



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**NOTICE TO BIDDERS
AND
SPECIAL PROVISIONS**

**FOR CONSTRUCTION ON STATE HIGHWAY IN SHASTA COUNTY AT
VARIOUS LOCATIONS**

In District 02 On Route Var

Under

Bid book dated July 1, 2013

Standard Specifications dated 2010

Project plans approved April 29, 2013

Standard Plans dated 2010

Identified by

Contract No. 02-4E5304

02-Sha-Var-Var

Project ID 0200020318

Federal-Aid Project

ACSTP-X089(107)E

Electronic Advertising Contract

Bids open Tuesday, August 20, 2013

Dated July 1, 2013

OSD

IH

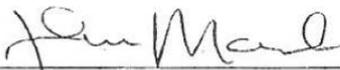
SPECIAL NOTICES

- For federal-aid projects, the Department is modifying its DBE program.
- See section 2-1.35 for SSPC QP certification requirements.

CONTRACT NO. 02-4E5304

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

HIGHWAY


REGISTERED CIVIL ENGINEER

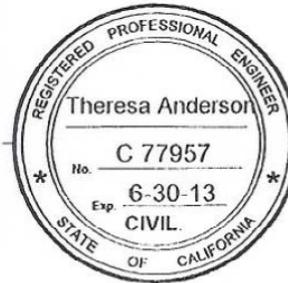
4/30/13
DATE



ELECTRICAL (HIGHWAY)


REGISTERED ELECTRICAL ENGINEER

5/1/13
DATE



STRUCTURES

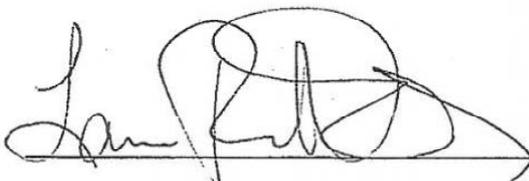

REGISTERED CIVIL ENGINEER



TABLE OF CONTENTS

NOTICE TO BIDDERS	1
BID ITEM LIST.....	3
SPECIAL PROVISIONS	9
DIVISION I GENERAL PROVISIONS	9
1 GENERAL.....	9
2 BIDDING.....	9
5 CONTROL OF WORK.....	10
7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC.....	11
8 PROSECUTION AND PROGRESS	13
9 PAYMENT	14
DIVISION II GENERAL CONSTRUCTION	14
10 GENERAL.....	14
12 TEMPORARY TRAFFIC CONTROL.....	15
13 WATER POLLUTION CONTROL.....	33
14 ENVIRONMENTAL STEWARDSHIP.....	33
15 EXISTING FACILITIES.....	48
DIVISION III GRADING	54
17 WATERING	54
20 LANDSCAPE.....	54
DIVISION V SURFACINGS AND PAVEMENTS.....	54
39 HOT MIX ASPHALT	54
DIVISION VI STRUCTURES.....	74
51 CONCRETE STRUCTURES.....	74
52 REINFORCEMENT	76
54 WATERPROOFING	77
59 PAINTING.....	77
DIVISION VIII MISCELLANEOUS CONSTRUCTION.....	79
75 MISCELLANEOUS METAL	79
DIVISION IX TRAFFIC CONTROL FACILITIES	79
83 RAILINGS AND BARRIERS.....	79
86 ELECTRICAL SYSTEMS	82
DIVISION X MATERIALS	84
90 CONCRETE.....	84
92 ASPHALTS.....	85
REVISED STANDARD SPECIFICATIONS APPLICABLE TO THE 2010 EDITION OF THE STANDARD SPECIFICATIONS.....	88

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
RSP A24A	Pavement Markings - Arrows
A24D	Pavement Markings - Words
RSP A24E	Pavement Markings - Words, Limit and Yield Lines
A40B	Shoulder Rumble Strip Details - Ground-In Indentations
A73A	Object Markers
A73B	Markers
A73C	Delineators, Channelizers and Barricades
A76A	Concrete Barrier Type 60
A76B	Concrete Barrier Type 60
A77A1	Metal Beam Guard Railing - Standard Railing Section (Wood Post with Wood Block)
A77A2	Metal Beam Guard Railing - Standard Railing Section (Steel Post with Notched Wood or Notched Recycled Plastic 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 A77C7	Metal Beam Guard Railing - Typical Vegetation Control at Structure Approach
A77F1	Metal Beam Guard Railing - Typical Layouts for Structure Approach
A77F3	Metal Beam Guard Railing - Typical Layouts for Structure Approach

A77F4	Metal Beam Guard Railing - Typical Layouts for Structure Departure
A77F5	Metal Beam Guard Railing - Typical Layouts for Structure Departure
A77H1	Metal Railing - End Anchor Assembly (Type SFT)
A77H2	Metal Railing - Rail Tensioning Assembly
A77J1	Metal Beam Guard Railing - Connections to Bridge Railings without Sidewalks Details No. 1
A77J2	Metal Beam Guard Railing - Connections to Bridge Railings without Sidewalks Details No. 2
A77J4	Metal Beam Guard Railing - Transition Railing (Type WB)
A85	Chain Link Fence
A85A	Chain Link Fence Details
RSP A85B	Chain Link Fence Details
A87A	Curbs and Driveways
A87B	Hot Mix Asphalt Dikes
RSP D73	Drainage Inlets
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)
RSP T9	Traffic Control System for Lane Closure on Freeways and Expressways
RSP T10	Traffic Control System for Lane Closure on Freeways and Expressways
RSP T10A	Traffic Control System for Lane Closures on Freeways and Expressways
RSP T11	Traffic Control System for Lane Closure on Multilane Conventional Highways
RSP T13	Traffic Control System for Lane Closure on Two Lane Conventional Highways
RSP T14	Traffic Control System for Ramp Closure
T56	Temporary Water Pollution Control Details (Temporary Fiber Roll)
T59	Temporary Water Pollution Control Details (Temporary Concrete Washout Facility)
T61	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T62	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T65	Temporary Water Pollution Control Details [Temporary Fence (Type ESA)]
B6-21	Joint Seals (Maximum Movement Rating = 2")
B11-56	Concrete Barrier Type 736
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)
ES-5A	Electrical Systems (Detectors)
ES-5B	Electrical Systems (Detectors)
ES-5D	Electrical Systems (Curb Termination and Handhole)
ES-13A	Electrical Systems (Splicing Details)
ES-13B	Electrical Systems (Fuse Rating, Kinking and Banding Detail)

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 Tuesday, August 20, 2013

Dated July 1, 2013

General work description: Rehab bridges with polyester conc overlay and rdwy with HMA over AB.

The Department will receive sealed bids for CONSTRUCTION ON STATE HIGHWAY IN SHASTA COUNTY AT VARIOUS LOCATIONS.

District-County-Route-Post Mile: 02-Sha-Var-Var

Contract No. 02-4E5304

The Contractor must have either a Class A license or any combination of the following Class C licenses which constitutes a majority of the work: C-8, C-12.

The DBE Contract goal is 6 percent.

Federal-aid project no.:

ACSTP-X089(107)E

Bids must be on a unit price basis.

Complete the work within 230 working days.

The estimated cost of the project is \$7,650,000.

No prebid meeting is scheduled for this project.

The Department will receive bids until 2:00 p.m. on the bid open date at 1727 30th Street, Bidders' Exchange, MS 26, Sacramento, CA 95816. Bids received after this time will not be accepted. Department staff will direct the bidders to the bid opening.

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

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. Additional information is provided in the Excluded Parties List System at <https://www.epls.gov>.

Department of Transportation

WAT

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	090100	TIME-RELATED OVERHEAD (WDAY)	WDAY	230
4	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM
5	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM
6	120120	TYPE III BARRICADE	EA	39
7	120151	TEMPORARY TRAFFIC STRIPE (TAPE)	LF	29,800
8	120152	TEMPORARY PAVEMENT MARKING (TAPE)	SQFT	130
9	120165	CHANNELIZER (SURFACE MOUNTED)	EA	690
10	120300	TEMPORARY PAVEMENT MARKER	EA	990
11	128652	PORTABLE CHANGEABLE MESSAGE SIGN (LS)	LS	LUMP SUM
12	129000	TEMPORARY RAILING (TYPE K)	LF	2,920
13	129100	TEMPORARY CRASH CUSHION MODULE	EA	56
14	025774	ALTERNATIVE TEMPORARY CRASH CUSHION	EA	8
15	130100	JOB SITE MANAGEMENT	LS	LUMP SUM
16	130200	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	LUMP SUM
17	130510	TEMPORARY MULCH	SQYD	300
18	130620	TEMPORARY DRAINAGE INLET PROTECTION	EA	10
19	130640	TEMPORARY FIBER ROLL	LF	200
20	130900	TEMPORARY CONCRETE WASHOUT	LS	LUMP SUM

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
21	025775	ASBESTOS COMPLIANCE PLAN (LOCATION 12)	LS	LUMP SUM
22	025776	ASBESTOS COMPLIANCE PLAN (LOCATION 13)	LS	LUMP SUM
23	025777	ASBESTOS COMPLIANCE PLAN (LOCATION 17)	LS	LUMP SUM
24	141000	TEMPORARY FENCE (TYPE ESA)	LF	280
25	025778	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE) (WATER BLASTING)	LF	3,990
26	141120	TREATED WOOD WASTE	LB	22,900
27	025779	BIRD EXCLUSION	LS	LUMP SUM
28	025780	REMOVAL WORK PLAN (ASBESTOS CONTAINING MATERIAL) (LOCATION 12)	LS	LUMP SUM
29	025781	REMOVAL WORK PLAN (ASBESTOS CONTAINING MATERIAL) (LOCATION 13)	LS	LUMP SUM
30	025782	REMOVAL WORK PLAN (ASBESTOS CONTAINING MATERIAL) (LOCATION 17)	LS	LUMP SUM
31	150100	PUBLIC SAFETY PLAN	LS	LUMP SUM
32	150310	RAPID SETTING CONCRETE (PATCH)	CF	717
33	150662	REMOVE METAL BEAM GUARD RAILING	LF	230
34	025783	REMOVE THERMOPLASTIC TRAFFIC STRIPE (WATER BLASTING)	LF	6,210
35	025784	REMOVE THERMOPLASTIC PAVEMENT MARKING (WATER BLASTING)	SQFT	190
36	150770	REMOVE ASPHALT CONCRETE PAVEMENT (SQFT)	SQFT	3,260
37	150771	REMOVE ASPHALT CONCRETE DIKE	LF	240
38	150812	REMOVE PIPE (LF)	LF	740
39	150857	REMOVE ASPHALT CONCRETE SURFACING	SQFT	119,805
40	150870	REMOVE CONCRETE DECK SURFACE	SQFT	3,690

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
41	151572	RECONSTRUCT METAL BEAM GUARD RAILING	LF	1,900
42	152430	ADJUST INLET	EA	4
43	152440	ADJUST MANHOLE TO GRADE	EA	2
44	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	10,100
45	153140	REMOVE CONCRETE SIDEWALK (SQYD)	SQYD	60
46	153215	REMOVE CONCRETE (CURB AND GUTTER)	LF	330
47	153221	REMOVE CONCRETE BARRIER	LF	34
48	153223	REMOVE UNSOUND CONCRETE	CF	717
49	153225	PREPARE CONCRETE BRIDGE DECK SURFACE	SQFT	98,265
50	153227	FURNISH POLYESTER CONCRETE OVERLAY	CF	7,087
51 (F)	153228	PLACE POLYESTER CONCRETE OVERLAY	SQFT	70,865
52 (F)	153233	TREAT BRIDGE DECK	SQFT	27,400
53	153234	FURNISH BRIDGE DECK TREATMENT MATERIAL	GAL	341
54	157561	BRIDGE REMOVAL (PORTION), LOCATION A	LS	LUMP SUM
55	157562	BRIDGE REMOVAL (PORTION), LOCATION B	LS	LUMP SUM
56	157563	BRIDGE REMOVAL (PORTION), LOCATION C	LS	LUMP SUM
57	044327	MODIFY EXPANSION GRATE	LS	LUMP SUM
58	160102	CLEARING AND GRUBBING (LS)	LS	LUMP SUM
59	190101	ROADWAY EXCAVATION	CY	1,250
60	190185	SHOULDER BACKING	TON	260

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
61 (F)	192003	STRUCTURE EXCAVATION (BRIDGE)	CY	16
62 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	CY	16
63	200002	ROADSIDE CLEARING	LS	LUMP SUM
64	210420	STRAW	SQFT	13,400
65	260203	CLASS 2 AGGREGATE BASE (CY)	CY	840
66	390132	HOT MIX ASPHALT (TYPE A)	TON	3,100
67	390161	HOT MIX ASPHALT (BRIDGE)	TON	1,084
68	394053	SHOULDER RUMBLE STRIP (HMA,GROUND-IN INDENTATIONS)	STA	66
69	394074	PLACE HOT MIX ASPHALT DIKE (TYPE C)	LF	38
70	394077	PLACE HOT MIX ASPHALT DIKE (TYPE F)	LF	190
71	394090	PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	SQYD	29
72	397005	TACK COAT	TON	2
73	420201	GRIND EXISTING CONCRETE PAVEMENT	SQYD	71
74 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	CY	41
75	511106	DRILL AND BOND DOWEL	LF	240
76	511118	CLEAN EXPANSION JOINT	LF	1,432
77	519081	JOINT SEAL (MR 1/2")	LF	906
78	519088	JOINT SEAL (MR 1")	LF	472
79	519091	JOINT SEAL (MR 1 1/2")	LF	58
80	044328	BONDED JOINT SEAL (MR 3 1/2")	LF	62

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
81	519100	JOINT SEAL (MR 2")	LF	58
82	519133	JOINT SEAL (ASPHALTIC PLUG)	LF	212
83 (F)	520110	BAR REINFORCING STEEL (EPOXY COATED) (BRIDGE)	LB	2,835
84	044329	GALVANIC ANODE	EA	707
85 (F)	540100	DECK SEAL	SQFT	104,390
86	590106	CLEAN STRUCTURAL STEEL (EXISTING BRIDGE)	LS	LUMP SUM
87	590111	PAINT STRUCTURAL STEEL (EXISTING BRIDGE)	LS	LUMP SUM
88	590135	SPOT BLAST CLEAN AND PAINT UNDERCOAT	SQFT	10,525
89	590301	WORK AREA MONITORING	LS	LUMP SUM
90	731504	MINOR CONCRETE (CURB AND GUTTER)	CY	19
91	731521	MINOR CONCRETE (SIDEWALK)	CY	7
92 (F)	750501	MISCELLANEOUS METAL (BRIDGE)	LB	260
93	750505	BRIDGE DECK DRAINAGE SYSTEM	LS	LUMP SUM
94	800103	TEMPORARY FENCE (TYPE CL-6)	LF	540
95	820107	DELINEATOR (CLASS 1)	EA	20
96	820134	OBJECT MARKER (TYPE P)	EA	3
97	820141	OBJECT MARKER (TYPE K-1)	EA	2
98	832002	METAL BEAM GUARD RAILING (STEEL POST)	LF	14
99	832070	VEGETATION CONTROL (MINOR CONCRETE)	SQYD	350
100	025785	CONCRETE BARRIER (TRANSITION ANCHOR BLOCK)	LF	52

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
101	839541	TRANSITION RAILING (TYPE WB)	EA	7
102	839701	CONCRETE BARRIER (TYPE 60)	LF	20
103 (F)	839725	CONCRETE BARRIER (TYPE 736)	LF	518
104	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT	410
105	840560	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)	LF	34,900
106	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	350
107	850122	PAVEMENT MARKER (RETROREFLECTIVE- RECESSED)	EA	210
108	860090	MAINTAINING EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS DURING CONSTRUCTION	LS	LUMP SUM
109	025786	MODIFY SIGNAL (LOCATION 1)	LS	LUMP SUM
110	025787	MODIFY SIGNAL (LOCATION 17)	LS	LUMP SUM
111	999990	MOBILIZATION	LS	LUMP SUM

Add to section 2-1.06B:

The Department makes the following supplemental project information available:

Supplemental Project Information

Means	Description
Included in <i>Information Handout</i>	PLAC - PLAC Condition Responsibility Summary PLAC - Railroad Relations and Insurance Requirements PLAC - Encroachment Permit - City of Redding Laboratory analysis results of test on pipe tape on welded steel pipe at Sacramento River Bridge, Bridge Number 06-0014 Photographs of pipe tape on welded steel pipe at Sacramento River Bridge, Bridge Number 06-0014
Available as specified in the <i>Standard Specifications</i>	Bridge as-built drawings

5 CONTROL OF WORK

Add to section 5-1.20A:

During the progress of the work under this Contract, work under the following contracts may be in progress at or near the job site of this Contract:

Coincident or Adjacent Contracts

Contract no.	County–Route–Post Mile	Project Location	Type of work
02-4F6104	SHA-5-R21.0, R24.08, R29.32	11, 12	Bridge Maintenance
02-4E1604	SHA-5-R21.0, R28.20	11	Replace CCTV Poles
02-347604	SHA-5-R4.2/R5.4	3, 4, 5, 6	Modify interchange
02-3E8904	SHA-5-R28.8/R39.2	12 & 13	Thin blanket overlay
Encroachment Permit	SHA-273-17.03/17.25	17	Replace Water Lines
Encroachment Permit	SHA-299-25.25/25.70	20, 21, 22	Operational Improvements at Hawley Road

Add to section 5-1.20C:

This project does not include work on the railroad property. Use of the access shown to the southwest quadrant of the area under the Sacramento River Bridge, Bridge Number 06-0014, requires access through gated railroad property. To use the access road through railroad property, you must submit a "Contractor's Endorsement" to said railroad property. You are directed to the "Railroad Relations and Insurance Requirements" in the Supplemental Project Information. You must comply with the provisions.

