



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**NOTICE TO BIDDERS  
AND  
SPECIAL PROVISIONS**

**FOR CONSTRUCTION ON STATE HIGHWAY IN LOS ANGELES COUNTY AT  
VARIOUS LOCATIONS FROM 0.1 MILE SOUTH OF ROUTE 1/710 SEPARATION  
TO 0.2 MILE NORTH OF ROUTE 105/710 SEPARATION.**

**In District 07 On Route 710**

**Under**

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*Bid book dated August 19, 2013*

*Standard Specifications dated 2010*

*Project plans approved June 10, 2013*

*Standard Plans dated 2010*

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**Identified by**

**Contract No. 07-259014**

**07-LA-710-6.7/R15.9**

**Project ID 0713000045**

**Federal-Aid Project**

**NHPI-710-1(817)E**

**Electronic Advertising Contract**

**Bids open Thursday, October 10, 2013**

**Dated August 19, 2013**

**IH**



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# SPECIAL NOTICES

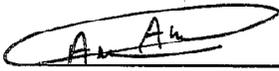
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- For federal-aid projects, the Department is modifying its DBE program.

# CONTRACT NO. 07-259014

The special provisions contained herein have been prepared by or under the direction of the following Registered Persons.

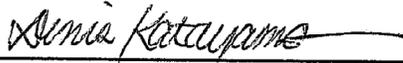
## HIGHWAYS



REGISTERED CIVIL ENGINEER



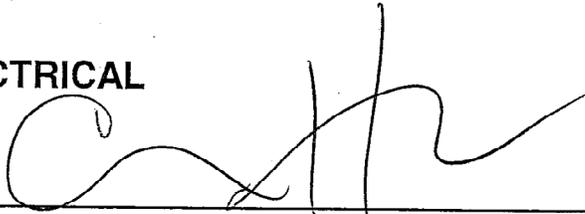
## MAINTAINING TRAFFIC



REGISTERED CIVIL ENGINEER



## ELECTRICAL



REGISTERED ELECTRICAL ENGINEER



# CONTRACT NO. 07-259014

The special provisions contained herein have been prepared by or under the direction of the following Registered Persons.

## HYDRAULICS

Ralph M. Sasaki  
REGISTERED CIVIL ENGINEER



## LANDSCAPE

George Olguin  
LICENSED LANDSCAPE ARCHITECT





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# STANDARD PLANS LIST

The standard plan sheets applicable to this Contract include those listed below. The applicable revised standard plans (RSPs) listed below are included in the project plans.

A10A	Abbreviations (Sheet 1 of 2)
A10B	Abbreviations (Sheet 2 of 2)
A10C	Lines and Symbols (Sheet 1 of 3)
A10D	Lines and Symbols (Sheet 2 of 3)
A10E	Lines and Symbols (Sheet 3 of 3)
A20A	Pavement Markers and Traffic Lines, Typical Details
A20B	Pavement Markers and Traffic Lines, Typical Details
A20C	Pavement Markers and Traffic Lines, Typical Details
A20D	Pavement Markers and Traffic Lines, Typical Details
A62A	Excavation and Backfill - Miscellaneous Details
A62D	Excavation and Backfill - Concrete Pipe Culverts
A62DA	Excavation and Backfill - Concrete Pipe Culverts - Indirect Design Method
A62F	Excavation and Backfill - Metal and Plastic Culverts
A73A	Object Markers
A73B	Markers
A73C	Delineators, Channelizers and Barricades
A77A1	Metal Beam Guard Railing - Standard Railing Section (Wood Post with Wood Block)
A77B1	Metal Beam Guard Railing - Standard Hardware
A77C1	Metal Beam Guard Railing - Wood Post and Wood Block Details
A77C2	Metal Beam Guard Railing - Steel Post and Notched Wood Block Details
A77C3	Metal Beam Guard Railing - Typical Line Post Embedment and Hinge Point Offset Details
A77C4	Metal Beam Guard Railing - Typical Railing Delineation and Dike Positioning Details
RSP A77C5	Metal Beam Guard Railing - Typical Vegetation Control Standard Railing Section
RSP A77C6	Metal Beam Guard Railing - Typical Vegetation Control for Terminal System End Treatments
RSP A77C7	Metal Beam Guard Railing - Typical Vegetation Control at Structure Approach
RSP A77C8	Metal Beam Guard Railing - Typical Vegetation Control at Fixed Object
RSP A77C9	Metal Beam Guard Railing - Typical Vegetation Control at Fixed Object
RSP A77C10	Metal Beam Guard Railing - Typical Vegetation Control at Fixed Object
A77H1	Metal Railing - End Anchor Assembly (Type SFT)

A85	Chain Link Fence
A85A	Chain Link Fence Details
RSP A85B	Chain Link Fence Details
A87B	Hot Mix Asphalt Dikes
RSP D73	Drainage Inlets
D73A	Drainage Inlets (Precast)
D74C	Drainage Inlet Details
D75C	Pipe Inlets - Ladder and Trash Rack Details
RSP D77A	Grate Details
D87A	Corrugated Metal Pipe Downdrain Details
D87D	Overside Drains
D94A	Metal and Plastic Flared End Sections
D94B	Concrete Flared End Sections
D97H	Reinforced Concrete Pipe or Non-Reinforced Concrete Pipe - Standard and Positive Joints
D100A	Gabion Basket Details No. 1
D100B	Gabion Basket Details No. 2
H1	Landscape and Erosion Control - Abbreviations
H2	Landscape - Symbols
H3	Landscape Details
H5	Landscape Details
H6	Landscape Details
H7	Landscape Details
H8	Landscape Details
H9	Landscape Details
T1A	Temporary Crash Cushion, Sand Filled (Unidirectional)
T1B	Temporary Crash Cushion, Sand Filled (Bidirectional)
T2	Temporary Crash Cushion, Sand Filled (Shoulder Installations)
T3A	Temporary Railing (Type K)
T3B	Temporary Railing (Type K)
T4	Temporary Traffic Screen
T51	Temporary Water Pollution Control Details (Temporary Silt Fence)
T53	Temporary Water Pollution Control Details (Temporary Cover)
T56	Temporary Water Pollution Control Details (Temporary Fiber Roll)
T58	Temporary Water Pollution Control Details (Temporary Construction Entrance)

T59	Temporary Water Pollution Control Details (Temporary Concrete Washout Facility)
T58	Temporary Water Pollution Control Details (Temporary Construction Entrance)
T61	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T62	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T63	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T64	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
B0-3	Bridge Details
B3-6	Retaining Wall Details No. 2
B6-21	Joint Seals (Maximum Movement Rating = 2")
B7-11	Utility Details
RSP B11-47	Cable Railing
RS1	Roadside Signs, Typical Installation Details No. 1
RS2	Roadside Signs - Wood Post, Typical Installation Details No. 2
RS4	Roadside Signs, Typical Installation Details No. 4
S93	Framing Details for Framed Single Sheet Aluminum Signs, Rectangular Shape
S94	Roadside Framed Single Sheet Aluminum Signs, Rectangular Shape
S95	Roadside Single Sheet Aluminum Signs, Diamond Shape
ES-1A	Electrical Systems (Legend, Notes and Abbreviations)
ES-1B	Electrical Systems (Legend, Notes and Abbreviations)
ES-1C	Electrical Systems (Legend, Notes and Abbreviations)
RSP ES-8A	Electrical Systems (Pull Box)
RSP ES-8B	Electrical Systems (Traffic Rated Pull Box)
ES-13A	Electrical Systems (Splicing Details)

## **CANCELED STANDARD PLANS LIST**

The standard plan sheets listed below are canceled and not applicable to this contract.

B3-1	Canceled on April 20, 2012
B3-2	Canceled on April 20, 2012
B3-3	Canceled on April 20, 2012
B3-4	Canceled on April 20, 2012
B3-7	Canceled on April 20, 2012
B3-8	Canceled on April 20, 2012
ES-8	Canceled on January 20, 2012
ES-10	Canceled on July 20, 2012

# NOTICE TO BIDDERS

Bids open Thursday, October 10, 2013

Dated August 19, 2013

General work description: Install sand filters, bioswales, and biostrip.

The Department will receive sealed bids for CONSTRUCTION ON STATE HIGHWAY IN LOS ANGELES COUNTY AT VARIOUS LOCATIONS FROM 0.1 MILE SOUTH OF ROUTE 1/710 SEPARATION TO 0.2 MILE NORTH OF ROUTE 105/710 SEPARATION..

District-County-Route-Post Mile: 07-LA-710-6.7/R15.9

Contract No. 07-259014

The Contractor must have either a Class A license or a combination of Class C licenses which constitutes a majority of the work.

The DBE Contract goal is 12 percent.

Federal-aid project no.:

NHPI-710-1(817)E

Bids must be on a unit price basis.

Complete the work, excluding plant establishment work, within 180 working days.

Complete the work, including plant establishment work, within 240 working days.

Complete the plant establishment work within 60 working days.

The estimated cost of the project is \$2,940,000.

No prebid meeting is scheduled for this project.

The Department will receive bids until 2:00 p.m. on the bid open date at 3347 Michelson Drive, Suite 100, Irvine, CA 92612-1692. Bids received after this time will not be accepted.

The Department will open and publicly read the bids at the above location immediately after the specified closing time.

District office addresses are provided in the *Standard Specifications*.

Present bidders' inquiries to the Department and view the Department's responses at:

[http://www.dot.ca.gov/hq/esc/oe/project\\_status/bid\\_inq.html](http://www.dot.ca.gov/hq/esc/oe/project_status/bid_inq.html)

Questions about alleged patent ambiguity of the plans, specifications, or estimate must be asked before bid opening. After bid opening, the Department does not consider these questions as bid protests.

Submit your bid with bidder's security equal to at least 10 percent of the bid.

Prevailing wages are required on this Contract. The Director of the California Department of Industrial Relations determines the general prevailing wage rates. Obtain the wage rates at the DIR Web site, <http://www.dir.ca.gov>, or from the Department's Labor Compliance Office of the district in which the work is located.

The federal minimum wage rates for this Contract as determined by the United States Secretary of Labor are available at <http://www.dot.ca.gov/hq/esc/oe/federal-wages>.

If the minimum wage rates as determined by the United States Secretary of Labor differs from the general prevailing wage rates determined by the Director of the California Department of Industrial Relations for similar classifications of labor, the Contractor and subcontractors must not pay less than the higher wage rate. The Department does not accept lower State wage rates not specifically included in the federal minimum wage determinations. This includes helper, or other classifications based on hours of experience, or any other classification not appearing in the federal wage determinations. Where federal wage determinations do not contain the State wage rate determination otherwise available for use by the Contractor and subcontractors, the Contractor and subcontractors must not pay less than the federal minimum wage rate that most closely approximates the duties of the employees in question.

The Department has made available Notices of Suspension and Proposed Debarment from the Federal Highway Administration. For a copy of the notices, go to [http://www.dot.ca.gov/hq/esc/oe/contractor\\_info](http://www.dot.ca.gov/hq/esc/oe/contractor_info). Additional information is provided in the Excluded Parties List System at <https://www.epls.gov>.

Department of Transportation

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### BID ITEM LIST

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
1	070030	LEAD COMPLIANCE PLAN	LS	LUMP SUM
2	080050	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	LUMP SUM
3	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM
4	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM
5	120159	TEMPORARY TRAFFIC STRIPE (PAINT)	LF	8,040
6	120165	CHANNELIZER (SURFACE MOUNTED)	EA	210
7	129000	TEMPORARY RAILING (TYPE K)	LF	8,380
8	129100	TEMPORARY CRASH CUSHION MODULE	EA	170
9	129150	TEMPORARY TRAFFIC SCREEN	LF	8,380
10	130100	JOB SITE MANAGEMENT	LS	LUMP SUM
11	130300	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM
12	130330	STORM WATER ANNUAL REPORT	EA	2
13	130570	TEMPORARY COVER	SQYD	2,000
14	130620	TEMPORARY DRAINAGE INLET PROTECTION	EA	22
15	130640	TEMPORARY FIBER ROLL	LF	1,300
16	130680	TEMPORARY SILT FENCE	LF	1,450
17	130710	TEMPORARY CONSTRUCTION ENTRANCE	EA	2
18	130730	STREET SWEEPING	LS	LUMP SUM
19	130900	TEMPORARY CONCRETE WASHOUT	LS	LUMP SUM
20	141103	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	LF	1,610

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
21	141120	TREATED WOOD WASTE	LB	6,540
22	150204	ABANDON CULVERT (LF)	LF	220
23	150608	REMOVE CHAIN LINK FENCE	LF	210
24	150662	REMOVE METAL BEAM GUARD RAILING	LF	190
25	150685	REMOVE IRRIGATION FACILITY	LS	LUMP SUM
26	150711	REMOVE PAINTED TRAFFIC STRIPE	LF	4,430
27	150714	REMOVE THERMOPLASTIC TRAFFIC STRIPE	LF	2,820
28	150722	REMOVE PAVEMENT MARKER	EA	1,100
29	150771	REMOVE ASPHALT CONCRETE DIKE	LF	30
30	150812	REMOVE PIPE (LF)	LF	210
31	150820	REMOVE INLET	EA	3
32	150821	REMOVE HEADWALL	EA	1
33	153123	REMOVE CONCRETE (SQYD)	SQYD	91
34	153130	REMOVE CONCRETE CURB (LF)	LF	200
35	155003	CAP INLET	EA	6
36	155232	SAND BACKFILL	CY	17
37	160102	CLEARING AND GRUBBING (LS)	LS	LUMP SUM
38	190101	ROADWAY EXCAVATION	CY	1,880
39	190105	ROADWAY EXCAVATION (TYPE Z-2) (AERIALY DEPOSITED LEAD)	CY	1,580
40	190140	TRENCH EXCAVATION	CY	120

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
41 (F)	192001	STRUCTURE EXCAVATION	CY	2,836
42	192053	STRUCTURE EXCAVATION (TYPE Z-2) (AERIALY DEPOSITED LEAD)	CY	390
43 (F)	193001	STRUCTURE BACKFILL	CY	351
44	194001	DITCH EXCAVATION	CY	1,420
45	198010	IMPORTED BORROW (CY)	CY	650
46	202011	MULCH	CY	640
47	202036	SLOW RELEASE OR CONTROLLED RELEASE FERTILIZER	LB	1,190
48	204008	PLANT (GROUP H)	EA	101,000
49	204035	PLANT (GROUP A)	EA	2,670
50	204096	MAINTAIN EXISTING PLANTED AREAS	LS	LUMP SUM
51	204099	PLANT ESTABLISHMENT WORK	LS	LUMP SUM
52	206401	MAINTAIN EXISTING IRRIGATION FACILITIES	LS	LUMP SUM
53	206560	CONTROL AND NEUTRAL CONDUCTORS	LS	LUMP SUM
54	206602	1" ELECTRIC REMOTE CONTROL VALVE	EA	14
55	206604	1 1/2" ELECTRIC REMOTE CONTROL VALVE	EA	13
56	208421	BACKFLOW PREVENTER ASSEMBLY ENCLOSURE	EA	1
57	208426	2" BACKFLOW PREVENTER ASSEMBLY	EA	1
58	208465	SPRINKLER (TYPE A-5)	EA	180
59	208471	SPRINKLER (TYPE B-1)	EA	83
60	208590	6" GATE VALVE	EA	1

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
61 (F)	208594	3/4" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	5,985
62 (F)	208595	1" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	1,455
63 (F)	208596	1 1/4" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	183
64 (F)	208597	1 1/2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	425
65 (F)	208598	2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	7,048
66	208683	BALL VALVE	EA	13
67	209202	RECYCLED WATER WARNING SIGNS	LS	LUMP SUM
68	260303	CLASS 3 AGGREGATE BASE (CY)	CY	1,290
69	280000	LEAN CONCRETE BASE	CY	1,090
70	390132	HOT MIX ASPHALT (TYPE A)	TON	1,910
71	394073	PLACE HOT MIX ASPHALT DIKE (TYPE A)	LF	90
72	394074	PLACE HOT MIX ASPHALT DIKE (TYPE C)	LF	100
73	394075	PLACE HOT MIX ASPHALT DIKE (TYPE D)	LF	20
74	394076	PLACE HOT MIX ASPHALT DIKE (TYPE E)	LF	420
75	394077	PLACE HOT MIX ASPHALT DIKE (TYPE F)	LF	140
76	394090	PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	SQYD	40
77 (F)	510050	STRUCTURAL CONCRETE	CY	495
78 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	CY	142.6
79 (F)	510526	MINOR CONCRETE (BACKFILL)	CY	18.8
80	519101	JOINT SEAL (TYPE A)	LF	230

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
81	519102	JOINT SEAL (TYPE AL)	LF	110
82 (F)	520101	BAR REINFORCING STEEL	LB	122,030
83	650014	18" REINFORCED CONCRETE PIPE	LF	490
84	650018	24" REINFORCED CONCRETE PIPE	LF	990
85	650026	36" REINFORCED CONCRETE PIPE	LF	160
86	680902	6" PERFORATED PLASTIC PIPE UNDERDRAIN	LF	1,150
87	680903	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	LF	430
88 (F)	026021	CLASS 4 PERMEABLE MATERIAL	CY	445
89 (F)	026022	CLASS 5 PERMEABLE MATERIAL	CY	590
90	690112	12" CORRUGATED STEEL PIPE DOWNDRAIN (.079" THICK)	LF	31
91	690117	18" CORRUGATED STEEL PIPE DOWNDRAIN (.079" THICK)	LF	46
92	705007	12" STEEL FLARED END SECTION	EA	1
93	705011	18" STEEL FLARED END SECTION	EA	3
94	705206	24" CONCRETE FLARED END SECTION	EA	1
95	705210	36" CONCRETE FLARED END SECTION	EA	1
96	707217	36" PRECAST CONCRETE PIPE MANHOLE	LF	21
97 (F)	721017	ROCK SLOPE PROTECTION (FACING, METHOD B) (CY)	CY	11.5
98	721420	CONCRETE (DITCH LINING)	CY	4
99 (F)	722020	GABION	CY	44
100	729011	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	SQYD	35

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
101 (F)	750001	MISCELLANEOUS IRON AND STEEL	LB	9,157
102 (F)	750500	MISCELLANEOUS METAL	LB	115
103	800360	CHAIN LINK FENCE (TYPE CL-6)	LF	1,300
104	802580	12' CHAIN LINK GATE (TYPE CL-6)	EA	1
105	802660	20' CHAIN LINK GATE (TYPE CL-6)	EA	2
106	802670	24' CHAIN LINK GATE (TYPE CL-6)	EA	1
107	820107	DELINEATOR (CLASS 1)	EA	24
108	832001	METAL BEAM GUARD RAILING	LF	540
109	832070	VEGETATION CONTROL (MINOR CONCRETE)	SQYD	150
110 (F)	839521	CABLE RAILING	LF	545.1
111	839581	END ANCHOR ASSEMBLY (TYPE SFT)	EA	3
112	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	3
113	840504	4" THERMOPLASTIC TRAFFIC STRIPE	LF	3,220
114	840525	4" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 36-12)	LF	4,830
115	850101	PAVEMENT MARKER (NON-REFLECTIVE)	EA	810
116	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	290
117	860090	MAINTAINING EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS DURING CONSTRUCTION	LS	LUMP SUM
118	861504	MODIFY LIGHTING AND SIGN ILLUMINATION	LS	LUMP SUM
119 (F)	026023	CLASS D FILTER FABRIC	SQYD	1,240
120	999990	MOBILIZATION	LS	LUMP SUM







When authorized, remove and dispose of construction project funding signs upon completion of the project.

#### **12-2.04 PAYMENT**

Not Used

#### **Add to section 12-3.12C:**

Start displaying the message on the portable changeable message sign 5 minutes before closing the lane.

#### **Replace section 12-3.13 with:**

### **12-3.13 IMPACT ATTENUATOR VEHICLE**

#### **12-3.13A General**

##### **12-3.13A(1) Summary**

Section 12-3.13 includes specifications for protecting traffic and workers with an impact attenuator vehicle during moving lane closures and when placing and removing components of stationary lane closures, ramp closures, shoulder closures, or a combination.

Impact attenuator vehicles must comply with the following test levels under National Cooperative Highway Research Program 350:

1. Test level 3 if the preconstruction posted speed limit is 50 mph or more
2. Test levels 2 or 3 if the preconstruction posted speed limit is 45 mph or less

Comply with the attenuator manufacturer's instructions for:

1. Support truck
2. Trailer-mounted operation
3. Truck-mounted operation

Flashing arrow signs must comply with section 12-3.03. You may use a portable changeable message sign instead of a flashing arrow sign. If a portable changeable message sign is used as a flashing arrow sign, it must comply with section 6F.56 "Arrow Panels" of the *California MUTCD*.

##### **12-3.13A(2) Definitions**

**impact attenuator vehicle:** A support truck that is towing a deployed attenuator mounted to a trailer or a support truck with a deployed attenuator that is mounted to the support truck.

##### **12-3.13A(3) Submittals**

Upon request, submit a certificate of compliance for each attenuator used on the project.

##### **12-3.13A(4) Quality Control and Assurance**

Do not start impact attenuator vehicle activities until authorized.

Before starting impact attenuator vehicle activities, conduct a preinstallation meeting with the Engineer, subcontractors, and other parties involved with traffic control to discuss the operation of the impact attenuator vehicle during moving lane closures and when placing and removing components of stationary traffic control systems.

Schedule the location, time, and date for the preinstallation meeting with all participants. Furnish the facility for the preinstallation meeting within 5 miles of the job site or at another location if authorized.

##### **12-3.13B Materials**

Attenuators must be a brand on the Authorized Material List for highway safety features.

The combined weight of the support truck and the attenuator must be at least 19,800 pounds, except the weight of the support truck must not be less than 16,100 or greater than 26,400 pounds.

For the Trinity MPS-350 truck-mounted attenuator, the support truck must not have a fuel tank mounted underneath within 10'-6" of the rear of the support truck.

Each impact attenuator vehicle must have:

1. Legal brake lights, taillights, sidelights, and turn signals
2. Inverted "V" chevron pattern placed across the entire rear of the attenuator composed of alternating 4-inch wide nonreflective black stripes and 4-inch wide yellow retroreflective stripes sloping at 45 degrees
3. Type II flashing arrow sign
4. Flashing or rotating amber light
5. Operable 2-way communication system for maintaining contact with workers

### **12-3.13C Construction**

Except where prohibited, use an impact attenuator vehicle:

1. To follow behind equipment and workers who are placing and removing components of a stationary lane closure, ramp closure, shoulder closure, or any combination. Operate the flashing arrow sign in the arrow or caution mode during this activity, whichever applies. Follow at a distance that prevents intrusion into the workspace from passing traffic.
2. As a shadow vehicle in a moving lane closure.

After placing components of a stationary traffic control system you may place the impact attenuator vehicle in advance of the work area or at another authorized location to protect traffic and workers.

Secure objects, including equipment, tools, and ballast on impact attenuator vehicles to prevent loosening upon impact by an errant vehicle.

Do not use a damaged attenuator in the work. Replace any attenuator damaged from an impact during work activities at your expense.

### **12-3.13D Payment**

Not Used

**Delete the 2nd through 5th paragraphs of section 12-4.02A.**

**Replace the 1st paragraph of section 12-4.02A with:**

Work that interferes with traffic is limited to the hours when closures are allowed, except for work shown on the stage construction and traffic handling plans.

**Replace the 6th paragraph of section 12-4.02A with:**

If a minor deviation from the requirements of this section regarding hours of work is required, submit a request at least 15 days before the proposed date of closure. If no significant increase in cost is accrued to the Department and the work can be expedited and better serve the traffic, the deviation may be authorized.

**Add to section 12-4.02A:**

If work including installing, maintaining, and removing Category 3 traffic control devices except impact attenuator vehicles is to be performed within 6 feet of the adjacent traffic lane, close the adjacent traffic lane.

Closure of the adjacent traffic lane is not required for installing, maintaining, and removing Category 1 and 2 traffic control devices.

The full width of the ramp traveled way must be open for use by traffic on designated holidays.

Designated holidays are as shown in the following table:

<b>Designated Holidays</b>	
Holiday	Date observed
New Year's Day	January 1st
Washington's Birthday	3rd Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4th
Labor Day	1st Monday in September
Veterans Day	November 11th
Thanksgiving Day	4th Thursday in November
Christmas Day	December 25th

If a designated holiday falls on a Sunday, the following Monday is a designated holiday. If November 11th falls on a Saturday, the preceding Friday is a designated holiday.

Special days are: Martin Luther King Jr Day and Columbus Day.

Concurrent stationary lane closures must be more than 5 miles apart. Closure spacing is the distance between the last cone of the upstream closure and the temporary sign (W20-1) of the downstream closure. The number of lanes open in the upstream closures must be less than or equal to the number of lanes open in the downstream closures. For multiple closures in each direction of travel, pick up downstream closures first.

Work may be performed during the hours designated as "No work allowed" on Charts no 1 through 6 if temporary traffic screens are installed on top of the Type K temporary railings. The Department does not pay for furnishing, installing, maintaining, or removing temporary traffic screen.

Route 710 may be closed to traffic on SB direction of travel for restriping operations. Comply with the hours and requirements shown on Chart no. 7.

Except as otherwise specified on Charts no. 13 through 17, other ramps may be closed if the adjacent freeway lane is allowed to be closed as shown on Charts no. 1 through 6. If a ramp is closed and a ramp lane requirement chart is not included, detour traffic to the next available ramp downstream of the closed ramp in the direction of travel. For each ramp closed, post at least 8 special portable freeway detour signs, SP-2, as shown on traffic handling details plan titled "Traffic Control System for Detour Sign Installation along Designated Detour Route," along the detour route and remove at the end of each closure.

If an off-ramp is closed, install special signs for exit ramp closures, SP-3 or SP-5, and place the sign on the right shoulder of the freeway upstream of the preceding off-ramp.

If a ramp or connector closure is allowed, post a special advance notice publicity sign, SP-1, as shown at an authorized location, at least 7 days before the ramp or connector closure. Maintain accurate information on the sign and remove or cover sign when work is not actively in progress.

Payment for special signs, SP-1, SP-2, SP-3, and SP-5 is included in the payment for traffic control system.

From 3 hours before to 2 hours after the Long Beach Grand Prix event, work that encroaches onto the freeway or connector traveled way will not be allowed.

Personal vehicles of the Contractor's employees must not be parked within the right-of-way.

If work vehicles or equipment are parked within 6 feet of a traffic lane, close the shoulder area as shown.

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**Delete the 1st paragraph of section 12-4.02B.**

**Add to section 12-4.02C:**

**Replace "Sunday" at each occurrence in the 1st paragraph of section 12-4.03 with:**

Friday

**Replace the 3rd paragraph of section 12-4.03 with:**

Use the online Lane Closure System (LCS) and show the locations and times of the proposed closures. Closure schedules submitted with incomplete or inaccurate information will be rejected and returned for correction and resubmittal online. You will be notified of unauthorized closures or closures that require coordination with other parties as a condition for authorization. Fifteen days before submitting the 1st lane closure request, contact the Engineer to schedule for the required LCS training. For the LCS, go to:

<http://lcs.dot.ca.gov>

**Replace the 4th paragraph of section 12-4.03 with:**

Using LCS, submit closure schedule amendments, including adding additional closures, by noon at least 3 business days before a planned closure. Authorization of amendments will be at the discretion of the Engineer.

**Replace the 5th paragraph of section 12-4.03 with:**

Using LCS, cancel lane closure requests at least 2 business days before the date of the closure.

**Add between the 3rd and 4th paragraphs of the RSS for section 12-4.03:**

For the striping operation, submit the contingency plan and discuss with the Engineer at least 5 business days before starting that operation:

**Replace the 4th paragraph of the RSS for section 12-4.03 with:**

**Add to section 12-4.03:**

For each 10-minute interval or fraction thereof past the time specified to reopen the closure, the Department deducts the amount for damages per interval shown below. Damages are limited to 5 percent of the total bid per occurrence. Damages are not assessed if the Engineer orders the closure to remain in place beyond the scheduled pickup time.

Type of facility	Route or segment	Period	Damages/interval (\$)
Mainline	NB 710	1st half hour 2nd half hour 2nd hour and beyond	\$1,500 / 10 minutes \$2,300 / 10 minutes \$3,100 / 10 minutes
Mainline	SB 710	1st half hour 2nd half hour 2nd hour and beyond	\$2,600 / 10 minutes \$4,000 / 10 minutes \$5,300 / 10 minutes

Replace "Reserved" in section 12-4.04 with:

Freeway or Connector Lane Closure Restriction for Designated Holidays and Special Days										
Thu	Fri	Sat	Sun	Mon	Tues	Wed	Thu	Fri	Sat	Sun
x	<b>H</b> xx	xx	xx							
x	xx	<b>H</b> xx	xx							
	x	xx	xx	<b>H</b> xx						
	x			<b>SD</b> xx						
				x	<b>H</b> xx					
					x	<b>H</b> xx				
						x	<b>H</b> xx	xx		xx
Legend:										
	Refer to Charts no. 1 to 12.									
x	The full width of the traveled way must be open for use by traffic by 0500.									
xx	The full width of the traveled way must be open for use by traffic.									
<b>H</b>	Designated holiday									
<b>SD</b>	Special day									

**Replace "Reserved" in section 12-4.05B with:**

<b>Chart no. 1 Freeway Lane Requirements and Hours of Work</b>																										
County: LA						Route/Direction: 710/NB																				
Closure limits: PCH to SB Rte 405 on-connector																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		1	1	1	1	1	2	N	N	N	S	S	S	S	S	N	N	N	N	N	S	2	2	2	2	
Fridays		1	1	1	1	1	2	N	N	N	N	S	S	S	N	N	N	N	N	N	S	S	S	2	2	
Saturdays		2	1	1	1	1	1	2	2	2	S	S	S	S	S	S	N	N	N	S	S	S	S	S	2	
Sundays		2	1	1	1	1	1	1	2	2	2	S	S	S	S	S	S	S	S	S	S	2	2	2	1	
<b>Legend:</b>																										
1		Provide at least 1 adjacent through freeway lanes open in direction of travel																								
2		Provide at least 2 adjacent through freeway lanes open in direction of travel																								
S		Shoulder closure allowed																								
N		No work allowed																								
<p>REMARKS: The number of through traffic lanes is 3.                      Traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," may be closed at the same time the adjacent through traffic lane is allowed to be closed.</p>																										

<b>Chart no. 2 Freeway Lane Requirements and Hours of Work</b>																										
County: LA						Route/Direction: 710/NB																				
Closure limits: North of SB Rte 405 on-connector to Del Amo Blvd off-ramp																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		3	3	3	3	3	3	N	N	S	4	4	4	4	4	4	N	N	N	N	4	3	3	3	3	
Fridays		3	3	3	3	3	3	N	N	S	4	4	4	4	4	4	N	N	N	N	4	3	3	3	3	
Saturdays		3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	3	3	3	3	3	
Sundays		3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	3	3	3	3	3	
<b>Legend:</b>																										
3		Provide at least 3 adjacent through freeway lanes open in direction of travel																								
4		Provide at least 4 adjacent through freeway lanes open in direction of travel																								
S		Shoulder closure allowed																								
N		No work allowed																								
<p>REMARKS: The number of through traffic lanes is 4 or 5.</p>																										

Chart no. 3 Freeway Lane Requirements and Hours of Work																										
County: LA					Route/Direction: 710/NB																					
Closure limits: EB Rte 91 off-connector to EB Rte 91 on-connector																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		2	2	2	2	2	2	N	N	N	S	S	S	S	N	N	N	N	N	N	2	2	2	2	2	
Fridays		2	2	2	2	2	2	N	N	N	S	S	S	S	N	N	N	N	N	N	S	2	2	2	2	
Saturdays		2	2	2	2	2	2	2	2	2	2	S	S	S	S	S	S	S	S	S	S	2	2	2	2	
Sundays		2	2	2	2	2	2	2	2	2	2	S	S	S	S	S	S	S	S	S	2	2	2	2	2	
Legend:																										
2		Provide at least 2 adjacent through freeway lanes open in direction of travel																								
S		Shoulder closure allowed																								
N		No work allowed																								
REMARKS: The number of through traffic lanes is 3.																										

