FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-12(2)	2001	98	145

WATER POLLUTION AND EROSION CONTROL NOTES:

A. GENERAL:

1. The Contractor is reminded of the requirements of Section 209 - Water Pollution and Erosion Control, in the "Hawaii Standard Specifications for Road, Bridge and Public Works Construction". Section 209 describes but is not limited to: submittal requirements; scheduling of a water pollution and erosion control conference with the Engineer; construction requirements; method of measurement; and basis of payment.

2. The Contractor shall follow the guidelines in the "Best Management Practices Manual for Construction Sites in Honolulu", dated May 1999 in developing, installing and maintaining the Best Management Practices (BMP) for the project.

3. The Engineer may assess liquidated damages of up to $25,000 for non-compliance of each BMP requirement and each requirement stated in Section 209, for every day of non-compliance. There is no maximum limit on the amount assessed per day.

4. The Engineer will deduct the cost from the progress payment for all citations received by the Department for non-compliance, or the Contractor shall reimburse the State for the full amount of the outstanding cost incurred by the State.

B. WASTE DISPOSAL:

1. Waste Materials

All waste materials shall be collected and stored in a securely lidded metal dumpster. The dumpster shall meet all local and State solid waste management regulations. All trash and construction debris from the site shall be deposited in the dumpster. The dumpster shall be emptied a minimum of twice per week or as often as is deemed necessary. No construction waste materials shall be buried on site. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Notices stating these practices shall be posted in the office trailer and the Contractor shall be responsible for seeing that these procedures are followed.

2. Hazardous Waste

All hazardous waste materials shall be disposed of in the manner specified by local or State regulations or by the manufacturer. The Contractor's site personnel shall be instructed in these practices and shall be responsible for seeing that these practices are followed.

3. Sanitary Waste

All sanitary waste shall be collected from the portable units a minimum of once per week, or as required.

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

1. All control measures shall be inspected at least once each week and following any rainfall event of 0.5 inches or greater.
2. All measures shall be maintained in good working order. If repair is necessary, it shall be initiated within 24 hours after the inspection.
3. Built-up sediment shall be removed from silt fence when it has reached one-third the height of the fence.
4. Silt screen or fence shall be inspected for depth of sediment, tears, to verify that the fabric is securely attached to the fence posts or concrete slab and to verify that the fence posts are firmly in the ground.
5. Temporary and permanent seeding and planting shall be inspected for bare spots, washouts and healthy growth.
6. A maintenance inspection report shall be made promptly after each inspection by the Contractor.
7. The Contractor shall select a minimum of three personnel who shall be responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
8. Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. Personnel shall be trained in all inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

1. Materials Pollution Prevention Plan

a. Applicable materials or substances listed below are expected to be present on site during construction. Other materials and substances not listed below shall be added to the inventory.

Concrete	Fertilizers
Detergents	Petroleum Based Products
Paints (enamel and latex)	Cleaning Solvents
Metal Studs	Wood
Tar	Masonry Block

b. Material Management Practices shall be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. An effort shall be made to store only enough product as is required to do the job.

c. All materials stored on site shall be stored in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.

d. Products shall be kept in their original containers with the original manufacturer's label.

e. Substances shall not be mixed with one another unless recommended by the manufacturer.

f. Whenever possible, a product shall be used up completely before disposing of the container.

g. Manufacturer's recommendations for proper use and disposal shall be followed.

h. The Contractor shall conduct a daily inspection to ensure proper use and disposal of materials onsite.

2. Hazardous Material Pollution Prevention Plan

a. Products shall be kept in original containers unless they are not resealable.
b. Original labels and material safety data sheets (MSDS) shall be retained.
c. Surplus products shall be disposed of according to manufacturers' instructions or local and State recommended methods.

3. On Site and Off Site Product Specific Plan

a. The following product specific practices shall be followed on site:

1) Petroleum Based Products:
All on site vehicles shall be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products shall be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used on site shall be applied according to the manufacturer's recommendation.