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Replace section 7-1.02K(6)(e) with:

7-1.02K(6)(e) Scaffolding

7-1.02K(6)(e)(i) General

Section 7-1.02K(6)(e) applies to scaffolding constructed (1) over traffic, (2) on or suspended from a bridge, or (3) within a distance equal to the scaffolding height plus 6 feet from the edge of a traveled way open to traffic, except section 7-1.02K(6)(e) does not apply to scaffolding at sound walls, retaining walls, and buildings.

Submit shop drawings and calculations.

The shop drawings and calculations must be sealed and signed by:

1. Engineer who is registered as a civil engineer
2. Independent reviewer who is:
 - 2.1. Registered as a civil engineer in the State
 - 2.2. Not employed by the same entity that prepared the drawings

Include in the submittal:

1. Descriptions, calculations, and values for loads anticipated during erection, use, and removal of the scaffolding.
2. Methods and equipment for erecting, moving, and removing scaffolding.
3. Design details, including bolt layouts, welding details, and connections to existing structures.
4. Stress sheets, including a summary of computed stresses in the scaffolding and in the connections between the scaffolding and existing structures. The computed stresses must include the effects of erection, movement, and removal of the scaffolding.

If manufactured scaffolding is used, the manufacturer's name, address, and telephone number must be shown on the shop drawings.

Allow 15 days for the Department's review.

Welding must comply with AWS D1.1 for steel and AWS D1.2 for aluminum.

7-1.02K(6)(e)(ii) Bridge Scaffolding

Section 7-1.02K(6)(e)(ii) applies to scaffolding constructed on or suspended from a bridge.

The available bridge load capacity in excess of the dead and live load demand is shown in the following table. The available capacity is a uniform load across the entire bridge width and is based on the design live load shown.

Bridge number	Available load capacity (lb/sq ft)	Bridge width (ft)	Design live load
06-0014	35	70.75	5 AXLE PERMIT

Calculations must include:

1. Moment and shear force demands versus capacity during erection, movement, and removal of the scaffolding on the longitudinal girders of girder bridges and the flooring system of stringers and floor beams of truss bridges.
2. Tension and compression force demands versus capacity of truss members of truss bridges during erection, movement, and removal of the scaffolding.

Scaffolding loads must not exceed the load-carrying capacity of the existing members. Determine the capacity of existing members under the Department's *Bridge Design Specifications, Load Factor Design Version, April 2000*. Use the group load factors shown in the following table:

Group	Gamma factor	Beta factors		
		D	(L+I)H	(L+I)P
I _H ^a	1.3	1	1	0
I _{PC} ^b	1.3	1	0	1
I _{PW} ^c	1.3	1	1	1.15

^aH denotes HS-20 loads

^bPC denotes P loads on closely spaced girders

^cPW denotes P loads on widely spaced girders

For truss-type bridges, all connections must be made through stringers, floor beams, or truss panel points, and no connections are allowed that may cause bending stresses in a truss member.

Replace section 7-1.02K(6)(j)(iii) with:

7-1.02K(6)(j)(iii) Earth Material Containing Lead

Section 7-1.02K(6)(j)(iii) includes specifications for handling, removing, and disposing of earth material containing lead.

Submit a lead compliance plan.

Lead is present in earth material on the job site. The average lead concentrations are below 1,000 mg/kg total lead and below 5 mg/L soluble lead. The material on the job site:

1. Is not a hazardous waste
2. Does not require disposal at a permitted landfill or solid waste disposal facility

Lead is typically found within the top 2 feet of material in unpaved areas of the highway. Reuse all of the excavated material on the right-of-way. Haul and place the surplus excavated material within the project limits.

Handle the material under all applicable laws, rules, and regulations, including those of the following agencies:

1. Cal/OSHA
2. CA RWQCB, Region 5-Central Valley
3. CA Department of Toxic Substances Control

Add to section 7-1.03:

If a height differential of more than 0.04 foot is created by construction activities at joints transverse to the direction of traffic on the traveled way or shoulder subject to public traffic, construct temporary tapers with slopes (horizontal:vertical) in conformance with the following table:

Temporary Tapers

Height differential	Slope	
	Taper use of 14 days or less	Taper use of more than 14 days
Greater than 0.10 foot	100:1 or flatter	200:1 or flatter
0.04 to 0.10 foot	70:1 or flatter	70:1 or flatter

For temporary tapers on existing asphalt concrete or concrete pavement, construct tapers with HMA that complies with section 39-1.15B. HMA spreading and compacting equipment must comply with section 39-1.10.

Grind existing surfaces to accommodate a minimum taper thickness of 0.10 foot when either:

At Location 17, upon obtaining an Encroachment Permit from the City of Redding, use of the access shown to the southwest quadrant of the area under the Sacramento River Bridge, Bridge Number 06-0014, requires access through a locked gate. Contact City of Redding, Paul Anderson, 530-224-6105, to arrange access.

AA

12 TEMPORARY TRAFFIC CONTROL

Add to section 12-3.12C:

Start displaying the message on the portable changeable message sign 15 minutes before closing the lane.

Place the portable changeable message sign in advance of the 1st warning sign for each:

1. Stationary lane closure
2. Off-ramp closure
3. Connector closure
4. Speed reduction zone

At project location 11 (Route 151/5 SEP) and project location 17 (Sacramento River Br) portable message signs must be used to provide motorists advanced notification of planned work. At least 7 calendar days before beginning work place a portable changeable message sign for each approach direction at a location approved by the Engineer. The message displayed must be approved by the Engineer.

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 when placing and removing components of stationary lane closures, ramp closures, or a combination on multilane highways and interstates.

Do not use an impact attenuator vehicle on 2-lane, 2-way highways or roadways.

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, or any combination on a multilane highway or interstate. 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.

After placing components of a stationary traffic control system you must 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

Add to section 12-3:

12-3.18 ALTERNATIVE TEMPORARY CRASH CUSHION

12-3.18A General

12-3.18A(1) Summary

Section 12-3.18 includes specifications for installing and maintaining alternative temporary crash cushions.

12-3.18A(2) Submittals

Submit one copy of the manufacturer's plan and parts list for each model installed.

Submit the manufacturer's certificate of compliance. The certification of compliance must certify that the alternative temporary crash cushion complies with the contract plans and specifications, conforms to the prequalified design and material requirements, and was manufactured in accordance with the approved quality control program.

12-3.18B Materials

The alternative temporary crash cushion must consist of one of the following or a Department-authorized equal:

1. ADIEM 350 - must be the ADIEM 350 manufactured by Trinity Industries, Inc., and must include items detailed for the ADIEM 350 crash cushion system per the manufacturer's recommendations. The ADIEM 350 can be obtained from the manufacturer, Trinity Industries, Inc., P.O. Box 99, 950 West 400 South, Centerville, Utah 84014, telephone (800) 772-7976.
2. ABSORB 350 9-element System - must be the ABSORB 350 9-element System manufactured by Barrier Systems, Inc., and must include items detailed for the ABSORB 350 crash cushion system per the manufacturer's recommendations. The ABSORB 350 9-element System can be obtained from the manufacturer, Barrier Systems, Inc., 3333 Vaca Valley Parkway, Vacaville, California 95688, telephone (888) 800-3691.
3. QuadGuard II CZ System - must be the QuadGuard II CZ System, model number QZ210024P, manufactured by Energy Absorption System, Inc., and must include items detailed for the QuadGuard II CZ System crash cushion system per the manufacturer's recommendations. The QuadGuard II CZ System can be obtained from the manufacturer, Energy Absorption System, Inc., 70 W Madison Street, Suite 2350, Chicago, IL 60602, telephone (312) 467-6750.

12-3.18C Construction

12-3.18C(1) General

Alternative temporary crash cushion must be installed under the manufacturer's recommendations and these specifications.

A Type P marker panel must be attached to the front of the alternative temporary crash cushion when the closest point of the crash cushion is within 12 feet of the traveled way. The marker panel, when required, must be firmly fastened to the alternative temporary crash cushion.

Surplus excavated material remaining after installation of the alternative temporary crash cushion must be spread in a uniform manner along the adjacent roadway.

Concrete anchorage devices used for attaching the QuadGuard II CZ System to the asphalt concrete pad must be installed under the manufacturer's recommendations.

Dispose of the alternative temporary crash cushion and marker panel after completion of the work.

Backfill with slurry cement holes left in pavement after removal of anchor rods. Slurry cement must comply with section 19-3.03F. Concrete anchorage devices used for attaching the QuadGuard II CZ System to the asphalt concrete pad must be installed under the manufacturer's recommendations.

12-3.18C(2) Maintenance

Keep on hand two replacement modules for each ADIEM 350 in case of minor damage.

Alternative temporary crash cushion damaged due to your operations must be repaired immediately by you at your expense. Alternative temporary crash cushion damaged beyond repair, as determined by the Engineer, due to your operations must be removed and replaced by you at your expense.

12-3.18D Payment

Repairing the alternative temporary crash cushion damaged by public traffic will be paid for as extra work.

Removing and replacing alternative temporary crash cushion damaged beyond repair by public traffic, when ordered by the Engineer, will be paid for as extra work.

If the Engineer orders a lateral move of the alternative temporary crash cushion and the repositioning is not shown, moving the alternative temporary crash cushion will be paid for as extra work.

Add to section 12-4.01:

Payment for transporting pedestrians through a 1-way reversing traffic control work zone at Location 19 is included in the payment for traffic control system.

Traffic delay is defined as the difference between the time it takes a vehicle to travel through the project at the posted speed limit when no work is in progress and the time it takes a vehicle to travel through the project when work is in progress.

Add to section 12-4.02A:

For grinding and grooving operations, sawcutting concrete slabs, and installing loop detectors with an impact attenuator vehicle as a shadow vehicle, closure of the adjacent traffic lane is not required.

Designated holidays are as shown in the following table:

Designated Holidays

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:

Special Days

Special Day	Location	Date observed
Cottonwood Rodeo & Parade	1,2	2nd Thursday through Sunday in May
Anderson Explodes	3 through 8	July 3rd
Redding Rodeo	10	3rd Wednesday through Sunday in May
Freedom Fest	10	July 4th
Shasta Damboree	11	1st Saturday in May
Shasta Lake City Veterans Parade	11	November 12
Kool April Nites	10 & 14	3rd week & weekend in April
Simpson College Baccalaureate Ceremony	21	3rd Friday in April
Simpson College Spring Graduation	21	3rd Saturday in April
Shasta College Semester	20, 21, 22	1 week before semester begins through 2 weeks after semester begins

Confirm special day dates with the Engineer.

Under a 1-way reversing traffic control operation, traffic may be stopped in 1 direction for periods not to exceed 5 minutes. After each stoppage, all accumulated traffic for that direction must pass through the work zone before another stoppage is made. You must conduct construction activities so that the traffic delay does not exceed 6 minutes.

The maximum length of a single stationary lane closure is 0.25 miles, except at:

1. Locations 3 through 8 the maximum length of a stationary lane closure is 1.0 mile
2. Locations 12, 13, and 17 where stage construction with temporary railing (Type K) is present, except k-rail placed under sections 7-1.03 and 7-1.04.

On multilane highways and interstates, not more than 1 stationary lane closures will be allowed in each direction of travel at one time.

Personal vehicles of your employees must not be parked on the traveled way or shoulders, including sections closed to traffic.

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

Except at Locations 5, 11, 12, 13, 17, and 18 where stage construction with temporary railing (Type K) or full closure of a connector is required, or when temporary railing (Type K) is required under section 7-1.03 and 7-1.04, the full width of the traveled way must be open to traffic:

1. On Fridays after 3:00 p.m.
2. On Saturdays
3. On Sundays
4. On designated holidays
5. On special days
6. When operations are not actively in progress

At Location 17, the full width of the Sacramento River Trail must remain open for public use during construction operations, except nightly between 10 p.m. and 6 a.m. when the path is closed by city ordinance. You must provide and maintain protective overhead covering to insure the public is protected from falling objects and drips from overhead structures. The protective overhead covering must provide an opening at least 12 feet wide and 10 feet high.

At Locations 1, 2, 9, 14, and 17, you must provide and maintain a minimum 5 feet wide paved surface for pedestrian passage. At Location 19 transport pedestrians through the lane closure.

Replace "Reserved" in section 12-4.04 with:

Lane Closure Restriction for Designated Holidays and Special Days

Thu	Fri	Sat	Sun	Mon	Tues	Wed	Thu	Fri	Sat	Sun
	H xx	xx	xx							
	SD xx									
	xx	H xx	xx							
		SD xx								
		xx	H xx	xx						
			SD xx							
		xx	xx	H xx						
		xx	xx	SD xx						
					H xx					
					SD xx					
						H xx				
						SD xx				
							H xx	xx	xx	xx
							SD xx			
Legend: This chart applies to all project locations except Location 17 (Sacramento River Br)										
	Refer to lane requirement charts									
xx	The full width of the traveled way must be open for use by traffic.									
H	Designated holiday									
SD	Special day									

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

**Chart no. 1
Freeway/Expressway Lane Requirements**

County: Shasta	Route/Direction: 5 (NB & SB)		PM: R4.29/R5.89																						
Closure limits: Deschutes Rd UC R (Loc 3) Anderson Creek Br L (Loc 4) Balls Ferry UC L & R (Locs 5 & 6) North Street UC L (Loc 7) Tormey Drain R (Loc 8)																									
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	1	1															1	1	1	1
Fridays	1	1	1	1	1	1	1																1	1	1
Saturdays	1	1	1	1	1	1	1	1	1													1	1	1	1
Sundays	1	1	1	1	1	1	1	1	1													1	1	1	1
Legend:																									
1	Provide at least 1 through freeway lane not less than 12 feet wide plus the adjacent paved shoulder (sufficient to provide a minimum 16 feet horizontal clearance), open in direction of travel																								
	Work allowed within the highway where lane closure is not required																								
REMARKS:																									
<ul style="list-style-type: none"> • Locations 3 through 8 have Special Days restrictions. • For Location 4: The SB on-ramp from Balls Ferry Rd may be closed only during the times shown above. All detour signing must be in-place prior to ramp closure. The ramp may be closed no more than 2 times. • For Location 8: The NB on-ramp from North St may be closed only during the times shown above. All detour signing must be in-place prior to ramp closure. The ramp may be closed no more than 2 times. 																									

**Chart no. 2
Freeway/Expressway Lane Requirements**

County: Shasta	Route/Direction: 5 (SB), 299 (WB)	PM: SHA-5-R29.29,R30.23, SHA-299-27.22																									
Closure limits: Turntable Bay Rd UC L (Loc 12) Power Line Rd UC L (Loc 13) Old Oregon Trail UC L (Loc 22)																											
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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Fridays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Saturdays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Sundays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Legend:																											
1		Provide at least 1 through freeway lane not less than 12 feet wide plus the adjacent paved shoulder (sufficient to provide a minimum 16 feet horizontal clearance), open in direction of travel																									
		Work allowed within the highway where lane closure is not required																									
REMARKS:																											
<ul style="list-style-type: none"> • Location 22 has Special Day restrictions. • At Locations 12 and 13, stage construction with temporary railing (Type K) is not allowed between November 1 and April 15. 																											

