

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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GENERAL NOTES

- All work, including all additional materials and labor required to complete this project; whether or not shown or called for, shall be considered incidental to the various contract items in the proposal, and no additional compensation will be allowed therefore.
- Existing facilities and/or improvements including, fencing, gates, guardrails, walls, vegetation which are damaged by the Contractor shall be restored to its original condition at the Contractor's expense.
- Contractor shall verify & investigate existing conditions at the site before proceeding with work and shall immediately report any discrepancy to the Engineer.
- The Contractor shall protect structures and property from damages during construction.
- Should the drawings disagree in themselves, the better quality or greater quantity of work or materials shall be estimated upon and unless otherwise ordered in writing shall be furnished.
- The Contractor and his Subcontractors shall, at intervals during the progress of work, remove and properly dispose of all accumulations of dirt, debris, trash, etc. outside the limits of the property. The cost shall be considered incidental to the various contract items.
- The Contractor shall observe and comply with all federal, State and local laws required for the protection of public health, safety and environmental quality.
- The Contractor, at his own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the air pollution standards and regulations of the State of Hawaii, Department of Health. The Government shall require supplementary measures, if necessary.
- No clearing or cutting of vegetation and no grading work will be allowed for this project.

WAILUA RIVER BRIDGES EMERGENCY SCOUR REPAIRS
SECTION 7 ENDANGERED SPECIES ACT (ESA), AND
MIGRATORY BIRD TREATY ACT (MBTA) AVOIDANCE,
MINIMIZATION AND MITIGATION MEASURES

The following mitigation measures will be implemented, at a minimum:

All ESA and MBTA Species:

- All on-site project personnel regardless of their project affiliation (contractor, subcontractor, County personnel) shall be apprised of the status of any protected species potentially present in the project area and the protections afforded to the species under federal law.
- The project foreman shall have in his or her possession at the jobsite a handout with photographs of protected species that may enter the project site to assist in identification of protected species.
- The project foreman shall designate an appropriate number of competent observers to survey the area adjacent to the proposed action for protected species prior to initiation of construction activities on a daily basis.

HAWAIIAN HAWK:

- Construction and repair activities will not occur within 1,600 feet of any Hawaiian hawk nest during the Hawaiian hawk breeding season (March through September). Project disturbance activities to begin in October and will be completed before March.
- If work must be conducted during the breeding season, a nest search of the project footprint and surrounding areas will be performed within 14 days prior to disturbance.
- There will be no clearing or pruning of vegetation.

SEABIRDS

- Construction activity shall be restricted to daylight hours during the seabird peak fallout period (September 15-December 15) to avoid the use of nighttime lighting that could attract seabirds. The limited temporary night time work outside of the peak seabird fallout period shall be shielded to prevent upward radiation and directed away from any nearby beach habitats.
- All outdoor lights shall be shielded to prevent upward radiation. This has been shown to reduce the potential for seabird attraction (Reed et al. 1985; Telfer et al. 1987). A selection of acceptable seabirdfriendly lights can be found online at the Kaua'i Seabird Habitat Conservation website (2013).

HAWAIIAN HOARY BAT (LASLURUS CINEREUS SEMOTUS)

- Any fences that are erected as part of the project shall have barbless wire to prevent entanglements of the Hawaiian hoary bat on barbed wire. No fences in the survey area were observed with barbed wire during the survey; however, if fences are present, the top strand of barbed wire shall be removed or replaced with barbless wire.
- No trees taller than 15 feet (4.6 m) shall be trimmed or removed as a result of this project between June 1 and September 15, when juvenile bats that are not yet capable of flying may be roosting in the trees.

NENE OR HAWAIIAN GOOSE (BRANTA SANVICENSIS)

- A qualified biologist shall survey the area for nesting nene before construction or as soon as the area is deemed safe and accessible (in coordination with the waterbird surveys), and after any subsequent delay in work of 3 or more days (during which birds may attempt nesting). The results of the pre-construction survey shall be submitted to the USFWS.
- If a nene is found in the area during ongoing activities, all activities within 100 feet (30 m) of the bird would cease, and the bird shall not be approached. If a nest is discovered, USFWS shall be notified. If a nest is not discovered, work may continue after the bird leaves the area of its own accord.
- All regular on-site staff shall be trained to identify nene and shall know the appropriate steps to take if nene are present on-site. Training would not be necessary if a biological monitor is present for the duration of the construction.
- Temporary construction fencing shall be erected around the Wailua River Bridges construction zones to minimize the potential for nene to enter the project zones.

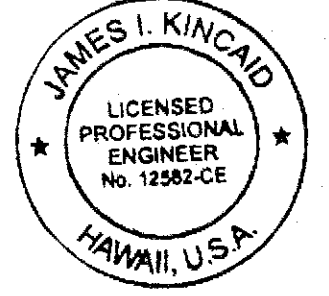
WATERBIRDS

- In areas where vegetated streambanks would be disturbed, waterbird nest searches shall be conducted by a qualified biologist before any work is conducted and after any subsequent delay in work of 3 or more days (during which birds may attempt nesting). For vegetated streambanks where emergency work has already been initiated, a qualified biologist shall survey the area as soon as the area is deemed safe and accessible. The results of the pre-construction survey shall be submitted to the USFWS.
- If a waterbird nest with eggs or chicks/ducklings is discovered in the construction limits, work shall not begin until the chicks/ducklings have fledged.
- Waterbird nests, chicks, or broods found in the survey area before or during construction shall be reported to the USFWS within 48 hours.
- A biological monitor shall be present on the project site during all construction activities to ensure that Hawaiian waterbirds and nests are not adversely impacted.

HAWAIIAN MONK SEAL (NEOMONACHUS SCHAUINSLANDI) AND SEA TURTLES

- All regular on-site staff shall be trained to identify the Hawaiian monk seal and sea turtles, and trained on appropriate steps to take if these species are present on-site.
- Construction activities shall not take place if a Hawaiian monk seal or sea turtle is in the construction area or within 150 feet (46 m) of the construction area. Construction can only begin after the animal voluntarily leaves the area. If a monk seal/pup pair is present, a minimum 300-foot (91-m) buffer shall be observed. If a Hawaiian monk seal or sea turtle is noticed after work has already begun, that work may continue only if, in the best judgment of the biological monitor, that there is no way for the activity to adversely affect the animal(s).
- Any construction-related debris that may pose an entanglement threat to Hawaiian monk seals and sea turtles shall be removed from the construction area at the end of each day and at the conclusion of the construction project.
- Workers shall not attempt to feed, touch, ride, or otherwise intentionally interact with any listed species.
- Shielded lighting shall be used to reduce direct and ambient light to potential nearby beach habitat. Lighting shall be directed away from the beach.
- In-water work at night shall be avoided, unless emergency maintenance and repair of erosion and sediment controls are necessary to meet permit conditions.

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WAILUA RIVER BRIDGES EMERGENCY REPAIRS
SECTION 7 ENDANGERED SPECIES ACT (ESA), AND
MIGRATORY BIRD TREATY ACT (MBTA) AVOIDANCE.
MINIMIZATION AND MITIGATION MEASURES (CONT.)

Hawaiian Monk Seal (*Neomonachus Shauinslandi*) and Sea Turtles:

- Any construction-related debris that may pose an entanglement threat to Hawaiian monk seals and sea turtles would be removed from the construction area at the end of each day and at the conclusion of the construction project.
- Workers would not attempt to feed, touch, ride, or otherwise intentionally interact with any listed species.
- Shielded lighting would be used to reduce direct and ambient light to potential nearby beach habitat. Lighting would be directed away from the beach.
- All project-related materials and equipment placed in the water should be free of pollutants.
- No project-related materials (fill, revetment rock, pipe, etc.) should be stockpiled in the water (intertidal zones, reef flats, stream channels, etc.).
- No contamination (trash or debris disposal, alien species introductions, etc.) of marine environments (reef flats, lagoons, open ocean, etc.) adjacent to the project site should result from project-related activities.
- Fueling of project-related vehicles and equipment should take place away from the water. A contingency plan to control the accidental spills of petroleum products at the construction site should be developed.
- Absorbent pads, containment booms, and skimmers will be stored on-site to facilitate the cleanup of petroleum spills.
- Return flow or run-off from material stored at inland dewatering or storage sites should be prevented.

For Aquatic Ecosystems:

- Best Management Practices (BMPs), as advised in the USFWS Recommended Aquatic Best Management Practices information sheet, shall be incorporated to minimize water quality degradation and minimize the impacts to fish and wildlife resources.

Essential Fish Habitat

- Contractor shall conduct a pre-construction biological survey to determine whether infrastructure materials (e.g., riprap, piles, boulders) are colonized with benthic communities. If infrastructure materials (e.g., riprap, piles, boulders) that are colonized with benthic communities will be removed or destroyed as part of permitted activities, Contractor shall prepare relocation plan for HDOT approval, and then relocate these materials to an appropriate receiving site.
- Perform work outside of the main coral spawning period in summer (May to August) to minimize sedimentation and turbidity affects to coral eggs and larvae in the area. Work will occur between October and March.

BMPs to Minimize the Introduction and Spread of New Invasive Species:

- To avoid the unintentional introduction or transport of new terrestrial invasive species, all construction equipment and vehicles arriving from outside Kaua'i shall be washed and inspected before entering the project area. In addition, construction materials arriving from outside Kaua'i shall also be washed and/or visually inspected (as appropriate) for excessive debris, plant materials, and invasive or harmful non-native species (plants, amphibians, reptiles, and insects). When possible, raw materials (gravel, rock, and soil) shall be purchased from a local supplier on Kaua'i to avoid introducing non-native species not present on the island. Inspection and cleaning activities shall be conducted at a designated location.
- All materials imported to the project site, including gravel, soil, rock, sand, and construction materials and forms, should be free of invasive species. Invasive species found on stockpiled materials should be removed mechanically.
- The area beyond the construction limits will not be disturbed. Trees, shrubs or vegetated areas temporarily damaged by construction operations will be re-vegetated.
- Temporarily disturbed areas shall be revegetated with non-invasive plant species appropriate for the project area.

WATER POLLUTION AND EROSION NOTES

A. GENERAL:

- See Special Provisions Section 209 - Water Pollution and Erosion Control. 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. In addition, Appendix A lists potential pollutant sources and corresponding BMPs used to mitigate the pollutants.
- Follow the guidelines in the current HDOT Construction Best Management Practices Field Manual in developing, installing and maintaining the Best Management Practices (BMP) for the project. Should a requirement not be clearly described within the applicable documents, the Contractor shall notify the Engineer immediately for interpretation. For the purposes of clarification under Note A2, "applicable documents" include the construction plans, standard specifications, Special Provisions, Permits, and the Storm Water Pollution Prevention Plan (SWPPP) when applicable.
- Follow the guidelines in the Honolulu's City & County "Rules Relating to Soil Erosion Standards and Guidelines" along with applicable Soil Erosion Guidelines for projects on Maui, Molokai, Kauai, and Hawaii.
- The Engineer may assess liquidated damages of up to \$27,500 for non-compliance of each BMP requirement and each requirement stated in Section 209 and special provisions, for every day of non-compliance. There is no maximum limit on the amount assessed per day.
- 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 County of Hawaii for the full amount of the outstanding cost incurred by the County of Hawaii.
- Submit Site-Specific BMP Plan to the Engineer along with a completed Site-Specific BMP Review Checklist within 30 calendar days of contract execution. The Site-Specific BMP Review Checklist may be obtained from <http://www.stormwaterhawaii.com>.

B. WASTE DISPOSAL:

1. Waste Materials:

Collect and store all waste materials in a securely lidded metal dumpster or roll off container with cover to keep rain out or loss of waste during windy conditions. The dumpster shall meet all local and State solid waste management regulations. Deposit all trash and construction debris from the site in the dumpster. Empty the dumpster weekly or when the container is two-thirds full, whichever is sooner. Do not bury construction waste materials onsite. The Contractor's supervisory personnel shall be instructed regarding the correct procedure for waste disposal. Post notices stating these practices in the office trailer, on a weatherproof bulletin board, or other accessible location acceptable to the Engineer. The Contractor shall be responsible for seeing that these procedures are followed. Submit the Solid Waste Disclosure Form for Construction Sites to the Engineer within 30 calendar days of contract execution. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer monthly. This should also include documentation from any intermediary facility where solid waste is handled or processed.

2. Hazardous Waste:

Dispose all hazardous waste materials in the manner specified by local or State regulations and 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.

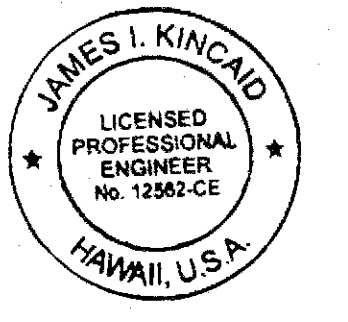
3. Sanitary Waste:

Collect all sanitary waste from the portable units a minimum of once per week, or as required. Position sanitary facilities where they are secure and will not be tipped over or knocked down.

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

- For projects with an NPDES Permit for Construction Activities, inspect at the following intervals. For construction areas discharging to nutrient or sediment impaired waters, inspect all control measures at least once each week and within 24 hours of any rainfall event of 0.25 inches or greater within a 24-hour period. For construction areas discharging to waters not impaired for nutrient or sediments, inspect all control measures weekly. Inspections are only required during the project's normal working hours. The discharge point water classification may be found in the SWPPP.
- For projects without an NPDES Permit for Construction Activities, inspect all control measures weekly.

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WATER POLLUTION AND EROSION NOTES (CONTINUED)

C. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

3. Maintain all erosion and sediment control measures in good working order. If repair is necessary, initiate repair immediately and complete by the close of the next work day if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance. When installation of a new erosion or sediment control or a significant repair is needed, install the new or modified control or complete the repair no later than 7 calendar days from the time of discovery. "Immediately" means the Contractor shall take all reasonable measures to minimize or prevent discharge of pollutants until a permanent solution is installed and made operational. If a problem is identified at a time in the day in which it is too late to initiate repair, initiation of repair shall begin on the following work day.
4. Remove built-up sediment from silt fence when it has reached one-third the height of the fence. Remove sediment from other perimeter sediment control devices when it has reached one-half the height of the device.
5. Inspect silt screen or fence 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. Inspect and verify the bottom of the silt screen is buried a minimum of 6 inches below the existing ground.
6. Inspect temporary and permanent seeding and planting for bare spots, washouts and healthy growth.
7. Complete and submit to the Engineer a maintenance inspection report within 24 hours after each inspection.
8. Provide a stabilized construction entrance at all points of exit onto paved roads to reduce vehicle tracking of sediments. Include stabilized construction entrance in the Water Pollution, Dust, and Erosion Control submittals. Minimum length should be 50 feet. Minimum width should be 30 feet. Minimum depth should be 12 inches or as recommended by the soils engineer and underlain with geotextile fabric. If minimum dimensions cannot be met, provide other stabilization techniques that remove sediment prior to exit. Clean the paved street adjacent to the site entrance daily or as required to remove any excess mud, cold-planed materials, dirt or rock tracked from the site. Do not hose down the street without containing or vacuuming wash water. Cover dump trucks hauling material from the construction site with a tarpaulin. Remove sediment tracked onto the street, sidewalk, or other paved area by the end of the day in which the track-out occurs.
9. Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control submittals.
10. Submit the name of a specific individual designated responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
11. Personnel selected for the inspection and maintenance responsibilities shall receive training from the Contractor. They shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.
12. Contain, remove, and dispose slurry generated from saw cutting of pavement in accordance with approved BMP practices. Do not allow discharge into the drainage system or State waters.

For projects with an NPDES Permit for Construction Activities, immediately initiate stabilizing exposed soil areas upon completion of earth-disturbing activities for areas where earth-disturbing activities have permanently or temporarily ceased. Earth-disturbing activities have permanently ceased when clearing and excavation within any area of the construction site that will not include permanent structures has been completed. Earth-disturbing activities have temporarily ceased when clearing, grading, and excavation within any area of the site that will not include permanent structures will not resume (i.e., the land will be idle) for a period of 14 or more calendar days, but such activities will resume in the future. For construction areas discharging into waters not impaired for nutrients sediments, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities. For construction areas discharging into nutrient or sediment impaired waters, complete initial stabilization within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities. Classification of water at the discharge point may be found in the SWPPP.

14. For projects without an NPDES Permit for Construction Activities, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities.

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

1. Materials Pollution Prevention Plan
 - a. Applicable materials or substances listed below are expected to be present onsite during construction. Other materials and substances not listed below shall be added to the inventory.
 - i. Concrete
 - ii. Detergents
 - iii. Paints (enamel and latex)
 - iv. Metal Studs
 - v. Tar
 - vi. Fertilizers
 - vii. Cleaning solvents
 - viii. Wood
 - ix. Masonry Block
 - x. Herbicides and Pesticides
 - xi. Curing Compounds
 - xii. Adhesives
 - xiii. Petroleum Based Products
 - b. Use Material Management Practices to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff. Make an effort to store only enough product as is required to do the job.
 - c. Store all materials stored onsite in a neat, orderly manner in their appropriate containers and if possible under a roof or other enclosure.
 - d. Keep products in their original containers with the original manufacturer's label.
 - e. Do not mix substances with one another unless recommended by the manufacturer.
 - f. Whenever possible, use a product up completely before disposing of the container.

- g. Follow manufacturer's recommendations for proper use and disposal.
- h. Conduct a daily inspection to ensure proper use and disposal of materials onsite.

2. Hazardous Material Pollution Prevention Plan

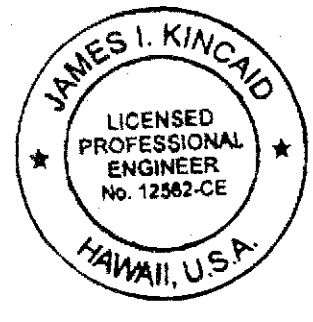
- a. Keep products in original containers unless they are not resealable.
- b. Retain original labels and Safety Data Sheets (SDSJ, formerly Material Safety Data Sheets (MSDS).
- c. Dispose of surplus products according to manufacturers' instructions and local and State regulations.

3. Onsite and Offsite Product Specific Plan

The following product specific practices shall be followed onsite:

- a. Petroleum Based Products:
Monitor all onsite vehicles for leaks and perform regular preventive maintenance to reduce the chance of leakage. Store petroleum products in tightly sealed containers which are clearly labeled. Apply asphalt substances used onsite according to the manufacturer's recommendation.
- b. Fertilizers:
Apply fertilizers used only in the minimum amounts recommended by the manufacturer and federal, state, and local requirements. Avoid applying just before a heavy rain event. Apply at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth. Once applied, work fertilizer into the soil to limit exposure to storm water. Do not apply to storm conveyance channels with flowing water. Storage shall be in a covered shed or in an area where fertilizer will not come into contact with precipitation or stormwater. Transfer the contents of any partially used bags of fertilizer to a sealable plastic bin to avoid spills.
- c. Paints:
Seal and store all containers when not required for use. Do not discharge excess paint to the drainage system, sanitary sewer system, or State waters. Dispose properly according to manufacturers' instructions and State and local regulations.
- d. Concrete Trucks:
Washout or discharge concrete truck drum wash water only at a designated site as far as practicable from storm drain inlets or State waters. Do not discharge water in the drainage system or State waters. Disposal by percolation is prohibited. Clean disposal site as required or as requested by the Engineer.

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WATER POLLUTION AND EROSION NOTES (CONTINUED)

D. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES (CONTINUED):

4. Spill Control Plan

- a. Post a spill prevention plan to include measures to prevent and clean up each occurrence.
- b. The Contractor shall be the spill prevention and cleanup coordinator. 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. Post the names of responsible spill personnel in the material storage area on a weatherproof bulletin board or other accessible location acceptable to the Engineer and in the office trailer onsite.
- c. Clearly post manufacturers' recommended methods for spill cleanup. Make site personnel aware of the procedures and the location of the information and cleanup supplies.
- d. Keep ample materials and equipment necessary for spill cleanup in the material storage area onsite.
- e. Clean up all spills immediately after discovery.
- f. Keep the spill area well ventilated. Personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- g. Report spills of toxic hazardous material to the appropriate State or local government agency, regardless of the size. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, the Contractor shall notify the Engineer as soon as the Contractor has knowledge of the discharge. The Engineer will notify the National Response Center (NRC) at (800) 424-8802, the Clean Water Branch during regular business hours at 586-4309, and the Hawaii State Hospital Operator at 247-2191 and the Clean Water Branch (DOH-CWB) via email at cleanwaterbranch@doh.hawaii.gov during non-business hours immediately. The Contractor shall also provide to the Engineer, within 7 calendar days of knowledge of the release, a description of the release, the circumstances leading to the release, and the date of the release. The Engineer will provide this information to the DOH-CWB. The Engineer will provide information to the NRC if requested.

E. SITE-SPECIFIC BMP REQUIREMENTS:

Each BMP below is referenced to the corresponding section of the current HDOT Construction Best Management Practices Field Manual and appropriate Supplemental Sheets. The Manual may be obtained from the HDOT Statewide Stormwater Management Program Website at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/> under Construction Best Management Practices Field Manual. Supplemental BMP sheets are located at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/> under Concrete Curing and Irrigation Water.

The requirements for Water Pollution, Dust, and Erosion Control submittals are included in Section 209 of the Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and applicable Special Provisions. A list of pollutant sources and corresponding BMP used to mitigate the pollutants are included in Section 209 of the Special Provisions under Appendix A.

Follow the requirements below:

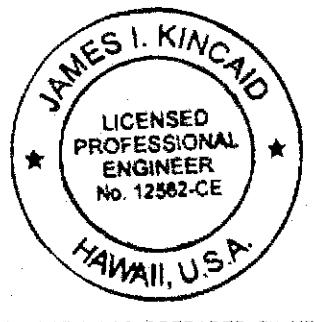
- 1. Protect all Drainage Inlets receiving runoff from disturbed areas (SC-2).
- 2. Contain on-site runoff using Perimeter Sediment Controls
 - a. SC-1 Silt Fence or Filter Fabric Fence
 - b. SC-5 Vegetated Filter Strips and Buffers
 - c. SC-8 Compost Filter Berm
 - d. SC-13 Sandbag Barrier
 - e. SC-14 Brush or Rock Filter
- 3. Control offsite runoff from entering construction area
 - a. EC-8 Run-On Diversion
 - b. SC-6 Earth Dike
 - c. SC-7 Temporary Drains and Swales
- 4. Incorporate applicable Site Management BMP
 - a. SM-1 Employee Training
 - b. SM-2 Material Delivery and Storage
 - c. SM-3 Material Use
 - d. SM-4 Protection of Stockpiles
 - e. SM-6 Solid Waste Management
 - f. SM-7 Sanitary/Septic Waste Management
 - g. SM-9 Hazardous Waste Management
 - h. SM-10 Spill Prevention and Control
 - i. SM-11 Vehicle and Equipment Cleaning
 - j. SM-12 Vehicle and Equipment Maintenance
 - k. SM-13 Vehicle and Equipment Refueling
 - l. SM-14 Scheduling
 - m. SM-15 Location of Potential Sources of Sediment
 - n. SM-16 Preservation of Existing Vegetation
 - o. SM-18 Dust Control
- 5. Contain pollutants within the Construction Staging/Storage Area BMP with applicable Perimeter Sediment Controls and Site Management BMP. Include a Stabilized Construction Entrance/Exit (EC-2) for all areas which exit onto a paved street. Restrict vehicle access to these points.
- 6. Manage Concrete Waste including installing a Concrete Washout Area (SM-5) and properly disposing of Concrete Curing Water (California Stormwater BMP Handbook NS-12 Concrete Curing).

Water Quality

In addition to the above measures, the following BMPs shall be implemented to protect water quality, as recommended by the NMFS Protected Resources Division (NOAA NMFS 2015a) and USFWS (USFWS 2014b). The applicability of these measures to the proposed project shall depend on the site-specific construction means and methods chosen. The project shall also adhere to the requirements of all applicable permits.

- 1. Turbidity and siltation from project-related work shall be minimized and contained through the appropriate use of erosion control practices, effective silt containment devices, and the curtailment of work during adverse weather and tidal/flow conditions.
- 2. Erosion and sediment control measures shall be in place before initiating earth-moving activities. Functionality shall be maintained throughout the construction period. For earth-moving activities initiated to address imminent health and safety concerns, erosion and sediment control measures shall be in place as soon as practicable.
- 3. When it is not possible to schedule work to avoid times of the year when high rainfall is expected, then enhancing the capacity of existing controls, adding additional control measures, or installing contingency measures shall be implemented.
- 4. Inspection shall be documented, and records for all inspections and repairs shall be maintained on-site. When a device proves inadequate, it shall be immediately redesigned or replaced until it is effective.
- 5. Control measures (i.e., silt fences, sand bag barriers, sediment traps, geotextile mats, and other measures intended for soil/sediment trapping) shall be inspected and repaired as needed within 24 hours after a rainfall event of 0.25 inch or greater over a 24-hour period. During periods of prolonged rainfall, a daily inspection shall occur, unless extended heavy rainfall makes access impossible or hazardous.
- 6. Construction shall be sequenced to minimize the exposure time of the cleared surface area.
- 7. The contractor shall be required to prepare a spill prevention, control and countermeasure (SPCC) plan before beginning work or as soon as practicable. The SPCC shall describe preventative measures including the location of refueling and storage facilities and the handling of hazardous material. The SPCC shall describe actions to be taken in case of a spill. Hazardous materials shall be properly stored and managed in accordance with local, state, and Federal regulations.
- 8. Appropriate materials to contain and clean potential spills shall be stored at the work site and be readily available. Spill kits shall be available on-site at locations where hazardous materials are used. Spill kits shall be inspected regularly and supplies replaced as needed. Staff shall be trained on spill prevention and cleanup.

AS-BUILT

 <p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.</p> <p>SIGNATURE: <i>James I. Kincaid</i> EXPIRATION DATE OF THE LICENSE: _____</p>	<p>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</p> <p>GENERAL NOTES</p> <p>WAILUA RIVER</p> <p>SCOUR COUNTERMEASURES</p> <p>Proj. No. ER-19(009)</p> <p>Scale: None Date: Oct. 26, 2018</p>
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DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
IN CHARGE	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
NO.	_____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-19 (009)	2018	6	29

WATER POLLUTION AND EROSION NOTES (CONTINUED)

WATER QUALITY

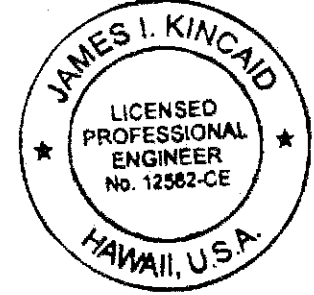
9. Absorbent pads shall be stored on-site to facilitate the cleanup of petroleum spills. At fueling sites, containment booms and skimmers shall be stored, in addition to absorbent pads.
10. Return flow or run-off from material stored at inland dewatering or storage sites shall be prevented.
11. All project-related materials and equipment placed in the water shall be free of pollutants.
12. The project manager or heavy equipment operators shall perform daily pre-work equipment inspections for cleanliness and leaks. All heavy equipment operations shall be postponed or halted should a leak be detected, and they shall not proceed until the leak is repaired and the equipment is cleaned.
13. Fueling of land-based vehicles and equipment shall take place at least 50 feet (15.24 m) away from the water, preferably over an impervious surface. Fueling of vessels shall be done at approved fueling facilities.
14. Portable toilets for sanitary waste management shall be serviced regularly.
15. A plan shall be developed to prevent debris and other wastes from entering or remaining in the marine environment during the project.
16. No project-related materials (fill, revetment rock, pipe, etc.) shall be stockpiled in the water.
17. (intertidal zones, reef flats, stream channels, wetlands, etc.) or on beach habitats.
18. No contamination (trash or debris disposal, invasive species introductions, attraction of non-native pests, etc.) of adjacent habitats (reef flats, channels, open ocean, stream channels, wetlands, beaches, forests, etc.) shall result from project-related activities.
19. Any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric etc.) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydroseeding, etc.).
20. All debris removed from the marine/aquatic environment shall be disposed of at an approved site. Solid waste and construction and demolition debris shall be properly managed.
21. Clearing and grubbing shall be held to the minimum necessary for grading, access, and equipment operation.
22. Revegetation success shall be monitored to ensure sufficient vegetation cover has established. Relevant erosion and sediment control BMPs shall not be removed until sufficient vegetative cover is re-established. If vegetation fails to establish, corrective actions shall be taken where necessary.
23. Concrete wash-outs shall be located 50 feet from storm drain inlets, open drainage areas, and waterbodies, and shall be maintained as needed.

24. All in-water work areas shall be isolated and confined from open water habitats through the use of approved isolation techniques including filter fabrics, turbidity curtains, K-rails, Cofferdams, Sheet Piles, Gravel/Rock berms, Gravel/Sandbag berms, Stream diversions (Pumped, pipe/flume, or excavated) or other approved means. Frequent inspections of these BMPs shall be conducted to determine if devices are operating effectively. When a device proves inadequate, work shall cease and it shall be immediately redesigned or replaced until it is effective.
25. Flow around the isolated and confined in-water work area shall be unimpeded to allow for aquatic animal migration and/or to prevent downstream flooding situations. The unimpeded flow shall be equivalent to a two (2) year, 24 hour duration storm event and/or the existing flow capacity of the stream, ditch, or gulch.
26. In addition to diversion and isolation of the project area, dewatering of work zones shall also be completed. Dewatering shall follow the procedures outlined in SM-17 of the 2008 HDOT Construction BMP Field Manual and Section 208 of the FP-14. Treatment of dewatering effluent shall conform to Federal, state, and local regulations.

CONCRETE PUMPING GENERAL NOTES

1. Concrete nozzle to extend sufficiently into the fill ports of the grout bags and secured to prevent leakage or blowouts.
2. Once the bag is full, all of the fill ports are to be close/tied-off to avoid concrete leakage.
3. Contractor to secure bag to prevent rolling or movement during concrete pumping and/or from higher water velocities/flow.
4. The grout bags should be flat (not full of water) when filling bags with concrete. Prior to pumping concrete into the bags, make all efforts to ensure that the bag is not full of water.

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SURVEY PLATTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	