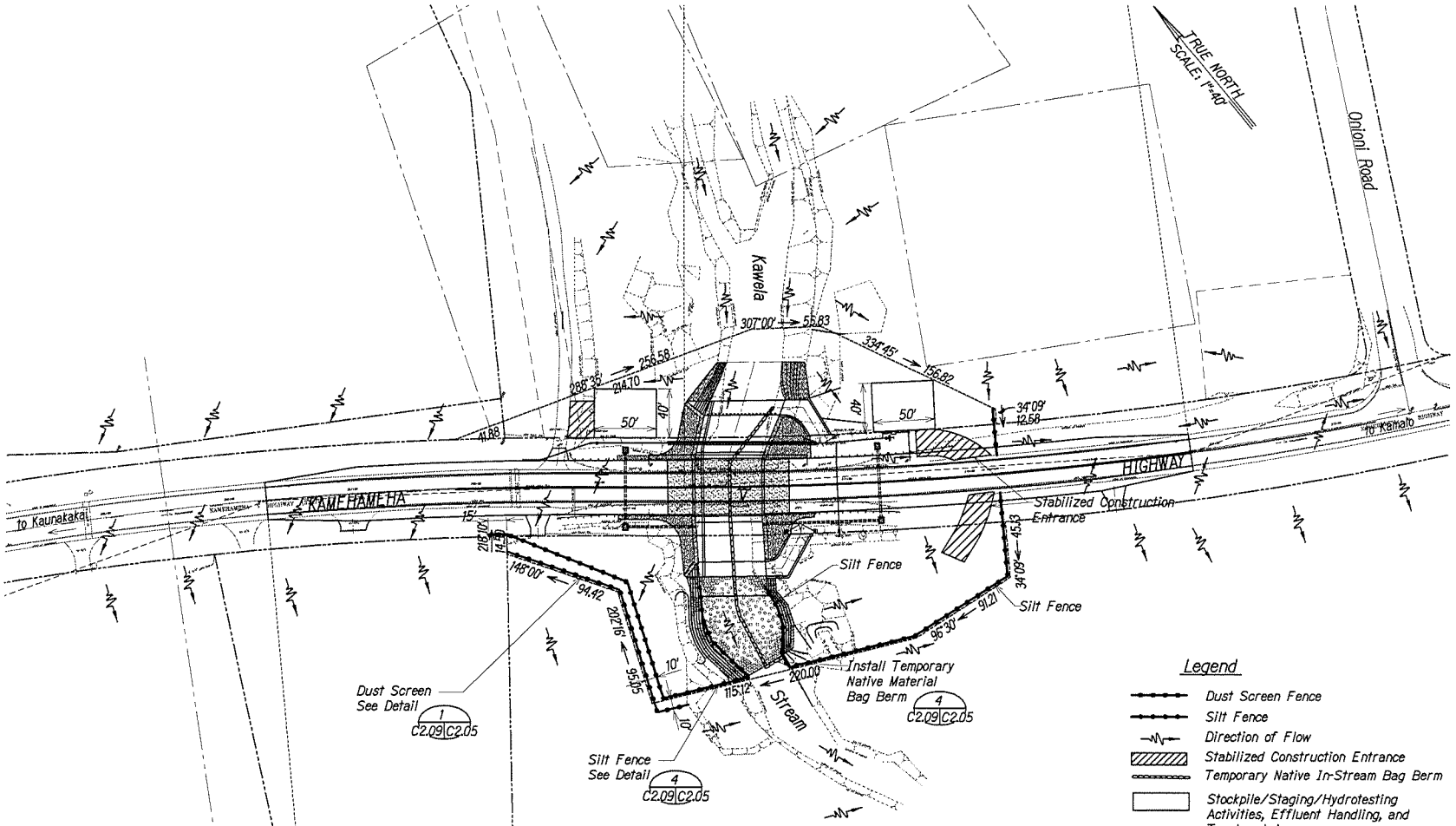
EROSION CONTROL PLAN

EXHIBIT A12



(KAM. HWY. - PHASE 4)

EROSION CONTROL PLAN

SCALE: 1" = 40'

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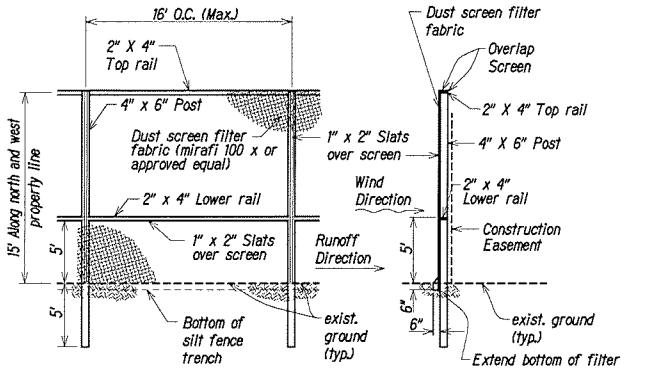
EROSION CONTROL PLAN

EXHIBIT

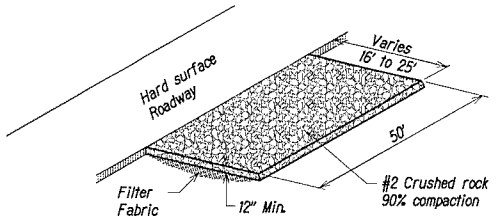
A13



ELEVATION

SECTION

DUST SCREEN 1 — NOT TO SCALE — C2.03 | C2.05



STABILIZED CONSTRUCTION ENTRANCE DETAIL 3 — NOT TO SCALE — C3.01 | C2.05

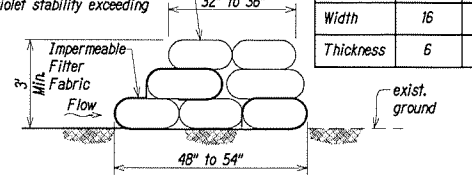
Impermeable fabric bags and filter material. Fill bags with native in-stream material. Bag and fabric material shall be polypropylene, polyethylene or polyamide woven fabric, minimum unit weight (4) ounces per square yard, mullen burst strength exceeding 300 psi and ultraviolet stability exceeding 70%.

Native In-Stream Material Bag Size (Weight 90 to 125 pounds)

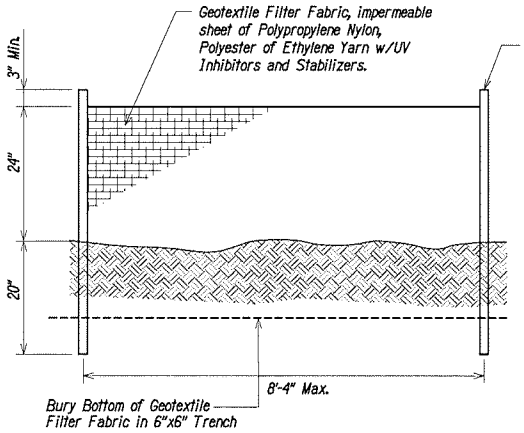
	Min. (in)	Max. (in)
Length	24	30
Width	16	18
Thickness	6	8

NOTES:

1. The bags shall be a minimum of 3 bags high.
2. The end of the bags shall be turned up slope.
3. The bag rows and layers shall be staggered to eliminate gaps.



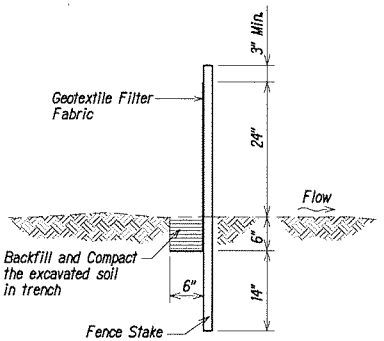
TEMPORARY NATIVE IN-STREAM BAG BERM DETAIL 4 — C2.01 | C2.05 — C2.02 thru C2.04, C2.06 thru C2.09



ELEVATION

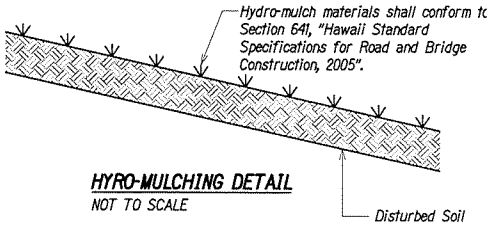
Notes:

1. The filter fabric shall be a minimum of 36 inches wide.
2. If silt fence is obtained from manufacturer as a package (I.E. fabric attached to post) the manufacturer's installation instruction shall be adhered to.
3. Fence stakes may be wood or metal, must be capable of supporting accumulated sediment



SECTION

SILT FENCE DETAIL 2 — NOT TO SCALE — C2.01 | C2.05 — C2.03



HYRO-MULCHING DETAIL

NOT TO SCALE

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EXHIBIT

EROSION CONTROL DETAILS

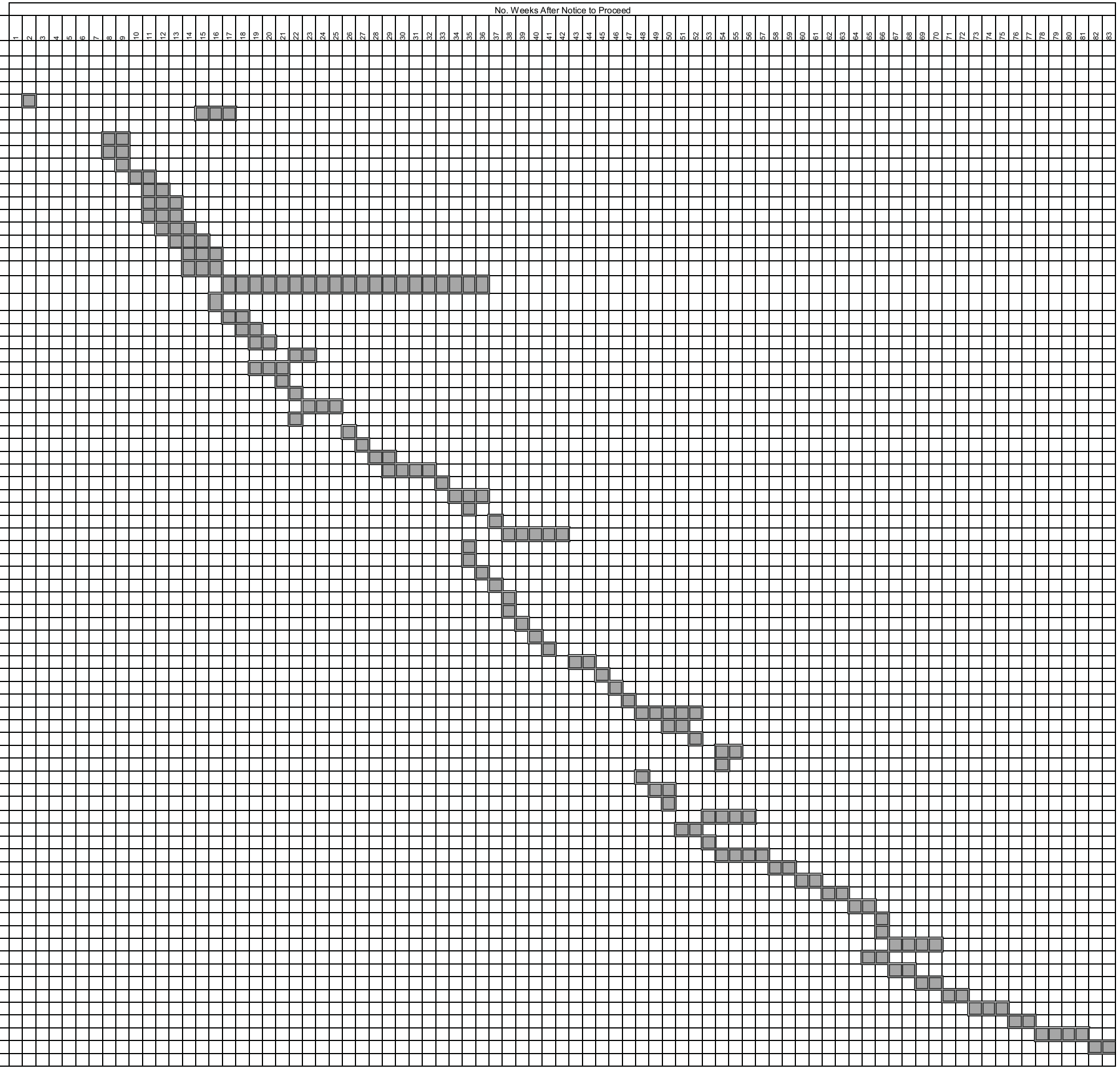
A14

KAMEHAMEHA V HIGHWAY
KAWELA BRIDGE REPLACEMENT, ISLAND OF MOLOKAI
PROJECT NO. BR-0450(8)
JULY 2010

CONSTRUCTION SCHEDULE

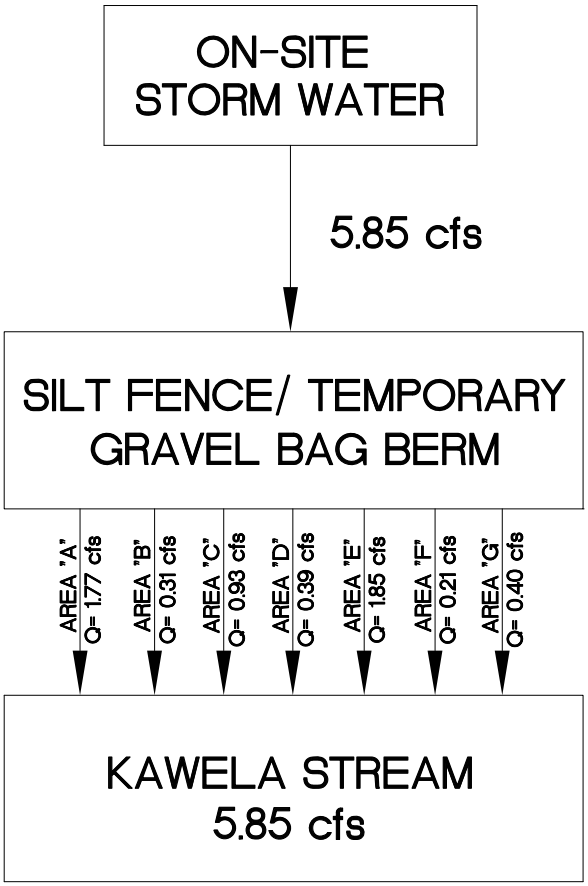
2-way traffic after hours

Task	Begin	No. Work Days	End	
Bid Date			10/15/10	
Contract Award (assumed)			11/15/10	
Preconstruction Meeting			12/1/10	
Notice to Proceed			1/15/11	
Notification of Residents	1/25/11	2	1/27/11	2
Relocation of Utility Pole and Lines	4/1/11	10	4/11/11	17
Permits	1/15/11		3/1/11	9
Mobilization	1/15/11		3/1/11	9
Begin Construction	3/1/11			
Clear and Grub, Trim Trees, Add BMP's	3/3/11	8	3/11/11	11
Grading for detour bridge	3/11/11	5	3/16/11	12
Install detour culverts, backfill	3/16/11	3	3/19/11	13
Install temporary guardrails	3/19/11	4	3/23/11	13
Pave detour road	3/23/11	3	3/26/11	14
Detour road striping, install signage	3/31/11	2	4/2/11	15
Set up Traffic Control	4/2/11	1	4/3/11	16
Open detour road	4/4/11	0	4/4/11	16
Roadway excavation/backfill	4/5/11	100	7/14/11	36
Install stream BMP's	4/5/11	2	4/7/11	16
Demolish existing bridge	4/8/11	9	4/17/11	18
Excavate/widen stream channel embankments	4/10/11	9	4/19/11	19
Excavate for abutments and wingwalls	4/19/11	8	4/27/11	20
Extend waterline across stream	4/28/11	10	5/8/11	23
Mobilize micropile drilling equipment	4/14/11	15	4/29/11	21
Install one verification test pile	4/29/11	1	4/30/11	21
Verification test, present results	5/1/11	3	5/4/11	22
Install micropiles (20 total)	5/4/11	15	5/19/11	25
	5/4/11	0	5/4/11	22
Form and pour pilecaps	5/21/11	6	5/27/11	26
Strip formwork	5/30/11	2	6/1/11	27
Cure pilecaps	5/27/11	14	6/10/11	29
Place rebar for abutments	6/4/11	20	6/24/11	32
Form and pour concrete for abutments	6/25/11	6	7/1/11	33
Cure abutment concrete	7/1/11	14	7/15/11	36
Add rebar for wingwalls	7/2/11	9	7/11/11	35
Form and pour concrete for wingwalls	7/11/11	7	7/18/11	37
Cure wingwalls	7/18/11	28	8/15/11	42
Excavate for channel slab, Phase 1	7/4/11	3	7/7/11	35
Install aggregate base and geotextile membrane, Phase 1	7/8/11	3	7/11/11	35
Install rebar for channel slab, Phase 1	7/12/11	4	7/16/11	36
Pour concrete for channel slab, install bollards Phase 1	7/17/11	3	7/20/11	37
Adjust stream channel BMP's for Phase 2	7/21/11	1	7/22/11	38
Excavate for channel slab, Phase 2	7/23/11	3	7/26/11	38
Install aggregate base and geotextile membrane, Phase 2	7/27/11	3	7/30/11	39
Install rebar for channel slab, Phase 2	7/31/11	4	8/4/11	40
Pour concrete for channel slab, install bollards Phase 2	8/5/11	3	8/8/11	41
Backfill abutments and wingwalls	8/11/11	11	8/22/11	44
Install precast concrete deck planks	8/23/11	3	8/26/11	45
Add rebar for concrete deck topping	8/27/11	6	9/2/11	46
Form, pour concrete for deck topping	9/3/11	3	9/6/11	47
Cure concrete topping	9/6/11	28	10/4/11	52
Add rebar for bridge railings	9/13/11	14	9/27/11	51
Form and pour concrete for bridge railings	9/28/11	6	10/4/11	52
Cure bridge railings	10/4/11	14	10/18/11	55
Add metal pedestrian railings	10/8/11	5	10/13/11	54
Excavate for approach slabs	9/7/11	4	9/11/11	48
Add rebar for approach slabs	9/12/11	8	9/20/11	50
Form and pour concrete for approach slabs	9/21/11	3	9/24/11	50
Cure approach slabs and retaining walls	9/24/11	28	10/22/11	56
Install drain inlets	9/25/11	6	10/1/11	52
Install portion of drainage system, Phase 1 and 2	10/2/11	5	10/7/11	53
Add fill for approach roadway ramps, compact	10/8/11	21	10/29/11	57
Finish grading around bridge and upstream embankments	10/30/11	7	11/6/11	59
Pave approach roadways	11/7/11	9	11/16/11	61
Striping of bridge and approach roadway	11/21/11	4	11/25/11	63
Installation of guardrails, transition, end treatments	11/26/11	9	12/5/11	65
Intall signage	12/8/11	2	12/10/11	66
Shift traffic to new bridge	12/11/11	0	12/11/11	66
Remove detour bridge	12/12/11	19	12/31/11	70
Excavate and grade downstream stream bed and embankments	11/30/11	11	12/11/11	66
Install CRM channel walls	12/12/11	10	12/22/11	68
Holiday	12/22/11	10	1/1/12	70
Complete installation of CRM channel walls	1/2/12	10	1/12/12	72
Install GRP slope protection	1/13/12	14	1/27/12	75
Restore area to previous condition	1/28/12	5	2/2/12	77
Rain Days	2/3/12	20	2/23/12	81
Clean up	2/24/12	8	3/3/12	83



Total project duration = **413** **working days** **578** **(calendar days)**

EXHIBIT 15 - CONSTRUCTION SCHEDULE

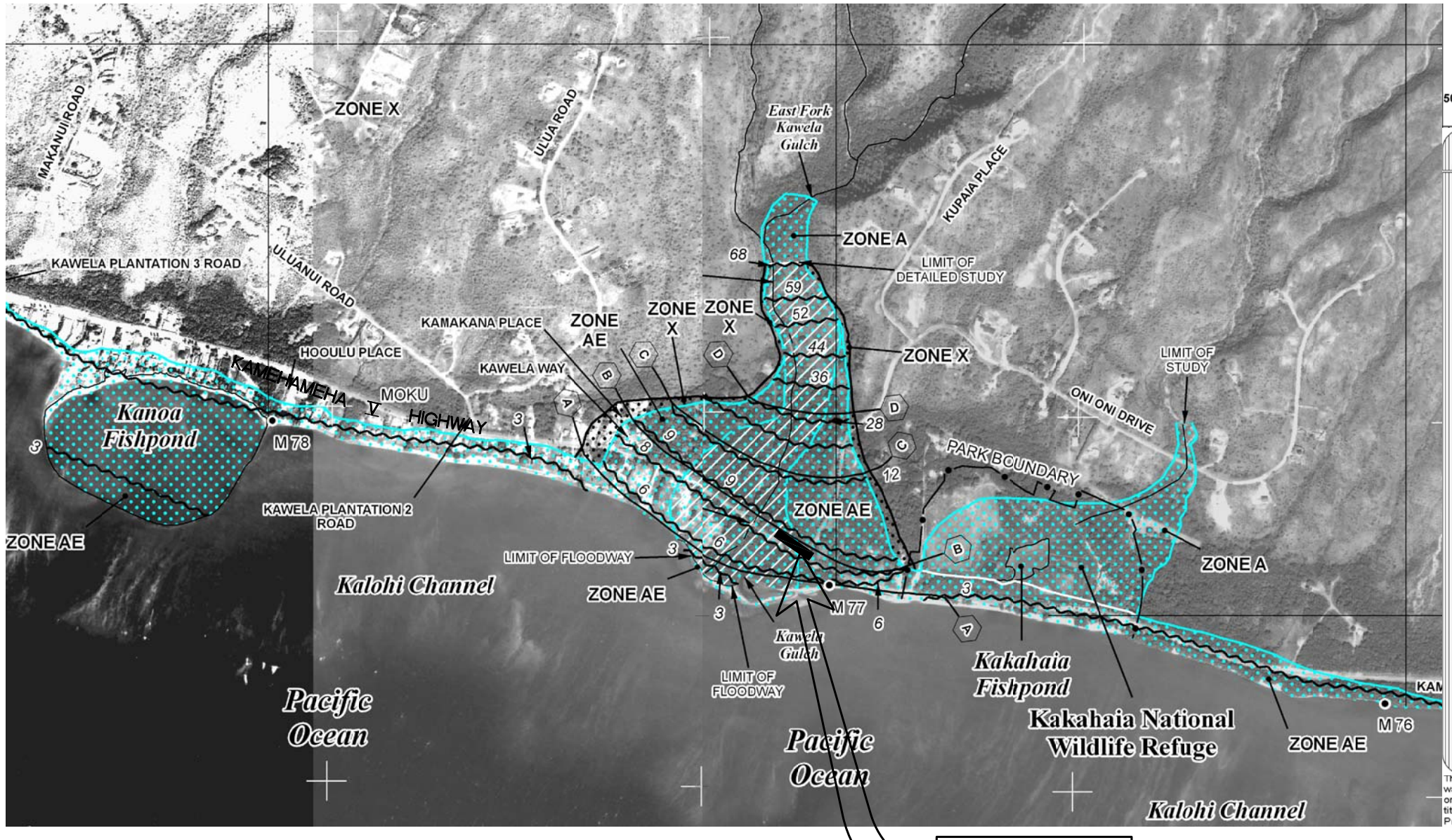


AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

EXHIBIT

FLOW CHART

A16



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0215E

FIRM

FLOOD INSURANCE RATE MAP

MAUI COUNTY, HAWAII

PANEL 215 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MAUI COUNTY	150003	0215	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
1500030215E

MAP REVISED
SEPTEMBER 25, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the LOCAL TIDAL DATUM

- Cross section line
- Transect line
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4376000mN — 1000-meter Universal Transverse Mercator grid ticks, Zone 4N
- 600000 FT — 5000-foot grid values: Hawaii State Plane coordinate system, zone 2 (FIPSZONE 5102), Transverse Mercator projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — Coastline Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

INITIAL NFIP MAP DATE
December 6, 1977

FLOOD HAZARD BOUNDARY MAP REVISIONS

FLOOD INSURANCE RATE MAP EFFECTIVE
June 1, 1981

FLOOD INSURANCE RATE MAP REVISIONS
September 6, 1989 - March 16, 1995 - September 17, 1997 - August 3, 1998 - May 15, 2002 - September 25, 2009 ; for description of revisions, see Notice to Users page in the Flood Insurance Study report.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

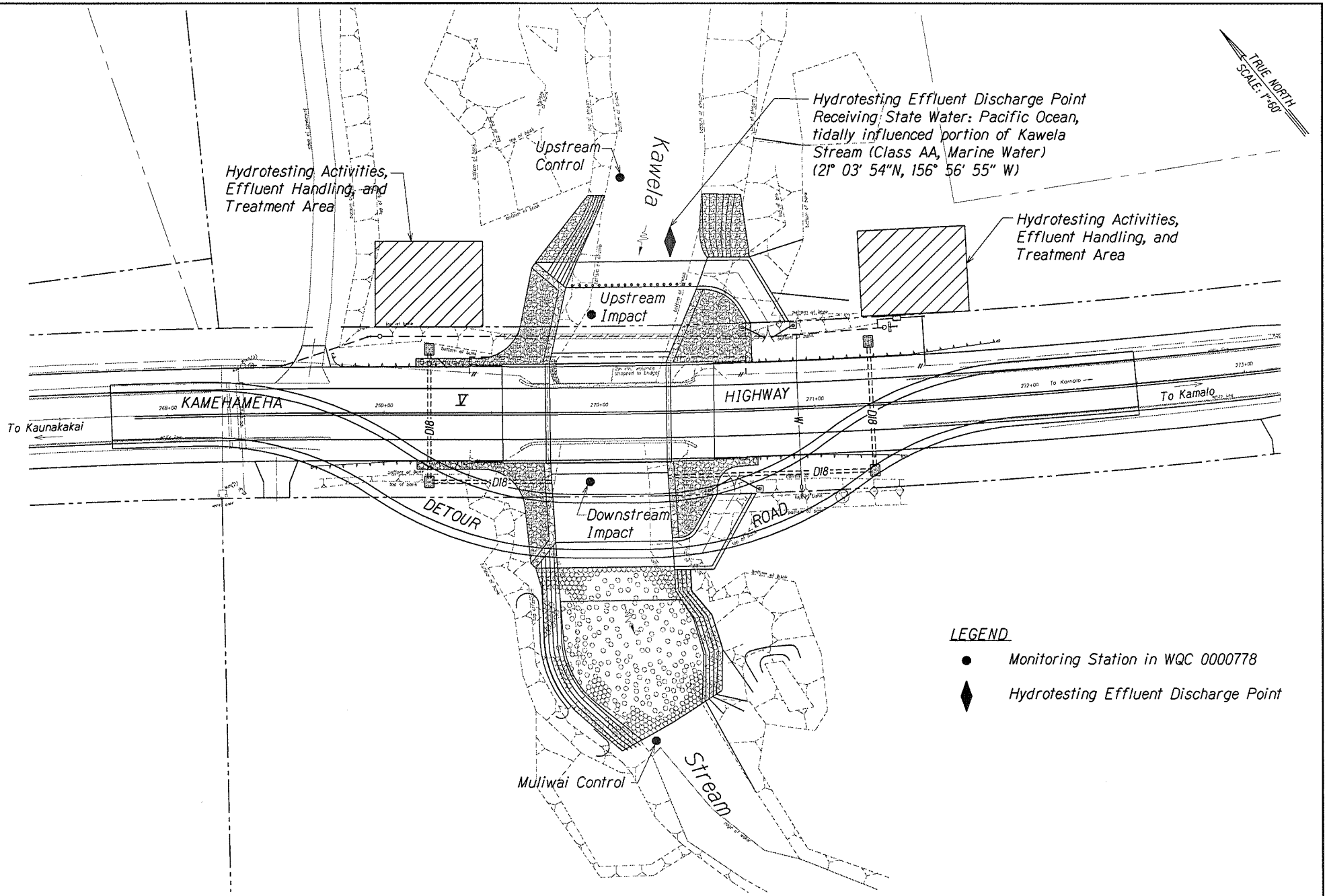
FLOOD ZONE MAP

EXHIBIT

A17

APPENDIX B

EXHIBITS - NOI FORM F

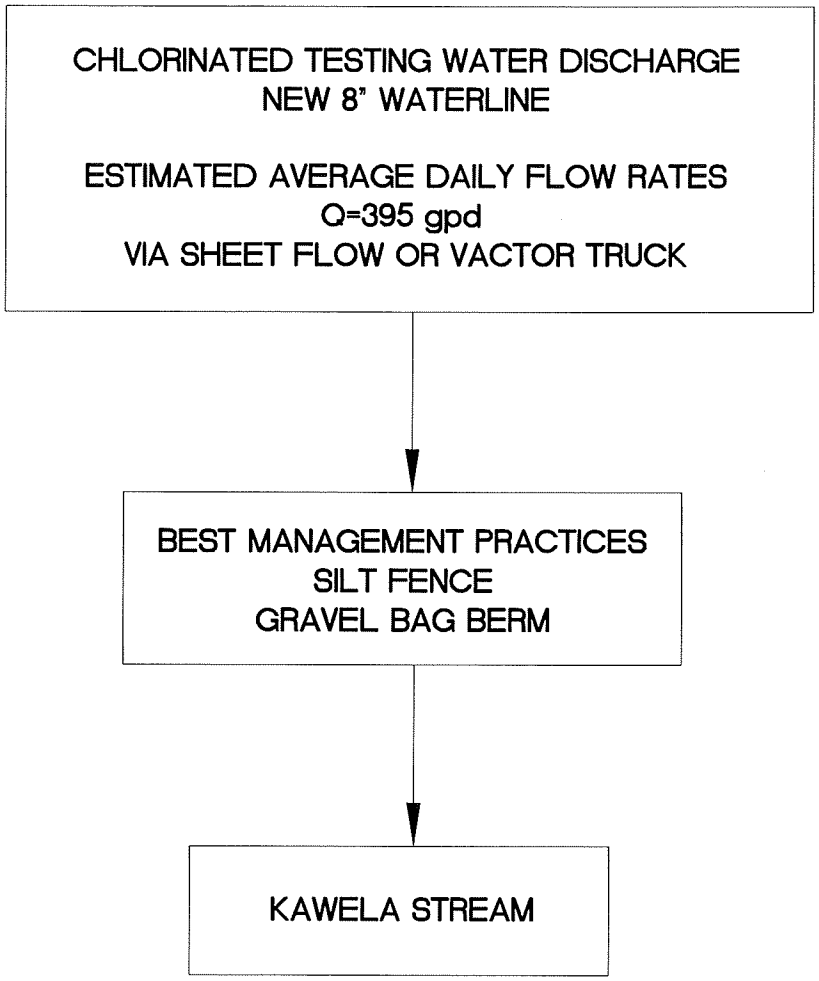


AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

EXHIBIT

LOCATION MAP
(HYDROTESTING)

B1



NOTE: CONTRACTOR TO PROVIDE SITE-SPECIFIC FLOW CHART AND FLOW DATA

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

EXHIBIT

FLOW CHART (HYDROTESTING)

B2

EXHIBIT B3
(ESTIMATED CHLORINATED TESTING WATER DISCHARGE)

Project: Kamehameha V Highway, Kawela Bridge Replacement
Date: 08/06/10
By: SK

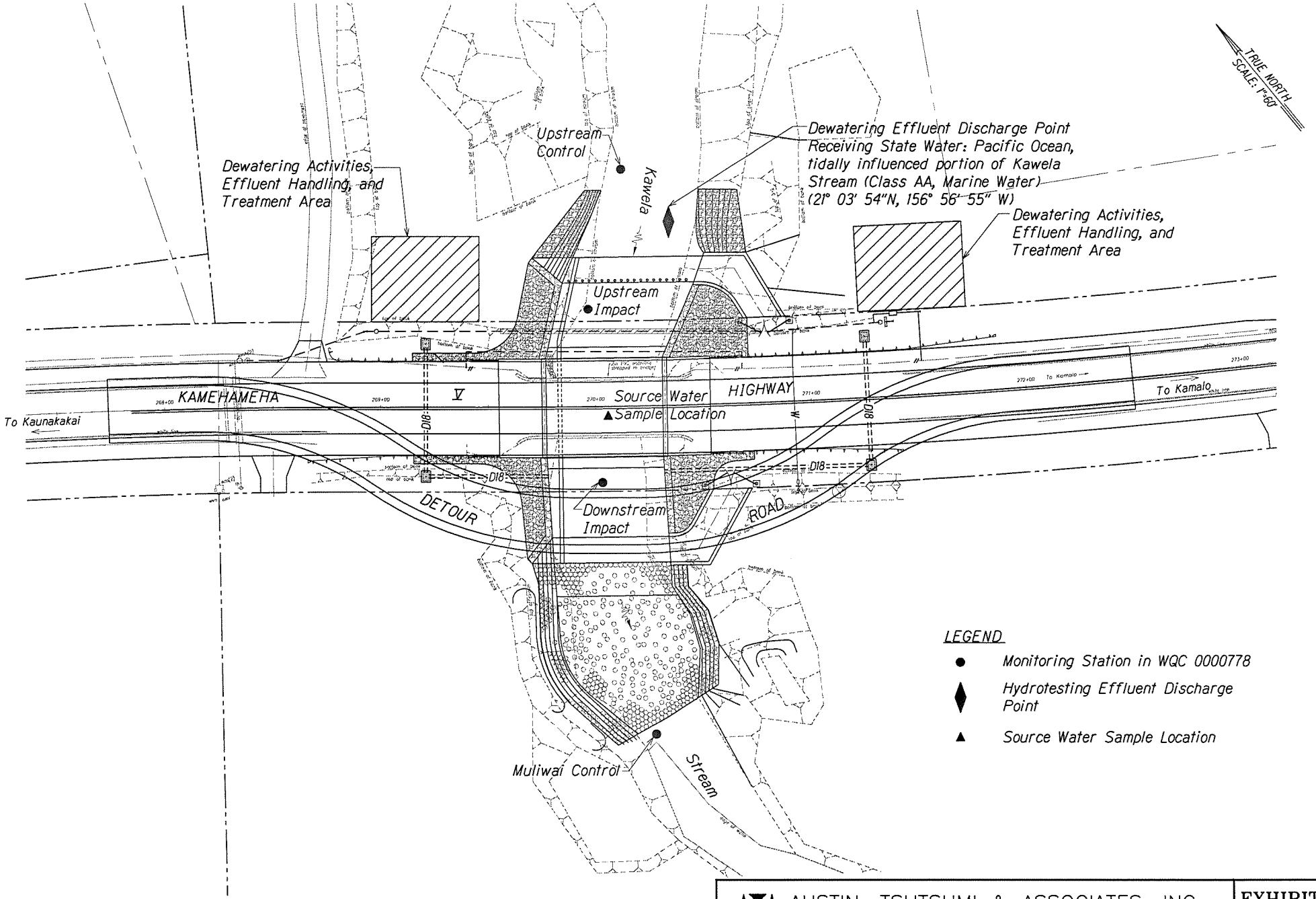
Formulas:
Volume = (Length of pipe) x (Cross-section area)
Cross-section area = π(R)^2
Daily flow rate = (Volume)/ (# of days)

Calulations:

Total length of 8-inch pipe to be tested	=	302	feet	
Radius of 8-inch pipe	=	0.3333	feet	
Cross-section area of 8-inch pipe	=	0.35	sq. ft.	
Total volume of discharge	=	106	cu. ft.	
	=	**791**	gallons	(1 cu. ft. = 7.48 gallons)
Daily flow rate	=	**395**	gpd (*assume hydrotesting last for 2 days)	

APPENDIX C

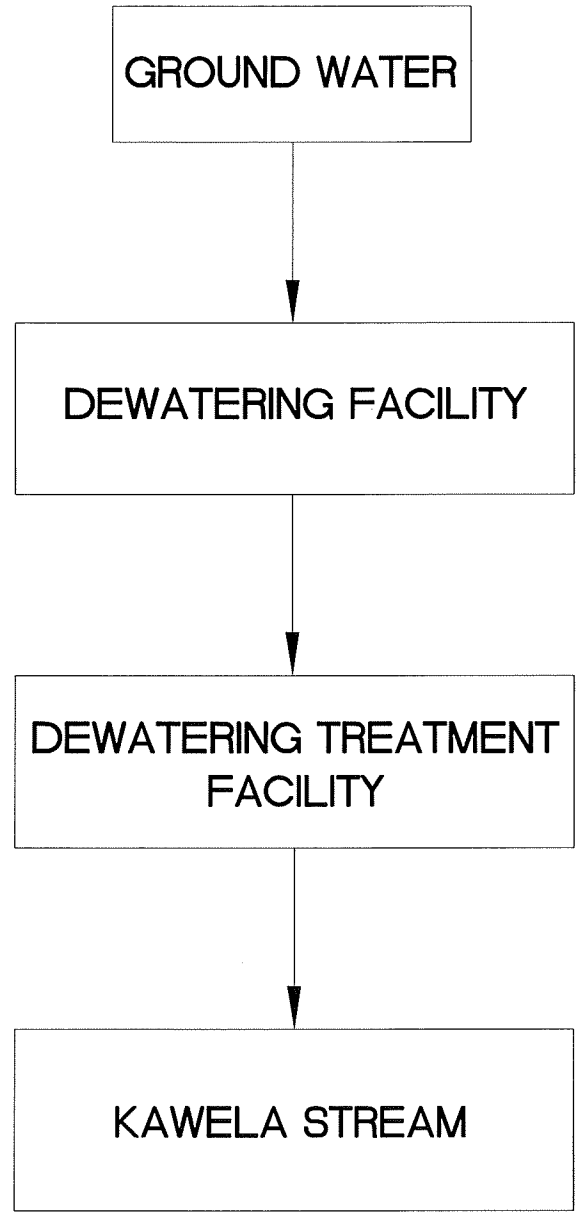
EXHIBITS - NOI FORM G



AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

LOCATION MAP
(DEWATERING)

EXHIBIT
C1



NOTE: CONTRACTOR TO PROVIDE SITE-SPECIFIC FLOW CHART AND FLOW DATA

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

EXHIBIT

FLOW CHART (DEWATERING)

C2

EXHIBIT C3
(ESTIMATED QUANTITY AND RATE OF DEWATERING DISCHARGE)

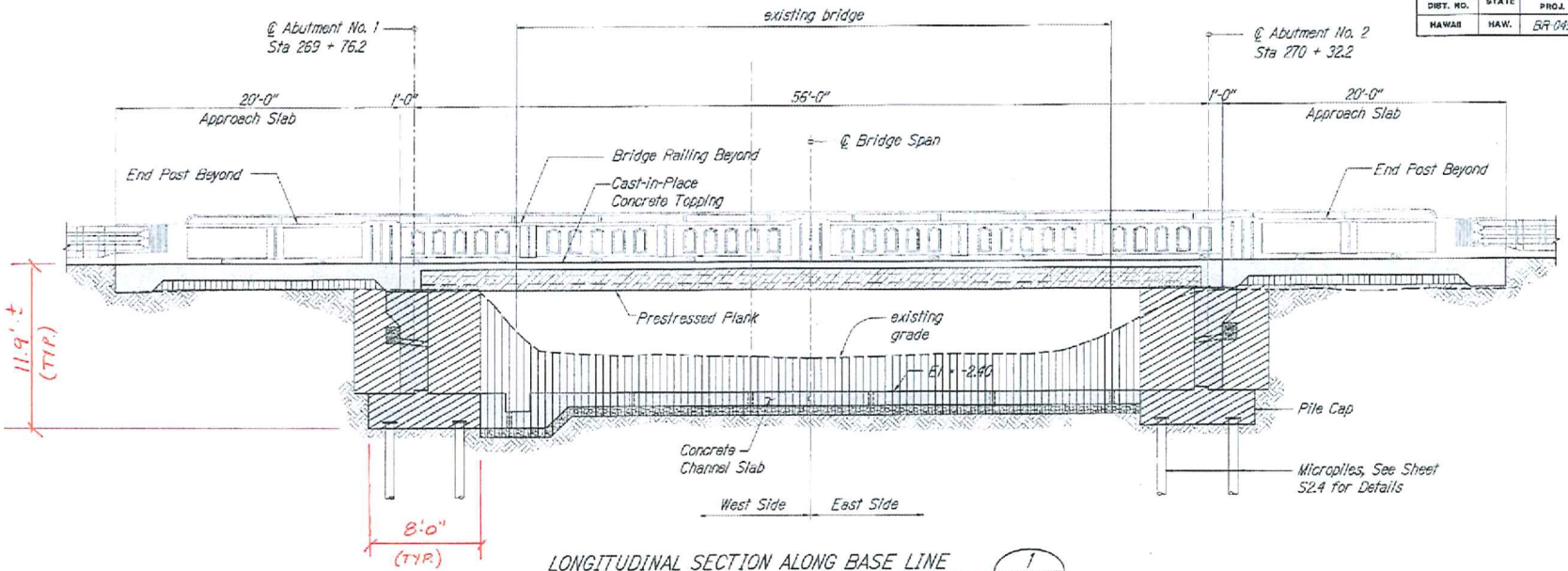
Project: Kamehameha V Highway, Kawela Bridge Replacement
Date: 09/10/10
By: SK

Assumptions:
Pump size = 1.5-inch
Flow rate = 105 gpm (typical)
Estimated Dewatering Duration = 2 hrs

Calulations:
Rate of Discharge = (Assumed flow rate in gpm) x (60 mins/hr) x (24 hrs/1 day)
= 105 gallons/min x 60 mins/hr x 24 hrs/1 day
= **151,200 gpd**

Quantity of Discharge = (Rate of Discharge) x (Estimated Duration)
= 151,200 gallons/day x 1 day/24 hrs x 2 hrs
= **12,600 gallons**

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR 045(8)	2011	58	86



LONGITUDINAL SECTION ALONG BASE LINE (1 / S1.5 | S1.5)

Scale: 1/4" = 1'-0"

Note:
Excavation for wingwall not shown and shall be considered incidental to excavation for abutment.

Legend:

Structure Excavation for Abutment

Structure Excavation for Channel

EXHIBIT C4 - Proposed Excavation/Dredging Areas

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAY LIMITS

KAMEHAMEHA V HIGHWAY
Kawela Bridge Replacement
Federal Aid Project No. BR-0450(8)

AECOS, Inc.
45-939 Kamehameha Hwy., Room 104 • Kaneohe, HI 96744
Telephone: (808) 234-7770 • Fax: (808) 234-7775

CLIENT: KAI Hawaii, Inc.
31 N. Pauahi Street, 2nd Floor
Honolulu, HI 96817
ATTENTION: Mike Hunneman

FILE No.:	1124
REPORT DATE:	10/01/10
PAGE:	1 of 1

AECOS REPORT OF ANALYTICAL RESULTS

SAMPLE TYPE: Water
DATE SAMPLED: 09/13/10
Sampled by: Client (B. Lum)
***AECOS* LOG No.:** 26615
DATE RECEIVED: 09/13/10

SAMPLE ID ⇨ / ANALYTE ⇩	Kawela Bridge 0900	Detection Limit	Method Number	Analysis Date / Analyst ID
Salinity (ppt)	38	1	Refractive Index	09/13/10 jw
Turbidity (NTU)	5.58	0.01	EPA 180.1 Rev. 2.0 (1993)	09/14/10 ml
Total Suspended Solids (mg/L)	22	0.1	SM 2540D (1998)	09/14/10 ml
Oil & Grease (mg/L)	<1.0	1.0	EPA 1664A	09/20/10 CEL
Ammonia (µg N/L)	110	100	SM4500 NH3 B/C	09/21/10 CEL
Nitrate + Nitrite (µg N/L)	<100	100	SM4500 NO3-E	09/22/10 CEL
Total Nitrogen (µg N/L)	<500	500	SM4500 NO3E, N Org B	09/21-22/10 CEL
Total Phosphorus (µg P/L)	<100	100	SM4500 P B/E	09/20/10 CEL
Total Recoverable Petroleum Hydrocarbons (µg/L)	<1.0	1.0	EPA 418.1	09/22/10 CEL

Refer to Calscience Work Order No.: 10-09-1114

J. Mello, Laboratory Director

EXHIBIT C5 - AECOS REPORT OF ANALYTICAL RESULTS/ CHAIN OF CUSTODY

Calscience
Environmental
Laboratories, Inc.

September 23, 2010

Snookie Mello
AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Subject: **Calscience Work Order No.: 10-09-1114**
Client Reference: 26615

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 9/15/2010 and analyzed in accordance with the attached chain-of-custody.

Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Ranjit K. J. Clarke

Calscience Environmental
Laboratories, Inc.
Ranjit Clarke
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 09/15/10
Work Order No: 10-09-1114
Preparation: Extraction
Method: EPA 418.1

Project: 26615

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Kawela Bridge	**10-09-1114-1-D**	**09/13/10 09:00**	**Aqueous**	**IR #1**	**09/22/10**	**09/22/10 11:04**	**100922L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	ND	1.0	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-07-016-778**	**N/A**	**Aqueous**	**IR #1**	**09/22/10**	**09/22/10 11:04**	**100922L01**

Parameter	Result	RL	DF	Qual	Units
TRPH	ND	1.0	1		mg/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: 09/15/10
Work Order No: 10-09-1114

Project: 26615

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Kawela Bridge	**10-09-1114-1**	**09/13/10**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	09/20/10	09/20/10	EPA 1664A
Total Kjeldahl Nitrogen	ND	0.50	1		mg/L	09/21/10	09/21/10	SM 4500 N Org B
Phosphorus, Total	ND	0.10	1		mg/L	09/20/10	09/20/10	SM 4500 P B/E
Ammonia (as N)	0.11	0.10	1		mg/L	09/21/10	09/21/10	SM 4500-NH3 B/C
Nitrate-Nitrite (as N)	ND	0.10	1		mg/L	09/22/10	09/22/10	SM 4500-NO3 E

Method Blank	**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	09/20/10	09/20/10	EPA 1664A
Total Kjeldahl Nitrogen	ND	0.50	1		mg/L	09/21/10	09/21/10	SM 4500 N Org B
Phosphorus, Total	ND	0.10	1		mg/L	09/20/10	09/20/10	SM 4500 P B/E
Ammonia (as N)	ND	0.10	1		mg/L	09/21/10	09/21/10	SM 4500-NH3 B/C
Nitrate-Nitrite (as N)	ND	0.10	1		mg/L	09/22/10	09/22/10	SM 4500-NO3 E

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

AECOS, Inc.	Date Sampled:	09/13/10
45-939 Kamehameha Hwy #104	Date Received:	09/15/10
Kanehoe, HI 96744-3221	Date Analyzed:	09/21-22/10
	Work Order No.:	10-09-1114
	Method:	SM 4500-NO3 E + SM 4500 N Org B
Project: 26615		Page 1 of 1

Total Nitrogen (TN) is calculated by adding Nitrate+Nitrite (as N) + Total Kjeldahl Nitrogen. Results reported in mg/L.

Sample Number	Total Nitrogen Concentration	RL	Qual
Kawela Bridge	ND	0.50	
Method Blank	ND	0.50	

RL - Reporting Limit , Qual - Qualifiers

*

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: N/A
Work Order No: 10-09-1114

Project: 26615

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	MS% REC	MSD % REC	%REC CL	RPD	RPD CL	Qualifiers
Phosphorus, Total	SM 4500 P B/E	10-09-1143-1	09/20/10	9/20/10	107	110	70-130	1	0-25	
Nitrate-Nitrite (as N)	SM 4500-NO3 E	Kawela Bridge	09/22/10	9/22/10	90	91	70-130	1	0-25	
HEM: Oil and Grease	EPA 1664A	10-09-1472-1	09/20/10	9/20/10	99	104	78-114	4	0-18	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	10-09-1114
Kaneohe, HI 96744-3221			

Project: 26615

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Total Kjeldahl Nitrogen	SM 4500 N Org B	10-09-1527-1	09/21/10	2.7	2.7	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

AECOS, Inc.		Date Received:	N/A
45-939 Kamehameha Hwy #104		Work Order No:	10-09-1114
Kaneohe, HI 96744-3221		Preparation:	Extraction
		Method:	EPA 418.1

Project: 26615

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-07-016-778	**Aqueous**	**IR #1**	**09/22/10**	**09/22/10**	**100922L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TRPH	110	109	70-130	1	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: N/A
Work Order No: 10-09-1114

Project: 26615

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Extracted	Date Analyzed	LCS % REC	LCSD % REC	%REC CL	RPD	RPD CL	Qual
Ammonia (as N)	SM 4500-NH3 B	099-12-814-783	09/21/10	09/21/10	100	100	80-120	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

ACCREDITED IN ACCORDANCE WITH nelac

AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: N/A
Work Order No: 10-09-1114

Project: 26615

Matrix: Aqueous or Solid

Parameter	Method	Quality Control Sample ID	Date Analyzed	Date Extracted	Conc Added	Conc Recovered	LCS %Rec	%Rec CL	Qualifiers
Phosphorus, Total	SM 4500 P B/E	099-05-098-2,177	09/20/10	09/20/10	0.400	0.39	96	80-120	
Nitrate-Nitrite (as N)	SM 4500-NO3 E	099-05-120-1,723	09/22/10	09/22/10	0.500	0.49	98	80-120	
HEM: Oil and Grease	EPA 1664A	099-05-119-2,477	09/20/10	09/20/10	40.0	38.7	97	78-114	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 10-09-1114

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
E	Concentration exceeds the calibration range.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

AECOS, Inc.

45-939 Kamehameha Highway Suite 104
Kaneohe, Oahu, HI 96744
Tel: (808) 234-7770 Fax: 234-7775

SUB-- CHAIN OF CUSTODY FORM

1114

PROJECT
FILE No.
LOG NUMBER [266615]

CLIENT: AECOS INC.
ADDRESS:

CONTACT: SNOOKIE MELLO
PHONE No.: ☎ (808)234-7770
Purchase Order No.:

☐ RUSH
☐ SEE REVERSE
SPECIAL INSTRUCTIONS

	☑	SAMPLE ID	SAMPLED DATE	TIME	SAMPLE TYPE	CONTAINER(S)		REQUESTED ANALYSES	PRESERVATION
1		Kawela Bridge	9/13/10	0900	Ground Water	2	1L a glass	NO_3NO_2, NH_3, TN, TP	H_2SO_4
2		1	1	1	1	1	1L a glass	Oil & Grease (DL ≤ 1mg/L)	H_2SO_4
3						1	1L a glass	TRPH (EPA 418.1)	H_2SO_4
4									
5									
6									
7									
8									
9									
10									

CLIENTS PROVIDING SAMPLES TO THE LABORATORY SHOULD COMPLETE AS MUCH OF THE ABOVE FORM AS POSSIBLE, NOTE: NAME AND DATED SIGNATURE OF PERSON COLLECTING THE SAMPLE MUST BE ENTERED BELOW ↓. INFORMATION REQUESTED IN SHADED BOXES ABOVE TO BE FILLED IN BY THE LABORATORY.

SAMPLED BY: Bryan Lum — DATE 9/13/2010
PRINT NAME
RELINQUISHED: Client — DATE 9/13/2010 TIME 1200
SIGNATURE

RECEIVED BY: ML — DATE 9/13/2010 TIME 1200
SIGNATURE
RELINQUISHED: — DATE 9/14/2010 TIME Noon
SIGNATURE OR INITIALS

RECEIVED FOR LABORATORY: — DATE 9/15/10 TIME 11:08
SIGNATURE
RELINQUISHED: — DATE 20__ TIME
SIGNATURE OR INITIALS

COMMENTS:

PRECAUTIONS:

DISPOSAL:

USE (BLACK) INK

RETURN SAMPLE TO CLIENT ☐

AECOS, Inc.
(808) 234-7770
45-939 Kamehameha Hwy, #104
Kaneohe HI 96744

1114

Subcontractor:
Cal Science Environmental Laboratories

Requested By: SNOOKIE MELLO, Ann Mello
Date: 9/14/10

Results Requested By: Normal Turn Around Time

Log No.	Qty	Sample Type	Analysis Requested	Collection Information	Sample Preparation
26615	1	ground water	NH_3, NO_3NO_2, TN, TP	9/13/10 0900	H_2SO_4
"	"	"	Oil + Grease (DL ≤ 1mg/L)	"	"
"	"	"	TRPH (EPA 418.1)	"	"
26618	1	effluent cooling sea-water	Oil + grease	9/13/10 1024	H_2SO_4
26619	1	source water Brackish	Oil + grease	9/13/10 1114	H_2SO_4

Notes/Special Instructions: please return the cooler with replacement bottles. Mahalo,
AECOS, inc.

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-09-1 1 1 4

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AECOS, INC.

DATE: 09/15/10

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 3.2 °C + 0.5 °C (CF) = 3.7 °C ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only Initial: PS

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: PS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: PS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Residual Chlorine / Dissolved Sulfide received within 24 hours	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☑1AGB**s**^{H}

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na**

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** PS

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** WB

Preservative: h: HCL n: HNO_3 na$_2$: $Na_2S_2O_3$ na: NaOH p: H_3PO_4 s: H_2SO_4 znna: $ZnAc_2$+NaOH f: Field-filtered **Scanned by:** PS

AECOS, Inc.

45-939 Kamehameha Highway Suite 104
Kaneohe, Oahu, HI 96744
Tel: (808) 234-7770 Fax: 234-7775

CHAIN OF CUSTODY FORM

Item G.8. (fka: 2a list – Item 15)

PROJECT FILE No.:

LOG NUMBER [026615]

CLIENT: KAI Hawaii, Inc
ADDRESS: 31 N Pauahi St 2nd Floor Honolulu HI 96817

CONTACT: Mike Hunnemann
PHONE No.: 791-3980
Purchase Order No.:

☐ RUSH
☐ SEE REVERSE

SPECIAL INSTRUCTIONS

	SAMPLED ☑	SAMPLE ID	DATE	TIME	SAMPLE TYPE	CONTAINER(S)		REQUESTED ANALYSES	PRESERVATION
1		Kawela Bridge	09/13/10	9:00	Groundwater	1	1L poly	Turbidity, TSS	
2		Kawela Bridge	09/13/10	9:00		1	250 ml poly	Sal or Cond or Chloride	
3		Kawela Bridge	09/13/10	9:00		2	1L glass	NH3, NO3NO2, TN, TP	H2SO4
4		Kawela Bridge	09/13/10	9:00		1	1L glass	Oil & Grease (DL ≤ 1 mg/L)	H2SO4
5								Temperature: _____ degrees C	
6								Dissolved Oxygen: _____ mg/L	
7								pH: _____	
8								Salinity: _____ ppt	
9		Kawela Bridge	09/13/10	9:00		1	1L amber glass	TRPH (EPA 418.1)	H2SO4
10									

CLIENTS PROVIDING SAMPLES TO THE LABORATORY SHOULD COMPLETE AS MUCH OF THE ABOVE FORM AS POSSIBLE, NOTE: NAME AND DATED SIGNATURE OF PERSON COLLECTING THE SAMPLE MUST BE ENTERED BELOW ↓. INFORMATION REQUESTED IN SHADED BOXES ABOVE TO BE FILLED IN BY THE LABORATORY.

SAMPLED BY: Bryan Lum (PRINT NAME)	DATE 09/13/2010	
RELINQUISHED: (SIGNATURE)	DATE 09/13/2010 TIME 2:20	
RECEIVED BY: (SIGNATURE)	DATE 20__ TIME	
RELINQUISHED: (SIGNATURE OR INITIALS)	DATE 20__ TIME	
RECEIVED FOR LABORATORY: (SIGNATURE)	DATE 9/13/2010 TIME 1200	
RELINQUISHED: (SIGNATURE OR INITIALS)	DATE 20__ TIME	

COMMENTS: USE (BLACK) INK

TC = 21.5°

PRECAUTIONS:

DISPOSAL:

RETURN SAMPLE TO CLIENT ☐

NOTE: IF ANY INFORMATION IS PROVIDED ON THIS SIDE OF FORM, CHECK THE "SEE REVERSE" BOX ON THE FRONT SIDE OF FORM

ADDITIONAL CUSTODY RECORD
TRANSPORTERS

RECEIVED BY:	DATE	20___
SIGNATURE	TIME	
RELINQUISHED:	DATE	20___
SIGNATURE OR INITIALS	TIME	

RECEIVED BY:	DATE	20___
SIGNATURE	TIME	
RELINQUISHED:	DATE	20___
SIGNATURE OR INITIALS	TIME	

RECEIVED BY:	DATE	20___
SIGNATURE	TIME	
RELINQUISHED:	DATE	20___
SIGNATURE OR INITIALS	TIME	

RECEIVED BY:	DATE	20___
SIGNATURE	TIME	
RELINQUISHED:	DATE	20___
SIGNATURE OR INITIALS	TIME	

☐ SEND INVOICE TO
(ONLY IF DIFFERENT FROM CLIENT):

FIRM:
ADDRESS:

ATTN:

Purchase Order No.:

☐ SEND RESULTS TO
(ONLY IF DIFFERENT FROM CLIENT):

FIRM:
ADDRESS:

ATTN:

☐ SPECIAL INSTRUCTIONS:

PLEASE INITIAL HERE:

DRAW MAP OR DIAGRAM OF SAMPLE SITES HERE