**Chart no. 3
Freeway/Expressway Lane Requirements**

County: Shasta	Route/Direction: 44 (EB & WB)												PM: 1.56												
Closure limits: Churn Creek Br L & R (Locs 15 & 16)																									
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	1	1													1	1	1	1	1	1
Fridays	1	1	1	1	1	1	1													1	1	1	1	1	1
Saturdays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sundays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Legend:

1	Provide at least 1 through freeway lane not less than 12 feet wide plus the adjacent paved shoulder (sufficient to provide a minimum 16 feet horizontal clearance), open in direction of travel
	Work allowed within the highway where lane closure is not required

REMARKS:

- For Location 16: The EB on-ramp from Victor Ave may be closed only during the times shown above. All detour signing must be in-place prior to ramp closure. The ramp may be closed no more than 5 times.

**Chart no. 4
Freeway/Expressway Lane Requirements**

County: Shasta	Route/Direction: 273 (NB & SB)	PM: 17.08																							
Closure limits: Sacramento River Br (Loc 17)																									
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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fridays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Saturdays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sundays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Legend:

- 1 Provide at least 1 through freeway lane not less than 12 feet wide, open in direction of travel
- Work allowed within the highway where lane closure is not required

REMARKS:

**Chart no. 5
Freeway/Expressway Lane Requirements**

County: Shasta	Route/Direction: 299 (WB)												PM: 25.54, 25.71												
Closure limits: Hawley Rd UC L (Loc20) Churn Creek Br L (Loc 21)																									
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	1	1													1	1	1	1	1	1
Fridays	1	1	1	1	1	1	1													1	1	1	1	1	1
Saturdays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sundays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Legend:																									
1	Provide at least 1 through freeway lane not less than 12 feet wide plus the adjacent paved shoulder (sufficient to provide a minimum 16 feet horizontal clearance), open in direction of travel																								
	Work allowed within the highway where lane closure is not required																								
REMARKS:																									
<ul style="list-style-type: none"> For Location 21, the WB off-ramp to Hawley Rd may be closed during the hours shown above. All detour signing must be in-place prior to ramp closure. The ramp may be closed no more than 5 times. Location 20 & 21 have Special Day restrictions. 																									

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

**Chart no. 6
Complete Connector Closure Hours**

County: Shasta	Route/Direction: 5, 273	PM: SHA-5-R15.31 SHA-5-R22.14 SHA-273-20.00																									
Closure limits: N5-E44 Connector OC (Loc 10) SR 151/5 Connector (Loc 11) N273-N5 Connector OC (Loc 18)																											
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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
Fridays	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	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	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	C	
Legend:																											
<input type="checkbox"/> C Connector may be closed completely and traffic detoured as shown on the plans.																											
<input type="checkbox"/> Work allowed within the highway where lane closure is not required																											
REMARKS:																											
<ul style="list-style-type: none"> • N5-E44 (Loc 10) must not be closed longer than 7 consecutive calendar days. • SR 151-N5 SEP (Loc 11) must not be closed longer than 10 consecutive calendar days. This location has an incentive/disincentive. • N273- N5 Connector OC (Loc 18) must not be closed longer than 7 consecutive calendar days. • All detour signing must be in-place prior to connector closure. • Locations 10 and 11 have Special Days restrictions. 																											

**Chart no. 7
Connector Lane Requirements**

County: Shasta	Route/Direction: 5 (NB)												PM: R22.14														
Closure limits: SR 151/5 WB Connector (Loc 11)																											
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	1	1													1	1	1	1	1	1		
Fridays	1	1	1	1	1	1	1													1	1	1	1	1	1		
Saturdays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Sundays	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Legend:																											
<table border="0"> <tr> <td style="border: 1px solid black; width: 20px; text-align: center;">1</td> <td>Provide at least 1 through freeway lane not less than 12 feet wide open in direction of travel</td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 15px;"></td> <td>Work allowed within the highway where lane closure is not required</td> </tr> </table>																								1	Provide at least 1 through freeway lane not less than 12 feet wide open in direction of travel		Work allowed within the highway where lane closure is not required
1	Provide at least 1 through freeway lane not less than 12 feet wide open in direction of travel																										
	Work allowed within the highway where lane closure is not required																										
REMARKS:																											
<ul style="list-style-type: none"> • This chart to allow cold planning the connector, if needed • Location 11 has Special Day restrictions. 																											

Replace "Reserved" in section 12-4.05F with:

**Chart no. 8
Conventional Highway Lane Requirements**

County: Shasta	Route/Direction: 5, 299	PM: SHA-05-0.66 SHA-299-14.17																								
Closure limits: First Street OC (Loc 1) Whiskey Creek Br (Loc 19)																										
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								R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Fridays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R											
Saturdays																										
Sundays																										
Legend:																										
<input type="checkbox"/> R	Provide at least 1 through traffic lane, not less than 12 feet in width, for use by both directions of travel (Reversing Control)																									
<input type="checkbox"/>	Work allowed within the highway where lane closure is not required																									
REMARKS:																										
<ul style="list-style-type: none"> Location 1 has Special Day restrictions. 																										

**Chart no. 9
Conventional Highway Lane Requirements**

County: Shasta	Route/Direction: 5	PM: R0.91, R9.77,																								
Closure limits: Fourth Street OC (Loc 2) Knighton Rd OC (Loc 9)																										
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	R	R	R	R	R	R	R														R	R	R	R	R	
Fridays	R	R	R	R	R	R	R														R	R	R	R	R	
Saturdays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
Sundays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
Legend:																										
<input type="checkbox"/> R	Provide at least 1 through traffic lane, not less than 12 feet in width, for use by both directions of travel (Reversing Control)																									
<input type="checkbox"/>	Work allowed within the highway where lane closure is not required																									
REMARKS:																										
<ul style="list-style-type: none"> Location 2 has Special Day restrictions. 																										

**Chart no. 10
Conventional Highway Lane Requirements**

County: Shasta	Route/Direction: 44	PM: R0.38																								
Closure limits: Churn Creek Rd OC (Loc 14)																										
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	1	1	1	1	1										1	1	1	1	1	1	
Fridays	1	1	1	1	1	1	1	1	1	1										1	1	1	1	1	1	
Saturdays	1	1	1	1	1	1	1	1	1	1	1									1	1	1	1	1	1	
Sundays	1	1	1	1	1	1	1	1	1	1	1									1	1	1	1	1	1	
Legend:																										
<input type="checkbox"/> 1	Provide at least 1 through traffic lane, not less than 12 feet wide plus the adjacent shoulder, open in direction of travel																									
<input type="checkbox"/>	Work allowed within the highway where lane closure is not required																									
REMARKS:																										
<ul style="list-style-type: none"> Location 14 has Special Day restrictions. 																										

Replace section 12-5 with:

12-5 TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE

12-5.01 GENERAL

Section 12-5 includes specifications for closing traffic lanes, ramps, or a combination, with stationary lane closures on multilane highways and 2-lane, 2-way highways. The traffic control system for a lane closure, connector, or ramp closure must comply with the details shown.

Traffic control system includes signs.

12-5.02 MATERIALS

Not Used

12-5.03 CONSTRUCTION

Whenever components of the traffic control system are displaced or cease to operate or function as specified from any cause, immediately repair the components to the original condition or replace the components and restore the components to the original location.

For a stationary lane closure, ramp closure, or a combination, made only for the work period, remove the components of the traffic control system from the traveled way and shoulder, except for portable delineators placed along open trenches or excavation adjacent to the traveled way at the end of each work period. You may store the components at selected central locations designated by the Engineer within the limits of the highway.

If multilane highway lane closures are also required, each vehicle used to place, maintain, and remove components of a traffic control system on a multilane highway must be equipped with a Type II flashing arrow sign that must be in operation whenever the vehicle is being used for placing, maintaining, or removing the components. Vehicles equipped with a Type II flashing arrow sign not involved in placing, maintaining, or removing the components if operated within a stationary-type lane closure must display only the caution display mode. The sign must be controllable by the operator of the vehicle while the vehicle is in motion. If a flashing arrow sign is required for a lane closure, the flashing arrow sign must be operational before the lane closure is in place.

Additional flaggers are required at Project Locations 2 (Fourth St OC) and 9 (Knighton Rd OC) to ensure traffic queues do not extend onto off-ramps or through intersections.

You may use a pilot car to control traffic. If a pilot car is used for traffic control, the cones shown along the centerline need not be placed. The pilot car must have radio contact with personnel in the work area. Operate the pilot car through the traffic control zone at a speed not greater than 25 miles per hour.

12-5.04 PAYMENT

Traffic control system for lane closure is paid for as traffic control system. Flagging costs are paid for as specified in section 12-1.03.

The requirements in section 4-1.05 for payment adjustment do not apply to traffic control system. Adjustments in compensation for traffic control system will be made for an increase or decrease in traffic control work if ordered and will be made on the basis of the cost of the necessary increased or decreased traffic control. The adjustment will be made on a force account basis for increased work and estimated on the same basis in the case of decreased work.

A traffic control system required by change order work is paid for as a part of the change order work.

Replace section 12-8 with:

12-8 TEMPORARY PAVEMENT DELINEATION

12-8.01 GENERAL

Section 12-8 includes specifications for placing, applying, maintaining, and removing temporary pavement delineation.

Temporary signing for no-passing zones must comply with section 12-3.06.

Temporary painted traffic stripes and painted pavement markings used for temporary delineation must comply with section 84-3.

12-8.02 MATERIALS

12-8.02A General

Not Used

12-8.02B Temporary Lane Line and Centerline Delineation

Temporary pavement markers must be the same color as the lane line or centerline markers being replaced. Temporary pavement markers must be temporary pavement markers on the Authorized Material List for short-term day/night use, 14 days or less, or long-term day/night use, 180 days or less. Place temporary pavement markers under the manufacturer's instructions.

12-8.02C Temporary Edge Line Delineation

On multilane roadways, freeways, and expressways open to traffic where edge lines are obliterated and temporary pavement delineation to replace those edge lines is not shown, provide temporary pavement delineation for:

1. Right edge lines consisting of (1) a solid 4-inch wide traffic stripe tape of the same color as the stripe being replaced, (2) traffic cones, or (3) portable delineators or channelizers placed longitudinally at intervals not exceeding 100 feet
2. Left edge lines consisting of (1) solid 4-inch wide traffic stripe tape of the same color as the stripe being replaced, (2) traffic cones, (3) portable delineators or channelizers placed longitudinally at intervals not exceeding 100 feet, or (4) temporary pavement markers placed longitudinally at intervals not exceeding 6 feet

12-8.02D Temporary Traffic Stripe Tape

Temporary traffic stripe tape must be one of the types of temporary, removable striping tape on the Authorized Material List.

12-8.02E Temporary Traffic Stripe Paint

Not Used

12-8.02F Temporary Pavement Marking Tape

Temporary pavement marking tape must be one of the types of temporary, removable pavement marking tape on the Authorized Material List and must be applied and removed as specified for applying and removing temporary, removable traffic stripe tape.

12-8.02G Temporary Pavement Marking Paint

You may use one of the types of temporary removable pavement marking tape or permanent pavement marking tape on the Authorized Material List instead of temporary pavement marking paint.

12- 8.02H Temporary Pavement Markers

Temporary pavement markers must be one of the temporary pavement markers on the Authorized Material List for long term day/night use, 180 days or less.

12-8.03 CONSTRUCTION

12-8.03A General

Wherever work activities obliterate pavement delineation, place temporary or permanent pavement delineation before opening the traveled way to traffic. Place lane line and centerline pavement delineation for traveled ways open to traffic. On multilane roadways, freeways and expressways, place edge line delineation for traveled ways open to traffic.

Establish the alignment for the temporary pavement delineation including required lines or markers. Surfaces to receive an application of paint or removable traffic tape must be dry and free of dirt and loose material. Do not apply temporary pavement delineation over existing pavement delineation or other temporary pavement delineation. Maintain temporary pavement delineation until it is superseded or you replace it with a new pattern of temporary pavement delineation or permanent pavement delineation.

When the Engineer determines the temporary pavement delineation is no longer required for the direction of traffic, remove the temporary pavement markers, underlying adhesive, and removable traffic tape from the final layer of surfacing and from the existing pavement to remain in place. Remove temporary pavement delineation that conflicts with any subsequent or new traffic pattern for the area.

12-8.03B Temporary Lane line and Centerline Delineation

Whenever lane lines or centerlines are obliterated and temporary pavement delineation to replace the lines is not shown, the minimum lane line and centerline delineation must consist of temporary pavement markers placed longitudinally at intervals not exceeding 24 feet. For temporary pavement markers on the Authorized Material List for long-term day/night use, 180 days or less, cement the markers to the surfacing with the adhesive recommended by the manufacturer except do not use epoxy adhesive to place the pavement markers in areas where removal of the markers will be required.

For temporary lane line or centerline delineation consisting entirely of temporary pavement markers on the Authorized Material List for short-term day/night use, 14 days or less, place the markers longitudinally at intervals not exceeding 24 feet. Do not use the markers for more than 14 days on lanes opened to traffic. Place the permanent pavement delineation before the end of the 14 days. If the permanent pavement delineation is not placed within the 14 days, replace the temporary pavement markers with additional temporary pavement delineation equivalent to the pattern specified or shown for the permanent pavement delineation for the area. The Department does not pay for the additional temporary pavement delineation.

Where no-passing centerline pavement delineation is obliterated, install the following temporary no-passing zone signs before opening lanes to traffic. Install a W20-1, "Road Work Ahead," sign from 1,000 feet to 2,000 feet in advance of a no-passing zone. Install a R4-1, "Do Not Pass," sign at the beginning of a no-passing zone and at 2,000-foot intervals within the no-passing zone. For continuous zones longer than 2 miles, install a W7-3a or W71(CA), "Next ___ Miles," sign beneath the W20-1 sign. Install a R4-2, "Pass With Care," sign at the end of the no-passing zone. The Engineer determines the exact location of temporary no-passing zone signs. Maintain the temporary no-passing zone signs in place until you place the permanent no-passing centerline pavement delineation. Remove the temporary no-passing zone signs when the Engineer determines they are no longer required for the direction of traffic.

12-8.03C Temporary Edge Line Delineation

You may apply temporary painted traffic stripe where removal of a 4-inch wide traffic stripe is not required.

The Engineer determines the lateral offset for traffic cones, portable delineators, and channelizers used for temporary edge line delineation. If traffic cones or portable delineators are used for temporary pavement delineation for edge lines, maintain the cones or delineators during hours of the day when the cones or delineators are being used for temporary edge line delineation.

Channelizers used for temporary edge line delineation must be an orange surface-mounted type. Cement channelizer bases to the pavement under section 85 for cementing pavement markers to pavement except do not use epoxy adhesive to place channelizers on the top layer of the pavement. Channelizers must be one of the 36-inch, surface-mounted types on the Authorized Material List.

Remove the temporary edge line delineation when the Engineer determines it is no longer required for the direction of traffic.

12-8.03D Temporary Traffic Stripe Tape

Apply temporary traffic stripe tape under the manufacturer's instructions. Slowly roll the tape with a rubber-tired vehicle or roller to ensure complete contact with the pavement surface. Apply the tape straight on a tangent alignment and on a true arc on a curved alignment. Do not apply the tape when the air or pavement temperature is less than 50 degrees F unless the installation procedures are authorized beforehand.

The temporary traffic stripe tape must be complete in place at the location shown before opening the traveled way to traffic.

12-8.03E Temporary Traffic Stripe Paint

Apply 1 or 2 coats of temporary traffic stripe paint for new or existing pavement.

ESA Management

Identification	Location	Management measures
Location 17, Sacramento River Bridge, Bridge Number 06-0014	East side of bridge between abutment 1 and pier 2, as shown	No access
Location 17, Sacramento River Bridge, Bridge Number 06-0014	Between pier 8 and abutment 9, as shown	Before starting work, protect the ESA by installing temporary fence (Type ESA). Limited access to ESA is allowed for hand work and overhead work only, no access roads or work pads allowed. Notify the Engineer 5 business days before the planned entry date. Any other access to an ESA is prohibited.

Replace section 14-6.02 with:

14-6.02 SPECIES PROTECTION

14-6.02A General

Section 14-6.02 includes specifications for protecting regulated species or their habitat.

This project is within or near habitat for regulated species shown in the following table:

Species Name
Migratory or nongame birds

14-6.02B Material

Not Used

14-6.02C Construction

14-6.02C(1) General

Not Used

14-6.02C(2) Protective Radius

Upon discovery of a regulated species, stop construction activities within a 100 foot radius of the discovery or as defined in the table below. Immediately notify the Engineer. Do not resume activities until receiving notification from the Engineer.

Regulated species name	Protective radius
Migratory or nongame birds at Location 17	1

14-6.02C(3) Protocols

Use protocols required by PLACs or, if not specified, use as shown in the following table:

Regulated species name	Protocol
Migratory or nongame birds	At Location 17 remove nests between September 1 and February 15
Migratory or nongame birds	At Location 17 prevent nesting between February 16 and August 31

14-6.02C(4) Biological Resource Information

Not Used

14-6.02C(5) Protection Measures

Within Location 17, Sacramento River Bridge, Br. No. 06-0014 , implement the following protection measures:

1. Submit a bird exclusion plan at least 20 days prior to beginning work at Location 17. The bird exclusion plan must include:
 - 1.1. Title Sheet
 - 1.2. Table of contents
 - 1.3. Exclusion device(s) to be used to exclude nesting birds
 - 1.4. Location and schedule of exclusion device(s)
 - 1.5. Disposal method for partially constructed and unoccupied nests
2. Between September 1 and February 15 remove and dispose of partially constructed and unoccupied nests.
3. Between February 16 and August 31 use exclusion devices to prevent nesting of migratory or nongame birds on the exterior girders.
4. Exclusion devices may include:
 - 4.1 Plastic sheeting of sufficient thickness to withstand the elements
 - 4.2 Weather-resistant polypropylene netting with 1/4-inch or smaller openings
 - 4.3 Other devices as approved
5. Exclusion devices must not include:
 - 5.1 Removing partially constructed nests between February 16 and August 31, regardless of percent complete
 - 5.2 Vegetable oil, liquids, or solvents
6. Maintain exclusion device(s) and inspect for damage at least every 3 days
7. Repair damage to exclusion device(s) before nests are formed

14-6.02C(6) Monitoring Schedule

Not Used

14-6.02D Payment

Not Used

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)
Migratory or nongame birds at Location 17	1

Replace 1st paragraph of section 14-6.03C with:

Except at Location 17, if ordered, use exclusion devices, take nesting prevention measures, remove and dispose of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation, or perform any combination of these. Except at location 17, this 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.

Work associated with disposal of hazardous waste residue regulated under RCRA as determined by test results is change order work.

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 90 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 90 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 14-11.08 with:

14-11.08 DISTURBANCE OF EXISTING PAINT SYSTEMS ON BRIDGES

14-11.08A General

14-11.08A(1) Summary

Section 14-11.08 includes specifications for disturbing existing paint systems.

The existing paint system on bridge number 06-0014 consists of red lead. Any work that disturbs the existing paint system will expose workers to health hazards and will:

1. Produce debris containing heavy metal in amounts that exceed the thresholds established in 8 CA Code of Regs and 22 CA Code of Regs.
2. Produce toxic fumes when heated.

The grime and debris on the bridge may also contain lead. Consider the grime and debris part of the paint system. The Department is the hazardous waste generator if the Engineer accepts waste characterization analytical test results documenting that the debris is a hazardous waste.

14-11.08A(2) Submittals

14-11.08A(2)(a) Debris Containment and Collection Plan

Submit a debris containment and collection plan. The plan must:

1. Identify materials
2. Identify equipment and methods to be used when the existing paint system is disturbed
3. Include shop drawings of:
 - 3.1. Containment systems
 - 3.2. Loads applied to the bridge by the containment system
 - 3.3. Components that provide ventilation, air movement, and visibility for worker safety.
4. Identify the analytical laboratory that will perform the analyses
5. Include current DTSC registration certificate and documentation of compliance with the CA Highway Patrol Biennial Inspection of Terminals Program of the hazardous waste hauler that will transport the hazardous waste
6. Identify the disposal site that will accept the hazardous waste debris

14-11.08A(2)(b) Lead Compliance Plan

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

14-11.08A(2)(c) Waste Characterization Analytical Test Results

Submit waste characterization analytical test results of the debris, 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

14-11.08A(2)(d) U.S. Environmental Protection Agency Identification Number Request

Submit a request for the US EPA Generator Identification Number when the Engineer accepts waste characterization analytical test results documenting that the debris is a hazardous waste.

14-11.08A(2)(e) Disposal Documentation

Submit receiving landfill or recycling facility documentation of proper disposal within 5 business days of transporting debris from the project.

14-11.08A(3) Safety and Health Provisions

Comply with 8 CA Code of Regs, including § 1532.1.

14-11.08A(3)(a) Protective Work Clothing and Washing Facilities

Wherever exposure or possible exposure to heavy metals or silica dust exists, and during application of undercoats of paint, supply clean protective work clothing for 5 Department personnel. Replace as needed.

Protective work clothing and washing facilities will be inspected by the Engineer and must meet approval for use by Department personnel before starting any activity with potential for lead exposure.

The protective work clothing will remain your property at the completion of the Contract.

14-11.08A(4) Quality Control and Assurance

Handle, store, transport and dispose of debris produced when the existing paint system is disturbed under all applicable Federal, State, and local hazardous waste laws. Laws that govern this work include:

1. Health & Safety Code Div 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.

14-11.08B Materials

Not Used

14-11.08C Construction

14-11.08C(1) General

Contain all debris produced when the existing paint system is disturbed.

14-11.08C(2) Containment System

Use a Class 1 ventilated containment system as defined in SSPC-Guide 6. The containment system must contain all water, resulting debris, and visible dust produced when the existing paint system is disturbed.

For bridges over water, the containment system must include a skimming boom consisting of a float with a skirt to collect floating debris.

The containment system must provide the clearances specified in section 12-4, except if no clearances are specified a vertical clearance of 15 feet and a horizontal clearance of 32 feet must be provided for the passage of public traffic.

Scaffolding or supports for the containment system must not extend below the vertical clearance level nor to the ground line at locations within the roadbed.

The containment system must comply with section 7-1.02K(6)(e).

The minimum total design load of the containment system must be the greater of the following:

1. Scaffolding capacity requirements specified in 8 CA Code of Regs §§ 1637–1667.
2. Sum of the dead and live vertical loads. Dead load consists of the actual load of the containment system. Live loads consist of a uniform load of not less than 45 psf, including 20 psf of sand load applied over the supported area, and a moving concentrated load of 1,000 lb to produce maximum

stress in the main supporting elements. Assumed horizontal loads need not be included in the design of the containment system.

Connections of the containment system to the existing structure must be made through the deck, girder, stringer, or floor beam system. No connections are allowed that will cause bending stresses in a truss member.

If flexible framing is used, support and fasten it to prevent escape of abrasive and blast materials due to whipping from traffic or wind and to maintain clearances.

The ventilation system in the containment system must be of the forced input airflow type with fans or blowers.

Negative air pressure must be employed within the containment system and will be verified by visual methods by observing the concave nature of the containment system while taking into account wind effects or by using smoke or other visible means to observe airflow. The input airflow must be properly balanced with the exhaust capacity throughout the range of operations.

The exhaust airflow of the ventilation system in the containment system must be forced into wet or dry dust collectors or bag houses.

Properly maintain the containment system while work is in progress and do not change the containment system unless authorized.

14-11.08C(3) Work Area Monitoring

14-11.08C(3)(a) General

Work area monitoring includes performing air monitoring of the ambient air and soil monitoring in and around the work area at the bridge site to verify the effectiveness of the containment system.

Work area monitoring includes:

1. Collecting, analyzing, and reporting air and soil test results
2. Recommending corrective action when specified exposure levels are exceeded

Work area air monitoring must be performed under the direction of a CIH. Collect air and soil samples at locations designated by the Engineer.

If containment measures are inadequate to contain and collect debris produced when the existing paint system is disturbed, the Engineer will direct you to revise the operations and the debris containment and collection plan. The directions will be in writing and will specify the items of work for which your debris containment and collection plan is inadequate. No further work must be performed on the items until:

1. The debris containment and collection plan is adequate
2. If required, a revised plan has been authorized for the containment and collection of debris produced when the existing paint system is disturbed.
3. Released material has been cleaned up and contained

14-11.08C(3)(b) Air Monitoring

Air samples for lead detection must be collected and analyzed under National Institute of Occupational Safety and Health (NIOSH) method 7082, with a limit of detection of at least $0.05 \mu\text{g}/\text{m}^3$. Air samples for detection of other metals must be collected and analyzed under NIOSH method 7300, with a detection limit of at least 1 percent of the appropriate permissible exposure limits (PEL) specified by Cal/OSHA. Alternative methods of sample collection and analysis with equivalent limits of detection may be used.

The airborne metals exposure, outside either the containment system or work areas must not exceed the lower of:

1. An average of $1.5 \mu\text{g}/\text{m}^3$ of air per day and $0.15 \mu\text{g}/\text{m}^3$ per day on a rolling 90-day basis. Calculate average daily concentrations based on monitoring to date, and projection based on those monitoring trends for the next 90 days or to the end of work subject to the lead compliance plan if less than the specified averaging period
2. 10 percent of the action level specified for lead by 8 CA Code of Regs §1532.1

3. 10 percent of the appropriate PELs specified for other metals by Cal/OSHA

Collect air samples daily during work that disturbs the existing paint system. All air samples must be analyzed within 48 hours by a facility accredited by the Environmental Lead Laboratory-Accreditation Program of the American Industrial Hygiene Association. If airborne metals concentrations exceed the allowable levels modify the work or containment system to prevent further release of metals. When corrective action is recommended by the CIH, additional samples must be taken unless directed otherwise.

Air sample laboratory analysis results, including results of additional samples taken after corrective action must be prepared by the CIH and must be delivered to the Engineer:

1. Verbally within 48 hours after sampling
2. As an informational submittal within 5 days after sampling

Air sample laboratory analysis results must include:

1. Date and location of sample collection, sample number, Contract number, bridge number, full name of the structure as shown, and District-County-Route-Post mile
2. Name and address of the certified laboratory that performed the analyses
3. Chain of custody forms
4. List of emission control measures in place when air samples were taken
5. Air sample results compared to the appropriate PELs
6. Corrective action recommended by the CIH to ensure airborne metals exposure, outside either the containment system or work areas is within specified limits
7. Signature of the CIH who reviewed the data and made recommendations

14-11.08C(3)(c) Soil Sampling for Debris Containment Verification

Collect 10 soil samples before starting work and collect 10 soil samples within 36 hours after completion of cleaning operations of existing steel. A soil sample consists of 5 plugs, each 3/4 inch in diameter and 1/2 inch deep, taken at each corner and center of a 1 sq yd area. Analyze soil samples for:

1. Total lead by US EPA Method 6010B or US EPA Method 7000 Series
2. Soluble lead by California Waste Extraction Test (Ca WET)

The analytical laboratory performing the analyses must be certified by the CDPH Environmental Laboratory Accreditation Program (ELAP) for all analyses to be performed.

The concentrations of heavy metals in the soil in the area affected must not increase when the existing paint system is disturbed. If soil sampling after completion of work that disturbs the existing paint system, shows an increase in the concentrations of heavy metals, the area affected must be cleaned and resampled until soil sampling and testing shows concentrations of heavy metals less than or equal to the concentrations collected before the start of work.

In areas without exposed soil, the concentrations of heavy metals on the area affected must not increase when the existing paint system is disturbed. Any visible increase in the concentrations of heavy metals, after completion of work that disturbs the existing paint system, must be removed.

Soil sample laboratory analysis results, including results of additional samples taken after corrective action, must be delivered to the Engineer:

1. Verbally within 48 hours after sampling
2. Within 5 days after sampling

Soil sample laboratory analysis results must include:

1. Date and location of sample collection, sample number, Contract number, bridge number, full name of the structure as shown, and District-County-Route-Post mile
2. Concentrations of heavy metals expressed as mg/kg and mg/L
3. Name and address of the certified laboratory that performed the analyses
4. Chain of custody documentation

14-11.08C(4) Debris Storage

Debris produced when the existing paint system is disturbed must not be temporarily stored on the ground. Debris accumulated inside the containment system must be removed before the end of each work shift. Debris must be stored as a hazardous waste.

14-11.08C(5) Debris Waste Characterization

Make necessary arrangements to test the debris as required by the disposal facility and as specified. Testing must include:

1. Total lead by US EPA Method 6010B
2. Soluble lead by Ca WET
3. Soluble lead by Toxicity Characteristic Leaching Procedure (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 U.S. 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 work that disturbs the existing paint system. The analytical laboratory must be certified by the CDPH ELAP for all analyses to be performed.

14-11.08C(6) Debris Transporting and Disposal

For bidding purposes assume the debris is a hazardous waste.

After the Engineer accepts the waste characterization analytical test results dispose of hazardous waste debris at a Class 1 disposal facility located in California under the requirements of the disposal facility operator within 45 days after accumulating 220 pounds of debris and dust. The Department is the generator of this hazardous waste.

If less than 220 pounds of hazardous waste debris is generated in total, dispose of it within 45 days after the start of accumulation of the debris.

Use a hazardous waste manifest and a transporter using vehicles with current DTSC registration certificate when transporting hazardous waste. The Engineer will obtain the US EPA Generator Identification Number and will sign all manifests as the generator within 2 business days of receiving and accepting the waste characterization analytical test results and receiving your request for the US EPA Generator Identification Number.

Dispose of the debris at an appropriately permitted disposal facility based upon the waste characterization and comply with disposal facility requirements. Make all arrangements with the operator of the disposal facility. Transport debris as a hazardous waste unless analytical testing demonstrates that it is non-hazardous and the Engineer agrees.

If waste characterization analytical test results demonstrate that the debris is a non-hazardous waste and the Engineer agrees, dispose of the debris at an appropriately permitted CA Class II or CA Class III facility or recycle it.

Debris may be disposed of at a facility equipped to recycle the debris subject to the following requirements:

1. Copper slag abrasive blended by the supplier with a calcium silicate compound must be used for blast cleaning
2. The debris may be transported to the recycling facility as a non-hazardous waste

3. Make all arrangements with the operator of the recycling facility and perform any testing of the debris produced when the existing paint system is disturbed that is required by the operator

14-11.08D Payment

If waste characterization analytical test results demonstrate that the debris is a non-hazardous waste, the Engineer agrees, and debris is disposed of at an appropriately permitted CA Class II, CA Class III, or recycling facility, the Department does not adjust payment.

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
3. 1 year of generation if stored in a water-resistant container or within 90 days after the container is full, whichever is shorter
4. 1 year of generation if storing in a storage building as defined in 22 CA Code of Regs, Div. 4.5, Chp. 34, § 67386.6(a)(2)(C)

14-11.09D Payment

Not Used

Replace section 14-11 with:

14-11.11 MANAGEMENT OF ASBESTOS CONTAINING MATERIALS

14-11.11A General

14-11.11A(1) Summary

Section 14-11.11 includes specifications for removal, and disposal of asbestos-containing material (ACM). Friable ACM generated as part of this work is Department-generated hazardous waste under 14-11.02F.

14-11.11A(2) Definitions

asbestos: Includes chrysotile, amosite, crocidolite, tremolite, anthrophyllite, actinolite and any of these minerals that has been chemically treated and/or altered.

asbestos-containing material (ACM): Any building material, including asbestos cement pipe containing commercial asbestos in an amount greater than 1% by weight, area, or count.

certified asbestos consultant (CAC): An asbestos consultant certified by Cal/OSHA under 8 CA Code of Regs § 341.15 and 1529.

friable ACM: Any material containing more than 1 percent asbestos by area that hand pressure can crumble, pulverize or reduce to powder when dry".

non-friable ACM: Asbestos fibers are tightly bound into the matrix of the material and should not become an airborne hazard as long as the material remains intact and undamaged, and is not sawed, sanded, drilled or otherwise abraded during removal (Asbestos Hazard Emergency Response Act (AHERA)).

14-11.11A(3) Asbestos Survey Results

Asbestos was detected on the Market Street Bridge on a 12-inch diameter, welded steel pipe with tar enamel coating covered by an asbestos wrap. The laboratory analysis results prepared by Quantem Laboratories, dated 6/20/12 are included in the "Information Handout." In addition, there are suspected ACM containing railing shims on 2 of the bridges requiring removal. The total quantities of ACM materials to be removed is:

1. Turntable Bay Road UC, bridge number 06-0130- 19.8 square feet (railing shims)
2. Power Line Road UC, bridge number 06-0147- 17.2 square feet (railing shims)
3. Sacramento River Bridge, bridge number 06-0014- 740 linear feet (wrapped pipe)

14-11.11A(4) Submittals

14-11.11A(4)a Asbestos Sampling and Analysis Report

Not Used

14-11.11A(4)b Air Quality Management District (AQMD) or Air Pollution Control District (APCD) Notification of Demolition

Submit a copy of the NESHAP notification form and attachments, required under section 14-9.02, before submittal to the AQMD or APCD.

14-11.11A(4)c Asbestos Compliance Plan

Prepare an Asbestos Compliance Plan (ACP) to prevent or minimize exposure to asbestos. The ACP must be signed by a CIH before submission to the Engineer for review and authorization. Submit the ACP to the Engineer at least 15 business days before beginning work in areas containing or suspected to contain asbestos. The ACP must comply with section 7-1.01A, "Labor Code Requirements" of the Standard Specifications and contain as a minimum:

1. Identification of key personnel for the project
2. Scope of Work and equipment that will be used
3. Job hazard analysis for work assignments
4. Summary of risk assessment
5. Personal protective equipment
6. Delineation of work zones on-site
7. Decontamination procedures
8. General safe work practices
9. Security measures
10. Emergency response plans
11. Worker training

14-11.11A(4)d Removal Work Plan

Prepare a work plan for the removal, storage, transportation and disposal of ACM. Removal and management of ACM must be performed by a contractor registered under Labor Code § 6501.5 and certified under Bus & Prof Code § 7058.6

Asbestos removal procedures must include:

1. Installing asbestos warning signs at perimeters of abatement work areas
2. Wetting asbestos materials with sprayers
3. Containing large volumes of asbestos materials in disposal bins for temporary storage until removed from the site
4. Providing manifests for disposal upon completion for the Engineer to sign
5. Providing transporters registered to transport hazardous waste in the state of California under the Health and Safety Code Ch 6.5, Div 20 and 22 CA Code of Regs, Div 4.5
6. Disposing of asbestos materials at a disposal facility permitted by the California Environmental Protection Agency
7. Compliance with federal, state, and local requirements for asbestos work, transport, and disposal

14-11.11A(4)e Certification of Completion of Safety Training

Submit a certification of completion of safety training for all trained personnel before starting work in areas containing or suspected to contain asbestos.

14-11.11A(4)f Waste Shipment Records

Submit a copy of all waste shipment records within 35 days after shipment.

14-11.11A(5) Quality Control and Assurance

14-11.11A(5)a Qualifications

The person in charge of asbestos inspection and abatement planning must be a CAC.

The person in charge of asbestos removal must be registered under Labor Code § 6501.5 and certified under Bus & Prof Code § 7058.6.

Laboratories used to perform asbestos analysis must be certified by the CDPH Environmental Laboratory Accreditation Program (ELAP) for all analyses to be performed.

14-11.11A(5)b Regulatory Requirements

Codes which govern removal and disposal of materials containing asbestos include:

1. CA Health and Safety Code, Division 20, Chapter 6.5, Hazardous Waste Control
2. 8 CA Code of Regs, General Industry Safety Order 5208 Asbestos
3. 8 CA Code of Reg, § 1529 and 341
4. 22 CA Code of Regs, Division 4.5
5. Cal/OSHA, Part 26 (amended), of 29 CFR
6. 40 CFR, Part 61, subpart M

14-11.11B Materials

Not used

14-11.11C Construction

Notify Cal/OSHA of changes in work locations or conditions under 8 CA Code of Regs § 341.9.

Before starting work in areas containing or suspected to contain asbestos, provide safety training that meets the requirements of 8 CA Code of Regs § 1529 to personnel who have no prior training or are not current in their training status, including State personnel.

Provide training, personal protective equipment, and medical surveillance required by the Asbestos Compliance Plan to 2 State personnel.

14-11.11C(1) Asbestos Inspection (Removal of ACM from Bridge)

Complete an inspection to determine if ACM or suspected ACM is present within the structure at least 30 days before starting removal of ACM from bridge.

14-11.11C(2) Unanticipated Suspected ACM discovered During Demolition or Excavation

If unanticipated suspected ACM is discovered during demolition, the portion of the work that involves the unanticipated suspected ACM must be performed by or under the direction of CAC. Test the suspected ACM in compliance with USEPA "Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance."

Notify the APCD or the AQMD of changes to removal or demolition plans, including discovery of ACM during demolition, within 2 business days of the change.

14-11.11C(3) Removal

Comply with 8 CA Code of Regs § 1529 and § 341. Remove friable ACM using the wetting method. Remove and handle all non-friable ACM to prevent breakage. The removal of ACM encased in concrete or other similar structural material is not required before demolition, but the ACM must be adequately wetted whenever exposed during demolition. Prevent visible emissions from all ACM removal activities.

Mark all regulated work areas with the following or equivalent warning:

**DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY**

14-11.11C(4) Packaging

Comply with 22 CA Code of Regs, Div 4.5, Chapter 12, Article 3 requirements for packaging and labeling removed ACM. Place removed ACM in approved containers (double ply, 0.06-inch minimum thickness, plastic bags) with caution labels affixed to bags. Caution labels must have conspicuous, legible lettering, that spells out the following or equivalent warning:

**DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD**

Place removed materials containing asbestos directly into a covered, lockable roll off or drop box that has the same caution label affixed on all sides.

14-11.11C(5) Transportation

All haulers of friable ACM must have current registration with DTSC for transporting hazardous waste and must have a U.S. Environmental Protection Agency Identification Number (U.S. EPA I.D. Number). All vehicles used to transport hazardous waste material must carry a valid registration during transport. Transport non-friable (non-hazardous waste) ACM to the disposal facility with a shipping document or waste shipment record.

14-11.11C(6) Disposal

Dispose of friable and non-friable waste containing asbestos at a disposal facility permitted to accept the waste and that meets all the requirements specified by federal, state and local regulations. Notify the proper authorities at the disposal site in advance of delivery of ACM. Sample waste as required by the disposal facility. Provide copies of all documentation to the Engineer for sampling procedures, locations, analysis, and chain-of-custody forms.

14-11.11D Payment

Not Used

15 EXISTING FACILITIES

Replace section 15-1.03B with:

15-1.03B Residue Containing Lead from Paint and Thermoplastic

Residue from grinding or cold planing contains lead from paint and thermoplastic. The average lead concentrations are less than 1,000 mg/kg total lead and 5 mg/L soluble lead. This residue:

1. Is a nonhazardous waste
2. Does not contain heavy metals in concentrations that exceed thresholds established by the Health and Safety Code and 22 CA Code of Regs
3. Is not regulated under the Federal Resource Conservation and Recovery Act (RCRA), 42 USC § 6901 et seq.

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

Payment for a lead compliance plan is not included in the payment for existing facilities work.

Payment for handling, removal, and disposal of grinding or cold planing residue that is a nonhazardous waste is included in the payment for the type of removal work involved.

Replace section 15-1.03C with:

15-1.03C Loop Detectors

The existing inductive loop detectors shown must remain in place and operational.

If you damage part of a loop conductor including an adjacent loop and the portion leading to the adjacent pull box, replace the entire loop detector within 2 weeks of damage.

Replace section 15-2.02B(3) with:

15-2.02B(3) Cold Planing Asphalt Concrete Pavement

15-2.02B(3)(a) General

Schedule cold planing activities so that not more than 7 days elapses between the time the pavement is cold planed and the HMA is placed.

15-2.02B(3)(b) Materials

Use the same quality of HMA for temporary tapers that is used for the HMA overlay or comply with the specifications for minor HMA in section 39.

15-2.02B(3)(c) Construction

15-2.02B(3)(c)(i) General

Do not use a heating device to soften the pavement.

The cold planing machine must be:

1. Equipped with a cutter head width that matches the planing width. If the cutter head width is wider than the cold plane area shown, submit to the Engineer a request for using a wider cutter head. Do not cold plane unless the Engineer approves your request.
2. Equipped with automatic controls for the longitudinal grade and transverse slope of the cutter head and:
 - 2.1. If a ski device is used, it must be at least 30 feet long, rigid, and a 1-piece unit. The entire length must be used in activating the sensor.
 - 2.2. If referencing from existing pavement, the cold planing machine must be controlled by a self-contained grade reference system. The system must be used at or near the centerline of the

roadway. On the adjacent pass with the cold planing machine, a joint-matching shoe may be used.

3. Equipped to effectively control dust generated by the planing operation
4. Operated so that no fumes or smoke is produced.

Replace broken, missing, or worn machine teeth.

15-2.02B(3)(c)(ii) Grade Control and Surface Smoothness

Furnish, install, and maintain grade and transverse slope references.

The depth, length, width, and shape of the cut must be as shown or as ordered. The final cut must result in a neat and uniform surface. Do not damage the remaining surface.

The completed surface of the planed asphalt concrete pavement must not vary more than 0.02 foot when measured with a 12-foot straightedge parallel with the centerline. With the straightedge at right angles to the centerline, the transverse slope of the planed surface must not vary more than 0.03 foot.

Where lanes are open to traffic, the drop-off of between adjacent lanes must not be more than 0.15 foot.

15-2.02B(3)(c)(iii) Temporary HMA Tapers

Comply with section 7-1.03.

15-2.02B(3)(c)(iv) Remove Planed Material

Remove cold planed material concurrent with planing activities so that removal does not lag more than 50 feet behind the planer.

15-2.02B(3)(d) Payment

Payment for removal of pavement markers, thermoplastic traffic stripe, painted traffic stripe, and pavement marking within the area of cold planing is included in the payment for cold plane asphalt concrete pavement of the types shown in the Bid Item List.

Replace section 15-2.02C(1) with:

15-2.02C(1) General

Remove traffic stripe and pavement markings before making any changes to the traffic pattern.

Remove traffic stripes and pavement markings by high pressure water blasting by methods that do not materially damage the pavement. Remove pavement marking images so that the old message cannot be identified.

Comply with section 14-11.07 for disposal of yellow traffic stripe residue.

15-2.02C(1)(a) High Pressure Water Blasting

High pressure water blasting must remove paint, thermoplastic, epoxy or preformed tape materials from the following surfaces without causing any significant damage:

1. Asphalt concrete
2. Concrete
3. Friction course asphalt concrete
4. Grooved concrete

High pressure water blasting must not remove any significant amount of fines from the surfaces, nor cause any degradation of the edges of grooves that may be present. Protect the existing pavement from damage under section 15-1.01.

The high pressure water blasting system must be in a mobile configuration to allow easy, safe movement down a roadway.

The width of the blast head and resulting nozzle spray pattern must be variable, with minimal effort, to allow for the removal of varying widths of traffic markings while not causing any impact to areas outside of the line marking.

The blast head assembly must be positioned on casters or wheels to maintain the distance from the nozzles to the road surface and to facilitate the ease of forward movement along the removal path. The blast head assembly must also be affixed to a hydraulically driven vehicle to provide for smooth, adjustable forward speed. The operator must be able to quickly adjust the forward speed in very small increments to only remove the markings without traveling too slow and gouging the underlying road surface.

High pressure water blasting must remove at least 95% of the traffic stripe or pavement marking without causing any significant damage to the underlying road surface.

15-2.02C(1)(b) Vacuum Recovery

The spray head must be shrouded in such a way as to immediately contain:

1. The water used to spray
2. The debris being generated as a result of the spraying

A vacuum recovery system must be attached to the shroud. The system must immediately move the water and debris generated by the high pressure water spray to a collection box or tank. You may not leave standing water or debris on the pavement.

The vacuum recovery must operate concurrently with the water blasting. The residue and water must be removed immediately after contact between the water and the surface.

15-2.02C(1)(c) Quality Control and Assurance

Before removing traffic stripes or pavement markings, the Engineer selects and marks a test section of traffic stripe, at least 50 feet in length.

Demonstrate the ability of the high pressure water blast method to remove the existing traffic stripe without damaging the existing pavement. Do not proceed with work beyond the test section until authorized. The Engineer may adjust the size of the test section for your demonstration if necessary

Replace section 15-2.02C(2) with:

15-2.02C(2) Remove Traffic Stripes and Pavement Markings Containing Lead

Residue from removing traffic stripes and pavement markings contains lead from the paint or thermoplastic. The average lead concentrations are less than 1,000 mg/kg total lead and 5 mg/L soluble lead. This residue:

1. Is a nonhazardous waste
2. Does not contain heavy metals in concentrations that exceed thresholds established by the Health and Safety Code and 22 CA Code of Regs
3. Is not regulated under the Federal Resource Conservation and Recovery Act (RCRA), 42 USC § 6901 et seq.

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

Payment for a lead compliance plan is not included in the payment for existing facilities work.

Payment for handling, removal, and disposal of pavement residue that is a nonhazardous waste is included in the payment for the type of removal work involved.

Replace section 15-2.02F with:

15-2.02F Remove Asphalt Concrete Dikes

Before removing the dike, cut the outside edge of the asphalt concrete on a neat line and to a minimum depth of 0.17 foot.

You may dispose of the dike by burial in an embankment in the same manner as specified for burying concrete in an embankment in section 15-3.01.

Replace "Reserved" in section 15-2.04D with:

15-2.04D(1) General

Cable anchor assemblies or terminal anchor assemblies, including concrete anchors and steel foundation tubes that are not reused must be completely removed.

Reconstruction includes single or double metal beam guard railing and three beam barrier, transition railings, end anchor assemblies and terminal systems where shown.

15-2.04D(2) Materials

Reconstruct metal beam guard railing with posts of the same material as the existing metal beam guard railing section to be reconstructed.

Reconstruct metal beam guard railing with blocks of the same material as the existing metal beam guard railing section to be reconstructed.

Terminal systems must use the type of post and block specified by the manufacturer or as shown.

End anchors and transition railings must use the type of post and block shown.

Sand bedding must comply with section 19-3.02E(2).

15-2.04D(3) Construction

Reconstruct metal beam guard railing with new posts, blocks and hardware.

Acceptable salvaged steel tubes, plates, brackets, and cables may be reused. Keep a sufficient supply of new or salvaged spare parts on hand to insure there is no delay to the work.

Reconstruct terminal system in accordance with Manufacturer's instructions or as shown. You must have a copy of the manufacturer's drawings and installation manual onsite for the model of terminal system being reconstructed.

Each terminal system installed must be identified by painting the type of terminal system in neat black letters and figures 2 inches high on the backside of the rail element between system posts numbers 4 and 5. Apply a black metallic acrylic resin type paint to a clean dry surface.

Install and backfill steel foundation tubes and soil tubes in conformance with manufacturer's instructions and section 83-1.02B.

If a soil plate is not used on steel foundation tube or soil tube, you must install a 5/8 inch bolt through the tube just below the bottom of the wood post to keep the post from dropping into the tube.

Sand bedding or other acceptable material must be used to:

1. Backfill holes resulting from the removal of existing posts and anchors that are not reused
2. Partially backfill holes so that the bottom of the post bears on compacted material if a post of the same size is being replaced
3. Completely backfill holes resulting from the removal of a wood post before installing a steel post in the same hole
4. Completely backfill holes resulting from drilling a pilot hole larger than 5 inches before driving a steel post in the hole
5. Backfill any void remaining after installing a post or sleeve

Compaction must comply with section 19-5. Place material in lifts approximately 4 inch thick. Moisten and thoroughly compact each layer.

15-2.04D(4) Payment

Reconstruct metal beam guard railing will be measured along the face of the rail from end to end regardless of the type of rail, terminal system, or anchor that is reconstructed.

Furnishing new replacement parts for unacceptable salvaged steel tubes, plates, brackets, and cables is change order work.

