

1 **SECTION 203 – EXCAVATION AND EMBANKMENT**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **203.03(C)(2)(a) – Maximum Dry Unit Weight** from line 245 to line
6 255 to read as follows:

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8 **“(a) Maximum Dry Unit Weight.** Test for maximum dry
9 unit weight according to AASHTO T 180, and apply the
10 correction for fraction larger than 3/4 inch. Use Hawaii
11 Test Method HDOT TM 5 for sample preparation of sensitive
12 soils when so designated by the Engineer.”

13
14 **(II)** Amend **203.04 – Measurement** by revising lines 345 to 366 to read as
15 follows:

16
17 **“203.04 Measurement.**

18
19 **(A)** Roadway Excavation will be paid on a lump sum basis.
20 Measurement for payment will not apply.

21
22 **(III)** Amend **203.05 – Payment** by revising lines 368 to 457 to read as follows:

23
24 **“203.05 Payment.** The Engineer will pay for the accepted pay items listed
25 below at the contract price per pay unit, as shown in the proposal schedule.
26 Payment will be full compensation for the work prescribed in this section and the
27 contract documents.

28
29 The Engineer will pay for each of the following pay items when included in
30 the proposal schedule:

Pay Item	Pay Unit
(A) Roadway Excavation	Lump Sum

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35 The Engineer will pay for:

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38 **(1)** 15 percent of the contract bid price upon completion of
39 obliterating old roadways and hauling.

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41 **(2)** 30 percent of the contract bid price upon completion of
42 preparing subgrade.

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44 **(3)** 40 percent of the contract bid price upon completion of placing
45 selected material in final position, rounding of slopes, and using water
46 for compaction.

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(4) 15 percent of the contract bid price upon completion of disposing of surplus excavation material.

The Engineer will not pay for stockpiling selected material, placing selected material in final position, or placing selected material in windrows along tops of roadway slopes for erosion control work, separately and will consider the cost as included in the unit prices for the various excavation contract pay items. The cost is for work prescribed in this section and the contract documents.

The Engineer will not pay for overhaul separately and will consider the cost as included in the unit prices for the various excavation contract pay items. The cost is for work prescribed in this section and the contract documents.

The Engineer will not pay for embankment separately and will consider the cost as included in the unit price for roadway excavation. The cost is for work prescribed in this section and the contract documents.”

END OF SECTION 203

1 **SECTION 205 - EXCAVATION AND BACKFILL**
2 **FOR BRIDGE AND RETAINING STRUCTURES**

3
4 Make the following amendments to said Section:

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6 **(I)** Amend **205.04 – Measurement** by revising lines 204 to 214 to read as
7 follows:

8
9 **“205.04 Measurement.**

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11 **(A) Structure Excavation.**

12
13 The Engineer will not measure structure excavation when
14 contracted on a lump sum basis.

15
16 **(B) Structure Backfill.**

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18 The Engineer will not measure structure backfill when contracted
19 on a lump sum basis.

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21 **(II)** Amend **205.05 – Payment** by revising lines 216 to 234 to read as follows:

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23 **“205.05 Payment.** The Engineer will pay for the accepted pay items listed
24 below at the contract price per pay unit, as shown in the proposal schedule.
25 Payment will be full compensation for the work prescribed in this section and the
26 contract documents.

27
28 The Engineer will consider structure excavation, structure backfill and
29 filter material incidental to the various contract items when not specified in the
30 proposal. The Engineer will not measure for payment.

31
32 The Engineer will pay for each of the following pay items when included in
33 the proposal schedule:

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Pay Item	Pay Unit
Structure Excavation for Abutments	Lump Sum
Structure Excavation for Wingwalls	Lump Sum
Structure Excavation for Retaining Walls	Lump Sum
Structure Backfill for Abutments	Lump Sum
Structure Backfill for Wingwalls	Lump Sum

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47 Structure Backfill for Retaining Walls

Lump Sum”

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END OF SECTION 205

1 **SECTION 207 — DITCH AND CHANNEL EXCAVATION**

2
3 Make the following amendments to said Section:

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5 **(I)** Amend **207.04 - Measurement** by revising lines 35 to 41 to read as follows:

6
7 **"207.04 Measurement.**

8
9 Ditch and channel excavation will be paid on a lump sum basis. Measurement for
10 payment will not apply."

11
12 **(II)** Amend **207.05 - Payment** by revising lines 43 to 961 to read as follows:

13
14 **"207.05 Payment.** The Engineer will pay for the accepted pay item listed below
15 at the contract price per pay unit, as shown in the proposal schedule. Payment
16 will be full compensation for the work prescribed in this section and the contract
17 documents.

18
19 The Engineer will pay for the following pay item when included in the
20 proposal schedule:

Pay Item	Pay Unit
Ditch and Channel Excavation	Lump Sum
(1) 80% of the contract bid price upon completion of clearing and grubbing, excavating ditch, and backfilling and compacting below required bottom grade of ditches and channels.	
(2) 20% of the contract bid price upon completion of disposing unsuitable and surplus material.	

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33 The Engineer will not pay for clearing and grubbing in accordance with Section 201-
34 Clearing and Grubbing.

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39 **END OF SECTION 207**

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

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5 **“SECTION 209 - TEMPORARY WATER POLLUTION, DUST, AND EROSION**
6 **CONTROL**

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9 **209.01 Description.** This section describes the following:

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

19
20 **(B)** Work associated with construction stormwater, dewatering, and
21 hydrotesting activities and complying with conditions of the National Pollutant
22 Discharge Elimination System (NPDES) permit(s) authorizing discharges
23 associated with construction stormwater, dewatering, and hydrotesting
24 activities.

25
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.

28
29 Requirements of this section also apply to construction support
30 activities including concrete or asphalt batch plants, rock crushing plants,
31 equipment staging yards/areas, material storage areas, excavated material
32 disposal areas, and borrow areas located outside the State Right-of-Way.
33 For areas serving multiple construction projects, or operating beyond the
34 completion of the construction project in which it supports, the Contractor
35 shall be responsible for securing the necessary permits, clearances, and
36 documents, and following the conditions of the permits and clearances, at no
37 cost to the State.

38
39 **209.02 Materials.** Comply with applicable materials described in Chapters 2 and
40 3 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 **(C) Hydro-mulching.** Hydro-mulching used as a temporary vegetative
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
57 meet the requirements of Subsection 712.01 - Water. Submit alternate
58 sources of irrigation water for the Engineer’s acceptance if deviating from
59 712.01 - Water. Installation and other requirements shall be in accordance
60 with portions of Section 641- Hydro-Mulch Seeding including 641.02(D) - Soil
61 and Mulch Tackifier, 641.03(A) – Seeding, and 641.03(B) - Planting Period.
62 Install non-vegetative controls including mulch or rolled erosion control
63 products while the vegetation is being established. Water and fertilize grass.
64 Apply fertilizer as recommended by the manufacturer. Replace grass the
65 Engineer considers unsuitable or sick. Remove and dispose of trash and
66 debris. Remove invasive species. Mow as needed to prevent site or signage
67 obstructions, fire hazard, or nuisance to the public. Do not remove down
68 stream sediment control measures until the vegetation is uniformly
69 established, including no large bare areas, and provides 70 percent of the
70 density of pre-disturbance vegetation. Temporary vegetative stabilization
71 shall not be used longer than one year.

72
73 **(D) Silt Fences.** Comply with ASTM D6462, Standard Practice for Silt
74 Fence Installation.

75
76 Alternative materials or methods to control, prevent, remove and dispose
77 pollution are allowable if acceptable to the Engineer.

78
79 **209.03 Construction.**

80
81 **(A) Preconstruction Requirements.**

82
83 **(1) Water Pollution, Dust, and Erosion Control Meeting.**
84 Schedule a water pollution, dust, and erosion control meeting with the
85 Engineer after Site-Specific BMP is accepted in writing by the
86 Engineer. Meeting shall be scheduled a minimum of 7 calendar days
87 prior to the Start Work Date. Discuss sequence of work, plans and
88 proposals for water pollution, dust, and erosion control.
89

90 **(2) Water Pollution, Dust, and Erosion Control Submittals.**
91 Submit a Site-Specific BMP Plan within **21** calendar days of **date of**
92 **award**. Submission of complete and acceptable Site-Specific BMP
93 Plan is the sole responsibility of the Contractor and additional contract
94 time will not be issued for delays due to incompleteness. Include the
95 following:

96
97 **(a)** Written description of activities to minimize water
98 pollution and soil erosion into State waters, drainage or sewer
99 systems. BMP shall include the following:

- 100
101 **1.** An identification of potential pollutants and their
102 sources.
- 103
104 **2.** A list of all materials and heavy equipment to be
105 used during construction.
- 106
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
113 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
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
130 and other products used for the project.
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132 **10.** Material storage and handling areas, and other
133 staging areas.
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135 **11.** Concrete truck washouts.

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- 12.** Concrete waste control.
- 13.** Fueling and maintenance of vehicles and other equipment.
- 14.** Tracking of sediment offsite from project entries and exits.
- 15.** Litter management.
- 16.** Toilet facilities.
- 17.** Other factors that may cause water pollution, dust and erosion control.

(b) Provide plans indicating location of water pollution, dust and erosion control devices; provide plans and details of BMPs to be installed or utilized; show areas of soil disturbance in cut and fill, indicate areas used for construction staging and storage including items (1) through (17) above, storage of aggregate (indicate type of aggregate), asphalt cold mix, soil or solid waste, equipment and vehicle parking, and show areas where vegetative practices are to be implemented. Indicate intended drainage pattern on plans. Include flow arrows. Include separate drawing for each phase of construction that alters drainage patterns. Indicate approximate date when device will be installed and removed.

(c) Construction schedule.

(d) Name(s) of specific individual(s) designated responsible for water pollution, dust, and erosion controls on the project site. Include home, cellular, and business telephone numbers, fax numbers, and e-mail addresses.

(e) Description of fill material to be used.

(f) For projects with an NPDES Permit for Construction Activities, submit information to address all sections in the Storm Water Pollution Prevention Plan (SWPPP).

(g) For projects with an NPDES Permit, information required for compliance with the conditions of the Notice of General Permit Coverage (NGPC)/NPDES Permit.

181 (h) Site-Specific BMP Review Checklist. The checklist may
182 be downloaded from HDOT's Stormwater Management
183 website at <http://stormwaterhawaii.com>.
184

185 Date and sign Site-Specific BMP Plan. Keep accepted
186 copy on site or at an accessible location so that it can be made
187 available at the time of an on-site inspection or upon request by
188 the Engineer, HDOT Third-Party Inspector, and/or DOH/EPA
189 Representative. Amendments to the Site-Specific BMP Plan
190 shall be included with original Site-Specific BMP Plan. Modify
191 SWPPP if necessary to conform to revisions. Include date of
192 installation and removal of Site-Specific BMP measures.
193 Obtain written acceptance by the Engineer before
194 implementing revised Site-Specific BMPs in the field.
195

196 Follow the guidelines in the current HDOT "Construction
197 Best Management Practices Field Manual", in developing,
198 installing, and maintaining Site-Specific BMPs for all projects.
199 For any conflicting requirements between the Manual and
200 applicable bid documents, the applicable bid documents will
201 govern. Should a requirement not be clearly described within
202 the applicable bid documents, notify the Engineer immediately
203 for interpretation. For the purposes of clarification "applicable
204 bid documents" include the construction plans, standard
205 specifications, special provisions, Permits, and the SWPPP
206 when applicable.
207

208 Follow Honolulu's City and County "Rules for Soil
209 Erosion Standards and Guidelines" for all projects on Oahu.
210 Use respective Soil Erosion Guidelines for Maui, Kauai and
211 Hawaii projects.
212

213 **(B) Construction Requirements.** Do not begin work until submittals
214 detailed in Subsection 209.03(A)(2) - Water Pollution, Dust, and Erosion
215 Control Submittals are completed and accepted in writing by the Engineer.
216

217 Install, maintain, monitor, repair and replace site-specific BMP
218 measures, such as for water pollution, dust and erosion control; installation,
219 monitoring, and operation of hydrotesting activities; removal and disposal of
220 hazardous waste indicated on plans, concrete cutting slurry, concrete curing
221 water; or hydrodemolition water. Site-Specific BMP measures shall be in
222 place, functional and accepted by HDOT personnel prior to initiating any
223 ground disturbing activities.
224

225 If necessary, furnish and install rain gage in a secure location prior to
226 field work including installation of site-specific BMP. Provide rain gage with
227 a tolerance of at least 0.05 inches of rainfall. Install rain gage on project site
228 in an area that will not deter rainfall from entering the gate opening. Do not
229 install in a location where rain water may splash into rain gage. The rain
230 gage installation shall be stable and plumbed. Maintain rain gage and
231 replace rain gage that is stolen, does not function properly or accurately, is
232 worn out, or needs to be relocated. Do not begin field work until rain gage is
233 installed and Site-Specific BMPs are in place. Rain gage data logs shall be
234 readily available. Submit rain gage data logs weekly to the Engineer.
235

236 Address all comments received from the Engineer.
237

238 Modify and resubmit plans and construction schedules to correct
239 conditions that develop during construction which were unforeseen during
240 the design and pre-construction stages.
241

242 Coordinate temporary control provisions with permanent control
243 features throughout the construction and post-construction period.
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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
257 activities have temporarily ceased when clearing, grading, and excavation
258 within any area of the site that will not include permanent structures will not
259 resume for a period of 14 or more calendar days, but such activities will
260 resume in the future. The term "immediately" is used in this section to define
261 the deadline for initiating stabilization measures. "Immediately" means as
262 soon as practicable, but no later than the end of the next work day, following
263 the day when the earth-disturbing activities have temporarily or permanently
264 ceased.
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266 For projects with an NPDES Permit for Construction activities:
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(1) For construction areas discharging into **waters not impaired for** nutrients or sediments, complete initial stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities.

(2) 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.

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.

Any of the following types of activities constitutes initiation of stabilization:

- (1) Prepping the soil for vegetative or non-vegetative stabilization;
- (2) Applying mulch or other non-vegetative product to the exposed area;
- (3) Seeding or planting the exposed area;
- (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
- (5) Finalizing arrangements to have stabilization product fully installed in compliance with the deadline for completing initial stabilization activities.

Any of the following types of activities constitutes completion of initial stabilization activities:

- (1) For vegetative stabilization, all activities necessary to initially seed or plant the area to be stabilized; and/or
- (2) For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

If the Contractor is unable to meet the deadlines above due to circumstances beyond the Contractor’s control, and the Contractor is using vegetative cover for temporary or permanent stabilization, the Contractor may comply with the following stabilization deadlines instead as agreed to by the Engineer:

314 (1) Immediately initiate, and complete within the timeframe shown
315 above, the installation of temporary non-vegetative stabilization
316 measures to prevent erosion;

317
318 (2) Complete all soil conditioning, seeding, watering or irrigation
319 installation, mulching, and other required activities related to the
320 planting and initial establishment of vegetation as soon as conditions
321 or circumstances allow it on the site; and

322
323 (3) Notify and provide documentation to the Engineer the
324 circumstances that prevent the Contractor from meeting the deadlines
325 above for stabilization and the schedule the Contractor will follow for
326 initiating and completing initial stabilization and as agreed to by the
327 Engineer.

328
329 Follow the applicable requirements of the specifications and special
330 provisions including Section 619 Planting and Section 641 Hydro-Mulch
331 Seeding.

332
333 Immediately after seeding or planting the area to be vegetatively
334 stabilized, to the extent necessary to prevent erosion on the seeded or
335 planted area, select, design, and install non-vegetative erosion controls that
336 provide cover (e.g., mulch, rolled erosion control products) to the area while
337 vegetation is becoming established.

338
339 Protect exposed or disturbed surface area with mulches, grass seeds
340 or hydromulch. Spray mulches at a rate of 2,000 pounds per acre. Add
341 tackifier to mix at a rate of 85 pounds per acre. Apply grass seeds at a rate
342 of 125 pounds per acre. For hydromulch, use the ingredients and rates
343 required for mulches and grass seeds. Submit recommendations from a
344 licensed Landscape Architect when deviating from the application rates
345 above.

346
347 Apply fertilizer to mulches, grass seed or hydromulch per
348 manufacturer's recommendations. Submit recommendations from a licensed
349 Landscape Architect when deviating from the manufacturer's
350 recommendations.

351
352 Install velocity dissipation measures when exposing erodible surfaces
353 greater than 15 feet in height.

354
355 BMP measures shall be in place and operational at the end of work
356 day or as required by Section 209.03(B) Construction Requirements.

357

358 Install and maintain either or both stabilized construction entrances
359 and wheel washes to minimize tracking of dirt and mud onto roadways.
360 Restrict traffic to stabilized construction areas only. Clean dirt, mud, or other
361 material tracked onto the road, sidewalk, or other paved area by the end of
362 the same day in which the track-out occurs. Modify stabilized construction
363 entrances to prevent mud from being tracked onto road. Stabilize entire
364 access roads if necessary.

365
366 Chemicals may be used as soil stabilizers for either or both erosion
367 and dust control if acceptable to the Engineer.

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369 Provide temporary slope drains of rigid or flexible conduits to carry
370 runoff from cuts and embankments. Provide portable flume at the entrance.
371 Shorten or extend temporary slope drains to ensure proper function.

372
373 Protect ditches, channels, and other drainageways leading away from
374 cuts and fills at all times by either:

- 375
376 (1) Hydro-mulching the lower region of embankments in the
377 immediate area.
378
379 (2) Installing check dams and siltation control devices.
380
381 (3) Other methods acceptable to the Engineer.

382
383 Provide for controlled discharge of waters impounded, directed, or
384 controlled by project activities or erosion control measures.

385
386 Cover exposed surface of materials completely with tarpaulin or
387 similar device when transporting aggregate, soil, excavated material or
388 material that may be source of fugitive dust.

389
390 Cleanup and remove any pollutant that can be attributed to the
391 Contractor.

392
393 Install or modify Site-Specific BMP measures due to change in the
394 Contractor's means and methods, or for omitted condition that should have
395 been allowed for in the accepted Site-Specific BMP or a Site-Specific BMP
396 that replaces an accepted Site-Specific BMP that is not satisfactorily
397 performing. Modifications to Site-Specific BMP measures shall be accepted
398 in writing by the Engineer prior to implementation.

399
400 Properly maintain all Site-Specific BMP measures.

401
402 For projects with an NPDES Permit for Construction Activities:

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404 (1) For construction areas discharging into nutrient or sediment
405 impaired waters, inspect, prepare a written report, and make repairs
406 to BMP measures at the following intervals:

- 407
- 408 (a) Weekly.
- 409
- 410 (b) Within 24 hours of any rainfall of 0.25 inch or greater
411 which occurs in a 24-hour period.
- 412
- 413 (c) When existing erosion control measures are damaged
414 or not operating properly as required by Site-Specific BMP.
- 415

416 (2) For construction areas discharging to waters not impaired for
417 nutrients or sediments, inspect, prepare a written report, and make
418 repairs to BMP measures at the following intervals:

- 419
- 420 (a) Weekly.
- 421
- 422 (b) When existing erosion control measures are damaged
423 or not operating properly as required by Site-Specific BMP.
- 424

425 For projects without an NPDES Permit for Construction activities,
426 inspect, prepare a written report, and make repairs to BMP measures at the
427 following intervals:

- 428
- 429 (a) Weekly.
- 430
- 431 (b) When existing erosion control measures are damaged
432 or not operating properly as required by Site-Specific BMP.
- 433

434 Temporarily remove, replace or relocate any Site-Specific BMP that
435 must be removed, replaced or relocated due to potential or actual flooding,
436 or potential danger or damage to project or public.

437

438 Maintain records of inspections of Site-Specific BMP work. Keep
439 continuous records for duration of the project. Submit copy of Inspection
440 Report to the Engineer within 24 hours after each inspection.

441

442 The Contractor's designated representative specified in Subsection
443 209.03(A)(2)(d) shall address any Site-Specific BMP deficiencies brought up
444 by the Engineer immediately, including weekends and holidays, and
445 complete work to fix the deficiencies by the close of the next work day if the
446 problem does not require significant repair or replacement, or if the problem
447 can be corrected through routine maintenance. Address any Site-Specific
448 BMP deficiencies brought up by the State's Third-Party Inspector in the
449 timeframe above or as specified in the Consent Decree or MS4 NPDES

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Permit, whichever is more stringent. The Consent Decree timeframe requirement applies statewide. The MS4 NPDES Permit only applies to Oahu. In this section, “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. When installation of a new pollution prevention control or a significant repair is needed, complete installation or repair no later than 7 calendar days from the time of notification/Contractor discovery. Notify the Engineer and document why it is infeasible to complete the installation or repair within 7 calendar days and complete the work as soon as practicable and as agreed to by the Engineer. Address Site-Specific BMP deficiencies discovered by the Contractor within the timeframe above. The Contractor’s failure to satisfactorily address these Site-Specific BMP deficiencies, the Engineer reserves the right to employ outside assistance or use the Engineer’s own labor forces to provide necessary corrective measures. The Engineer will charge the Contractor such incurred costs plus any associated project engineering costs. The Engineer will make appropriate deductions from the Contractor’s monthly progress estimate. Failure to apply Site-Specific BMP measures may result in one or more of the following: assessment of liquidated damages, suspension, or cancellation of Contract with the Contractor being fully responsible for all additional costs incurred by the State.

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

Do not begin construction activities until all required conditions of the permit are met and submittals detailed in Subsection 209.03(A)(2) – Water Pollution, Dust, and Erosion Control Submittals are completed and accepted in writing 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.

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

496 **(E) Discharges Associated with Dewatering Activities.** If dewatering
497 activities require effluent discharge into State waters or drainage systems, an
498 NPDES Dewatering Permit (CWB-NOI Form G) or Individual Permit
499 authorizing discharges associated with dewatering from DOH-CWB is
500 required from the DOH-CWB.
501

502 Do not begin dewatering activities until the DOH-CWB has issued an
503 Individual NPDES Permit or Notice of General Permit Coverage (NGPC).
504 Conduct dewatering operations in accordance with the conditions of the
505 permit or NGPC.
506

507 **(F) Solid Waste.** Submit the Solid Waste Disclosure Form for
508 Construction Sites to the Engineer within 21 calendar days of date of award.
509 Provide a copy of all the disposal receipts from the facility permitted by the
510 Department of Health to receive solid waste to the Engineer monthly. This
511 should also include documentation from any intermediary facility where solid
512 waste is handled or processed, or as directed by the Engineer.
513

514 **(G) Construction BMP Training.** The Contractor's representative
515 responsible for development of the Site-Specific BMP Plan and
516 implementation of Site-Specific BMPs in the field shall attend the State's
517 Construction Best Management Practices Training. The Contractor shall
518 keep training logs updated and readily available.
519

520 **209.04 Measurement.**

521
522 **(A)** Installation, maintenance, monitoring, and removal of BMP will be paid
523 on a lump sum basis. Measurement for payment will not apply.
524

525 **209.05 Payment.** The Engineer will pay for accepted pay items listed below at
526 contract price per pay unit, as shown in the proposal schedule. Payment will be full
527 compensation for work prescribed in this section and contract documents.
528

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

532 Pay Item	533 Pay Unit
534 Installation, Maintenance, Monitoring, and Removal of BMP	535 Lump Sum

536 No progress payment will be authorized until the Engineer accepts in writing
537 Site-Specific BMP or when the Contractor fails to maintain project site in accordance
538 with accepted BMP.
539

540 For all citations or fines received by the Department for non-compliance,
541 including compliance with NPDES Permit conditions, the Contractor shall reimburse

542 State within 30 calendar days for full amount of outstanding cost State has incurred,
543 or the Engineer will deduct cost from progress payment.

544

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

547

548 **Appendix A**

549

550 The following list identifies potential pollutant sources and corresponding
551 BMPs used to mitigate the pollutants. Each BMP is referenced to the corresponding
552 section of the current HDOT Construction Best Management Practices Field Manual
553 or appropriate Supplemental Sheets. The Manual may be obtained from the HDOT
554 Statewide Stormwater Management Program Website at
555 <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/> under
556 Construction Best Management Practices Field Manual. Supplemental BMP sheets
557 are located at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/> under Concrete Curing
558 and Irrigation Water.
559
560

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<p>Construction debris, green waste, general litter</p>	<ul style="list-style-type: none"> • 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. • <i>Collect and dispose of all waste materials in trash dumpsters. Place dumpsters, with secure watertight lids, away from storm water conveyances and drains, in a covered materials storage area.</i> • <i>Dispose of construction and non- construction solid waste in accordance with State DOH regs.</i> • <i>Load removed non- recyclable vegetation directly onto trucks; cover and transport to a licensed facility</i> 	<p>See Solid Waste Management Section SM-6. <i>Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.</i></p>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<p>Materials associated with the operation and maintenance of equipment, such as oil, fuel, and hydraulic fluid leakage</p>	<ul style="list-style-type: none"> • 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 cleanup 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. • 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 Storage and Handling Section SM-2 for additional requirements. 	<p>See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM-12, and SM-13, and Material Storage and Handling, Section SM-2, and Spill Prevention and Control SM-10.</p>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Soil erosion from the disturbed areas	<ul style="list-style-type: none"> • Provide Soil Stabilization, Slope Protection, Storm Drain Inlet Protection SC-1, Perimeter Controls and Sediment Barriers, Sediment Basins and Detention Ponds, Check Dams SC-3 ,Level Spreader EC-6, Paving Operations SM-20, Construction Roads and Parking Area Stabilization SC-10, Controlling Storm Water Flowing Onto and Through the Project, Post-Construction BMPs, and Non-Structural BMPs (Construction BMP Training SM-1, Scheduling SM-14, Location of Potential Sources of Sediment SM-15, Preservation of Existing Vegetation SM-17). • Delineate, and clearly mark off, with flags, tape, or other similar marking device all natural buffer areas defined in the SWPPP. • Preserve native topsoil where practicable. • In areas where vegetative stabilization will occur, restrict vehicle/equipment use in areas to avoid soil compaction or condition soil to promote vegetative growth. • For Storm Drain Inlet Protection, clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. • Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same day in which it is found or by the end of the following work day if removal by the same day is not feasible. • Sediment basins shall be designed and maintained in accordance with HAR Chapter 11-55. • Minimize disturbance on steep slopes (Greater than 15% in grade). • If disturbance of steep slopes are unavoidable, phase disturbances and use stabilization techniques designed for steep grades. • For temporary drains and swales use velocity dissipation devices within and at the outlet to minimize erosive flow velocities. 	<p>Soil Stabilization</p> <ol style="list-style-type: none"> 1. SM-22 Topsoil Management 2. EC-12 Seeding and Planting 3. EC-14 Mulching 4. EC-11 Geotextiles and Mats <p>Slope Protection</p> <ol style="list-style-type: none"> 1. EC-12 Seeding and Planting 2. EC-14 Mulching 3. EC-11 Geotextiles and Mats 4. EC-4 Slope Roughening, Terracing, and Rounding 5. EC-7 Slope Drains and Subsurface Drains 6. EC-9 Slope Interceptor or Diversion Ditches/Berms <p>SC-1 Storm Drain Inlet Protection</p>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
		<p><i>Perimeter Controls and Sediment Barriers</i></p> <ol style="list-style-type: none"> 1. SC-7 Silt Fence <i>or Filter Fabric Fence</i> 2. SC-2 Vegetated Filter Strips and Buffers 3. SC-6 Compost Filter Berm/Sock 4. SC-8 Sandbag Barrier 5. SC-9 Brush or Rock Filter <p><i>Sediment Basins and Detention Ponds</i></p> <ol style="list-style-type: none"> 1. SC-4 Sediment Trap 2. SC-5 Sediment Basin <p>SC-3 Check Dams</p> <p><i>EC-6 Level Spreader</i> <i>SM-20 Paving Operations</i> <i>SC-10 Construction Roads and Parking Area Stabilization</i></p>

565

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
		<p>Controlling Storm Water Flowing onto and Through the Project</p> <ol style="list-style-type: none"> 1. EC-3 Run-On Diversion 2. EC-5 Earth Dike, Swales and Ditches <p>Post Construction BMPs</p> <ol style="list-style-type: none"> 1. EC-2 Flared Culvert End Sections 2. EC-10 Rip-Rap and Gabion Inflow Protection 3. EC-8 Outlet Protection and Velocity Dissipation Devices 4. SM-22 Topsoil Management <p>Non-Structural BMPs</p> <ol style="list-style-type: none"> 1. SM-1 Construction BMP Training 2. SM-14 Scheduling 3. SM-15 Location of Potential Sources of Sediment 4. SM-17 Preservation of Existing Vegetation

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Sediment from soil stockpiles	<ul style="list-style-type: none"> • Locate stockpiles a minimum of 50 feet or as far as practicable from concentrated runoff or outside of 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 Stockpile Management Section SM-3 for additional requirements. 	See Stockpile Management Section SM-3. Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.
Emulsified asphalt or prime/tack coat	<ul style="list-style-type: none"> • 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 Storage and Handling Section SM-2 and Paving Operations Section SM-20 for additional requirements. • Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. 	See Material Storage and Handling Section SM-2, and Stockpile Management Section SM-3, Paving Operations Section SM-20, Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<p>Materials associated with painting, such as paint and paint wash solvent</p>	<ul style="list-style-type: none"> • 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 Storage and Handling Use SM-2, Hazardous Materials and Waste Management Section SM-9, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-21 for additional requirements. <p>Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.</p>	<p>See Material Storage and Handling Use Section SM-2, Stockpile Management Section SM-3, Hazardous Materials and Waste Management Section SM-9, Waste Management, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-21, Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.</p>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<p><i>Industrial chemicals, fertilizers, and/or pesticides</i></p>	<ul style="list-style-type: none"> • <i>Hazardous chemicals shall be well-labeled and stored in original containers.</i> • <i>Keep ample supply of cleanup materials on site.</i> • <i>Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.</i> • <i>Do not clean surfaces or spills by hosing the area down.</i> • <i>Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.</i> • <i>Dispose container only after all of the product has been used.</i> • <i>Retain a complete set of safety data sheets (formerly MSDS) on site.</i> • <i>Store industrial chemicals in water-tight containers and provide either cover or secondary containment.</i> • <i>Provide cover when storing fertilizers or pesticides to prevent these chemicals from coming into contact with rainwater.</i> • <i>Restrict amount of pesticide prepared to quantity necessary for the current application.</i> • <i>Do not apply fertilizers or pesticides during or just before a rain event.</i> • <i>Do not apply to stormwater conveyance channels with flowing water.</i> • <i>Comply with fertilizer and pesticide manufacturer's recommended usage and disposal instructions. Document departures from manufacturer's specifications in Attachment J.</i> • <i>Apply fertilizers 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.</i> • <i>Follow federal, state, and local laws regarding fertilizer application.</i> • <i>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.</i> 	<p>See Material Storage and Handling Use Section SM-2, Stockpile Management Section SM-3, and Hazardous Materials and Waste Management Section SM-9, and Spill Prevention and Control SM-10</p>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	<ul style="list-style-type: none"> • <i>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.</i> • <i>See Material Storage and Handling Use SM-2, and Hazardous Materials and Waste Management Section SM-9 for additional requirements.</i> 	
<p><i>Hazardous waste (Batteries, Solvents, Treated Lumber, etc.)</i></p>	<ul style="list-style-type: none"> • <i>Do not dispose of toxic materials in dumpsters allocated for construction debris.</i> • <i>Ensure collection, removal, and disposal of hazardous waste complies with regulations.</i> • <i>Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler.</i> • <i>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.</i> • <i>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.</i> • <i>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.</i> • <i>Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.</i> • <i>Do not clean surfaces or spills by hosing the area down.</i> • <i>Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.</i> 	<p><i>See Hazardous Materials and Waste Management Section SM-9 and Vehicle and Equipment Maintenance SM-12</i></p>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	<ul style="list-style-type: none"> • 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 Materials and Waste Management Section SM-9 and Vehicle and Equipment Management, Vehicle and Equipment Maintenance SM-12 for additional requirements. 	
Metals and Building Materials	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Materials and 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 Materials and Waste Management Section SM-9

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<i>Fugitive Dust Control and Dust Control Water</i>	<ul style="list-style-type: none"> • 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. • <i>Minimize exposed areas through the schedule of construction activities.</i> • <i>Utilize vegetation, mulching, sprinkling, and stone/gravel layering to quickly stabilize exposed soil.</i> • <i>Direct construction vehicle traffic to stabilized roadways.</i> • <i>Cover dump trucks hauling material from the site with a tarpaulin.</i> <p>See Dust Control Section SM-19 for additional requirements.</p>	See Dust Control Section SM-19
<i>Concrete Truck Wash Water</i>	<ul style="list-style-type: none"> • 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. • 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 <i>Wash and Waste Management</i> Section SM-4 for additional requirements. 	See Waste Management, Concrete <i>Wash and Waste Management</i> Section SM-4

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Sediment Track-Out	<ul style="list-style-type: none"> • 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 that remove sediment prior to exit when minimum dimensions cannot be met. <p>See Stabilized Construction Entrance/Exit Section SC-11 for additional requirements.</p>	See Stabilized Construction Entrance/Exit Section SC-11
Irrigation Water	<ul style="list-style-type: none"> • 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. <p>See Seeding and Planting Section EC-12 and California Stormwater BMP Handbook SD-12 Efficient Irrigation included in SWPPP Attachment A for additional requirements.</p>	See Seeding and Planting Section EC-12 and California Stormwater BMP Handbook SD-12 Efficient Irrigation
Hydrotesting Effluent	<ul style="list-style-type: none"> • If work includes removing, relocation or installing waterlines, and Contractor elects to flush waterline or discharge hydrotesting effluent into State waters or drainage systems, the Contractor shall prepare and obtain HDOT acceptance of a NOI/NPDES Permit Form F application for HDOT submittal to DOH CWB at least 30 calendar days prior to the start of Hydrotesting Activities if necessary. Site specific BMPs will be included in the NOI/NPDES Permit Form F submittal. 	Site specific BMPs will be included in the NOI/NPDES Permit Form F submittal.

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<i>Dewatering Effluent</i>	<i>If excavation or backfilling operations require dewatering, and Contractor elects to discharge dewatering effluent into State waters or existing drainage systems, Contractor shall prepare and obtain HDOT acceptance of a NOI/NPDES Permit Form G application for HDOT submittal to DOH CWB at least 30 calendar days prior to the start of Dewatering Activities if necessary. See Site Planning and General Practices, Dewatering Operations Section SM-18 for additional requirements.</i>	<i>See Dewatering Operations SM-18. Site specific BMPs will be included in the NOI/NPDES Permit Form G submittal.</i>
<i>Saw-cutting Slurry</i>	<ul style="list-style-type: none"> • <i>Saw cut slurry shall be removed from the site by vacuuming.</i> • <i>Provide storm drain protection during saw cutting. See Paving Operations Section SM-20 for additional requirements.</i> <i>Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.</i>	<i>See Paving Operations Section SM-20, Storm Drain Inlet Protection SC-1, Perimeter sediment controls where applicable</i>
<i>Concrete Curing Water</i>	<ul style="list-style-type: none"> • <i>Avoid overspraying of curing compounds.</i> • <i>Apply an amount of compound that covers the surface, but does not allow any runoff of the compound.</i> <i>See California Stormwater BMP Handbook NS-12 Concrete Curing included in SWPPP Attachment A for additional requirements.</i>	<i>See California Stormwater BMP Handbook NS-12 Concrete Curing</i>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Plaster Waste Water	<ul style="list-style-type: none"> • Direct all wastewater 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, Storage and Handling Use SM-2, Stockpile Management Use Section SM-3, and Hazardous Materials and Waste Management Section SM-9 for additional requirements. 	See Material, Storage and Handling Use Section SM-2, Stockpile Management Use Section SM-3, and Hazardous Materials and Waste Management Section SM-9
Water-Jet Wash Water	<ul style="list-style-type: none"> • 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-11
Sanitary/Septic Waste	<ul style="list-style-type: none"> • 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 Waste Section SM-7 for additional requirements. 	See Sanitary Waste Section SM-7.

576

577

578

“

END OF SECTION 209

**Project No. 10006
209-28a**

5/20/2026

1 **SECTION 305 – AGGREGATE SUBBASE COURSE**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **305.04 – Measurement** by revising lines 54 to 55 to read as
6 follows:

7
8 **“305.04 Measurement.**

9
10 **(A)** Aggregate subbase will be paid on a lump sum basis.
11 Measurement for payment will not apply.”

12
13 **(II)** Amend **305.05 – Payment** by revising lines 57 to 66 to read as follows:

14
15 **“305.05 Payment.** The Engineer will pay for the accepted aggregate
16 subbase at the contract price per pay unit, as shown in the proposal schedule.
17 Payment will be full compensation for the work prescribed in this section and the
18 contract documents.

19
20 The Engineer will pay for the following pay item when included in the
21 proposal schedule:

22

	Pay Item	Pay Unit
(A)	Aggregate Subbase	Lump Sum”

23
24
25
26
27

28 **END OF SECTION 305**

- 46 (1) Blaw-Knox bituminous pavers shall be
47 equipped with the Blaw-Knox Materials
48 Management Kit (MMK).
49
50 (2) Cedarapids bituminous pavers shall be those
51 that were manufactured in 1989 or later.
52
53 (3) Barber-Green/Caterpillar bituminous pavers
54 shall be equipped with deflector plates as
55 identified in the December 2000 Service
56 Magazine entitled "New Asphalt Deflector Kit
57 {6630, 6631, 6640}".
58

59 Prior to the start of using the paver for placing plant
60 mix, the Contractor shall submit for approval a full
61 description in writing of the means and methodologies that
62 will be used to prevent bituminous paver segregation. Use of
63 the paver shall not commence prior to receiving approval
64 from the Engineer.
65

66 The Contractor shall supply a Certificate of
67 Compliance that verifies that the approved means and
68 methods used to prevent bituminous paver segregation have
69 been implemented on all pavers used on the project and is
70 working in accordance with the manufacturer's
71 requirements."
72

73 **(VI) Amend Section 401.03(F)(1) HMA Pavement Courses One and a**
74 **Half Inches Thick Or Greater**, from lines 499 to 505 to read as follows:
75

76 **"(1) HMA Pavement Courses One and a Half Inches Thick Or**
77 **Greater.** Where HMA pavement compacted thickness indicated
78 in the contract documents is 1-1/2 inches or greater, compact to not
79 less than 92.0 percent nor greater than 97.0 percent of the
80 maximum specific gravity determined in accordance with AASHTO
81 T 209, modified by deletion of Supplemental Procedure for Mixtures
82 Containing Porous Aggregate."
83

84
85 **(VII) Amend Section 401.03(F)(3) HMA Pavement Courses One and a**
86 **Half Inches Thick or Greater In Special Areas Not Designated For Vehicular**
87 **Traffic**, from lines 530 to 538 to read as follows:
88

89 **"(3) HMA Pavement Courses One and a Half Inches Thick or**
90 **Greater In Special Areas Not Designated For Vehicular Traffic.**
91 For areas such as bikeways that are not part of roadway and other

92 areas not subjected to vehicular traffic, compact to not less than
93 90.0 percent of maximum specific gravity determined in accordance
94 with AASHTO T 209, modified by deletion of Supplemental
95 Procedure for Mixtures Containing Porous Aggregate. Increase
96 asphalt content by at least 0.5 percent above that used for HMA
97 pavements designed for vehicular traffic.”
98
99

100 **(VIII) Amend Section 401.04 Measurement**, from lines 597 to 603 to read as
101 follows:

102
103 **“401.04 Measurement.**

104
105 **(A)** Asphalt concrete pavement will be paid on a lump sum basis.
106 Measurement for payment will not apply.
107

108 **(IX) Amend Section 401.05 Payment**, from lines 605 to 635, to read as
109 follows:

110
111 **“401.05 Payment.** The Engineer will pay for the accepted pay items
112 listed below at the contract price per pay unit, as shown in the proposal schedule.
113 Payment will be full compensation for the work prescribed in this section and the
114 contract documents.

115
116 The Engineer will pay for each of the following pay items when included in
117 the proposal schedule:

Pay Item	Pay Unit
HMA Pavement, Mix No. IV	Lump Sum

122
123
124 **(1)** 80% of the contract unit price upon completion of submitting
125 a job-mix formula acceptable to the Engineer; preparing the
126 surface, spreading, and finishing the mixture; and compacting the
127 mixture;

128
129 **(2)** 20% of the contract unit price upon completion of cutting
130 samples from the compacted pavement for testing; placing and
131 compacting the sampled area with new material conforming to the
132 surrounding area; protecting the pavement; and final analysis.

133
134 **(C)** Leveling Course Ton

135
136 **(1)** 80% of the contract unit price upon completion of submitting
137 a job-mix formula acceptable to the Engineer; preparing the

138 surface, spreading, and finishing the mixture; and compacting the
139 mixture;

140
141 (2) 20% of the contract unit price upon completion of cutting
142 samples from the compacted pavement for testing; placing and
143 compacting the sampled area with new material conforming to the
144 surrounding area; protecting the pavement; and final analysis.

145
146 The Engineer will pay for cold planing in accordance with and under
147 Section 415 – Cold Planing of Existing Pavement.

148
149 The Engineer will pay for adjusting existing frames and covers and valve
150 boxes in accordance with and under Section 604 – Manholes, Inlets and Catch
151 Basins and Section 626 – Manholes and Valve Boxes for Water and Sewer
152 Systems.

153
154 The Engineer may, in lieu of requiring removal and replacement, use the
155 sliding scale factor to accept HMA pavements compacted below 92.0 percent
156 and above 97.0 percent. The Engineer will make payment for the material in
157 that production day at a reduced price arrived at by multiplying the contract unit
158 price by the pay factor shown in Table 401.05-1.

159

Percent Compaction	Percentage Payment
> 98.0	Removal
97.1 - 98.0	95
92.0 - 97.0	100
90.0 - 91.9	80
<90.0	Removal

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END OF SECTION 401

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The Engineer will pay for excavation and backfill for foundations in accordance with and under Section 205 – Excavation and Backfill for Bridge and Retaining Structures.”

END OF SECTION 503

1 **SECTION 504 – PRESTRESSED CONCRETE MEMBERS**
2

3 Make the following amendments to said Section:
4

5 **(I)** Amend **504.04 – Measurement** by revising lines 649 to 650 to read as
6 follows:
7

8 **“504.04 Measurement.** The Engineer will not measure the prestressed
9 concrete members or post-tensioning operation when contracted on a lump sum
10 basis..”
11

12 **(II)** Amend **504.05 – Payment** by revising lines 652 to 664 to read as follows:
13

14 **“504.05 Payment.** The Engineer will pay for the accepted quantities of
15 prestressed concrete members at the contract lump sum as shown in the
16 proposal.
17

18 The price shall be full compensation for furnishing the shop drawings;
19 getting an authorized person of the company making the members; welding;
20 fabricating; tensioning; placing concrete; curing; grouting; taking safety
21 measures; handling, storing, and transporting; placing; and furnishing materials,
22 labors, equipment, tools and incidentals necessary to complete the work.
23

24 The Engineer will pay for the following pay item when included in the
25 proposal schedule:
26

Pay Item	Pay Unit
20” Deep Precast Prestressed Concrete Plank	Lump Sum”

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34 **END OF SECTION 504**

1 **DIVISION 600 - MISCELLANEOUS CONSTRUCTION**

2
3 Amend **Section 601 - STRUCTURAL CONCRETE** to read as follows:

4
5 **SECTION 601 - STRUCTURAL CONCRETE**

6
7
8 **601.01 Description.** This section describes structural concrete consisting of
9 Portland Cement, fine aggregate, coarse aggregate, and water. This will include
10 adding admixtures for the purpose of entraining air, retarding or accelerating set,
11 tinting, and other purposes as required or permitted.

12
13 **601.02 Materials.**

14	Portland Cement	701.01
15		
16	Fine Aggregate for Concrete	703.01
17		
18	Coarse Aggregate for Portland Cement Concrete	703.02
19		
20	Admixtures	711.03
21		
22	Water	712.01
23		

24
25 Use coarse aggregate for lightweight concrete conforming to ASTM C330
26 except Sections 5, 7 and 9.

27
28 **601.03 Construction.**

29
30 **(A) Quality Control.** Portland Cement concrete production requires
31 Contractor responsibility for quality control of materials during handling,
32 blending, mixing, curing, and placement operations.

33
34 Sample, test, and inspect concrete to ensure quality control of
35 component materials and concrete. Sampling and testing for quality control in
36 accordance with standard methods shall be performed by certified ACI
37 Concrete Field Technician Grade I. Perform quality control tests for slump, air
38 content, temperature, and unit weight during production of structural concrete
39 other than concrete for incidental construction. Submit quality control test
40 results.

41 **(B) Design and Designation of Concrete.** Design concrete mixture for
42 concrete work specified. Submit mix design using State Highways Division
43 form DOT 4-151 or an Engineer accepted equivalent form. Do not start work
44 until the Engineer accepts mix design. The Engineer will accept concrete mix
45 design using information given in Table 601.03-1 - Design of Concrete, and
46 other pertinent requirements.

601.03

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Whenever 28-day compressive strength, f'_c , is 4,000 psi or greater, designate concrete by required minimum 28-day compressive strength.

The 28-day compressive strength, f'_c , less than 4,000 psi listed in Table 601.03-1 – Design of Concrete, is for design information and designation of class only.

Proportion concrete designated by compressive strength such that concrete conforms to required strength.

Design concrete placed in bridge decks and pavements exposed to traffic wear, with air content of 3 percent, including entrapped and entrained air. Maintain air content for plastic concrete within tolerance of 1 percent air content, plus or minus, during the work.

Use Class BD concrete in bridge deck unless concrete is designated by compressive strength. Incorporate anti-corrosion and shrinkage reduction, water-reducing and set-retarding admixture into concrete mix design, with capability of varying degree of retardation without adversely affecting other characteristics of concrete. Submit design admixture dosage.

Class A concrete shall be used when type of concrete is not indicated in the contract documents.

Design concrete as specified in Table 601.03-1 – Design of Concrete.

74

TABLE 601.03-1 - DESIGN OF CONCRETE (800 Maximum Cement Content lbs./c.y.)					
Class of Concrete	28-Day Strength f_c, psi.	Minimum Cement Content lbs./c.y.	Maximum Water-Cement Ratio, lb./lb.	Minimum Cement Content with Mineralized CO2 lbs./c.y.	Maximum Water-Cement Ratio with Mineralized CO2 lb./lb.
A	3000	532	0.59	504	0.62
B	2500	475	0.66	450	0.70
C	2000	418	0.75	396	0.79
D	1500	380	0.85	360	0.87
BD	3750	610	0.49	NA	NA
SEAL	3000	610	0.55	NA	NA
Designated by Strength f_c or f_r	As Specified	610	0.49	NA	NA
f_r = Specified Modulus of Rupture					

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Use the absolute volume method to proportion concrete materials in accordance with requirements of concrete designated by class, cement content in pounds per cubic yards, or specified 28-day compressive strength. Use absolute volumetric proportioning methods as outlined in the American Concrete Institute (ACI) Standard 211.1, "Recommended Practices for Selecting Proportions for Normal and Heavyweight Concrete."

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Use coarse aggregate size No. 57 (one inch to No. 4) or No. 67 (3/4 inch to No. 4) for concrete. For concrete placed in bottom slabs and stems of box girders, use No. 67 size aggregate. Smaller size aggregates may be permitted when encountering limited space between forms and reinforcement or between reinforcement when accepted by the Engineer in writing. Maximum aggregate size shall not be greater than 1/3 of the space between reinforcing steel bars or reinforcing steel and the form.

Use the following standard methods in Table 601.03-2 – Standard Methods for determining compliance with requirements indicated in this subsection:

TABLE 601.03-2 – STANDARD METHODS	
Sampling Fresh Mixed Concrete	AASHTO T 141
Mass Per Cubic Meter (Cubic Foot) Yield and Air Content (Gravimetric) of Concrete	AASHTO T 121
Slump of Hydraulic Cement Concrete	AASHTO T 119
Air Content of Freshly Mixed Concrete by the Pressure Method	AASHTO T 152
Specific Gravity and Absorption of Fine Aggregate	AASHTO T 84
Specific Gravity and Absorption of Coarse Aggregate	AASHTO T 85
Temperature of Freshly Mixed Portland Cement Concrete	ASTM C1064
Making and Curing Concrete Test Specimens in the Field	AASHTO T 23
Compressive Strength of Molded Concrete Cylindrical Specimens	AASHTO T 22 (4 inch by 8 inch or 6 inch by 12 inch cylinders)
Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)	AASHTO T 97

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98 When concrete is designated by compressive strength, f'_c , or flexural
99 strength, f'_r , the Engineer will require prequalification of materials and mix
100 proportions proposed for use before placing such concrete. The Engineer will
101 prequalify concrete based on past performance records using statistical
102 computations of population sizes and (n-1) weighting, or trial batch test reports
103 in compliance with computed minimum average strength for material and mix
104 proportions. The Engineer will determine minimum average strength on
105 probability of not more than one in 20 tests falling below specified strength for
106 the following conditions:

107
108 **(1)** When past performance records are available, furnish the
109 following documented performance records:

110 **(a)** Minimum of 15 consecutive 28-day strength tests from
111 projects having same materials and mix proportions.
112

113 **(b)** Two groups totaling 30 or more test results representing
114 similar materials in which mix proportion strengths are within 20
115 percent of specified strength, from data obtained within one year
116 of proposed use.
117

118 The Engineer will analyze performance records to establish
119 standard deviation.
120

121 **(2)** When sufficient past performance records are not provided, the
122 Engineer will assume current standard deviation to be 500 psi for
123 compressive strength, f'_c , and 50 psi for flexural strength, f'_r .
124

125 Unless sufficient performance records are available from other projects
126 at DOT Materials Testing and Research Branch, submit test performance
127 records or trial test reports for prequalifications, based on data of most recent
128 tests made on concrete of proposed mix design, and data obtained within one
129 year of proposed use.
130

131 When shrinkage reducing admixtures are used, submit test results
132 showing compliance to the Contract Documents' requirements.
133

134 Include the following information in test data and trial batch test reports:
135 date of mixing; mixing equipment and procedures used; size of batch in cubic
136 yards and weight, type, and source of ingredients used; slump of concrete; air
137 content of concrete when using air entraining agent; age at time of testing; and
138 strength of concrete cylinders tested.
139
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601.03

141 Show that concrete strength tests equal or exceed minimum average
142 strength in trial test reports. Test is average 28-day test results of five
143 consecutive concrete cylinders or concrete beams taken from single batch. No
144 cylinder or beam shall have strength less than 85 percent of minimum average
145 strength.

146
147 Submit test data and trial test reports signed by official of firm that
148 performed tests.

149
150 The Engineer reserves the right to stop work when a series of low
151 strength tests occur. Do not continue concrete work until cause is established
152 and the Engineer is informed of and accepts, necessary corrective action to be
153 taken.

154
155 **(C) Batching.** Measure and batch materials in accordance with the
156 following provisions:

157
158 **(1) Portland Cement.** Either sacked or bulk cement may be used.
159 Do not use fraction of sack of cement in concrete batch unless cement
160 is weighed.

161
162 Weigh bulk cement on weighing device accepted by the Engineer. Seal
163 and vent bulk cement-weighing hopper properly to preclude dusting
164 during operation. Do not suspend discharge chute from weighing
165 hopper. Arrange discharge chute so that cement will not lodge in
166 hopper or leak from hopper.

167
168 Batching accuracy shall be within 1 percent, plus or minus, of
169 required weight.

170
171 **(2) Water.** Measure water by volume or by weight. Use readily
172 adjustable device for measurement of water, with accuracy within 1
173 percent, plus or minus, of quantity of water required for batch. Arrange
174 device so that variable pressure in water supply line does not affect
175 measurements. Equip measuring tanks with outside taps and valves or
176 other accepted means to allow for checking calibration.

177
178 **(3) Aggregates.** When storing and stockpiling aggregates, avoid
179 separation of coarse and fine particles within each size, and do not
180 intermix various sizes before proportioning. Protect stored or stockpiled
181 aggregates from dust or other foreign matter. Do not stockpile together,
182 aggregates from different sources and of different gradations.

183 When transporting aggregates from stockpiles or other sources to
184 batching plant, ensure uniform grading of material is maintained. Do
185 not use aggregates that have become segregated or mixed with earth
186 or foreign matter. Stockpile or bin aggregates at least 12 hours before
187 batching. Produce or handle aggregates by hydraulic methods and
188 wash and drain aggregates. If aggregates exhibit high or non-uniform
189 moisture content, the Engineer will order storage or stockpiling for more
190 than 12 hours.

191
192 Proportion aggregates by weight, with the exception that
193 aggregates in concrete for minor structures, curbs, and sidewalks may
194 be proportioned by either volume or weight. For volumetric
195 proportioning, use measuring boxes of known capacity to measure
196 quantity of each aggregate size.

197
198 Use batch weight based on dry materials plus total weight of
199 moisture (both absorbed and surface) contained in aggregate.
200 Measure individual aggregates to within 2 percent, plus or minus, of
201 required weight, and total weight of aggregates to within 1 percent, plus
202 or minus, of required weight.

203
204 **(4) Admixtures.** Store, proportion, and dispense admixtures in
205 accordance with the following provisions:

206
207 **(a) Liquid Admixtures.** Dispense chemical admixtures, air
208 entraining admixtures, and corrosion inhibiting admixtures in
209 liquid form. Use mechanical dispensers for liquid admixtures
210 with sufficient capacity to measure prescribed quantity for each
211 batch of concrete. Include graduated measuring unit in each
212 dispenser to measure liquid admixtures to within 5 percent, plus
213 or minus, of prescribed quantity for each batch. Read
214 graduations accurately from point of measuring unit, and control
215 proportioning operations to permit visual check of batch
216 accuracy before discharging. Mark each measuring unit clearly
217 for type and quantity of admixture.

218
219 Arrange with supplier to provide sampling device
220 consisting of valve located in safe and accessible location for
221 sampling admixtures.

222
223 When using more than one liquid admixture for concrete
224 mix, use separate measuring unit for each liquid admixture and
225 dispense separately to avoid interaction that may interfere with
226 admixture efficiency and adversely affect concrete. Dispense
227 liquid admixture by injecting so as not to mix admixture at high
228 concentrations.

601.03

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When using liquid admixtures in concrete that is completely mixed in paving or continuous mixers, operate dispensers automatically with batching control equipment. Equip such dispensers with automatic warning system that shall provide visible or audible signals at points where proportioning operations are controlled, when the following occurs:

- a. Quantity of admixture measured for each batch of concrete varies from pre-selected dosage by more than 5 percent; or
- b. Entire contents of measuring unit from dispenser is not emptied into each batch of concrete.

Unless liquid admixtures are added to batch with pre-measured water, discharge liquid admixtures into stream of water that disperses admixtures uniformly throughout batch. An exception is that air-entraining admixtures may be dispensed directly into moist sand in batching bins, provided adequate control of concrete air content can be maintained.

Measure and disperse special admixtures, as recommended by admixture manufacturer, and as accepted by the Engineer. Special admixtures include high-range water reducers requiring dosages greater than capacity of conventional dispensing equipment. For site-added, high-range water reducers, use calibrated, portable dispenser supplied by manufacturer.

(b) Mineral Admixtures. Protect mineral admixtures from exposure to moisture until used. Pile sacked material of each shipment to permit access for tally, inspection, and identification.

Provide adequate facilities to ensure that mineral admixtures meeting specified requirements are kept separate from other mineral admixtures and that only specified mineral admixtures are allowed to enter into the work. Provide safe and suitable facilities for sampling mineral admixtures at weigh hopper or in feed line immediately in advance of hopper.

Incorporate mineral admixtures into concrete using equipment conforming requirements for Portland Cement weigh hoppers and charging and discharging mechanisms specified in ASTM C94 and Subsection 601.03(C) - Batching.

274 When concrete is completely mixed in stationary paving
275 or continuous mixers, weigh mineral admixture in separate
276 weigh hopper. Introduce mineral admixture and cement
277 simultaneously into mixer, proportionately with aggregate.

278
279 When interlocks are required for cement-charging
280 mechanisms, and cement and mineral admixtures are weighed
281 cumulatively, interlock their charging mechanisms to prevent
282 introduction of mineral admixture until mass of cement in weigh
283 hopper is within tolerances specified in Subsection 601.03(C)(1)
284 - Portland Cement.

285
286 In determining maximum quantity of free water that may
287 be used in concrete, consider mineral admixture and
288 supplementary cementitious materials (SCMs) to be cement.

289
290 **(5) Bins and Scales.** At batching plant, use individual bins,
291 hoppers, and scale for each aggregate size. Include separate bin,
292 hopper, and scale for bulk cement and fly ash.

293
294 Except when proportioning bulk cement for pavement or
295 structures, cement weigh hopper may be attached to separate scale for
296 individual weighing or to aggregate scale for cumulative weighing. If
297 cement is weighed cumulatively, weigh cement before other
298 ingredients.

299
300 When proportioning for pavement or structures, keep bulk
301 cement scale and weigh hopper separate and distinct from aggregate
302 weighing equipment.

303
304 Use springless-dial or beam-type batching scales. When using
305 beam-type scales, make provisions to show operator that required load
306 in weighing hopper is approaching. Use devices that show condition
307 within last 200 pounds of load and within 50 pounds of overload.

308
309 Maintain scale accuracy to 0.5 percent throughout range of use.
310 Design poises to lock to prevent unauthorized change of position. Use
311 scales inspected by the State Measurement Standards Branch of the
312 Department of Agriculture to ensure their continued accuracy. Provide
313 not less than ten 50-pound weights for testing scales.

314
315 Batching plants may be equipped to proportion aggregates and
316 bulk cement by automatic weighing devices.

317

318 **(6) Batching and Hauling.** When mixing is to be performed at work
319 site, transport aggregates from batching plant to mixer in batch boxes,
320 vehicle bodies, or other containers of adequate capacity and
321 construction. Use partitions to separate batches and prevent spilling
322 from one compartment to another while in transit or during dumping.
323

324 Transport bulk cement to mixer in tight compartments carrying
325 full quantity of cement required for batch. Once cement is placed in
326 contact with aggregates, batches shall be mixed and placed within
327 1-1/2 hours of contact. Cement in original shipping packages may be
328 transported on top of aggregates. Ensure that each batch contains
329 number of sacks required by job mix.
330

331 Deliver batches to mixer intact. Charge each batch into mixer
332 without loss of cement. When carrying more than one batch on truck,
333 charge batch into mixer without spilling material from one batch
334 compartment into another.
335

336 **(D) Mixing.** Mix concrete in mechanically operated mixers.
337

338 Use stationary or truck mixers that distribute materials thoroughly and
339 produce concrete uniform in color and appearance. When there is variation in
340 mixed concrete attributable to worn pickup or throw-over blades, the Engineer
341 will inspect mixer. If inspection reveals that blades are worn more than one
342 inch below original height of manufacturer's design, repair or replace blades.
343 Upon request, make copy of manufacturer's design, showing dimensions and
344 arrangement of blades.
345

346 Charge batches into central or truck mixers so that portion of mixing
347 water enters ahead of cement and aggregates. Deliver uniform flow of water.
348 Place entire amount of batch water in mixer by end of first quarter of mixing
349 period. When mixers with multiple compartment drums are used, time
350 required to transfer material between compartments will be included as mixing
351 time. Use drum rotation speed as designated by manufacturer. If mixing does
352 not produce concrete of uniform and smooth texture, provide additional
353 revolutions at same speed until thorough mixing of each concrete batch is
354 attained. Begin measuring mixing time from time cement, aggregates, and 60
355 percent of water are in drum. Do not exceed manufacturer's rated capacity for
356 volume of concrete mixed in each batch.
357

358 Equip central or truck mixers with attachment for automatically timing
359 mixing of each concrete batch. Timing device shall include automatic feature
360 for locking discharge chute and device for warning operator when required
361 mixing duration has been met. If timing or locking device fails to operate,
362 immediately furnish clock or watch that indicates seconds, to mixer operator. If
363 timing device is not repaired within three days after becoming inoperative, shut
364 down batching operation until timing device is repaired.
365

366 For stationary mixers, use mixing time between 50 seconds and 5
367 minutes. Select mixing time, as necessary, to produce concrete that meets
368 uniformity criteria when tested in accordance with Section 11.3.3 of ASTM
369 C94. The Contractor may designate mixing time for which uniformity tests are
370 to be performed, provided mixing time is not less than 50 seconds or more
371 than 5 minutes. Before using concrete for pavements or structures, mix
372 concrete to meet specified uniformity requirements. The Contractor shall
373 furnish labor, sampling equipment, and materials required for conducting
374 uniformity tests of concrete mixture. The Engineer will furnish required testing
375 equipment, including scales, cubic measure, and air meter; and will perform
376 tests. The Engineer will not pay separately for labor, equipment, materials, or
377 testing, but will consider the costs incidental to concrete. After batching and
378 mixing operational procedures are established, the Engineer will not allow
379 changes in procedures without the Contractor re-establishing procedures by
380 conducting uniformity tests. Repeat mixer performance tests whenever
381 appearance of concrete or coarse aggregate content of samples is not
382 conforming to requirements of ASTM C94. For truck mixers, add four seconds
383 to specified mixing time if timing starts as soon as skip reaches its maximum
384 raised position.
385

386 Unless otherwise indicated in the contract documents or accepted by
387 the Engineer, concrete shall be mixed at proportioning plant. Operate mixer at
388 agitating speed while in transit. Concrete may be truck-mixed only when
389 cement or cement and mixing water are added at point of delivery. Begin
390 mixing truck-mixed concrete immediately after introduction of mixing water to
391 cement and aggregates, or introduction of cement to aggregates.
392

393 Inclined-axis, revolving drum truck mixers shall conform to Truck Mixer,
394 Agitator and Front Discharge Concrete Carrier Standards TMMB 100-01, 15th
395 Revision, published by Truck Mixer Manufacturers Bureau. Truck mixers shall
396 produce thoroughly mixed and uniform mass of concrete and shall discharge
397 concrete without segregation.
398

399 Manufacturer's standard metal rating plate shall be attached to each
400 truck mixer, stating maximum rating capacity in terms of volume of mixed
401 concrete for various uses and maximum and minimum mixing speeds. When
402 using truck mixers for mixing, adhere to maximum capacity shown on metal
403 rating plate for volume of concrete in each batch.

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404 Operate truck mixers at mixing speed designated by manufacturer, but
405 at not less than 6 or more than 18 revolutions per minute. Mix truck-mixed
406 concrete initially between 70 and 100 revolutions at manufacturer-designated
407 mixing speed, after ingredients, including water, are in mixer. Water may be
408 added to mixture not more than two times after initial mixing is completed.
409 Each time that water is added, turn drum an additional 30 revolutions or more
410 at mixing speed until concrete is mixed uniformly.

411
412 When furnishing shrink-mixed concrete, transfer partially mixed
413 concrete at central plant to truck mixer. Apply requirements for truck-mixed
414 concrete. The Engineer will not credit number of revolutions at mixing speed
415 for partial mixing in central plant.

416
417 When accepted by the Engineer, hand mixing may be allowed. The
418 entire concrete placement at one location shall not exceed 1/3 cubic yard.
419 It shall be hand mixed on a watertight, level platform. Use no aluminum to
420 construct platform. Measure proper amount of coarse aggregate in
421 measuring boxes and spread on platform. Spread fine aggregate on that
422 coarse aggregate layer. Limit coarse and fine aggregate layers to total
423 depth of one foot. Spread dry cement on this mixture. Turn whole mass
424 not less than two times dry. Add sufficient clean water, distributed evenly.
425 Turn whole mass again, not less than three times, not including placing in
426 carriers or forms.

427
428 **(E) Transporting Mixed Concrete.** Transport central-mixed concrete to
429 delivery point in truck agitators or truck mixers operating at speed designated
430 by equipment manufacturer as agitating speed; or in non-agitating hauling
431 equipment, provided consistency and workability of mixed concrete upon
432 discharge at delivery point is suitable for placement and consolidation in place;
433 and provided mixed concrete after hauling to delivery point conforms to
434 uniformity criteria when tested as specified in Section 12.5 of ASTM C94.

435
436 For revolving drum truck mixers transporting central-mixed concrete,
437 limit concrete volume to manufacturer's rated capacity for agitator operation.
438 Maintain agitating speed for both revolving drum mixers and revolving blade
439 type agitators as designated on manufacturer's data plate. Equip truck mixers
440 or truck agitators with electrically or mechanically actuated counters. Actuate
441 counters after introducing cement to aggregates.

442
443 Bodies of non-agitating hauling equipment shall be smooth, watertight,
444 metal containers equipped with gates to permit control of concrete discharge.
445 Protect open-topped haul vehicle against weather with cover accepted by the
446 Engineer.

447
448 When hauling concrete in non-agitating trucks, complete discharge
449 within 30 minutes after introducing mixing water to cement and aggregates.

450

451 When truck mixer or agitator is used for transporting central-mixed
452 concrete to delivery point, complete discharge within 1-1/2 hours, or before
453 250 revolutions of drum or blades, whichever comes first after introduction of
454 mixing water to cement and aggregates, or cement to aggregates. For truck-
455 mixed concrete, complete concrete discharge within 1-1/2 hours, or before 300
456 revolutions of drum or blades, whichever comes first. These limitations are
457 permitted to waived if concrete is of such slump after the 1-1/2 hour time or
458 300-revolution limit has been reached, that it can be placed, without addition of
459 water to the batch.

460
461 Submit delivery tickets from manufacturers of truck-mixed concrete and
462 central-mixed concrete with each truckload of concrete before unloading at
463 jobsite. Printed, stamped, or written delivery ticket shall include the following
464 information:

- 465
466 **(1)** Name of concrete plants.
467
468 **(2)** Serial number of ticket.
469
470 **(3)** Date and truck number.
471
472 **(4)** Name of Contractor.
473
474 **(5)** Specific project, route, or designation of job (name and location),
475 and truck overweight permit number when required.
476
477 **(6)** Specific class or designation of concrete in accordance with
478 contract documents.
479
480 **(7)** Quantity of concrete in cubic yards.
481
482 **(8)** Time of loading batch or mixing of cement and aggregates.
483
484 **(9)** Water added by receiver of concrete and receiver's initials.
485
486 **(10)** Information necessary to calculate total mixing water added by
487 producer. Total mixing water includes free water on aggregates, water,
488 and water added by truck operator from mixer tank.
489
490 **(11)** Readings of non-resettable revolution counters of truck mixers
491 after introduction of cement to aggregates, or introduction of mixing
492 water to cement aggregates.
493
494 **(12)** Supplier's mix number or code.
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Furnish additional information designated by the Engineer and required by job specifications upon request.

(F) Consistency. Regulate quantity of water used in concrete mixes so that concrete consistency, as determined by AASHTO T 119 test method, is within nominal slump range specified in Table 601.03-3 - Slump for Concrete or as stated on the accepted concrete mix design. If concrete slump exceeds nominal slump, adjust mixture of subsequent batches. If slump exceeds maximum slump, the Engineer will reject concrete unless deemed satisfactory for its use.

The Engineer will also reject harsh or unworkable concrete that cannot be properly placed. Remove rejected concrete at no increase in contract price or contract time.

Slump for concrete shall be as specified in Table 601.03-3 – Slump for Concrete.

TABLE 601.03-3 - SLUMP FOR CONCRETE		
Type of Work	Nominal Slump Inches	Maximum Slump Inches
Concrete Pavements	0 – 3	3-1/2
Reinforced Concrete Structures:		
Sections Over 12 Inches	0 – 4	5
Sections 12 Inches Thick or Less	2 – 5	6
Non-Reinforced Concrete Facilities	1 – 3	4
Concrete Placed Underwater	6 – 8	9
Bridge Decks	0 – 3	3-1/2

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In adverse or difficult conditions that may affect placement of concrete, the above slump limitations may be exceeded for placement workability, with the addition of admixture conforming to Subsection 711.03 - Admixtures, if accepted by the Engineer in writing and provided water-cement ratio is maintained. Provide additional cement and water, or admixture at no increase in contract price or contract time.

(G) Forms. Construct forms in accordance with applicable sections.

(H) Placing Concrete. Place concrete in accordance with applicable sections.

(I) Finishing Concrete Surfaces. Finish concrete surfaces in accordance with applicable sections.

529 **(J) Curing Concrete.** Cure concrete in accordance with applicable
530 sections.

531
532 **601.04 Measurement.** The Engineer will measure concrete in accordance with the
533 applicable sections.

534
535 **601.05 Payment.** The Engineer will pay for the accepted concrete under the
536 applicable sections.

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541

END OF SECTION 601

1 **SECTION 645 - WORK ZONE TRAFFIC CONTROL**
 2
 3

4 **645.01 Description.** This section describes the following:
 5

6 **(A)** Furnishing, installing, maintaining, and subsequently removing work
 7 zone traffic control devices, and personnel. Work zone traffic control shall
 8 include providing flaggers and police officers.
 9

10 **(B)** Keeping roads or alternate routes for public traffic open and in
 11 passable condition; providing and maintaining temporary access crossings
 12 for trails, businesses, parking lots, garages, residences, farms, parks, and
 13 other driveways; taking necessary work precautions for the protection, safety,
 14 and convenience of the public; should pedestrian facilities exist, taking
 15 necessary measures for safe and accessible passage, with route information
 16 and ADAAG compliance, for pedestrians traveling through or near work zone;
 17 taking necessary precautions to protect work zone workers from situations
 18 that place workers at increased risk from motorized traffic.
 19

20 **(C)** Taking safety and precautionary measures, such as illuminating
 21 roadway obstructions during hours of darkness, in accordance with Chapter
 22 286, HRS; Title 19, Subtitle 5, Chapters 127, 128, and 129, HAR; and
 23 *MUTCD*.
 24

25 **645.02 Materials.**

26		
27	Signs	750.01
28		
29	Sign Posts	750.02
30		
31	Fasteners for Signs and Route Markers	750.03
32		
33	Reflector Marker	750.07
34		
35	Flexible Delineator Posts and Reflectors	750.08
36		
37	Traffic Delineators	750.09
38		
39	Preformed Pavement Marking Tape	755.04
40		

41 Submit electronic crashworthy documentation, including but not limited to,
 42 drawings in pdf and CADD, crash test reports, and FHWA eligibility letters certifying
 43 compliance with MASH 2016, for signs, sign supports, barricades, tubular markers,
 44 cones, vertical panels, and other traffic control devices. Only devices that are
 45 deemed crashworthy will be allowed.
 46

645.03

47 Upon request of the Engineer, furnish self-certified MASH 2016 compliant
48 letter from vendor(s) for each type of Category 1 traffic control device, as defined by
49 FHWA and/or AASHTO, including single-piece traffic cone, single-piece drum, and
50 tubular marker.

51
52 Traffic control devices, including signs, barricades, warning lights, arrow
53 boards, portable changeable message signs, cones, tubular markers, and temporary
54 concrete barriers shall conform to the American Traffic Safety Services Association
55 (ATSSA), *Quality Guidelines for Temporary Traffic Control Devices and Features*
56 and the *MUTCD*.

57
58 Protective devices including barricades, warning signs, lights, and temporary
59 signals shall conform to Title 19, Subtitle 5, Chapters 127, 128, and 129, HAR.
60 Retroreflectorization for protective devices such as barricades, tubular markers, and
61 warning signs shall conform to Subsection 750.01 – Signs.

62
63 **645.03 Construction.** Furnish, install, and maintain barricades, signs, cones,
64 tubular markers, lights, flashing signals, and other traffic control devices.

65
66 Furnish two police officers for each location that requires work zone traffic
67 control. If the Traffic Control Plan (TCP) is included in the contract documents,
68 furnish number of police officers indicated in the TCP, whichever is greater.

69
70 When directing traffic, flaggers, or police officers, or both shall be in direct
71 communication with each other.

72
73 TCP for lane closure on two-lane road will consider intersections and
74 driveway access. Maximum length of a lane closure on a two-lane road is 1,000
75 feet.

76
77 Submit TCP and schedule at least 15 working days before work starts.
78 Submit modifications and deviations from accepted TCP and schedule at least 15
79 working days before start of work requiring modification or deviation. Illegible TCP
80 will not be accepted.

81
82 Include the following in TCP and schedule:

- 83
84 (1) Signs (type, size, designation, and placement).
85
86 (2) Traffic movements shown by arrows.
87
88 (3) Positions of flaggers and police officers.

- 89 (4) Barricades, cones, tubular markers, and additional traffic
90 control devices and measures necessary for protection of work and
91 public safety; and placement, spacing, distances, and reference points
92 for traffic control devices.
93
- 94 (5) Layout, drawn to scale, of traffic control devices, including
95 information needed to layout TCP.
96
- 97 (6) Brief description of work.
98
- 99 (7) Dates of work.
100
- 101 (8) Times of day affected.
102
- 103 (9) Proposed public information sign.
104
- 105 (10) Proposed news release.
106
- 107 Place sign or device situated farthest upstream from work zone first. Then
108 place others progressively downstream toward work zone.
109
- 110 Extend cones or tubular markers to point where cones or tubular markers are
111 visible to approaching traffic.
112
- 113 For signs with messages on both faces, cover inapplicable message before
114 placement.
115
- 116 Keep barricades, construction and warning signs, and other traffic control
117 devices in good condition. Repair, clean, or replace barricades, signs, or other
118 devices as required to maintain effectiveness and appearance. The Engineer alone
119 will decide suitable condition of each barricade, sign, or other traffic control device.
120
- 121 Remove or cover regulatory and warning signs that conflict with TCP.
122 Restore signs upon completion of work or as ordered by the Engineer. Affix object
123 markers to post(s) of covered sign.
124
- 125 Promptly remove or cover construction and warning signs that are not
126 applicable or not in use.
127
- 128 For sign covers, fully covers signs as indicated in the Acceptable category of
129 the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features.
130 Covers that are deemed to be in the Marginal or Unacceptable categories will not be
131 accepted. Covers that are fabricated from rigid materials will also not be accepted
132 unless it is certified to be MASH 2016 compliant.
133
- 134 Promptly remove traffic control devices that are no longer needed.

645.03

135 Remove traffic control devices in reverse order of installation, starting closest
136 to work zone and continuing away from work zone.

137
138 Maintain abutting owners' existing access until replacement access is usable.
139 Obtain permission from abutting owners, including conditions for closing existing
140 access. Submit copy of agreement with abutting owners before beginning work in
141 the affected area.

142
143 When working on existing facility that will be kept open to traffic, provide
144 smooth and even surface for public traffic use. Only work on a portion of roadway at
145 one time, and stage construction from one side to other while routing traffic over
146 opposite side.

147
148 Do not store material or equipment where it will interfere with public traffic.
149 Remove equipment and other obstructions out of right-of-way or clear zone to permit
150 free and safe passage of public traffic during non-working hours or suspension of
151 work, when road is open to traffic. For storage of materials and equipment, see
152 Subsection 105.14 – Storage and Handling of Materials and Equipment.

153
154 Notify Fire Department, in writing, at least 24 hours before blocking or closing
155 road access. Keep fire hydrants accessible to Fire Department by not placing
156 material or other obstructions within five feet of fire hydrant or closer than permitted
157 by applicable ordinances, rules, and regulations.

158
159 Notify the Engineer and County, including Bus Systems Division, Police
160 Department, Fire Department, Emergency Medical Services, and Department of
161 Health in writing at least five days before start of construction.

162
163 **(A) Signs.** Install signs sufficiently ahead of location where operations
164 may interfere with use of road by traffic and at intermediate points where new
165 work crosses or coincides with existing road.

166
167 Place signs in accordance with TCP as accepted by the Engineer.

168
169 **(B) Construction Signs.** Erect construction signs at the beginning of
170 project and at the end of project at the location indicated by the Engineer.
171 These signs shall remain for the duration of the highway project. Maintain
172 these signs. Place these signs besides the required traffic control signs
173 called for herein.

174
175 The construction signs shall be new and become the property of the
176 Contractor.

177
178 **(C) Barricades.**

179
180 **(1) General.** Provide, erect, and maintain necessary barricades

181 suitable for protection of work and safety of the public.

182
183 Barricades shall be in good condition. Barricade application
184 and installation shall be in accordance with accepted TCP.

185
186 Provide sand bags if required or ordered by the Engineer.
187 Sand bags and installation method shall comply with *MUTCD* and be
188 accepted by the Engineer prior to use. Do not place sand bags on
189 striped barricade rail.

190
191 During hours of darkness, install steady burn or flashing lamps
192 on barricades selected by the Engineer. Attach lamps on barricade
193 ends closest to traveled way and visible to oncoming traffic.

194
195 Do not install signs on barricades unless signs and barricades
196 have been crash tested as a unit and accepted under NCHRP Report
197 350.

198
199 **(2) Retroreflectorization.** Retroreflectorize barricade rails and
200 attachment with retroreflective sheeting in accordance with
201 Subsection 750.01(C)(4) - Type III or IV Retroreflective Sheeting (High
202 Intensity) or Subsection 750.01(C)(5) - Hardened Aluminum-Backed
203 Retroreflective Sheeting.

204
205 Retroreflectorize both vertical faces of each barricade rail.

206
207 **(3) Color.** Provide white colored rails, frames, and braces with
208 front and back rail faces having 6-inch-wide alternating orange or red
209 and white stripes sloping downward toward traveled way at angle of
210 45 degrees from vertical. Use stripe colors in accordance with the
211 following:

212
213 **(a)** Use orange and white stripes for the following
214 conditions:

- 215
216 1. Construction work.
- 217
218 2. Detours.
- 219
220 3. Maintenance work.

221
222 **(b)** Use red and white stripes for the following conditions:

- 223
224 1. On roadways with no outlet, such as dead-ends
225 and cul-de-sacs.

226

270 Before scheduling work, submit requests for detours and lane closures
271 as follows:

- 272
- 273 (1) Detours - 8 weeks before implementing detours.
 - 274
 - 275 (2) Lane closures - 6 weeks before implementing lane closures.
 - 276

277 Include the following with detour and lane closure requests:

- 278
- 279 (1) Explanation of proposed changes to existing traffic pattern.
 - 280
 - 281 (2) Installation schedule for informational and traffic control signs.
 - 282
 - 283 (3) Publication schedule for legal notices.
 - 284
 - 285 (4) Plan showing proposed informational signs.
 - 286

645.03

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(5) Plan showing lane changes or detours in accordance with accepted TCP, including details at beginning of multi-lane highway lane changes and detours.

Detours or lane closures will not be allowed before the Engineer accepts detour or lane closure request.

TABLE 645-I - FOR TRAFFIC CONTROL PLAN							
POSTED SPEED LIMIT (M.P.H.)	SIGN SPACING (D) (FEET)	TAPER LENGTH (T) (FEET)		LONGI-TUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONES OR TUBULAR MARKERS (FEET)		
		W = 12' OR LESS	W = GREATER THAN 12' *		TAPER	TANGENT	WORK AREA
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

* W = width of lane or shoulder

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311
312

(G) **Advisory Signs.** Submit advisory sign shop drawings. Construct, install, maintain, and remove two advisory signs as ordered by the Engineer. Place signs at locations designated by the Engineer. Provide signs, minimum 8 feet wide by 4 feet high, with black letters on orange background, and with three 4.00 pounds/foot flanged channel posts for each sign.

Include starting date and hours of construction in sign message. Use letter heights of 8 inches, Series D. The Engineer will review and accept advisory signs' wording before fabrication. Install advisory signs two weeks before start of construction. Remove advisory signs immediately after construction has been completed or as ordered by the Engineer.

(H) **Advertisement.** Place advertisement in newspaper, as ordered by the Engineer, for the following traffic pattern changes or night work:

- (1) Detours.
- (2) Lane closure.

- 313 (3) Permanent road closure.
314
315 (4) Permanent new route that changes previous route.
316
317 Include the following information:
318
319 (1) Map of traffic pattern change limits.
320
321 (2) Map showing lane(s) closure and detour pattern.
322
323 (3) Notice of starting and ending dates and duration.
324
325 (4) Explanation of lane(s) closure or detours in "Notice To
326 Motorist".
327
328 Quality of map shall conform to the following requirements:
329
330 (1) No freehand printing or penciling.
331
332 (2) Highlight important features by darkening, cross-hatching,
333 crossing-out, or coloring important words, as necessary.
334
335 (3) Provide maps with minimum size of five columns wide and four
336 columns deep. Lesser width columns may be considered to balance
337 against size of drawing.
338
339 (4) Text specifications.
340
341 (a) Work being featured - 3/16-inch text.
342
343 (b) Major roads and features - 1/8-inch text.
344
345 (c) Other roads and features- first letter of sentence upper
346 case.
347
348 (d) "NOTICE TO MOTORIST" in upper case.
349
350 (e) Message - first letter of sentence upper case.
351
352 (5) Line Thickness.
353
354 (a) Important feature being advertised - line thicker than
355 rest of map.
356
357 (b) Directional arrow - bolder than rest of lines shown on
358 map, when important, to show route traffic should use.

645.04

359 **(6)** Show reference direction such as "TO WAIMEA" with arrow
360 Submit the following:

361
362 **(a)** "Notice to Motorists" before placement in newspaper, six
363 weeks before start of work.

364
365 **(b)** Actual size of notice to be published in newspaper. The
366 Engineer will not allow size reduction of notices once accepted.
367 Submit final, camera-ready "Notice to Motorists"
368 advertisement.

369
370 Place advertisement for three consecutive days and within one week
371 before traffic pattern changes, in publication as ordered by the Engineer.

372

373 **645.04 Measurement.**

374

375 **(A)** Traffic control as specified in this specification will be measured on a
376 contract lump sum (LS) basis and will include all traffic control work required
377 by this specification and the contract documents. Measurement for payment
378 will not apply.

379

380 **(B)** Traffic control devices, including, but not limited to cones, traffic
381 delineators, concrete barricades and construction signs, will be considered
382 incidental to traffic control Measurement for payment will not apply.

383

384 **(C)** The Engineer will measure additional police officers, additional traffic
385 control devices, and advertisement, if ordered by the Engineer, on a force
386 account basis, in accordance with Subsection 109.08 - Force Account
387 Provisions and Compensation under Bid Item #22.

388

389

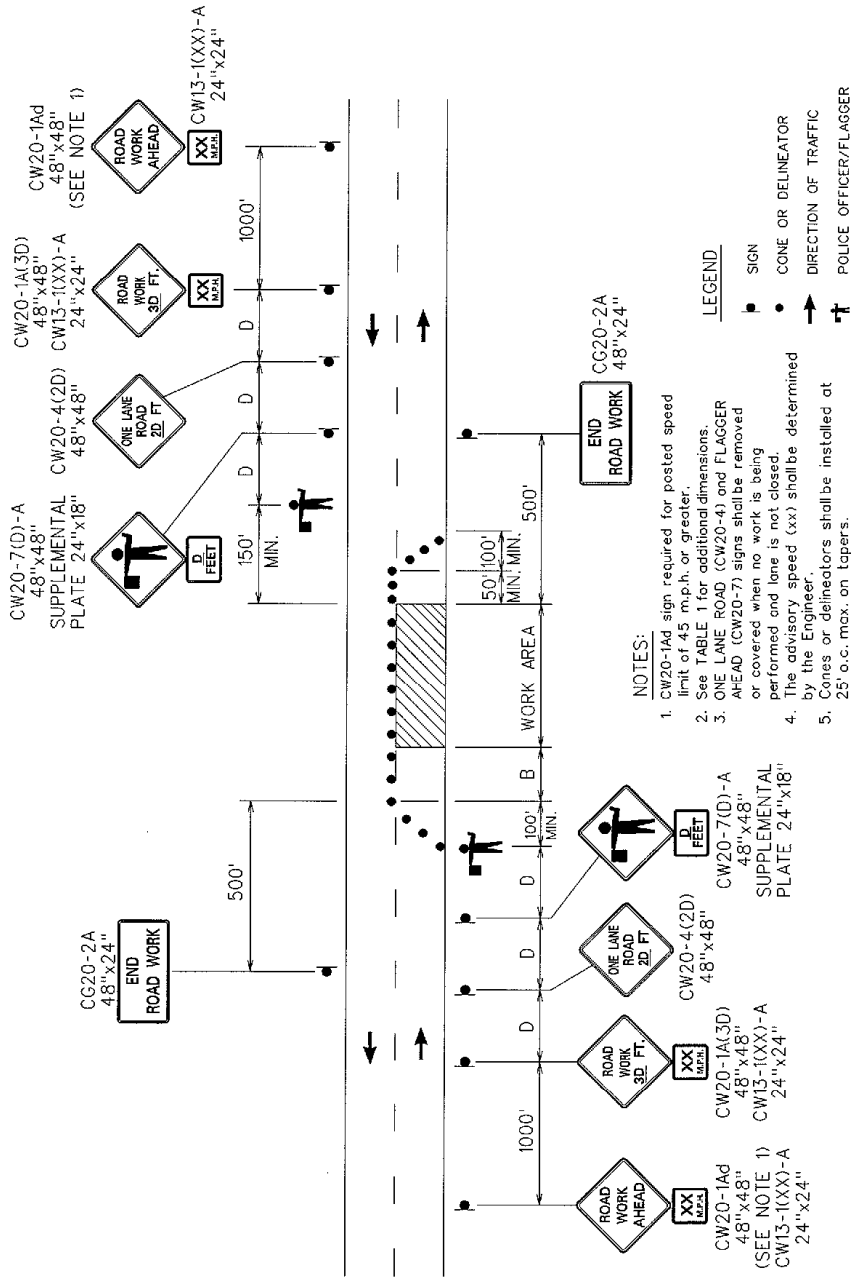
390 **645.05 Payment.** The Engineer will pay for the accepted traffic control, traffic
391 control device, police officers, flaggers, additional traffic control devices, specific
392 traffic control contract bid items and advertisement at the contract price per pay unit,
393 as shown in the proposal schedule. Payment will be full compensation for the work
394 prescribed in this section and the contract documents.
395

396 Costs associated with the provision of uniformed law enforcement to maintain safe
397 and efficient travel through highway work zones and their payment terms are
398 explained in more detail in Section III. D. of HDOT's WORK ZONE SAFETY
399 MANAGEMENT GUIDELINES.
400

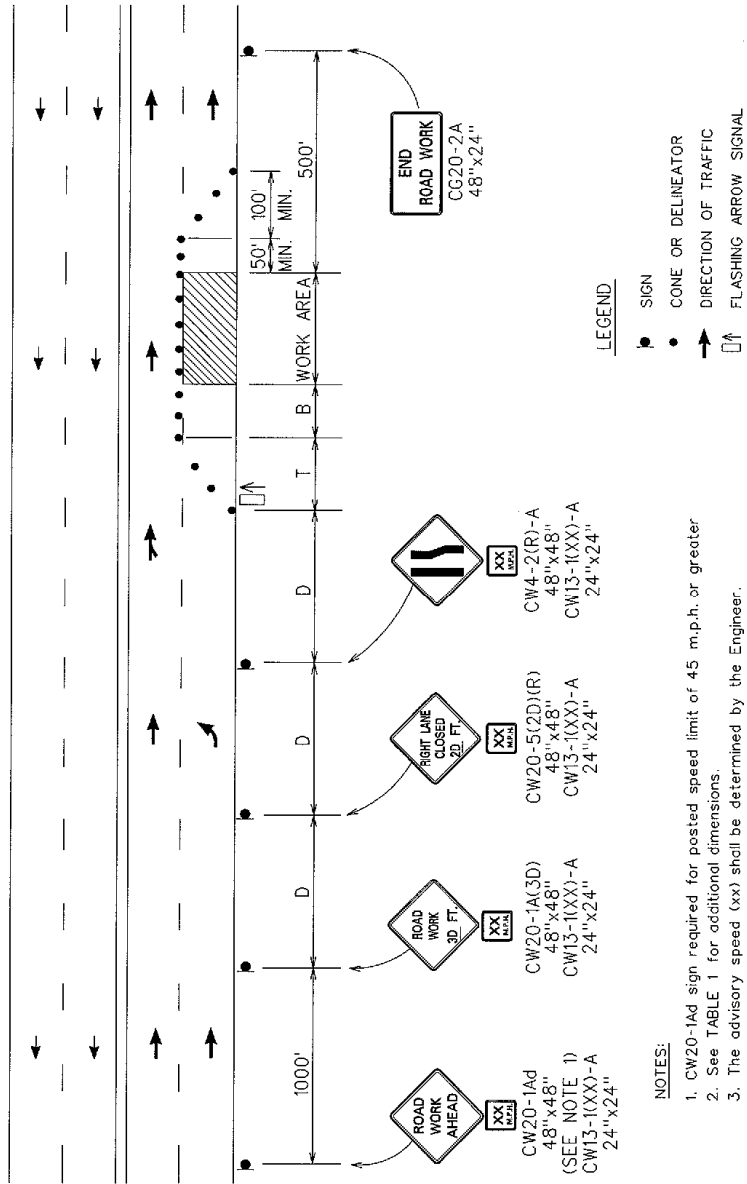
401 The Engineer will pay for the following pay items when included in the
402 proposal schedule:
403

404 Pay Item	405 Pay Unit
406 Traffic Control	407 LS

408 The Engineer will not pay for request submittals. The Engineer will not
409 consider claims for additional compensation of late submittals or requests by
410 Contractor.

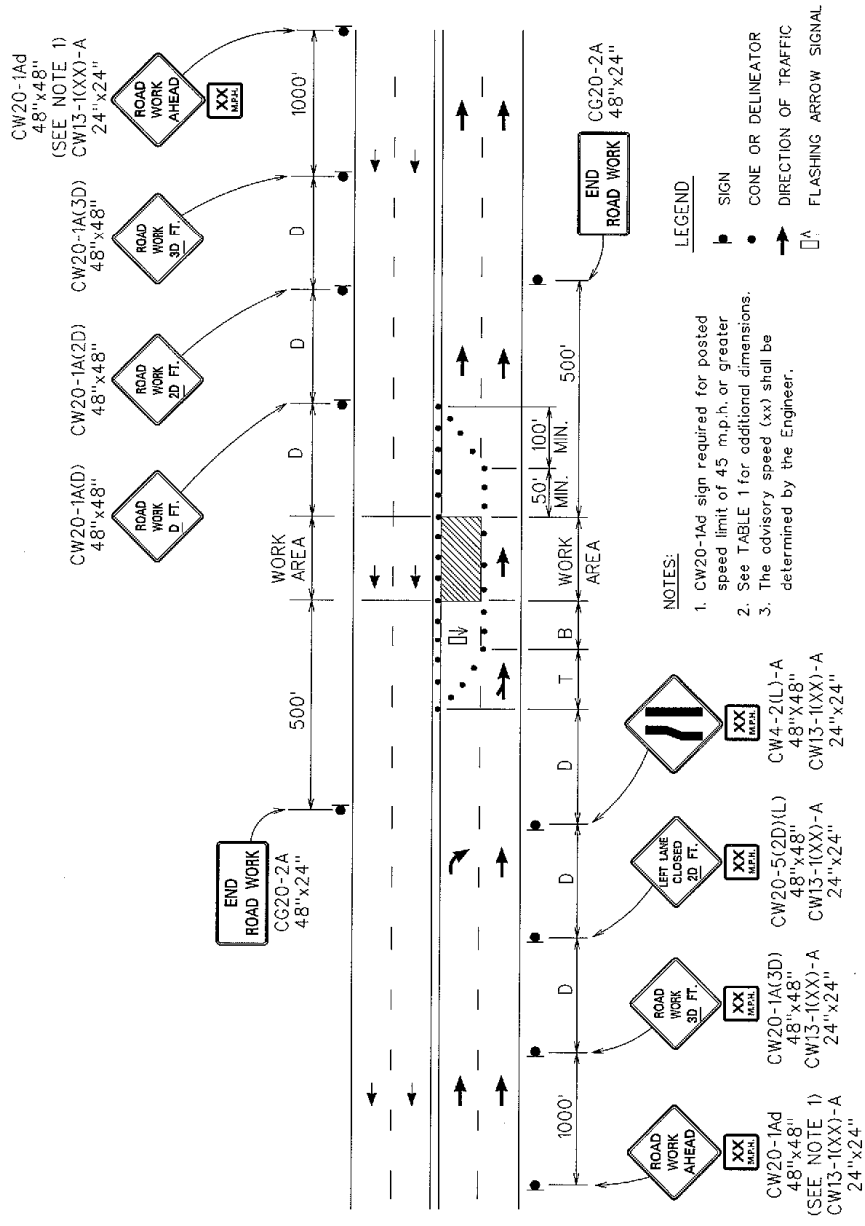


TWO-LANE HIGHWAY - ONE LANE CLOSED
FIGURE 1 - TRAFFIC CONTROL PLAN



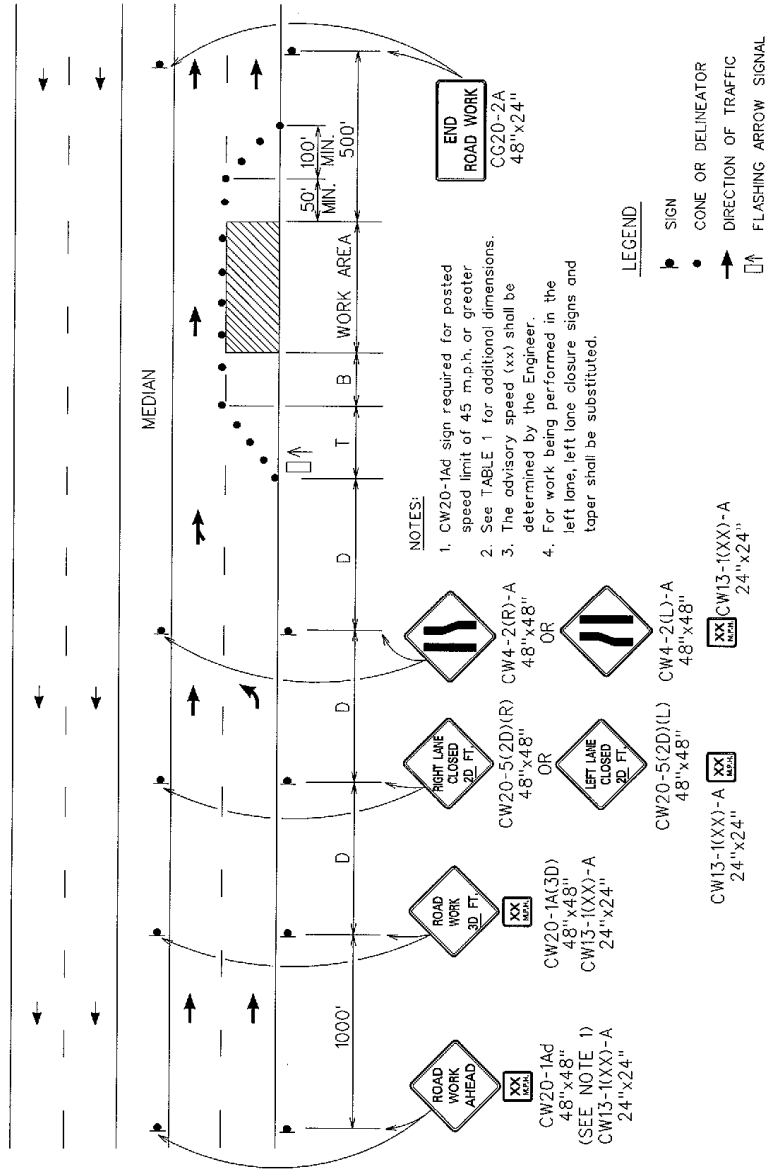
MULTILANE UNDIVIDED HIGHWAY - RIGHT LANE CLOSED

FIGURE 2 - TRAFFIC CONTROL PLAN



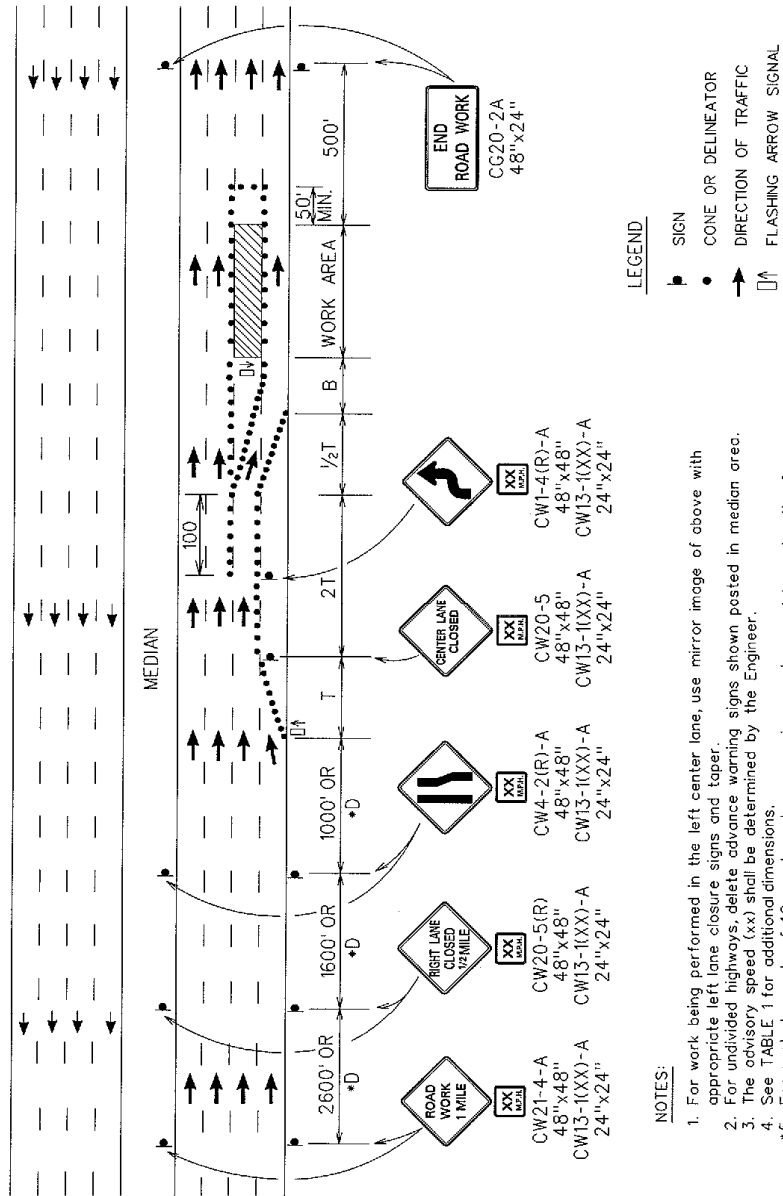
MULTILANE UNDIVIDED HIGHWAY - LEFT LANE CLOSED

FIGURE 3 - TRAFFIC CONTROL PLAN



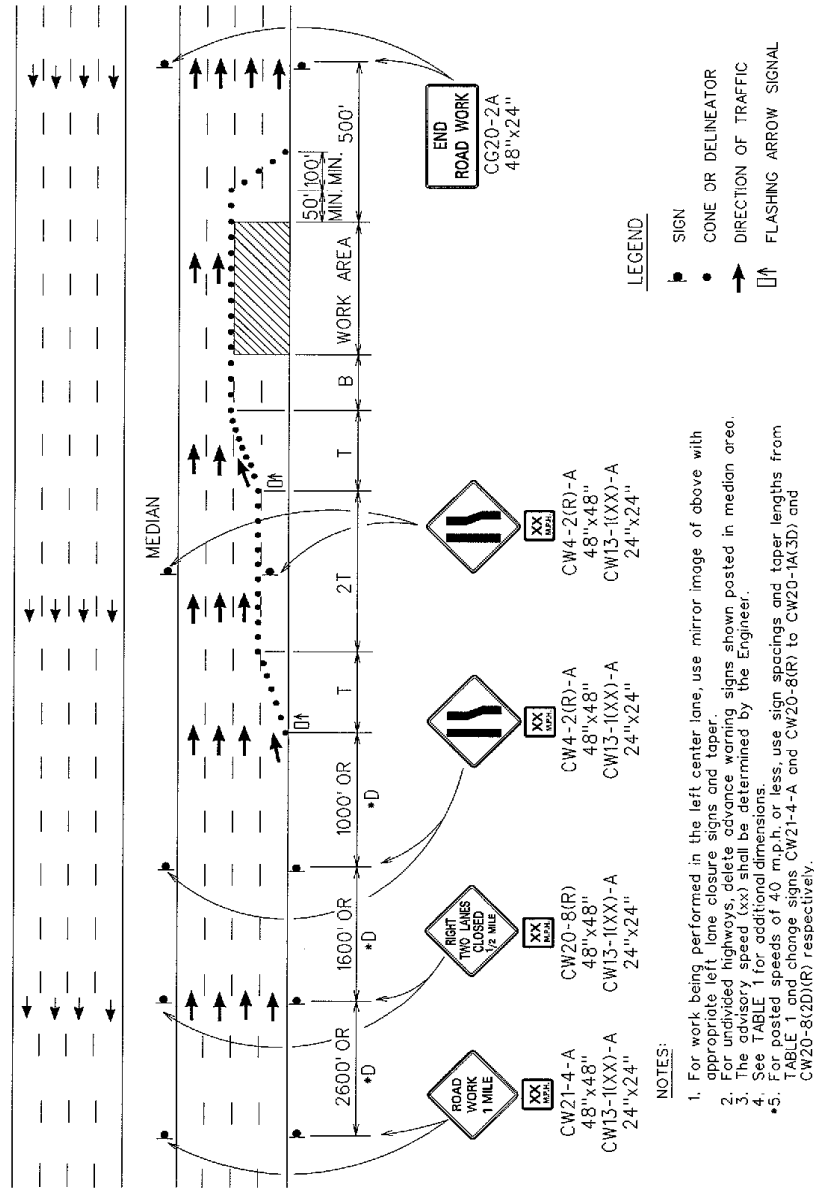
MULTILANE DIVIDED HIGHWAY - ONE LANE CLOSED

FIGURE 4 - TRAFFIC CONTROL PLAN



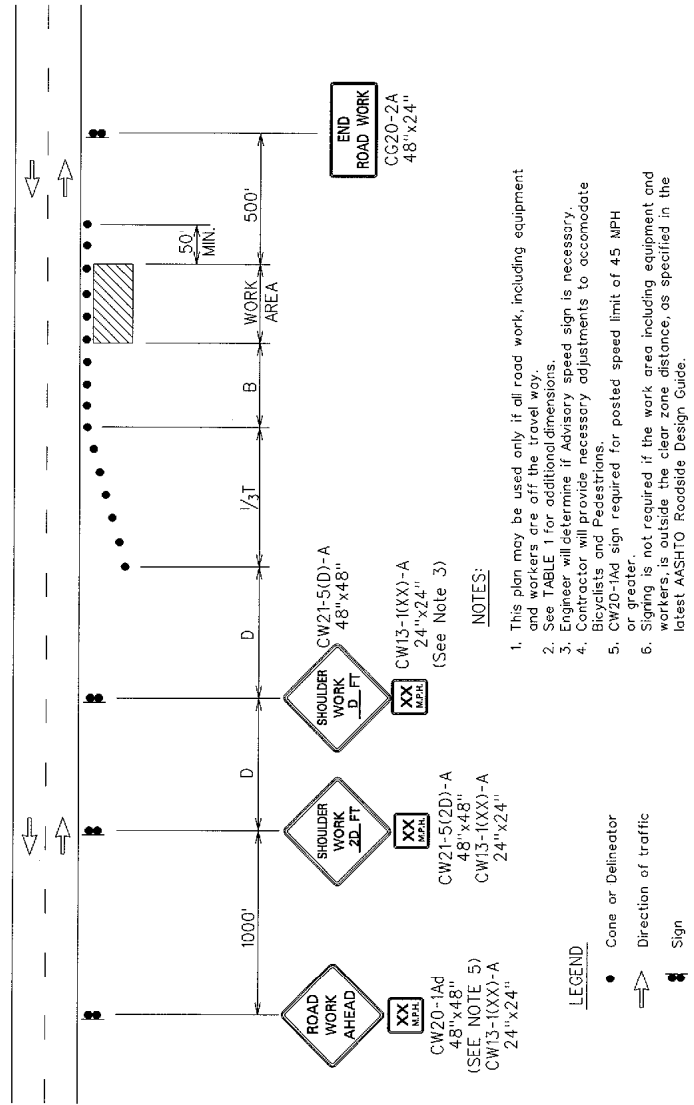
MULTILANE HIGHWAY - CENTER LANE CLOSED

FIGURE 5 - TRAFFIC CONTROL PLAN



MULTILANE HIGHWAY - MULTIPLE LANE CLOSED

FIGURE 6 - TRAFFIC CONTROL PLAN



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431
432
433

END OF SECTION 645

WORKING ON SHOULDER OR ROADSIDE
FIGURE 7 - TRAFFIC CONTROL PLAN

1 **SECTION 717 – CULLET AND CULLET-MADE MATERIALS**

2
3 Make the following amendments to said Section:

4
5 **(I) Amend Subsection 717.01 – Cullet and Cullet-Aggregate Mixtures as**
6 **Construction Materials** by revising the third paragraph from line 16 to 20 to
7 read:

8
9 “Debris shall not exceed values specified in Tables 717.02-1 - Cullet in
10 Roadway Applications, 717.03-1 - Cullet in Utility Applications, and 717.04-1 -
11 Cullet in Drainage Applications. Debris is defined as deleterious material that
12 includes plastics, papers, and non-ceramic constituents of cullet. Hazardous
13 material will not be allowed in cullet such as but not limited to, TV or other
14 cathode ray tubes, fluorescent light bulbs, and any toxic or hazardous materials.
15 Test cullet stockpile for toxic or hazardous materials every 90 days and submit
16 the results to the Engineer.”

17
18 **(II) Amend Subsection 717.01 – Cullet and Cullet-Aggregate Mixtures as**
19 **Construction Materials** by adding the following paragraph after line 21:

20
21 “Cullet shall not be used in concrete.”

22
23 **(III) Amend Table 717.03-1 – Cullet in Utility Applications** from line 37 to
24 line 39 to read:

25

TABLE 717.03-1 - CULLET IN UTILITY APPLICATIONS		
Utility Trench Bedding and Backfill Applications	Maximum Cullet Content (Percent By Weight)	Maximum Debris Level (Percent By Weight Of Cullet)
Sewer Pipes	25	0.3
Electrical Conduits	25	0.3
Fiber Optic Lines	25	0.3

26

27 (IV) Amend Table 717.04-1 – Cullet in Drainage Applications from line 47 to
28 line 49 to read:
29

TABLE 717.04-1 - CULLET IN DRAINAGE APPLICATIONS		
Drainage Fill Applications	Maximum Cullet Content (Percent By Weight)	Maximum Debris Level (Percent By Weight Of Cullet)
Retaining Walls	25	0.2
Foundation Drains	25	0.2
Drainage Blankets	25	0.2
French Drains	25	0.2

30
31
32
33

END OF SECTION 717

1 **SECTION 750 – TRAFFIC CONTROL SIGN AND MARKER MATERIALS**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **Subsection 750.01(A)(1) Retroreflectorization** by replacing lines
6 8 through 31 to read:

7
8 **“(1) Retroreflectorization.** The following shall be retroreflectorized:

9
10 **(a)** Background for illuminated guide signs and exit number panels (“E”
11 designation) with ASTM D 4956 Type XI retroreflective sheeting.

12
13 **(b)** Background for non-illuminated guide signs and exit number panels
14 (“D” designation) with ASTM D 4956 Type XI retroreflective sheeting.

15
16 **(c)** Messages, arrows, and borders of guide signs and exit number
17 panels (“D” and “E” designations) with ASTM D 4956 Type XI
18 retroreflective sheeting.

19
20 **(d)** Regulatory and warning signs, directional signs (“DIR” designation),
21 route and auxiliary markers, shield symbols, yellow “EXIT ONLY” panels,
22 construction warning signs, and barricade rails, completely, with Type III,
23 IV, or IX retroreflective sheeting.

24
25 **(e)** Pedestrian, school, bicycle crossing series, completely with Type IX
26 fluorescent yellow green retroreflective sheeting.”

27
28
29 **(II)** Amend **Subsection 750.01(B) Backing** by replacing lines 72 through 73
30 to read:

31
32 “Aluminum sheet shall conform to ASTM B 209, alloy 5052-H38 or 6061-
33 T6 flat sheet.”

34
35 **(III)** Amend **Subsection 750.01(E) Retroreflective Sheeting Materials** by
36 replacing lines 1126 through 1137 to read:

37
38 **“(E) Retroreflective Sheeting Materials.** Retroreflective sheeting
39 includes white or colored sheeting having smooth outer surface.

40
41 Retroreflective sheeting shall be classified in accordance with ASTM D
42 4956.

43
44 The coefficient of retroreflection shall meet the minimum requirements of
45 ASTM D 4956 for the type of reflective sheeting specified.

47 The color shall conform to the latest appropriate standard color tolerance
48 chart issued by the U.S. Department of Transportation, Federal Highway
49 Administration and to the daytime and nighttime color requirements of ASTM D
50 4956.

51
52 Test methods and procedures shall be in accordance with ASTM.

53
54 **(IV)** Amend **Subsection 750.02 Sign Posts** by replacing lines 1168 through
55 1172 to read:

56
57 **“750.02 Square Tube Posts.** Square and other tube posts shall conform to
58 ASTM A 653 for cold-rolled, carbon steel sheet, commercial quality; or ASTM A
59 787 for electric-resistance-welded, metallic-coated carbon steel mechanical
60 tubing.”

61
62
63

END OF SECTION 750