Chart no. 4 Freeway Lane Requirements and Hours of Work																										
County: LA					Route/Direction: 710/NB																					
Closure limits: Rte 105 off-connectors to Rosecrans Ave on-ramp																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		2	2	2	2	2	2	N	N	S	3	3	3	3	S	S	N	N	N	N	3	2	2	2	2	
Fridays		2	2	2	2	2	2	N	N	S	3	3	3	3	S	S	N	N	N	N	3	2	2	2	2	
Saturdays		2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	
Sundays		2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	2	2	2	2	2	
Legend:																										
2		Provide at least 2 adjacent through freeway lanes open in direction of travel																								
3		Provide at least 3 adjacent through freeway lanes open in direction of travel																								
S		Shoulder closure allowed																								
N		No work allowed																								
REMARKS: The number of through traffic lanes is 4.																										

**Chart no. 5  
Freeway Lane Requirements and Hours of Work**

County: LA	Route/Direction: 710/SB																								
Closure limits: Long Beach Blvd off-ramp to Rte 405 off-connector																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	1	1	1	1	2	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	3	3	2	2	
Fridays	1	1	1	1	2	S	N	N	N	S	S	S	S	S	S	N	N	N	N	S	3	3	3	2	
Saturdays	2	1	1	1	1	2	3	3	3	3	S	S	S	S	S	S	S	S	S	S	3	3	3	2	
Sundays	2	2	1	1	1	1	2	2	2	3	3	3	S	S	S	S	S	3	3	3	3	3	2	2	

- Legend:**
- 1 Provide at least 1 adjacent through freeway lanes open in direction of travel
  - 2 Provide at least 2 adjacent through freeway lanes open in direction of travel
  - 3 Provide at least 3 adjacent through freeway lanes open in direction of travel
  - S Shoulder closure allowed
  - N No work allowed

**REMARKS:** The number of through traffic lanes is 3 or 4.  
Traffic lanes outside of the through traffic lanes delineated with a double line of pavement markers as shown on "Pavement Markers and Traffic Lines Typical Details (Detail 37 series)," may be closed at the same time the adjacent through traffic lane is allowed to be closed.

**Chart no. 6  
Freeway Lane Requirements and Hours of Work**

County: LA	Route/Direction: 710/SB																								
Closure limits: NB Rte 405 on-connector to Willow St off-ramp																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	1	1	1	1	1	S	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	2	2
Fridays	1	1	1	1	1	2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	2
Saturdays	1	1	1	1	1	1	2	S	S	S	S	N	N	N	N	N	N	N	S	S	S	S	S	2	
Sundays	2	1	1	1	1	1	2	2	2	2	S	S	S	S	S	S	S	S	S	2	2	2	2	1	
<b>Legend:</b>																									
1	Provide at least 1 adjacent through freeway lanes open in direction of travel																								
2	Provide at least 2 adjacent through freeway lanes open in direction of travel																								
S	Shoulder closure allowed																								
N	No work allowed																								
<b>REMARKS:</b> The number of through traffic lanes is 3.																									

**Replace "Reserved" in section 12-4.05C with:**

<b>Chart no. 7 Complete Freeway Closure Hours</b>																										
County: LA	Route/Direction: 710/SB																									
Closure limits: NB Long Beach Blvd off-ramp to Long Beach Blvd on-ramp																										
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Mondays through Thursdays	C	C	C	C																						
Fridays	C	C	C	C																						
Saturdays		C	C	C	C																					
Sundays		C	C	C	C	C																				C

**Legend:**  
 C Freeway may be closed completely  
 No complete freeway closure is allowed

**REMARKS:**  
 Detour traffic to exit at Long Beach Blvd (North) off-ramp; north on Long Beach Blvd; west on Victoria St; south on Susana Rd to the on-ramp to SB Rte 710. Place a portable changeable message sign on the right shoulder of SB Rte 710 between Alondra Blvd on and off-ramps with the message: "FREEWAY / CLOSED / AHEAD – LONG BCH / TO / DEL AMO".  
 Place a second portable changeable message sign on EB Rte 91 at Alameda St off-ramp gore with the message: "S710 / CLOSED – AT / LONG BCH / BLVD".  
 Post at least 18 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

**Replace "Reserved" in section 12-4.05D with:**

<b>Chart no. 8 Connector Lane Requirements and Hours of Work</b>																										
County: LA					Route/Direction: 405/SB																					
Closure limits: SB Rte 405 to NB Rte 710																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C	C	C	S	S	S	1	1	1	1	1	1	S	S	S	S	C	C	C	C	C	
Fridays		C	C	C	C	C	C	S	S	S	1	1	1	1	1	1	S	S	S	S	C	C	C	C	C	
Saturdays		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Sundays		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
<p><b>Legend:</b></p> <p><b>1</b> Provide at least 1 connector lane open in direction of travel</p> <p><b>C</b> Connector may be closed completely</p> <p><b>S</b> Shoulder closure allowed</p>																										
<p><b>REMARKS:</b></p> <p>Detour traffic onto SB Rte 710 and exit at Willow St (east) off-ramp; east on Willow St to the on-ramp to NB Rte 710. Place a portable changeable message sign on the right shoulder of SB Rte 405 freeway in advance of the Rte 710 connector just north of Alameda St with the message: "N710 / EXIT / CLOSED - USE / S710 TO / WILLOW".</p> <p>Post at least 3 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.</p> <p>The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.</p>																										

**Chart no. 9  
Complete Connector Closure Hours**

County: LA	Route/Direction: 405/NB																								
Closure limits: NB Rte 405 to NB Rte 710																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C	C	
Fridays	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C	C	
Saturdays	C	C	C	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	C	C	C	C		
Sundays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	

Legend:

C Connector may be closed completely

S Shoulder closure allowed

REMARKS:

Detour traffic to continue on NB Rte 405 and exit at Santa Fe Ave off-ramp; west on Warnock Way; south on Santa Fe Ave; west on Wardlow Rd to the on-ramp to SB Rte 405. Place a portable changeable message sign on the right shoulder of NB Rte 405 in advance of the Rte 710 connector just north of Atlantic Ave with the message: "N710 / EXIT / CLOSED – DETOUR / USE / SANTA FE". Post at least 11 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

**Chart no. 10  
Complete Connector Closure Hours**

County: LA	Route/Direction: 710/NB																								
Closure limits: NB Rte 710 to NB Rte 405																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C	C	C	
Fridays	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C	C	C	
Saturdays	C	C	C	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	C	C	C	C	C	C	
Sundays	C	C	C	C	C	C	C	C	C	C	C	C	C	S	S	S	S	S	C	C	C	C	C	C	

Legend:

- C Connector may be closed completely
- S Shoulder closure allowed

REMARKS:

Detour traffic to continue on NB Rte 710 and exit at Del Amo Blvd (west) off-ramp; west to the on-ramp to SB Rte 710. Place a portable changeable message sign on the right shoulder of NB Rte 710 in advance of the off-connector just north of Willow St with the message: "N405 / EXIT / CLOSED – DETOUR / USE WEST / DEL AMO".  
Post at least 3 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

Chart no. 11 Complete Connector Closure Hours																										
County: LA										Route/Direction: 91/WB																
Closure limits: WB Rte 91 to NB Rte 710																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C	
Fridays		C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C	
Saturdays		C	C	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	S	C	C		
Sundays		C	C	C	C	C	C	C	C	S	S	S	S	S	S	S	S	S	S	S	S	C	C	C		
Legend:																										
C		Connector may be closed completely																								
S		Shoulder closure allowed																								
REMARKS:																										
Detour traffic to continue on WB Rte 91; exit at Long Beach Blvd off-ramp, south to the on-ramp to EB Route 91. Place a portable changeable message sign on the right shoulder of WB Rte 91 in advance of the connector at the Cherry Ave off-ramp gore with the message: "N710 / EXIT / CLOSED – USE / LONG / BEACH BL".																										
Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.																										

**Chart no. 12  
Complete Connector Closure Hours**

County: LA	Route/Direction: 710/NB																								
Closure limits: NB Rte 710 to WB Rte 91																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	C	C	S	S	S	C	C	C	C	C	C	S	S	S	S	C	C	C	C	C	C
Fridays	C	C	C	C	C	C	S	S	S	C	C	C	C	C	C	S	S	S	S	C	C	C	C	C	C
Saturdays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sundays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

**Legend:**

C Connector may be closed completely

S Shoulder closure allowed

**REMARKS:**

Detour traffic to continue on NB Rte 710 and exit at Alondra Blvd off-ramp; west on Alondra Blvd to the on-ramp to SB Rte 710. Place a portable changeable message sign on the right shoulder of NB Rte 710 in advance of the connector at the Long Beach Blvd on-ramp gore with the message: "WEST 91 / EXIT / CLOSED – DETOUR / USE / ALONDRA".

Post at least 6 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.

The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.

**Replace "Reserved" in section 12-4.05E with:**

<b>Chart no. 13 Complete Ramp Closure Hours</b>																									
County: LA	Route/Direction: 710/NB																								
Closure limits: On-ramp from NB PCH (Rte 1)																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	C	C	S	S	S	C	C	C	C	C	C	S	S	S	S	C	C	C	C	C	C
Fridays	C	C	C	C	C	C	S	S	S	C	C	C	C	C	C	S	S	S	S	C	C	C	C	C	C
Saturdays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sundays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
<p>Legend:</p> <p><input type="checkbox"/> C Ramp may be closed completely</p> <p><input type="checkbox"/> S Shoulder closure allowed</p>																									
<p>REMARKS:</p> <p>Detour traffic to continue west on PCH; south on Santa Fe Ave; east on Anaheim St to the on-ramp to NB Route 710.</p> <p>Post at least 7 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.</p> <p>The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.</p>																									

Chart no. 14 Complete Ramp Closure Hours																										
County: LA					Route/Direction: 710/NB																					
Closure limits: On-ramp from Wardlow Rd																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C	C	C	S	S	S	C	C	C	C	C	C	S	S	S	S	C	C	C	C	C	
Fridays		C	C	C	C	C	C	S	S	S	C	C	C	C	C	C	S	S	S	S	C	C	C	C	C	
Saturdays		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Sundays		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
<p>Legend:</p> <p><input type="checkbox"/> C Ramp may be closed completely</p> <p><input type="checkbox"/> S Shoulder closure allowed</p> <p>REMARKS:</p> <p>Detour traffic to continue west on Wardlow Rd to the on-ramp to SB Rte 405. Post at least 3 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure. The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.</p>																										

Chart no. 15 Complete Ramp Closure Hours																										
County: LA					Route/Direction: 710/SB																					
Closure limits: Off-ramp to SB Long Beach Blvd																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C	C	C	S	S	S	C	C	C	C	C	C	S	S	S	S	C	C	C	C	C	
Fridays		C	C	C	C	C	C	S	S	S	C	C	C	C	C	C	S	S	S	S	C	C	C	C	C	
Saturdays		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Sundays		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
<p>Legend:</p> <p><input type="checkbox"/> C Ramp may be closed completely</p> <p><input type="checkbox"/> S Shoulder closure allowed</p> <p>REMARKS:</p> <p>The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.</p>																										

**Chart no. 16  
Complete Ramp Closure Hours**

County: LA	Route/Direction: 710/SB																								
Closure limits: On-ramp from Long Beach Blvd																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	C	C	S	S	S	C	C	C	C	C	C	S	S	S	S	C	C	C	C	C	C
Fridays	C	C	C	C	C	C	S	S	S	C	C	C	C	C	C	S	S	S	S	C	C	C	C	C	C
Saturdays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sundays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

- Legend:**
- C Ramp may be closed completely
  - S Shoulder closure allowed

**REMARKS:**  
 Detour SB Long Beach Blvd traffic to go west on Victoria St; south on Susana Rd to the on-ramp to SB Rte 710. Place a portable changeable message sign on SB Long Beach Blvd 500 ft north of Victoria St with the message: "RAMP / TO S 710 / CLOSED – DETOUR / USE / VICTORIA".  
 Post at least 8 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.  
 Detour NB Long Beach Blvd traffic to continue north on Long Beach Blvd to the on-ramp to EB Rte 91 to SB Rte 710.  
 Post at least 4 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.  
 Detour EB Victoria St traffic to go north on Long Beach Blvd to the on-ramp to EB Rte 91 to SB Rte 710. Place a portable changeable message sign on the EB Victoria St 500 ft west of Long Beach Blvd with the message: "RAMP / TO S 710 / CLOSED – DETOUR / LEFT ON / LONG BCH".  
 Post at least 5 special portable freeway detour signs, SP-2, along the detour route and remove signs at the end of each closure.  
 The full width of the traveled way must be open for use by traffic when construction activities are not actively in progress.



**Replace item 1 in the list in the 7th paragraph of section 14-6.03A with:**

Stop all work within a 100-foot radius of the discovery except as shown in the following table:

**Radius Exceptions**

Species	Work stoppage radius (feet)
All Passerine Birds	100
All Birds of Prey	500

**Replace section 14-11.03 with:**

**14-11.03 MATERIAL CONTAINING HAZARDOUS WASTE CONCENTRATIONS OF AERIALLY DEPOSITED LEAD**

**14-11.03A General**

**14-11.03A(1) Summary**

Section 14-11.03 includes specifications for hazardous waste management while excavating, stockpiling, transporting, placing, and disposing of material containing hazardous waste concentrations of aerially deposited lead (ADL).

ADL is present within the project limits.

**14-11.03A(2) Definitions**

**Type Z-2:** Material that contains ADL in average concentrations (using the 95 percent Upper Confidence Limit) greater than or equal to 1,000 mg/kg total lead, greater than or equal to 5.0 mg/L soluble lead (as tested using the California Waste Extraction Test), and the material is surplus; or material that contains ADL in average concentrations greater than 150 mg/L extractable lead (based on a modified waste extraction test using deionized water as the extractant) or greater than 3,397 mg/kg total lead. This material is a Department-generated California hazardous waste and must be transported to and disposed of at a California Class I disposal site.

**14-11.03A(3) Site Conditions**

ADL concentration data and sample locations maps are included in the *Information Handout*.

Type Z-2 material exists as shown on the plans.

**14-11.03A(4) Submittals**

**14-11.03A(4)(a) Lead Compliance Plan**

Submit a lead compliance plan under section 7-1.02K(6)(j)(ii).

**14-11.03A(4)(b) Excavation and Transportation Plan**

Within 15 days after approval of the Contract, submit 3 copies of an excavation and transportation plan. Allow 7 days for review. If revisions are required, as determined by the Engineer, submit the revised plan within 7 days of receipt of the Engineer's comments. For the revision, allow 7 days for the review. Minor changes to or clarifications of the initial submittal may be made and attached as amendments to the excavation and transportation plan. In order to allow construction to proceed, the Engineer may conditionally approve the plan while minor revisions or amendments are being completed.

Prepare the written, project specific excavation and transportation plan establishing the procedures you will use to comply with requirements for excavating, stockpiling, transporting, and placing or disposing of material containing ADL. The plan must comply with the regulations of the DTSC and Cal/OSHA. The sampling and analysis portions of the excavation and transportation plan must meet the requirements for the design and development of the sampling plan, statistical analysis, and reporting of test results contained in US EPA, SW 846, "Test Methods for Evaluating Solid Waste," Volume II: Field Manual Physical/Chemical, Chapter Nine, Section 9.1. The plan must include the following elements:

1. Excavation schedule by location and date
2. Transportation equipment and routes
3. Method for preventing spills and tracking material onto public roads
4. Truck waiting and staging areas
5. Site for disposal of hazardous waste
6. Spill Contingency Plan for material containing ADL

**14-11.03A(4)(c) Burial Location Report**

Not Used

**14-11.03A(4)(d) Bill of Lading**

Not used

**14-11.03A(5) Quality Control and Assurance**

Excavation, reuse, and disposal of material with ADL must comply with rules and regulations of the following agencies:

1. US DOT
2. US EPA
3. California Environmental Protection Agency
4. CDPH
5. DTSC
6. Cal/OSHA
7. California Department of Resources Recycling and Recovery
8. RWQCB, Region 4, Los Angeles
9. California Air Resources Board
10. South Coast Air Quality Management District

Transport and dispose of material containing hazardous levels of lead under federal and state laws and regulations and county and municipal ordinances and regulations. Laws and regulations that govern this work include:

1. Health & Safety Code, Division 20, Chp 6.5 (California Hazardous Waste Control Act)
2. 22 CA Code of Regs, Div. 4.5 (Environmental Health Standards for the Management of Hazardous Waste)
3. 8 CA Code of Regs

**14-11.03B Materials**

Not Used

**14-11.03C Construction**

**14-11.03C(1) General**

Not Used

**14-11.03C(2) Material Management**

Transport excavated Type Z-2 material using:

1. Hazardous waste manifest
2. Hazardous waste transporter with a current DTSC registration certificate and CA Highway Patrol (CHP) Biennial Inspection of Terminals (BIT) Program compliance documentation.

**14-11.03C(3) Dust Control**

Excavation, transportation, placement, and handling of material containing ADL must result in no visible dust migration. A water truck or tank must be on the job site at all times while clearing and grubbing or performing earthwork operations in work areas containing ADL. Apply water to prevent visible dust.

**14-11.03C(4) Surveying Type Y-1 or Y-2 Material Burial Locations**

**14-11.03C(5) Material Transportation**

Not used.

**14-11.03C(6) Disposal**

Analyze surplus material for which the lead content is not known for lead before removing the material from within the project limits. Submit a sampling and analysis plan and the name of the analytical laboratory at least 15 days before beginning sampling and analysis. Use a CDPH ELAP certified laboratory. Sample at a minimum rate of 1 sample for each 200 cu yd of surplus material and test for lead using US EPA Method 6010B or 7000 series.

**14-11.03D Payment**

Payment for a lead compliance plan is not included in the payment for environmental stewardship work.

The Department does not pay for stockpiling of material containing ADL, unless the stockpiling is ordered. The Department does not pay for sampling and analysis unless it is ordered. The Department does not pay for additional sampling and analysis required by the receiving landfill.

Sampling, analyses, and reporting of results for surplus material not previously sampled is change order work.

**Replace section 14-11.07 with:**

**14-11.07 REMOVE YELLOW TRAFFIC STRIPE AND PAVEMENT MARKING WITH HAZARDOUS WASTE RESIDUE**

**14-11.07A General**

**14-11.07A(1) Summary**

Section 14-11.07 includes specifications for removing existing yellow thermoplastic and yellow painted traffic stripe and pavement marking. The residue from the removal of this material is a Department-generated hazardous waste.

Residue from removal of yellow thermoplastic and yellow painted traffic stripe and pavement marking contains lead chromate. The average lead concentration is at least 1,000 mg/kg total lead or 5 mg/l soluble lead. When applied to the roadway, the yellow thermoplastic and yellow painted traffic stripe and pavement marking contained as much as 2.6 percent lead. Residue produced from the removal of this yellow thermoplastic and yellow painted traffic stripe and pavement marking contains heavy metals in concentrations that exceed thresholds established by the Health & Safety Code and 22 CA Code of Regs. For bidding purposes, assume the residue is not regulated under the Federal Resource Conservation and Recovery Act (RCRA), 42 USC § 6901 et seq.

Yellow thermoplastic and yellow paint may produce toxic fumes when heated.

**14-11.07A(2) Submittals**

**14-11.07A(2)(a) General**

Reserved

**14-11.07A(2)(b) Lead Compliance Plan**

Submit a lead compliance plan under section 7-1.02K(6)(j)(ii).

**14-11.07A(2)(c) Work Plan**

Submit a work plan for the removal, containment, storage, and disposal of yellow thermoplastic and yellow painted traffic stripe and pavement marking. The work plan must include:

1. Objective of the operation
2. Removal equipment
3. Procedures for removal and collection of yellow thermoplastic and yellow painted traffic stripe and pavement marking residue, including dust
4. Type of hazardous waste storage containers
5. Container storage location and how it will be secured

6. Hazardous waste sampling protocol and QA/QC requirements and procedures
7. Qualifications of sampling personnel
8. Analytical lab that will perform the analyses
9. DTSC registration certificate and CA Highway Patrol (CHP) Biennial Inspection of Terminals (BIT) Program compliance documentation of the hazardous waste hauler that will transport the hazardous waste
10. Disposal site that will accept the hazardous waste residue

The Engineer will review the work plan within 5 business days of receipt.

Do not perform work that generates hazardous waste residue until the work plan has been authorized.

Correct any rejected work plan and resubmit a corrected work plan within 5 business days of notification by the Engineer. A new review period of 5 business days will begin from date of resubmittal.

#### **14-11.07A(2)(d) Analytical Test Results**

Submit analytical test results of the residue from removal of yellow thermoplastic and yellow painted traffic stripe and pavement marking, including chain of custody documentation, for review and acceptance before:

1. Requesting the Engineer's signature on the waste profile requested by the disposal facility
2. Requesting the Engineer obtain an US EPA Generator Identification Number for disposal
3. Removing the residue from the site

#### **14-11.07A(2)(e) U.S. Environmental Protection Agency Identification Number Request**

Submit a request for the US EPA Generator Identification Number when the Engineer accepts analytical test results documenting that residue from removal of yellow thermoplastic and yellow painted traffic stripe and pavement marking is a hazardous waste.

#### **14-11.07A(2)(f) Disposal Documentation**

Submit documentation of proper disposal from the receiving landfill within 5 business days of residue transport from the project.

#### **14-11.07B Materials**

Not Used

#### **14-11.07C Construction**

Where grinding or other authorized methods are used to remove yellow thermoplastic and yellow painted traffic stripe and pavement marking that will produce a hazardous waste residue, immediately contain and collect the removed residue, including dust. Use a HEPA filter-equipped vacuum attachment operated concurrently with the removal operations or other equally effective approved methods for collection of the residue.

Make necessary arrangements to test the yellow thermoplastic and yellow paint hazardous waste residue as required by the disposal facility and these special provisions. Testing must include:

1. Total lead by US EPA Method 6010B
2. Total chromium by US EPA Method 6010B
3. Soluble lead by California Waste Extraction Test (CA WET)
4. Soluble chromium by CA WET
5. Soluble lead by Toxicity Characteristic Leaching Procedure (TCLP)
6. Soluble chromium by TCLP

From the first 220 gal of hazardous waste or portion thereof if less than 220 gal of hazardous waste are produced, a minimum of 4 randomly selected samples must be taken and analyzed individually. Samples must not be composited. From each additional 880 gal of hazardous waste or portion thereof if less than 880 gal are produced, a minimum of 1 additional random sample must be taken and analyzed. Use chain of custody procedures consistent with chapter 9 of US EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) while transporting samples from the project to the laboratory. Each sample must be homogenized before analysis by the laboratory performing the analyses. A sample

aliquot sufficient to cover the amount necessary for the total and the soluble analyses must then be taken. This aliquot must be homogenized a 2nd time and the total and soluble analyses run on this aliquot. The homogenization process must not include grinding of the samples. Submit the name and location of the disposal facility that will be accepting the hazardous waste and the analytical laboratory along with the testing requirements not less than 5 business days before the start of removal of yellow thermoplastic and yellow painted traffic stripe and pavement marking. The analytical laboratory must be certified by the California Department of Public Health (CDPH) Environmental Laboratory Accreditation Program (ELAP) for all analyses to be performed.

After the Engineer accepts the analytical test results, dispose of yellow thermoplastic and yellow paint hazardous waste residue at a Class 1 disposal facility located in California under the requirements of the disposal facility operator within 30 days after accumulating 220 pounds of residue and dust.

If less than 220 pounds of hazardous waste residue and dust is generated in total, dispose of it within 30 days after the start of accumulation of the residue and dust.

The Engineer will sign all manifests as the generator within 2 business days of receiving and accepting the analytical test results and receiving your request for the US EPA Generator Identification Number. Use a transporter with a current DTSC registration certificate and that is in compliance with the CHP BIT Program when transporting hazardous waste.

#### **14-11.07D Payment**

Payment for a lead compliance plan is not included in the payment for environmental stewardship work.

If analytical test results demonstrate that the residue is a non-hazardous waste and the Engineer agrees, dispose of the residue at an appropriately permitted CA Class II or CA Class III facility. The Department does not adjust payment for this disposal.

### **Replace section 14-11.09 with:**

#### **14-11.09 TREATED WOOD WASTE**

##### **14-11.09A General**

##### **14-11.09A(1) Summary**

Section 14-11.09 includes specifications for handling, storing, transporting, and disposing of treated wood waste (TWW).

Wood removed from metal beam guard railing is TWW. Manage TWW under 22 CA Code of Regs, Div. 4.5, Chp. 34.

##### **14-11.09A(2) Submittals**

For disposal of TWW, submit as an informational submittal a copy of each completed shipping record and weight receipt within 5 business days.

##### **14-11.09B Materials**

Not Used

##### **14-11.09C Construction**

##### **14-11.09C(1) General**

Not Used

##### **14-11.09C(2) Training**

Provide training to personnel who handle TWW or may come in contact with TWW. Training must include:

1. Applicable requirements of 8 CA Code of Regs
2. Procedures for identifying and segregating TWW
3. Safe handling practices
4. Requirements of 22 CA Code of Regs, Div. 4.5, Chp. 34
5. Proper disposal methods

Maintain records of personnel training for 3 years.

#### **14-11.09C(3) Storage**

Store TWW before disposal using the following methods:

1. Elevate on blocks above a foreseeable run-on elevation and protect from precipitation for no more than 90 days.
2. Place on a containment surface or pad protected from run-on and precipitation for no more than 180 days.
3. Place in water-resistant containers designed for shipping or solid waste collection for no more than 1 year.
4. Place in a storage building as defined in 22 CA Code of Regs, Div. 4.5, Chp. 34, § 67386.6(a)(2)(C).

Prevent unauthorized access to TWW using a secured enclosure such as a locked chain-link-fenced area or a lockable shipping container located within the job site.

Resize and segregate TWW at a location where debris from the operation including sawdust and chips can be contained. Collect and manage the debris as TWW.

Provide water-resistant labels that comply with 22 CA Code of Regs, Div. 4.5, Chp. 34, §67386.5, to clearly mark and identify TWW and accumulation areas. Labels must include:

1. Caltrans, District number, Construction, Construction Contract number
2. District office address
3. Engineer's name, address, and telephone number
4. Contractor's contact name, address and telephone number
5. Date placed in storage

#### **14-11.09C(4) Transporting and Disposal**

Before transporting TWW, obtain an agreement from the receiving facility that the TWW will be accepted. Protect shipments of TWW from loss and exposure to precipitation. For projects with 10,000 lb or more of TWW, request a generator's EPA Identification Number at least 5 business days before the 1st shipment. Each shipment must be accompanied by a shipping record such as a bill of lading or invoice that includes:

1. Caltrans with district number
2. Construction Contract number
3. District office address
4. Engineer's name, address, and telephone number
5. Contractor's contact name and telephone number
6. Receiving facility name and address
7. Waste description: Treated Wood Waste with preservative type if known or unknown/mixture
8. Project location
9. Estimated quantity of shipment by weight or volume
10. Date of transport
11. Date of receipt by the receiving TWW facility
12. Weight of shipment as measured by the receiving TWW facility
13. Generator's EPA Identification Number for projects with 10,000 lb or more of TWW

The shipping record must be at least a 4-part carbon or carbonless 8-1/2-by-11-inch form to allow retention of copies by the Engineer, transporter, and disposal facility.

Dispose of TWW at an approved TWW facility. A list of currently approved TWW facilities is available at:

<http://www.dtsc.ca.gov/HazardousWaste/upload/lanfillapr11pdated1.pdf>

Dispose of TWW within:

1. 90 days of generation if stored on blocks
2. 180 days of generation if stored on a containment surface or pad



**15-2.05C(3) Construction**

Wherever culverts or pipelines intersect side slopes, remove them to a depth of at least 3 feet. Measure the depth normal to the plane of the finished side slope. Abandon the remaining portion of the culvert or pipeline.

Culverts or pipelines that are 12 inches or more in diameter must be completely filled by authorized methods. Backfill with sand that is clean, free draining, and free from roots and other deleterious substances. As an alternative to sand, you may backfill with one of the following:

1. Controlled low-strength material under section 19-3.02F
2. Slurry cement backfill under section 19-3.02D

Ends of culverts and pipelines must be securely closed by a 6-inch-thick, tight-fitting plug or wall of commercial-quality concrete.

**15-2.05C(4) Payment**

If backfilling inside the culvert or pipeline is required, payment for backfilling inside the culvert or pipeline is paid for as sand backfill. Payment for backfilling outside the culvert or pipeline is included in the payment for abandon culvert or abandon pipeline.

**DIVISION III GRADING  
19 EARTHWORK**

**Replace section 19-6.03B with:**

**19-6.03B Subsidence**

You may compact the ground surface on which an embankment is to be constructed before placing embankment material.

If the compaction results in an average subsidence exceeding 0.25 foot, the Engineer measures the ground surface after compaction. Allow time for the Engineer to measure the area before placing embankment material.

A quantity of 645.3 cubic yards of embankment will be added to the computed imported borrow quantity for the anticipated effect of subsidence.

If you do not agree with this specified quantity, you may submit a plan for measuring subsidence. The plan must include complete details of the measuring devices and their installation.

If the your plan for measuring subsidence is authorized, install and maintain the subsidence-measuring devices.

The Engineer takes readings as needed to determine the progress of subsidence. Provide assistance as needed.

If the Engineer finds that a device has been damaged, that device will not be used for determining subsidence in the area the device represents. The subsidence for that area is considered as zero regardless of the subsidence measured at other areas.

Subsidence is considered as zero at:

1. Intersection of the side slope and end slope at structures with the ground line as established by the original cross-sections
2. Points on the cross-sections 50 feet beyond the start and end of the area with subsidence-measuring devices, unless the Engineer agrees otherwise

The additional quantity of material for embankment work due to subsidence is determined by the average-end-area method from the original measurements and the final measurements, including zero subsidence at specified areas.

After final measurements are made, remove detachable elements of the subsidence-measuring devices.

**Replace the 2nd and 3rd paragraphs of section 19-7.04 with:**

Imported borrow is measured based on planned as shown and the measured ground surface.

Quantities of roadway excavation, structure excavation, and ditch excavation used in constructing the embankment will be adjusted by multiplying by a grading factor. This grading factor is determined by the Engineer. The Department does not adjust payment if the grading factor determined by the Engineer does not equal the actual grading factor.

The quantity of imported borrow is the quantity remaining after deducting the adjusted quantities from excavations from the total embankment quantity and adding the quantity for subsidence as specified in section 19-6.03B.

AA

## 20 LANDSCAPE

### Add to section 20-1.02B:

Pesticides used to control weeds must be limited to the following materials:

- Aminopyralid
- Diquat
- Dithiopyr
- Clopyralid MEA
- Fluazifop-P-Butyl
- Flumioxazin
- Glyphosate
- Imazapyr
- Isoxaben (preemergent)
- Oryzalin (preemergent)
- Oxyfluorfen (non-odor type)
- Pendimethalin (preemergent)
- Prodiamine (preemergent)
- Sethoxydim

### Replace the last paragraph in section 20-1.03D with:

Reduce pruned materials to chips and spread within the job site. Spread chipped material at locations determined by the Engineer. Chipped material must not be substituted for mulch, nor must the chipped material be placed within areas to receive mulch.

### Replace the paragraph in section 20-2.02A with:

Packet fertilizer is not required.

### Replace section 20-2.02B with:

#### 20-2.02B Root Stimulant for Transplant Tree and Transplant Palm Tree

Root stimulant is not required.

### Replace the last paragraph in section 20-2.03B(1) with:

Reduce damaged transplanted trees to chips and spread within the job site. Spread chipped material at locations determined by the Engineer. Chipped material must not be substituted for mulch, nor must the chipped material be placed within areas to receive mulch.