Replace section 15-2.07E with:

15-2.07E Modify Expansion Grate

Modifying expansion grates includes removing expansion grates, removing portions of bars and angles, and reinstalling expansion grates at new elevation.

If you damage expansion grate, repair or replace at your expense. The replacement must be of the same kind and of the same or better quality and condition as before removal.

Cut bars and angles so that they have smooth edges.

Clean the cut ends of bars and angles under SSPC-SP 3. Paint immediately after cleaning with 2 coats of organic zinc-rich primer under section 59-2.03C(2)(a).

Add to section 15-4.01C(1):

Remove the following portions of bridges:

Location code	Bridge no.	Description of work
Location A	06-0130L	Barrier rail type 9 and overhang
Location B	06-0147L	Barrier rail type 9 and overhang
Location C	06-0014 SB	For south-bound lanes remove existing back wall, expansion dam, and expansion joint armor
	06-0014 NB	For north-bound lanes remove existing backwall, and channels

Add to section 15-5.01C(2):

When abrasive blasting within 10 feet of public traffic, remove residue using a vacuum attachment operating concurrently with the blasting equipment.

The Engineer may direct you to remove existing slurry or chip seal contrast treatment. This is change order work.

Replace the 3rd paragraph of the RSS for section 15-5.01C(4) with:

Remove existing asphalt concrete surfacing and membrane seal by cold milling. Do not remove more than 1/2 inch of the existing concrete slab during cold-milling activities.

Add to section 15-5.01C(4):

Where a portion of the asphalt concrete overlay is to remain, saw cut a 2-inch-deep neat line along the edge to remain in place before removing asphalt concrete. Remove the asphalt surfacing without damaging the existing surfacing to remain in place.

Add to section 15-5.05A(2):

Submit a public safety plan. Include with the submittal:

1. Public notification letter describing the work to be performed with treatment work locations, dates and times. Include a list of addresses of delivery and posting of the letter.
2. Airborne emissions monitoring plan. A CIH certified in comprehensive practice by the American Board of Industrial Hygiene must prepare and execute the plan. The plan must have at least 4 monitoring points including the mixing point, application point, and point of nearest public contact.

3. Action plan for protecting the public if airborne emissions levels exceed permissible levels.
4. Copy of the CIH's certification.

Submit results from airborne emissions monitoring of the test area before starting production work.

Submit results from production airborne emissions monitoring as an informational submittal after completing treatment activities.

Add to the list in the 3rd paragraph of section 15-5.05A(3):

7. Demonstrate suitability of the airborne emissions monitoring plan

Add to section 15-5.05C:

Deliver the public notification letter to residences and businesses within 100 feet of treatment work and to local fire and police officials at least 7 days before starting treatment activities. Post the letter at the job site.

Monitor airborne emissions during treatment activities.

Replace the 6th paragraph of section 15-5.05C with:

Thoroughly mix all resin components. Apply resin to the deck within 5 minutes of mixing. The approximate application rate is 75 sq ft/gal. Resin that thickens during application is rejected.

Add to section 15-5.06A(2):

Submit a public safety plan. The public safety plan must include:

1. Public notification letter with a list of delivery and posting addresses. The letter must describe the work to be performed and state treatment work locations, dates, and times. Deliver the letter to residences and businesses within 100 feet of the overlay work and to local fire and police officials at least 7 days before starting overlay activities. Post the letter at the job site.
2. Airborne emissions monitoring plan. A CIH certified in comprehensive practice by the American Board of Industrial Hygiene must prepare and execute the plan. The plan must have at least 4 monitoring points, including the mixing point, application point, and point of nearest public contact. Monitor airborne emissions during overlay activities.
3. Action plan for protecting the public if airborne emissions levels exceed permissible levels.
4. Copy of the CIH's certification.

Submit results from airborne emissions monitoring of the trial overlay before starting production work.

Submit results from production airborne emissions monitoring as an informational submittal after completing overlay activities.

Add to the list in the 2nd paragraph of section 15-5.06A(3):

8. Demonstrate the suitability of the airborne emissions monitoring plan

Add to section 15-5.06C(1):

You may use a mechanical mixer to mix the polyester concrete. The mixer capacity must not exceed 9 cu ft unless authorized. Initiate the resin binder and thoroughly blend it immediately before mixing it with the aggregate. Mix the polyester concrete for at least 2 minutes before placing.

Replace the 1st paragraph of section 39-1.02B with:

Tack coat must comply with the specifications for asphaltic emulsion or asphalts. Use CRS2, CQS1, asphalt binder, or PMCRS2 asphaltic emulsion.

Add to section 39-1.02C:

Asphalt binder used in HMA Type A must be PG 64-28 M.

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 for HMA thickness greater than 0.2-feet and the 1/2-inch HMA Types A and B gradation for HMA thickness less than or equal to 0.2-feet.

If aggregate source is from Modoc, Siskiyou, or Shasta County, submit aggregate samples to the Engineer at least 30 days before the aggregate's intended use.

Treat HMA aggregate with lime using the slurry method.

Add to the 4th table of section 39-1.02E:

Aggregate Quality					
Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Sodium sulfate soundness (% max loss) ^c	California Test 214	25	25	25	25
Coarse durability index (min) ^d	California Test 229	65	65	65	65
Fine durability index (min)	California Test 229	50	50	50	50
Plasticity Index	California Test 204	<10	<10	<10	--

^c Requirement applies only if aggregate source is from Modoc, Siskiyou, or Shasta County.

^d Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 2nd row of the 4th table of section 39-1.02E with:

Aggregate Quality					
Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Los Angeles Rattler (% max.)	California Test 211				
Loss at 100 rev.		12	--	12	12
Loss at 500 rev.		25	25	25	25

Replace the 3rd paragraph of section 39-1.03A with:

Laboratories testing aggregate qualities, RAP, and preparing the mix design and JMF must be qualified under the Department's Independent Assurance Program. Take samples under California Test 125.

When doing your mix design take three 80 lb RAP samples from stockpiles under California Test 125. Split each sample into 2 parts:

1. Each part must weigh at least 40 lb.
2. Submit 1 part to the Engineer with the JMF.
3. Use 1 part for your testing.

Add to the 1st table of the RSS for section 39-1.03B:

HMA Mix Design Requirements				
Quality characteristic	Test method	HMA type		
		A	B	RHMA-G
Optimum Bitumen Content (OBC)	California Test 367	--	--	7.0% min
Moisture susceptibility (minimum dry strength, psi)	California Test 371	100	100	100
Moisture susceptibility (tensile strength ratio, %) ^b	California Test 371	≥80	≥80	≥80

^b After lime treatment.

^c Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r , and absorption of fine aggregate.

Replace the 1st and 2nd rows of the 1st table of the RSS for section 39-1.03B with:

HMA Mix Design Requirements				
Quality characteristic	Test method	HMA type		
		A	B	RHMA-G
Air void content (%)	California Test 367	4.0	4.0	3.5
Voids in mineral aggregate (% min.) No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367 ^c	17.0	17.0	--
		15.0	15.0	--
		14.0	14.0	18.0–23.0
		13.0	13.0	18.0–23.0

Replace the 2nd table in the RSS for section 39-1.03B with:

**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)			
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)			
PG-58		10,000	10,000	--
PG-64		10,000	10,000	
PG-70		12,500	12,500	
PG-76 or higher		15000	15000	

Add to section 39-1.03B:

If the project is greater than 1500 feet elevation, perform a mix design that produces the quality characteristic shown in the table when mixed with the asphalt used on the project in the amount determined to be optimum by California Test 367:

Quality Characteristic	Test	Requirement
Surface abrasion	California Test 360	Loss not to exceed 0.4 g/cm ²

Replace the 4th and 5th paragraphs of section 39-1.03C with:

For HMA Type A, B or RHMA-G submit test results with the JMF submittal for:

1. California Test 204 plasticity index
2. California Test 371 for treated and untreated HMA for:
 - 2.1. Tensile strength ratio
 - 2.2. Minimum dry strength
3. AASHTO T 324 (Modified), for RAP substitution greater than 15 percent

Replace the 6th paragraph of section 39-1.03C with:

For HMA Type A, B or RHMA-G submit the California Test 371 tensile strength ratio, California Test 371 minimum dry strength, and AASHTO T 324 (Modified) test results to:

1. The Engineer
2. Moisture_Tests@dot.ca.gov

Delete the last two paragraphs of the RSS for Section 39-1.03C.

Delete the last paragraph of section 39-1.03E.

Delete "If required," from the 5th item in the 2nd paragraph of the RSS for section 39-1.03G.

Replace the 3rd paragraph of the RSS for section 39-1.03G with:

With an accepted modified JMF submittal, the Engineer verifies each modified JMF within 10 business days of receiving all verification samples.

Replace the 4th paragraph of the RSS for section 39-1.03G with:

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
 - 2.1. design value ± 2.0 percent for HMA Type A and Type B
 - 2.2. design value ± 1.5 percent for RHMA-G
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
6. Optimum Bitumen Content
7. Tensile Strength Ratio
8. Minimum Dry Strength
9. Hamburg Wheel Track for RAP substitution greater than 15 percent, as shown in the table titled "Additional HMA Mix Design Requirements for RAP Substitution Rate Greater Than 15 Percent"

Replace the last paragraph of the RSS for section 39-1.03G with:

The Engineer deducts \$4,000 from payments for each modified JMF verification.

Add to section 39-1.08A:

On the first production day and once during production of the first 5,000 tons, submit:

1. Samples split from your HMA production sample for California Test 371 to:
 - 1.1 The Engineer
 - 1.2 The Transportation Laboratory, Attention: Moisture Test.
2. The California Test 371 results to:
 - 2.1 The Engineer
 - 2.2 Moisture_Tests@dot.ca.gov

After the 1st production day and production of the first 5,000 tons, submit the California Test 371 results for each 5,000 tons to:

1. The Engineer
2. Moisture_Tests@dot.ca.gov

Add to section 39-1.11A of the RSS for section 39-1.11:

Place RHMA-G only when the atmospheric temperature is 70 degrees F or greater.

Use a material transfer vehicle (MTV) if:

1. The project quantity of hot mix asphalt to be paved is greater than 1000 tons, and
2. Any of the following exists:
 - 2.1. Paving is allowed and the atmospheric temperature is below 70 degrees F.
 - 2.2. Time from discharge to truck at the HMA plant until transfer to the paver's hopper is 90 minutes or greater.

The MTV must:

1. Either receive HMA directly from the truck or use a pickup head to load it from a windrow than can be deposited on the roadway surface for a maximum of 100 feet in length.
2. Remix the HMA, with augers, before loading the paver.
3. Transfer HMA directly into the paver's receiving hopper or feed system.
4. Have sufficient capacity to prevent stopping the paver.

The MTV requirements will not apply to replace asphalt concrete surfacing under section 39-1.21.

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.

Replace the headings and paragraphs in section 39-1.12 with:

39-1.12A General

Section 39-1.12 includes specifications for measuring pavement smoothness with an inertial profiler (IP) and straightedge, analyzing the data with FHWA's engineering software ProVAL, and correcting deficient smoothness. Grinding equipment used for smoothness correction must comply with Section 42-3.03B.

Test pavement smoothness using an IP except use a 12-foot straightedge at the following locations:

1. Traffic lanes less than 1,000 feet in length including ramps, turn lanes, and acceleration and deceleration lanes
2. HMA pavement within 3 feet from and parallel to the construction joint formed between curbs, gutters, or existing pavement
3. Areas within 15 feet of manholes
4. Shoulders
5. Weigh-in-motion areas
6. Miscellaneous areas such as medians, gore areas, turnouts, and maintenance pullouts

Where IP testing is required, pavement smoothness for each lane must be determined by the international roughness index (IRI) for the left and right wheel paths in an individual lane and then averaging the results. The average of the IRIs from the left and right wheel paths for the same lane is the mean roughness index (MRI) of the lane. The wheel paths are a pair of lines 3 feet from and parallel to the edge of a lane. Left and right wheel paths are based on the direction of travel.

Where IP testing is required, identify areas of localized roughness. Areas of localized roughness must be identified using the ProVAL smoothness assurance analysis by calculating continuous IRI for each wheel path with a 25-foot interval using a 250 mm filter.

Interpret references to "must-grinds" as "localized roughness" and "PI₀" as "MRI" in the RSS for section 39.

39-1.12B Submittals

At least 5 business days before start of initial profiling or changing profiler or operator, submit:

1. IP certification issued by Texas Transportation Institute. The certification must be not more than 12 months old.
2. Operator certification for the IP issued by Texas Transportation Institute. The certification must be not more than 36 months old.
3. List of manufacturer's recommended test procedures for IP calibration and verification.

Within 2 business days after cross correlation testing, submit ProVAL profiler certification analysis report for cross correlation test results performed on test section to the Engineer and to the electronic mailbox address:

smoothness@dot.ca.gov

Within 2 business days after each day of inertial profiling, submit profile data to the Engineer and to the electronic mailbox address:

smoothness@dot.ca.gov

Profiling data must include:

1. Raw profile data for each lane.
2. ProVAL ride quality analysis report for IRIs of left and right wheel paths of each lane. Submit in pdf file format.
3. ProVAL ride quality analysis report for MRIs of each lane. Submit in pdf file format.
4. ProVAL smoothness assurance analysis report for IRIs of left wheel path. Submit in pdf file format.
5. ProVAL smoothness assurance analysis report for IRIs of right wheel path. Submit in pdf file format.
6. GPS data file for each lane in GPS exchange. Submit in GPS eXchange file format.
7. Manufacturer's recommended IP calibration and verification tests results.
8. AASHTO IP calibration and verification test results including bounce, block, and distance measurement instrument (DMI).

Submit the raw profile data in unfiltered electronic pavement profile file (PPF) format. Name the PPF file using the following naming convention:

YYYYMMDD_TTCCRRR_D_L_W_S_X_PT.PPF

where:

YYYY = year

MM = Month, leading zero

DD = Day of month, leading zero

TT = District, leading zero

CCC = County, 2 or 3 letter abbreviation as shown in section 1-1.08

RRR = Route number, no leading zeros

D = Traffic direction as NB, SB, WB, or EB

L = Lane number from left to right in direction of travel

W = Wheel path as "L" for left, "R" for right, or "B" for both

S = Beginning station to the nearest foot (i.e., 10+20) or beginning post mile to the nearest hundredth (i.e., 25.06) no leading zero

X = Profile operation as "EXIST" for existing pavement, "INTER" for after prepaving smoothness correction, "PAVE" for after paving, and "CORR" for after final surface pavement correction

PT = Pavement type (i.e., HMA, RHMA, HMA-O, RHMA-O, RHMA-G, etc.)

Electronic PPF files that do not follow this standardized naming convention will be rejected.

Within 2 business days of performing straightedge measurements, submit areas requiring smoothness correction. Identify locations of smoothness correction by:

1. Location Number
2. District-County-Route
3. Beginning station or post mile to the nearest 0.01 mile
4. For correction areas within a lane:
 - 4.1. Lane direction as NB, SB, EB, or WB

- 4.2. Lane number from left to right in direction of travel
- 4.3. Wheel path as "L" for left, "R" for right, or "B" for both
- 5. For correction areas not within a lane:
 - 5.1. Identify pavement area (i.e., shoulder, weight station, turnout)
 - 5.2. Direction and distance from centerline as "L" for left or "R" for right
- 6. Estimated size of correction area

39-1.12C Inertial Profiler Calibration and Verification Tests

IP equipment must display a current certification decal with expiration date.

Operate the IP according to the manufacturer's recommendations and AASHTO R57-10 at 1-inch recording intervals.

Notify the Engineer 2 business days before performing IP calibration and verification testing.

Conduct the following IP calibration and verification tests in the Engineer's presence each day before performing inertial profiling:

- 1. Block test. Verify the height sensor accuracy under AASHTO R57-10, section 5.3.2.3.
- 2. Bounce test. Verify the combined height sensor and accelerometer accuracy under AASHTO R57-10, section 5.3.2.3.2.
- 3. DMI test. Calibrate the accuracy of the testing procedure under AASHTO R56-10, section 8.4.
- 4. Manufacturer's recommended tests.

Conduct cross correlation IP verification test in the Engineer's presence before performing initial profiling. Verify cross correlation IP verification test at least annually. Conduct 5 repeat runs of the IP on an authorized test section. The test section must be on an existing asphalt concrete pavement surface 0.1 mile long. Calculate a cross correlation to determine the repeatability of your device under Section 8.3.1.2 of AASHTO R56-10 using ProVAL profiler certification analysis with a 3 feet maximum offset. The cross correlation must be a minimum of 0.92.

For each 0.1 mile section, your IRI values must be within 10 percent of the Department's IRI values. The Engineer may order you to recalibrate your IP equipment and reprofile. If your results are inaccurate due to operator error, the Engineer may disqualify your IP operator.

39-1.12D Acceptance Criteria

For areas that require pavement smoothness determined using an IP, the pavement surface must:

- 1. Have no areas of localized roughness with an IRI greater than 120 in/mi
- 2. Comply with the MRI requirements shown in the following tables for a 0.1 mile section:

HMA^a Pavement Smoothness Acceptance Criteria

HMA thickness	MRI requirement
> 0.20 foot	60 in/mi or less
≤0.20 foot	75 in/mi or less

^aExcept OGFC

OGFC Pavement Smoothness Acceptance Criteria

OGFC placement on	MRI requirement
New construction, or HMA overlay	60 in/mi or less
Existing pavement	75 in/mi or less
Milled surface	75 in/mi or less

For areas that require pavement smoothness determined using a 12-foot straightedge, the HMA pavement surface must not vary from the lower edge of the straightedge by more than:

1. 0.01 foot when the straightedge is laid parallel with the centerline
2. 0.02 foot when the straightedge is laid perpendicular to the centerline and extends from edge to edge of a traffic lane
3. 0.02 foot when the straightedge is laid within 24 feet of a pavement conform

Pavement smoothness may be accepted based on your testing in the absence of the Department's testing.

39-1.12E Smoothness Measurement

39-1.12E(1) General

Notify the Engineer of start location by station and start time at least 2 business days before profiling.

Remove foreign objects on the pavement surface before profiling.

39-1.12E(2) Inertial Profiler

Mark the beginning and ending station on the pavement shoulder before profiling. Stationing must be the same when profiling more than one surface.

While collecting the profile data to determine IRI, record the following locations in the raw profile data:

1. Begin and end of all bridge approach slabs
2. Begin and end of all bridges
3. Begin and end of all culverts visible on the roadway surface

Determine the MRI for 0.1-mile fixed sections using the ProVAL ride quality analysis with a 250 mm filter. Profile the left and right wheel paths of each lane. Calculate the MRI of each lane. A partial section less than 0.1 mile that is the result of an interruption to continuous pavement surface must comply with the MRI specifications for a full section. Adjust the MRI for a partial section to reflect a full section based on the proportion of a section paved.

Determine the areas of localized roughness using a continuous IRI for each wheel path with a 25-foot interval using a 250 mm filter. Localized roughness greater than 120 in/mi must be corrected regardless of the IRI values of a 0.1-mile section.

Determine the MRI of the HMA, except OGFC. If the MRI of the final pavement surface is greater than the MRI acceptance requirement in the table titled "HMA Pavement Smoothness Acceptance Criteria" in section 39-1.12D, correct to the MRI acceptance requirement in the table.

The final surface of HMA must meet MRI acceptance requirements in the table titled "HMA Pavement Smoothness Acceptance Criteria" in section 39-1.12D before placing OGFC.

Determine the MRI of the OGFC. If OGFC MRI is greater than the accepted value in the table titled "OGFC Pavement Smoothness Acceptance Criteria" in section 39-1.12D, correct to the MRI acceptance requirement in the table.

39-1.12E(3) Straightedge

Measure areas that require 12-foot straightedge. If the straightedge measurement is greater than the accepted value in section 39-1.12D, correct to the acceptance requirement.

39-1.12F Smoothness Correction

If the final surface of the pavement does not comply with section 39-1.12D, grind the pavement to within specified tolerances, remove and replace it, or place an overlay of HMA. Do not start corrective work until your method is authorized.

Smoothness correction of the final pavement surface must leave at least 75 percent of the specified HMA thickness. If ordered, core the pavement at the locations determined by the Engineer. Coring, including traffic control, is change order work. Remove and replace deficient pavement areas where the overlay thickness is less than 75 percent of the thickness specified as determined by the Engineer.

If you choose to correct OGFC, the Engineer determines if the corrective method causes raveling. OGFC that is raveling must be removed and replaced.

Corrected HMA pavement areas must be uniform rectangles with edges:

1. Parallel to the nearest HMA pavement edge or lane line
2. Perpendicular to the pavement centerline

On ground areas not to be overlaid with OGFC, apply fog seal coat under section 37-2.

Where corrections are made within areas requiring testing with IP, reprofile the entire lane length with the IP device.

Where corrections are made within areas requiring testing with a 12-foot straightedge, retest the corrected area with the straightedge.

Add to section 39-1.13:

HMA placed on the bridge deck must be Type A.

Asphalt binder must be Grade PG 64-28 M .

Replace section 39-1.16 with:

39-1.16 RUMBLE STRIPS

39-1.16A General

Construct rumble strips in the top layer of HMA surfacing by ground-in method.

39-1.16B Materials

Not Used

39-1.16C Construction

Select the method and equipment for constructing ground-in indentations.

Do not construct rumble strips on structures or approach slabs.

Construct rumble strips within 2 inches of the specified alignment. The grinding equipment must be equipped with a sighting device enabling the operator to maintain the rumble strip alignment.

Indentations must comply with the specified dimensions within 0.06 inch in depth and 10 percent in length and width.

The Engineer orders grinding or removal and replacement of noncompliant rumble strips to bring them within specified tolerances. Ground surface areas must be neat and uniform in appearance.

The grinding equipment must be equipped with a vacuum attachment to remove residue from the roadbed.

Dispose of removed material.

On ground areas, apply fog seal coat under section 37-2.

39-1.16D Payment

Rumble strips are measured by the station along the length of the rumble strips without deductions for gaps between indentations.

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.

39-1.19A(2) Submittals

Determine the exact lime proportions for treated aggregate stockpiles and resulting combined aggregate. 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
Course durability index (D _c) (min) ^e	California Test 229	1 per 3,000 tons of aggregate treated with lime
Fine durability index (D _f) (min)	California Test 229	
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.

^eRequirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

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 aggregate stockpiles 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 virgin stockpiles ^a	0.4–1.0
Fine virgin stockpiles ^a	1.5–2.0
Combined virgin aggregate	1.0–1.5

^a Stockpiles containing predominately coarse aggregate are coarse aggregate stockpiles. Stockpiles containing predominately fine aggregate are fine aggregate stockpiles.

For OGFC, you may reduce the combined virgin aggregate lime ratio to 0.5–1.0 percent.

The lime ratio for fine and coarse virgin aggregate stockpiles must be within ± 0.2 percent of the lime ratio in the accepted JMF. The lime ratio must be within ± 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.

Add to the first table of the RSS for section 39-2.02B:

Minimum Quality Control—Standard Construction Process

Quality characteristic	Test method	Minimum sampling and testing frequency	HMA type			
			A	B	RHMA-G	OGFC
Coarse durability index (min) ^{k, m}	California Test 229	1 per 3,000 tons during production,	65	65	65	65
Fine durability index (min) ^k	California Test 229	but not less than 1 per paving day	50	50	50	50

^k Obtain sample from stockpile before lime treatment.

^l Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r , and absorption of fine aggregate.

^m Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 7th, 10th, 14th, 18th and 19th rows of the first table of the RSS for section 39-2.02B with:

Minimum Quality Control—Standard Construction Process

Quality characteristic	Test method	Minimum sampling and testing frequency	HMA type			
			A	B	RHMA-G	OGFC
Air void content (%) ^{c, f}	California Test 367	1 per 4,000 tons or 2 per 5 business days, whichever is greater	4 ± 2	4 ± 2	3.5 ± 1.5	--
Los Angeles Rattler (% max) ^k Loss at 100 rev. Loss at 500 rev.	California Test 211	1 per 3,000 tons during production, but not less than 1 per paving day	12 25	-- 25	12 25	12 25
Voids in mineral aggregate(% min) ⁱ No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367 ^l		17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 18.0–23.0	--
Moisture susceptibility (minimum dry strength, psi)	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	100	100	100	--
Moisture susceptibility (tensile strength ratio, %)	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	80	80	80	--

Add to the first table of the RSS for section 39-2.03A:

HMA Acceptance—Standard Construction Process

Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Coarse durability index (min) ^{k,m}	California Test 229	65	65	65	65
Fine durability index (min) ^k	California Test 229	50	50	50	50

^k Obtain sample from stockpile before lime treatment.

^l Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r , and absorption of fine aggregate.

^m Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 7th, 9th, 13th, 17th and 18th rows of the first table of the RSS for section 39-2.03A with:

HMA Acceptance—Standard Construction Process

Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Air void content (%) ^{d,g}	California Test 367	4 ± 2	4 ± 2	3.5 ± 1.5	--
Los Angeles Rattler (% max) ^k Loss at 100 rev. Loss at 500 rev.	California Test 211	12	--	12	12
		25	25	25	25
Voids in mineral aggregate (% min) ⁱ No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367 ^l	17.0	17.0	--	--
		15.0	15.0	--	--
		14.0	14.0	18.0–23.0	--
		13.0	13.0	18.0–23.0	--
Moisture susceptibility (minimum dry strength, psi)	California Test 371	100	100	100	--
Moisture susceptibility (tensile strength ratio, %)	California Test 371	80	80	80	--

Add to the first table of the RSS for section 39-3.02A:

HMA Acceptance—Method Construction Process

Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Coarse durability index (min) ^{h,j}	California Test 229	65	65	65	65
Fine durability index (min) ^h	California Test 229	50	50	50	50

^h Obtain sample from stockpile before lime treatment.

ⁱ Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r , and absorption of fine aggregate.

^j Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 7th, 12th, 16th and 17th rows of the first table of the RSS for section 39-3.02A with:

HMA Acceptance—Method Construction Process

Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Los Angeles Rattler(% , max) ^h	California Test 211				
Loss at 100 rev. Loss at 500 rev.		12 25	-- 25	12 25	12 25
Voids in mineral aggregate (% min) ^f	California Test 367 ⁱ				
No. 4 grading		17.0	17.0	--	--
3/8" grading		15.0	15.0	--	--
1/2" grading		14.0	14.0	18.0-23.0	
3/4" grading	13.0	13.0	18.0-23.0		
Moisture susceptibility (minimum dry strength, psi)	California Test 371	100	100	100	--
Moisture susceptibility (tensile strength ratio, %)	California Test 371	80	80	80	--

Add to the first table of the RSS for section 39-4.02C:

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		
Coarse durability index(min) ^{k, m}	California Test 229	1 per 3,000 tons during production, but not less than 1 per paving day	65	65	65	Stockpile	48 hours
Fine Durability index (min) ^k	California Test 229		50	50	50	Stockpile	48 hours

^k Obtain sample from stockpile before lime treatment.

^l Determine the following using AASHTO T84: bulk specific gravity (SSD) of fine aggregate, bulk specific gravity (oven dry) of fine aggregate, G_r , and absorption of fine aggregate.

^m Requirement applies only if aggregate source is from Lassen, Modoc, Siskiyou or Shasta County.

Replace the 8th, 10th, 14th, 18th and 19th rows of the first table of the RSS for section 39-4.02C with:

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		
Air void content (%) ^{f, g}	California Test 367	1 per 4,000 tons or 2 per 5 business days, whichever is greater	4 ± 2	4 ± 2	3.5 ± 1.5	Loose Mix Behind Paver See California Test 125	48 hours
Los Angeles Rattler (% max) ^k : Loss at 100 rev. Loss at 500 rev.	California Test 211	1 per 3,000 tons during production, but not less than 1 per paving day	12 25	-- 25	12 25	Stockpile	48 hours
Voids in mineral aggregate (% min.) ⁱ No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367 ^l	As designated in QC plan. At least once per project.	17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 18.0–23.0	California Test 367 ^l	48 hours
Moisture susceptibility (minimum dry strength, psi)	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	100	100	100	--	
Moisture susceptibility (tensile strength ratio, %)	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	80	80	80	--	

Delete the "i" from the footnote in the quality characteristic column of the 16th row of the 1st table of the RSS for section 39-4.02C.

Add to the first table of the RSS for section 39-4.04A:

DIVISION VI STRUCTURES

51 CONCRETE STRUCTURES

Add to section 51-1.02B:

For the portions of structures shown in the following table, concrete must contain at least 675 pounds of cementitious material per cubic yard:

Bridge name and no.	Portion of structure
Sacramento River Bridge 06-0014	Abutment backwall
06-0130L	Barrier and overhang
06-0147L	Barrier and overhang
06-0099G	Barrier
06-0156	Barrier
06-0137G	Barrier

Concrete in superstructures and barriers for the bridges shown in the table above must:

1. Contain no more than 360 pounds of total water per cubic yard. Total water is the combined total of free water and water absorbed by aggregates in reaching a saturated surface-dry condition.
2. Be prequalified under section 90-1.01D(5)(b). Include water absorbed by the aggregates and free water in the certified test data and trial batch test reports. You must (1) submit a certificate of compliance for the workability of concrete with the prequalification test reports or (2) demonstrate the workability of trial batches in the Engineer's presence.

If authorized, you may use concrete from trial batches in structures at locations where concrete without a total water requirement is allowed. Concrete from trial batches used in structures at locations where air entrainment is not required must have air entrainment as specified for the trial batch instead of the requirements in section 90-1.02E(3).

Add to section 51-2.02:

51-2.02G Bonded Joint Seal

51-2.02G(1) General

51-2.02G(1)(a) Summary

Section 51-2.02G includes specifications for installing bonded joint seals.

Bonded joint seals consist of a preformed joint seal adhesively bonded to the joint openings.

51-2.02G(1)(b) Definitions

Not Used

51-2.02G(1)(c) Submittals

Submit the following:

1. Certificate of compliance for each batch of seals
2. Splicing details

51-2.02G(1)(d) Quality Control and Assurance

A technical representative of the joint seal manufacturer must be present during cleaning, preparing, and installation.

51-2.02G(2) Materials

Bonded joint seals must be one of the systems shown in the following table or equal:

Bonded joint seal system	Contact information
Jeene®Seal System	Watson Bowman Acme Corporation 95 Pineview Drive Amherst, NY 14228 (800) 677-4922 www.wbacorp.com
Silicoflex Joint Seal System	R.J. Watson, Inc 78 John Glenn Drive Amherst, NY 14228 (716) 691-3301 www.rjwatson.com
W-Seal Expansion Joint	D.S. TechStar, Inc 1219 West Main Cross Street Findlay, Ohio 14228 (419) 424-0888 www.techstar-inc.com
J –Series Sealing System	D.S. Brown Company 300 East Cherry Street North Baltimore, OH 45872 Phone: (419) 257-3561 Fax: (419) 257-2200 www.dsbrown.com
Wabo SPS Joint Seal System	Watson Bowman ACME 95 PineView Drive Amherst, NY 14228 Attn: Casey Woodlock Phone: (716) 817-5459 e-mail: casey.woodlock@basf.com www.wbacorp.com

Joint seals delivered to the job site must be labeled with:

1. Manufacturer's name
2. Lot or batch number
3. Dates of manufacturing, packaging, and expiration
4. Manufacturer's instructions for use

Silicone adhesive must be a 2-component type.

You may make field splices if authorized. Splice locations and methods must be authorized. Seals must be manufactured full length and then cut at the splice location and rematched before splicing.

Shop and field splices must have no visible offset of exterior surfaces and no evidence of bond failure.

51-2.02G(3) Construction

Prepare joints under section 51-2.02B(3)(b).

Thoroughly clean contact surfaces and install bonded joint seal under the manufacturer's instructions.

At maximum joint closure, the top surface of the bonded joint seal must be less than 3/4 inch below the deck surface.

51-2.02G(4) Payment

Not Used

52 REINFORCEMENT

Add to the list in the 2nd paragraph of section 52-2.02A(1):

7. Abutment backwall at bridge no. 06-0014
8. Overhang at bridge no. 06-0130L
9. Overhang at bridge no. 06-0147L

Add to section 52:

52-8 GALVANIC ANODE

52-8.01 GENERAL

52-8.01A Summary

Section 52-8 includes specifications for installing galvanic anodes.

52-8.01B Definitions

Not used

52-8.01C Submittals

Submit a certificate of compliance for each shipment of galvanic anodes that states that the materials involved comply in all respect to the manufacturer's current published specifications for the product involved.

52-8.01D Quality Control and Assurance

A qualified representative of the galvanic anode manufacturer must be present during installation of galvanic anodes on the 1st bridge and be available during the remaining installations.

52-8.02 MATERIALS

Galvanic anodes must have a zinc mass of at least 100 grams and be one of the systems shown in the following table or equal:

PRODUCT	MANUFACTURER
EMACO® CP Intact Galvanic Anodes 105G, 150G	BASF http://www.buildingsystems.basf.com
Galvashield®XP2 Galvashield®XP4 Galvanode VP (100g version)	Vector Technologies http://www.vector-corrosion.com/
Sentinel Silver Sentinel Gold	Euclid Chemical Company http://www.euclidchemical.com/
Sika® Galvashield® XP+	Sika Corporation http://usa.sika.com

Galvanic anodes must be embedded in a mortar pad that has a resistivity below 15,000 ohm cm as recommended by the galvanic anode manufacturer.

All galvanic anodes and related components must be made by the same manufacturer.

52-8.03 CONSTRUCTION

Do not space galvanic anodes more than the manufacturer's recommended spacing.

Clean reinforcement to remove all residue and foreign material immediately prior to placing the anodes.

State Specification PWB Coating System

Description	Coating	Dry film thickness (mils)
Surfaces cleaned to bare metal ^a :		
1st undercoat	State Specification PWB 145	2-3
2nd undercoat	State Specification PWB 146	2-3
1st finish coat	State Specification PWB 171	1.5-3
2nd finish coat	State Specification PWB 172	1.5-3
Total thickness, all coats		7-12
Existing painted surfaces to be topcoated:		
Undercoat	State Specification PWB 146	2-3
1st finish coat	State Specification PWB 171	1.5-3
2nd finish coat	State Specification PWB 172	1.5-3
Total thickness, new coats		5-9

^aIncludes 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.

Replace the paragraphs of the RSS for section 59-2.03C(2)(a) with:

Coatings for new structural steel and connections between new and existing structural steel must comply with the requirements shown in the following table:

Add to section 83-1.02A:

At locations exposed to traffic, schedule activities so that at the end of each day both leading and trailing ends of all guard railing are anchored to an authorized permanent or temporary terminal system, end anchor assembly or anchor block. You may anchor to existing guard railing using a standard bolted rail element splice.

Existing guard railing, including anchors, exposed to traffic must remain functional until new anchors are completed, or be protected by other means.

If you remove 1 or 2 posts to construct an anchor block, you must install nested double rail elements as shown or protect traffic by other means. Nested double rail elements must cover any railing without posts and extend from the anchor point to a minimum of 25 feet before the new anchor block.

If more than two posts must be removed to construct new anchor blocks, or if existing guard railing anchors cannot be used during construction, do not remove posts until you have submitted a plan to the Engineer detailing how you will protect traffic, and you have received authorization.

Replace "Reserved" in section 83-1.02B(1) with:

83-1.02B(1)(a) General

Section 83-1.02B(1) includes specifications for constructing vegetation control areas around metal beam guard railing posts with minor concrete.

Submit mix design for the minor concrete to be used for vegetation control. Include compressive strength test results with your mix design.

Submit the quantity in pounds of crumb rubber with your certificate of compliance for crumb rubber aggregate if used.

83-1.02B(1)(b) Materials

83-1.02B(1)(b)(i) General

Not Used

83-1.02B(1)(b)(ii) Minor Concrete

Minor concrete must include reinforcing fibers and crumb rubber aggregate.

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:

Gradation Requirements	
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 ± 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 ± 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.

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.

Replace the 2nd paragraph of section 92-1.02B with:

PG modified asphalt binder is asphalt binder modified with polymers, crumb rubber, or other additives, that must comply with the requirements shown in the following table:

PG Modified Asphalt Binder ^a

Property	AASHTO Test Method	Grade		
		PG 58-34 M	PG 64-28 M	PG 76-22 M
Original Binder				
Flash point, min °C	T 48	230	230	230
Solubility, min % ^b	T 44 ^c	97.5	97.5	97.5
Viscosity at 135°C ^d , max, Pa·s	T 316	3.0	3.0	3.0
Dynamic shear, Test temperature at 10 rad/s, °C min G*/sin(delta), kPa	T 315	58 1.00	64 1.00	76 1.00
RTFO test ^g , Mass loss, max, %	T 240	1.00	1.00	1.00
RTFO Test Aged Binder				
Dynamic shear, Test temperature at 10 rad/s, °C min G*/sin(delta), kPa	T 315	58 2.20	64 2.20	76 2.20
Dynamic shear, Test temperature at 10 rad/s, °C max (delta), degree	T 315	80 ^e	80 ^e	80 ^e
Elastic recovery ^f , Test temperature °C min recovery, %	T 301	25 75	25 75	25 65
PAV ^h , temperature, °C	R 28	100	100	110
RTFO Test and PAV Aged Binder				
Dynamic shear, Test temperature at 10 rad/s, °C max G*sin(delta), kPa	T 315	16 5000	22 5000	31 5000
Creep stiffness, Test temperature, °C max S-value, MPa min M-value	T 313	-24 300 0.300	-18 300 0.300	-12 300 0.300

^aDo not modify PG Polymer Modified using polyphosphoric acid modification.

^bThe Engineer waives this specification if the supplier is an Approved Supplier as defined by the Department's Certification Program for Suppliers of Asphalt.

^cThe Department allows ASTM D 5546 or ASTM D 7753 instead of AASHTO T 44. Particles recovered from ASTM D 5546 must be less than 250 μm.

^dThe Engineer waives this specification if the supplier provides written certification the asphalt can be adequately pumped and mixed at temperatures meeting applicable safety standards.

^eTest temperature is the temperature at which G*/sin(delta) is 2.2 kPa. A graph of log G*/sin(delta) plotted against temperature may be used to determine the test temperature when G*/sin(delta) is 2.2 kPa. A graph of (delta) versus temperature may be used to determine delta at the temperature when G*/sin(delta) is 2.2 kPa. The graph must have at least two points that envelope G*/sin(delta) of 2.2 kPa and the test temperature must not be more than 6 degree C apart. The Engineer also accepts direct measurement of (delta) at the temperature when G*/sin(delta) is 2.2 kPa.

^fTests without a force ductility clamp may be performed.

^g"RTFO Test" means the asphaltic residue obtained using the Rolling Thin Film Oven Test, AASHTO Test Method T 240 or ASTM D 2872. The residue from mass change determination may be used for other tests.

^h"PAV" means "Pressure Aging Vessel."

Crumb rubber must be from automobile and truck tires, and free from contaminants including fabric, metal, and mineral or other nonrubber substances.

PG modified asphalt binders modified with crumb rubber must be homogeneous and must not contain visible particles of crumb rubber.

Supplier of PG modified asphalt binder modified with crumb rubber must certify:

1. The amount of crumb rubber by weight of asphalt binder
2. A minimum of 10 percent of crumb rubber by weight of asphalt binder

**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	http://www.dot.ca.gov/hq/esc/oe/weekly_ads/all_advertised.php	--	--
--	---	----	----

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.

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

06-20-12

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

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

06-20-12

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

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

01-20-12

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

5 CONTROL OF WORK

10-19-12

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

10-19-12

and 100 or more working days

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

10-19-12

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

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

10-19-12

, including VECPs

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

10-19-12

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

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:

10-19-12

field supervisory personnel

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

06-20-12

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.

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

06-20-12

30

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

06-20-12

Performance of

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.

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

07-27-12

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

09-16-11

25 days

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

09-16-11

125 days

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 qualifiable 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.

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:

$$Q_h = HMATT \times X_a$$

04-20-12

Replace "weight of dry aggregate" in the definition of the variable X_a in section 9-1.07B(2) with:

total weight of HMA

04-20-12

Replace the formula in section 9-1.07B(3) with:

$$Q_{rh} = RHMATT \times 0.80 \times X_{arb}$$

04-20-12

Replace "weight of dry aggregate" in the definition of the variable X_{arb} 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:

$$Q_{mh} = MHMATT \times [(100 - X_{am}) / 100] \times X_{mab}$$

04-20-12

Replace "weight of dry aggregate" in the definition of the variable X_{mab} in section 9-1.07B(4) with:

total weight of HMA

04-20-12

Replace the formula in section 9-1.07B(5) with:

$$Q_{rap} = HMATT \times X_{aa}$$

04-20-12

Replace "weight of dry aggregate" in the definitions of the variables X_{aa} and X_{ta} 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:

04-19-13

1. Active stockpiles before a forecasted storm event
2. Inactive stockpiles according to the WPCP or SWPPP schedule

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 ± 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 ± 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 ± 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 ± 2.0 percent of the average binder content of the original processed RAP stockpile.

The maximum specific gravity for processed RAP must be within ± 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 ± 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

^a 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) ^a			
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) ^a			
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 ^a	120	120	--
Moisture susceptibility (tensile strength ration, %)	California Test 371 ^a	70	70	--

^aTest 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 ± 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 ± 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 ± 5 percent.

For RAP substitution greater than 15, you may adjust the RAP by ± 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 ^a	California Test 202	1 per 750 tons and any remaining part at the end of the project	JMF ± Tolerance ^b			
Sand equivalent (min) ^c	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) ^{d,e}	QC plan	2 per business day (min.)	91–97	91–97	91–97	--
Stabilometer value (min) ^c 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 (%) ^{c,f}	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 ^g	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
70	20		70	90		
Los Angeles Rattler (% max) Loss at 100 rev.	California Test 211		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) ^h	California Test 234		45	45	45	--
Voids filled with asphalt (%) ⁱ 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) ⁱ 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 ^l 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) ^j 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) ^j 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) ^j	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, %) ^j	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 ₀			
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

^a Determine combined aggregate gradation containing RAP under California Test 367.

^b The tolerances must comply with the allowable tolerances in section 39-1.02E.

^c Report the average of 3 tests from a single split sample.

^d 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.

^e 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.

^f 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.

^g For adjusting the plant controller at the HMA plant.

^h 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.

ⁱ Report only.

^j 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 ^a	California Test 202	JMF ± tolerance ^c	JMF ± tolerance ^c	JMF ± tolerance ^c	JMF ± tolerance ^c			
Sieve						3/4"	1/2"	3/8"
1/2"						X ^b		
3/8"							X	
No. 4								X
No. 8						X	X	X
No. 200	X	X	X					
Sand equivalent (min) ^d	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) ^{e, f}	California Test 375	91–97	91–97	91–97	--			
Stabilometer value (min) ^d No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 366	30 37	30 35	-- 23	-- --			
Air void content (%) ^{d, g}	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	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			
Fine aggregate angularity (% min) ^h	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 (%) ⁱ 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) ⁱ 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 ⁱ	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) ^j 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) ^j 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) ^j	California Test 371	120	120	--	--
Moisture susceptibility (tensile strength ration, %) ^j	California Test 371	70	70	--	--
Smoothness	Section 39-1.12	12-foot straight- edge, must grind, and PI ₀	12-foot straight- edge, must grind, and PI ₀	12-foot straight- edge, must grind, and PI ₀	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

^a The Engineer determines combined aggregate gradations containing RAP under California Test 367.

^b "X" denotes the sieves the Engineer tests for the specified aggregate gradation.

^c The tolerances must comply with the allowable tolerances in section 39-1.02E.

^d The Engineer reports the average of 3 tests from a single split sample.

^e 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.

^f 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.

^g 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.

^h 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.

ⁱ Report only.

^j 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 ^a	California Test 202	JMF ± tolerance ^b	JMF ± tolerance ^b	JMF ± tolerance ^b	JMF ± tolerance ^b
Sand equivalent (min) ^c	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) ^c 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 (%) ^{c, d}	California Test 367	4 ± 2	4 ± 2	TV ± 2	--
Fine aggregate angularity (% min) ^e	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 (%) ^f 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) ^f 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 ^f 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) ^g 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) ^g	AASHTO T 324 (Modified)	10,000 10,000 12,500 15000	10,000 10,000 12,500 15000	--	--
PG-58 PG-64 PG-70 PG-76 or higher					
Moisture susceptibility (minimum dry strength, psi) ^g	California Test 371	120	120	--	--
Moisture susceptibility (tensile strength ration, %) ^g	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

^a The Engineer determines combined aggregate gradations containing RAP under California Test 367.

^b The tolerances must comply with the allowable tolerances in section 39-1.02E.

^c The Engineer reports the average of 3 tests from a single split sample.

^d 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.

^e 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.

^f Report only.

^g 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 report-ing time allow-ance
			A	B	RHMA-G		
Aggregate gradation ^a	California Test 202	1 per 750 tons	JMF ± tolerance ^b	JMF ± tolerance ^b	JMF ± tolerance ^b	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) ^{c,d}	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 ^e	California Test 226 or 370	2 per day during production	--	--	--	Stock-piles or cold feed belts	--
Sand equivalent (min) ^f	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) ^f	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 (%) ^{f,g}	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) ⁿ	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 (%) ⁱ 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.) ⁱ 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 ⁱ 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) ⁱ 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 greater	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) ⁱ 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 greater	10,000 10,000 12,500 15000	10,000 10,000 12,500 15000	--	--	
Moisture susceptibility (minimum dry strength, psi) ^j	California Test 371	1 per 10,000 tons or 1 per project whichever is greater	120	120	--	--	
Moisture susceptibility (tensile strength ratio, %) ^j	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 PI ₀	12-foot straight-edge, must-grind, and PI ₀	12-foot straight-edge, must-grind, and PI ₀	--	
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

- ^a Determine combined aggregate gradation containing RAP under California Test 367.
- ^b The tolerances must comply with the allowable tolerances in section 39-1.02E.
- ^c 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.
- ^d 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.
- ^e For adjusting the plant controller at the HMA plant.
- ^f Report the average of 3 tests from a single split sample.
- ^g 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.
- ^h 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.
- ⁱ Report only.
- ^j 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 ^a				California Test 202	JMF ± Tolerance ^c		
	Sieve	3/4"	1/2"	3/8"					
1	1/2"	X ^b	--	--	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) ^{d, e}				0.40	California Test 375	92–96	92–96	91–96
	Sand equivalent (min) ^f					California Test 217	47	42	47
	Stabilometer value (min) ^f No. 4 and 3/8" gradings 1/2" and 3/4" gradings					California Test 366	30 37	30 35	-- 23
	Air void content (%) ^{f, g}					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	25 --	-- 90
	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) ^h					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) ⁱ 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 (%) ⁱ 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 ¹ 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) ^j 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) ^j 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) ^j		California Test 371	120	120	--
	Moisture susceptibility (tensile strength ratio %) ^j		California Test 371	70	70	70
	Smoothness		Section 39-1.12	12-foot straight- edge, must grind, and PI ₀	12-foot straight- edge, must grind, and PI ₀	12-foot straight- edge, must grind, and PI ₀
	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

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:

Tie Bar Tolerance	
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 ± 5 feet from the transverse construction joint formed at each day's start of paving and 1 ± 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:

cross-sectional area

04-20-12

Add to section 50-1.02:

50-1.02G Sheathing

09-16-11

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):

After seating, the maximum tensile stress in the prestressing steel must not exceed 75 percent of the minimum ultimate tensile strength shown.

01-20-12

Add to section 50-1.03B(2):

50-1.03B(2)(e) Debonding Prestressing Strands

09-16-11

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.

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:

Zinc Coating System		
Description	Coating	Dry film thickness (mils)
All new surfaces:		
Undercoat	Inorganic zinc primer, AASHTO M 300 Type I or II	4–8
Finish coat ^a	Exterior grade latex ^b , 2 coats	2 minimum each coat, 4–8 total
Total thickness, all coats		8–14
Connections to existing structural steel:^c		
Undercoat	Inorganic zinc primer, AASHTO M 300 Type I or II	4–8
Finish coat ^a	Exterior grade latex ^b , 2 coats	2 minimum each coat, 4–8 total
Total thickness, all coats		8–14

^aIf no finish coats are described, a final coat of inorganic zinc primer is required.

^bExterior grade latex must comply with section 91-2.02 unless otherwise specified.

^cIncludes 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 ^a :	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

^aIncludes 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.

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 ⁻¹ 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 ⁻¹ 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:

