



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**NOTICE TO BIDDERS
AND
SPECIAL PROVISIONS**

**FOR CONSTRUCTION ON STATE HIGHWAY IN ORANGE COUNTY IN LAGUNA
NIGUEL FROM PASEO DE COLINAS TO GREENFIELD DRIVE**

In District 12 On Route 73

Under

Bid book dated June 29, 2012

Standard Specifications dated 2010

Project plans approved June 11, 2012

Standard Plans dated 2010

Informal Bid Authorized by Pub Cont Code §10122

Identified by

Contract No. 12-0M5504

12-Ora-73-10.7/11.6

Project ID 1212000110

Federal-Aid Project

ACNH-P073(100)E

SPECIAL NOTICES

- For federal-aid projects, the Department is modifying its DBE program.
- This project has a special bid opening date and time. See the *Notice to Bidders* for details.

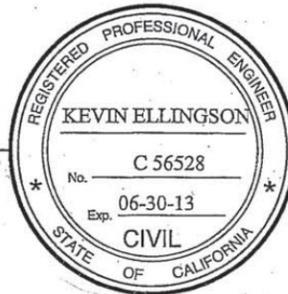
CONTRACT NO. 12-0M5504

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

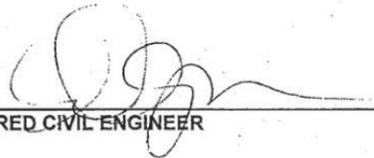
STRUCTURES


REGISTERED CIVIL ENGINEER

June 1, 2012



HIGHWAY


REGISTERED CIVIL ENGINEER



LANDSCAPE


LICENSED LANDSCAPE ARCHITECT



TABLE OF CONTENTS

NOTICE TO BIDDERS	1
COPY OF BID ITEM LIST	3
SPECIAL PROVISIONS	7
DIVISION I GENERAL PROVISIONS	7
1 GENERAL.....	7
2 BIDDING.....	8
3 CONTRACT AWARD AND EXECUTION	8
5 CONTROL OF WORK.....	9
8 PROSECUTION AND PROGRESS	9
9 PAYMENT	10
DIVISION II GENERAL CONSTRUCTION	10
10 GENERAL.....	10
12 TEMPORARY TRAFFIC CONTROL.....	11
13 WATER POLLUTION CONTROL.....	19
14 ENVIRONMENTAL STEWARDSHIP	20
15 EXISTING FACILITIES.....	22
DIVISION III GRADING	22
19 EARTHWORK	22
20 LANDSCAPE.....	23
DIVISION V SURFACINGS AND PAVEMENTS.....	25
39 HOT MIX ASPHALT	25
DIVISION VI STRUCTURES.....	25
46 GROUND ANCHORS AND SOIL NAILS	25
49 PILING.....	26
51 CONCRETE STRUCTURES.....	29
52 REINFORCEMENT	30
DIVISION VIII MISCELLANEOUS CONSTRUCTION.....	30
80 FENCES	30
86 ELECTRICAL SYSTEMS	31
DIVISION X MATERIALS	32
87 MATERIALS—GENERAL	32
90 CONCRETE.....	34

STANDARD PLANS LIST

The standard plan sheets applicable to this Contract include those listed below. The applicable revised standard plans (RSP) 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)
A10F	Legend - Soil (Sheet 1 of 2)
A10G	Legend - Soil (Sheet 2 of 2)
A20A	Pavement Markers and Traffic Lines, Typical Details
A62B	Limits of Payment for Excavation and Backfill - Bridge Surcharge and Wall
A62F	Excavation and Backfill - Metal and Plastic Culverts
D89	Pipe Culvert Headwalls - Straight and "L"
D102	Underdrains
H1	Landscape and Erosion Control - Abbreviations
H2	Landscape - Symbols
H3	Landscape Details
H4	Landscape Details
H5	Landscape Details
H6	Landscape Details
H7	Landscape Details
T1A	Temporary Crash Cushion, Sand Filled (Unidirectional)
T1B	Temporary Crash Cushion, Sand Filled (Bidirectional)

T2	Temporary Crash Cushion, Sand Filled (Shoulder Installations)
T3A	Temporary Railing (Type K)
T3B	Temporary Railing (Type K)
T4	Temporary Traffic Screen
T56	Temporary Water Pollution Control Details (Temporary Fiber Roll)
T58	Temporary Water Pollution Control Details (Temporary Construction Entrance)
T59	Temporary Water Pollution Control Details (Temporary Concrete Washout Facility)
T62	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
B0-13	Bridge Details
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

NOTICE TO BIDDERS

Bids open Monday, July 9, 2012

Dated June 29, 2012

General work description: Construct shear pile wall with ground anchors.

The Department will receive sealed bids for CONSTRUCTION ON STATE HIGHWAY IN ORANGE COUNTY IN LAGUNA NIGUEL FROM PASEO DE COLINAS TO GREENFIELD DRIVE.

District-County-Route-Post Mile: 12-Ora-73-10.7/11.6

Contract No. 12-0M5504

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

In order to ensure the Department achieves its federally mandated statewide overall DBE goal, the Department encourages the participation of DBEs as defined in 49 CFR 26.

Federal-aid project no.:

ACNH-P073(100)E

For the Federal training program, the number of trainees or apprentices is 13.

Bids must be on a unit price basis.

Complete the work within 550 working days.

The estimated cost of the project is \$17,200,000.

No prebid meeting is scheduled for this project.

The Department will receive bids until 10:00 a.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

EMW

COPY OF BID ITEM LIST

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
1	070012	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	LUMP SUM
2	071321	TEMPORARY FENCE (TYPE CL-6)	LF	890
3	074017	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	LUMP SUM
4	074028	TEMPORARY FIBER ROLL	LF	910
5	074033	TEMPORARY CONSTRUCTION ENTRANCE	EA	1
6	074038	TEMPORARY DRAINAGE INLET PROTECTION	EA	2
7	074041	STREET SWEEPING	LS	LUMP SUM
8	074042	TEMPORARY CONCRETE WASHOUT (PORTABLE)	LS	LUMP SUM
9	074051	TEMPORARY HYDRAULIC MULCH	SQYD	3,090
10	090100	TIME-RELATED OVERHEAD (WDAY)	WDAY	310
11	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM
12	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM
13	120165	CHANNELIZER (SURFACE MOUNTED)	EA	29
14	128652	PORTABLE CHANGEABLE MESSAGE SIGN (LS)	LS	LUMP SUM
15	129000	TEMPORARY RAILING (TYPE K)	LF	1,060
16	129100	TEMPORARY CRASH CUSHION MODULE	EA	14
17	129150	TEMPORARY TRAFFIC SCREEN	LF	1,050
18	130100	JOB SITE MANAGEMENT	LS	LUMP SUM
19	141103	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	LF	2,360
20	150608	REMOVE CHAIN LINK FENCE	LF	1,240