### Add to section 20-2.03D:

After deficiencies are corrected, perform work to maintain existing planted areas in a neat and presentable condition and to promote healthy plant growth. Submit a work plan that includes weeding, weed control, fertilization, mowing and trimming of turf areas, watering, and controlling rodents and pests. The work plan must include the following requirements:

1. Weeds must be killed in existing planted areas as shown. Weeds in existing plant basins, including basin walls, must be killed by hand pulling.

2. Where pesticides are used to kill weeds, weeds must be killed before they reach the seed stage of growth or exceed 4 inches in length, whichever occurs first.
3. Where weeds are to be killed by hand pulling, weeds must be hand pulled before they reach the seed stage of growth or exceed 4 inches in length, whichever occurs 1st, except for tumbleweeds. Dispose of weeds the same day they are pulled.
4. Tumbleweeds must be killed by hand pulling before they reach the seed stage of growth or exceed 6 inches in length, whichever occurs 1st. Dispose of tumbleweeds the same day they are pulled.
5. Weeds killed in existing planted areas must extend beyond the outer limits of the existing planted areas to the adjacent edges of paving, fences, proposed plants and planting areas, and the clearing limits as described in section 20-7.03B.
6. Weeds must be killed within a 6 foot diameter area centered at each existing tree and shrub located outside of the existing planted areas.
7. Pesticides used for maintaining existing planted areas must comply with section 20-1.02B.
8. Water plants automatically if the new irrigation system for that area is operational.
9. Existing plant basins, if still required as determined by the Engineer, must be kept well-formed and free of silt. If the existing plant basins need repairs, and the basins contain mulch, replace the mulch after the repairs are done.

**Replace section 20-3.01C(3) with:**

**20-3.01C(3) Control and Neutral Conductors Schedule of Values**

Submit a schedule of values for control and neutral conductors. Submit the schedule after the wiring plans and diagrams for the electrical components of the irrigation system, except electrical service, have been authorized.

The unit descriptions shown in the table are the minimum. You may include additional unit descriptions. Include the quantity, value, and amount for those additional unit descriptions.

Use the authorized wiring plan and diagrams to determine the quantities required to complete the work.

No adjustment in compensation is made in the contract lump sum price paid for control and neutral conductors work due to differences between the quantities shown in the schedule of values for control and neutral conductors work and the quantities required to complete the work.

Schedule of Values for Control and Neutral Conductors

Contract no. 07-259014				
Unit description	Unit	Approximate quantity	Value	Amount
__ AWG (UF) conductors (provide size)	LF			
__ AWG (UF) conductors	LF			
__ AWG (UF) conductors	LF			
__ AWG armor-clad conductors	LF			
__ AWG armor-clad conductors	LF			
__ AWG armor-clad conductors	LF			
No. 5 or larger pull box	EA			
Splices	EA			
__ Sprinkler control conduit (provide size)	LF			
__ Sprinkler control conduit	LF			
__ Sprinkler control conduit	LF			

Total \_\_\_\_\_

**Add to section 20-3.02E(2):**

Conductors that comply with section 20-3.02E(1) may be used when installed in electrical conduit instead of using armor-clad conductors.

**Add to section 20-3.02R(1):**

Ball valves must be PVC.

**Add to section 20-3.02R(3)(b):**

Remote control valves must be glass filled nylon.

**Add to paragraph 2 of section 20-3.02R(3)(b):**

8. Valves must be equipped with a self-flushing feature manufactured to be used with recycled water. Valves must not have external tubing.

**Add to section 20-3.02R(3)(b):**

Valves must be angle pattern or straight pattern as shown.

**Replace section 20-3.03C(1)(c) with:**

**20-3.03C(1)(c) Directional Boring**

Notify the Engineer 2 working days before starting directional bore operations. Perform directional bore operations in the presence of the Engineer.

Conduits installed by the directional bore method must be PVC Schedule 40 and comply with section 20-3.02M(3)(a).

The diameter of the boring tool for directional boring must be only as large as necessary to install conduit. Only use mineral slurry or wetting solution to lubricate the boring tool and to stabilize the soil surrounding the boring path. Mineral slurry or wetting solution must be water based and environmentally safe.

Dispose of residue from directional boring operations.

The directional bore equipment must have directional control of the boring tool and an electronic boring tool location detection system. During operation the directional bore equipment must be able to determine the location of the tool both horizontally and vertically.

You must have direct charge and control of the directional bore operation at all times.

**Add to section 20-3.03E(2):**

Apply 1 application of a preemergent pesticide to trenched areas in existing ground cover areas and to trenched areas adjacent to fences, curbs, dikes and shoulders. The Engineer determines when the preemergent pesticide must be applied.

**Replace the 5th paragraph of section 20-3.03E(2) with:**

Replacement of ground cover that is removed or rototilled is not required.

**Replace the last paragraph in section 20-3.03E(2) with:**

Reduce removed ground cover and prunings to chips and spread within the job site. Spread chipped material at locations determined by the Engineer. Chipped material must not be substituted for mulch, nor must the chipped material be placed within areas to receive mulch.

**Add to section 20-3.03F(3):**

**Replace the 5th paragraph of section 20-3.03N with:**

Pipe supply lines on the discharge side of the valve must be tested in conformance with Method B only. Testing by Method A is not allowed.

Pipelines installed by trenching and backfilling and pipelines that are completely visible after installation must be tested by Method B. All other pipelines, including those installed in the ground by methods other than trenching and backfilling must be tested by Method A.

**Replace the 2nd paragraph of section 20-7.01B(1) with:**

**Replace the 2nd paragraph of section 20-7.01B(1) with:**

At least 7 days before planting the plants, submit a statement from the vendor that the order for the plants required for this Contract, including sample plants used for inspection, has been received and accepted by the vendor. The statement from the vendor must include the names, sizes, and quantities of plants ordered and the anticipated delivery date.

**Add between the 3rd and 4th paragraphs of section 20-7.03B(1):**

Reduce removed existing plants to chips and spread within the job site. Spread chipped material at locations determined by the Engineer. Chipped material must not be substituted for mulch, nor must the chipped material be placed within areas to receive mulch.

**Add to section 20-7.03B(2):**

Weeds must be killed within 2 feet of the edges of paved shoulders, dikes, curbs, and sidewalks.

Existing ground cover must be killed and removed from within an area 6 foot in diameter centered at each plant location within existing ground cover areas.

**Replace the 1st paragraph in section 20-7.03B(2) with:**

Dispose of weeds killed during the initial roadside clearing.

**Replace the 2nd paragraph in section 20-7.03B(3) with:**

Dispose of mowed material and weeds killed during the after initial roadside clearing.

**Add to section 20-7.03C:**

Plants adjacent to drainage ditches must be located so that after construction of the basins, no portion of the basin wall is less than the minimum distance shown for each plant involved.

**Add to section 20-9.01A:**

The plant establishment period must be Type 2.

**Add to section 20-9.03C:**

Apply slow-release or controlled-release fertilizer to the plants during the 1st week of March and September of each year.

**Add to section 20-9.03D:**

Control weeds by:

1. Hand pulling:
  - 1.1. In plant basins and on basin walls
  - 1.2. In ground cover planting areas without plant basins
2. Killing:
  - 2.1. In mulched areas and ground cover planting areas outside of plant basins
  - 2.2. In planting areas without ground cover plantings or located outside of ground cover areas
  - 2.3. In ground cover planting areas without plant basins
3. Mowing:



**Add to section 26-1.03C:**

Compact AB with either (1) a smooth-wheeled roller or (2) a rubber-tired roller. Do not use vibratory devices during compaction.

**Replace the 3rd sentence in the 3rd paragraph of section 26-1.03C with:**

The compacted thickness of any one layer of Class 3 AB must not exceed 0.5 foot.

**Add to section 26-1.04:**

AA

**DIVISION V SURFACINGS AND PAVEMENTS  
39 HOT MIX ASPHALT**

**Add to section 39-1.01:**

Produce and place HMA Type A under the standard construction process.

**Add to section 39-1.02C:**

Asphalt binder used in HMA Type A must be PG 64-10.

**Add to section 39-1.02E:**

Aggregate used in HMA Type A must comply with the 3/4-inch HMA Types A and B gradation.

**Replace the 2nd, 3rd, and 4th paragraphs of section 39-1.11B(1) of the RSS for section 39-1.11 with:**

Place HMA on adjacent traveled way lanes so that at the end of each work shift the distance between the ends of HMA layers on adjacent lanes is from 5 to 10 feet. Place additional HMA along the transverse edge at each lane's end and along the exposed longitudinal edges between adjacent lanes. Hand rake and compact the additional HMA to form temporary conforms. You may place Kraft paper or another authorized bond breaker under the conform tapers to facilitate the taper removal when paving operations resume.

**Delete section 39-1.11B(2) of the RSS for section 39-1.11.**

**Add to section 39-1.11D of the RSS for section 39-1.11:**

Pave shoulders and median borders adjacent to the lane before opening a lane to traffic.

Place shoulder conform tapers concurrently with the adjacent lane's paving.

Place additional HMA along the pavement's edge to conform to road connections and driveways. Hand rake, if necessary, and compact the additional HMA to form a smooth conform taper.

**Replace section 39-1.18 with:**

**39-1.18 HOT MIX ASPHALT AGGREGATE LIME TREATMENT—DRY LIME METHOD**

**39-1.18A General**

**39-1.18A(1) Summary**

Treat HMA aggregate with lime using the dry lime method either with marination or without.

Treat aggregate for HMA (Type A) with dry lime.

**39-1.18A(2) Submittals**

Determine the exact lime proportions for fine and coarse virgin aggregate and submit them as part of the proposed JMF.

If marination is required, submit the averaged aggregate quality test results within 24 hours of sampling.

Submit a treatment data log from the dry lime and aggregate proportioning device in the following order:

1. Treatment date
2. Time of day the data is captured
3. Aggregate size being treated
4. HMA type and mix aggregate size
5. Wet aggregate flow rate collected directly from the aggregate weigh belt
6. Aggregate moisture content, expressed as a percent of the dry aggregate weight
7. Flow rate of dry aggregate calculated from the flow rate of wet aggregate
8. Dry lime flow rate
9. Lime ratio from the accepted JMF for each aggregate size being treated
10. Lime ratio from the accepted JMF for the combined aggregate
11. Actual lime ratio calculated from the aggregate weigh belt output, the aggregate moisture input, and the dry lime meter output, expressed as a percent of the dry aggregate weight
12. Calculated difference between the authorized lime ratio and the actual lime ratio

Each day during lime treatment, submit the treatment data log on electronic media in tab delimited format on a removable CD-ROM storage disk. Each continuous treatment data set must be a separate record using a line feed carriage return to present the specified data on 1 line. The reported data must include data titles at least once per report.

**39-1.18A(3) Quality Control and Assurance**

If marination is required, the QC plan must include aggregate quality control sampling and testing during lime treatment. Sample and test in compliance with minimum frequencies shown in the following table:

**Aggregate Quality Control During Lime Treatment**

Quality characteristic	Test method	Minimum sampling and testing frequency
Sand equivalent	California Test 217	Once per 1,000 tons of aggregate treated with lime
Percent of crushed particles	California Test 205	As necessary and as designated in the QC plan
Los Angeles Rattler	California Test 211	
Fine aggregate angularity	California Test 234	
Flat and elongated particles	California Test 235	

Note: During lime treatment, sample coarse and fine aggregate from individual stockpiles. Combine aggregate in the JMF proportions. Run tests for aggregate quality in triplicate and report test results as the average of 3 tests.

For any of the following, the Engineer orders proportioning operations stopped if you:

1. Do not submit the treatment data log
2. Do not submit the aggregate quality control data for marinated aggregate
3. Submit incomplete, untimely, or incorrectly formatted data
4. Do not take corrective actions
5. Take late or unsuccessful corrective actions
6. Do not stop treatment when proportioning tolerances are exceeded
7. Use malfunctioning or failed proportioning devices

If you stop treatment, notify the Engineer of any corrective actions taken and conduct a successful 20-minute test run before resuming treatment.

### **39-1.18B Materials**

High-calcium hydrated lime and water must comply with section 24-2.02.

Before virgin aggregate is treated, it must comply with the aggregate quality specifications. Do not test treated aggregate for quality control except for gradation. The Department does not test treated aggregate for acceptance except for gradation.

The Engineer determines the combined aggregate gradation during HMA production after you have treated the aggregate.

Treated aggregate must not have lime balls or clods.

### **39-1.18C Construction**

#### **39-1.18C(1) General**

Notify the Engineer at least 24 hours before the start of aggregate treatment.

Do not treat RAP.

Marinate aggregate if the plasticity index determined under California Test 204 is from 4 to 10.

If marination is required:

1. Treat and marinate coarse and fine aggregates separately.
2. Treat the aggregate and stockpile for marination only once.
3. Treat the aggregate separate from HMA production.

The lime ratio is the pounds of dry hydrated lime per 100 lb of dry virgin aggregate expressed as a percentage. Water content of slurry or untreated aggregate must not affect the lime ratio.

Aggregate gradations must have the lime ratio ranges shown in the following table:

Aggregate gradation	Lime ratio percent
Coarse	0.4–1.0
Fine	1.5–2.0
Combined	0.8–1.5

You may reduce the combined aggregate lime ratio for OGFC to 0.5–1.0 percent.

The lime ratio for fine and coarse aggregate must be within  $\pm 0.2$  percent of the lime ratio in the accepted JMF. The lime ratio must be within  $\pm 0.2$  percent of the authorized lime ratio when you combine the individual aggregate sizes in the JMF proportions.

Proportion dry lime by weight with a continuous operation.

The device controlling dry lime and aggregate proportioning must produce a treatment data log. The log consists of a series of data sets captured at 10-minute intervals throughout daily treatment. The data must be a treatment activity register and not a summation. The material represented by a data set is the

quantity produced 5 minutes before and 5 minutes after the capture time. For the duration of the Contract, collected data must be stored by the controller.

If 3 consecutive sets of recorded treatment data indicate deviation more than 0.2 percent above or below the lime ratio in the accepted JMF, stop treatment.

If a set of recorded treatment data indicates a deviation of more than 0.4 percent above or below the lime ratio in the accepted JMF, stop treatment and do not use the material represented by that set of data in HMA.

If 20 percent or more of the total daily treatment indicates deviation of more than 0.2 percent above or below the lime ratio in the accepted JMF, stop treatment and do not use the day's treated aggregate in HMA.

If you stop treatment for noncompliance, you must implement corrective action and successfully treat aggregate for a 20-minute period. Notify the Engineer before beginning the 20-minute treatment period.

If you use a batch-type proportioning operation for HMA production, control proportioning in compliance with the specifications for continuous mixing plants. Use a separate dry lime aggregate treatment operation from HMA batching operations including:

1. Pugmill mixer
2. Controller
3. Weigh belt for the lime
4. Weigh belt for the aggregate

If using a continuous mixing operation for HMA without lime marinated aggregates, use a controller that measures the blended aggregate weight after any additional water is added to the mixture. The controller must determine the quantity of lime added to the aggregate from the aggregate weigh belt input in connection with the manually input total aggregate moisture, the manually input target lime content, and the lime proportioning system output. Use a continuous aggregate weigh belt and pugmill mixer for the lime treatment operation in addition to the weigh belt for the aggregate proportioning to asphalt binder in the HMA plant. If you use a water meter for moisture control for lime treatment, the meter must comply with California Test 109.

At the time of mixing dry lime with aggregate, the aggregate moisture content must ensure complete lime coating. The aggregate moisture content must not cause aggregate to be lost between the point of weighing the combined aggregate continuous stream and the dryer. Add water for mixing and coating aggregate to the aggregate before dry lime addition. Immediately before mixing lime with aggregate, water must not visibly separate from aggregate.

The HMA plant must be equipped with a bag-house dust system. Material collected in the dust system must be returned to the mix.

### **39-1.18C(2) Mixing Dry Lime and Aggregate**

Mix aggregate, water, and dry lime with a continuous pugmill mixer with twin shafts. Immediately before mixing lime with aggregate, water must not visibly separate from the aggregate. Store dry lime in a uniform and free-flowing condition. Introduce dry lime to the pugmill in a continuous operation. The introduction must occur after the aggregate cold feed and before the point of proportioning across a weigh belt and the aggregate dryer. Prevent loss of dry lime.

If marination is required, marinate treated aggregate in stockpiles from 24 hours to 60 days before using in HMA. Do not use aggregate marinated more than 60 days.

The pugmill must be equipped with paddles arranged to provide sufficient mixing action and mixture movement. The pugmill must produce a homogeneous mixture of uniformly coated aggregates at mixer discharge.

If the aggregate treatment operation is stopped longer than 1 hour, clean the equipment of partially treated aggregate and lime.

Aggregate must be completely treated before introduction into the mixing drum.

### **39-1.18D Payment**

Payment for dry lime treating the aggregate, including marination, is included in payment for the HMA involved.

**Replace section 39-1.19 with:**

### **39-1.19 HOT MIX ASPHALT AGGREGATE LIME TREATMENT—SLURRY METHOD**

#### **39-1.19A General**

##### **39-1.19A(1) Summary**

Treat HMA aggregate with lime using the slurry method and place it in stockpiles to marinate.

Treat aggregate for HMA (Type A) with lime slurry.

##### **39-1.19A(2) Submittals**

Determine the exact lime proportions for fine and coarse virgin aggregate and submit them as part of the proposed JMF.

Submit the averaged aggregate quality test results to the Engineer within 24 hours of sampling.

Submit a treatment data log from the slurry proportioning device in the following order:

1. Treatment date
2. Time of day the data is captured
3. Aggregate size being treated
4. Wet aggregate flow rate collected directly from the aggregate weigh belt
5. Moisture content of the aggregate just before treatment, expressed as a percent of the dry aggregate weight
6. Dry aggregate flow rate calculated from the wet aggregate flow rate
7. Lime slurry flow rate measured by the slurry meter
8. Dry lime flow rate calculated from the slurry meter output
9. Authorized lime ratio for each aggregate size being treated
10. Actual lime ratio calculated from the aggregate weigh belt and the slurry meter output, expressed as a percent of the dry aggregate weight
11. Calculated difference between the authorized lime ratio and the actual lime ratio
12. Dry lime and water proportions at the slurry treatment time

Every day during lime treatment, submit the treatment data log on electronic media in tab delimited format on a removable CD-ROM storage disk. Each continuous treatment data set must be a separate record using a line feed carriage return to present the specified data on 1 line. The reported data must include data titles at least once per report.

##### **39-1.19A(3) Quality Control and Assurance**

The QC plan must include aggregate quality control sampling and testing during aggregate lime treatment. Sample and test in compliance with frequencies in the following table:

**Aggregate Quality Control During Lime Treatment**

Quality characteristic	Test method	Minimum sampling and testing frequency
Sand equivalent	California Test 217	Once per 1,000 tons of aggregate treated with lime
Percent of crushed particles	California Test 205	As necessary and as designated in the QC plan
Los Angeles Rattler	California Test 211	
Fine aggregate angularity	California Test 234	
Flat and elongated particles	California Test 235	

Note: During lime treatment, sample coarse and fine aggregate from individual stockpiles. Combine aggregate in the JMF proportions. Run tests for aggregate quality in triplicate and report test results as the average of 3 tests.

For any of the following, the Engineer orders proportioning operations stopped if you:

1. Do not submit the treatment data log
2. Do not submit the aggregate quality control data
3. Submit incomplete, untimely, or incorrectly formatted data
4. Do not take corrective actions
5. Take late or unsuccessful corrective actions
6. Do not stop treatment when proportioning tolerances are exceeded
7. Use malfunctioning or failed proportioning devices

If you stop treatment, notify the Engineer of any corrective actions taken and conduct a successful 20-minute test run before resuming treatment.

For the aggregate to be treated, determine the moisture content at least once during each 2 hours of treatment. Calculate moisture content under California Test 226 or 370 and report it as a percent of dry aggregate weight. Use the moisture content calculations as a set point for the proportioning process controller.

**39-1.19B Materials**

High-calcium hydrated lime and water must comply with section 24-2.02.

Before virgin aggregate is treated, it must comply with the aggregate quality specifications. Do not test treated aggregate for quality control except for gradation. The Engineer does not test treated aggregate for acceptance except for gradation.

The Engineer determines the combined aggregate gradation during HMA production after you have treated the aggregate. If RAP is used, the Engineer determines combined aggregate gradations containing RAP under Laboratory Procedure LP-9.

Treated aggregate must not have lime balls or clods.

**39-1.19C Construction**

**39-1.19C(1) General**

Notify the Engineer at least 24 hours before the start of aggregate treatment.

Treat aggregate separate from HMA production.

Do not treat RAP.

Add lime to the aggregate as slurry consisting of mixed dry lime and water at a ratio of 1 part lime to from 2 to 3 parts water by weight. The slurry must completely coat the aggregate.

Lime treat and marinate coarse and fine aggregates separately.

Immediately before mixing lime slurry with the aggregate, water must not visibly separate from the aggregate.

Treat the aggregate and stockpile for marination only once.

The lime ratio is the pounds of dry hydrated lime per 100 lb of dry virgin aggregate expressed as a percentage. Water content of slurry or untreated aggregate must not affect the lime ratio.

The following aggregate gradations must have the lime ratio ranges shown in the following table:

Aggregate gradation	Lime ratio percent
Coarse	0.4–1.0
Fine	1.5–2.0
Combined virgin aggregate	0.8–1.5

You may reduce the combined aggregate lime ratio for OGFC to 0.5–1.0 percent.

The lime ratio for fine and coarse aggregate must be within  $\pm 0.2$  percent of the lime ratio in the accepted JMF. The lime ratio must be within  $\pm 0.2$  percent of the authorized lime ratio when you combine the individual aggregate sizes in the JMF proportions. The lime ratio must be determined before the addition of RAP.

If 3 consecutive sets of recorded treatment data indicate deviation more than 0.2 percent above or below the lime ratio in the accepted JMF, stop treatment.

If a set of recorded treatment data indicates a deviation of more than 0.4 percent above or below the lime ratio in the accepted JMF, stop treatment and do not use the material represented by that set of data in HMA.

If 20 percent or more of the total daily treatment indicates deviation of more than 0.2 percent above or below the lime ratio in the accepted JMF, stop treatment and do not use the day's total treatment in HMA.

If you stop treatment for noncompliance, you must implement corrective action and successfully treat aggregate for a 20-minute period. Notify the Engineer before beginning the 20-minute treatment period.

### **39-1.19C(2) Lime Slurry Proportioning**

Proportion lime and water with a continuous or batch operation.

The device controlling slurry proportioning must produce a treatment data log. The log consists of a series of data sets captured at 10-minute intervals throughout daily treatment. The data must be a treatment activity register and not a summation. The material represented by the data set is the quantity produced 5 minutes before and 5 minutes after the capture time. For the Contract's duration, collected data must be stored by the controller.

### **39-1.19C(3) Proportioning and Mixing Lime Slurry Treated Aggregate**

Treat HMA aggregate by proportioning lime slurry and aggregate by weight in a continuous operation.

Marinate treated aggregate in stockpiles from 24 hours to 60 days before using in HMA. Do not use aggregate marinated longer than 60 days.

### **39-1.19D Payment**

Payment for treating aggregates with lime slurry is included in payment for the HMA involved.

**Replace section 39-1.20 with:**

**39-1.20 LIQUID ANTISTRIP TREATMENT**

**39-1.20A General**

**39-1.20A(1) Summary**

Treat asphalt binder with liquid antistrip (LAS) treatment to bond the asphalt binder to aggregate in HMA.

**39-1.20A(2) Submittals**

For LAS, submit with the proposed JMF submittal:

1. MSDS
2. One 1-pint sample
3. Infrared analysis including copy of absorption spectra

Submit a certified copy of test results and an MSDS for each LAS lot.

Submit a certificate of compliance for each LAS shipment. With each certificate of compliance, submit:

1. Your signature and printed name
2. Shipment number
3. Material type
4. Material specific gravity
5. Refinery
6. Consignee
7. Destination
8. Quantity
9. Contact or purchase order number
10. Shipment date

Submit proportions for LAS as part of the JMF submittal. If you change the brand or type of LAS, submit a new JMF.

For each job site delivery of LAS, submit one 1/2-pint sample to METS. Submit shipping documents to the Engineer. Label each LAS sampling container with:

1. LAS type
2. Application rate
3. Sample date
4. Contract number

At the end of each day's production shift, submit production data in electronic and printed media. Present data on electronic media in tab delimited format. Use line feed carriage return with 1 separate record per line for each production data set. Allow sufficient fields for the specified data. Include data titles at least once per report. For each mixing operation type, submit in order:

1. Batch mixing:
  - 1.1. Production date
  - 1.2. Time of batch completion
  - 1.3. Mix size and type
  - 1.4. Each ingredient's weight
  - 1.5. Asphalt binder content as a percentage of the dry aggregate weight
  - 1.6. LAS content as a percentage of the asphalt binder weight
2. Continuous mixing:
  - 2.1. Production date
  - 2.2. Data capture time
  - 2.3. Mix size and type
  - 2.4. Flow rate of wet aggregate collected directly from the aggregate weigh belt
  - 2.5. Aggregate moisture content as percentage of the dry aggregate weight
  - 2.6. Flow rate of asphalt binder collected from the asphalt binder meter
  - 2.7. Flow rate of LAS collected from the LAS meter
  - 2.8. Asphalt binder content as percentage of total weight of mix calculated from:

- 2.8.1. Aggregate weigh belt output
- 2.8.2. Aggregate moisture input
- 2.8.3. Asphalt binder meter output
- 2.9. LAS content as percentage of the asphalt binder weight calculated from:
  - 2.9.1. Asphalt binder meter output
  - 2.9.2. LAS meter output

**39-1.20A(3) Quality Control and Assurance**

For continuous mixing and batch mixing operations, sample asphalt binder before adding LAS. For continuous mixing operations, sample combined asphalt binder and LAS after the static mixer.

The Engineer orders proportioning operations stopped for any of the following if you:

1. Do not submit data
2. Submit incomplete, untimely, or incorrectly formatted data
3. Do not take corrective actions
4. Take late or unsuccessful corrective actions
5. Do not stop production when proportioning tolerances are exceeded
6. Use malfunctioning or failed proportioning devices

If you stop production, notify the Engineer of any corrective actions taken before resuming.

**39-1.20B Materials**

LAS-treated asphalt binder must comply with the specifications for asphalt binder in section 39-1.02C. Do not use LAS as a substitute for asphalt binder.

LAS total amine value must be 325 minimum when tested under ASTM D 2074.

Use only 1 LAS type or brand at a time. Do not mix LAS types or brands.

Store and mix LAS under the manufacturer's instruction.

**39-1.20C Construction**

LAS must be from 0.5 to 1.0 percent by weight of asphalt binder.

If 3 consecutive sets of recorded production data show actual delivered LAS weight is more than  $\pm 1$  percent of the authorized mix design LAS weight, stop production and take corrective action.

If a set of recorded production data shows actual delivered LAS weight is more than  $\pm 2$  percent of the authorized mix design LAS weight, stop production. If the LAS weight exceeds 1.2 percent of the asphalt binder weight, do not use the HMA represented by that data.

The continuous mixing plant controller proportioning the HMA must produce a production data log. The log consists of a series of data sets captured at 10-minute intervals throughout daily production. The data must be a production activity register and not a summation. The material represented by the data is the quantity produced 5 minutes before and 5 minutes after the capture time. For the duration of the Contract, collected data must be stored by the plant controller or a computer's memory at the plant.

**39-1.20D Payment**

Payment for treating asphalt binder with LAS is included in payment for the HMA involved.

**Replace section 39-1.30 with:**

**39-1.30 EDGE TREATMENT, HOT MIX ASPHALT PAVEMENT**

**39-1.30A General**

Section 39-1.30 includes specifications for constructing the edges of HMA pavement as shown.

**39-1.30B Materials**

For the safety edge, use the same type of HMA used for the adjacent lane or shoulder.

### **39-1.30C Construction**

The edge of roadway where the safety edge treatment is to be placed must have a solid base, free of debris such as loose material, grass, weeds, or mud. Grade areas to receive the safety edge as required.

The safety edge treatment must be placed monolithic with the adjacent lane or shoulder and shaped and compacted with a device attached to the paver.

The device must be capable of shaping and compacting HMA to the required cross section as shown. Compaction must be by constraining the HMA to reduce the cross sectional area by 10 to 15 percent. The device must produce a uniform surface texture without tearing, shoving, or gouging and must not leave marks such as ridges and indentations. The device must be capable of transition to cross roads, driveways, and obstructions.

For safety edge treatment, the angle of the slope must not deviate by more than  $\pm 5$  degrees from the angle shown. Measure the angle from the plane of the adjacent finished pavement surface.

If paving is done in multiple lifts, the safety edge treatment can be placed either with each lift or with the final lift.

Short sections of hand work are allowed to construct transitions for safety edge treatment.

For more information on the safety edge treatment, go to:

[http://safety.fhwa.dot.gov/roadway\\_dept/pavement/safedge/](http://safety.fhwa.dot.gov/roadway_dept/pavement/safedge/)

You can find a list of commercially available devices at the above Web site under "Frequently Asked Questions" and "Construction Questions."

### **39-1.30D Payment**

Not Used

### **Replace section 39-1.31 with:**

#### **39-1.31 WARM MIX ASPHALT TECHNOLOGY OPTION**

##### **39-1.31A GENERAL**

##### **39-1.31A(1) Summary**

You may produce HMA Type A, Type B, or RHMA-G using an approved warm mix asphalt (WMA) technology. For Department-approved WMA technologies, go to:

[http://www.dot.ca.gov/hq/esc/approved\\_products\\_list/](http://www.dot.ca.gov/hq/esc/approved_products_list/)

AASHTO T 324 (Modified) is AASHTO T 324, "Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA)," with the following parameters:

1. Target air void content is  $7 \pm 1$  percent
2. 4 test specimens
3. 6-inch gyratory compacted test specimen
4. Test temperature is  $122 \pm 2$  degrees F
5. Impression measurements at every 100 passes
6. Inflection point as the number of wheel passes at the intersection of the creep slope and the stripping slope
7. Testing shut off after 25,000 passes
8. For RHMA test specimens:
  - 8.1. Superpave Gyratory Compactor ram pressure may be increased to a maximum 825 kPa
  - 8.2. Specimens may be held at a constant height for a maximum 90 minutes

HMA samples must be prepared under California Test 304, except the samples must be cured in a forced air draft oven at 275 degrees F for 4 hours  $\pm 10$  minutes.

### **39-1.31A(2) Definitions**

**WMA:** HMA produced at temperatures no greater than 275 degrees F.

**HMA with WMA technology:** HMA produced using additives to aid with mixing and compaction of HMA produced at temperatures greater than 275 degrees F.

### **39-1.31A(3) Submittals**

#### **39-1.31A(3)(a) General**

With the JMF submittal as specified in section 39-1.03C, submit:

1. For WMA water injection foam technology:
  - 1.1. Name of technology
  - 1.2. Laboratory Procedure LP-12 test result for foamed bitumen expansion ratio dated within 12 months of submittal
  - 1.3. Laboratory Procedure LP-12 test result for foamed bitumen half-life dated within 12 months of submittal
  - 1.4. Optimum foaming water content
  - 1.5. Proposed HMA production temperature range
2. For WMA additive technology:
  - 2.1. Name of technology
  - 2.2. Percent admixture by weight of binder and percent admixture by total weight of HMA as recommended by the manufacturer
  - 2.3. Methodology for inclusion of admixture in laboratory-produced HMA
  - 2.4. Proposed HMA production temperature range

The 4th and 5th paragraphs of section 39-1.03C do not apply. Instead submit:

1. California Test 371 test results for dry strength for untreated plant-produced HMA
2. California Test 371 test results for tensile strength ratio for untreated plant-produced HMA
3. California Test 204 test results for plasticity index if untreated plant-produced HMA test result determined under California Test 371 is below the specified HMA mix design requirements
4. California Test 371 test results for treated plant-produced HMA if untreated plant-produced HMA test result determined under California Test 371 is below the specified HMA mix design requirements
5. AASHTO T 324 (Modified) test results data showing number of passes with rut depth for plant-produced HMA
6. AASHTO T 324 (Modified) test results data showing number of passes at inflection point for plant-produced HMA

#### **39-1.31A(3)(b) Prepaving Conference**

With the JMF submittal, submit a list of names participating in the prepaving conference. Identify each participant's name, employer, title, and role in the production and placement of WMA or HMA with WMA technology.

