FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(125)	2011	6	55

WATER POLLUTION AND EROSION CONTROL NOTES:

A. GENERAL:

1. See 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.
2. Effective October 1, 2008, follow the guidelines in the "Construction Best Management Practice Field Manual", dated January 2008 in developing, installing and maintaining the Best Management Practices (BMP) for the project.
3. 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.
4. 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, for every with day of non-compliance. There is no maximum limit on the amount assessed per day.
5. 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.
6. For projects that require an NPDES Permit from the Department of Health, install a rain gage prior to any field work including the installation of any site-specific best management practices. The rain gage shall have a tolerance of at least 0.05 inches of rainfall, and have an opening of at least one-inch in diameter. Install the rain gage on the project site in an area that will not deter rain from entering the gage opening. The rain gage installation shall be stable and plumbed. Do not begin field work until the rain gage is installed and site-specific best management practices are in-place.

B. WASTE DISPOSAL:

1. Waste Materials
   Collect all waste materials in a in a securely lidded metal dumpster. The dumpster shall meet all local and State solid waste management regulations. Deosit all trash and construction debris from the site in the dumpster. The dumpster shall be emptied a minimum of twice per week or as often as is deemed necessary. 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 shall be posted in the office trailer and the Contractor shall be responsible for seeing that these procedures are followed.
2. Hazardous Waste
   Dispose hazardous waste materials in a 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.

C. EROSION & SEDIMENT CONTROL INSPECTION & MAINTENANCE PRACTICES:

1. Inspect all control measures shall at least once each week and within 24 hours of any rainfall event of 0.5 inches or greater within a 24 hour period.
2. Maintain all measures in good working order. If repair is necessary, it shall be initiated within 24 hours after the inspection.
3. Remove built-up sediment from silt fence when it has reached one-third the height of the fence.
4. 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.
5. Inspect temporary and permanent seeding and planting for bare spots, washouts and healthy growth.
6. Make a maintenance inspection report promptly after each inspection. Submit a copy to the Engineer no later than one week from the date of the inspection.
7. Provide a stabilized construction entrance 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 geo-textile fabric. Clean the paved street adjacent to the site entrance daily or as required to remove any excess mud, cold planed material, dirt or rock tracked from the site. Cover dump trucks hauling material from the construction site with a tarpaulin.
8. Include designated Concrete Washout Area(s) in the Water Pollution, Dust, and Erosion Control submittals
9. Submit the name of a specific individual designated responsible for inspections, maintenance and repair activities and filling out the inspection and maintenance report.
10. 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.
11. Contain, remove and dispose of slurry generated from saw cutting of pavement in accordance with approved BMP practices. Payment for confinement, removal and disposal of slurry shall be considered incidental to the various contract items.

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.

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

   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, a product shall be used 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 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:
      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. 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 highway drainage system. Dispose properly according to manufacturers' instructions or State and local regulations.
   d. Concrete Trucks:
      Wash out or discharge concrete truck drum wash water at a designated site. Do not discharge water in the highway drainage system or waters of the United States. Contact Drinking Water Branch, Department of Health at 586-4258 to receive permission to designate a disposal site. Clean disposal site as required or as requested by the Owner's representative.

4. Spill Control Plan

   a. Post a spill prevention plan to include measures to prevent and clean up each spill.
   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 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 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.