2) Fertilizers:
Fertilizers used shall be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer shall be worked into the soil to limit exposure to storm water. Storage shall be in a covered shed. The contents of any partially used bags of fertilizer shall be transferred to a sealable plastic bin to avoid spills.

ORIGINAL PLAN
SURVEY PLOTTED BY ____ DATE X
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TRACED BY ____
DESIGNED BY X
NOTE BOOK dhx.cx
QUANTITIES BY ____
CHECKED BY X.Sign
No. ____

X:\KAALAALA\MISC\GN2.dgn May, 2001

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER POLLUTION AND EROSION CONTROL NOTES

MAMALAHOA HIGHWAY, EMERGENCY
REPLACEMENT OF KAALAALA STREAM BRIDGE
FEDERAL-AID PROJECT NO. ER-12(2), PAHALA, HAWAII

Scale: None Date: FEBRUARY 20, 2001

SHEET No. BC4 OF 28 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-12(2)	2001	99	145

WATER POLLUTION AND EROSION CONTROL NOTES: -Cont.

3) Paints:
All containers shall be tightly sealed and stored when not required for use. Excess paint shall not be discharged to the highway drainage system but shall be properly disposed of according to manufacturers' instructions or State and local regulations.

4) Concrete Trucks:
Concrete trucks shall be allowed to wash out or drum wash water only at locations indicated in plan sheets BC6, BC7 and BC8. Water shall not be discharged in the highway drainage system or waters of the United States. The Contractor shall contact Drinking Water Branch, Department of Health at 586-4258 to receive permission to designate a disposal site. The Contractor shall clean disposal site as required or as requested by the Owner's representative.

b. Off site Vehicle Tracking:

A stabilized construction entrance shall be provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance shall be cleaned daily or as required to remove any excess mud, cold planed materials, dirt or rock tracked from the site. Dump trucks hauling material from the construction site shall be covered with a tarpaulin.

4. Spill Control Plan

a. A spill prevention plan shall be posted to include measures to prevent and clean up each spill.

b. The Contractor shall be the spill prevention and cleanup coordinator. The Contractor shall designate at least three site personnel who shall receive spill prevention and cleanup training. These individuals shall each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel shall be posted in the material storage area and in the office trailer on site.

c. Manufacturers' recommended methods for spill cleanup shall be clearly posted and site personnel shall be made aware of the procedures and the location of the information and cleanup supplies.

d. Materials and equipment necessary for spill cleanup shall be kept in the material storage area on site.

e. All spills shall be cleaned up immediately after discovery.

f. The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

g. Spills of toxic hazardous material shall be reported to the appropriate State or local government agency, regardless of the size.

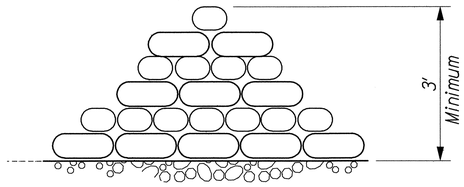
E. PERMIT REQUIREMENTS:

1. A National Pollutant Discharge Elimination System (NPDES) Permit is required for Construction Activities of five acres or more, the Contractor shall submit to the Engineer four sets of the Water Pollution and Erosion Control Submittals as detailed in Subsection 209.04 of the specifications.

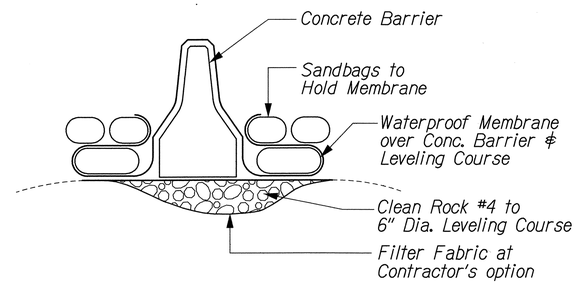
2. The Contractor shall be responsible to obtain the Permit from the Department of Health, Clean Water Branch.

3. The Contractor shall comply with all applicable State and Federal Permit conditions. Permits may include but are not limited to the following:

a. NPDES Permit for Construction Activities
b. Water Quality Certification
c. Section 404 Army Corps of Engineer Permit



SANDBAG WALL DETAILS
Not to Scale



ALTERNATE TO SANDBAG WALLS
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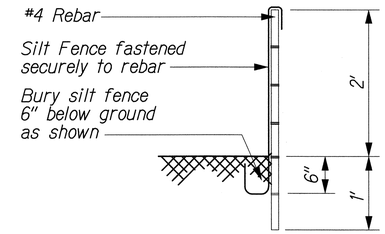

SILT FENCE DETAIL
Not to Scale

ORIGINAL PLAN
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DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
No.

J:\KAALAAUA\MISC\GW3.dgn May, 2001

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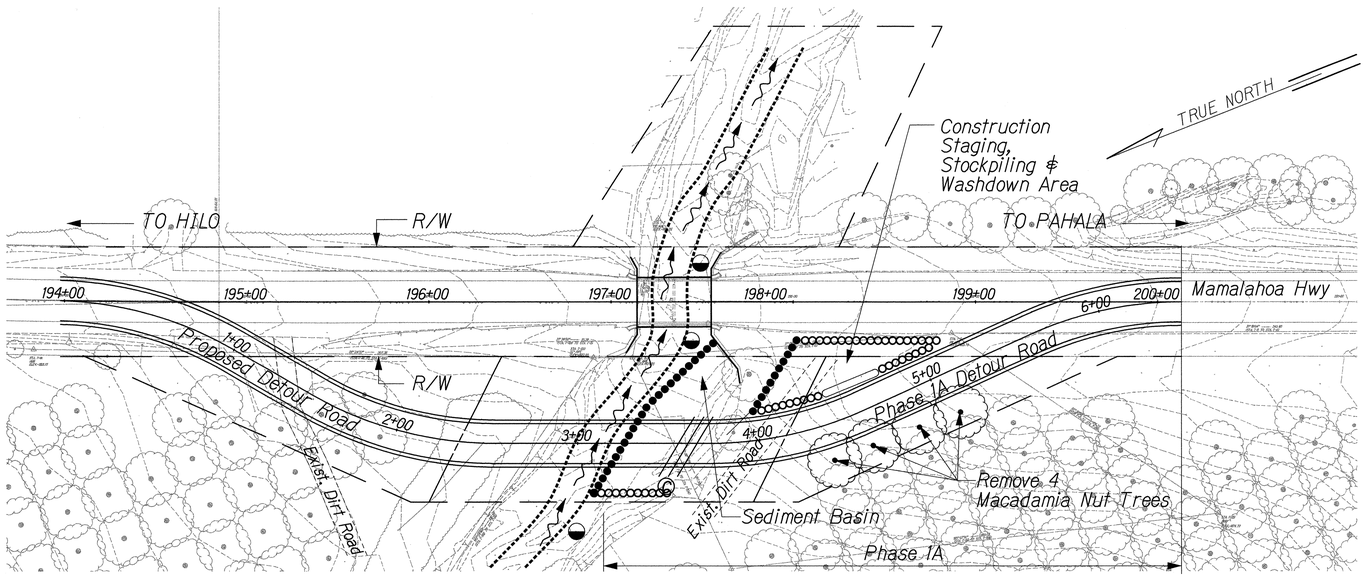
WATER POLLUTION, EROSION CONTROL NOTES AND SAND BAG DETAILS

MAMALAHOA HIGHWAY, EMERGENCY
REPLACEMENT OF KAALAALA STREAM BRIDGE
FEDERAL-AID PROJECT NO. ER-12(2), PAHALA, HAWAII

Scale: None Date: FEBRUARY 20, 2001

SHEET No. BC5 OF 28 SHEETS

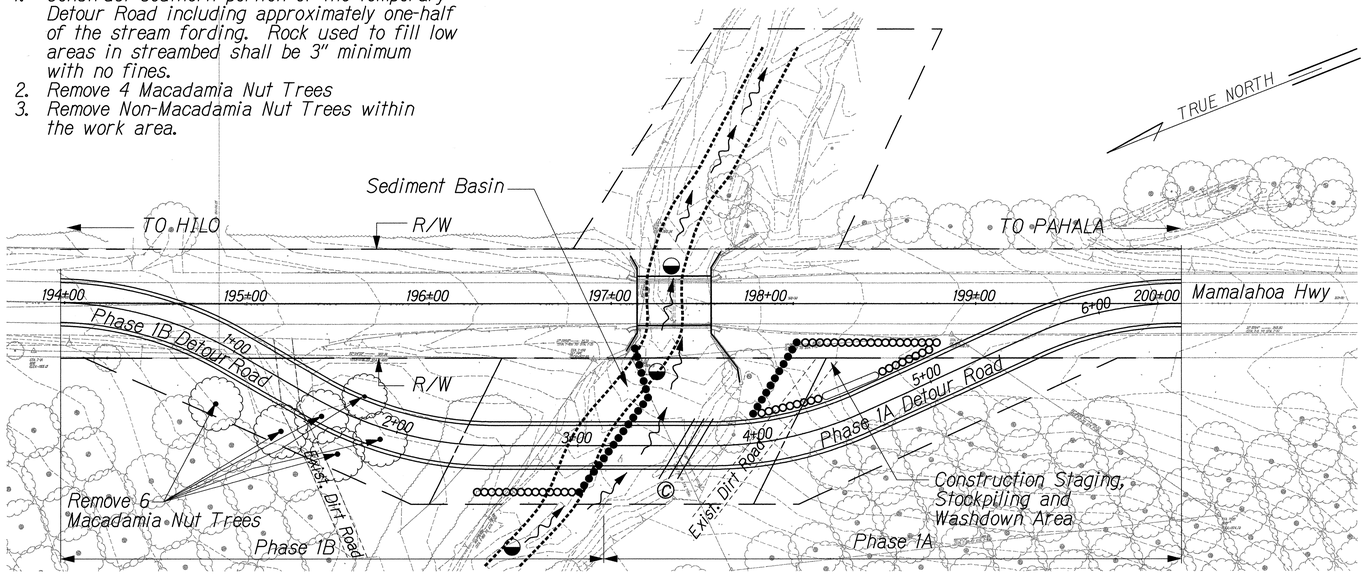
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-12(2)	2001	100	145



Construction Tasks - Phase 1A

1. Construct southern portion of the temporary Detour Road including approximately one-half of the stream fording. Rock used to fill low areas in streambed shall be 3" minimum with no fines.
2. Remove 4 Macadamia Nut Trees
3. Remove Non-Macadamia Nut Trees within the work area.

PHASE 1A - CONSTRUCT DETOUR ROAD - SOUTH



Construction Tasks - Phase 1B

1. Construct northern portion of the temporary Detour Road including remainder of stream fording.
2. Remove 6 Macadamia Nut Trees.

PHASE 1B - CONSTRUCT DETOUR ROAD - NORTH

GENERAL NOTES:

1. Excavated material shall be hauled off site for disposal. Rock crushing is not allowed on site.
2. Sandbags shall be installed to contain the work area. Sandbags shall be stacked in alternating directions.
3. Stack sandbags to a minimum of 3' height downslope of contained work area.
4. Maintain a minimum of 20-foot wide of stream channel open to flow and clear from debris.
5. Work above the ordinary highwater mark shall resume when stream flows subside to levels that can be diverted by sandbags and do not significantly affect water quality as approved by the Engineer.
6. Upstream sample location shall be minimum 30' from the nearest work area of the project site.
7. Impact water sample station shall be 3' downslope from the nearest point of the silt fencing and sandbags.
8. Downstream water sample station shall be within 50' of the silt fencing/sandbags.
9. Fill material for sandbags and temporary construction access roads shall be clean granular material.
10. Runoff collected within contained areas shall be removed and disposed of off site with no impact to State waters.
11. Erosion control for road work and exposed embankments outside of stream channel shall consist of berms/sandbags top slope and silt fences bottom slope.

(Continued on next page)

LEGEND:

- Silt Fence 2' High with #4 Rebar Embeded 1' Minimum @ 18" O.C.
- Sandbags 1 layer High Minimum
- Sandbag Wall 3' Minimum High or Rigid Concrete Barrier Alt.
- Border of Work Area or Construction Parcel
- Ordinary Highwater Line
- Water Sampling Station
- Direction of Stream Flow
- Berm
- 3-24" Culvert

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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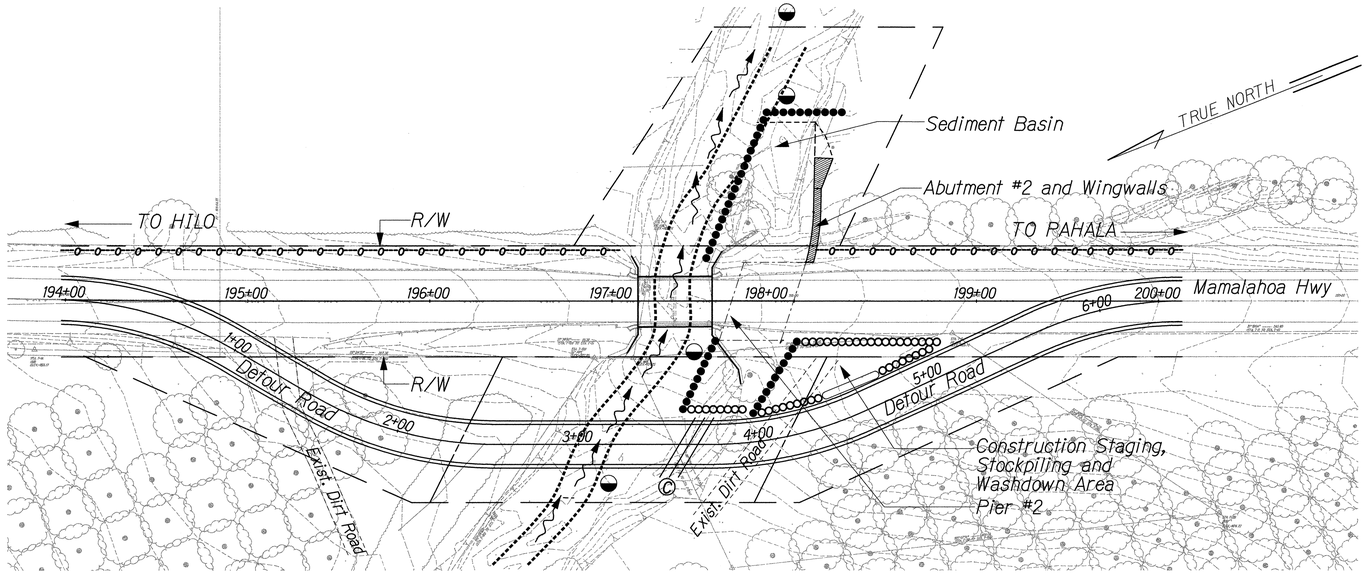
BMP PLANS

MAMALAHOA HIGHWAY, EMERGENCY
REPLACEMENT OF KAALAALA STREAM BRIDGE
FEDERAL-AID PROJECT NO. ER-12(2), PAHALA, HAWAII

Scale: 1" = 40' Date: February 20, 2001

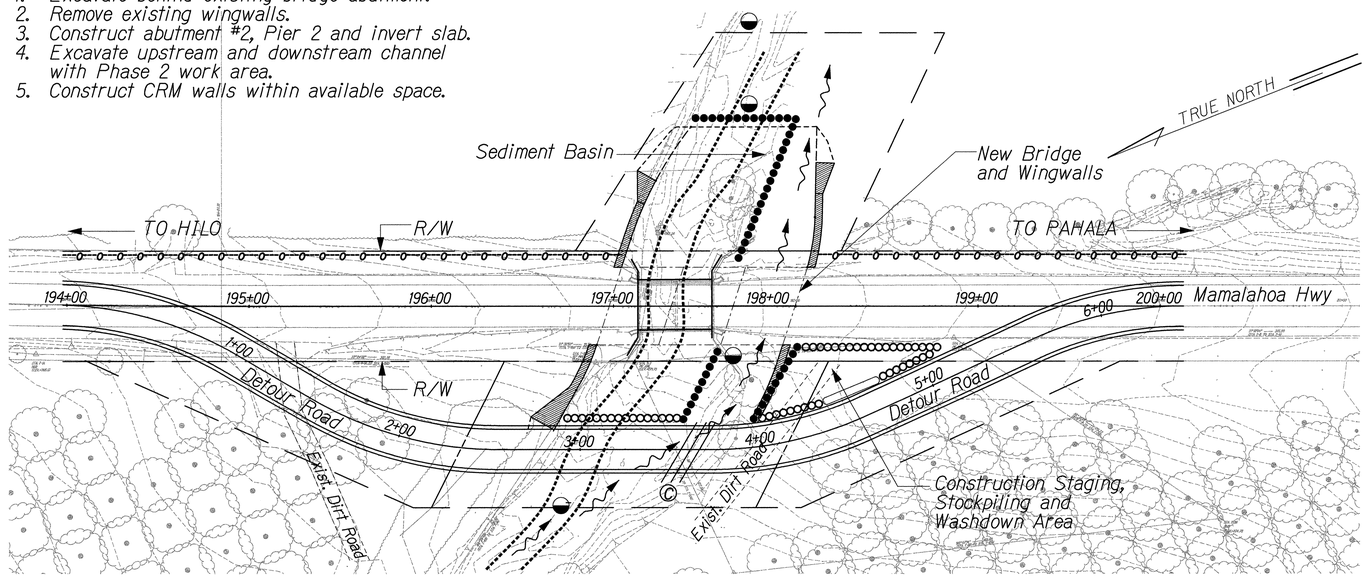
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-12(2)	2001	101	145



Construction Tasks - Phase 2

1. Excavate behind existing bridge abutment.
2. Remove existing wingwalls.
3. Construct abutment #2, Pier 2 and invert slab.
4. Excavate upstream and downstream channel with Phase 2 work area.
5. Construct CRM walls within available space.

PHASE 2 - CONSTRUCT BRIDGE - SOUTH



Construction Tasks - Phase 3

1. Divert stream to completed area.
2. Demolish existing bridge and abutments.
3. Complete bridge construction.
4. Complete stream excavation in available space.
5. Construct CRM Walls within available space.

PHASE 3 - CONSTRUCT BRIDGE - NORTH

(Continuation)

GENERAL NOTES:

12. Cleanup the contained work area then open minimum 20-foot wide channel.
13. Treated wood material is not permitted for forms and shoring within the stream channel.
14. Shoring can remain in place within the open channels as required by the Engineer.
15. BMP's are required for concrete placement at footings. Confine placement area with sandbags one layer high.
16. BMP's are required for Contractor's stockpile and staging area.
17. Any access to construction area or crane pad placed in the stream bed shall be constructed using clean 3" plus filler rock, shall not change the cross section of the stream, and will be completely removed after construction. Photographs will be submitted to the Engineer of pre-and-post-construction conditions. This work is incidental to the various items of work.
18. Sandbags will be placed outside any access to construction area as a first order of work.
19. Contractor shall hire a certified testing lab to conduct water sampling.
20. Traffic control necessary for the Contractor to install BMP shown on the BMP plans will be considered incidental to the BMP contract item.
21. Any concrete not part of the finished product that falls into the stream bed shall be removed by the Contractor at no cost to the State.

(Continued on next page)

LEGEND:

- Silt Fence 2' High with #4 Rebar Embeded 1' Minimum @ 18" O.C.
- Sandbags 1 layer High Minimum
- Sandbag Walls 3' Minimum High or Rigid Concrete Barrier Alt.
- Border of Work Area or Construction Parcel
- Ordinary Highwater Line
- Water Sampling Station
- Direction of Stream Flow
- Berm
- 3-24" Culvert

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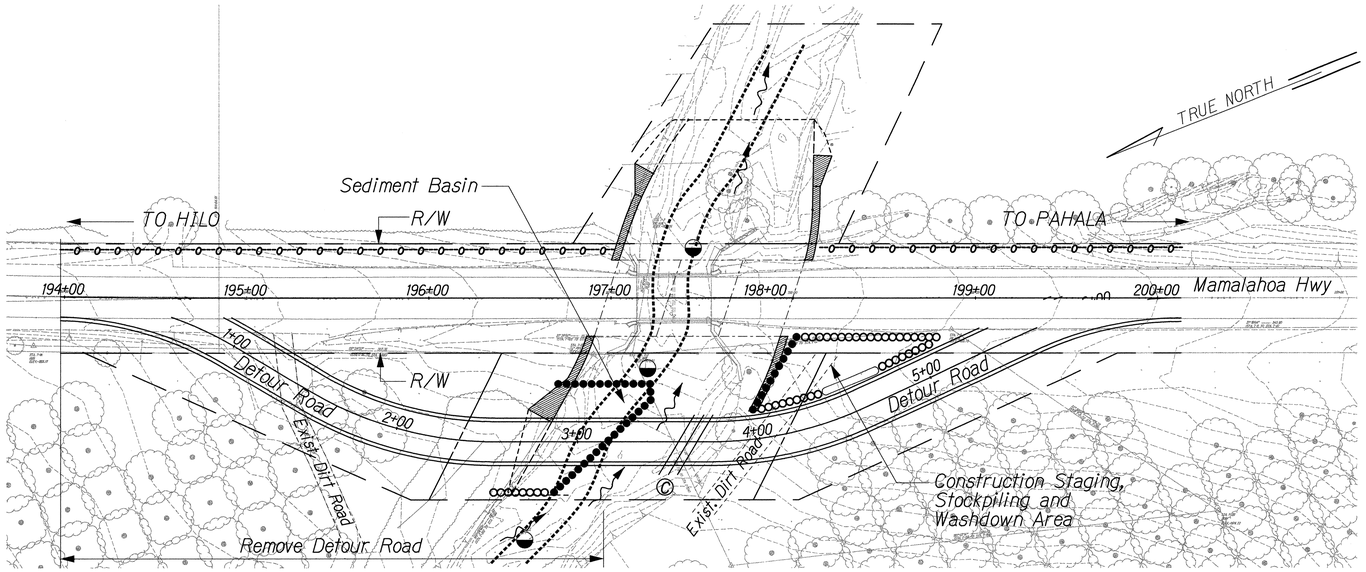
BMP PLANS

MAMALAHOA HIGHWAY, EMERGENCY
REPLACEMENT OF KAALAALA STREAM BRIDGE
FEDERAL-AID PROJECT NO. ER-12(2), PAHALA, HAWAII

Scale: 1" = 40' Date: February 20, 2001

SHEET No. BC7 OF 28 SHEETS

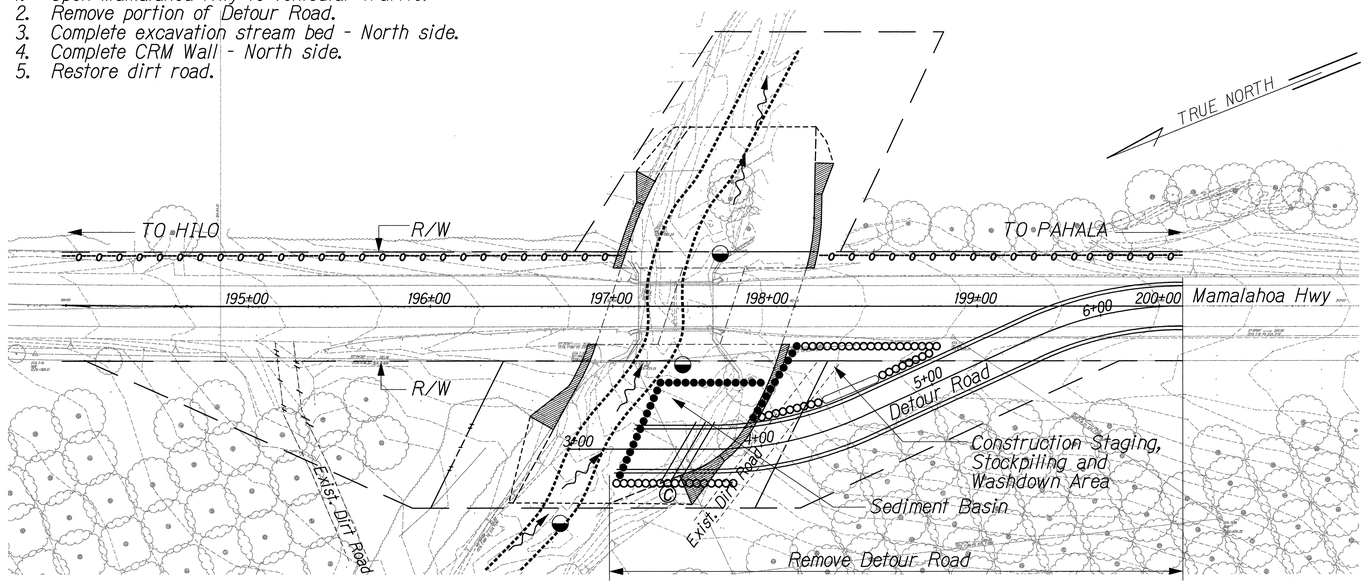
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-12(2)	2001	102	145



Construction Tasks - Phase 4A

1. Open Mamalahoa Hwy to vehicular traffic.
2. Remove portion of Detour Road.
3. Complete excavation stream bed - North side.
4. Complete CRM Wall - North side.
5. Restore dirt road.

PHASE 4A - REMOVE DETOUR ROAD - NORTH



Construction Tasks - Phase 4B

1. Remove remainder of detour road
2. Complete excavation of stream bed - South side.
3. Complete CRM Wall - South side.

PHASE 4B - REMOVE DETOUR ROAD - SOUTH

(Continuation)

GENERAL NOTES:

22. No leakage of water or material will be permitted from the Contractor's washdown area.
23. Vehicles or equipment parked or stored on site will be contained by sandbags 1 layer high minimum.
24. Use of stream channel as water treatment facility is prohibited.
25. Footing probe holes and grouting shall be done within sand bagged areas.
26. Any deviations from these BMP's shall be at Contractor's cost with no extension of contract time.

NOTES FOR DETOUR ROAD DEMOLITION/RESTORATION:

1. See General Notes Sheet Nos. BC6, BC7, and BC8.
2. The pavement shall be broken into particles as large as practical for loading into the truck.
3. Demolish embankment slopes with Class D concrete. Particles shall be as large as practical to avoid creating excess dust.
4. Load material to be removed from the Detour Road.
5. Rock lodged in crevices (Approximately 10% - 20%) of the embankment shall be removed manually.

LEGEND:

- Silt Fence 2' High with #4 Rebar Embeded 1' Minimum @ 18" O.C.
- Sandbags 1 layer High Minimum
- Sandbag Walls 3' Minimum High or Rigid Concrete Barrier Atl.
- Border of Work Area or Construction Parcel
- Ordinary Highwater Line
- Water Sampling Station
- Direction of Stream Flow
- Berm
- 3-24" Culvert

ORIGINAL PLAN
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HIGHWAYS DIVISION

BMP PLANS

MAMALAHOA HIGHWAY, EMERGENCY
REPLACEMENT OF KAALAALA STREAM BRIDGE
FEDERAL-AID PROJECT NO. ER-12(2), PAHALA, HAWAII

Scale: 1" = 40' Date: February 20, 2001

SHEET No. BC8 OF 28 SHEETS