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
21	150711	REMOVE PAINTED TRAFFIC STRIPE	LF	6,090
22	150712	REMOVE PAINTED PAVEMENT MARKING	SQFT	130
23	150714	REMOVE THERMOPLASTIC TRAFFIC STRIPE	LF	4,260
24	150722	REMOVE PAVEMENT MARKER	EA	980
25	151540	RECONSTRUCT CHAIN LINK FENCE	LF	1,240
26	152603	MODIFY DRAINAGE SYSTEM	LS	LUMP SUM
27	190101	ROADWAY EXCAVATION	CY	42
28	190110	LEAD COMPLIANCE PLAN	LS	LUMP SUM
29 (F)	043996	STRUCTURE EXCAVATION (SHEAR PILE WALL)	CY	3,245
30 (F)	043997	STRUCTURE BACKFILL (SHEAR PILE WALL)	CY	165
31	194001	DITCH EXCAVATION	CY	40
32	043998	TEMPORARY WORKING BENCH	LS	LUMP SUM
33	200002	ROADSIDE CLEARING	LS	LUMP SUM
34	202006	SOIL AMENDMENT	CY	4
35	202011	MULCH	CY	270
36	202035	FERTILIZER (PACKET)	EA	590
37	204006	PLANT (GROUP F)	EA	6,800
38	204011	PLANT (GROUP K)	EA	1
39	204035	PLANT (GROUP A)	EA	170
40	204036	PLANT (GROUP B)	EA	330

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
41	204038	PLANT (GROUP U)	EA	44
42	204099	PLANT ESTABLISHMENT WORK	LS	LUMP SUM
43	206601	3/4" ELECTRIC REMOTE CONTROL VALVE	EA	1
44	206604	1 1/2" ELECTRIC REMOTE CONTROL VALVE	EA	3
45	208465	SPRINKLER (TYPE A-5)	EA	25
46	208466	SPRINKLER (TYPE A-6)	EA	9
47	208474	SPRINKLER (TYPE B-4)	EA	12
48	208560	FILTER ASSEMBLY UNIT	EA	1
49	208595	1" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	1,000
50	208596	1 1/4" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	250
51	208597	1 1/2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	130
52	208598	2" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	90
53	208600	3" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	1,800
54	208603	8" PLASTIC PIPE (SCHEDULE 40) (SUPPLY LINE)	LF	20
55	208683	BALL VALVE	EA	1
56	390132	HOT MIX ASPHALT (TYPE A)	TON	83
57	460210	GROUND ANCHOR (SUBHORIZONTAL)	EA	322
58	490607	48" CAST-IN-DRILLED-HOLE CONCRETE PILING	LF	13,241
59 (F)	043999	STRUCTURAL CONCRETE, SHEAR PILE WALL	CY	4,612
60 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	CY	0.6

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
61	044000	BAR REINFORCING STEEL (SHEAR PILE WALL)	LB	5,018,146
62	680285	4" PLASTIC PIPE UNDERDRAIN	LF	10
63	721420	CONCRETE (DITCH LINING)	CY	19
64	800360	CHAIN LINK FENCE (TYPE CL-6)	LF	1,240
65	024381	GEOMEMBRANE VISUAL BARRIER	SQYD	600
66	840504	4" THERMOPLASTIC TRAFFIC STRIPE	LF	5,500
67	840525	4" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 36-12)	LF	4,470
68	840656	PAINT TRAFFIC STRIPE (2-COAT)	LF	7,860
69	840666	PAINT PAVEMENT MARKING (2-COAT)	SQFT	130
70	850101	PAVEMENT MARKER (NON-REFLECTIVE)	EA	580
71	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	400
72	860090	MAINTAINING EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS DURING CONSTRUCTION	LS	LUMP SUM
73	999990	MOBILIZATION	LS	LUMP SUM

SPECIAL PROVISIONS

DIVISION I GENERAL PROVISIONS

1 GENERAL

Add to section 1-1.01:

Bid Items and Applicable Sections

Item code	Item description	Applicable section
070012	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	8
071321	TEMPORARY FENCE (TYPE CL-6)	80
074017	PREPARE WATER POLLUTION CONTROL PROGRAM	13
074028	TEMPORARY FIBER ROLL	13
074033	TEMPORARY CONSTRUCTION ENTRANCE	13
074038	TEMPORARY DRAINAGE INLET PROTECTION	13
074041	STREET SWEEPING	13
074042	TEMPORARY CONCRETE WASHOUT (PORTABLE)	13
074051	TEMPORARY HYDRAULIC MULCH	13
190110	LEAD COMPLIANCE PLAN	7
043996	STRUCTURE EXCAVATION (SHEAR PILE WALL)	19
043997	STRUCTURE BACKFILL (SHEAR PILE WALL)	19
043998	TEMPORARY WORKING BENCH	19
043999	STRUCTURAL CONCRETE, SHEAR PILE WALL	51
044000	BAR REINFORCING STEEL (SHEAR PILE WALL)	52
024381	GEOMEMBRANE VISUAL BARRIER	80

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

working day: Time measure unit for work progress. A working day is any day except when you cannot perform work on the controlling activity for at least 50 percent of the day with at least 50 percent of the normal labor and equipment due to any of the following:

- 2.1. Adverse weather-related conditions that cause you to dismiss the crew
- 2.2. Maintaining traffic under the Contract
- 2.3. The Engineer's direction to suspend the controlling activities for reasons unrelated to your performance
- 2.4. An unanticipated event not caused by either party such as:
 - 2.4.1. Act of God (Pub Cont Code § 7105)
 - 2.4.2. Act of a public enemy
 - 2.4.3. Epidemic
 - 2.4.4. Fire
 - 2.4.5. Flood
 - 2.4.6. Governor-declared state of emergency
 - 2.4.7. Landslide
 - 2.4.8. Quarantine restriction
- 2.5. An issue involving a third-party, including:
 - 2.5.1. Industry or area-wide labor strike
 - 2.5.2. Material shortage
 - 2.5.3. Freight embargo
 - 2.5.4. Jurisdictional requirement of a law enforcement agency

AA

5 CONTROL OF WORK

Add to section 5-1.09A:

The Department encourages the project team to exhaust the use of partnering in dispute resolution before engagement of an objective third party.

For certain disputes, a facilitated partnering session or facilitated dispute resolution session may be appropriate and effective in clarifying issues and resolving all or part of a dispute.

To afford the project team enough time to plan and hold the session, a maximum of 20 days may be added to the DRB referral time following the Engineer's response to a *Supplemental Potential Claim Record*.

To allow this additional referral time, the project team must document its agreement and intention in the dispute resolution plan of the partnering charter. The team may further document agreement of any associated criteria to be met for use of the additional referral time.

If the session is not held, the DRB referral time remains in effect as specified in section 5-1.43.

Add to section 5-1.23A:

Hand deliver all submittals to the Engineer. In addition to paper copies, deliver electronic copies of all submittals in PDF format.

AA

8 PROSECUTION AND PROGRESS

Replace "Reserved" in section 8-1.04E with:

Section 8-1.04B does not apply.

Start job site activities the next business day after receiving notice that the Contract has been approved by the Attorney General or the attorney appointed and authorized to represent the Department.

Replace section 8-1.09 with:

8-1.09 INCENTIVE/DISINCENTIVE FOR EARLY COMPLETION

The Department pays you the incentive for each day you complete the corresponding work part earlier than the date shown in the following table except as specified for the maximum total incentive and deducts the disincentive for each day you complete the corresponding work part beyond the date shown in the following table except as specified for the maximum total disincentive:

Incentive/Disincentive for Work Part Completion by Specified Dates

Work part	Date	Incentive amount	Disincentive amount
SEGMENT C	Oct 23, 2012	\$25000	\$50000

The Department pays a maximum total incentive of \$250,000.

The Department deducts a maximum total disincentive of \$500,000.

12-2.04 PAYMENT

Not Used

Replace 1st paragraph in section 12-3.06B(1) with:

Construction area warning and guide signs must have a black legend on a retroreflective, nonfluorescent-orange background. W10-1 and W47(CA) advance warning signs for highway-rail grade crossings must have a black legend on a retroreflective, nonfluorescent-yellow background.

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. Speed reduction zone

For 5 days, starting on the day of signal activation, place 1 portable changeable message sign in each direction of travel and display the following message: "SIGNAL AHEAD -- PREPARE TO STOP."

Portable changeable message signs ordered in excess of the number specified is change order work.

Replace section 12-3.13 with:

12-3.13 IMPACT ATTENUATOR VEHICLE

12-3.13A General

12-3.13A(1) Summary

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

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

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

Comply with the attenuator manufacturer's instructions for:

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

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

12-3.13A(2) Definitions

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

12-3.13A(3) Submittals

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

12-3.13A(4) Quality Control and Assurance

Do not start impact attenuator vehicle activities until authorized.

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

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

12-3.13B Materials

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

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

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

Each impact attenuator vehicle must have:

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

12-3.13C Construction

Except where prohibited, use an impact attenuator vehicle:

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

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

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

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

12-3.13 Payment

Not Used

Replace section 12-3.14 with:

12-3.14 TEMPORARY TRAFFIC SCREEN

12-3.14A General

Section 12-3.14 includes specifications for constructing temporary traffic screen at the locations shown.

12-3.14B Materials

Temporary traffic screen panels must be new or used, CDX grade or better, plywood or weather-resistant strandboard mounted and anchored on Type K temporary railing.

Wale boards must be new or used Douglas fir, rough sawn, construction grade or better.

Pipe screen supports must be new or used schedule 40, galvanized steel pipe.

Nuts, bolts, and washers must be cadmium plated.

Screws must be black or cadmium-plated flat head, cross-slotted screws with full thread length.

12-3.14C Construction

Mount and anchor temporary traffic screen on top of Type K temporary railing.

Remove the traffic screen from the highway when the Engineer determines it is no longer required. The traffic screen that is removed becomes your property.

A lateral move of Type K temporary railing with attached temporary traffic screen is change order work if ordered and the repositioning is not shown.

12-3.14D Payment

Temporary traffic screen is measured along the line of the completed screen.

Add to section 12-4.02A:

If work including installing, maintaining, and removing Type K temporary railing is to be performed within 6 feet of the adjacent traffic lane, close the adjacent traffic lane.

Except as listed above, closure of the adjacent traffic lane is not required for installing, maintaining, and removing traffic control devices.

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:

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: The day after Thanksgiving, Lincoln's Birthday, Washington's Birthday, and Columbus day.

The maximum length of a single stationary lane closure is 1.5 miles.

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.

Add to section 12-4.03:

For each 10-minute interval or fraction thereof past the time specified to reopen the closure, the Department will deduct the amount per interval shown below from moneys due or that may become due

the Contractor under the Contract. Damages are limited to 5 percent of the project cost per occurrence. Damages will not be assessed if the Engineer orders that the closure remain in place beyond the scheduled pickup time.

Type of facility	Route or segment	Period	Damages/interval (\$)
Mainline		1st half hour 2nd half hour 2nd hour and beyond	\$1100 / 10 minutes \$1200 / 10 minutes \$1400 / 10 minutes

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
x	H xx	xx	xx							
	SD xx									
x	xx	H xx	xx							
		SD xx								
	x	xx	H xx	xx						
			SD xx							
	x	xx	xx	H xx	xxx					
	x	xx	xx	SD xx	xxx					
				x	H xx					
				x	SD xx					
					x	H xx				
						SD xx				
						x	H xx	xx	xx	xx
							SD xx			
Legend:										
	Refer to lane requirement charts									
x	The full width of the traveled way must be open for use by traffic after 5:00 A.M.									
xx	The full width of the traveled way must be open for use by traffic.									
xxx	The full width of the traveled way must be open for use by traffic until 10:00 P.M.									
H	Designated holiday									
SD	Special day									

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

Chart no. 1 Freeway/Expressway Lane Requirements																									
County:Orange					Route/Direction:73/NB										PM:10.7-11.6										
Closure limits:SR-73 within Crown Valley Parkway																									
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	
Fridays	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	
Saturdays	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	
Sundays	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	
Legend:																									
1	Provide at least 1 through freeway lane open in direction of travel																								
2	Provide at least 2 adjacent through freeway lanes open in direction of travel																								
REMARKS:																									

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. The traffic control system for a lane closure or a ramp closure must comply with the details shown.

Traffic control system includes signs.

12-5.02 MATERIALS

Not Used

12-5.03 CONSTRUCTION

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.

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.

12-5.04 PAYMENT

Traffic control system for lane closure is paid for as traffic control system.

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.

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.

The painted temporary traffic stripe must be complete in place at the location shown before opening the traveled way to traffic. Removal of painted temporary traffic stripe is not required.

12-8.03F Temporary Pavement Marking Tape

Apply temporary pavement marking tape at the locations shown. The tape must be complete in place at the location shown before opening the traveled way to traffic.

12-8.03G Temporary Pavement Marking Paint

Apply and maintain temporary pavement markings consisting of painted pavement markings at the locations shown. The painted temporary pavement marking must be complete in place at the location shown before opening the traveled way to traffic. Removal of painted temporary pavement marking is not required.

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

12- 8.03H Temporary Pavement Markers

Place temporary pavement markers under the manufacturer's instructions. Cement the markers to the surfacing with the manufacturer's recommended adhesive, except do not use epoxy adhesive in areas where removal of the pavement markers is required.

You may use retroreflective pavement markers specified in section 85 instead of temporary pavement markers for long term day/night use, 180 days or less, except to simulate patterns of broken traffic stripe. Retroreflective pavement markers used for temporary pavement markers must comply with section 85, except the waiting period before placing pavement markers on new HMA surfacing as specified in section 85-1.03 does not apply. Do not use epoxy adhesive to place pavement markers in areas where removal of the pavement markers is required.

Temporary pavement markers must be complete in place before opening the traveled way to traffic.

12-8.04 PAYMENT

Not Used

AA

13 WATER POLLUTION CONTROL

Add to section 13-1.01A:

The following RWQCBs will review the authorized WPCP:

- 1. San Diego RWQCB

Replace 1st paragraph of section 13-6.03C with:

Provide temporary drainage inlet protection around drainage inlets as changing conditions require. Drainage inlet protection must be Type 3A, as appropriate for conditions around the drainage inlet.

14 ENVIRONMENTAL STEWARDSHIP

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. Type of hazardous waste storage containers
4. Container storage location and how it will be secured
5. Hazardous waste sampling protocol and QA/QC requirements and procedures
6. Qualifications of sampling personnel
7. Analytical lab that will perform the analyses
8. 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
9. 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 by the Engineer.

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

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

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

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

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

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

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

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

14-11.07B Materials

Not Used

14-11.07C Construction

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

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

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

From the first 220 gal of hazardous waste or portion thereof if less than 220 gal of hazardous waste are produced, a minimum of 4 randomly selected samples must be taken and analyzed individually. Samples must not be composited. From each additional 880 gal of hazardous waste or portion thereof if less than 880 gal are produced, a minimum of 1 additional random sample must be taken and analyzed. Use chain of custody procedures consistent with chapter 9 of US EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) while transporting samples from the project to the laboratory. Each sample must be homogenized before analysis by the laboratory performing the analyses. A sample aliquot sufficient to cover the amount necessary for the total and the soluble analyses must then be taken. This aliquot must be homogenized a 2nd time and the total and soluble analyses run on this aliquot. The homogenization process must not include grinding of the samples. Submit the name and location of the disposal facility that will be accepting the hazardous waste and the analytical laboratory along with the testing requirements not less than 5 business days before the start of removal of yellow thermoplastic and yellow painted traffic stripe and pavement marking. The analytical laboratory must be certified by the California Department of Public Health (CDPH) Environmental Laboratory Accreditation Program (ELAP) for all analyses to be performed.

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

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

Schedule of Values for Control and Neutral Conductors

Contract no. 12-0M5504				
Unit description	Unit	Approximate quantity	Value	Amount
__ AWG (UF) conductors (provide size)	LF			
__ AWG (UF) conductors	LF			
__ AWG (UF) conductors	LF			
__ AWG armor-clad conductors	LF			
__ AWG armor-clad conductors	LF			
__ AWG armor-clad conductors	LF			
No. 5 or larger pull box	EA			
Splices	EA			
__ Sprinkler control conduit (provide size)	LF			
__ Sprinkler control conduit	LF			
__ Sprinkler control conduit	LF			

Total _____

Add to section 20-3.02R(1):

Ball valves must be 2-piece brass or bronze body.

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

Remote control valves must be glass filled nylon, brass or bronze.

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

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

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

Valves must be angle pattern or straight pattern as shown.

1. Pile placement plan, dry and wet
2. Acceptance testing, including gamma-gamma logging, cross-hole sonic logging, and coring
3. *Pile Design Data Form*
4. Mitigation process
5. Timeline and critical path activities
6. Structural, geotechnical, and corrosion design requirements
7. Future meetings, if necessary, for pile mitigation and pile mitigation plan review
8. Safety requirements, including Cal/OSHA and Tunnel Safety Orders

Add to section 49-3.02B(6)(c):

The synthetic slurry must be one of the materials shown in the following table:

Material	Manufacturer
SlurryPro CDP	KB Technologies Ltd. 3648 FM 1960 West, Suite 107 Houston, TX 77068 (800) 525-5237
Super Mud	PDS Company c/o Champion Equipment Company 8140 East Rosecrans Ave. Paramount, CA 90723 (562) 634-8180
Shore Pac GCV	CETCO Drilling Products Group 1350 West Shure Drive Arlington Heights, IL 60004 (847) 392-5800
Terragel or Novagel Polymer	Geo-Tech Drilling Fluids 220 N. Zapata Hwy, Suite 11A Laredo, TX 78043 (210) 587-4758

Use synthetic slurries in compliance with the manufacturer's instructions. Synthetic slurries shown in the above table may not be appropriate for a given job site.

Synthetic slurries must comply with the Department's requirements for synthetic slurries to be included in the above table. The requirements are available from the Offices of Structure Design, P.O. Box 168041, MS# 9-4/11G, Sacramento, CA 95816-8041.

SlurryPro CDP synthetic slurry must comply with the requirements shown in the following table:

SLURRYPRO CDP

Property	Test	Value
Density During drilling	Mud Weight (density), API 13B-1, section 1	≤ 67.0 pcf ^a
Before final cleaning and immediately before placing concrete		≤ 64.0 pcf ^a
Viscosity During drilling	Marsh Funnel and Cup. API 13B-1, section 2.2	50–120 sec/qt
Before final cleaning and immediately before placing concrete		≤ 70 sec/qt
pH	Glass electrode pH meter or pH paper	6.0–11.5
Sand content, percent by volume Before final cleaning and immediately before placing concrete	Sand, API 13B-1, section 5	≤ 0.5 percent

^aIf authorized, you may use slurry in salt water. The allowable density of slurry in salt water may be increased by 2 pcf.

Slurry temperature must be at least 40 degrees F when tested.

Super Mud synthetic slurry must comply with the requirements shown in the following table:

SUPER MUD

Property	Test	Value
Density During drilling	Mud Weight (Density), API 13B-1, section 1	≤ 64.0 pcf ^a
Before final cleaning and immediately before placing concrete		≤ 64.0 pcf ^a
Viscosity During drilling	Marsh Funnel and Cup. API 13B-1, section 2.2	32–60 sec/qt
Before final cleaning and immediately before placing concrete		≤ 60 sec/qt
pH	Glass electrode pH meter or pH paper	8.0–10.0
Sand content, percent by volume Before final cleaning and immediately before placing concrete	Sand, API 13B-1, section 5	≤ 0.5 percent

^aIf authorized, you may use slurry in salt water. The allowable density of slurry in salt water may be increased by 2 pcf.

Slurry temperature must be at least 40 degrees F when tested.

Shore Pac GCV synthetic slurry must comply with the requirements shown in the following table:

SHORE PAC GCV

Property	Test	Value
Density During drilling	Mud Weight (Density), API 13B-1, section 1	≤ 64.0 pcf ^a
Before final cleaning and immediately before placing concrete		≤ 64.0 pcf ^a
Viscosity During drilling	Marsh Funnel and Cup. API 13B-1, section 2.2	33–74 sec/qt
Before final cleaning and immediately before placing concrete		≤ 57 sec/qt
pH	Glass electrode pH meter or pH paper	8.0–11.0
Sand content, percent by volume Before final cleaning and immediately before placing concrete	Sand, API 13B-1, section 5	≤ 0.5 percent

^aIf authorized, you may use slurry in salt water. The allowable density of slurry in salt water may be increased by 2 pcf.

Slurry temperature must be at least 40 degrees F when tested.

Terragel or Novagel Polymer synthetic slurry must comply with the requirements shown in the following table:

TERRAGEL OR NOVAGEL POLYMER

Property	Test	Value
Density During drilling	Mud Weight (Density), API 13B-1, section 1	≤ 67.0 pcf ^a
Before final cleaning and immediately before placing concrete		≤ 64.0 pcf ^a
Viscosity During drilling	Marsh Funnel and Cup. API 13B-1, section 2.2	45–104 sec/qt
Before final cleaning and immediately before placing concrete		≤ 104 sec/qt
pH	Glass electrode pH meter or pH paper	6.0–11.5
Sand content, percent by volume Before final cleaning and immediately before placing concrete	Sand, API 13B-1, section 5	≤ 0.5 percent

^aIf authorized, you may use slurry in salt water. The allowable density of slurry in salt water may be increased by 2 pcf.

Slurry temperature must be at least 40 degrees F when tested.

AA

51 CONCRETE STRUCTURES

Add to section 51-1.01A:

The pile cap must be constructed of mass concrete under section 51-6.

AA

52 REINFORCEMENT

Add to section 52-1.04:

Bar reinforcing steel involved in shear pile wall work, including CIDH piles, is paid for as bar reinforcing steel (shear pile wall).

AA

DIVISION VIII MISCELLANEOUS CONSTRUCTION

80 FENCES

Replace "Reserved" in section 80-1.08 with:

80-1.08 GEOMEMBRANE VISUAL BARRIERS

80-1.08A General

Section 80-1.08 includes specifications for installing geomembrane visual barriers on temporary chain link fence (Type CL-6).

80-1.08B Materials

Geomembrane visual barriers must be made of a scrim-reinforced material. Submit a certificate of compliance for the material, which must comply with ASTM D4632 and have a grab tensile strength of 230 psi minimum in each direction.

The primary component of the material must be vinyl, PVC, very low-density polyethylene, HDPE, chloro-sulfonated polyethylene or similar flexible materials or combinations of those materials. The geomembrane must resist degradation from ultraviolet exposure.

The scrim reinforcement must be nylon, polyester or other suitable material.

The geomembrane visual barrier must be free from holes, tears, or punctures. The barrier must be at least 5 feet 8 inches high and a tan color.

80-1.08C Construction

Attach the geomembrane visual barrier to the chain link fence (Type CL-6) where shown.

Place grommets along the top and bottom edges of the geomembrane at 1-foot spacing. Before setting the grommets, place 1-1/4-inch-wide strips of reinforcing material on both sides of the top and bottom edges. As an alternative to reinforcing material, you may fold the geomembrane fabric to form a triple layer through which you set the grommet.

Pass hog rings or rope through the grommets to attach the geomembrane to the fence. Twelve-inch overlapped seams are allowed.

Geomembrane visual barrier that is damaged during the progress of the work must be replaced at your expense.

80-1.08D Payment

Geomembrane visual barrier is paid by the square yard as measured by the area covered excluding overlaps.

86 ELECTRICAL SYSTEMS

Replace "Reserved" in section 86-1.06B with:

Traffic Management System (TMS) elements include, but are not limited to ramp metering (RM) system, communication system, traffic monitoring stations, video image vehicle detection system (VIVDS), microwave vehicle detection system (MVDS), loop detection system, changeable message sign (CMS) system, extinguishable message sign (EMS) system, highway advisory radio (HAR) system, closed circuit television (CCTV) camera system, roadway weather information system (RWIS), visibility sensor, and fiber optic system.

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

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

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

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

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

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

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

The Contractor must demonstrate that repaired or replaced elements operate in a manner equal to or better than the replaced equipment. If the Contractor fails to perform required repairs or replacement

2. Steel slag

87-2.02 MATERIALS

87-2.02A General

Do not use air-cooled iron blast furnace slag to produce aggregate for:

1. Structure backfill material
2. Pervious backfill material
3. Permeable material
4. Reinforced or prestressed PCC component or structure
5. Nonreinforced PCC component or structure for which a Class 1 surface finish under section 51-1.03F(3) is required

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

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

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

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

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

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

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

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

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

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

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

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

If steel slag aggregates are used to produce HMA, no other aggregates may be used in the mixture except that up to 50 percent of the material passing the no. 4 sieve may consist of iron blast furnace slag aggregates, natural aggregates, or a combination of these. If iron blast furnace aggregates, natural aggregates, or a combination of these are used in the mixture, each aggregate type must be fed to the

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

REVISED STANDARD SPECIFICATIONS PUBLISHED ON 06-20-12

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 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

06-20-12

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.

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

06-20-12

Add to section 1-1.07B:

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:

703 B ST

04-20-12

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

Add to section 2-1.33C:

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

01-20-12

Replace the paragraph in section 2-1.35 with:

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

01-20-12

AA

5 CONTROL OF WORK

06-20-12

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

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

06-20-12

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

30

06-20-12

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

Performance of

06-20-12

06-20-12

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

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):

06-20-12

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 DBEs to you regarding the request

AA

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

09-16-11

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

9 PAYMENT

04-20-12

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

Add to section 19-3.01A(3)(b):

01-20-12

For soil nail walls, wall zones are specified in the special provisions.

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 the 1st paragraph of section 19-3.03E(3) with:

01-20-12

Compact structure backfill behind lagging of soldier pile walls by hand tamping, mechanical compaction, or other authorized means.

Replace the 2nd paragraph of section 19-3.03F with:

01-20-12

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.

Add between the 2nd and 3rd paragraphs of section 19-3.03K:

01-20-12

Before you excavate for the installation of ground anchors in a wall zone:

1. Complete stability testing
2. Obtain authorization of test data

Replace the 2nd sentence of the 7th paragraph of section 19-3.03K:

01-20-12

Stop construction in unstable areas until remedial measures have been taken. Remedial measures must be submitted and authorized.

Add between the 8th and 9th paragraphs of section 19-3.03K:

01-20-12

When your excavation and installation methods result in a discontinuous wall along any soil nail row, the ends of the structurally completed wall section must extend beyond the ends of the next lower excavation lift by a distance equal to twice the lift height. Maintain temporary slopes at the ends of each wall section to ensure slope stability.

Replace the 9th paragraph of section 19-3.03K:

01-20-12

Do not excavate to the next underlying excavation lift until the following conditions have been attained for the portion of the soil nail or ground anchor wall in the current excavation lift:

1. Soil nails or ground anchors are installed and grouted.
2. Reinforced shotcrete facing is constructed.
3. Grout and shotcrete have cured for 72 hours.
4. Specified tests are complete for that portion of wall and the results are authorized.

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.)	California Test 367			
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 ^a
3/4" grading		13.0	13.0	18.0–23.0 ^a
Voids filled with asphalt (%)	California Test 367			Note c
No. 4 grading		65.0–75.0	65.0–75.0	
3/8" grading		65.0–75.0	65.0–75.0	
1/2" grading		65.0–75.0	65.0–75.0	
3/4" grading		65.0–75.0	65.0–75.0	
Dust proportion	California Test 367			Note c
No. 4 and 3/8" gradings		0.6–1.2	0.6–1.2	
1/2" and 3/4" gradings		0.6–1.2	0.6–1.2	
Stabilometer value (min.) ^b	California Test 366			
No. 4 and 3/8" gradings		30	30	--
1/2" and 3/4" gradings		37	35	23

^a Voids in mineral aggregate for RHMA-G must be within this range.

^b California Test 304, Part 2C.12.

^c Report this value in the JMF submittal.

Replace item 4 in the list in the 1st paragraph of section 39-1.03C with:

01-20-12

4. JMF renewal on a *Caltrans Job Mix Formula Renewal* form, if applicable

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.

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 "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.

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 the 15th paragraph of section 39-1.11 with:

01-20-12

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.

Replace the 17th paragraph of section 39-1.11 with:

01-20-12

Do not open new HMA pavement to public traffic until its mid-depth temperature is below 160 degrees F.

Replace "3 inches per 0.1-mile section" in the 5th paragraph of section 39-1.12C with:

01-20-12

2.5 inches per 0.1-mile section

Replace "6 inches per 0.1-mile section" in the 6th paragraph of section 39-1.12C with:

01-20-12

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:

04-20-12

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,f} No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 366	One per 4,000 tons or 2 per 5 business days, whichever is greater	30	30	--	--
			37	35	23	--
Air void content (%) ^{c,g}	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 ^h	California Test 226 or 370	2 per day during production	--	--	--	--
Percent of crushed particles coarse aggregate (% min) One fractured face Two fractured faces Fine aggregate (% min) (Passing no. 4 sieve and retained on no. 8 sieve.) One fractured face	California Test 205	As designated in the QC plan. At least once per project	90	25	--	90
			75	--	90	75
Los Angeles Rattler (% max) Loss at 100 rev.	California Test 211		70	20	70	90
			12	--	12	12

Loss at 500 rev.			45	50	40	40
Flat and elongated particles (% max by weight @ 5:1)	California Test 235		Report only	Report only	Report only	Report only
Fine aggregate angularity (% min)	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 ^k 18.0–23.0 ^k	--
Dust proportion ^j 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	--
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, 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 California Test 304, Part 2C.12.

^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 For adjusting the plant controller at the HMA plant.

ⁱ 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.

^j Report only.

^k Voids in mineral aggregate for RHMA-G must be within this range.

Replace the 1st paragraph of section 39-2.03A with:

04-20-12

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, g}	California Test 366	30 37	30 35	-- 23	-- --			
No. 4 and 3/8" gradings								
1/2" and 3/4" gradings								
Air void content (%) ^{d, h}	California Test 367	4 ± 2	4 ± 2	TV ± 2	--			
Percent of crushed particles	California Test 205	90 75	25 --	-- 90	90 75			
Coarse aggregate (% min)								
One fractured face								
Two fractured faces								
Fine aggregate (% min)	California Test 205	70	20	70	90			
(Passing no. 4 sieve and retained on no. 8 sieve.)								
One fractured face								
Los Angeles Rattler (% max)	California Test 211	12 45	-- 50	12 40	12 40			
Loss at 100 rev.								
Loss at 500 rev.								
Fine aggregate angularity (% min) ⁱ	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 (%) ^j	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	--			
No. 4 grading								
3/8" grading								
1/2" grading								
3/4" grading								
Voids in mineral aggregate (% min) ^j	California Test 367	17.0 15.0	17.0 15.0	-- --	-- --			
No. 4 grading								
3/8" grading								

1/2" grading		14.0	14.0	18.0–23.0 ^k	
3/4" grading		13.0	13.0	18.0–23.0 ^k	
Dust proportion ^j 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	--
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 California Test 304, Part 2C.12

^h 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.

ⁱ 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.

^j Report only.

^k Voids in mineral aggregate for RHMA-G must be within this range.

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:

04-20-12

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, d} 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, e}	California Test 367	4 ± 2	4 ± 2	TV ± 2	--
Fine aggregate angularity (% min) ^f	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 (%) ^g 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) ^g 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 ^h 18.0–23.0 ^h	--
Dust proportion ^g 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	--
Smoothness	Section 39-1.12	12-foot straight-edge and	12-foot straight-edge and	12-foot straight-edge and	12-foot straight-edge and

		must-grind	must-grind	must-grind	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 California Test 304, Part 2C.12.

^e 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.

^f 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.

^g Report only.

^h Voids in mineral aggregate for RHMA-G must be within this range.

Replace "280 degrees F" in item 2 in the list in the 6th paragraph of section 39-3.04 with:

01-20-12

285 degrees F

Replace the 8th paragraph of section 39-4.02C with:

04-20-12

Comply with the values for the HMA quality characteristics and minimum random sampling and testing for quality control shown in the following table:

Minimum Quality Control—QC/QA Construction Process

Quality characteristic	Test method	Minimum sampling and testing frequency	HMA Type			Location of sampling	Maximum reporting time allowance
			A	B	RHMA-G		
Aggregate gradation ^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,g}	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,h}	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		90	25	--	California Test 125	48 hours
Fine aggregate (% min) (Passing no. 4 sieve and retained on no. 8 sieve.): One fractured face			75	--	90		
Los Angeles Rattler (% max): Loss at 100 rev. Loss at 500 rev.	California Test 211	As designated in QC plan.	12	--	12	California Test 125	
Fine aggregate angularity (% min) ⁱ	California Test 234		45	50	40		
Flat and elongated particle (% max by weight @ 5:1)	California Test 235	At least once per project.	45	45	45	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	Report only	Report only	California Test 125	
Voids in mineral aggregate (% min.) ^j : 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		
			17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0– 23.0 ^k 18.0– 23.0 ^k		

Dust proportion ^j :	California Test 367						
No. 4 and 3/8" gradings			0.6-1.2	0.6-1.2	Report only		
1/2" and 3/4" gradings			0.6-1.2	0.6-1.2			
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 California Test 304, Part 2C, 12.

^h 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.

ⁱ 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.

^j Report only.

^k Voids in mineral aggregate for RHMA-G must be within this range.

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:

or

01-20-12

Replace the 1st paragraph of section 39-4.04A with:

04-20-12

The Engineer samples for acceptance testing and tests for the following quality characteristics:

HMA Acceptance—QC/QA Construction Process

Index (i)	Quality characteristic				Weighting 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, g} No. 4 and 3/8" gradings 1/2" and 3/4" gradings					California Test 366	30 37	30 35	-- 23
	Air void content (%) ^{f, n}					California Test 367	4 ± 2	4 ± 2	TV ± 2
	Percent of crushed particles coarse aggregate (% min) One fractured face Two fractured faces Fine aggregate (% min) (Passing no. 4 sieve and retained on No. 8 sieve.) One fractured face					California Test 205	90 75 70	25 -- 20	-- 90 70
	HMA moisture content (% max)					California Test 226 or 370	1.0	1.0	1.0
	Los Angeles Rattler (% max) Loss at 100 rev. Loss at 500 rev.					California Test 211	12 45	-- 50	12 40
	Fine aggregate angularity (% min) ^f					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 (%) ^j 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 ^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
	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

^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 determines field compaction for any of the following conditions:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot and less than 0.20 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.

^e 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.

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

^g California Test 304, Part 2C.12.

^h 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.

ⁱ 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.

^j Report only.

^k Voids in mineral aggregate for RHMA-G must be within this range.

Replace the 3rd paragraph of section 39-4.04A with:

01-20-12

The Department determines the percent of maximum theoretical density from density cores taken from the final layer measured the full depth of the total paved HMA thickness if any of the following applies:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot and any layer is less than 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 and any layer is less than 0.20 foot.

AA

40 CONCRETE PAVEMENT

01-20-12

Replace section 40-1.01C(4) with:

01-20-12

40-1.01C(4) Authorized Laboratory

Submit for authorization the name of the laboratory you propose to use for testing the drilled core specimens for air content.

Replace the paragraph in section 40-1.01C(8) with:

01-20-12

Submit a plan for protecting concrete pavement during the initial 72 hours after paving when the forecasted minimum ambient temperature is below 40 degrees F.

Delete "determined under California Test 559" in section 40-1.01C(9).

01-20-12

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 SO₄
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 last 2 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:

The maximum distance below the depth shown must be 5/8 inch.

01-20-12

Replace sections 40-1.03L and 40-1.03M with:

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.

01-20-12

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 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:
 - 2.1. Aggregate must consist of at least 70 percent fine aggregate and approximately 30 percent pea gravel, by weight.
 - 2.2. Fine aggregate must comply with section 90-1.02C(3).
 - 2.3. Size of pea gravel must be such that 100 percent passes the 1/2-inch sieve, at least 90 percent passes the 3/8-inch sieve, and not more than 5 percent passes the no. 8 sieve.
3. California Test 541 is not required.
4. Grout is not required to pass through a sieve with a 0.07-inch maximum clear opening before being introduced into the grout pump.

Replace section 49-3.02B(8) with:

01-20-12

49-3.02B(8) Spacers

Spacers must comply with section 52-1.03D, except you may use plastic spacers.

Plastic spacers must:

1. Comply with sections 3.4 and 3.5 of the Concrete Reinforcing Steel Institute's *Manual of Standard Practice*
2. Have at least 25 percent of their gross plane area perforated to compensate for the difference in the coefficient of thermal expansion between the plastic and concrete
3. Be of commercial quality

Add to section 49-3.02C(4):

01-20-12

Unless otherwise shown, the bar reinforcing steel cage must have at least 3 inches of clear cover measured from the outside of the cage to the sides of the hole or casing.

Place spacers at least 5 inches clear from any inspection tubes.

Place plastic spacers around the circumference of the cage and at intervals along the length of the cage, as recommended by the manufacturer.

AA

50 PRESTRESSING CONCRETE

04-20-12

Replace "diameter" in item 9 in the list in the 1st paragraph of section 50-1.02D with:

04-20-12

cross-sectional area

Add to section 50-1.02:

09-16-11

50-1.02G Sheathing

Sheathing for debonding prestressing strand must:

1. Be split or un-split flexible polymer plastic tubing
2. Have a minimum wall thickness of 0.025 inch
3. Have an inside diameter exceeding the maximum outside diameter of the strand by 0.025 to 0.14 inch

Split sheathing must overlap at least 3/8 inch.

Waterproofing tape used to seal the ends of the sheathing must be flexible adhesive tape.

The sheathing and waterproof tape must not react with the concrete, coating, or steel.

Add to section 50-1.03B(1):

01-20-12

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

Add to section 50-1.03B(2):

09-16-11

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

Where shown, debond prestressing strands by encasing the strands in plastic sheathing along the entire length shown and sealing the ends of the sheathing with waterproof tape.

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.

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 the 2nd paragraph of section 51-2.02E(1)(e) with:

08-05-11

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.

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 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.

AA

52 REINFORCEMENT

04-20-12

Add to the list in the 3rd paragraph of section 52-1.02B:

04-20-12

- 9. Shear reinforcement stirrups in PC girders

Replace section 52-6.02D with:

10-21-11

52-6.02D Ultimate Butt Splice Requirements

When tested under California Test 670, ultimate butt splice test samples must demonstrate necking as either of the following:

- 1. For "Necking (Option I)," the test sample must rupture in the reinforcing bar outside of the affected zone and show visible necking.

86 ELECTRICAL SYSTEMS

01-20-12

Replace section 86-2.06 with:

01-20-12

86-2.06 PULL BOXES

86-2.06A General

86-2.06A(1) Cover Marking

Marking must be clearly defined, uniform in depth, and parallel to either the long or short sides of the cover.

Marking letters must be 1 to 3 inches high.

Before galvanizing steel or cast iron cover, apply marking by one of the following methods:

1. Use cast iron strip at least 1/4 inch thick with letters raised a minimum of 1/16 inch. Fasten strip to cover with 1/4-inch flathead stainless steel machine bolts and nuts. Peen bolts after tightening.
2. Use sheet steel strip at least 0.027 inch thick with letters raised a minimum of 1/16 inch. Fasten strip to cover by spot welding, tack welding, or brazing, with 1/4-inch stainless steel rivets or 1/4-inch roundhead stainless steel machine bolts and nuts. Peen bolts after tightening.
3. Bead weld the letters on cover such that the letters are raised a minimum of 3/32 inch.

86-2.06A(2) Installation and Use

Space pull boxes no more than 200 feet apart. You may install additional pull boxes to facilitate the work.

You may use a larger standard size pull box than that shown on the plans or specified.

A pull box in ground or sidewalk area must be installed as follows:

1. Embed bottom of the pull box in crushed rock.
2. Place a layer of roofing paper on the crushed rock.
3. Place grout over the layer of roofing paper. Grout must be 0.50 to 1 inch thick and sloped toward the drain hole.
4. Make a 1-inch drain hole in the center of the pull box through the grout and roofing paper.
5. Place grout between the pull box and the pull box extension, and around conduits.

The top of the pull box must be flush with the surrounding grade or the top of an adjacent curb, except in unpaved areas where the pull box is not immediately adjacent to and protected by a concrete foundation, pole, or other protective construction. Place the pull box 1-1/4 inches above the surrounding grade. Where practical, place a pull box shown in the vicinity of curbs or adjacent to a standard on the side of the foundation facing away from traffic. If a pull box is installed in a sidewalk area, adjust the depth of the pull box so that the top of the pull box is flush with the sidewalk.

Reconstruct the sump of an existing pull box if disturbed by your activities. Remove old grout and replace with new if the sump was grouted.

86-2.06B Non-Traffic-Rated Pull Boxes

Reserved

86-2.06C Traffic Pull Boxes

Traffic pull box and cover must comply with ASTM C857, "Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures," for HS20-44 loading. You must be able to place the load anywhere on the box and cover for 1 minute without causing cracks or permanent deformations.

Frame must be anchored to the box with 1/4 by 2-1/4 inch concrete anchors. Four concrete anchors must be included for No. 3-1/2(T) pull box; one placed in each corner. Six concrete anchors must be included

for No. 5(T) and No. 6(T) pull boxes; one placed in each corner and one near the middle of each of the longer sides.

Nuts must be zinc-plated carbon steel, vibration resistant, and have a wedge ramp at the root of the thread.

After installation of traffic pull box, install the steel cover and keep it bolted down when your activities are not in progress at the pull box. When the steel cover is placed for the final time, the cover and Z bar frame must be cleaned of debris and tightened securely.

Steel cover must be countersunk approximately 1/4 inch to accommodate the bolt head. When tightened, the bolt head must not exceed more than 1/8 inch above the top of the cover.

Concrete placed around and under traffic pull boxes must be minor concrete.

AA

88 GEOSYNTHETICS

01-20-12

Replace the row for hydraulic bursting strength in the table in the 2nd paragraph of section 88-1.02B with:

01-20-12

Puncture strength, lb min	ASTM D 6241	600
------------------------------	----------------	-----

Replace the value for permittivity of woven fabric in the table in the 1st paragraph of section 88-1.02E with:

01-20-12

0.05

Replace the value for apparent size opening of nonwoven fabric in the table in the 1st paragraph of section 88-1.02E with:

01-20-12

0.012

Replace the 3rd paragraph of section 90-3.01C(5) with:

08-05-11

Production data must be input by hand into a pre-printed form or captured and printed by the proportioning device. Present electronic media containing recorded production data in a tab-delimited format on a CD or DVD. Each capture of production data must be followed by a line feed carriage return with sufficient fields for the specified data.

^^

92 ASPHALTS

01-20-12

Replace the row for dynamic shear for original binder in the table in the 1st paragraph of section 92-1.02B with:

01-20-12

Dynamic shear, Test temperature at 10 rad/s, °C	T 315	58	64	64	64	70
min G*/sin(delta), kPa		1.00	1.00	1.00	1.00	1.00
max G*/sin(delta), kPa		2.00	2.00	2.00	2.00	2.00