E. PERMIT REQUIREMENTS:

1. The Engineer has obtained the Notice of General Permit Coverage (NGPC), National Pollutant Discharge Elimination System (NPDES) from the State of Hawaii, Department of Health (DOH), Clean Water Branch (CWB) for the discharge of stormwater associated with construction activity (File No. HI R10D388). The Contractor shall comply with all requirements and conditions of the NGPC, including but not limited to preparing and submitting an updated construction schedule, erosion and sediment control plan and site-specific construction BMP plan.
2. The Engineer has obtained a NGPC, NPDES from the State of Hawaii, DOH-CWB for the discharge of construction activity dewatering (File No. HI 09GD389). The Contractor shall comply with all requirements and conditions of the NGPC, including but not limited to preparing and submitting an updated construction schedule, site-specific dewatering plan, site-specific dewatering system maintenance plan and site-specific construction pollution prevention plan.
3. Comply with all applicable City, State and Federal Permit conditions. Permits may include but are not limited to the following:
   a. NPDES Permit for Construction Activities
   b. NPDES Permit for Construction Dewatering
   c. Section 401 Water Quality Certification
   d. Stream Channel Alteration Permit
   e. Section 404 Army Corps of Engineer Permit
   f. Coastal Zone Management Federal Consistency Review
   g. Grading Permit

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Russell M. Arakaki — APRIL 30, 2012
ParEn, Inc. dba PARK ENGINEERING — LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WATER POLLUTION AND EROSION CONTROL NOTES

CASTLE HILLS ACCESS ROAD
Drainage Improvements, Phase 2
FEDERAL-AID PROJECT NO. STP-0300(125)

Scale: None — Date: December 2011

SHEET No. EC1 OF EC4 SHEETS

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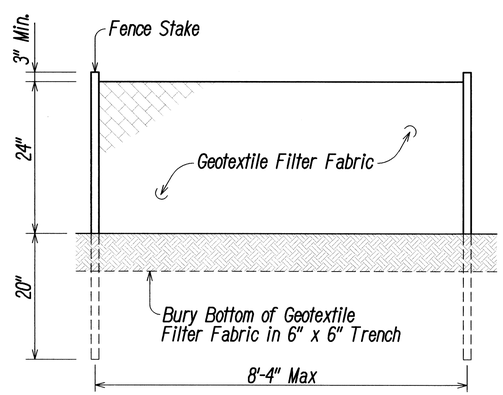

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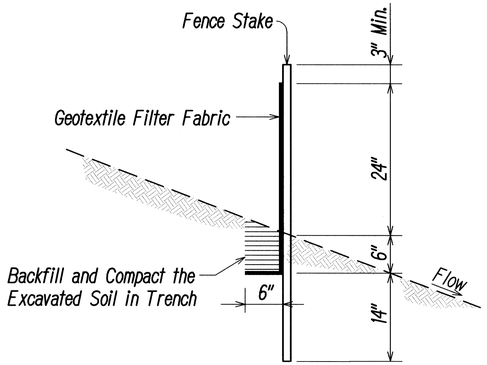


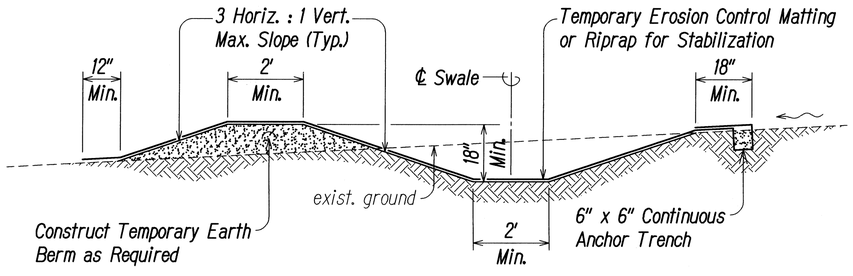
SECTION

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 anticipated loads.

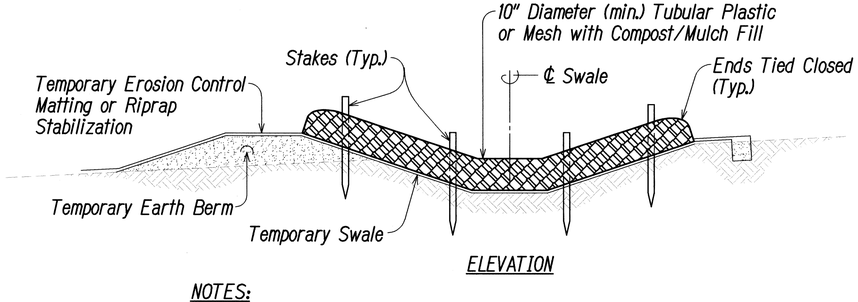
TYPICAL SILT FENCE DETAIL — 1 — C1.3 | EC2

NOT TO SCALE



TYPICAL SECTION TEMPORARY SWALE — 2 — C1.3 | EC2

NOT TO SCALE



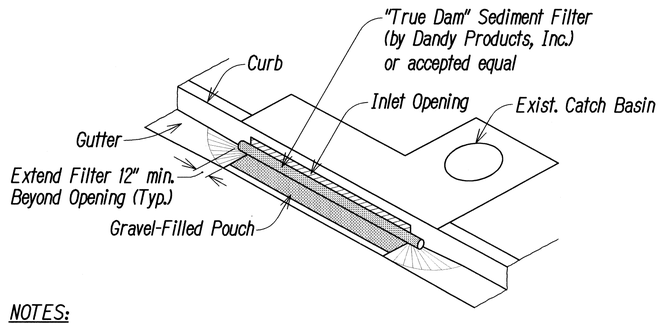
ELEVATION

NOTES:

1. See Detail SC-8 of the "Construction Best Management Practices Field Manual" dated January 2008
2. Stake Filter Sock per Manufacturer's Requirements.

COMPOST FILTER BERM (FILTER SOCK) — 3 — C1.3 | EC2

NOT TO SCALE

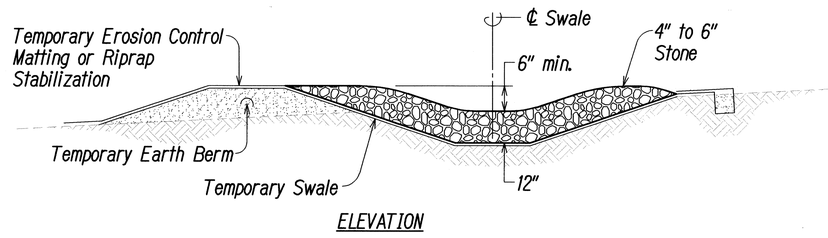


NOTES:

1. Sediment control filters shall be installed and maintained at all designated existing catch basins at the project site. It shall also be installed at catch basin downstream of the projects site on Pilina Way and Kupohu Street.
2. The contractor shall remove filters at times of above normal rainfall events and replace them when the event has passed.

SEDIMENT CONTROL FILTER AT CATCH BASIN — 4 — C1.3 | EC2

NOT TO SCALE



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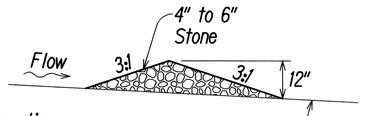


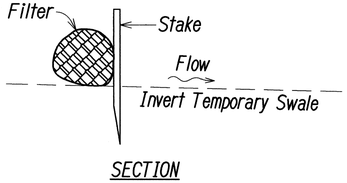
SECTION

NOTE:

See Detail SC-8 of the "Construction Best Management Practices Field Manual" dated January 2008

STONE CHECK DAM — 5 — C1.3 | EC2

NOT TO SCALE



SECTION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(125)	2011	7	55

BEST MANAGEMENT PRACTICES (BMP's) NOTES:

1. The Contractor shall install the erosion control measures at the locations shown, or as directed by the Engineer, as soon as practicable.
2. The stabilized construction entrance (ingress and egress) shall be constructed with 12" min. thick crushed rock (#2 coarse) layer over geotextile fabric (Geotex 250ST or accepted equal) to the dimensions and at the locations shown on the erosion control plan. Should the Contractor require an ingress and egress other than what is shown on the plans, the Contractor shall be responsible to obtain all necessary approvals, including relocating the crushed rock area as required.
3. Slopes and exposed areas shall be sodded or planted as soon as final grades have been established. Planting shall not be delayed until all grading has been completed. Grading to final grade shall be continuous and any area within which work has been interrupted or delayed shall be planted.
4. All Best Management Practices (BMP's) shall not be removed until all permanent erosion control controls are in place and established.
5. The Contractor shall cover the openings to all existing and proposed storm drain inlets with a filter system until permanent ground cover is established. Maintenance of inlet filters by the Contractor shall be included for the duration of the project.
6. At the ending of grading operations, existing storm drain inlets and manholes surrounding the project site shall be inspected and any accumulated sediment and debris found in the drain structures shall be removed. Flushing into the inlets and manholes is prohibited.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BMP NOTES AND DETAILS

CASTLE HILLS ACCESS ROAD
Drainage Improvements, Phase 2
FEDERAL-AID PROJECT NO. STP-0300(125)

Scale: As Shown Date: December 2011

SHEET No. EC2 OF EC4 SHEETS

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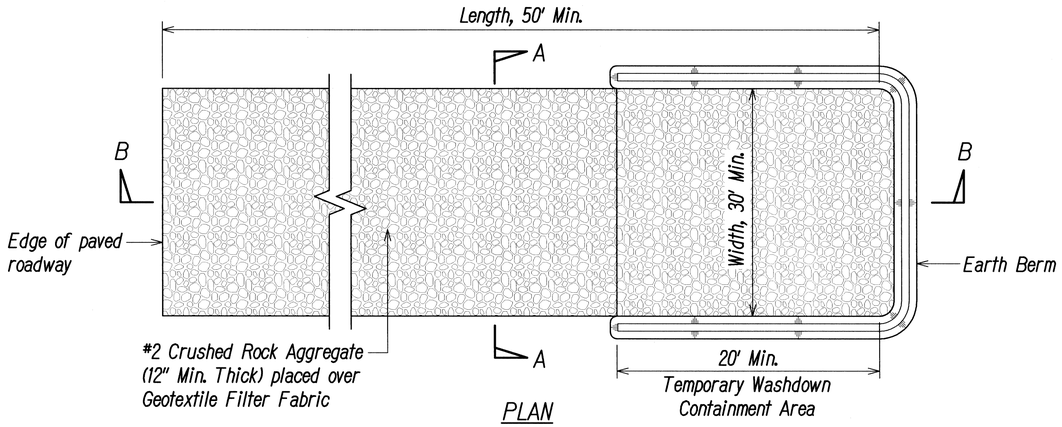
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(125)	2011	8	55



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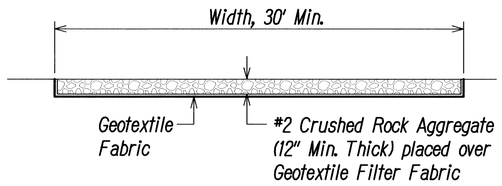
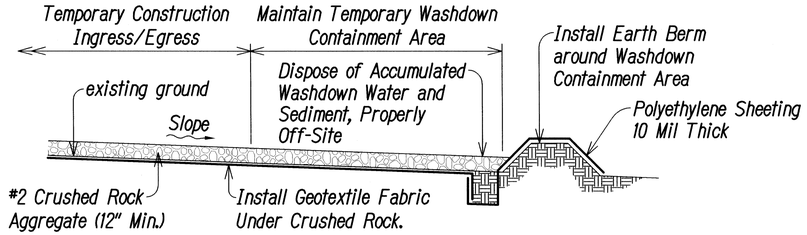


SECTION A-A



SECTION B-B

TEMPORARY STABILIZED CONSTRUCTION INGRESS/EGRESS AND WASHDOWN CONTAINMENT AREA

NOT TO SCALE

1
C1.3 | EC3

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STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BMP NOTES AND DETAILS

CASTLE HILLS ACCESS ROAD
Drainage Improvements, Phase 2
FEDERAL-AID PROJECT NO. STP-0300(125)

Scale: As Shown Date: December 2011

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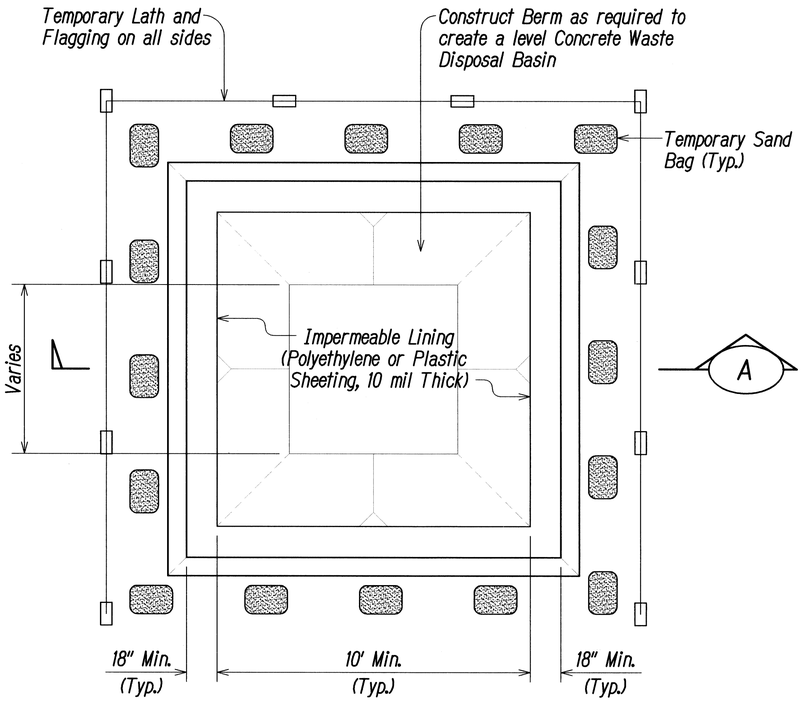
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(125)	2011	9	55



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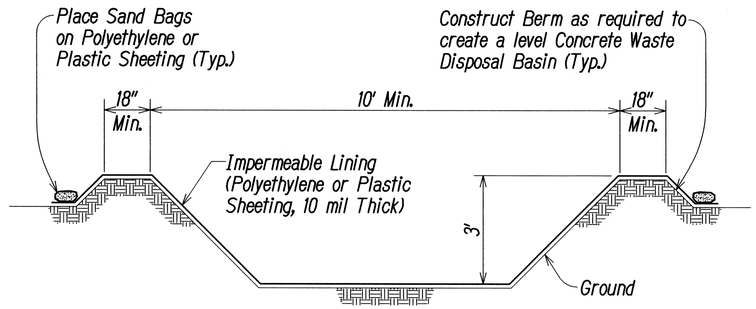

SECTION A

CONCRETE WASTE DISPOSAL BASIN DETAIL 1 C1.3 EC4

NOT TO SCALE

NOTES:

1. The dimensions and location of the concrete waste disposal basin shall be determined in the field by the contractor and submitted to the Department of Health, Clean Water Branch (DOH-CWB) in the Site-Specific BMP Plan.
2. The dimensions of the concrete waste disposal basin shall be sized to hold wash water for the number of concrete trucks required, based on 20 gallons of wash water per truck, plus additional capacity for a 3-inch rainfall storm event without overflowing.
3. If the concrete waste disposal basin is sized for a one-day pour, the collected water and materials shall be removed from the basin and disposed of properly prior to the start of the next pour, or another properly sized basin shall be used for each subsequent concrete pour and truck washout.
4. Water shall be allowed to evaporate or disposed of properly, and all hardened materials shall be disposed of in an appropriate manner.
5. The Concrete Washout Area Sign shall be installed within 30-feet of the temporary concrete waste disposal basin.

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ParEn, Inc. dba PARK ENGINEERING — APRIL 30, 2012 LIC. EXP. DATE

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

BMP NOTES AND DETAILS

CASTLE HILLS ACCESS ROAD
Drainage Improvements, Phase 2
FEDERAL-AID PROJECT NO. STP-0300(125)

Scale: None — Date: December 2011

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