Amend Section 209 - TEMPORARY WATER POLLUTION, DUST, AND EROSION
 CONTROL to read as follows:
 3

"SECTION 209 - TEMPORARY WATER POLLUTION, DUST, AND EROSION CONTROL

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209.01 Description. This section describes the following:

(A) Including detailed plans, diagrams, and written Site-Specific Best Management Practices (BMP); constructing, maintaining, and repairing temporary water pollution, dust, and erosion control measures at the project site, including local material sources, work areas and haul roads; removing and disposing hazardous wastes; control of fugitive dust (defined as uncontrolled emission of solid airborne particulate matter from any source other than combustion); and complying with applicable State and Federal permit conditions.

- (B) Work associated with construction stormwater, dewatering, and
 hydrotesting activities and complying with conditions of the National Pollutant
 Discharge Elimination System (NPDES) permit(s) authorizing discharges
 associated with construction stormwater, dewatering, and hydrotesting
 activities.
- 26 (C) Potential pollutant identification and mitigation measures are listed in
 27 Appendix A for use in the development of the Contractor's Site-Specific BMP.
- 29 Requirements of this section also apply to construction support activities 30 including concrete or asphalt batch plants, rock crushing plants, equipment staging yards/areas, material storage areas, excavated material disposal 31 32 areas, and borrow areas located outside the State Right-of-Way. For areas serving multiple construction projects, or operating beyond the completion of 33 34 the construction project in which it supports, the Contractor shall be 35 responsible for securing the necessary permits, clearances, and documents, and following the conditions of the permits and clearances, at no cost to the 36 37 State. 38
- 39 209.02 Materials. Comply with applicable materials described in Chapters 2 and 3
 40 of the current HDOT "Construction Best Management Practices Field Manual". In
 41 addition, the materials shall comply with the following:
- 42

43 (A) Grass. Grass shall be a quick growing species such as rye grass,
44 Italian rye grass, or cereal grasses. Grass shall be suitable to the area and
45 provide a temporary cover that will not compete later with permanent cover.
46 Alternative grasses are allowable if acceptable to the Engineer.

- 47 (B) Fertilizer and Soil Conditioners. Fertilizer and soil conditioners shall
 48 be a standard commercial grade acceptable to the Engineer. Fertilizer shall
 49 conform to Subsection 619.02(H)(1) Commercial Fertilizer.
- 50

51 **Hydro-mulching.** Hydro-mulching used as a temporary vegetative (C) 52 stabilization measure shall consist of materials in Subsections 209.02(A) -53 Grass, and 209.02(B) – Fertilizer and Soil Conditioners. Mulches shall be 54 recycled materials including bagasse, hay, straw, wood cellulose bark, wood 55 chips, or other material acceptable to the Engineer. Mulches shall be clean 56 and free of noxious weeds and deleterious materials. Potable water shall meet the requirements of Subsection 712.01 - Water. Submit alternate sources of 57 irrigation water for the Engineer's acceptance if deviating from 712.01 - Water. 58 59 Installation and other requirements shall be in accordance with portions of 60 Section 641- Hydro-Mulch Seeding including 641.02(D) - Soil and Mulch 61 Tackifier, 641.03(A) – Seeding, and 641.03(B) - Planting Period. Install non-62 vegetative controls including mulch or rolled erosion control products while the 63 vegetation is being established. Water and fertilize grass. Apply fertilizer as recommended by the manufacturer. Replace grass the Engineer considers 64 unsuitable or sick. Remove and dispose of trash and debris. Remove 65 66 invasive species. Mow as needed to prevent site or signage obstructions, fire hazard, or nuisance to the public. Do not remove down stream sediment 67 control measures until the vegetation is uniformly established, including no 68 69 large bare areas, and provides 70 percent of the density of pre-disturbance 70 vegetation. Temporary vegetative stabilization shall not be used longer than 71 one year.

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86 87 **(D) Silt Fences.** Comply with ASTM D6462, Standard Practice for Silt Fence Installation.

Alternative materials or methods to control, prevent, remove and dispose pollution are allowable if acceptable to the Engineer.

- 78 79 **209.03 Construction.**
 - (A) **Preconstruction Requirements.**

(1) Water Pollution, Dust, and Erosion Control Meeting. Schedule a water pollution, dust, and erosion control meeting with the Engineer after Site-Specific BMP is accepted in writing by the Engineer. Meeting shall be scheduled a minimum of 7 calendar days prior to the Start Work Date. Discuss sequence of work, plans and proposals for water pollution, dust, and erosion control.

90	(2) Water	Pollution, Dust, and Erosion Control Submittals.
91	Submit a Site	e-Specific BMP Plan within 21 calendar days of date of
92	award. Subm	nission of complete and acceptable Site-Specific BMP Plan
93	is the sole rea	sponsibility of the Contractor and additional contract time
94		ssued for delays due to incompleteness. Include the
95	following:	
96	Ū	
97	(a)	Written description of activities to minimize water pollution
98		bil erosion into State waters, drainage or sewer systems.
99		shall include the following:
100		3
101		1. An identification of potential pollutants and their
102		sources.
102		
104		2. A list of all materials and heavy equipment to be
105		used during construction.
105		
107		3. Descriptions of the methods and devices used to
108		minimize the discharge of pollutants into State waters,
109		drainage or sewer systems.
110		
111		4. Details of the procedures used for the
112		maintenance and subsequent removal of any erosion or
112		siltation control devices.
114		
115		5. Methods of removing and disposing hazardous
116		wastes encountered or generated during construction.
117		
118		6. Methods of removing and disposing concrete and
119		asphalt pavement cutting slurry, concrete curing water,
120		and hydrodemolition water.
121		j
122		7. Spill Control and Prevention and Emergency Spill
123		Response Plan.
124		
125		8. Fugitive dust control, including dust from grinding,
126		sweeping, or brooming off operations or combination
127		thereof.
128		
129		9. Methods of storing and handling of oils, paints and
130		other products used for the project.
130		
131		10. Material storage and handling areas, and other
132		staging areas.
133		
135		11. Concrete truck washouts.
1.5.5		

136	12. Concrete waste control.
137	
138	13. Fueling and maintenance of vehicles and other
139	equipment.
140	- 1
141	14. Tracking of sediment offsite from project entries
142	and exits.
	and exits.
143	4C Litter menegement
144	15. Litter management.
145	
146	16. Toilet facilities.
147	
148	17. Other factors that may cause water pollution, dust
149	and erosion control.
150	
151	(b) Provide plans indicating location of water pollution, dust
152	and erosion control devices; provide plans and details of BMPs
153	to be installed or utilized; show areas of soil disturbance in cut
154	and fill, indicate areas used for construction staging and storage
155	including items (1) through (17) above, storage of aggregate
156	(indicate type of aggregate), asphalt cold mix, soil or solid waste,
157	
	equipment and vehicle parking, and show areas where
158	vegetative practices are to be implemented. Indicate intended
159	drainage pattern on plans. Include flow arrows. Include
160	separate drawing for each phase of construction that alters
161	drainage patterns. Indicate approximate date when device will
162	be installed and removed.
163	
164	(c) Construction schedule.
165	
166	(d) Name(s) of specific individual(s) designated responsible
167	for water pollution, dust, and erosion controls on the project site.
168	Include home, cellular, and business telephone numbers, fax
169	numbers, and e-mail addresses.
170	,
171	(e) Description of fill material to be used.
172	
172	(f) For projects with an NPDES Permit for Construction
175	Activities, submit information to address all sections in the Storm
175	Water Pollution Prevention Plan (SWPPP).
176	
177	(g) For projects with an NPDES Permit, information required
178	for compliance with the conditions of the Notice of General
179	Permit Coverage (NGPC)/NPDES Permit.
180	

(h) Site-Specific BMP Review Checklist. The checklist may be downloaded from HDOT's Stormwater Management website at http://stormwaterhawaii.com.

Date and sign Site-Specific BMP Plan. Keep accepted copy on site or at an accessible location so that it can be made available at the time of an on-site inspection or upon request by the Engineer, HDOT Third-Party Inspector, and/or DOH/EPA Representative. Amendments to the Site-Specific BMP Plan shall be included with original Site-Specific BMP Plan. Modify SWPPP if necessary to conform to revisions. Include date of installation and removal of Site-Specific BMP measures. Obtain written acceptance by the Engineer before implementing revised Site-Specific BMPs in the field.

Follow the guidelines in the current HDOT "Construction Best Management Practices Field Manual", in developing, installing, and maintaining Site-Specific BMPs for all projects. For any conflicting requirements between the Manual and applicable bid documents, the applicable bid documents will govern. Should a requirement not be clearly described within the applicable bid documents, notify the Engineer immediately for interpretation. For the purposes of clarification "applicable bid documents" include the construction plans, standard specifications, special provisions, Permits, and the SWPPP when applicable.

> Follow Honolulu's City and County "Rules for Soil Erosion Standards and Guidelines" for all projects on Oahu. Use respective Soil Erosion Guidelines for Maui, Kauai and Hawaii projects.

(B) Construction Requirements. Do not begin work until submittals detailed in Subsection 209.03(A)(2) - Water Pollution, Dust, and Erosion Control Submittals are completed and accepted in writing by the Engineer.

Install, maintain, monitor, repair and replace site-specific BMP
 measures, such as for water pollution, dust and erosion control; installation,
 monitoring, and operation of hydrotesting activities; removal and disposal of
 hazardous waste indicated on plans, concrete cutting slurry, concrete curing
 water; or hydrodemolition water. Site-Specific BMP measures shall be in
 place, functional and accepted by HDOT personnel prior to initiating any
 ground disturbing activities.

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225 226 227 228 229 230 231 232 233 234 235	If necessary, furnish and install rain gage in a secure location prior to field work including installation of site-specific BMP. Provide rain gage with a tolerance of at least 0.05 inches of rainfall. Install rain gage on project site in an area that will not deter rainfall from entering the gate opening. Do not install in a location where rain water may splash into rain gage. The rain gage installation shall be stable and plumbed. Maintain rain gage and replace rain gage that is stolen, does not function properly or accurately, is worn out, or needs to be relocated. Do not begin field work until rain gage is installed and Site-Specific BMPs are in place. Rain gage data logs shall be readily available. Submit rain gage data logs weekly to the Engineer.
236	Address all comments received from the Engineer.
237 238 239 240 241	Modify and resubmit plans and construction schedules to correct conditions that develop during construction which were unforeseen during the design and pre-construction stages.
242 243	Coordinate temporary control provisions with permanent control features throughout the construction and post-construction period.
244	
245	Limit maximum surface area of earth material exposed at any time to
246	300,000 square feet. Do not expose or disturb surface area of earth material
247	(including clearing and grubbing) until BMP measures are installed and
248	accepted in writing by the Engineer. Protect temporarily or permanently
249	disturbed soil surface from rainfall impact, runoff and wind before end of the
250	work day.
251	
252	Immediately initiate stabilizing exposed soil areas upon completion of
253	earth disturbing activities for areas permanently or temporarily ceased on any
254	portion of the site. Earth-disturbing activities have permanently ceased when
255	clearing and excavation within any area of the construction site that will not
256	include permanent structures has been completed. Earth-disturbing activities
257	have temporarily ceased when clearing, grading, and excavation within any
258	area of the site that will not include permanent structures will not resume for a
259	period of 14 or more calendar days, but such activities will resume in the
260	future. The term "immediately" is used in this section to define the deadline for
261	initiating stabilization measures. "Immediately" means as soon as practicable,
262	but no later than the end of the next work day, following the day when the
263	earth-disturbing activities have temporarily or permanently ceased.
264	
265	For projects with an NPDES Permit for Construction activities:
266	
267	(1) For construction areas discharging into waters not impaired for
268	nutrients or sediments, complete initial stabilization within 14 calendar
269	days after the temporary or permanent cessation of earth-disturbing
270	activities.

271 For construction areas discharging into nutrient or sediment (2) 272 impaired waters, complete initial stabilization within 7 calendar days after the temporary or permanent cessation of earth-disturbing 273 274 activities. 275 276 For projects without an NPDES Permit for Construction activities, 277 complete initial stabilization within 14 calendar days after the temporary or 278 permanent cessation of earth-disturbing activities. 279 280 Any of the following types of activities constitutes initiation of stabilization: 281 282 283 Prepping the soil for vegetative or non-vegetative stabilization; (1) 284 285 (2) Applying mulch or other non-vegetative product to the exposed 286 area; 287 (3) 288 Seeding or planting the exposed area; 289 290 (4) Starting any of the activities in items (1) - (3) above on a portion of the area to be stabilized, but not on the entire area; and 291 292 293 Finalizing arrangements to have stabilization product fully (5) 294 installed in compliance with the deadline for completing initial 295 stabilization activities. 296 297 Any of the following types of activities constitutes completion of initial stabilization activities: 298 299 300 For vegetative stabilization, all activities necessary to initially (1) seed or plant the area to be stabilized; and/or 301 302 303 (2) For non-vegetative stabilization, the installation or application of 304 all such non-vegetative measures. 305 306 If the Contractor is unable to meet the deadlines above due to circumstances beyond the Contractor's control, and the Contractor is using 307 308 vegetative cover for temporary or permanent stabilization, the Contractor may comply with the following stabilization deadlines instead as agreed to by the 309 Engineer: 310 311 312 (1) Immediately initiate, and complete within the timeframe shown 313 above, the installation of temporary non-vegetative stabilization measures to prevent erosion; 314 315

316 Complete all soil conditioning, seeding, watering or irrigation (2) 317 installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or 318 319 circumstances allow it on the site; and 320 321 Notify and provide documentation to the Engineer the (3) 322 circumstances that prevent the Contractor from meeting the deadlines 323 above for stabilization and the schedule the Contractor will follow for 324 initiating and completing initial stabilization and as agreed to by the 325 Engineer. 326 327 Follow the applicable requirements of the specifications and special provisions including Section 619 Planting and Section 641 Hydro-Mulch 328 329 Seeding. 330 331 Immediately after seeding or planting the area to be vegetatively 332 stabilized, to the extent necessary to prevent erosion on the seeded or planted area, select, design, and install non-vegetative erosion controls that provide 333 cover (e.g., mulch, rolled erosion control products) to the area while vegetation 334 335 is becoming established. 336 337 Protect exposed or disturbed surface area with mulches, grass seeds or 338 hydromulch. Spray mulches at a rate of 2,000 pounds per acre. Add tackifier to mix at a rate of 85 pounds per acre. Apply grass seeds at a rate of 125 339 340 pounds per acre. For hydromulch, use the ingredients and rates required for 341 mulches and grass seeds. Submit recommendations from a licensed 342 Landscape Architect when deviating from the application rates above. 343 344 Apply fertilizer to mulches, grass seed or hydromulch per 345 manufacturer's recommendations. Submit recommendations from a licensed 346 Landscape Architect when the manufacturer's deviating from 347 recommendations. 348 349 Install velocity dissipation measures when exposing erodible surfaces 350 greater than 15 feet in height. 351 352 BMP measures shall be in place and operational at the end of work day 353 or as required by Section 209.03(B) Construction Requirements. 354 Install and maintain either or both stabilized construction entrances and 355 wheel washes to minimize tracking of dirt and mud onto roadways. Restrict 356 357 traffic to stabilized construction areas only. Clean dirt, mud, or other material tracked onto the road, sidewalk, or other paved area by the end of the same 358 day in which the track-out occurs. Modify stabilized construction entrances to 359 360 prevent mud from being tracked onto road. Stabilize entire access roads if 361 necessary.

362 363			nay be used as soil stabilizers for either or both erosion and ptable to the Engineer.
364 365	Provid	de tem	porary slope drains of rigid or flexible conduits to carry
366			d embankments. Provide portable flume at the entrance.
367			temporary slope drains to ensure proper function.
368			
369	Prote	ct ditch	es, channels, and other drainageways leading away from
370			imes by either:
371			
372	(1)	Hydro	o-mulching the lower region of embankments in the
373	• • •	, diate a	v
374			
375	(2)	Instal	ling check dams and siltation control devices.
376			•
377	(3)	Other	methods acceptable to the Engineer.
378			
379	Provid	de for	controlled discharge of waters impounded, directed, or
380	controlled by	/ projec	ct activities or erosion control measures.
381			
382		•	ed surface of materials completely with tarpaulin or similar
383			oorting aggregate, soil, excavated material or material that
384	may be sour	ce of fu	ugitive dust.
385			
386		iup an	d remove any pollutant that can be attributed to the
387	Contractor.		
388		_	
389			odify Site-Specific BMP measures due to change in the
390			s and methods, or for omitted condition that should have
391			the accepted Site-Specific BMP or a Site-Specific BMP that
392			ed Site-Specific BMP that is not satisfactorily performing.
393			e-Specific BMP measures shall be accepted in writing by
394 205	the Engineer	r prior t	to implementation.
395 206	Drope	rly ma	intain all Sita Spacific BMD macauras
396 397	Prope	eny ma	intain all Site-Specific BMP measures.
397	For p	roiocte	with an NPDES Permit for Construction Activities:
399	i oi pi	ojecis	with all NFDLS Fermit for Construction Activities.
400	(1)	For c	onstruction areas discharging into nutrient or sediment
400	• • •		ters, inspect, prepare a written report, and make repairs to
402	•		res at the following intervals:
403			
404		(a)	Weekly.
405		(-)	5
406		(b)	Within 24 hours of any rainfall of 0.25 inch or greater
407		• •	occurs in a 24-hour period.

400	
408	(a) When evicting excession control measures are demograd or
409	(c) When existing erosion control measures are damaged or
410	not operating properly as required by Site-Specific BMP.
411	(2) For construction cross discharging to waters not impaired for
412	(2) For construction areas discharging to waters not impaired for
413	nutrients or sediments, inspect, prepare a written report, and make
414	repairs to BMP measures at the following intervals:
415	
416	(a) Weekly.
417 418	(b) When existing erasion central measures are demaged or
	(b) When existing erosion control measures are damaged or
419 420	not operating properly as required by Site-Specific BMP.
420 421	For projects without an NPDES Permit for Construction activities,
421 422	inspect, prepare a written report, and make repairs to BMP measures at the
422 423	following intervals:
423	
425	(a) Weekly.
426	
427	(b) When existing erosion control measures are damaged or
428	not operating properly as required by Site-Specific BMP.
429	
430	Temporarily remove, replace or relocate any Site-Specific BMP that
431	must be removed, replaced or relocated due to potential or actual flooding, or
432	potential danger or damage to project or public.
433	
434	Maintain records of inspections of Site-Specific BMP work. Keep
435	continuous records for duration of the project. Submit copy of Inspection
436	Report to the Engineer within 24 hours after each inspection.
437	
438	The Contractor's designated representative specified in Subsection
439	209.03(A)(2)(d) shall address any Site-Specific BMP deficiencies brought up
440	by the Engineer immediately, including weekends and holidays, and complete
441	work to fix the deficiencies by the close of the next work day if the problem
442	does not require significant repair or replacement, or if the problem can be
443	corrected through routine maintenance. Address any Site-Specific BMP
444	deficiencies brought up by the State's Third-Party Inspector in the timeframe
445	above or as specified in the Consent Decree or MS4 NPDES Permit,
446	whichever is more stringent. The Consent Decree timeframe requirement
447	applies statewide. The MS4 NPDES Permit only applies to Oahu. In this
448	section, "immediately" means the Contractor shall take all reasonable
449 450	measures to minimize or prevent discharge of pollutants until a permanent
450 451	solution is installed and made operational. If a problem is identified at a time in
451 452	the day in which it is too late to initiate repair, initiation of repair shall begin on the following work day. When installation of a new pollution prevention control
4 <i>32</i> 453	or a significant repair is needed, complete installation or repair no later than
туу	

454 seven calendar days from the time of notification/Contractor discovery. Notify 455 the Engineer and document why it is infeasible to complete the installation or repair within seven calendar days and complete the work as soon as 456 457 practicable and as agreed to by the Engineer. Address Site-Specific BMP 458 deficiencies discovered by the Contractor within the timeframe above. The 459 Contractor's failure to satisfactorily address these Site-Specific BMP 460 deficiencies, the Engineer reserves the right to employ outside assistance or 461 use the Engineer's own labor forces to provide necessary corrective 462 measures. The Engineer will charge the Contractor such incurred costs plus 463 any associated project engineering costs. The Engineer will make appropriate deductions from the Contractor's monthly progress estimate. Failure to apply 464 Site-Specific BMP measures may result in one or more of the following: 465 assessment of liquidated damages, suspension, or cancellation of Contract 466 467 with the Contractor being fully responsible for all additional costs incurred by 468 the State.

470 (C) Discharges of Storm Water Associated with Construction
471 Activities. If work includes disturbance of one acre or more, an NPDES
472 Permit authorizing Discharges of Storm Water Associated with Construction
473 Activity (CWB-NOI Form C) or Individual Permit authorizing storm water
474 discharges associated with construction activity is required from the
475 Department of Health Clean Water Branch (DOH-CWB).

477Do not begin construction activities until all required conditions of the478permit are met and submittals detailed in Subsection 209.03(A)(2) – Water479Pollution, Dust, and Erosion Control Submittals are completed and accepted in480writing by the Engineer.

(D) Discharges Associated with Hydrotesting Activities. If hydrotesting activities require effluent discharge into State waters or drainage systems, an NPDES Hydrotesting Waters Permit (CWB-NOI Form F) or Individual Permit authorizing discharges associated with hydrotesting from DOH-CWB is required from the DOH-CWB.

488 Do not begin hydrotesting activities until the DOH-CWB has issued an 489 Individual NPDES Permit or Notice of General Permit Coverage (NGPC). 490 Conduct Hydrotesting operations in accordance with the conditions of the 491 permit or NGPC. 492

- 493 (E) Discharges Associated with Dewatering Activities. If dewatering
 494 activities require effluent discharge into State waters or drainage systems, an
 495 NPDES Dewatering Permit (CWB-NOI Form G) or Individual Permit
 496 authorizing discharges associated with dewatering from DOH-CWB is required
 497 from the DOH-CWB.
- 498

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- 499Do not begin dewatering activities until the DOH-CWB has issued an500Individual NPDES Permit or Notice of General Permit Coverage (NGPC).501Conduct dewatering operations in accordance with the conditions of the502permit or NGPC.
- 504 **(F)** Solid Waste. Submit the Solid Waste Disclosure Form for Construction 505 Sites to the Engineer within 21 calendar days of date of award. Provide a copy 506 of all the disposal receipts from the facility permitted by the Department of 507 Health to receive solid waste to the Engineer monthly. This should also 508 include documentation from any intermediary facility where solid waste is 509 handled or processed, or as directed by the Engineer. 510
- (G) Construction BMP Training. The Contractor's representative
 responsible for development of the Site-Specific BMP Plan and implementation
 of Site-Specific BMPs in the field shall attend the State's Construction Best
 Management Practices Training. The Contractor shall keep training logs
 updated and readily available.

517 **209.04** Measurement.

- (A) Installation, maintenance, monitoring, and removal of BMP will be paid on a lump sum basis. Measurement for payment will not apply.
- 522 **(B)** The Engineer will only measure additional water pollution, dust and 523 erosion control required and requested by the Engineer on a force account 524 basis in accordance with Subsection 109.06 – Force Account Provisions and 525 Compensation.
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209.05 Payment. The Engineer will pay for accepted pay items listed below at
 contract price per pay unit, as shown in the proposal schedule. Payment will be full
 compensation for work prescribed in this section and contract documents.

531 The Engineer will pay for each of the following pay items when included in 532 proposal schedule: 533

535 534 535	Pay Item	Pay Unit
535 536 537	Installation, Maintenance, Monitoring, and Removal of BMP	Lump Sum
537 538 539	Additional Water Pollution, Dust, and Erosion Control	Force Account

540 An estimated amount for force account is allocated in proposal schedule under 541 'Additional Water Pollution, Dust, and Erosion Control', but actual amount to be paid 542 will be the sum shown on accepted force account records, whether this sum be more 543 or less than estimated amount allocated in proposal schedule. The Engineer will pay 544 for BMP measures requested by the Engineer that are beyond scope of accepted 545 Site-Specific BMP on a force account basis.

546

547 No progress payment will be authorized until the Engineer accepts in writing 548 Site-Specific BMP or when the Contractor fails to maintain project site in accordance 549 with accepted BMP.

550

551 For all citations or fines received by the Department for non-compliance, 552 including compliance with NPDES Permit conditions, the Contractor shall reimburse 553 State within 30 calendar days for full amount of outstanding cost State has incurred, 554 or the Engineer will deduct cost from progress payment.

555

556 The Engineer will assess liquidated damages up to \$27,500 per day for non-557 compliance of each BMP requirement and all other requirements in this section.

559 Appendix A

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561 The following list identifies potential pollutant sources and corresponding 562 BMPs used to mitigate the pollutants. Each BMP is referenced to the 563 corresponding section of the current HDOT Construction Best Management 564 Practices Field Manual or appropriate Supplemental Sheets. The Manual may be 565 obtained from the HDOT Statewide Stormwater Management Program Website at 566 http://www.stormwaterhawaii.com/resources/contractors-and-consultants/ under Construction Best Management Practices Field Manual. Supplemental BMP 567 568 sheets are located at http://www.stormwaterhawaii.com/resources/contractors-569 and-consultants/storm-water-pollution-prevention-plan-swppp/ under Concrete 570 Curing and Irrigation Water.

Pollutant	Appropriate Site-Specific BMP to be	BMP
Source	Implemented	Requirements
Construction debris, green waste, general litter	 Separate contaminated clean up materials from construction and demolition (C&D) wastes. Provide waste containers (e.g., dumpster or trash receptacle) of sufficient size and number to contain construction and domestic wastes. Inspect construction waste and recycling areas regularly. Schedule solid waste collection regularly. Schedule recycling activities based on construction/demolition phases. Empty waste containers weekly or when they are two-thirds full, whichever is sooner. Do not allow containers to overflow. Clean up immediately if they do. On work days, clean up and dispose of waste in designated waste containers. See Solid Waste Management Section SM-6 for additional requirements. Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. 	See Solid Waste Management Section SM-6. Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.
Materials associated with the operation and maintenance of equipment, such as oil, fuel, and hydraulic fluid leakage	 Use off-site wash racks, repair and maintenance facilities, and fueling sites when practical. Designate bermed wash area if cleaning on site is necessary. Place drip pans or drop cloths under vehicles and equipment to absorb spills or leaks. Provide an ample supply of readily available spill cleanup materials. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. Do not clean surfaces or spills by hosing the area down. Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge. Inspect on-site vehicles and equipment regularly and immediately repair leaks. Regularly inspect fueling areas and storage tanks. 	See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM- 11, SM-12, and SM-13, and Material Delivery, Storage and Material Use Sections SM-2 and SM-3, and Spill Prevention and Control SM-10.

Pollutant	Appropriate Site-Specific BMP to be	BMP
Source	Implemented	Requirements
Source	 Implemented Train employees on proper maintenance and spill practices and procedures and fueling and cleanup procedures. Store diesel fuel, oil, hydraulic fluid, or other petroleum products or other chemicals in water-tight containers and provide cover or secondary containment. Do not remove original product labels and comply with manufacturer's labels for proper disposal. Dispose of containers only after all the product has been used. Dispose of or recycle oil or oily wastes according to Federal, State, and Local requirements. Store soaps, detergents, or solvents under cover or other means to prevent contact with rainwater. See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM- 12, and SM-13 and Material Use Section SM-3 for additional requirements. 	Requirements

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Pollutant	Appropriate Site-Specific BMP to be	BMP
Source	Implemented	Requirements
Soil erosion	Provide Soil Stabilization, Slope Protection,	Soil
from the	Storm Drain Inlet Protection SC-2, Perimeter	Stabilization
	Controls and Sediment Barriers, Sediment Basins	1. SM-21
disturbed	and Detention Ponds, Check Dams SC-9 ,Level	Topsoil
areas	Spreader SC-10, Paving Operations SM-19,	Management
	Construction Road Stabilization EC-1, Controlling	2. EC-5
	Storm Water Flowing Onto and Through the	Seeding and
	Project, Post-Construction BMPs, and Non-	Planting
	Structural BMPs (Employee Training SM-1,	3. EC-6
	Scheduling SM-14, Location of Potential Sources of	Mulching
	Sediment SM-15, Preservation of Existing	4. EC-7
	Vegetation SM-16).	Geotextiles
	• Delineate, and clearly mark off, with flags, tape,	and Mats
	or other similar marking device all natural buffer	Slong
	areas defined in the SWPPP.	Slope Protection
	Preserve native topsoil where practicable.	1. EC-5
	In areas where vegetative stabilization will	Seeding and
	occur, restrict vehicle/equipment use in areas to	Planting
	avoid soil compaction or condition soil to promote	2. EC-6
	 vegetative growth. For Storm Drain Inlet Protection, clean, or 	Mulching
	remove and replace, the protection measures as	3. EC-7
	sediment accumulates, the filter becomes clogged,	Geotextiles
	and/or performance is compromised.	and Mats
	Where there is evidence of sediment	4. EC-9
	accumulation adjacent to the inlet protection	Slope
	measure, remove the deposited sediment by the	Roughening,
	end of the same day in which it is found or by the	Terracing, and
	end of the following work day if removal by the	Rounding
	same day is not feasible.	5. SC-11
	Sediment basins shall be designed and	Slope Drains
	maintained in accordance with HAR 11-55.	and
	• Minimize disturbance on steep slopes (Greater	Subsurface
	than 15% in grade).	Drains 6. SC-12
	• If disturbance of steep slopes are unavoidable,	6. SC-12 Top and Toe
	phase disturbances and use stabilization	of Slope
	techniques designed for steep grades.	Diversion
	For temporary drains and swales use velocity	Ditches and
	dissipation devices within and at the outlet to	Berms
	minimize erosive flow velocities.	SC-2 Storm
		Drain Inlet
		Protection

Pollutant	Appropriate Site-Specific BMP to be	BMP
Source	Implemented	Requirements
		Perimeter
		Controls and
		Sediment
		Barriers 1. SC-1 Silt
		Fence
		2. SC-5
		Vegetated
		Filter Strips
		and Buffers
		3. SC-8
		Compost Filter
		Berm
		4. SC-13
		Sandbag
		Barrier
		5. SC-14
		Brush or Rock
		Filter
		Sediment
		Basins and
		Detention Ponds
		1. SC-15
		Sediment Trap
		2. SC-16
		Sediment
		Basin
		SC-9 Check
		Dams
		SC-10 Level
		Spreader
		SM-19 Paving
		Operations
		EC-1
		Construction
		Road
		Stabilization

Pollutant	Appropriate Site-Specific BMP to be	BMP
Source	Implemented	Requirements
		Controlling
		Storm Water
		Flowing onto
		and Through
		the Project
		1. EC-8
		Run-On
		Diversion
		2. SC-6
		Earth Dike
		3. SC-7
		Temporary
		Drains and
		Swales
		01/0/03
		Post
		Construction
		BMPs
		1. EC-4
		Flared Culvert
		End Sections
		2. SC-3 Rip
		Rap and
		Gabion Inflow
		Protection
		3. SC-4
		Outlet
		Protection and
		Velocity
		Dissipation
		Devices
		4. SM-21
		Topsoil
		Management

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Pollutant	Appropriate Site-Specific BMP to be	BMP
Source	Implemented	Requirements
		Non-Structural
		BMPs
		1. SM-1
		Employee
		Training
		2. SM-14
		Scheduling
		3. SM-15
		Location of
		Potential
		Sources of
		Sediment
		4. SM-16
		Preservation
		of Existing
		Vegetation

Pollutant	Appropriate Site-Specific BMP to be Implemented	BMP
Source		Requirements
Sediment from soil	• Locate stockpiles a minimum of 50 feet or as far as practicable from concentrated runoff or outside of	See Protection of Stockpiles
stockpiles	 any natural buffers identified on the SWPPP. Place bagged materials on pallets and under cover. Provide physical diversion to protect stockpiles from concentrated runoff. Cover stockpiles with plastic or comparable material when practicable. Place silt fence, fiber filtration tubes, or straw wattles around stockpiles. Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any storm water conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or state water. Unless infeasible, contain and securely protect stockpiles from the wind. Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. See Protection of Stockpiles Section SM-4 for additional requirements. 	Section SM-4. Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.
Emulsified asphalt or prime/tack coat	 Provide training for employees and contractors on proper material delivery and storage practices and procedures. Restrict paving operations during wet weather to prevent paving materials from being discharged. Use asphalt emulsions such as prime coat when possible. Protect drain inlet structures and manholes during application of tack coat, seal coat, slurry seal, and fog seal. Keep ample supplies of drip pans and absorbent materials on site. Inspect inlet protection devices. See Material Delivery and Storage Section SM-2 and Paving Operations Section SM-19 for additional requirements. Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. 	See Material Delivery and Storage Section SM-2 and Material Use Section SM-3, Paving Operations Section SM- 19, Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.

Pollutant	Appropriate Site-Specific BMP to be Implemented	BMP
Source		Requirements
	 Appropriate Site-Specific BMP to be Implemented Hazardous chemicals shall be well-labeled and stored in original containers. Keep ample supply of cleanup materials on site. Dispose container only after all of the product has been used. Remove as much paint from brushes on painted surface. Rinse from water-based paints shall be discharged into the sanitary sewer system where possible. If not, direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation. Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies. Do not dump liquid wastes into the storm drainage system. Filter and re-use solvents and thinners. Dispose of oil-based paints and residue as a hazardous waste. Ensure collection, removal, and disposal of hazardous waste complies with regulations. Immediately clean up spills and leaks Properly store paints, solvents, and epoxy compounds. Properly store and dispose waste materials generated from painting and structure repair and construction activities. Mix paints in a covered and contained area when possible to minimize adverse impacts from spills. Do not apply traffic paint or thermoplastic if rain is forecasted. See Material Delivery and Storage Section SM-2, Material Use SM-3, Waste Management, Hazardous Waste Management Section SM-9, Waste 	

Pollutant	Appropriate Site-Specific BMP to be Implemented	BMP
Source		Requirements
Industrial chemicals, fertilizers, and/or pesticides	 Hazardous chemicals shall be well-labeled and stored in original containers. Keep ample supply of cleanup materials on site. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. Do not clean surfaces or spills by hosing the area down. Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge. Dispose container only after all of the product has been used. Retain a complete set of material safety data sheets on site. Store industrial chemicals in water-tight containers and provide either cover or secondary containment. Provide cover when storing fertilizers or pesticides to prevent these chemicals from coming into contact with rainwater. Restrict amount of pesticide prepared to quantity necessary for the current application. Do not apply fertilizers or pesticides during or just before a rain event. Do not apply to stornwater conveyance channels with flowing water. Comply with fertilizer and pesticide manufacturer's recommended usage instructions. Follow federal, state, and local laws regarding fertilizer application. Do not dispose of toxic liquid wastes (solvents, used oils, and paints) or chemicals (additives, acids, and curing compounds) in dumpsters allocated for construction debris. Ensure collection, removal, and disposal of hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler. See Material Delivery and Storage Section SM2, Material Use SM-3, and Waste Management, Hazardous Waste Management Section SM-9 for additional requirements. 	See Material Delivery and Storage Section SM-2, Material Use Section SM-3, and Hazardous Waste Management Section SM-9, and Spill Prevention and Control SM-10

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Hazardous waste (Batteries, Solvents, Treated Lumber, etc.)	 Do not dispose of toxic materials in dumpsters allocated for construction debris. Ensure collection, removal, and disposal of hazardous waste complies with regulations. Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler. Segregate and recycle wastes from vehicle/ equipment maintenance activities such as used oil or oil filters, greases, cleaning solutions, antifreeze, automotive batteries, and hydraulic and transmission fluids. Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, and local requirements. All containers stored outside shall be kept away from surface waters and within appropriately-sized secondary containment (e.g., spill berms, decks, spill containment pallets). Provide cover if possible. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. Do not clean surfaces or spills by hosing the area down. Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge. Ensure collection, removal, and disposal of hazardous waste complies with manufacturer's recommendations and is in compliance with federal, state, and local requirements. See Hazardous Waste Management Section SM-9 and Vehicle and Equipment Maintenance SM-12 for additional requirements. 	See Hazardous Waste Management Section SM-9 and Vehicle and Equipment Maintenance SM-12

Pollutant	Appropriate Site-Specific BMP to be	BMP
Source	Implemented	Requirements
<i>Metals and Building Materials</i>	 Inspect construction waste and recycling areas regularly. Schedule solid waste collection regularly. If building materials or metals are stored on site (such as rebar or galvanized poles) store under cover under tarps or in containers. Minimize the amount of material stored on site. Do not stockpile uncovered metals or other building materials in close proximity to discharge points. See Solid Waste Management Section SM-6 for additional requirements. 	See Solid Waste Management Section SM-6
Contaminated Soil	 See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Waste Management Section SM-9 for additional requirements. At minimum contain contaminated material soil by surrounding with impermeable lined berms or cover exposed contaminated material with plastic sheets. 	See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Waste Management Section SM-9
Dust Control Water	 Do not over spray water for dust control purposes which will result in runoff from the area. Apply water as conditions require. Washing down of debris or dirt into drainage, sewage systems, or State waters is not allowed. See Dust Control Section SM-18 for additional requirements. 	See Dust Control Section SM-18
Concrete Truck Wash Water	 Disposal of concrete truck wash water via percolation is prohibited. Wash concrete-coated vehicles or equipment off-site or in the designated wash area. Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies. Runoff from the on-site concrete wash area shall be contained in a temporary pit or level bermed area where the concrete can set. Design the area so that no overflow can occur due to inadequate wash area sizing or precipitation. 	See Waste Management, Concrete Waste Management Section SM-5

Pollutant	Appropriate Site-Specific BMP to be	BMP
Source	Implemented	Requirements
	 The temporary pit shall be lined with plastic to prevent seepage of wash water into the ground. Allow wash water to evaporate or collect wash water and all concrete debris in a concrete washout system bin. Do not dump liquid wastes into storm drainage system. Dispose of liquid and solid concrete wastes in compliance with federal, state, and local standards. See Waste Management, Concrete Waste Management Section SM-5 for additional requirements. 	
Sediment Track-Out	 Include Stabilized Construction Entrance at all points that exit onto paved roads. A sediment trapping device is required if a wash rack is used in conjunction with the stabilized construction entrance/exit. The pavement shall not be cleaned by washing down the street. If sweeping is ineffective or it is necessary to wash the streets, wash water must be contained either by construction of a sump, diverting the water to an acceptable disposal area, or vacuuming the wash water. Use BMPs for adjacent drainage structures. Remove sediment tracked onto the street by the end of the day in which the track-out occurs. Restrict vehicle use to properly designated exit points. Include additional BMPs which remove sediment prior to exit when minimum dimensions can not be met. See Stabilized Construction Entrance Section EC-2 for additional requirements. 	See Stabilized Construction Entrance Section EC-2

Pollutant	Appropriate Site-Specific BMP to be	BMP
Source	Implemented	Requirements
<i>Source</i> <i>Irrigation</i> <i>Water</i>	 Consider irrigation requirements. Where possible, avoid species which require irrigation. Design timing and application methods of irrigation water to eliminate the runoff of excess irrigation water into the storm water drainage system. See Seeding and Planting Section EC-5 and California Stormwater BMP Handbook SD-12 Efficient Irrigation at 	

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Pollutant	Appropriate Site-Specific BMP to be	BMP
Source	Implemented	Requirements
Saw-cutting Slurry	 Saw cut slurry shall be removed from the site by vacuuming. Provide storm drain protection during saw cutting. See Paving Operations Section SM-19 for additional requirements. Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. 	See Paving Operations Section SM- 19, Storm Drain Inlet Protection SC-2, Perimeter sediment controls where applicable
Concrete Curing Water	 Avoid overspraying of curing compounds. Apply an amount of compound that covers the surface, but does not allow any runoff of the compound. See California Stormwater BMP Handbook NS-12 Concrete Curing at http://www.stormwaterhawaii.com/resources/ contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/ under Concrete Curing for additional requirements. 	See California Stormwater BMP Handbook NS- 12 Concrete Curing
Plaster Waste Water	 Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation. Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies. Any significant residual materials remaining on the ground after the completion of construction shall be removed and properly disposed. If the residual materials contaminate the soil, then the contaminated soil shall also be removed and properly disposed of. Plaster waste water shall not be allowed to flow into drainage structures or State waters. See Material Delivery and Storage Section SM-2, Material Use SM-3, and Hazardous Waste Management Section SM-9 for additional requirements. 	See Material Delivery and Storage Section SM-2, Material Use Section SM-3, and Hazardous Waste Management Section SM-9

Source	Implemented	Requirement
Water-Jet Wash Water	 For Water-Jet Wash Water used to clean vehicles, use off site wash racks or commercial washing facilities when practical. See Vehicle and Equipment Cleaning Section SM-11 for additional information. For Water-Jet Wash Water used to clean impervious surfaces, the runoff shall not be allowed to flow into drainage structures or State Waters. 	See Vehicle and Equipment Cleaning Section SM-1
Sanitary/Septic Waste	 Locate Sanitary facilities in a convenient place away from drainage facilities. Position sanitary facilities so they are secure and will not be tipped over or knocked down. Wastewater shall not be discharged to the ground or buried. A licensed service provider shall maintain sanitary/septic facilities in good working order. Schedule regular waste collection by a licensed transporter. See Sanitary/Septic Waste Section SM-7 for additional requirements. 	See Sanitary/Sept Waste Section SM-7.
11	licensed transporter. See Sanitary/Septic Waste Section SM-7 for 	

END OF SECTION 209