#### **39-1.31A(3)(c) Tests and Samples**

The 6th paragraph of section 39-1.03C does not apply.

At production start-up and within  $\pm 1,000$  tons of the halfway point of production of HMA produced using WMA technology, submit samples split from your HMA production sample for California Test 371 and AASHTO T 324 (Modified) test to the Engineer and METS, Attention: Moisture Test.

With the JMF submittal, at JMF verification, at production start-up, and for each 10,000 tons of HMA produced, submit California Test 371 test results and AASHTO T 324 (Modified) test results for mix design and production to the Engineer and electronically to:

Moisture\_Tests@dot.ca.gov

With the JMF submittal, at JMF verification, at production start-up evaluation, and for each 10,000 tons of HMA produced, submit 1 tested sample set from the AASHTO T 324 (Modified) test to the Engineer.

**39-1.31A(3)(d) Daily Production Log**

Submit the log of production data, daily and upon request.

**39-1.31A(4) Quality Control and Assurance**

**39-1.31A(4)(a) General**

Not Used

**39-1.31A(4)(b) Technical Representative**

A technical representative from the WMA technology supplier must be present during the first 3 days of production and placement of WMA or HMA using WMA technology. The technical representative must advise you, the Engineer, and the HMA producer. The technical representative must direct the HMA mix operation as it relates to the WMA technology.

The technical representative must advise the HMA producer regarding HMA plant and HMA plant process-controller modifications necessary for integrating WMA technology with HMA plant. HMA plant modifications and WMA technology equipment, scales, and meters must comply with the Department's Materials Plant Quality Program (MPQP).

**39-1.31A(4)(c) Prepaving Conference**

Schedule a prepaving conference with the Engineer at a mutually agreed time and place. Make arrangements for the conference facility. Be prepared to discuss:

1. HMA production and placement
2. Method for incorporating WMA technology and any impacts on HMA production and placement including requirements for compaction and workmanship
3. Contingency plan

The following personnel must attend the prepaving conference:

1. Project Manager
2. Superintendent
3. Technical representative for WMA technology
4. Asphalt binder supplier
5. HMA plant manager
6. HMA plant operators
7. HMA paving foreman

**39-1.31A(4)(d) Quality Control Testing**

In addition to the requirements specified in section 39-2.02B for Standard construction process and section 39-4.02C for QC/QA construction process and for Method construction process, perform sampling and testing at the specified frequency and location for the following additional quality characteristics:

**Minimum Quality Control**

Quality characteristic	Test method	Minimum sampling and testing frequency	Requirement			Sampling location	Maximum reporting time allowance
			HMA Type				
			A	B	RHMA-G		
Moisture susceptibility (minimum dry strength, psi)	California Test 371	First production day and 1 per every 10,000 tons	120	120	120	Loose mix behind the paver. See California Test 125	15 days
Moisture susceptibility (tensile strength ratio, %)	California Test 371		Report Only	Report Only	Report Only		
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) PG-58 PG-64 PG-70 PG-76	AASHTO T 324 (Modified)	First production day and 1 per every 10,000 tons	10,000	10,000	15,000	Loose mix behind the paver. See California Test 125	7 days <sup>a</sup>
Hamburg wheel track (inflection point minimum number of passes) PG-58 PG-64 PG-70 PG-76			15,000	15,000	25,000		
	AASHTO T 324 (Modified)		10,000	10,000	10,000		
			10,000	10,000	12,500		
			12,500	12,500	15,000		
			15,000	15,000	--		

<sup>a</sup> Submit test data and 1 tested sample set.

**39-1.31A(4)(e) Engineer's Acceptance**

In addition to the requirements specified in section 39-2.03A for Standard construction process, section 39-3.02A for Method construction process, and section 39-4.04A for QC/QA construction process, the Engineer samples HMA for acceptance testing and tests for the following additional quality characteristic:

**HMA Acceptance**

Quality characteristic	Test method	Requirement			Sampling location
		HMA Type			
		A	B	RHMA-G	
Moisture susceptibility (minimum dry strength, psi)	California Test 371	120	120	120	Loose mix behind the paver. See California Test 125
Moisture susceptibility (tensile strength ratio, %)	California Test 371	Report Only <sup>a</sup>	Report Only <sup>a</sup>	Report Only <sup>a</sup>	
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) PG-58 PG-64 PG-70 PG-76	AASHTO T 324 (Modified)	10,000 15,000 20,000 25,000	10,000 15,000 20,000 25,000	15,000 20,000 25,000 --	Loose mix behind the paver. See California Test 125
Hamburg wheel track (inflection point minimum number of passes) PG-58 PG-64 PG-70 PG-76	AASHTO T 324 (Modified)	10,000 10,000 12,500 15,000	10,000 10,000 12,500 15,000	10,000 12,500 15,000 --	

<sup>a</sup>The Department does not use California Test 371 tensile strength ratio test results from production to determine specification compliance.

**39-1.31B MATERIALS**

**39-1.31B(1) General**

Not Used

**39-1.31B(2) Foaming Bitumen**

If water injection is used by the WMA technology, the foamed bitumen must have the following quality characteristics:

**Quality Requirements for Foaming Bitumen**

Quality characteristic	Test method	Requirement
Expansion ratio (minimum)	LP-12	4
Half-life (seconds minimum)	LP-12	4

For Laboratory Procedure LP-12, go to:

<http://www.dot.ca.gov/hq/esc/Translab/ofpm/fmplab.htm>

**39-1.31B(3) Hot Mix Asphalt**

**39-1.31B(3)(a) General**

Not Used

**39-1.31B(3)(b) Mix Design**

For WMA additive technology, produce HMA mix samples for your mix design using your methodology for inclusion of WMA admixture in laboratory produced HMA. For WMA water injection foam technology, the use of foamed asphalt for mix design is not required.

HMA mix design must comply with the following quality characteristics:

**Hot Mix Asphalt Mix Design Requirements**

Quality characteristic	Test method	HMA Type		
		A	B	RHMA
Moisture susceptibility (minimum dry strength, psi)	California Test 371	120	120	120
Moisture susceptibility (tensile strength ratio, %)	California Test 371	70	70	70
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth)	AASHTO T 324 (Modified)			
PG-58		10,000	10,000	15,000
PG 64		15,000	15,000	20,000
PG-70		20,000	20,000	25,000
PG-76		25,000	25,000	--
Hamburg wheel track (inflection point minimum number of passes)	AASHTO T 324 (Modified)			
PG-58		10,000	10,000	10,000
PG 64		10,000	10,000	12,500
PG-70		12,500	12,500	15,000
PG-76		15,000	15,000	--

If the determined test results under California Test 371 or AASHTO T 324 (Modified) for untreated plant produced HMA are less than the minimum requirement for the mix design, determine the plasticity index of the aggregate blend under California Test 204. Choose from the antistrip treatments based on plasticity index as shown in the following table:

**Hot Mix Asphalt Antistrip Treatment Options**

Quality characteristic	Test method	Treatment requirement
Plasticity index from 4 to 10 <sup>a</sup>	California Test 204	Dry hydrated lime with marination Lime slurry with marination
Plasticity index less than 4		Liquid antistrip Dry hydrated lime without marination Dry hydrated lime with marination Lime slurry with marination

<sup>a</sup> If the plasticity index is greater than 10, do not use that aggregate blend.

Mix design for treated plant-produced HMA must comply with the mix design requirements, except if the tensile strength ratio test result for treated plant produced RHMA-G is less than the mix design requirement for tensile strength ratio, the minimum tensile strength ratio requirement is waived, but you must use any of the following antistrip treatments:

1. HMA aggregate lime treatment – slurry method
2. HMA aggregate lime treatment – dry lime method
3. Liquid antistrip treatment using 0.5 percent liquid antistrip

### **39-1.31B(3)(c) Job Mix Formula Verification**

HMA produced for JMF verification must be produced using the WMA technology shown in the JMF submittal.

Perform the AASHTO T 324 (Modified) test for compliance with the mix design requirements. Submit test data and one tested sample set from the AASHTO T 324 (Modified) test.

The Engineer may verify that the HMA complies with the mix design requirements for AASHTO T 324 (Modified) and California Test 371.

If you request, the Engineer verifies RHMA-G quality requirements within 5 business days of sampling. The 2nd sentence in the 8th paragraph of section 39-1.03E does not apply.

### **39-1.31B(4) Production**

#### **39-1.31B(4)(a) General**

For the Standard and QC/QA construction processes, HMA produced using WMA technology must be produced at a temperature between 240 and 325 degrees F.

For the Method construction process, HMA produced using WMA technology must be produced at the temperatures specified in section 39-1.08.

HMA additives used for antistripping treatment and WMA technologies may be either in a liquid or dry state.

The HMA plant must have a sampling device in the feed line connecting the additive storage to the additive metering system. The sampling equipment must comply with California Test 125.

#### **39-1.31B(4)(b) Proportioning Warm Mix Asphalt Technologies**

HMA plants using WMA technology must comply with the Department's MPQP.

Proportion all ingredients by weight. The HMA plant process controller (PPC) must be the sole source of ingredient proportioning control and be fully interfaced with all scales and meters used in the production process. The addition of the HMA additive must be controlled by the PPC.

Weighing and metering devices used for the production of additive enhanced HMA must comply with the requirements of the MPQP. If a loss-in-weight meter is used for dry HMA additive, the meter must:

1. Comply with the requirements of the MPQP
2. Have an automatic and integral material delivery control system for the refill cycle

Calibrate the loss-in-weight meter by:

1. Including at least 1 complete system refill cycle during each calibration test run
2. Operating the device in a normal run mode for 10 minutes immediately before starting the calibration process
3. Isolating the scale system within the loss-in-weight feeder from surrounding vibration
4. Checking the scale system within the loss-in-weight feeder for accuracy before and after the calibration process and daily during mix production
5. Using a 15-minute or 250-pound-minimum test run size for a dry ingredient delivery rate of less than 1 ton/hr
6. Complying with the limits of Table B, "Conveyor Scale Testing Extremes," in the MPQP

Produce additive enhanced HMA by using either a continuous mixing or a batch type HMA plant.

Liquid ingredient additive, including a normally dry ingredient made liquid, must be proportioned with a mass flow meter at continuous mixing plants. Use a mass flow meter or a container scale to proportion liquid additives at batch mixing plants.

Continuous mixing plants using HMA additives must comply with the following:

1. Dry ingredient additives for continuous production must be proportioned with a conveyor scale or a loss-in-weight meter.
2. HMA PPC and ingredient measuring systems must be capable of varying all ingredient feed rates proportionate with the dry aggregate delivery at all production rates and rate changes.

3. Liquid HMA additive must enter the production stream with the binder. Dry HMA additive must enter the production stream at or before the mixing area.
4. If dry HMA additives are used at continuous mixing HMA plants, baghouse dust systems must return all captured material to the mix.
5. HMA additive must be proportioned to within  $\pm 0.3$  percent of the target additive rate.

Batch mixing plants using HMA additives must comply with the following:

1. Metered HMA additive must be placed in an intermediate holding vessel before being added to the stream of asphalt binder as it enters the pugmill.
2. If a container scale is used, weigh additive before combining with asphalt binder. Keep the container scale separate from other ingredient proportioning. The container scale capacity must be no more than twice the volume of the maximum additive batch size. The container scale's graduations must be smaller than the proportioning tolerance or 0.001 times the container scale capacity.
3. Dry HMA additive proportioning devices must be separate from metering devices for the aggregates and asphalt binder. Proportion dry HMA additive directly into the pugmill or place in an intermediate holding vessel to be added to the pugmill at the appropriate time in the batch cycle. Dry ingredients for batch production must be proportioned with a hopper scale.
4. Zero tolerance for the HMA additive batch scale is  $\pm 0.5$  percent of the target additive weight. The indicated HMA additive batch scale weight may vary from the preselected weight setting by up to  $\pm 1.0$  percent of the target additive weight.

### **39-1.31B(4)(c) Production Data Collection**

The HMA PPC must produce an electronic log of production data consisting of a series of snapshots captured at a maximum of 1-minute intervals throughout daily production. Each snapshot of production data must be a register of production activity at that time and not a summation of the data over the preceding interval to the previous snapshot. The amount of material represented by each snapshot is the amount produced during the 0.5-minute interval before and the 0.5-minute interval after the capture time. Collect and hold data for the duration of the contract and submit the electronic media, daily and upon request. The snapshot of production data must include the following:

1. Date of production
2. Production location
3. Time of day the data is captured
4. HMA mix type being produced and target binder rate
5. HMA additive type, brand, and target rate
6. Temperature of the binder and HMA mixture
7. For a continuous mix operation, the rate of flow of the dry aggregate calculated from the wet aggregate flow rate as determined by the conveyor scale
8. For a continuous mix plant operation, the rate of flow of the asphalt meter
9. For a continuous mix plant operation, the rate of flow of HMA additive meter
10. For a batch plant operation, actual batch weights of all ingredients
11. Dry aggregate to binder ratio calculated from metered ingredient output
12. Dry aggregate to HMA additive ratio calculated from metered output

Electronic media must be presented in a comma-separated values (CSV) or tab-separated values (TSV) format. Captured data, for the ingredients represented by production snapshot, must have allowances for sufficient fields to satisfy the amount of data required by these specifications and include data titles at least once per report.

### **39-1.31C CONSTRUCTION**

You must request adjustments to the plant asphalt binder set point based on new RAP stockpiles average asphalt binder content. Do not adjust the HMA plant asphalt binder set point unless authorized.

The specified temperatures in section 39-1.11 for transporting, spreading and compacting of HMA apply to HMA produced using WMA technology. For the Method construction process, the specified temperatures in section 39-3.04 for transporting, spreading, and compacting of HMA apply to HMA produced using WMA technology.

**39-1.31D PAYMENT**

Not Used

AA

**DIVISION VII DRAINAGE  
68 SUBSURFACE DRAINS**

**Add to section 68-2.02F:**

**68-2.02F(5) Class 4 Permeable Material**

Class 4 permeable material for use in, around, and over underdrains, sand traps, and sand vaults must consist of hard, durable, clean sand, gravel, or crushed stone and must be free from organic material, clay balls, or other deleterious substances.

The percentage composition by weight of Class 4 permeable material in place must comply with the grading requirements shown in the following table:

**Class 4 Permeable Material  
Grading Requirements**

Sieve sizes	Percentage passing
2"	100
1-1/2"	95-100
3/4"	50-100
1/2"	--
3/8"	15-55
No. 4	0-25
No. 8	0-5
No. 100	0

Class 4 permeable material must have a durability index of not less than 40.

At least 5 days before placing Class 4 permeable material, submit a certificate of compliance for gradation of the material.

No more than 5 days after placing Class 4 permeable material, submit:

1. At least one ASTM D 6913 test on the permeable material at an authorized location.
2. Verification that the placed permeable material complies with the grading requirements

Prior to placement, wash Class 4 permeable material:

1. To remove silt and clay particles.
2. With potable water equal to at least four times the volume of the material to be placed.

After placement, wash Class 4 permeable material:

1. With potable water.
2. Until the discharged water has a turbidity reading of:

- a. 30 NTU or less for jobs within the Tahoe Hydrologic Unit
- b. 200 NTU or less for jobs outside of the Tahoe Hydrologic Unit

You must capture and dispose of the wash water. Dispose of wash water outside of the state right of way.

**Add to section 68-2.02F:**

**68-2.02F(6) Class 5 Permeable Material**

Class 5 permeable material for use in media filters must consist of hard, durable, clean sand, and must be free from organic material, clay balls, or other deleterious substances.

The percentage composition by weight of Class 5 permeable material in place must comply with the grading requirements shown in the following table:

**Class 5 Permeable Material  
Grading Requirements**

Sieve sizes	Percentage passing
3/8"	100
No. 4	95–100
No. 8	80–100
No. 16	45–85
No. 30	15–60
No. 50	3–15
No. 100	0–4
No. 200	0

Standard ASTM 6913	Range
Effective Particle size (ES)=(D <sub>10</sub> )	0.0098"-0.0197"
Uniformity Coefficient U <sub>c</sub> = (D <sub>60</sub> /D <sub>10</sub> )	< 4

Class 5 permeable material must have a durability index of not less than 40.

At least 5 days before placing Class 5 permeable material, submit a certificate of compliance for gradation of the material.

No more than 5 days after placing Class 5 permeable material, submit:

- 1. At least one ASTM D 6913 test on the permeable material at an authorized location.
- 2. Verification that the placed permeable material complies with the grading requirements

Prior to placement, wash Class 5 permeable material:

- 1. To remove silt and clay particles.
- 2. With potable water equal to at least four times the volume of the material to be placed.

After placement, wash Class 5 permeable material:

- 1. With potable water.



Section 90-2.02B does not apply. Minor concrete must contain at least:

1. 505 pounds of cementitious material per cubic yard if crumb rubber aggregate is used
2. 400 pounds of cementitious material per cubic yard if crumb rubber aggregate is not used

The 3rd paragraph of section 90-2.02C does not apply. Minor concrete must have a maximum aggregate size of 3/8 inch.

You may use volumetric proportioning under ASTM C 685/C 685M or section 90-3.02B.

Minor concrete must have a 28-day compressive strength from 1,400 to 1,800 psi.

**83-1.02B(1)(b)(iii) Crumb Rubber Aggregate**

Crumb rubber must consist of ground or granulated scrap tire rubber from automobile and truck tires. Tire buffings are not allowed. Crumb rubber aggregate must be ground and granulated at ambient temperature.

The gradation of the crumb rubber aggregate must meet the requirements of the following table:

Sieve size	Percentage passing
1/2"	100
3/8"	90–100
1/4"	35–45
No. 4	5–15
No. 8	0–5
No. 16	0

Crumb rubber aggregate must not contain more than 0.01 percent of wire by mass of crumb rubber and must be free of oils and volatile organic compounds.

Comingling of crumb rubber from different sources is not allowed.

The crumb rubber aggregate must be  $3.5 \pm 0.5$  percent by weight of the concrete.

**83-1.02B(1)(b)(iv) Reinforcing Fibers**

Reinforcing fibers for minor concrete must be:

1. Polypropylene fibers with an engineered sinusoidal contoured profile manufactured specifically for use as concrete reinforcement.
2. Blended ratio of 4 parts by weight of coarse monofilament fibers with maximum individual fiber lengths of  $2 \pm 1/2$  inch and 1 part by weight of fine fibrillated polypropylene fibers of various lengths and thicknesses. If the coarse and fine reinforcing fibers are supplied by the same manufacturer, they may be premixed in a sealed 5-lb degradable bag.
3. From a commercial source.
4. Concrete ingredient as described in your mix design and as recommended by the manufacturer.

The reinforcing fiber content of minor concrete must be 5 lbs/cu yd.

**83-1.02B(1)(b)(v) Coloring Agent**

If a color for concrete is specified in section 83-1.02B(1)(b)(i), the coloring agent must be integral to the concrete mix and added at the concrete plant.

If the curing compound method is used, use curing compound no. 6.

**83-1.02B(1)(b)(vi) Block-Out Material**

Use a commercially available expanded polystyrene foam for the block-out material. The expanded polystyrene foam must have a compressive strength of  $13 \pm 5$  psi at 10 percent deformation when tested under ASTM D1621.

You may substitute any appropriate material that meets the compressive strength requirements of the expanded polystyrene foam if authorized.

**83-1.02B(1)(c) Construction**

**83-1.02B(1)(c)(i) General**

Areas to receive vegetation control must be cleared of vegetation, trash, and debris. Dispose of removed material.

**83-1.02B(1)(c)(ii) Earthwork**

Excavate areas to receive vegetation control. Where vegetation control abuts the existing surfacing, the edge of the existing surfacing must be on a neat line or must be cut on a neat line to a minimum depth of 2 inches before removing the surfacing. The finished elevation of the excavated area to receive vegetation control must maintain planned flow lines, slope gradients, and contours of the job site.

Grade areas to receive vegetation control to a smooth, uniform surface and compact to a relative compaction of not less than 95 percent.

Dispose of surplus excavated material uniformly along the adjacent roadway, except as specified in section 14-11.

**83-1.02B(1)(c)(iii) Block Out**

Install block-out material as shown.

If block-out material is supplied in more than 1 piece, tape the pieces together to make a smooth surface on the top and sides.

Ensure block-out material does not move during concrete placement.

**83-1.02B(1)(c)(iv) Placing Minor Concrete**

Place minor concrete for vegetation control by hand.

Strike off and compact minor concrete with a mechanical or vibratory screed device. Apply a broom finish. Match the finished grade to the adjacent section of vegetation control, pavement, shoulder, or existing grade.

**83-1.02B(1)(d) Payment**

Vegetation control (minor concrete) is measured from the actual areas placed. The Department does not pay for vegetation control (minor concrete) placed outside the dimensions shown.

**Replace section 83-1.02C(3) with:**

**83-1.02C(3) Alternative Flared Terminal System**

Alternative flared terminal system must be furnished and installed as shown on the plans and under these special provisions.

The allowable alternatives for a flared terminal system must consist of one of the following or a Department-authorized equal.

1. TYPE FLEAT TERMINAL SYSTEM - Type FLEAT terminal system must be a Flared Energy Absorbing Terminal 350 manufactured by Road Systems, Inc., located in Big Spring, Texas, and must include items detailed for Type FLEAT terminal system shown on the plans. The Flared Energy Absorbing Terminal 350 can be obtained from the distributor, Universal Industrial Sales, P.O. Box 699, Pleasant Grove, UT 84062, telephone (801) 785-0505 or from the distributor, Gregory Industries, Inc., 4100 13<sup>th</sup> Street, S.W., Canton, OH 44708, telephone (330) 477-4800.
2. TYPE SRT TERMINAL SYSTEM - Type SRT terminal system must be an SRT-350 Slotted Rail Terminal (8-post system) as manufactured by Trinity Highway Products, LLC, and must include items detailed for Type SRT terminal system shown on the plans. The SRT-350 Slotted Rail Terminal (8-post system) can be obtained from the manufacturer, Trinity Highway Products, LLC, P.O. Box 99, Centerville, UT 84012, telephone (800) 772-7976.



Existing TMS elements, including detection systems, shown and located within the project limits must remain in place and be protected from damage. If the construction activities require existing TMS elements to be nonoperational or off line, and if temporary or portable TMS elements are not shown, the Contractor must provide for temporary or portable TMS elements. The Contractor must receive authorization on the type of temporary or portable TMS elements and installation method.

Before work is performed, the Engineer, the Contractor, and the Department's Traffic Operations Electrical representatives must jointly conduct a pre-construction operational status check of all existing TMS elements and each element's communication status with the Traffic Management Center (TMC), including existing TMS elements not shown and elements that may not be impacted by the Contractor's activities. The Department's Traffic Operations Electrical representatives will certify the TMS elements' location and status, and provide a copy of the certified list of the existing TMS elements within the project limits to the Contractor. The status list will include the operational, defined as having full functionality, and the nonoperational components.

The Contractor must obtain authorization at least 72 hours before interrupting existing TMS elements' communication with the TMC that will result in the elements being nonoperational or off line. The Contractor must notify the Engineer at least 72 hours before starting excavation activities.

Traffic monitoring stations and their associated communication systems, which were verified to be operational during the pre-construction operational status check, must remain operational on freeway/highway mainline at all times, except:

1. For a duration of up to 15 days on any continuous segment of the freeway/highway longer than 3 miles
2. For a duration of up to 60 days on any continuous segment of the freeway/highway shorter than 3 miles

If the construction activities require existing detection systems to be nonoperational or off line for a longer time period or the spacing between traffic monitoring stations is more than the specified criteria above, and temporary or portable detection operations are not shown, the Contractor must provide provisions for temporary or portable detection operations. The Contractor must receive authorization on the type of detection and installation before installing the temporary or portable detection.

If existing TMS elements shown or identified during the pre-construction operational status check, except traffic monitoring stations, are damaged or fail due to the Contractor's activity, where the elements are not fully functional, the Engineer must be notified immediately. If the Contractor is notified by the Engineer that existing TMS elements have been damaged, have failed or are not fully functional due to the Contractor's activity, the damaged or failed TMS elements, excluding structure-related elements, must be repaired or replaced, at the Contractor's expense, within 24 hours. For a structure-related elements, the Contractor must install temporary or portable TMS elements within 24 hours. For nonstructure-related TMS elements, the Engineer may authorize temporary or portable TMS elements for use during the construction activities.

The Contractor must demonstrate that repaired or replaced elements operate in a manner equal to or better than the replaced equipment. If the Contractor fails to perform required repairs or replacement work, the Department may perform the repair or replacement work and the cost will be deducted from monies due to the Contractor.

A TMS element must be considered nonoperational or off line for the duration of time that active communications with the TMC is disrupted, resulting in messages and commands not transmitted from or to the TMS element.

The Contractor must provide provisions for replacing existing TMS elements within the project limits, including detection systems, that were not identified on the plans or during the pre-construction operational status check that became damaged due to the Contractor's activities.

If the pre-construction operational status check identified existing TMS elements, then the Contractor, the Engineer, and the Department's Traffic Operations Electrical representatives must jointly conduct a post construction operational status check of all existing TMS elements and each element's communication status with the TMC. The Department's Traffic Operations Electrical representatives will certify the TMS elements' status and provide a copy of the certified list of the existing TMS elements within the project limits to the Contractor. The status list will include the operational, defined as having full functionality, and the nonoperational components. TMS elements that cease to be functional between pre and post construction status checks must be repaired at the Contractor's expense.

The Engineer will authorize the schedule for final replacement, the replacement methods and the replacement elements, including element types and installation methods before repair or replacement work is performed. The final TMS elements must be new and of equal or better quality than the existing TMS elements.

If no electrical work exists on the project and no TMS elements are identified within the project limits, the pre-construction operational status check is change order work.

Furnishing and installing temporary or portable TMS elements that are not shown, but are required when an existing TMS element becomes nonoperational or off line due to construction activities, is change order work.

Furnishing and installing temporary or portable TMS elements and replacing TMS elements that are not shown nor identified during the pre-construction operational status check and were damaged by construction activities is change order work.

If the Contractor is required to submit provisions for the replacement of TMS elements that were not identified, submitting the provisions is change order work.

**Add to section 86-2.05A:**

Conduit installed underground must be Type 1.

**Add to section 86-2.05B:**

The conduit in a foundation and between a foundation and the nearest pull box must be Type 1.

**Add to section 86-2.05C:**

If a standard coupling cannot be used for joining Type 1 conduit, use a UL-listed threaded union coupling under section 86-2.05C.

After conductors have been installed, the ends of the conduits terminating in pull boxes and service equipment enclosures must be sealed with an authorized type of sealing compound.

At those locations where conduit is required to be installed under pavement and underground facilities designated as high priority subsurface installation under Govt Code § 4216 et seq. exist, conduit must be placed by the trenching in pavement method under section 86-2.05C.

**Replace the 3rd paragraph in section 86-2.06A(2) of the RSS for section 86-2.06 with:**

In a ground or sidewalk area, embed the bottom of a pull box in crushed rock.

**Replace "Reserved" in section 86-2.06B of the RSS for section 86-2.06 with:**

**86-2.06B(1) General**

**86-2.06B(1)(a) Summary**

Section 86-2.06B includes specifications for installing non-traffic-rated pull boxes.

### **86-2.06B(1)(b) Submittals**

Before shipping pull boxes to the jobsite, submit a list of materials, Contract number, pull box manufacturer, manufacturer's instructions for pull box installation, and your contact information to METS.

Submit reports for pull box from an NRTL-accredited lab.

### **86-2.06B(1)(c) Quality Control and Assurance**

#### **86-2.06B(1)(c)(i) General**

Pull boxes may be tested by the Department. Deliver pull boxes and covers to METS and allow 30 days for testing. When testing is complete, you will be notified. You must pick up the boxes and covers from the test site and deliver it to the job site.

Any failure of the pull box or the cover that renders the unit noncompliant with these specifications will be a cause for rejection. If the unit is rejected, you must allow 30 days for retesting. Retesting period starts when the replacement pull box is delivered to the test site. You must pay for all retesting costs. Delays resulting from the submittal of noncompliant materials does not relieve you from executing the Contract within the allotted time.

If the pull box submitted for testing does not comply with the specifications, remove the unit from the test site within 5 business days after notification that it is rejected. If the unit is not removed within that period, it may be shipped to you at your expense.

You must pay for all shipping, handling, and transportation costs related to the testing and retesting.

#### **86-2.06B(1)(c)(ii) Functional Testing**

The pull box and cover must be tested under ANSI/SCTE 77, "Specification for Underground Enclosure Integrity."

#### **86-2.06B(1)(c)(iii) Warranty**

Provide a 2-year manufacturer replacement warranty for pull box and cover from the date of installation of the pull box and cover. All warranty documentation must be submitted before installation.

Replacement parts must be provided within 5 business days after receipt of failed pull box, cover, or both at no cost to the Department and must be delivered to the Department's Maintenance Electrical Shop at 7301 East Bandini Blvd, City of Commerce, CA 90040. Telephone (213) 620-2125.

### **86-2.06B(2) Materials**

The pull box and cover must comply with ANSI/SCTE 77, "Specification for Underground Enclosure Integrity," for tier 22 load rating and must be gray or brown.

Each pull box cover must have an electronic marker cast inside.

Extension for the pull box must be of the same material as the pull box and attached to the pull box to maintain the minimum combined depths as shown.

Include recesses for a hanger if a transformer or other device must be placed in a pull box.

The bolts, nuts, and washers must be a captive bolt design.

The captive bolt design must be capable of withstanding a torque range of 55 to 60 ft-lb and a minimum pull out strength of 750 lb. Perform the test with the cover in place and the bolts torqued. The pull box and cover must not be damaged while performing the test to the minimum pull out strength.

Stainless steel hardware must have an 18 percent chromium content and an 8 percent nickel content.

Galvanize ferrous metal parts under section 75-1-.05.

Manufacturer's instructions must provide guidance on:

1. Quantity and size of entries that can be made without degrading the strength of the pull box below tier 22 load rating
2. Where side entries cannot be made
3. Acceptable method to be used to create the entry



Do not use aggregate produced from slag resulting from a steel-making process except in:

1. Imported borrow
2. AS
3. Class 2 AB
4. HMA

Steel slag used to produce aggregate for AS and Class 2 AB must be crushed such that 100 percent of the material will pass a 3/4-inch sieve and then control aged for at least 3 months under conditions that will maintain all portions of the stockpiled material at a moisture content in excess of 6 percent of the dry weight of the aggregate.

For steel slag aggregate, provide separate stockpiles for controlled aging of the slag. An individual stockpile must not contain less than 10,000 tons or more than 50,000 tons of slag. The material in each individual stockpile must be assigned a unique lot number, and each stockpile must be identified with a permanent system of signs. Maintain a permanent record of:

1. Dates for:
  - 1.1. Completion of stockpile
  - 1.2. Start of controlled aging
  - 1.3. Completion of controlled aging
  - 1.4. Making of tests
2. Test results

For each stockpile of steel slag aggregate, moisture tests must be made at least once each week. The time covered by tests that show a moisture content of 6 percent or less is not included in the aging time.

Notify METS and the Engineer upon completion of each stockpile and the start of controlled aging and upon completion of controlled aging. Do not add aggregate to a stockpile unless a new aging period is started.

Steel slag used for imported borrow must be weathered for at least 3 months.

Each delivery of aggregate containing steel slag for AS or Class 2 AB must include a delivery tag for each load. The tag must identify the lot by the stockpile number, slag aging location, and stockpile completion and controlled aging start date.

You may blend air-cooled iron blast furnace slag or natural aggregate in proper combinations with steel slag aggregate to produce the specified gradings.

California Test 202 is modified by California Test 105 whenever the difference in sp gr between the coarse and fine portions of the aggregate or between the blends of different aggregates is 0.2 or more.

For slag used as aggregate in HMA, the Kc factor requirements in California Test 303 do not apply.

If steel slag aggregates are used to produce HMA, no other aggregates may be used in the mixture except that up to 50 percent of the material passing the no. 4 sieve may consist of iron blast furnace slag aggregates, natural aggregates, or a combination of these. If iron blast furnace aggregates, natural aggregates, or a combination of these are used in the mixture, each aggregate type must be fed to the drier at a uniform rate. Maintain the feed rate of each aggregate type within 10 percent of the amount set. Provide adequate means for controlling and checking the feeder accuracy.

Store steel slag aggregate separately from iron blast furnace slag aggregate. Store each slag aggregate type separately from natural aggregate.

For HMA produced from steel slag aggregates, iron blast furnace slag aggregates, natural aggregates, or any combination of these, the same aggregate must be used throughout any one layer. Once an aggregate type is selected, do not change it without authorization.

Aggregate containing slag must comply with the applicable quality requirements for the bid items in which the aggregate is used.



**REVISED STANDARD SPECIFICATIONS  
APPLICABLE TO THE 2010 EDITION  
OF THE STANDARD SPECIFICATIONS**



# REVISED STANDARD SPECIFICATIONS DATED 04-19-13

Revised standard specifications are under headings that correspond with the main-section headings of the *Standard Specifications*. A main-section heading is a heading shown in the table of contents of the *Standard Specifications*. A date under a main-section heading is the date of the latest revision to the section.

Each revision to the *Standard Specifications* begins with a revision clause that describes a revision to the *Standard Specifications* or introduces a revision to the *Standard Specifications*. For a revision clause that describes a revision, the date on the right above the clause is the publication date of the revision. For a revision clause that introduces a revision, the date on the right above a revised term, phrase, clause, paragraph, or section is the publication date of the revised term, phrase, clause, paragraph, or section. For a multiple-paragraph or multiple-section revision, the date on the right above a paragraph or section is the publication date of the paragraphs or sections that follow.

Any paragraph added or deleted by a revision clause does not change the paragraph numbering of the *Standard Specifications* for any other reference to a paragraph of the *Standard Specifications*.

## DIVISION I GENERAL PROVISIONS

### 1 GENERAL

04-19-13

**Replace "current" in the 2nd paragraph of section 1-1.05 with:**

most recent

04-20-12

**Add to the 4th paragraph of section 1-1.05:**

04-20-12

Any reference directly to a revised standard specification section is for convenience only. Lack of a direct reference to a revised standard specification section does not indicate a revised standard specification for the section does not exist.

**Add to the 1st table in section 1-1.06:**

04-19-13

LCS	Department's lane closure system
POC	pedestrian overcrossing
QSD	qualified SWPPP developer
QSP	qualified SWPPP practitioner
TRO	time-related overhead
WPC	water pollution control

**Delete the abbreviation and its meaning for *UDBE* in the 1st table of section 1-1.06.**

06-20-12

**Delete "Contract completion date" and its definition in section 1-1.07B.**

10-19-12

**Delete "critical delay" and its definition in section 1-1.07B.**

10-19-12

**Replace "day" and its definition in section 1-1.07B with:**

10-19-12

**day:** 24 consecutive hours running from midnight to midnight; calendar day.

1. **business day:** Day on the calendar except a Saturday and a holiday.
2. **working day:** Time measure unit for work progress. A working day is any 24-consecutive-hour period except:
  - 2.1. Saturday and holiday.
  - 2.2. Day during which you cannot perform work on the controlling activity for at least 50 percent of the scheduled work shift with at least 50 percent of the scheduled labor and equipment due to any of the following:
    - 2.2.1. Adverse weather-related conditions.
    - 2.2.2. Maintaining traffic under the Contract.
    - 2.2.3. Suspension of a controlling activity that you and the Engineer agree benefits both parties.
    - 2.2.4. Unanticipated event not caused by either party such as:
      - 2.2.4.1. Act of God.
      - 2.2.4.2. Act of a public enemy.
      - 2.2.4.3. Epidemic.
      - 2.2.4.4. Fire.
      - 2.2.4.5. Flood.
      - 2.2.4.6. Governor-declared state of emergency.
      - 2.2.4.7. Landslide.
      - 2.2.4.8. Quarantine restriction.
    - 2.2.5. Issue involving a third party, including:
      - 2.2.5.1. Industry or area-wide labor strike.
      - 2.2.5.2. Material shortage.
      - 2.2.5.3. Freight embargo.
      - 2.2.5.4. Jurisdictional requirement of a law enforcement agency.
      - 2.2.5.5. Workforce labor dispute of a utility or nonhighway facility owner resulting in a nonhighway facility rearrangement not described and not solely for the Contractor's convenience. Rearrangement of a nonhighway facility includes installation, relocation, alteration, or removal of the facility.
  - 2.3. Day during a concurrent delay.
3. **original working days:**
  - 3.1. Working days to complete the work shown on the *Notice to Bidders* for a non-cost plus time based bid.
  - 3.2. Working days bid to complete the work for a cost plus time based bid.

Where working days is specified without the modifier "original" in the context of the number of working days to complete the work, interpret the number as the number of original working days as adjusted by any time adjustment.

**Replace "Contract" in the definition of "early completion time" in section 1-1.07B with:**

10-19-12

work

**Replace "excusable delay" and its definition in section 1-1.07B with:**

10-19-12

**delay:** Event that extends the completion of an activity.

1. **excusable delay:** Delay caused by the Department and not reasonably foreseeable when the work began such as:
  - 1.1. Change in the work
  - 1.2. Department action that is not part of the Contract
  - 1.3. Presence of an underground utility main not described in the Contract or in a location substantially different from that specified
  - 1.4. Described facility rearrangement not rearranged as described, by the utility owner by the date specified, unless the rearrangement is solely for the Contractor's convenience
  - 1.5. Department's failure to obtain timely access to the right-of-way
  - 1.6. Department's failure to review a submittal or provide notification in the time specified
2. **critical delay:** Excusable delay that extends the scheduled completion date
3. **concurrent delay:** Occurrence of at least 2 of the following events in the same period of time, either partially or entirely:
  - 3.1. Critical delay
  - 3.2. Delay to a controlling activity caused by you
  - 3.3. Non-working day

**Replace "project" in the definition of "scheduled completion date" in section 1-1.07B with:**

10-19-12

work

**Add to section 1-1.07B:**

10-19-12

**Contract time:** Number of original working days as adjusted by any time adjustment.

06-20-12

**Disadvantaged Business Enterprise:** Disadvantaged Business Enterprise as defined in 49 CFR 26.5.

**Replace "PO BOX 911" in the District 3 mailing address in the table in section 1-1.08 with:**

04-20-12

703 B ST

**Add to the table in section 1-1.11:**

01-20-12

Office Engineer--All Projects Currently Advertised	<a href="http://www.dot.ca.gov/hq/esc/oe/weekly_ads/all_advertised.php">http://www.dot.ca.gov/hq/esc/oe/weekly_ads/all_advertised.php</a>	--	--
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AA

**2 BIDDING**

10-19-12

**Replace the 3rd paragraph of section 2-1.06B with:**

01-20-12

If an *Information Handout* or cross sections are available:

1. You may view them at the Contract Plans and Special Provisions link at the Office Engineer–All Projects Currently Advertised Web site
2. For an informal-bid contract, you may obtain them at the Bidders' Exchange street address

01-20-12

**Add a paragraph break between the 1st and 2nd sentences of the 5th paragraph of section 2-1.06B.**

**Add between "and" and "are" in item 2 in the list in the 7th paragraph of section 2-1.06B:**

they

04-20-12

06-20-12

**Delete "Underutilized" in "Underutilized Disadvantaged Business Enterprises" in the heading of section 2-1.12B.**

06-20-12

**Delete *U* in *UDBE* at each occurrence in section 2-1.12B.**

**Replace the 2nd paragraph of section 2-1.12B(1) with:**

To ensure equal participation of DBEs provided in 49 CFR 26.5, the Department shows a goal for DBEs.

06-20-12

06-20-12

**Delete the 3rd paragraph of section 2-1.12B(1):**

**Replace the 7th paragraph of section 2-1.12B(1) with:**

All DBE participation will count toward the Department's federally-mandated statewide overall DBE goal.

06-20-12

**Replace "offered" at the end of the 2nd sentence of item 7 in the list of 2nd paragraph of section 2-1.12B(3) with:**

provided

06-20-12

01-20-12

**Delete the 2nd paragraph of section 2-1.33A.**

**Replace the 3rd paragraph of section 2-1.33A with:**

Except for each subcontracted bid item number and corresponding percentage and proof of each required SSPC QP certification, do not fax submittals.

01-20-12

**Add to section 2-1.33C:**

10-19-12

On the *Subcontractor List*, you must either submit each subcontracted bid item number and corresponding percentage with your bid or fax these numbers and percentages to (916) 227-6282 within 24 hours after bid opening. Failure to do so results in a nonresponsive bid.

**Replace the paragraph in section 2-1.35 with:**

01-20-12

Submit proof of each required SSPC QP certification with your bid or fax it to (916) 227-6282 no later than 4:00 p.m. on the 2nd business day after bid opening. Failure to do so results in a nonresponsive bid.

AA

**3 CONTRACT AWARD AND EXECUTION**

10-19-12

**Add to the end of section 3-1.04:**

10-19-12

You may request to extend the award period by faxing a request to (916) 227-6282 before 4:00 p.m. on the last day of the award period. If you do not make this request, after the specified award period:

- 1. Your bid becomes invalid
- 2. You are not eligible for the award of the contract

**Replace the paragraph in section 3-1.11 with:**

10-19-12

Complete and deliver to the Office Engineer a *Payee Data Record* when requested by the Department.

**Replace section 3-1.13 with:**

07-27-12

**3-1.13 FORM FHWA-1273**

For a federal-aid contract, form FHWA-1273 is included with the Contract form in the documents sent to the successful bidder for execution. Comply with its provisions. Interpret the training and promotion section as specified in section 7-1.11A.

**Add to item 1 in the list in the 2nd paragraph of section 3-1.18:**

07-27-12

, including the attached form FHWA-1273

**Delete item 4 of the 2nd paragraph of section 3-1.18.**

10-19-12

AA

## 5 CONTROL OF WORK

10-19-12

**Add between "million" and ", professionally" in the 3rd paragraph of section 5-1.09A:**

and 100 or more working days

10-19-12

**Add to the list in the 4th paragraph of section 5-1.09A:**

9. Considering discussing with and involving all stakeholders in evaluating potential VECs

10-19-12

**Add to the end of item 1.1 in the list in the 7th paragraph of section 5-1.09A:**

, including VECs

10-19-12

**Replace the 1st paragraph of section 5-1.09C with:**

For a contract with a total bid over \$10 million and 100 or more working days, training in partnering skills development is required.

10-19-12

**Delete the 2nd paragraph of section 5-1.09C.**

10-19-12

**Replace "at least 2 representatives" in the 5th paragraph of section 5-1.09C with:**

field supervisory personnel

10-19-12

**Replace the 1st and 2nd sentences in the 7th paragraph of section 5-1.13B(1) with:**

If a DBE is decertified before completing its work, the DBE must notify you in writing of the decertification date. If a business becomes a certified DBE before completing its work, the business must notify you in writing of the certification date.

06-20-12

**Replace "90" in the last sentence of the 7th paragraph of section 5-1.13B(1) with:**

30

06-20-12

**Replace "Underutilized" in "Underutilized Disadvantaged Business Enterprises" in the heading of section 5-1.13B(2) with:**

Performance of

06-20-12

**Delete *U* in *UDBE* at each occurrence in section 5-1.13B(2).**

06-20-12

**Replace the 3rd paragraph of section 5-1.13B(2) with:**

06-20-12

Do not terminate or substitute a listed DBE for convenience and perform the work with your own forces or obtain materials from other sources without authorization from the Department.

**Replace item 6 in the list in the 4th paragraph of section 5-1.13B(2) with:**

06-20-12

6. Listed DBE is ineligible to work on the project because of suspension or debarment.

**Add to the list in the 4th paragraph of section 5-1.13B(2):**

06-20-12

8. Listed DBE voluntarily withdraws with written notice from the Contract.
9. Listed DBE is ineligible to receive credit for the type of work required.
10. Listed DBE owner dies or becomes disabled resulting in the inability to perform the work on the Contract.
11. Department determines other documented good cause.

**Add between the 4th and 5th paragraphs of section 5-1.13B(2):**

07-20-12

Notify the original DBE of your intent to use other forces or material sources and provide the reasons. Provide the DBE with 5 days to respond to your notice and advise you and the Department of the reasons why the use of other forces or sources of materials should not occur. Your request to use other forces or material sources must include:

1. 1 or more of the reasons listed in the preceding paragraph
2. Notices from you to the DBE regarding the request
3. Notices from the DBE to you regarding the request

**Add between "terminated" and ", you" in the 5th paragraph of section 5-1.13B(2):**

07-20-12

or substituted

**Replace "Contract" in item 1 in the list in the 5th paragraph of section 5-1.13C with:**

10-19-12

work

**Replace "Reserved" in section 5-1.20C with:**

10-19-12

If the Contract includes an agreement with a railroad company, the Department makes the provisions of the agreement available in the *Information Handout* in the document titled "Railroad Relations and Insurance Requirements." Comply with the requirements in the document.

**Add between the 2nd and 3rd paragraphs of section 5-1.23A:**

10-19-12

Submit action and informational submittals to the Engineer.

**Add to section 5-1.36C:**

07-20-12

If the Contract does not include an agreement with a railroad company, do not allow personnel or equipment on railroad property.

Prevent material, equipment, and debris from falling onto railroad property.

**Add between the 1st and 2nd paragraphs of section 5-1.37A:**

10-19-12

Do not remove any padlock used to secure a portion of the work until the Engineer is present to replace it. Notify the Engineer at least 3 days before removing the lock.

**Replace the 1st sentence of the 1st paragraph of section 5-1.39C(2) with:**

10-19-12

Section 5-1.39C(2) applies if a plant establishment period of 3 years or more is shown on the *Notice to Bidders*.

**Replace "working days" in the 1st paragraph of section 5-1.43E(1)(a) with:**

10-19-12

original working days

^^

**6 CONTROL OF MATERIALS**

04-19-13

**Replace section 6-2.05C with:**

04-19-13

**6-2.05C Steel and Iron Materials**

Steel and iron materials must be melted and manufactured in the United States except:

1. Foreign pig iron and processed, pelletized, and reduced iron ore may be used in the domestic production of the steel and iron materials
2. If the total combined cost of the materials does not exceed the greater of 0.1 percent of the total bid or \$2,500, materials produced outside the United States may be used if authorized

Furnish steel and iron materials to be incorporated into the work with certificates of compliance and certified mill test reports. Mill test reports must indicate where the steel and iron were melted and manufactured.

All melting and manufacturing processes for these materials, including an application of a coating, must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied.

^^

## 7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

07-27-12

Replace "20 days" in the 14th paragraph of section 7-1.04 with:

25 days

09-16-11

Replace "90 days" in the 14th paragraph of section 7-1.04 with:

125 days

09-16-11

Add between the 18th and 19th paragraphs of section 7-1.04:

09-16-11

Temporary facilities that could be a hazard to public safety if improperly designed must comply with design requirements described in the Contract for those facilities or, if none are described, with standard design criteria or codes appropriate for the facility involved. Submit shop drawings and design calculations for the temporary facilities and show the standard design criteria or codes used. Shop drawings and supplemental calculations must be sealed and signed by an engineer who is registered as a civil engineer in the State.

Replace the 2nd paragraph of section 7-1.11A with:

07-27-12

A copy of form FHWA-1273 is included in section 7-1.11B. The training and promotion section of section II refers to training provisions as if they were included in the special provisions. The Department specifies the provisions in section 7-1.11D of the *Standard Specifications*. If a number of trainees or apprentices is required, the Department shows the number on the *Notice to Bidders*. Interpret each FHWA-1273 clause shown in the following table as having the same meaning as the corresponding Department clause:

**FHWA-1273 Nondiscrimination Clauses**

FHWA-1273 section	FHWA-1273 clause	Department clause
Training and Promotion	In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.	If section 7-1.11D applies, section 7-1.11D supersedes this subparagraph.
Records and Reports	If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.	If the Contract requires on-the-job training, collect and report training data.

Replace the form in section 7-1.11B with:

07-20-12

**REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

**ATTACHMENTS**

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

**II. NONDISCRIMINATION**

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

**I. GENERAL**

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

**1. Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

**6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualified minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

**10. Assurance Required by 49 CFR 26.13(b):**

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

### III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

### IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

#### 1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

## 2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

## 3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### 4. Apprentices and trainees

##### a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

##### b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

**6. Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

**7. Contract termination; debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

**9. Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

**10. Certification of eligibility.**

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

**V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

**3. Withholding for unpaid wages and liquidated damages.** The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

**4. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

## VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

## VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

## VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

#### **IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

#### **X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

##### **1. Instructions for Certification – First Tier Participants:**

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

\*\*\*\*\*

## **2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

### **2. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers to any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

\*\*\*\*\*

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\*\*\*\*\*

**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

AA

**8 PROSECUTION AND PROGRESS**

10-19-12

**Replace "working days" in the 1st paragraph of section 8-1.02B(1) with:**

original working days

10-19-12

**Replace "working days" at each occurrence in the 1st paragraph of section 8-1.02C(1) with:**

original working days

10-19-12

**Delete the 4th paragraph of section 8-1.02C(1).**

04-20-12

**Replace "Contract" in the 9th paragraph of section 8-1.02C(1) with:**

work

10-19-12

**Replace the 1st paragraph of section 8-1.02C(3)(a) with:**

Submit a description of your proposed schedule software for authorization.

04-20-12

**Delete the last paragraph of section 8-1.02C(3)(a).**

04-20-12

**Replace section 8-1.02C(3)(b) with:**

**8-1.02C(3)(b) Reserved**

10-19-12

**Delete the 3rd paragraph of section 8-1.02C(5).**

04-20-12

**Replace "Contract" in the last paragraph of section 8-1.02C(5) with:**

original

10-19-12

**Replace "working days" in the 1st paragraph of section 8-1.02D(1) with:**

original working days

10-19-12

**Replace "8-1.02D(1)" in the 2nd paragraph of section 8-1.02D(1) with:**

8-1.02C(1)

01-20-12

**Replace "Contract" in the 3rd paragraph of section 8-1.02D(2) with:**

10-19-12

work

**Replace "Contract" in item 9 in the list in the 4th paragraph of section 8-1.02D(4) with:**

10-19-12

work

**Replace "Contract completion" in the 4th paragraph of section 8-1.02D(6) with:**

10-19-12

work completion

**Replace "Contract working days" in the 4th paragraph of section 8-1.02D(6) with:**

10-19-12

original working days

**Delete items 1.3 and 1.4 in the list in the 1st paragraph of section 8-1.02D(10).**

04-20-12

**Replace the last paragraph of section 8-1.04B with:**

10-19-12

The Department does not adjust time for starting before receiving notice of Contract approval.

**Replace the 1st paragraph of section 8-1.05 with:**

10-19-12

Contract time starts on the last day specified to start job site activities in section 8-1.04 or on the day you start job site activities, whichever occurs first.

**Replace the 2nd paragraph of section 8-1.05 with:**

10-19-12

Complete the work within the Contract time.

**Delete "unless the Contract is suspended for reasons unrelated to your performance" in the 4th paragraph of section 8-1.05.**

10-19-12

**Replace the headings and paragraphs in section 8-1.06 with:**

10-19-12

The Engineer may suspend work wholly or in part due to conditions unsuitable for work progress. Provide for public safety and a smooth and unobstructed passageway through the work zone during the suspension as specified under sections 7-1.03 and 7-1.04. Providing the passageway is force account work. The Department makes a time adjustment for the suspension due to a critical delay.

The Engineer may suspend work wholly or in part due to your failure to (1) fulfill the Engineer's orders, (2) fulfill a Contract part, or (3) perform weather-dependent work when conditions are favorable so that weather-related unsuitable conditions are avoided or do not occur. The Department may provide for a



Cost	Percent markup
Labor	30
Materials	10
Equipment rental	10

**Delete ", Huntington Beach," in the 3rd paragraph of section 9-1.07A.**

04-20-12

**Replace the formula in section 9-1.07B(2) with:**

$$Qh = HMATT \times Xa$$

04-20-12

**Replace "weight of dry aggregate" in the definition of the variable *Xa* in section 9-1.07B(2) with:**

total weight of HMA

04-20-12

**Replace the formula in section 9-1.07B(3) with:**

$$Qrh = RHMATT \times 0.80 \times Xarb$$

04-20-12

**Replace "weight of dry aggregate" in the definition of the variable *Xarb* in section 9-1.07B(3) with:**

total weight of rubberized HMA

04-20-12

**Replace the heading of section 9-1.07B(4) with:**

**Hot Mix Asphalt with Modified Asphalt Binder**

04-20-12

**Add between "in" and "modified" in the introductory clause of section 9-1.07B(4):**

HMA with

04-20-12

**Replace the formula in section 9-1.07B(4) with:**

$$Qmh = MHMATT \times [(100 - Xam) / 100] \times Xmab$$

04-20-12

**Replace "weight of dry aggregate" in the definition of the variable *Xmab* in section 9-1.07B(4) with:**

total weight of HMA

04-20-12

**Replace the formula in section 9-1.07B(5) with:**

$$Qrap = HMATT \times Xaa$$

04-20-12

**Replace "weight of dry aggregate" in the definitions of the variables *Xaa* and *Xta* in section 9-1.07B(5) with:**

04-20-12

total weight of HMA

**Add after the variable definitions in section 9-1.07B(9):**

04-20-12

The quantity of extender oil is included in the quantity of asphalt.

**Replace the headings and paragraphs in section 9-1.11 with:**

10-19-12

**9-1.11A General**

Section 9-1.11 applies if a bid item for time-related overhead is included in the Contract. If a bid item for time-related overhead is included, you must exclude the time-related overhead from every other bid item price.

**9-1.11B Payment Quantity**

The TRO quantity does not include the number of working days to complete plant establishment work.

For a contract with a TRO lump sum quantity on the Bid Item List, the Department pays you based on the following conversions:

1. LS unit of measure is replaced with WDAY
2. Lump sum quantity is replaced with the number of working days bid
3. Lump sum unit price is replaced with the item total divided by the number of working days bid

**9-1.11C Payment Inclusions**

Payment for the TRO bid item includes payment for time-related field- and home-office overhead for the time required to complete the work.

The field office overhead includes time-related expenses associated with the normal and recurring construction activities not directly attributed to the work, including:

1. Salaries, benefits, and equipment costs of:
  - 1.1. Project managers
  - 1.2. General superintendents
  - 1.3. Field office managers
  - 1.4. Field office staff assigned to the project
2. Rent
3. Utilities
4. Maintenance
5. Security
6. Supplies
7. Office equipment costs for the project's field office

The home-office overhead includes the fixed general and administrative expenses for operating your business, including:

1. General administration
2. Insurance
3. Personnel and subcontract administration
4. Purchasing
5. Accounting
6. Project engineering and estimating

Payment for the TRO bid item does not include payment for:

1. The home-office overhead expenses specifically related to:
  - 1.1. Your other contracts or other businesses
  - 1.2. Equipment coordination
  - 1.3. Material deliveries
  - 1.4. Consultant and legal fees
2. Non-time-related costs and expenses such as mobilization, licenses, permits, and other charges incurred once during the Contract
3. Additional overhead involved in incentive/disincentive provisions to satisfy an internal milestone or multiple calendar requirements
4. Additional overhead involved in performing additional work that is not a controlling activity
5. Overhead costs incurred by your subcontractors of any tier or suppliers

#### **9-1.11D Payment Schedule**

For progress payments, the total work completed for the TRO bid item is the number of working days shown for the pay period on the *Weekly Statement of Working Days*.

For progress payments, the Department pays a unit price equal to the lesser of the following amounts:

1. Price per working day as bid or as converted under section 9-1.11B.
2. 20 percent of the total bid divided by the number of original working days

For a contract without plant establishment work, the Department pays you the balance due of the TRO item total as specified in section 9-1.17B.

For a contract with plant establishment work, the Department pays you the balance due of the TRO item total in the 1st progress payment after all non-plant establishment work is completed.

#### **9-1.11E Payment Adjustments**

The 3rd paragraph of section 9-1.17C does not apply.

The Department does not adjust the unit price for an increase or decrease in the TRO quantity except as specified in section 9-1.11E.

Section 9-1.17D(2)(b) does not apply except as specified for the audit report below.

If the TRO bid item quantity exceeds 149 percent of the quantity shown on the Bid Item List or as converted under section 9-1.11B, the Engineer may adjust or you may request an adjustment of the unit price for the excess quantity. For the adjustment, submit an audit report within 60 days of the Engineer's request. The report must be prepared as specified for an audit report for an overhead claim in section 9-1.17D(2)(b).

Within 20 days of the Engineer's request, make your financial records available for an audit by the State for the purpose of verifying the actual rate of TRO described in your audit. The actual rate of TRO described is subject to the Engineer's authorization.

The Department pays the authorized actual rate for TRO in excess of 149 percent of the quantity shown on the Bid Item List or as converted under section 9-1.11B.

The Department pays for 1/2 the cost of the report; the Contractor pays for the other 1/2. The cost is determined under section 9-1.05.

**Delete "revised Contract" in item 1 of the 1st paragraph of section 9-1.16E(2).**

10-19-12

**Replace "2014" in the 1st paragraph of section 9-1.16F with:**

10-19-12

2020







**Replace "NEL violation" in item 3.6.2 in the list in the 1st paragraph of section 13-1.01D(3)(c) with:**

04-19-13

receiving water monitoring trigger

**Replace the 1st paragraph in section 13-2.01B with:**

04-19-13

Within 7 days after Contract approval, submit 2 copies of your WPCP for review. Allow 5 business days for review.

After the Engineer authorizes the WPCP, submit an electronic copy and 3 printed copies of the authorized WPCP.

If the RWQCB requires review of the authorized WPCP, the Engineer submits the authorized WPCP to the RWQCB for its review and comment. If the Engineer orders changes to the WPCP based on the RWQCB's comments, amend the WPCP within 3 business days.

**Replace the 1st paragraph in section 13-3.01B(2)(a) with:**

04-19-13

Within 15 days of Contract approval, submit 3 copies of your SWPPP for review. The Engineer provides comments and specifies the date when the review stopped if revisions are required. Change and resubmit a revised SWPPP within 15 days of receiving the Engineer's comments. The Department's review resumes when a complete SWPPP has been resubmitted.

When the Engineer authorizes the SWPPP, submit an electronic copy and 4 printed copies of the authorized SWPPP.

If the RWQCB requires review of the authorized SWPPP, the Engineer submits the authorized SWPPP to the RWQCB for its review and comment. If the Engineer requests changes to the SWPPP based on the RWQCB's comments, amend the SWPPP within 10 days.

**Replace "NELs" in item 3.1 in the 3rd paragraph of section 13-3.01B(2)(a) with:**

04-19-13

receiving water monitoring triggers

**Replace section 13-3.01B(6)(c) with:**

04-19-13

**13-3.01B(6)(c) Receiving Water Monitoring Trigger Report**

Whenever a receiving water monitoring trigger is exceeded, notify the Engineer and submit a receiving water monitoring trigger report within 48 hours after conclusion of a storm event. The report must include:

1. Field sampling results and inspections, including:
  - 1.1. Analytical methods, reporting units, and detection limits
  - 1.2. Date, location, time of sampling, visual observation and measurements
  - 1.3. Quantity of precipitation from the storm event
2. Description of BMPs and corrective actions

**Replace "NEL" in the 6th paragraph of section 13-3.01C(1) with:**

04-19-13

receiving water monitoring trigger

Replace section 13-3.01C(3) with:

04-19-13

**13-3.01C(3) Receiving Water Monitoring Trigger**

For a risk level 3 project, receiving water monitoring triggers must comply with the values shown in the following table:

**Receiving Water Monitoring Trigger**

Parameter	Test method	Detection limit (min)	Unit	Value
pH	Field test with calibrated portable instrument	0.2	pH	Lower limit = 6.0 Upper limit = 9.0
Turbidity	Field test with calibrated portable instrument	1	NTU	500 NTU max

The storm event daily average for storms up to the 5-year, 24-hour storm must not exceed the receiving water monitoring trigger for turbidity.

The daily average sampling results must not exceed the receiving water monitoring trigger for pH.

**Delete "and NELs are violated" in the 3rd paragraph of section 13-3.03C.**

04-19-13

**Replace "working days" at each occurrence in section 13-3.04 with.**

original working days

10-19-12

**Delete the 1st sentence in the 2nd paragraph of section 13-4.03C(3).**

04-19-13

**Add between the 2nd and 3rd paragraphs of section 13-4.03C(3):**

Manage stockpiles by implementing water pollution control practices on:

1. Active stockpiles before a forecasted storm event
2. Inactive stockpiles according to the WPCP or SWPPP schedule

04-19-13

**Replace the paragraph in section 13-4.04 with:**

Not Used

04-20-12

**Delete "or stockpile" in the 3rd paragraph of section 13-5.02F.**

10-19-12



5. Be fastened securely to the existing frame without projections above the surface of the road or into the clear opening

**Add to the end of section 15-4.01A(2):**

Allow 20 days for review of the bridge removal work plan.

04-19-13

**Replace the 1st paragraph of section 15-5.01C(1) with:**

Before starting deck rehabilitation activities, complete the removal of any traffic stripes, pavement markings, and pavement markers.

10-19-12

**Replace the 2nd and 3rd paragraphs of section 15-5.01C(2) with:**

Perform the following activities in the order listed:

10-19-12

1. Abrasive blast the deck surface with steel shot. Perform abrasive blasting after the removal of any unsound concrete and placement of any rapid setting concrete patches.
2. Sweep the deck surface.
3. Blow the deck surface clean using high-pressure air.

**Replace the 2nd paragraph of section 15-5.01C(4) with:**

Before removing asphalt concrete surfacing, verify the depth of the surfacing at the supports and midspans of each structure (1) in each shoulder, (2) in the traveled way, and (3) at the roadway crown, if a crown is present.

10-19-12

**Delete "and concrete expansion dams" in the 3rd paragraph of section 15-5.01C(4).**

04-19-13

**Replace the 2nd paragraph of section 15-5.03A(2) with:**

For a contract with less than 60 original working days, submit certificates of compliance for the filler material and bonding agents.

10-19-12

**Replace "51-1.02C" in the 1st paragraph of section 15-5.03B with:**

51-1.02F

04-19-13

**Replace the 4th paragraph of section 15-5.03B with:**

For a contract with less than 60 original working days, alternative materials must be authorized before use.

10-19-12

**Add between the 5th and 6th paragraphs of section 15-5.03C:**

The final surface finish of the patched concrete surface must comply with section 51-1.03F.

10-19-12

**Delete the 4th paragraph of section 15-5.05C.**

10-19-12

**Replace "51-1.03F(5)" in the 3rd paragraph of section 15-5.06C(1) with:**

51-1.01D(4)

10-19-12

**Replace "51-1.03E(5)" in the 5th paragraph of section 15-5.06C(1) with:**

51-1.03F(5)

10-19-12

**Delete the 9th paragraph of section 15-5.06C(1).**

10-19-12

**Delete the 15th paragraph of section 15-5.06C(1).**

04-19-13

**Add to section 15-5.06C(1):**

Texture the polyester concrete surface before gelling occurs by longitudinal tining under 51-1.03F(5)(b)(iii), except do not perform initial texturing.

10-19-12

**Replace section 15-5.06C(2) with:**

**15-5.06C(2) Reserved**

04-19-13

**Delete the 3rd paragraph of section 15-5.06D.**

04-19-13

**Replace the 1st paragraph in section 15-5.07B(4) with:**

Payment for furnishing dowels is not included in the payment for core and pressure grout dowel.

10-19-12

**Replace section 15-5.09 with:**

**15-5.09 POLYESTER CONCRETE EXPANSION DAMS**

04-19-13

**15-5.09A General**

Section 15-5.09 includes specifications for constructing polyester concrete expansion dams.

Polyester concrete expansion dams must comply with the specifications for polyester concrete overlays in section 15-5.06, except a trial slab is not required.



**Replace "sets" in the 3rd and 4th paragraphs of section 19-3.01A(2)(d) with:**

copies

04-19-13

**Add to section 19-3.01A(3)(b):**

For soil nail walls, wall zones are specified in the special provisions.

01-20-12

For ground anchor walls, a wall zone is the entire wall unless otherwise specified in the special provisions.

**Delete the 2nd sentence in the 4th paragraph of section 19-3.01A(3)(b).**

01-20-12

**Replace "90" in the paragraph of section 19-3.02G with:**

90-1

01-18-13

**Replace the heading of section 19-3.03C with:**

**19-3.03B(4) Cofferdams**

04-19-13

**Replace the heading of section 19-3.03D with:**

**19-3.03B(5) Water Control and Foundation Treatment**

04-19-13

**Replace the 1st paragraph of section 19-3.03E(3) with:**

Compact structure backfill behind lagging of soldier pile walls by hand tamping, mechanical compaction, or other authorized means.

01-20-12

**Replace the 2nd paragraph of section 19-3.03F with:**

Do not backfill over or place material over slurry cement backfill until 4 hours after placement. When concrete sand is used as aggregate and the in-place material is free draining, you may start backfilling as soon as the surface water is gone.

01-20-12

**Add between the 2nd and 3rd paragraphs of section 19-3.03K:**

Before you excavate for the installation of ground anchors in a wall zone:

01-20-12

1. Complete stability testing
2. Obtain authorization of test data









- 2. Paving construction foreman
- 3. Traffic control foreman

Be prepared to discuss:

- 1. Quality control
- 2. Acceptance testing
- 3. Placement
- 4. Training on placement methods
- 5. Checklist of items for proper placement
- 6. Unique issues specific to the project, including:
  - 6.1. Weather
  - 6.2. Alignment and geometrics
  - 6.3. Traffic control issues
  - 6.4. Haul distances
  - 6.5. Presence and absence of shaded areas
  - 6.6. Any other local issues

**37-1.02 MATERIALS**

Not Used

**37-1.03 CONSTRUCTION**

Not Used

**37-1.04 PAYMENT**

Not Used

**Replace "Reserved" in section 37-2.01D(1) with:**

01-18-13

Aggregate suppliers, chip spreader operators, emulsion distributor, and for coated chips, the coated chips producer must attend the prepaving conference.

**Add to section 37-2.03A:**

04-20-12

If you fail to place the permanent traffic stripes and pavement markings within the specified time, the Department withholds 50 percent of the estimated value of the seal coat work completed that has not received permanent traffic stripes and pavement markings.

**Add to section 37-3.01D(1):**

01-18-13

Micro-surfacing spreader operators must attend the prepaving conference.

AA

**39 HOT MIX ASPHALT**

02-22-13

**Add to section 39-1.01B:**

02-22-13

**processed RAP:** RAP that has been fractionated.

**substitution rate:** Amount of RAP aggregate substituted for virgin aggregate in percent.

**binder replacement:** Amount of RAP binder in OBC in percent.

**surface course:** Upper 0.2 feet of HMA exclusive of OGFC.

**Add to the end of the paragraph in section 39-1.02A:**

10-19-12

as shown

**Replace the paragraphs in section 39-1.02F with:**

02-22-13

**39-1.02F(1) General**

You may produce HMA Type A or B using RAP. HMA produced using RAP must comply with the specifications for HMA, except aggregate quality specifications do not apply to RAP. You may substitute RAP at a substitution rate not exceeding 25 percent of the aggregate blend. Do not use RAP in OGFC and RHMA-G.

Assign the substitution rate of RAP aggregate for virgin aggregate with the JMF submittal. The JMF must include the percent of RAP used.

Provide enough space for meeting RAP handling requirements at your facility. Provide a clean, graded, well-drained area for stockpiles. Prevent material contamination and segregation.

If RAP is from multiple sources, blend the RAP thoroughly and completely. RAP stockpiles must be homogeneous.

Isolate the processed RAP stockpiles from other materials. Store processed RAP in conical or longitudinal stockpiles. Processed RAP must not be agglomerated or be allowed to congeal in large stockpiles.

AASHTO T 324 (Modified) is AASHTO T 324, "Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA)," with the following parameters:

1. Target air voids must equal  $7 \pm 1$  percent
2. Number of test specimens must be 4
3. Test specimen must be a 6-inch gyratory compacted specimen
4. Test temperature must be set at  $140 \pm 2$  degrees F
5. Measurements for impression must be taken at every 100 passes
6. Inflection point defined as the number of wheel passes at the intersection of the creep slope and the stripping slope
7. Testing shut off must be set at 25,000 passes

**39-1.02F(2) Substitution Rate of 15 Percent or Less**

For a RAP substitution rate of 15 percent or less, you may stockpile RAP during the entire project.

**39-1.02F(3) Substitution Rate Greater than 15 Percent**

For a RAP substitution rate greater than 15 percent, fractionate RAP into 2 sizes, a coarse fraction RAP retained on 1/4-inch screen and a fine fraction RAP passing 1/4-inch screen.

Sample and test processed RAP at a minimum frequency of 1 sample per 1000 tons with a minimum of 6 samples for each processed RAP stockpile. The asphalt binder content and specific gravity must meet the processed RAP quality characteristics. If a processed RAP stockpile is augmented, sample and test processed RAP quality characteristics at a minimum frequency of 1 sample per 500 tons of augmented RAP.

The processed RAP asphalt binder content must be within  $\pm 2.0$  percent of the average processed RAP stockpile asphalt binder content when tested under ASTM D 2172, Method B. If a new processed RAP stockpile is required, the average binder content of the new processed RAP stockpile must be within  $\pm 2.0$  percent of the average binder content of the original processed RAP stockpile.

The maximum specific gravity for processed RAP must be within  $\pm 0.06$  when tested under California Test 309 of the average maximum specific gravity reported on page 4 of your *Contractor Hot Mix Asphalt Design Data* form.

**Replace "less than 10 percent" in note "b" in the table in the 5th paragraph of section 39-1.02E with:**

01-20-12

10 percent or less

**Replace items 7 and 8 in the 5th paragraph of section 39-1.03A with:**

02-22-13

7. Substitution rate by more than 5 percent if your assigned RAP substitution rate is 15 percent or less
8. Substitution rate by more than 3 percent if your assigned RAP substitution rate is greater than 15 percent
9. Average binder content by more than 2 percent from the average binder content of the original processed RAP stockpile used in the mix design
10. Maximum specific gravity of processed RAP by more than  $\pm 0.060$  from the average maximum specific gravity of processed RAP reported on page 4 of your *Contractor Hot Mix Asphalt Design Data* form
11. Any material in the JMF

**Replace the 1st paragraph of section 39-1.03B with:**

02-22-13

Perform a mix design that produces HMA with the values for the quality characteristics shown in the following table:

**HMA Mix Design Requirements**

Quality characteristic	Test method	HMA type		
		A	B	RHMA-G
Air void content (%)	California Test 367	4.0	4.0	Section 39-1.03B
Voids in mineral aggregate (% min.) No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367	17.0	17.0	--
		15.0	15.0	--
		14.0	14.0	18.0–23.0
		13.0	13.0	18.0–23.0
Voids filled with asphalt (%) No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367	65.0–75.0	65.0–75.0	Note a
		65.0–75.0	65.0–75.0	
		65.0–75.0	65.0–75.0	
		65.0–75.0	65.0–75.0	
Dust proportion No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 367	0.6–1.2	0.6–1.2	Note a
		0.6–1.2	0.6–1.2	
Stabilometer value (min.) No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 366	30	30	--
		37	35	23

<sup>a</sup> Report this value in the JMF submittal.

For RAP substitution rate greater than 15 percent, the mix design must comply with the additional quality characteristics shown in the following table:

**Additional HMA Mix Design Requirements  
for RAP Substitution Rate Greater Than 15 Percent**

Quality characteristic	Test method	HMA type		
		A	B	RHMA-G
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth)	AASHTO T 324 (Modified) <sup>a</sup>			
PG-58		10,000	10,000	--
PG-64		15,000	15,000	
PG-70		20,000	20,000	
PG-76 or higher		25,000	25,000	
Hamburg wheel track (inflection point minimum number of passes)	AASHTO T 324 (Modified) <sup>a</sup>			
PG-58		10,000	10,000	--
PG-64		10,000	10,000	
PG-70		12,500	12,500	
PG-76 or higher		15000	15000	
Moisture susceptibility (minimum dry strength, psi)	California Test 371 <sup>a</sup>	120	120	--
Moisture susceptibility (tensile strength ration, %)	California Test 371 <sup>a</sup>	70	70	--

<sup>a</sup>Test plant produced HMA.

For HMA with RAP, the maximum binder replacement must be 25.0 percent of OBC for surface course and 40.0 percent of OBC for lower courses.

For HMA with a binder replacement less than or equal to 25 percent of OBC, you may request that the PG asphalt binder grade with upper and lower temperature classifications be reduced by 6 degrees C from the specified grade.

For HMA with a binder replacement greater than 25 percent but less than or equal to 40 percent of OBC, you must use a PG asphalt binder grade with upper and lower temperature classifications reduced by 6 degrees C from the specified grade.

**Replace item 4 in the list in the 1st paragraph of section 39-1.03C with:**

4. JMF renewal on a *Caltrans Job Mix Formula Renewal* form, if applicable

01-20-12

**Add after the last paragraph of section 39-1.03C:**

For RAP substitution rate greater than 15 percent, submit with the JMF submittal:

1. California Test 371 tensile strength ratio and minimum dry strength test results
2. AASHTO T 324 (Modified) test results

02-22-13

For RAP substitution rate greater than 15 percent, submit California Test 371 and AASHTO T 324 (Modified) test results to the Engineer and to:

Moisture\_Tests@dot.ca.gov

**Replace the 2nd paragraph of section 39-1.03E with:**

04-20-12

Use the OBC specified on your *Contractor Hot Mix Asphalt Design Data* form. No adjustments to asphalt binder content are allowed. Based on your testing and production experience, you may submit an adjusted aggregate gradation TV on a *Contractor Job Mix Formula Proposal* form before verification testing. Aggregate gradation TV must be within the TV limits specified in the aggregate gradation tables.

**Add between the 3rd and 4th paragraphs of section 39-1.03E:**

04-20-12

Asphalt binder set point for HMA must be the OBC specified on your *Contractor Hot Mix Asphalt Design Data* form. When RAP is used, asphalt binder set point for HMA must be:

$$\text{Asphalt Binder Set Point} = \frac{\frac{BC_{OBC}}{\left(1 - \frac{BC_{OBC}}{100}\right)} - R_{RAP} \left[ \frac{BC_{RAP}}{\left(1 - \frac{BC_{RAP}}{100}\right)} \right]}{100 + \frac{BC_{OBC}}{\left(1 - \frac{BC_{OBC}}{100}\right)}}$$

Where:

$BC_{OBC}$  = optimum asphalt binder content, percent based on total weight of mix

$R_{RAP}$  = RAP ratio by weight of aggregate

$BC_{RAP}$  = asphalt binder content of RAP, percent based on total weight of RAP mix

**Replace item 4 in the list in the 8th paragraph of section 39-1.03E with:**

04-20-12

4. HMA quality specified in the table titled "HMA Mix Design Requirements" except:
  - 4.1. Air void content, design value  $\pm 2.0$  percent
  - 4.2. Voids filled with asphalt, report only
  - 4.3. Dust proportion, report only

**Replace the 12th paragraph of section 39-1.03E with:**

04-20-12

If tests on plant-produced samples do not verify the JMF, the Engineer notifies you and you must submit a new JMF or submit an adjusted JMF based on your testing. JMF adjustments may include a change in aggregate gradation TV within the TV limits specified in the aggregate gradation tables.

**Replace the 14th paragraph of section 39-1.03E with:**

01-20-12

A verified JMF is valid for 12 months.

**Replace the last sentence in the 15th paragraph of section 39-1.03E with:**

01-20-12

This deduction does not apply to verifications initiated by the Engineer or JMF renewal.

**Replace the 16th paragraph of section 39-1.03E with:**

02-22-13

Except for RAP substitution rate greater than 15 percent, for any HMA produced under the QC/QA process the Department does not use California Test 371 test results for verification.

**Add between the 1st and 2nd paragraphs of section 39-1.03F:**

04-20-12

Target asphalt binder content on your Contractor *Job Mix Formula Proposal* form and the OBC specified on your *Contractor Hot Mix Asphalt Design Data* form must be the same.

**Delete the 4th paragraph of section 39-1.03F.**

01-20-12

**Replace items 3 and 5 in the list in the 6th paragraph of section 39-1.03F with:**

01-20-12

3. Engineer verifies each proposed JMF renewal within 20 days of receiving verification samples.
5. For each HMA type and aggregate gradation specified, the Engineer verifies at the Department's expense 1 proposed JMF renewal within a 12-month period.

**Add between the 6th and 7th paragraphs of section 39-1.03F:**

01-20-12

The most recent aggregate quality test results within the past 12 months may be used for verification of JMF renewal or the Engineer may perform aggregate quality tests for verification of JMF renewal.

**Replace section 39-1.03G with:**

04-20-12

**39-1.03G Job Mix Formula Modification**

For an accepted JMF, you may change asphalt binder source one time during production.

Submit your modified JMF request a minimum of 3 business days before production. Each modified JMF submittal must consist of:

1. Proposed modified JMF on *Contractor Job Mix Formula Proposal* form
2. Mix design records on *Contractor Hot Mix Asphalt Design Data* form for the accepted JMF to be modified
3. JMF verification on *Hot Mix Asphalt Verification* form for the accepted JMF to be modified
4. Quality characteristics test results for the modified JMF as specified in section 39-1.03B. Perform tests at the mix design OBC as shown on the *Contractor Asphalt Mix Design Data* form
5. If required, California Test 371 test results for the modified JMF.

With an accepted modified JMF submittal, the Engineer verifies each modified JMF within 5 business days of receiving all verification samples. If California Test 371 is required, the Engineer tests for California Test 371 within 10 days of receiving verification samples.

The Engineer verifies the modified JMF after the modified JMF HMA is placed on the project and verification samples are taken within the first 750 tons following sampling requirements in section 39-1.03E, "Job Mix Formula Verification." The Engineer tests verification samples for compliance with:

1. Stability as shown in the table titled "HMA Mix Design Requirements"
2. Air void content at design value  $\pm 2.0$  percent
3. Voids in mineral aggregate as shown in the table titled "HMA Mix Design Requirements"
4. Voids filled with asphalt, report only

5. Dust proportion, report only

If the modified JMF is verified, the Engineer revises your *Hot Mix Asphalt Verification* form to include the new asphalt binder source. Your revised form will have the same expiration date as the original form.

If a modified JMF is not verified, stop production and any HMA placed using the modified JMF is rejected.

The Engineer deducts \$2,000 from payments for each modified JMF verification. The Engineer deducts an additional \$2,000 for each modified JMF verification that requires California Test 371.

**Add to section 39-1.03:**

01-20-12

**39-1.03H Job Mix Formula Acceptance**

You may start HMA production if:

1. The Engineer's review of the JMF shows compliance with the specifications.
2. The Department has verified the JMF within 12 months before HMA production.
3. The Engineer accepts the verified JMF.

**Replace "3 days" in the 1st paragraph of section 39-1.04A with:**

01-20-12

3 business days

**Replace the 2nd sentence in the 2nd paragraph of section 39-1.04A with:**

01-20-12

During production, take samples under California Test 125. You may sample HMA from:

**Replace the 2nd paragraph of section 39-1.04E with:**

02-22-13

For RAP substitution rate of 15 percent or less, sample RAP once daily.

For RAP substitution rate of greater than 15percent, sample processed RAP twice daily.

Perform QC testing for processed RAP aggregate gradation under California Test 367, appendix B, and submit the results with the combined aggregate gradation.

**Replace "5 days" in the 1st paragraph of section 39-1.06 with:**

01-20-12

5 business days

**Replace the 3rd paragraph of section 39-1.08A with:**

04-20-12

During production, you may adjust hot or cold feed proportion controls for virgin aggregate and RAP.

**Add to section 39-1.08A:**

04-20-12

During production, asphalt binder set point for HMA Type A, HMA Type B, HMA Type C, and RHMA-G must be the OBC shown in *Contractor Hot Mix Asphalt Design Data* form. For OGFC, asphalt binder set

point must be the OBC shown on *Caltrans Hot Mix Asphalt Verification* form. If RAP is used, asphalt binder set point for HMA must be calculated as specified in section 39-1.03E.

02-22-13

For RAP substitution rate of 15 percent or less, you may adjust the RAP by  $\pm 5$  percent.

For RAP substitution greater than 15, you may adjust the RAP by  $\pm 3$  percent.

04-20-12

You must request adjustments to the plant asphalt binder set point based on new RAP stockpiles average asphalt binder content. Do not adjust the HMA plant asphalt binder set point until authorized.

**Replace the 3rd paragraph of section 39-1.08B with:**

09-16-11

Asphalt rubber binder must be from 375 to 425 degrees F when mixed with aggregate.

**Replace section 39-1.11 with:**

01-18-13

**39-1.11 CONSTRUCTION**

**39-1.11A General**

Do not place HMA on wet pavement or a frozen surface.

You may deposit HMA in a windrow and load it in the paver if:

1. Paver is equipped with a hopper that automatically feeds the screed
2. Loading equipment can pick up the windrowed material and deposit it in the paver hopper without damaging base material
3. Activities for deposit, pickup, loading, and paving are continuous
4. HMA temperature in the windrow does not fall below 260 degrees F

You may place HMA in 1 or more layers on areas less than 5 feet wide and outside the traveled way, including shoulders. You may use mechanical equipment other than a paver for these areas. The equipment must produce uniform smoothness and texture.

HMA handled, spread, or windrowed must not stain the finished surface of any improvement, including pavement.

Do not use petroleum products such as kerosene or diesel fuel to release HMA from trucks, spreaders, or compactors.

HMA must be free of:

1. Segregation
2. Coarse or fine aggregate pockets
3. Hardened lumps

**39-1.11B Longitudinal Joints**

**39-1.11B(1) General**

Longitudinal joints in the top layer must match specified lane edges. Alternate the longitudinal joint offsets in the lower layers at least 0.5 foot from each side of the specified lane edges. You may request other longitudinal joint placement patterns.

A vertical longitudinal joint of more than 0.15 ft is not allowed at any time between adjacent lanes open to traffic.

For HMA thickness of 0.15 ft or less, the distance between the ends of the adjacent surfaced lanes at the end of each day's work must not be greater than can be completed in the following day of normal paving.

For HMA thickness greater than 0.15 ft, you must place HMA on adjacent traveled way lanes so that at the end of each work shift the distance between the ends of HMA layers on adjacent lanes is from 5 to 10 feet. Place additional HMA along the transverse edge at each lane's end and along the exposed longitudinal edges between adjacent lanes. Hand rake and compact the additional HMA to form temporary conforms. You may place Kraft paper or another authorized bond breaker under the conform tapers to facilitate the taper removal when paving operations resume.

### **39-1.11B(2) Tapered Notched Wedge**

For divided highways with an HMA lift thickness greater than 0.15 foot, you may construct a 1-foot wide tapered notched wedge joint as a longitudinal joint between adjacent lanes open to traffic. A vertical notch of 0.75 inch maximum must be placed at the top and bottom of the tapered wedge.

The tapered notched wedge must retain its shape while exposed to traffic. Pave the adjacent lane within 1 day.

Construct the tapered portion of the tapered notched wedge with an authorized strike-off device. The strike-off device must provide a uniform slope and must not restrict the main screed of the paver.

You may use a device attached to the screed to construct longitudinal joints that will form a tapered notched wedge in a single pass. The tapered notched wedge must be compacted to a minimum of 91 percent compaction.

Perform QC testing on the completed tapered notch wedge joint as follows:

1. Perform field compaction tests at the rate of 1 test for each 750-foot section along the joint. Select random locations for testing within each 750-foot section.
2. Perform field compaction tests at the centerline of the joint, 6 inches from the upper vertical notch, after the adjacent lane is placed and before opening the pavement to traffic.
3. Determine maximum density test results.
4. Determine percent compaction of the longitudinal joint as the ratio of the average of the field compaction values and the maximum density test results.

For HMA under QC/QA construction process, the additional quality control compaction results associated with the tapered notch wedge will not be included in the computation of any quality factor and process control.

For acceptance of the completed tapered notch wedge joint, take two 4- or 6-inch diameter cores 6 inches from the upper vertical notch of the completed longitudinal joint for every 3,000 feet at locations designated by the Engineer. Take cores after the adjacent lane is placed and before opening the pavement to traffic. Cores must be taken in the presence of the Engineer and must be marked to identify the test sites. Submit the cores. One core will be used for determination of the field density and 1 core will be used for dispute resolution. The Engineer determines:

1. Field compaction by measuring the bulk specific gravity of the cores under California Test 308, Method A
2. Percent compaction as the ratio of the average of the bulk specific gravity of the core for each day's production to the maximum density test value

For HMA under QC/QA construction process, the additional quality assurance testing by the Engineer to determine field compaction associated with the tapered notch wedge will not be included in the Engineer's verification testing and in the computation of any quality factor and process control.

Determine percent compaction values each day the joint is completed and submit values within 24 hours of testing. If the percent compaction of 1 day's production is less than 91 percent, that day's notched wedge joint is rejected. Discontinue placement of the tapered notched wedge and notify the Engineer of changes you will make to your construction process in order to meet the specifications.

For HMA under QC/QA construction process, quantities of HMA placed in the completed longitudinal joint will have a quality factor  $QF_{QC5}$  of 1.0.

### **39-1.11C Widening Existing Pavement**

If widening existing pavement, construct new pavement structure to match the elevation of the existing pavement's edge before placing HMA over the existing pavement.

### **39-1.11D Shoulders, Medians, and Other Road Connections**

Until the adjoining through lane's top layer has been paved, do not pave the top layer of:

1. Shoulders
2. Tapers
3. Transitions
4. Road connections
5. Driveways
6. Curve widenings
7. Chain control lanes
8. Turnouts
9. Turn pockets

If the number of lanes changes, pave each through lane's top layer before paving a tapering lane's top layer. Simultaneous to paving a through lane's top layer, you may pave an adjoining area's top layer, including shoulders. Do not operate spreading equipment on any area's top layer until completing final compaction.

### **39-1.11E Leveling**

If leveling with HMA is specified, fill and level irregularities and ruts with HMA before spreading HMA over the base, existing surfaces, or bridge decks. You may use mechanical equipment other than a paver for these areas. The equipment must produce uniform smoothness and texture. HMA used to change an existing surface's cross slope or profile is not paid for as HMA (leveling).

If placing HMA against the edge of existing pavement, sawcut or grind the pavement straight and vertical along the joint and remove extraneous material.

### **39-1.11F Compaction**

Rolling must leave the completed surface compacted and smooth without tearing, cracking, or shoving. Complete finish rolling activities before the pavement surface temperature is:

1. Below 150 degrees F for HMA with unmodified binder
2. Below 140 degrees F for HMA with modified binder
3. Below 200 degrees F for RHMA-G

If a vibratory roller is used as a finish roller, turn the vibrator off.

Do not use a pneumatic-tired roller to compact RHMA-G.

For Standard and QC/QA construction processes, if 3/4-inch aggregate grading is specified, you may use a 1/2-inch aggregate grading if the specified total paved thickness is at least 0.15 foot and less than 0.20 foot thick.

Spread and compact HMA under sections 39-3.03 and 39-3.04 if any of the following applies:

1. Specified paved thickness is less than 0.15 foot.
2. Specified paved thickness is less than 0.20 foot and 3/4-inch aggregate grading is specified and used.
3. You spread and compact at:
  - 3.1. Asphalt concrete surfacing replacement areas
  - 3.2. Leveling courses
  - 3.3. Areas for which the Engineer determines conventional compaction and compaction measurement methods are impeded

Do not open new HMA pavement to public traffic until its mid-depth temperature is below 160 degrees F.

If you request and if authorized, you may cool HMA Type A and Type B with water when rolling activities are complete. Apply water under section 17-3.

Spread sand at a rate from 1 to 2 lb/sq yd on new RHMA-G, RHMA-O, and RHMA-O-HB pavement when finish rolling is complete. Sand must be free of clay or organic matter. Sand must comply with section 90-1.02C(4)(c). Keep traffic off the pavement until spreading sand is complete.

**Replace the 5th and 6th paragraphs of section 39-1.12C with:**

07-20-12

On tangents and horizontal curves with a centerline radius of curvature 2,000 feet or more, the  $PI_0$  must be at most 2.5 inches per 0.1-mile section.

On horizontal curves with a centerline radius of curvature between 1,000 feet and 2,000 feet including pavement within the superelevation transitions, the  $PI_0$  must be at most 5 inches per 0.1-mile section.

**Add to section 39-1.12:**

01-20-12

**39-1.12E Reserved**

**Add to section 39-1.14:**

01-20-12

Prepare the area to receive HMA for miscellaneous areas and dikes, including any excavation and backfill as needed.

**Replace "6.8" in item 3 in the list in the 4th paragraph of section 39-1.14 with:**

04-20-12

6.4

**Replace "6.0" in item 3 in the list in the 4th paragraph of section 39-1.14 with:**

04-20-12

5.7

**Replace "6.8" in the 1st paragraph of section 39-1.15B with:**

04-20-12

6.4

**Replace "6.0" in the 1st paragraph of section 39-1.15B with:**

04-20-12

5.7

**Replace the 1st paragraph of section 39-2.02B with:**

02-22-13

Perform sampling and testing at the specified frequency for the quality characteristics shown in the following table:

**Minimum Quality Control—Standard Construction Process**

Quality characteristic	Test method	Minimum sampling and testing frequency	HMA type			
			A	B	RHMA-G	OGFC
Aggregate gradation <sup>a</sup>	California Test 202	1 per 750 tons and any remaining part at the end of the project	JMF ± Tolerance <sup>b</sup>			
Sand equivalent (min) <sup>c</sup>	California Test 217		47	42	47	--
Asphalt binder content (%)	California Test 379 or 382		JMF±0.40	JMF±0.40	JMF ± 0.40	JMF ± 0.40
HMA moisture content (% max)	California Test 226 or 370	1 per 2,500 tons but not less than 1 per paving day	1.0	1.0	1.0	1.0
Field compaction (% max. theoretical density) <sup>d,e</sup>	QC plan	2 per business day (min.)	91–97	91–97	91–97	--
Stabilometer value (min) <sup>c</sup> No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 366	1 per 4,000 tons or 2 per 5 business days, whichever is greater	30	30	--	--
			37	35	23	--
Air void content (%) <sup>c,f</sup>	California Test 367		4 ± 2	4 ± 2	TV ± 2	--
Aggregate moisture content at continuous mixing plants and RAP moisture content at continuous mixing plants and batch mixing plants <sup>g</sup>	California Test 226 or 370	2 per day during production	--	--	--	--
Percent of crushed particles coarse aggregate (% min) One fractured face Two fractured faces Fine aggregate (% min) (Passing no. 4 sieve and retained on no. 8 sieve.) One fractured face	California Test 205	As designated in the QC plan. At least once per project	90	25	--	90
			75	--	90	75
Los Angeles Rattler (% max) Loss at 100 rev.	California Test 211		70	20	70	90
			12	--	12	12

Loss at 500 rev.			45	50	40	40
Flat and elongated particles (% max by weight @ 5:1)	California Test 235		Report only	Report only	Report only	Report only
Fine aggregate angularity (% min) <sup>h</sup>	California Test 234		45	45	45	--
Voids filled with asphalt (%) <sup>i</sup> No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367		65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	Report only	--
Voids in mineral aggregate (% min) <sup>i</sup> No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367		17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 18.0–23.0	--
Dust proportion <sup>l</sup> No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 367		0.6-1.2 0.6–1.2	0.6-1.2 0.6–1.2	Report only	--
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) <sup>j</sup> PG-58 PG-64 PG-70 PG-76 or higher	AASHTO T 324 (Modified)	1 per 10,000 tons or 1 per project whichever is more	10,000 15,000 20,000 25,000	10,000 15,000 20,000 25,000	--	--
Hamburg wheel track (inflection point minimum number of passes) <sup>j</sup> PG-58 PG-64 PG-70 PG-76 or higher	AASHTO T 324 (Modified)	1 per 10,000 tons or 1 per project whichever is more	10,000 10,000 12,500 15000	10,000 10,000 12,500 15000	--	--
Moisture susceptibility (minimum dry strength, psi) <sup>j</sup>	California Test 371	For RAP ≥15% 1 per 10,000 tons or 1 per project whichever is greater	120	120	--	--
Moisture susceptibility (tensile strength ratio, %) <sup>j</sup>	California Test 371	For RAP ≥15% 1 per 10,000 tons or 1	70	70	--	--

		per project whichever is greater				
Smoothness	Section 39-1.12	--	12-foot straight- edge, must grind, and PI <sub>0</sub>			
Asphalt rubber binder viscosity @ 375 °F, centipoises	Section 39-1.02D	Section 39-1.04C	--	--	1,500– 4,000	1,500– 4,000
Asphalt modifier	Section 39-1.02D	Section 39-1.04C	--	--	Section 39-1.02D	Section 39-1.02D
CRM	Section 39-1.02D	Section 39-1.04C	--	--	Section 39-1.02D	Section 39-1.02D

<sup>a</sup> Determine combined aggregate gradation containing RAP under California Test 367.

<sup>b</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.

<sup>c</sup> Report the average of 3 tests from a single split sample.

<sup>d</sup> Determine field compaction for any of the following conditions:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.

<sup>e</sup> To determine field compaction use:

1. In-place density measurements using the method specified in your QC plan.
2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.

<sup>f</sup> Determine the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

<sup>g</sup> For adjusting the plant controller at the HMA plant.

<sup>h</sup> The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

<sup>i</sup> Report only.

<sup>j</sup> Applies to RAP substitution rate greater than 15 percent.

**Replace the 1st paragraph of section 39-2.03A with:**

02-22-13

The Department samples for acceptance testing and tests for the quality characteristics shown in the following table:

**HMA Acceptance—Standard Construction Process**

Quality characteristic				Test method	HMA type			
					A	B	RHMA-G	OGFC
Aggregate gradation <sup>a</sup>				California Test 202	JMF ± tolerance <sup>c</sup>			
Sieve	3/4"	1/2"	3/8"					
1/2"	X <sup>b</sup>							
3/8"		X						
No. 4			X					
No. 8	X	X	X					
No. 200	X	X	X					
Sand equivalent (min) <sup>d</sup>				California Test 217	47	42	47	--
Asphalt binder content (%)				California Test 379 or 382	JMF±0.40	JMF±0.40	JMF ± 0.40	JMF ± 0.40
HMA moisture content (% max)				California Test 226 or 370	1.0	1.0	1.0	1.0
Field compaction (% max. theoretical density) <sup>e, f</sup>				California Test 375	91–97	91–97	91–97	--
Stabilometer value (min) <sup>d</sup>				California Test 366	30	30	--	--
No. 4 and 3/8" gradings								
1/2" and 3/4" gradings					37	35	23	--
Air void content (%) <sup>d, g</sup>				California Test 367	4 ± 2	4 ± 2	TV ± 2	--
Percent of crushed particles				California Test 205				
Coarse aggregate (% min)								
One fractured face								
Two fractured faces								
Fine aggregate (% min)								
(Passing no. 4 sieve and retained on no. 8 sieve.)								
One fractured face					70	20	70	90
Los Angeles Rattler (% max)				California Test 211	12	--	12	12
Loss at 100 rev.								
Loss at 500 rev.					45	50	40	40
Fine aggregate angularity (% min) <sup>h</sup>				California Test 234	45	45	45	--
Flat and elongated particles (% max by weight @ 5:1)				California Test 235	Report only	Report only	Report only	Report only
Voids filled with asphalt (%) <sup>i</sup>				California Test 367	65.0–75.0	65.0–75.0	Report only	--
No. 4 grading								
3/8" grading								
1/2" grading								
3/4" grading					65.0–75.0	65.0–75.0		
Voids in mineral aggregate (% min) <sup>i</sup>				California Test 367				
No. 4 grading								
3/8" grading								
1/2" grading								
3/4" grading					17.0	17.0	--	--
					15.0	15.0	--	
					14.0	14.0	18.0–23.0	
					13.0	13.0	18.0–23.0	
Dust proportion <sup>i</sup>				California			Report only	--

No. 4 and 3/8" gradings 1/2" and 3/4" gradings	Test 367	0.6-1.2 0.6-1.2	0.6-1.2 0.6-1.2		
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) <sup>j</sup> PG-58 PG-64 PG-70 PG-76 or higher	AASHTO T 324 (Modified)	10,000 15,000 20,000 25,000	10,000 15,000 20,000 25,000	--	--
Hamburg wheel track (inflection point minimum number of passes) <sup>j</sup> PG-58 PG-64 PG-70 PG-76 or higher	AASHTO T 324 (Modified)	10,000 10,000 12,500 15000	10,000 10,000 12,500 15000	--	--
Moisture susceptibility (minimum dry strength, psi) <sup>j</sup>	California Test 371	120	120	--	--
Moisture susceptibility (tensile strength ration, %) <sup>j</sup>	California Test 371	70	70	--	--
Smoothness	Section 39-1.12	12-foot straight- edge, must grind, and PI <sub>0</sub>	12-foot straight- edge, must grind, and PI <sub>0</sub>	12-foot straight- edge, must grind, and PI <sub>0</sub>	12-foot straight- edge and must grind
Asphalt binder	Various	Section 92	Section 92	Section 92	Section 92
Asphalt rubber binder	Various	--	--	Section 92- 1.01D(2) and section 39-1.02D	Section 92-1.01D(2) and section 39-1.02D
Asphalt modifier	Various	--	--	Section 39-1.02D	Section 39-1.02D
CRM	Various	--	--	Section 39-1.02D	Section 39-1.02D

<sup>a</sup> The Engineer determines combined aggregate gradations containing RAP under California Test 367.

<sup>b</sup> "X" denotes the sieves the Engineer tests for the specified aggregate gradation.

<sup>c</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.

<sup>d</sup> The Engineer reports the average of 3 tests from a single split sample.

<sup>e</sup> The Engineer determines field compaction for any of the following conditions:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.

<sup>f</sup> To determine field compaction, the Engineer uses:

1. California Test 308, Method A, to determine in-place density of each density core.
2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.

<sup>g</sup> The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

<sup>h</sup> The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

<sup>i</sup> Report only.

<sup>j</sup> Applies to RAP substitution rate greater than 15 percent.

**Replace the 5th paragraph of section 39-2.03A with:**

01-20-12

The Engineer determines the percent of maximum theoretical density from density cores taken from the final layer measured the full depth of the total paved HMA thickness if any of the following applies:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot and any layer is less than 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.2 foot and any layer is less than 0.20 foot.

**Replace the 1st paragraph of section 39-3.02A with:**

02-22-13

The Department samples for acceptance testing and tests for the quality characteristics shown in the following table:

**HMA Acceptance—Method Construction Process**

Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Aggregate gradation <sup>a</sup>	California Test 202	JMF ± tolerance <sup>b</sup>	JMF ± tolerance <sup>b</sup>	JMF ± tolerance <sup>b</sup>	JMF ± tolerance <sup>b</sup>
Sand equivalent (min) <sup>c</sup>	California Test 217	47	42	47	--
Asphalt binder content (%)	California Test 379 or 382	JMF±0.40	JMF±0.40	JMF ± 0.40	JMF ± 0.40
HMA moisture content (% max)	California Test 226 or 370	1.0	1.0	1.0	1.0
Stabilometer value (min) <sup>c</sup> No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 366	30 37	30 35	-- 23	-- --
Percent of crushed particles Coarse aggregate (% min) One fractured face Two fractured faces Fine aggregate (% min) (Passing no. 4 sieve and retained on no. 8 sieve.) One fractured face	California Test 205	90 75 70	25 -- 20	-- 90 70	90 75 90
Los Angeles Rattler (% max) Loss at 100 rev. Loss at 500 rev.	California Test 211	12 45	-- 50	12 40	12 40
Air void content (%) <sup>c, d</sup>	California Test 367	4 ± 2	4 ± 2	TV ± 2	--
Fine aggregate angularity (% min) <sup>e</sup>	California Test 234	45	45	45	--
Flat and elongated particles (% max by weight @ 5:1)	California Test 235	Report only	Report only	Report only	Report only
Voids filled with asphalt (%) <sup>f</sup> No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367	65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	Report only	--
Voids in mineral aggregate (% min) <sup>f</sup> No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367	17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 18.0–23.0	--
Dust proportion <sup>g</sup> No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 367	0.6–1.2 0.6–1.2	0.6–1.2 0.6–1.2	Report only	--
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) <sup>g</sup> PG-58 PG-64	AASHTO T 324 (Modified)	10,000 15,000	10,000 15,000	--	--

PG-70 PG-76 or higher		20,000 25,000	20,000 25,000		
Hamburg wheel track (inflection point minimum number of passes) <sup>g</sup>	AASHTO T 324 (Modified)			--	--
PG-58		10,000	10,000		
PG-64		10,000	10,000		
PG-70		12,500	12,500		
PG-76 or higher		15000	15000		
Moisture susceptibility (minimum dry strength, psi) <sup>g</sup>	California Test 371	120	120	--	--
Moisture susceptibility (tensile strength ration, %) <sup>g</sup>	California Test 371	70	70	--	--
Smoothness	Section 39-1.12	12-foot straight- edge and must-grind	12-foot straight- edge and must-grind	12-foot straight- edge and must-grind	12-foot straight- edge and must-grind
Asphalt binder	Various	Section 92	Section 92	Section 92	Section 92
Asphalt rubber binder	Various	--	--	Section 92- 1.01D(2) and section 39-1.02D	Section 92- 1.01D(2) and section 39-1.02D
Asphalt modifier	Various	--	--	Section 39-1.02D	Section 39-1.02D
CRM	Various	--	--	Section 39-1.02D	Section 39-1.02D

<sup>a</sup> The Engineer determines combined aggregate gradations containing RAP under California Test 367.

<sup>b</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.

<sup>c</sup> The Engineer reports the average of 3 tests from a single split sample.

<sup>d</sup> The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

<sup>e</sup> The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

<sup>f</sup> Report only.

<sup>g</sup> Applies to RAP substitution rate greater than 15 percent.

**Replace "280 degrees F" in item 2 in the list in the 6th paragraph of section 39-3.04 with:**

285 degrees F

01-20-12

**Replace "5,000" in the 5th paragraph of section 39-4.02C with:**

10,000

02-22-13

**Replace the 7th paragraph of section 39-4.02C with:**

Except for RAP substitution rate of greater than 15 percent, the Department does not use results from California Test 371 to determine specification compliance.

02-22-13

**Replace the 8th paragraph of section 39-4.02C with:**

02-22-13

Comply with the values for the HMA quality characteristics and minimum random sampling and testing for quality control shown in the following table:

**Minimum Quality Control—QC/QA Construction Process**

Quality characteristic	Test method	Minimum sampling and testing frequency	HMA Type			Location of sampling	Maximum reporting time allowance
			A	B	RHMA-G		
Aggregate gradation <sup>a</sup>	California Test 202	1 per 750 tons	JMF ± tolerance <sup>b</sup>	JMF ± tolerance <sup>b</sup>	JMF ± tolerance <sup>b</sup>	California Test 125	24 hours
Asphalt binder content (%)	California Test 379 or 382		JMF±0.40	JMF±0.40	JMF ±0.40	Loose mix behind paver See California Test 125	
Field compaction (% max. theoretical density) <sup>c,d</sup>	QC plan		92–96	92–96	91–96	QC plan	
Aggregate moisture content at continuous mixing plants and RAP moisture content at continuous mixing plants and batch mixing plants <sup>e</sup>	California Test 226 or 370	2 per day during production	--	--	--	Stock-piles or cold feed belts	--
Sand equivalent (min) <sup>f</sup>	California Test 217	1 per 750 tons	47	42	47	California Test 125	24 hours
HMA moisture content (% max)	California Test 226 or 370	1 per 2,500 tons but not less than 1 per paving day	1.0	1.0	1.0	Loose Mix Behind Paver See California Test 125	24 hours
Stabilometer value (min) <sup>f</sup>	California Test 366	1 per 4,000 tons or 2 per 5 business days, whichever is greater	30	30	--		48 hours
No. 4 and 3/8" gradings 1/2" and 3/4" gradings			37	35	23		
Air void content (%) <sup>f,g</sup>	California Test 367		4 ± 2	4 ± 2	TV ± 2		

Percent of crushed particles coarse aggregate (% min.): One fractured face Two fractured faces	California Test 205	As designated in QC plan.  At least once per project.	90	25	--	California Test 125	48 hours
			75	--	90		
Fine aggregate (% min) (Passing no. 4 sieve and retained on no. 8 sieve): One fractured face			70	20	70		
Los Angeles Rattler (% max): Loss at 100 rev. Loss at 500 rev.	California Test 211		12	--	12	California Test 125	
			45	50	40		
Fine aggregate angularity (% min) <sup>h</sup>	California Test 234		45	45	45	California Test 125	
Flat and elongated particle (% max by weight @ 5:1)	California Test 235		Report only	Report only	Report only	California Test 125	
Voids filled with asphalt (%) <sup>i</sup>  No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367				Report only		
			65.0–75.0	65.0–75.0			
		65.0–75.0	65.0–75.0				
		65.0–75.0	65.0–75.0				
		65.0–75.0	65.0–75.0				
Voids in mineral aggregate (% min.) <sup>i</sup>  No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367						
		17.0	17.0	--			
		15.0	15.0	--			
		14.0	14.0	18.0–23.0			
		13.0	13.0	18.0–23.0			

Dust proportion <sup>i</sup>	California Test 367						
No. 4 and 3/8" gradings			0.6–1.2	0.6–1.2	Report only		
1/2" and 3/4" gradings			0.6–1.2	0.6–1.2			
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) <sup>i</sup>	AASHTO T 324 (Modified)	1 per 10,000 tons or 1 per project whichever is greater			--	--	
PG-58			10,000	10,000			
PG-64			15,000	15,000			
PG-70			20,000	20,000			
PG-76 or higher			25,000	25,000			
Hamburg wheel track (inflection point minimum number of passes) <sup>i</sup>	AASHTO T 324 (Modified)	1 per 10,000 tons or 1 per project whichever is greater			--	--	
PG-58			10,000	10,000			
PG-64			10,000	10,000			
PG-70			12,500	12,500			
PG-76 or higher			15000	15000			
Moisture susceptibility (minimum dry strength, psi) <sup>i</sup>	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	120	120	--	--	
Moisture susceptibility (tensile strength ratio, %) <sup>j</sup>	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	70	70	70	--	
Smoothness	Section 39-1.12	--	12-foot straight-edge, must-grind, and Pl <sub>0</sub>	12-foot straight-edge, must-grind, and Pl <sub>0</sub>	12-foot straight-edge, must-grind, and Pl <sub>0</sub>	--	
Asphalt rubber binder viscosity @ 375 °F, centipoises	Section 39-1.02D	--	--	--	1,500–4,000	Section 39-1.02D	24 hours
CRM	Section 39-1.02D	--	--	--	Section 39-1.02D	Section 39-1.02D	48 hours

- <sup>a</sup> Determine combined aggregate gradation containing RAP under California Test 367.
- <sup>b</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.
- <sup>c</sup> Determines field compaction for any of the following conditions:
  1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot.
  2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.
- <sup>d</sup> To determine field compaction use:
  1. In-place density measurements using the method specified in your QC plan.
  2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.
- <sup>e</sup> For adjusting the plant controller at the HMA plant.
- <sup>f</sup> Report the average of 3 tests from a single split sample.
- <sup>g</sup> Determine the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.
- <sup>h</sup> The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.
- <sup>i</sup> Report only.
- <sup>j</sup> Applies to RAP substitution rate greater than 15 percent.

**Replace the 1st sentence in the 1st paragraph of section 39-4.03B(2) with:**

01-20-12

For aggregate gradation and asphalt binder content, the minimum ratio of verification testing frequency to quality control testing frequency is 1:5.

**Replace the 2nd "and" in the 7th paragraph of section 39-4.03B(2) with:**

01-20-12

or

**Replace the 1st paragraph of section 39-4.04A with:**

02-22-13

The Engineer samples for acceptance testing and tests for the following quality characteristics:

**HMA Acceptance—QC/QA Construction Process**

Index (i)	Quality characteristic				Weight -ing factor (w)	Test method	HMA type		
							A	B	RHMA-G
		Aggregate gradation <sup>a</sup>				California Test 202	JMF ± Tolerance <sup>c</sup>		
	Sieve	3/4"	1/2"	3/8"					
1	1/2"	X <sup>b</sup>	--	--	0.05				
1	3/8"	--	X	--	0.05				
1	No. 4	--	--	X	0.05				
2	No. 8	X	X	X	0.10				
3	No. 200	X	X	X	0.15				
4	Asphalt binder content (%)				0.30	California Test 379 or 382	JMF±0.40	JMF±0.40	JMF ± 0.40
5	Field compaction (% max. theoretical density) <sup>d, e</sup>				0.40	California Test 375	92–96	92–96	91–96
	Sand equivalent (min) <sup>f</sup>					California Test 217	47	42	47
	Stabilometer value (min) <sup>f</sup> No. 4 and 3/8" gradings 1/2" and 3/4" gradings					California Test 366	30 37	30 35	-- 23
	Air void content (%) <sup>f, g</sup>					California Test 367	4 ± 2	4 ± 2	TV ± 2
	Percent of crushed particles coarse aggregate (% min) One fractured face Two fractured faces Fine aggregate (% min) (Passing no. 4 sieve and retained on No. 8 sieve.) One fractured face					California Test 205	90 75 70	25 -- 20	-- 90 70
	HMA moisture content (% max)					California Test 226 or 370	1.0	1.0	1.0
	Los Angeles Rattler (% max) Loss at 100 rev. Loss at 500 rev.					California Test 211	12 45	-- 50	12 40
	Fine aggregate angularity (% min) <sup>h</sup>					California Test 234	45	45	45
	Flat and elongated particle (% max by weight @ 5:1)					California Test 235	Report only	Report only	Report only
	Voids in mineral aggregate (% min) <sup>i</sup> No. 4 grading 3/8" grading 1/2" grading 3/4" grading					California Test 367	17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 18.0–23.0

	Voids filled with asphalt (%) <sup>i</sup> No. 4 grading 3/8" grading 1/2" grading 3/4" grading		California Test 367	65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	Report only
	Dust proportion <sup>1</sup> No. 4 and 3/8" gradings 1/2" and 3/4" gradings		California Test 367	0.6–1.2 0.6–1.2	0.6–1.2 0.6–1.2	Report only
	Hamburg Wheel Tracker (minimum number of passes at 0.5 inch average rut depth) <sup>j</sup> PG-58 PG-64 PG-70 PG-76 or higher		AASHTO T 324 (Modified)	10,000 15,000 20,000 25,000	10,000 15,000 20,000 25,000	--
	Hamburg Wheel Tracker (inflection point minimum number of passes) <sup>j</sup> PG-58 PG-64 PG-70 PG-76 or higher		AASHTO T 324 (Modified)	10,000 15,000 20,000 25,000	10,000 15,000 20,000 25,000	--
	Moisture susceptibility (minimum dry strength, psi) <sup>j</sup>		California Test 371	120	120	--
	Moisture susceptibility (tensile strength ratio %) <sup>j</sup>		California Test 371	70	70	70
	Smoothness		Section 39-1.12	12-foot straight- edge, must grind, and PI <sub>0</sub>	12-foot straight- edge, must grind, and PI <sub>0</sub>	12-foot straight- edge, must grind, and PI <sub>0</sub>
	Asphalt binder		Various	Section 92	Section 92	Section 92
	Asphalt rubber binder		Various	--	--	Section 92-1.01D(2) and section 39-1.02D
	Asphalt modifier		Various	--	--	Section 39-1.02D
	CRM		Various	--	--	Section 39-1.02D

- <sup>a</sup> The Engineer determines combined aggregate gradations containing RAP under California Test 367.
- <sup>b</sup> "X" denotes the sieves the Engineer tests for the specified aggregate gradation.
- <sup>c</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.
- <sup>d</sup> The Engineer determines field compaction for any of the following conditions:
  1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot and less than 0.20 foot.
  2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.
- <sup>e</sup> To determine field compaction, the Engineer uses:
  1. California Test 308, Method A, to determine in-place density of each density core.
  2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.
- <sup>f</sup> The Engineer reports the average of 3 tests from a single split sample.
- <sup>g</sup> The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.
- <sup>h</sup> The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.
- <sup>i</sup> Report only.
- <sup>j</sup> Applies to RAP substitution rate greater than 15 percent.

**Replace the 3rd paragraph of section 39-4.04A with:**

01-20-12

The Department determines the percent of maximum theoretical density from density cores taken from the final layer measured the full depth of the total paved HMA thickness if any of the following applies:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot and any layer is less than 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 and any layer is less than 0.20 foot.

AA

**40 CONCRETE PAVEMENT**

01-20-12

**Replace section 40-1.01C(4) with:**

01-20-12

**40-1.01C(4) Authorized Laboratory**

Submit for authorization the name of the laboratory you propose to use for testing the drilled core specimens for air content.

**Replace the paragraph in section 40-1.01C(8) with:**

01-20-12

Submit a plan for protecting concrete pavement during the initial 72 hours after paving when the forecasted minimum ambient temperature is below 40 degrees F.

01-20-12

**Delete "determined under California Test 559" in section 40-1.01C(9).**

**Replace the 2nd and 3rd paragraphs in section 40-1.01D(4) with:**

01-20-12

The QC plan must include details of corrective action to be taken if any process is out of control. As a minimum, a process is out of control if any of the following occurs:

1. For fine and coarse aggregate gradation, 2 consecutive running averages of 4 tests are outside the specification limits
2. For individual penetration or air content measurements:
  - 2.1. One point falls outside the suspension limit line
  - 2.2. Two points in a row fall outside the action limit line

Stop production and take corrective action for out of control processes or the Engineer rejects subsequent material.

**Replace the 1st paragraph in section 40-1.01D(5) with:**

01-20-12

Determine the minimum cementitious materials content. Use your value for minimum cementitious material content for *MC* in equation 1 and equation 2 of section 90-1.02B(3).

**Replace the 1st sentence of the 3rd paragraph of section 40-1.01D(9) with:**

01-20-12

Use a California profilograph to determine the concrete pavement profile.

**Replace the title of the table in section 40-1.01D(13)(a) with:**

01-20-12

**Concrete Pavement Acceptance Testing**

**Replace the 2nd and 3rd paragraphs in section 40-1.01D(13)(a) with:**

01-20-12

Pavement smoothness may be accepted based on the Department's testing. A single test represents no more than 0.1 mile.

Acceptance of modulus of rupture, thickness, dowel bar and tie bar placement, coefficient of friction, smoothness, and air content, does not constitute final concrete pavement acceptance.

**Delete item 4 in the list in the 2nd paragraph in section 40-1.01D(13)(c)(2).**

01-20-12

**Replace items 1 and 2 in the list in the 2nd paragraph in 40-1.01D(13)(d) with:**

01-20-12

1. For tangents and horizontal curves having a centerline radius of curvature 2,000 feet or more, the  $PI_0$  must be at most 2-1/2 inches per 0.1-mile section.
2. For horizontal curves having a centerline radius of curvature from 1,000 to 2,000 feet including concrete pavement within the superelevation transitions of those curves, the  $PI_0$  must be at most 5 inches per 0.1-mile section.

**Replace the 1st and 2nd variables in the equation in section 40-1.01D(13)(f) with:**

01-20-12

$n_c$  = Number of your quality control tests (minimum of 6 required)

$n_v$  = Number of verification tests (minimum of 2 required)

**Replace "Your approved third party independent testing laboratory" in the 4th paragraph of section 40-1.01D(13)(f) with:**

01-20-12

The authorized laboratory

**Replace item 2 in the list in the 2nd paragraph of section 40-1.01D(13)(g):**

01-20-12

2. One test for every 4,000 square yards of concrete pavement with tie bars or remaining fraction of that area. Each tie bar test consists of 2 cores with 1 on each tie-bar-end to expose both ends and allow measurement.

**Replace section 40-1.01D(13)(h) with:**

01-20-12

**40-1.01D(13)(h) Bar Reinforcement**

Bar reinforcement is accepted based on inspection before concrete placement.

**Replace the paragraph in section 40-1.02B(2) with:**

01-20-12

PCC for concrete pavement must comply with section 90-1 except as otherwise specified.

**Replace the paragraphs in section 40-1.02D with:**

01-20-12

Bar reinforcement must be deformed bars.

If the project is not shown to be in high desert or any mountain climate region, bar reinforcement must comply with section 52.

If the project is shown to be in high desert or any mountain climate regions, bar reinforcement must be one of the following:

1. Epoxy-coated bar reinforcement under section 52-2.03B except bars must comply with either ASTM A 706/A 706M; ASTM A 996/A 996M; or ASTM A 615/A 615M, Grade 40 or 60. Bars must be handled under ASTM D 3963/D 3963M and section 52-2.02C.
2. Low carbon, chromium steel bar complying with ASTM A 1035/A 1035M

**Replace the paragraphs in section 40-1.02E with:**

01-20-12

Tie bars must be deformed bars.

If the project is not shown to be in high desert or any mountain climate region, tie bars must be one of the following:

1. Epoxy-coated bar reinforcement. Bars must comply with either section 52-2.02B or 52-2.03B except bars must comply with either ASTM A 706/A 706M; ASTM A 996/A 996M; or ASTM A 615/A 615M, Grade 40 or 60.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.
3. Low carbon, chromium-steel bars under ASTM A 1035/A 1035M.

If the project is shown to be in high desert or any mountain climate region, tie bars must be one of the following:

1. Epoxy-coated bar reinforcement. Bars must comply with section 52-2.03B except bars must comply with either ASTM A 706/A 706M; ASTM A 996/A 996M; or ASTM A 615/A 615M, Grade 40 or 60.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.

Fabricate, sample, and handle epoxy-coated tie bars under ASTM D 3963/D 3963M, section 52-2.02C, or section 52-2.03C.

Do not bend tie bars.

**Replace the 1st, 2nd, and 3rd paragraphs in section 40-1.02F with:**

01-20-12

Dowel bars must be plain bars. Fabricate, sample, and handle epoxy-coated dowel bars under ASTM D 3963/D 3963M and section 52-2.03C except each sample must be 18 inches long.

If the project is not shown to be in high desert or any mountain climate region, dowel bars must be one of the following:

1. Epoxy-coated bars. Bars must comply with ASTM A 615/A 615M, Grade 40 or 60. Epoxy coating must comply with either section 52-2.02B or 52-2.03B.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.
3. Low carbon, chromium-steel bars under ASTM A 1035/A 1035M.

If the project is shown to be in high desert or any mountain climate region, dowel bars must be one of the following:

1. Epoxy-coated bars. Bars must comply with ASTM A 615/A 615M, Grade 40 or 60. Epoxy coating must comply with section 52-2.03B.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.

**Replace the paragraphs in section 40-1.02G with:**

01-20-12

For dowel and tie bar baskets, wire must comply with ASTM A 82/A 82M and be welded under ASTM A 185/A 185M, Section 7.4. The minimum wire-size no. is W10. Use either U-frame or A-frame shaped assemblies.

If the project is not shown to be in high desert or any mountain climate region. Baskets may be epoxy-coated, and the epoxy coating must comply with either section 52-2.02B or 52-2.03B.

If the project is shown to be in high desert or any mountain climate region, wire for dowel bar and tie bar baskets must be one of the following:

1. Epoxy-coated wire complying with section 52-2.03B
2. Stainless-steel wire. Wire must be descaled, pickled, and polished solid stainless-steel. Wire must comply with (1) the chemical requirements in ASTM A 276/A 276M, UNS Designation S31603 or S31803 and (2) the tension requirements in ASTM A 1022/ A 1022M.

Handle epoxy-coated tie bar and dowel bar baskets under ASTM D 3963/D 3963M and either section 52-2.02B or 52-2.03B.

Fasteners must be driven fasteners under ASTM F 1667. Fasteners on lean concrete base or HMA must have a minimum shank diameter of 3/16 inch and a minimum shank length of 2-1/2 inches. For asphalt

treated permeable base or cement treated permeable base, the shank diameter must be at least 3/16 inch and the shank length must be at least 5 inches.

Fasteners, clips, and washers must have a minimum 0.2-mil thick zinc coating applied by either electroplating or galvanizing.

**Replace the 1st paragraph in section 40-1.02H with:**

01-20-12

Chemical adhesive for drilling and bonding dowels and tie bars must be on the Authorized Material List. The Authorized Material List indicates the appropriate chemical adhesive system for the concrete temperature and installation conditions.

**Replace section 40-1.02I(2) with:**

01-20-12

**40-1.02I(2) Silicone Joint Sealant**

Silicone joint sealant must be on the Authorized Material List.

**Replace the last sentence in section 40-1.02I(4) with:**

01-20-12

Show evidence that the seals are compressed from 30 to 50 percent for the joint width at time of installation.

**Replace the paragraph in section 40-1.02L with:**

01-20-12

Water for core drilling may be obtained from a potable water source, or submit proof that it does not contain:

1. More than 1,000 parts per million of chlorides as Cl
2. More than 1,300 parts per million of sulfates as  $SO_4$
3. Impurities that cause pavement discoloration or surface etching

**Replace the paragraph in section 40-1.03B with:**

01-20-12

Before placing concrete pavement, develop enough water supply for the work under section 17.

**Replace the last paragraph in section 40-1.03D(1) with:**

01-20-12

Removal of grinding residue must comply with section 42-1.03B.

**Replace the 1st and 2nd paragraphs in section 40-1.03E(6)(c) with:**

01-20-12

Install preformed compressions seals in isolation joints if specified in the special provisions.

Install longitudinal seals before transverse seals. Longitudinal seals must be continuous except splicing is allowed at intersections with transverse seals. Transverse seals must be continuous for the entire transverse length of concrete pavement except splices are allowed for widenings and staged construction. With a sharp instrument, cut across the longitudinal seal at the intersection with transverse

construction joints. If the longitudinal seal does not relax enough to properly install the transverse seal, trim the longitudinal seal to form a tight seal between the 2 joints.

If splicing is authorized, splicing must comply with the manufacturer's written instructions.

**Replace the 12th and 13th paragraphs in section 40-1.03G with:**

01-20-12

Construct additional test strips if you:

1. Propose different paving equipment including:
  - 1.1. Paver
  - 1.2. Dowel bar inserter
  - 1.3. Tie bar inserter
  - 1.4. Tining
  - 1.5. Curing equipment
2. Change concrete mix proportions

You may request authorization to eliminate the test strip if you use paving equipment and personnel from a Department project (1) for the same type of pavement and (2) completed within the past 12 months. Submit supporting documents and previous project information with your request.

**Replace the 1st paragraph in section 40-1.03I with:**

01-20-12

Place tie bars in compliance with the tolerances shown in the following table:

<b>Tie Bar Tolerance</b>	
Dimension	Tolerance
Horizontal and vertical skew	10 degrees maximum
Longitudinal translation	± 2 inch maximum
Horizontal offset (embedment)	± 2 inch maximum
Vertical depth	1. Not less than 1/2 inch below the saw cut depth of joints 2. When measured at any point along the bar, not less than 2 inches clear of the pavement's surface and bottom

**Replace item 4 in the list in the 2nd paragraph in section 40-1.03I with:**

01-20-12

4. Use tie bar baskets. Anchor baskets at least 200 feet in advance of pavement placement activity. If you request a waiver, describe the construction limitations or restricted access preventing the advanced anchoring. After the baskets are anchored and before paving, demonstrate the tie bars do not move from their specified depth and alignment during paving. Use fasteners to anchor tie bar baskets.

**Replace "The maximum distance below the depth shown must be 0.05 foot." in the table in section 40-1.03J with:**

01-20-12

The maximum distance below the depth shown must be 5/8 inch.

**Replace sections 40-1.03L and 40-1.03M with:**

01-20-12

**40-1.03L Finishing**

**40-1.03L(1) General**

Reserved

**40-1.03L(2) Preliminary Finishing**

**40-1.03L(2)(a) General**

Preliminary finishing must produce a smooth and true-to-grade finish. After preliminary finishing, mark each day's paving with a stamp. The stamp must be authorized before paving starts. The stamp must be approximately 1 by 2 feet in size. The stamp must form a uniform mark from 1/8 to 1/4 inch deep. Locate the mark  $20 \pm 5$  feet from the transverse construction joint formed at each day's start of paving and  $1 \pm 0.25$  foot from the pavement's outside edge. The stamp mark must show the month, day, and year of placement and the station of the transverse construction joint. Orient the stamp mark so it can be read from the pavement's outside edge.

Do not apply more water to the pavement surface than can evaporate before float finishing and texturing are completed.

**40-1.03L(2)(b) Stationary Side Form Finishing**

If stationary side form construction is used, give the pavement a preliminary finish by the machine float method or the hand method.

If using the machine float method:

1. Use self-propelled machine floats.
2. Determine the number of machine floats required to perform the work at a rate equal to the pavement delivery rate. If the time from paving to machine float finishing exceeds 30 minutes, stop pavement delivery. When machine floats are in proper position, you may resume pavement delivery and paving.
3. Run machine floats on side forms or adjacent pavement lanes. If running on adjacent pavement, protect the adjacent pavement surface under section 40-1.03P. Floats must be hardwood, steel, or steel-shod wood. Floats must be equipped with devices that adjust the underside to a true flat surface.

If using the hand method, finish pavement smooth and true to grade with manually operated floats or powered finishing machines.

**40-1.03L(2)(c) Slip-Form Finishing**

If slip-form construction is used, the slip-form paver must give the pavement a preliminary finish. You may supplement the slip-form paver with machine floats.

Before the pavement hardens, correct pavement edge slump in excess of 0.02 foot exclusive of edge rounding.

**40-1.03L(3) Final Finishing**

After completing preliminary finishing, round the edges of the initial paving widths to a 0.04-foot radius. Round transverse and longitudinal construction joints to a 0.02-foot radius.

Before curing, texture the pavement. Perform initial texturing with a burlap drag or broom device that produces striations parallel to the centerline. Perform final texturing with a steel-tined device that produces grooves parallel with the centerline.

Construct longitudinal grooves with a self-propelled machine designed specifically for grooving and texturing pavement. The machine must have tracks to maintain constant speed, provide traction, and maintain accurate tracking along the pavement surface. The machine must have a single row of rectangular spring steel tines. The tines must be from 3/32 to 1/8 inch wide, on 3/4-inch centers, and must have enough length, thickness, and resilience to form grooves approximately 3/16 inch deep. The machine must have horizontal and vertical controls. The machine must apply constant down pressure on the pavement surface during texturing. The machines must not cause ravels.

Construct grooves over the entire pavement width in a single pass except do not construct grooves 3 inches from the pavement edges and longitudinal joints. Final texture must be uniform and smooth. Use a guide to properly align the grooves. Grooves must be parallel and aligned to the pavement edge across the pavement width. Grooves must be from 1/8 to 3/16 inch deep after the pavement has hardened.

For irregular areas and areas inaccessible to the grooving machine, you may hand-construct grooves under section 40-1.03L(2) using the hand method. Hand-constructed grooves must comply with the specifications for machine-constructed grooves.

Initial and final texturing must produce a coefficient of friction of at least 0.30 when tested under California Test 342. Notify the Engineer when the pavement is scheduled to be opened to traffic to allow at least 25 days for the Department to schedule testing for coefficient of friction. Notify the Engineer when the pavement is ready for testing which is the latter of:

1. Seven days after paving
2. When the pavement has attained a modulus of rupture of 550 psi

The Department tests for coefficient of friction within 7 days of receiving notification that the pavement is ready for testing.

Do not open the pavement to traffic unless the coefficient of friction is at least 0.30.

#### **40-1.03M Reserved**

#### **Replace the 4th paragraph of 40-1.03P with:**

01-20-12

Construct crossings for traffic convenience. If authorized, you may use RSC for crossings. Do not open crossings until the Department determines that the pavement's modulus of rupture is at least 550 psi under California Test 523 or California Test 524.

#### **Replace the 1st paragraph of section 40-6.01A with:**

01-20-12

Section 40-6 includes specifications for applying a high molecular weight methacrylate resin system to pavement surface cracks that do not extend the full slab depth.

#### **Replace the 4th paragraph of section 40-6.01C(2) with:**

01-20-12

If the project is in an urban area adjacent to a school or residence, the public safety plan must also include an airborne emissions monitoring plan prepared by a CIH certified in comprehensive practice by the American Board of Industrial Hygiene. Submit a copy of the CIH's certification. The CIH must monitor the emissions at a minimum of 4 points including the mixing point, the application point, and the point of nearest public contact. At work completion, submit a report by the industrial hygienist with results of the airborne emissions monitoring plan.

#### **Delete the 1st sentence of the 2nd paragraph in section 40-6.02B.**

01-20-12

#### **Replace item 4 in the list in the last paragraph in section 40-6.03A with:**

01-20-12

4. Coefficient of friction is at least 0.30 under California Test 342









**Replace the 2nd paragraph of section 49-2.01D with:**

01-20-12

Furnish piling is measured along the longest side of the pile from the specified tip elevation shown to the plane of pile cutoff.

**Replace "sets" in the 1st paragraph of section 49-2.04A(3) with:**

04-19-13

copies

**Replace the 3rd and 4th paragraphs of section 49-2.04B(2) with:**

10-19-12

Piles in a corrosive environment must be steam or water cured under section 90-4.03.

If piles in a corrosive environment are steam cured, either:

1. Keep the piles continuously wet for at least 3 days. The 3 days includes the holding and steam curing periods.
2. Apply curing compound under section 90-1.03B(3) after steam curing.

**Add to section 49-3.01A:**

01-20-12

Concrete must comply with section 51.

**Replace the 1st paragraph of section 49-3.01C with:**

01-20-12

Except for CIDH concrete piles constructed under slurry, construct CIP concrete piles such that the excavation methods and the concrete placement procedures provide for placing the concrete against undisturbed material in a dry or dewatered hole.

**Replace "Reserved" in section 49-3.02A(2) with:**

01-20-12

**dry hole:**

1. Except for CIDH concrete piles specified as end bearing, a drilled hole that:
  - 1.1. Accumulates no more than 12 inches of water in the bottom of the drilled hole during a period of 1 hour without any pumping from the hole during the hour.
  - 1.2. Has no more than 3 inches of water in the bottom of the drilled hole immediately before placing concrete.
2. For CIDH concrete piles specified as end bearing, a drilled hole free of water without the use of pumps.

**Replace "Reserved" in section 49-3.02A(3)(a) with:**

01-20-12

If plastic spacers are proposed for use, submit the manufacturer's data and a sample of the plastic spacer. Allow 10 days for review.

**Replace item 5 in the list in the 1st paragraph of section 49-3.02A(3)(b) with:**

10-19-12

5. Methods and equipment for determining:
  - 5.1. Depth of concrete
  - 5.2. Theoretical volume of concrete to be placed, including the effects on volume if casings are withdrawn
  - 5.3. Actual volume of concrete placed

**Add to the list in the 1st paragraph of section 49-3.02A(3)(b):**

01-18-13

8. Drilling sequence and concrete placement plan.

**Replace item 2 in the list in the 1st paragraph of section 49-3.02A(3)(g) with:**

01-20-12

2. Be sealed and signed by an engineer who is registered as a civil engineer in the State. This requirement is waived for either of the following conditions:
  - 2.1. The proposed mitigation will be performed under the current Department-published version of *ADSC Standard Mitigation Plan 'A' - Basic Repair* without exception or modification.
  - 2.2. The Engineer determines that the rejected pile does not require mitigation due to structural, geotechnical, or corrosion concerns, and you elect to repair the pile using the current Department-published version of *ADSC Standard Mitigation Plan 'B' - Grouting Repair* without exception or modification.

**Replace item 1 in the list in the 1st paragraph of section 49-3.02A(4)(d)(ii) with:**

01-20-12

1. Inspection pipes must be schedule 40 PVC pipe complying with ASTM D 1785 with a nominal pipe size of 2 inches. Watertight PVC couplers complying with ASTM D 2466 are allowed to facilitate pipe lengths in excess of those commercially available. Log the location of the inspection pipe couplers with respect to the plane of pile cutoff.

**Add to section 49-3.02A(4)(d)(iv):**

01-20-12

If the Engineer determines it is not feasible to use one of ADSC's standard mitigation plans to mitigate the pile, schedule a meeting and meet with the Engineer before submitting a nonstandard mitigation plan.

The meeting attendees must include your representatives and the Engineer's representatives involved in the pile mitigation. The purpose of the meeting is to discuss the type of pile mitigation acceptable to the Department.

Provide the meeting facility. The Engineer conducts the meeting.

**Replace the 1st paragraph of section 49-3.02B(5) with:**

01-20-12

Grout used to backfill casings must comply with section 50-1.02C, except:

1. Grout must consist of cementitious material and water, and may contain an admixture if authorized. Cementitious material must comply with section 90-1.02B, except SCMs are not required. The minimum cementitious material content of the grout must not be less than 845 lb/cu yd of grout.
2. Aggregate must be used to extend the grout as follows:



2. Each jack used to tension prestressing steel permanently anchored at 25 percent or more of its specified minimum ultimate tensile strength must be calibrated by METS within 1 year of use and after each repair. You must:
  - 2.1. Schedule the calibration of the jacking equipment with METS
  - 2.2. Verify that the jack and supporting systems are complete, with proper components, and are in good operating condition
  - 2.3. Mechanically calibrate the gages with a dead weight tester or other authorized means before calibration of the jacking equipment by METS
  - 2.4. Provide enough labor, equipment, and material to (1) install and support the jacking and calibration equipment and (2) remove the equipment after the calibration is complete
  - 2.5. Plot the calibration results
3. Each jack used to tension prestressing steel permanently anchored at less than 25 percent of its specified minimum ultimate tensile strength must be calibrated by an authorized laboratory within 6 months of use and after each repair.

**Replace "diameter" in item 9 in the list in the 1st paragraph of section 50-1.02D with:**

04-20-12

cross-sectional area

**Add to section 50-1.02:**

09-16-11

**50-1.02G Sheathing**

Sheathing for debonding prestressing strand must:

1. Be split or un-split flexible polymer plastic tubing
2. Have a minimum wall thickness of 0.025 inch
3. Have an inside diameter exceeding the maximum outside diameter of the strand by 0.025 to 0.14 inch

Split sheathing must overlap at least 3/8 inch.

Waterproofing tape used to seal the ends of the sheathing must be flexible adhesive tape.

The sheathing and waterproof tape must not react with the concrete, coating, or steel.

**Add to section 50-1.03B(1):**

01-20-12

After seating, the maximum tensile stress in the prestressing steel must not exceed 75 percent of the minimum ultimate tensile strength shown.

**Add to section 50-1.03B(2):**

09-16-11

**50-1.03B(2)(e) Debonding Prestressing Strands**

Where shown, debond prestressing strands by encasing the strands in plastic sheathing along the entire length shown and sealing the ends of the sheathing with waterproof tape.

Distribute the debonded strands symmetrically about the vertical centerline of the girder. The debonded lengths of pairs of strands must be equal.

Do not terminate debonding at any one cross section of the member for more than 40 percent of the debonded strands or 4 strands, whichever is greater.

Thoroughly seal the ends with waterproof tape to prevent the intrusion of water or cement paste before placing the concrete.

AA

## 51 CONCRETE STRUCTURES

04-19-13

**Replace the paragraphs of section 51-1.01A with:**

10-19-12

Section 51-1 includes general specifications for constructing concrete structures.

Earthwork for the following concrete structures must comply with section 19-3:

1. Sound wall footings
2. Sound wall pile caps
3. Culverts
4. Barrier slabs
5. Junction structures
6. Minor structures
7. Pipe culvert headwalls, endwalls, and wingwalls for a pipe with a diameter of 5 feet or greater

Falsework must comply with section 48-2.

Joints must comply with section 51-2.

Elastomeric bearing pads must comply with section 51-3.

Reinforcement for the following concrete structures must comply with section 52:

1. Sound wall footings
2. Sound wall pile caps
3. Barrier slabs
4. Junction structures
5. Minor structures
6. PC concrete members

You may use RSC for a concrete structure only where the specifications allow the use of RSC.

**Replace the heading of section 51-1.01D(4) with:**

04-19-13

### Testing Concrete Surfaces

**Add to section 51-1.01D(4)(a):**

04-19-13

The Engineer tests POC deck surfaces for smoothness and crack intensity.

**Add to the list in the 1st paragraph of section 51-1.01D(4)(b):**

04-19-13

3. Completed deck surfaces, including ramps and landings of POCs

**Replace the 4th paragraph in section 51-1.01D(4)(b) with:**

04-19-13

Except for POCs, surface smoothness is tested using a bridge profilograph under California Test 547. Two profiles are obtained in each lane approximately 3 feet from the lane lines and 1 profile is obtained in

each shoulder approximately 3 feet from the curb or rail face. Profiles are taken parallel to the direction of traffic.

**Add between the 5th and 6th paragraphs of section 51-1.01D(4)(b):**

04-19-13

POC deck surfaces must comply with the following smoothness requirements:

1. Surfaces between grade changes must not vary more than 0.02 foot from the lower edge of a 12-foot-long straightedge placed parallel to the centerline of the POC
2. Surface must not vary more than 0.01 foot from the lower edge of a 6-foot-long straightedge placed perpendicular to the centerline of the POC

**Add to section 51-1.01D(4)(d):**

04-19-13

The Engineer measures crack intensity of POC deck surfaces after curing, before prestressing, and before falsework release. Clean the surface for the Engineer to measure surface crack intensity.

In any 100 sq ft portion of a new POC deck surface, if there are more than 10 feet of cracks having a width at any point of over 0.02 inch, treat the deck with methacrylate resin under section 15-5.05. Treat the entire deck width between the curbs to 5 feet beyond where the furthest continuous crack emanating from the 100 sq ft section is 0.02 inch wide. Treat the deck surface before grinding.

**Add to section 51-1.03C(2)(c)(i):**

04-20-12

Permanent steel deck forms are only allowed where shown or if specified as an option in the special provisions.

**Replace the 3rd paragraph of section 51-1.03C(2)(c)(ii) with:**

04-20-12

Compute the physical design properties under AISI's *North American Specification for the Design of Cold-Formed Steel Structural Members*.

**Replace the 8th paragraph of section 51-1.03D(1) with:**

10-19-12

Except for concrete placed as pipe culvert headwalls and endwalls, slope paving and aprons, and concrete placed under water, consolidate concrete using high-frequency internal vibrators within 15 minutes of placing concrete in the forms. Do not attach vibrators to or hold them against forms or reinforcing steel. Do not displace reinforcement, ducts, or prestressing steel during vibrating.

**Add to section 51-1.03E(5):**

08-05-11

Drill the holes without damaging the adjacent concrete. If reinforcement is encountered during drilling before the specified depth is attained, notify the Engineer. Unless coring through the reinforcement is authorized, drill a new hole adjacent to the rejected hole to the depth shown.

**Add to section 51-1.03F(5)(a):**

04-19-13

For approach slabs, sleeper slabs, and other roadway surfaces of concrete structures, texture the roadway surface as specified for bridge deck surfaces in section 51-1.03F(5)(b).

**Replace "Reserved" in section 51-1.03F(5)(b) with:**

04-20-12

**51-1.03F(5)(b)(i) General**

Except for bridge widenings, texture the bridge deck surfaces longitudinally by grinding and grooving or by longitudinal tining.

10-19-12

For bridge widenings, texture the deck surface longitudinally by longitudinal tining.

04-20-12

In freeze-thaw areas, do not texture PCC surfaces of bridge decks.

**51-1.03F(5)(b)(ii) Grinding and Grooving**

When texturing the deck surface by grinding and grooving, place a 1/4 inch of sacrificial concrete cover on the bridge deck above the finished grade shown. Place items to be embedded in the concrete based on the final profile grade elevations shown. Construct joint seals after completing the grinding and grooving.

Before grinding and grooving, deck surfaces must comply with the smoothness and deck crack treatment requirements.

Grind and groove the deck surface as follows:

1. Grind the surface to within 18 inches of the toe of the barrier under section 42-3. Grinding must not reduce the concrete cover on reinforcing steel to less than 1-3/4 inches.
2. Groove the ground surfaces longitudinally under section 42-2. The grooves must be parallel to the centerline.

**51-1.03F(5)(b)(iii) Longitudinal Tining**

When texturing the deck surface by longitudinal tining, perform initial texturing with a burlap drag or broom device that produces striations parallel to the centerline. Perform final texturing with spring steel tines that produce grooves parallel with the centerline.

The tines must:

1. Be rectangular in cross section
2. Be from 3/32 to 1/8 inch wide on 3/4-inch centers
3. Have enough length, thickness, and resilience to form grooves approximately 3/16 inch deep

Construct grooves to within 6 inches of the layout line of the concrete barrier toe. Grooves must be from 1/8 to 3/16 inch deep and 3/16 inch wide after concrete has hardened.

For irregular areas and areas inaccessible to the grooving machine, you may hand construct grooves. Hand-constructed grooves must comply with the specifications for machine-constructed grooves.

Tining must not cause tearing of the deck surface or visible separation of coarse aggregate at the surface.

**Add to section 51-1.03F:**

04-19-13

**51-1.03F(6) Finishing Pedestrian Overcrossing Surfaces**

Construct deck surfaces, including ramps and landings of POCs to the grade and cross section shown. Surfaces must comply with the specified smoothness, surface texture, and surface crack requirements.

The Engineer sets deck elevation control points for your use in establishing the grade and cross section of the deck surface. The grade established by the deck elevation control points includes all camber allowances. Except for landings, elevation control points include the beginning and end of the ramp and will not be closer together than approximately 8 feet longitudinally and 4 feet transversely to the POC centerline. Landing elevation control points are at the beginning and the end of the landing.

Broom finish the deck surfaces of POCs. Apply the broom finish perpendicular to the path of travel. You may apply water mist to the surface immediately before brooming.

Clean any discolored concrete by abrasive blast cleaning or other authorized methods.

**Replace the paragraphs of section 51-1.04 with:**

10-19-12

If concrete involved in bridge work is not designated by type and is not otherwise paid for under a separate bid item, the concrete is paid for as structural concrete, bridge.

The payment quantity for structural concrete includes the volume in the concrete occupied by bar reinforcing steel, structural steel, prestressing steel materials, and piling.

The payment quantity for seal course concrete is the actual volume of seal course concrete placed except the payment quantity must not exceed the volume of concrete contained between vertical planes 1 foot outside the neat lines of the seal course shown. The Department does not adjust the unit price for an increase or decrease in the seal course concrete quantity.

Structural concrete for pier columns is measured as follows:

1. Horizontal limits are vertical planes at the neat lines of the pier column shown.
2. Bottom limit is the bottom of the foundation excavation in the completed work.
3. Upper limit is the top of the pier column concrete shown.

The payment quantity for drill and bond dowel is determined from the number and depths of the holes shown.

**Replace section 51-2.01B(2) with:**

04-19-13

**51-2.01B(2) Reserved**

04-19-13

**Delete the 4th paragraph of section 51-2.01C.**

**Replace "SSPC-QP 3" in the 1st paragraph of section 51-2.02A(2) with:**

10-19-12

AISC-420-10/SSPC-QP 3

**Replace the 2nd and 3rd paragraphs of section 51-2.02B(3)(b) with:**

04-20-12

Concrete saws for cutting grooves in the concrete must have diamond blades with a minimum thickness of 3/16 inch. Cut both sides of the groove simultaneously for a minimum 1st pass depth of 2 inches. The completed groove must have:

1. Top width within 1/8 inch of the width shown or ordered
2. Bottom width not varying from the top width by more than 1/16 inch for each 2 inches of depth
3. Uniform width and depth

Cutting grooves in existing decks includes cutting any conflicting reinforcing steel.

**Replace "sets" in the 1st and 2nd paragraphs of section 51-2.02D(1)(c)(ii) with:**

copies

04-19-13

**Replace "set" in the 7th paragraph of section 51-2.02D(1)(c)(ii) with:**

copy

04-19-13

**Add to the 1st paragraph of section 51-2.02D(3):**

POC deck surfaces must comply with section 51-1.03F(6) before placing and anchoring joint seal assemblies.

04-19-13

**Replace "sets" in the 2nd paragraph of section 51-2.02E(1)(c) with:**

copies

04-19-13

**Replace "set" in the 6th paragraph of section 51-2.02E(1)(c) with:**

copy

04-19-13

**Replace the 2nd paragraph of section 51-2.02E(1)(e) with:**

Except for components in contact with the tires, the design loading must be the AASHTO LRFD Bridge Design Specifications Design Truck with 100 percent dynamic load allowance. Each component in contact with the tires must support a minimum of 80 percent of the AASHTO LRFD Bridge Design Specifications Design Truck with 100 percent dynamic load allowance. The tire contact area must be 10 inches measured normal to the longitudinal assembly axis by 20 inches wide. The assembly must provide a smooth-riding joint without slapping of components or tire rumble.

08-05-11

**Replace "sets" in the 1st and 2nd paragraphs of section 51-2.02F(1)(c) with:**

copies

04-19-13

**Add between the 1st and 2nd paragraphs of section 51-4.01A:**

Prestressing concrete members must comply with section 50.

10-19-12

**Delete the 2nd paragraph of section 51-4.01A.**

04-20-12

**Replace the 3rd paragraph of section 51-4.01C(2) with:**

04-20-12

For segmental or spliced-girder construction, shop drawings must include the following additional information:

1. Details showing construction joints or closure joints
2. Arrangement of bar reinforcing steel, prestressing tendons, and pressure-grouting pipe
3. Materials and methods for making closures
4. Construction joint keys and surface treatment
5. Other requested information

For segmental girder construction, shop drawings must include concrete form and casting details.

**Replace "sets" in the 1st paragraph of section 51-4.01C(3) with:**

04-19-13

copies

**Delete the 1st and 2nd paragraphs of section 51-4.02A.**

10-19-12

**Replace the 3rd paragraph of section 51-4.02B(2) with:**

04-20-12

For segmental or spliced-girder construction, materials for construction joints or closure joints at exterior girders must match the color and texture of the adjoining concrete.

**Add to section 51-4.02B(2):**

04-20-12

At spliced-girder closure joints:

1. If shear keys are not shown, the vertical surfaces of the girder segment ends must be given a coarse texture as specified for the top surface of PC members.
2. Post-tensioning ducts must extend out of the vertical surface of the girder segment closure end sufficiently to facilitate splicing of the duct.

For spliced girders, pretension strand extending from the closure end of the girder segment to be embedded in the closure joint must be free of mortar, oil, dirt, excessive mill scale and scabby rust, and other coatings that would destroy or reduce the bond.

**Add to section 51-4.03B:**

04-20-12

The specifications for prestressing force distribution and sequencing of stressing in the post-tensioning activity in 50-1.03B(2)(a) do not apply if post-tensioning of spliced girders before starting deck construction is described. The composite deck-girder structure must be post-tensioned in a subsequent stage.

Temporary spliced-girder supports must comply with the specifications for falsework in section 48-2.

Before post-tensioning of spliced girders, remove the forms at CIP concrete closures and intermediate diaphragms to allow inspection for concrete consolidation.







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**58 SOUND WALLS**

04-19-13

**Delete the 3rd paragraph of section 58-1.01.**

10-19-12

**Replace the 1st paragraph of section 58-2.01D(5)(a) with:**

08-05-11

You must employ a special inspector and an authorized laboratory to perform Level 1 inspections and structural tests of masonry to verify the masonry construction complies with section 1704, "Special Inspections," and section 2105, "Quality Assurance," of the 2007 CBC.

**Delete the 1st paragraph of section 58-2.02F.**

10-19-12

**Replace "sets" at each occurrence in the 1st paragraph of section 58-4.01C with:**

04-19-13

copies

AA

**59 PAINTING**

04-19-13

**Replace "SSPC-SP 10" at each occurrence in section 59 with:**

10-19-12

SSPC-SP 10/NACE no. 2

**Replace "SSPC-SP 6" at each occurrence in section 59 with:**

10-19-12

SSPC-SP 6/NACE no. 3

**Replace "SSPC-CS 23.00" at each occurrence in section 59 with:**

10-19-12

SSPC-CS 23.00/AWS C 2.23M/NACE no. 12

**Replace "SSPC-QP 3 or AISC SPE, Certification P-1 Enclosed" in item 3 in the list in the 1st paragraph of section 59-2.01D(1) with:**

10-19-12

AISC-420-10/SSPC-QP 3 (Enclosed Shop)

**Replace the paragraphs in section 59-2.03A with:**

10-19-12

Clean and paint all exposed structural steel and other metal surfaces.

You must provide enclosures for cleaning and painting structural steel. Cleaning and painting of new structural steel must be performed in an Enclosed Shop as defined in AISC-420-10/SSPC-QP 3. Maintain atmospheric conditions inside enclosures within specified limits.

Except for blast cleaning within closed buildings, perform blast cleaning and painting during daylight hours.

**Replace item 1 in the list in the 2nd paragraph of section 59-2.03C(1) with:**

10-19-12

1. Apply a stripe coat of undercoat paint on all edges, corners, seams, crevices, interior angles, junctions of joining members, weld lines, and similar surface irregularities. The stripe coat must completely hide the surface being covered. If spot blast cleaning portions of the bridge, apply the stripe coat of undercoat paint before each undercoat and follow with the undercoat as soon as practical. If removing all existing paint from the bridge, apply the undercoat first as soon as practical and follow with the stripe coat of undercoat paint for each undercoat.

**Replace the heading of section 59-2.03C(2) with:**

04-19-13

**Zinc Coating System**

**Add to section 59-2.03C(2)(a):**

04-19-13

Coatings for new structural steel and connections between new and existing structural steel must comply with the requirements shown in the following table:

<b>Zinc Coating System</b>		
Description	Coating	Dry film thickness (mils)
<b>All new surfaces:</b>		
Undercoat	Inorganic zinc primer, AASHTO M 300 Type I or II	4–8
Finish coat <sup>a</sup>	Exterior grade latex <sup>b</sup> , 2 coats	2 minimum each coat, 4–8 total
Total thickness, all coats		8–14
<b>Connections to existing structural steel:<sup>c</sup></b>		
Undercoat	Inorganic zinc primer, AASHTO M 300 Type I or II	4–8
Finish coat <sup>a</sup>	Exterior grade latex <sup>b</sup> , 2 coats	2 minimum each coat, 4–8 total
Total thickness, all coats		8–14

<sup>a</sup>If no finish coats are described, a final coat of inorganic zinc primer is required.

<sup>b</sup>Exterior grade latex must comply with section 91-2.02 unless otherwise specified.

<sup>c</sup>Includes the following locations:

1. New and existing contact surfaces
2. Existing member surfaces under new HS bolt heads, nuts, or washers
3. Bare surfaces of existing steel after trimming, cutting, drilling, or reaming
4. Areas within a 4-inch radius from the point of application of heat for welding or flame cutting

**Add to section 59-2.03C:**

04-19-13

**59-2.03C(3) Moisture-Cured Polyurethane Coating System**

Reserved

**59-2.03C(4) State Specification Paint Waterborne Coating System**

**59-2.03C(4)(a) General**

The State Specification PWB coating system for existing structural steel must comply with the requirements shown in the following table:

**State Specification PWB Coating System**

Surface	Description	State Specification PWB Coating	Dry film thickness (mils)
Surfaces cleaned to bare metal <sup>a</sup> :	1st undercoat	145	2-3
	2nd undercoat	146	2-3
	1st finish coat	171	1.5-3
	2nd finish coat	172	1.5-3
	Total thickness, all coats	--	7-12
Existing painted surfaces to be topcoated:	Undercoat	146	2-3
	1st finish coat	171	1.5-3
	2nd finish coat	172	1.5-3
	Total thickness, new coats	--	5-9

<sup>a</sup>Includes locations of spot blast cleaning

**59-2.03C(4)(b) Finish Coats**

Pressure rinse undercoated surfaces to receive finish coats. Perform pressure rinsing no sooner than 72 hours after the final application of undercoat.

The 1st finish coat must be applied within 48 hours of pressure rinsing.

Apply the 1st finish coat in 2 applications. The 1st application consists of a spray-applied mist application. Apply the 2nd application after the mist application has dried to a set-to-touch condition as determined using the procedure in section 7 of ASTM D 1640.

Apply the 2nd finish coat after the 1st finish coat has dried 12 hours unless authorized. You may apply the 2nd finish coat in a single application.

**Add to section 59-5.01:**

04-19-13

Where specified, prepare and paint sign structures under sections 59-2 and 59-3.

Instead of submitting proof of the certification complying with SSPC-QP 1, you may submit documentation with the painting quality work plan showing compliance with the requirements in section 3 of SSPC-QP 1.

Instead of submitting proof of the certification complying with SSPC-QP 2, you may submit documentation with the painting quality work plan showing compliance with the requirements in sections 4.2 through 4.4 of SSPC-QP 2, Category A.

Instead of submitting proof of the certification complying with AISC-420-10/SSPC-QP 3 (Enclosed Shop), you may submit documentation with the painting quality work plan showing compliance with the requirements in sections 5 through 18 of AISC-420-10/SSPC-QP3.













## 86 ELECTRICAL SYSTEMS

10-19-12

Replace section 86-2.06 with:

01-20-12

### 86-2.06 PULL BOXES

#### 86-2.06A General

##### 86-2.06A(1) Cover Marking

Marking must be clearly defined, uniform in depth, and parallel to either the long or short sides of the cover.

Marking letters must be 1 to 3 inches high.

Before galvanizing steel or cast iron cover, apply marking by one of the following methods:

1. Use cast iron strip at least 1/4 inch thick with letters raised a minimum of 1/16 inch. Fasten strip to cover with 1/4-inch flathead stainless steel machine bolts and nuts. Peen bolts after tightening.
2. Use sheet steel strip at least 0.027 inch thick with letters raised a minimum of 1/16 inch. Fasten strip to cover by spot welding, tack welding, or brazing, with 1/4-inch stainless steel rivets or 1/4-inch roundhead stainless steel machine bolts and nuts. Peen bolts after tightening.
3. Bead weld the letters on cover such that the letters are raised a minimum of 3/32 inch.

##### 86-2.06A(2) Installation and Use

Space pull boxes no more than 200 feet apart. You may install additional pull boxes to facilitate the work.

You may use a larger standard size pull box than that shown on the plans or specified.

A pull box in ground or sidewalk area must be installed as follows:

1. Embed bottom of the pull box in crushed rock.
2. Place a layer of roofing paper on the crushed rock.
3. Place grout over the layer of roofing paper. Grout must be 0.50 to 1 inch thick and sloped toward the drain hole.
4. Make a 1-inch drain hole in the center of the pull box through the grout and roofing paper.
5. Place grout between the pull box and the pull box extension, and around conduits.

The top of the pull box must be flush with the surrounding grade or the top of an adjacent curb, except in unpaved areas where the pull box is not immediately adjacent to and protected by a concrete foundation, pole, or other protective construction. Place the pull box 1-1/4 inches above the surrounding grade. Where practical, place a pull box shown in the vicinity of curbs or adjacent to a standard on the side of the foundation facing away from traffic. If a pull box is installed in a sidewalk area, adjust the depth of the pull box so that the top of the pull box is flush with the sidewalk.

Reconstruct the sump of an existing pull box if disturbed by your activities. Remove old grout and replace with new if the sump was grouted.

##### 86-2.06B Non-Traffic-Rated Pull Boxes

Reserved

##### 86-2.06C Traffic Pull Boxes

Traffic pull box and cover must comply with ASTM C857, "Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures," for HS20-44 loading. You must be able to place the load anywhere on the box and cover for 1 minute without causing cracks or permanent deformations.

Frame must be anchored to the box with 1/4 by 2-1/4 inch concrete anchors. Four concrete anchors must be included for No. 3-1/2(T) pull box; one placed in each corner. Six concrete anchors must be included for No. 5(T) and No. 6(T) pull boxes; one placed in each corner and one near the middle of each of the longer sides.

Nuts must be zinc-plated carbon steel, vibration resistant, and have a wedge ramp at the root of the thread.

After installation of traffic pull box, install the steel cover and keep it bolted down when your activities are not in progress at the pull box. When the steel cover is placed for the final time, the cover and Z bar frame must be cleaned of debris and tightened securely.

Steel cover must be countersunk approximately 1/4 inch to accommodate the bolt head. When tightened, the bolt head must not exceed more than 1/8 inch above the top of the cover.

Concrete placed around and under traffic pull boxes must be minor concrete.

**Replace "project" in the 3rd paragraph of section 86-2.11A with:**

10-19-12

work

**Replace "Contract" in item 2 in the list in the 11th paragraph of section 86-2.11A with:**

10-19-12

work

AA

### 88 GEOSYNTHETICS

01-18-13

**Replace the row for hydraulic bursting strength in the table in the 2nd paragraph of section 88-1.02B with:**

10-19-12

Puncture strength, lb min	ASTM D 6241	310
Trapezoid tearing strength, lb min	ASTM D 4533	56

**Replace the 3rd paragraph in section 88-1.02C with:**

10-19-12

Geocomposite wall drain must be from 0.25 to 2 inches thick.

**Replace the value for permittivity of woven fabric in the table in the 1st paragraph of section 88-1.02E with:**

01-20-12

0.05

**Replace the value for apparent size opening of nonwoven fabric in the table in the 1st paragraph of section 88-1.02E with:**

01-20-12

0.012

Replace the table in the 1st paragraph of section 88-1.02G with:

01-20-12

**Sediment Filter Bag**

Property	Test	Values	
		Woven	Nonwoven
Grab breaking load, lb, 1-inch grip min, in each direction	ASTM D 4632	200	250
Apparent elongation, percent min, in each direction	ASTM D 4632	10	50
Water flow rate, gal per minute/sq ft min and max average roll value	ASTM D 4491	100-200	75-200
Permittivity, sec <sup>-1</sup> min	ASTM D 4491	1.0	1.0
Apparent opening size, inches max average roll value	ASTM D 4751	0.023	0.012
Ultraviolet resistance, % min retained grab breaking load, 500 hr.	ASTM D 4355	70	70

Replace the table in the 1st paragraph of section 88-1.02H with:

01-20-12

**Temporary Cover**

Property	Test	Values	
		Woven	Nonwoven
Grab breaking load, lb, 1-inch grip min, in each direction	ASTM D 4632	200	200
Apparent elongation, percent min, in each direction	ASTM D 4632	15	50
Water flow rate, gal per minute/sq ft min and max average roll value	ASTM D 4491	4-10	80-120
Permittivity, sec <sup>-1</sup> min	ASTM D 4491	0.05	1.0
Apparent opening size, inches max average roll value	ASTM D 4751	0.023	0.012
Ultraviolet resistance, % min retained grab breaking load, 500 hr.	ASTM D 4355	70	70

Replace section 88-1.02P with:

01-18-13

**88-1.02P Biaxial Geogrid**

Geosynthetics used for biaxial geogrid must be a punched and drawn polypropylene material formed into an integrally formed biaxial grid. When tested under the referenced test methods, properties of biaxial geogrid must have the values shown in the following table:



