

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

OFFICE ENGINEER

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Be energy efficient!*

October 18, 2013

12-Ora-5-6.2/8.7

12-0F96E4

Project ID 1200020279

Addendum No. 2

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN ORANGE COUNTY FROM 0.4 MILE NORTH OF CAMINO DE ESTRELLA OVERCROSSING TO 0.2 MILE SOUTH OF SAN JUAN CREEK ROAD UNDERCROSSING.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on October 31, 2013.

This addendum is being issued to revise the project plans, the *Notice to Bidders and Special Provisions* and the Federal Minimum Wages with Modification Number 15 dated 10/04/2013.

Project plan sheets 1, 2, 3, 4, 8, 154, 173, 175, 192, 196, 321, 327, 331, 339, 340, 352, 371, 385, 387, 397, 405, and 406 are replaced and attached for substitution for the like-numbered sheets.

In the Notice to Bidders and Special Provisions, in the "STANDARD PLANS LIST," the following Standard Plans are added as follows:

"RSP T9, RSP T10, RSP T10A, and RSP T14."

In the Special Provisions, "Standard Plans List", is replaced as attached.

In the Special Provisions, Section 5-1.20A, is replaced as attached.

In the Special Provisions, Section 10-1.02, is replaced as attached.

12-Ora-5-6.2/8.7  
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In the Special Provisions, Section 12-4.02A, the table for Bridge Number 55-0227 is replaced as follows:

Camino Capistrano On-Ramp  
 Camino Capistrano Undercrossing  
 Bridge Number 55-0227

	Number	Width (feet)	Height (feet)
Vehicle openings	1	27	15
Pedestrian openings	None	--	--
<b>Falsework</b>			
	Location		Spacing
Falsework pavement lighting	R & L		30 and staggered 1/2 space

NOTE:  
 R = Right side of traffic  
 L = Left side of traffic  
 C = Centered overhead

In the Special Provisions, Section 12-4.02A, the table for Bridge Number 55-0510 is replaced as follows:

Camino Las Ramblas/Pacific Coast Highway  
 Route 5/Route 1 Separation  
 Bridge Number 55-0510

	Number	Width (feet)	Height (feet)
Vehicle openings			
Eastbound	1	26	15
Westbound	1	26	15
Pedestrian openings	None	--	--
<b>Falsework</b>			
	Location		Spacing
Falsework pavement lighting	R & L		30 and staggered 1/2 space

NOTE:  
 R = Right side of traffic  
 L = Left side of traffic  
 C = Centered overhead

In the Special Provisions, Section 12-4.03, is replaced as attached.

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In the Special Provisions, Section 12-4.05B, "Chart No. 1" is replaced as attached.

In the Special Provisions, Section 12-4.05C, "Chart No. 2 and Chart No. 3" are replaced as attached.

In the Special Provisions, Section 12-4.05E, "Chart No. 4 and Chart No. 5" are replaced as attached.

In the Special Provisions, Section 12-4.05G, "Chart No. 6" is replaced as attached.

In the Special Provisions, Section 14-6.02D is replaced as follows:

**14-6.02D Payment**

Any exclusion measures, devices, or nest removals required due to discovery of regulated species, required of you by the qualified biologist is change order work.

In the Special Provisions, Section 14-8.02 is deleted.

In the Special Provisions, Section 14-11.03, "MATERIAL CONTAINING HAZARDOUS WASTE CONCENTRATIONS OF AERIALY DEPOSITED LEAD" is replaced as attached.

In the Special Provisions, Section 14-11.09, "TREATED WOOD WASTE" is replaced as attached.

In the Special Provisions, Section 15-4.01C(1), the sentence above the table, is replaced as follows:

"Remove the following bridges or portions of bridges:"

In the Special Provisions, Section 39-1.01, the instruction is replaced as follows:

"Add to section 39-1.01A:"

In the Special Provisions, Section 39-1.18, is replaced as attached.

In the Special Provisions, Section 39-1.19, is replaced as attached.

In the Special Provisions, Section 39-1.20, is replaced as attached.

In the Special Provisions, Section 39-6.01, the instruction is replaced as follows:

"Add to section 39-6:"

In the Special Provisions, Section 40-1, is replaced as attached.

In the Special Provisions, Section 56-3.02M(3)(a) is deleted.

In the Special Provisions, Section 59 "PAINTING," is added as attached.

In the Special Provisions, Section 65, "CONCRETE PIPE," is replaced as attached.

In the Special Provisions, Section 83-2.02E(5), is replaced as attached.

In the Special Provisions, Section 86-1.03, item 13 is replaced as follows:

"Materials shown in the quantity tables on sheets labeled E-104 through E-110"

In the Special Provisions, Section "86-1.06D(1)(c) Submittals" is added to read as follows:

"Not Used."

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In the Special Provisions, Section "86-1.06E(1)(a) the following sentence is added:

"The maximum time during which the fiber optic communication system may remain inactive when making transition from existing to temporary and also from temporary to permanent, shall be 48 hours."

In the Special Provisions, Section 86-2.06, is replaced as attached.

In the Special Provisions, Section 86-2.19B(9), the first sentence is deleted.

In the Special Provisions, Section 86-8.01 is deleted.

To Bid book holders:

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the *Notice to Bidders* section of the *Notice to Bidders and Special Provisions*.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the *Bid* book.

Submit bids in the *Bid* book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This addendum, attachments and the modified wage rates are available for the Contractors' download on the Web site:

**[http://www.dot.ca.gov/hq/esc/oe/project\\_ads\\_addenda/12/12-0F96E4](http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/12/12-0F96E4)**

If you are not a *Bid* book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

  
for REBECCA D. HARNAGEL  
Chief, Office of Plans, Specifications & Estimates  
Office Engineer  
Division of Engineering Services

Attachments

## STANDARD PLANS LIST

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

### ABBREVIATIONS, LINES, SYMBOLS AND LEGEND

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)

### PAVEMENT MARKERS, TRAFFIC LINES, AND PAVEMENT MARKINGS

A20A	Pavement Markers and Traffic Lines, Typical Details
A20B	Pavement Markers and Traffic Lines, Typical Details
A20C	Pavement Markers and Traffic Lines, Typical Details
A20D	Pavement Markers and Traffic Lines, Typical Details
RSP A24A	Pavement Markings - Arrows
A24B	Pavement Markings - Arrows and Symbols
RSP A24C	Pavement Markings - Symbols and Numerals
A24D	Pavement Markings - Words
RSP A24E	Pavement Markings - Words, Limit and Yield Lines

### EXCAVATION AND BACKFILL

A62A	Excavation and Backfill - Miscellaneous Details
A62B	Limits of Payment for Excavation and Backfill - Bridge Surcharge and Wall
A62C	Limits of Payment for Excavation and Backfill - Bridge
A62D	Excavation and Backfill - Concrete Pipe Culverts

### OBJECT MARKERS, DELINEATORS, CHANNELIZERS AND BARRICADES

A73A	Object Markers
A73B	Markers
A73C	Delineators, Channelizers and Barricades

### CONCRETE BARRIER TYPE 60 SERIES

A76A	Concrete Barrier Type 60
A76B	Concrete Barrier Type 60
A76D	Concrete Barrier Type 60G
A76E	Concrete Barrier Type 60G
A76F	Concrete Barrier Type 60GE

### METAL BEAM GUARD RAILING - STANDARD RAILING SECTIONS

A77A1	Metal Beam Guard Railing - Standard Railing Section (Wood Post with Wood Block)
A77B1	Metal Beam Guard Railing - Standard Hardware
A77C1	Metal Beam Guard Railing - Wood Post and Wood Block Details
A77C3	Metal Beam Guard Railing - Typical Line Post Embedment and Hinge Point Offset Details

A77C4	Metal Beam Guard Railing - Typical Railing Delineation and Dike Positioning Details
	<b>METAL BEAM GUARD RAILING – TYPICAL VEGETATION CONTROL</b>
RSP A77C5	Metal Beam Guard Railing - Typical Vegetation Control Standard Railing Section
RSP A77C6	Metal Beam Guard Railing - Typical Vegetation Control for Terminal System End Treatments
RSP A77C7	Metal Beam Guard Railing - Typical Vegetation Control at Structure Approach
RSP A77C8	Metal Beam Guard Railing - Typical Vegetation Control at Fixed Object
	<b>METAL BEAM GUARD RAILING - TYPICAL LAYOUTS FOR STRUCTURES</b>
A77F1	Metal Beam Guard Railing - Typical Layouts for Structure Approach
A77F5	Metal Beam Guard Railing - Typical Layouts for Structure Departure
A77G3	Metal Beam Guard Railing - Typical Layouts for Roadside Fixed Objects
	<b>METAL BEAM GUARD RAILING - END ANCHORAGE AND RAIL TENSIONING ASSEMBLY</b>
A77H1	Metal Railing - End Anchor Assembly (Type SFT)
A77H3	Metal Railing - Anchor Cable and Anchor Plate Details
A77I2	Metal Beam Guard Railing - Buried Post End Anchor
	<b>METAL BEAM GUARD RAILING - CONNECTIONS DETAILS AND TRANSITION RAILING TO BRIDGE RAILINGS, ABUTMENTS AND WALLS</b>
A77J1	Metal Beam Guard Railing - Connections to Bridge Railings without Sidewalks Details No. 1
A77J2	Metal Beam Guard Railing - Connections to Bridge Railings without Sidewalks Details No. 2
A77J3	Metal Beam Guard Railing - Connections to Abutments and Walls
A77J4	Metal Beam Guard Railing - Transition Railing (Type WB)
	<b>CRASH CUSHIONS</b>
A81A	Crash Cushion, Sand Filled (Unidirectional)
	<b>FENCES</b>
A85	Chain Link Fence
A85A	Chain Link Fence Details
RSP A85B	Chain Link Fence Details
	<b>CURBS, DRIVEWAYS, DIKES, CURB RAMPS AND ACCESSIBLE PARKING</b>
A87A	Curbs and Driveways
A87B	Hot Mix Asphalt Dikes
A88A	Curb Ramp Details
	<b>PAVEMENTS</b>
P1	Jointed Plain Concrete Pavement
P2	Jointed Plain Concrete Pavement - Widened Slab Details
RSP P10	Concrete Pavement - Dowel Bar Details
P12	Concrete Pavement - Dowel Bar Basket Details
RSP P18	Concrete Pavement - Lane Schematics and Isolation Joint Detail
RSP P30	Concrete Pavement - End Panel Pavement Transitions
P45	Concrete Pavement - Drainage Inlet Details No. 1
P46	Concrete Pavement - Drainage Inlet Details No. 2
RSP P74	Pavement Edge Treatments
RSP P76	Pavement Edge Treatments - New Construction

**DRAINAGE INLETS, PIPE INLETS AND GRATES**

D72	Drainage Inlets
RSP D73	Drainage Inlets
D74B	Drainage Inlets
D74C	Drainage Inlet Details
D75B	Concrete Pipe Inlets
D75C	Pipe Inlets - Ladder and Trash Rack Details
RSP D77A	Grate Details No. 1
RSP D77B	Grate Details No. 2

**GUTTER AND INLET DEPRESSIONS**

D78A	Gutter Depressions
D78B	Inlet Depressions - Concrete Shoulders
D78C	Inlet Depressions - Hot Mix Asphalt Shoulders

**CONCRETE PIPE - DIRECT DESIGN METHOD**

D79	Precast Reinforced Concrete Pipe - Direct Design Method
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**PIPE DOWNDRAINS, ANCHORAGE SYSTEMS AND OVERSIDE DRAINS**

D87D	Overside Drains
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**CONSTRUCTION LOADS ON CULVERTS AND STRUT DETAILS**

D88	Construction Loads on Culverts
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**PIPE CULVERT HEADWALLS, ENDWALLS, WINGWALLS AND JUNCTION STRUCTURE**

D89	Pipe Culvert Headwalls - Straight and "L"
D91A	Cast-In-Place Reinforced Concrete - Junction Structure
D91B	Cast-In-Place Reinforced Concrete - Junction Structure

**FLARED END SECTIONS**

D94A	Metal and Plastic Flared End Sections
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**PIPE COUPLING AND JOINT DETAILS**

D97H	Reinforced Concrete Pipe or Non-Reinforced Concrete Pipe - Standard and Positive Joints
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**STRUCTURAL SECTION DRAINS**

D99B	Edge Drain Outlet and Vent Details
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**GABIONS AND UNDERDRAINS**

D102	Underdrains
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**LANDSCAPE AND EROSION CONTROL**

H1	Landscape and Erosion Control - Abbreviations
H2	Landscape - Symbols
H3	Landscape Details
H4	Landscape Details
H5	Landscape Details
H6	Landscape Details
H7	Landscape Details
H8	Landscape Details
H9	Landscape Details
H10	Irrigation Controller Enclosure Cabinet
H51	Erosion Control Details - Fiber Roll and Compost Sock
H52	Rolled Erosion Control Product

**TEMPORARY CRASH CUSHIONS, RAILING AND TRAFFIC SCREEN**

- 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

**TEMPORARY TRAFFIC CONTROL SYSTEMS**

- RSP T9 Traffic Control System for Lane Closure on Freeways and Expressways
- RSP T10 Traffic Control System for Lane Closure on Freeways and Expressways
- RSP T10A Traffic Control System for Lane Closures on Freeways and Expressways
- RSP T14 Traffic Control System for Ramp Closure

**TEMPORARY WATER POLLUTION CONTROL**

- T51 Temporary Water Pollution Control Details (Temporary Silt Fence)
- T53 Temporary Water Pollution Control Details (Temporary Cover)
- T56 Temporary Water Pollution Control Details (Temporary Fiber Roll)
- T57 Temporary Water Pollution Control Details (Temporary Check Dam)
- 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)
- T65 Temporary Water Pollution Control Details [Temporary Fence (Type ESA)]
- T66 Temporary Water Pollution Control Details (Temporary Large Sediment Barrier)

**BRIDGE DETAILS**

- B0-1 Bridge Details
- B0-3 Bridge Details
- B0-5 Bridge Details
- B0-13 Bridge Details

**PILES**

- B2-3 16" and 24" Cast-In-Drilled-Hole Concrete Pile
- B2-5 Pile Details - Class 90 and Class 140
- B2-8 Pile Details - Class 200

**RETAINING WALLS**

- RSP B3-1A Retaining Wall Type 1 (Case 1)
- RSP B3-5 Retaining Wall Details No. 1
- B3-6 Retaining Wall Details No. 2

**JOINT SEALS**

- B6-21 Joint Seals (Maximum Movement Rating = 2")

**BOX GIRDER DETAILS**

- B7-1 Box Girder Details

**CAST-IN-PLACE PRESTRESSED GIRDER**

- B8-5 Cast-In-Place Prestressed Girder Details

**CHAIN LINK RAILING, CABLE RAILING AND TUBULAR HAND RAILING**

- RSP B11-47 Cable Railing

## BRIDGE CONCRETE BARRIERS

- B11-56 Concrete Barrier Type 736  
COMMUNICATION AND SPRINKLER CONTROL CONDUITS (BRIDGE)  
B14-3 Communication and Sprinkler Control Conduits (Conduit Less Than 4")

### SOUND WALLS

- B15-3 Sound Wall Masonry Block on Pile Cap Detail (1)  
B15-4 Sound Wall Masonry Block on Pile Cap Detail (2)  
B15-5 Sound Wall Masonry Block on Pile Cap Detail (3)  
RSP B15-6 Sound Wall Masonry Block on Type 736S/SV Barrier Details (1)  
B15-7 Sound Wall Masonry Block on Type 736S/SV Barrier Details (2)  
B15-8 Sound Wall Masonry Block on Type 736S/SV Barrier Details (3)  
B15-9 Sound Wall Masonry Block Miscellaneous Details  
B15-12 Sound Wall Masonry Block on Barrier 5'-0" Access Gate Details (1)  
B15-13 Sound Wall Masonry Block on Barrier 5'-0" Access Gate Details (2)  
B15-14 Sound Wall Masonry Block Access Gate Locking Details  
B15-15 Sound Wall Masonry Block on Type 736S/SV Barrier on Pile Footing for Spanning Utilities

### ROADSIDE SIGNS

- RS1 Roadside Signs, Typical Installation Details No. 1  
RS2 Roadside Signs - Wood Post, Typical Installation Details No. 2  
RS3 Roadside Signs - Laminated Wood Box Post Typical Installation Details No. 3  
RS4 Roadside Signs, Typical Installation Details No. 4

### OVERHEAD SIGNS (TRUSS)

- S1 Overhead Signs - Truss, Instructions and Examples  
S2 Overhead Signs - Truss, Single Post Type - Post Types II thru IX  
S3 Overhead Signs - Truss, Single Post Type - Base Plate and Anchorage Details  
S4 Overhead Signs - Truss, Single Post Type - Structural Frame Members Details No. 1  
S5 Overhead Signs - Truss, Single Post Type - Structural Frame Members Details No. 2  
S6 Overhead Signs - Truss, Gusset Plate Details  
S7 Overhead Signs - Truss, Single Post Type - Square Pedestal Pile Foundation  
S9 Overhead Signs - Truss, Two Post Type - Post Types I-S thru VII-S  
S10 Overhead Signs - Truss, Two Post Type - Base Plate and Anchorage Details  
S11 Overhead Signs - Truss, Two Post Type - Structural Frame Members  
S12 Overhead Signs - Truss, Structural Frame Details  
S13 Overhead Signs - Truss, Frame Juncture Details  
S14 Overhead Signs - Truss, Two Post Type - Square Pedestal Pile Foundation  
S16 Overhead Signs - Walkway Details No. 1  
S17 Overhead Signs - Walkway Details No. 2  
S17A Overhead Signs - Walkway Details No. 3  
S18 Overhead Signs - Walkway Safety Railing Details  
S19 Overhead Signs - Truss, Sign Mounting Details - Laminated Panel - Type A

### OVERHEAD AND ROADSIDE SIGNS PANELS

- S81 Overhead Laminated Sign - Single or Multiple Panel, Type A (1" Thick)  
S82 Roadside Laminated Sign - Single or Multiple Panel, Type B (1" Thick)

S85	Seam Closure, "H" Section Extrusion and Post Spacing Tables, Multi-Horizontal Laminated Panel Aluminum Signs
S86	Laminated Panel Details - Extrusions for Type A, B and H Panels
S87	Type A-1 Mounting Hardware - Overhead Laminated Type A Panel, Truss and Lightweight Sign Structures
S93	Framing Details for Framed Single Sheet Aluminum Signs, Rectangular Shape
S94	Roadside Framed Single Sheet Aluminum Signs, Rectangular Shape
S95	Roadside Single Sheet Aluminum Signs, Diamond Shape
	<b>ELECTRICAL SYSTEMS - LEGEND, NOTES AND ABBREVIATIONS</b>
ES-1A	Electrical Systems (Legend, Notes and Abbreviations)
ES-1B	Electrical Systems (Legend, Notes and Abbreviations)
ES-1C	Electrical Systems (Legend, Notes and Abbreviations)
	<b>ELECTRICAL SYSTEMS - SERVICE EQUIPMENT AND WIRING DIAGRAMS</b>
ES-2A	Electrical Systems (Service Equipment)
ES-2C	Electrical Systems (Service Equipment Notes, Type III Series)
ES-2E	Electrical Systems (Service Equipment Enclosure and Typical Wiring Diagram, Type III - B Series)
	<b>ELECTRICAL SYSTEMS - CONTROLLER CABINETS</b>
ES-3C	Electrical Systems (Controller Cabinet Foundation Details)
	<b>ELECTRICAL SYSTEMS - IRRIGATION CONTROLLER ENCLOSURE CABINET</b>
ES-3H	Electrical Systems (Irrigation Controller Enclosure Cabinet)
	<b>ELECTRICAL SYSTEMS - SIGNAL HEADS, SIGNAL FACES AND MOUNTINGS</b>
ES-4A	Electrical Systems (Signal Heads and Mountings)
ES-4B	Electrical Systems (Pedestrian Signal and Ramp Metering)
ES-4C	Electrical Systems (Vehicular Signal Heads and Mountings)
ES-4D	Electrical Systems (Signal Mounting)
ES-4E	Electrical Systems (Signal Faces and Emergency Vehicle Detector Mountings)
	<b>ELECTRICAL SYSTEMS - DETECTORS</b>
ES-5A	Electrical Systems (Detectors)
ES-5B	Electrical Systems (Detectors)
ES-5D	Electrical Systems (Curb Termination and Handhole)
	<b>ELECTRICAL SYSTEMS - LIGHTING STANDARDS</b>
ES-6A	Electrical Systems (Lighting Standard, Types 15 and 21)
ES-6B	Electrical Systems (Electrolier Anchorage and Grouting for Types 15 and 21, Barrier Rail Mounted)
ES-6E	Electrical Systems (Lighting Standard, Types 30 and 31)
ES-6F	Electrical Systems (Lighting Standard, Slip Base Plate)
	<b>ELECTRICAL SYSTEMS - SIGNAL AND LIGHTING STANDARD, TYPE TS, AND PEDESTRIAN PUSH BUTTON POST</b>
ES-7A	Electrical Systems (Signal and Lighting Standard, Type TS, and Pedestrian Push Button Post)
	<b>ELECTRICAL SYSTEMS - SIGNAL AND LIGHTING STANDARDS</b>
ES-7B	Electrical Systems (Signal and Lighting Standard - Type 1 and Equipment Numbering)
ES-7E	Electrical Systems (Signal and Lighting Standard - Case 3 Signal Mast Arm Loading, Wind Velocity = 100 mph and Signal Mast Arm Lengths 15' to 45')

	<b>ELECTRICAL SYSTEMS - SIGNAL AND LIGHTING STANDARD DETAILS</b>
ES-7M	Electrical Systems (Signal and Lighting Standard - Detail No. 1)
ES-7N	Electrical Systems (Signal and Lighting Standard - Detail No. 2)
ES-7O	Electrical Systems (Signal and Lighting Standard - Detail No. 3)
	<b>ELECTRICAL SYSTEMS - PULL BOX</b>
RSP ES-8A	Electrical Systems (Pull Box)
RSP ES-8B	Electrical Systems (Traffic Rated Pull Box)
	<b>ELECTRICAL SYSTEMS - STRUCTURE INSTALLATIONS</b>
ES-9A	Electrical Systems (Structure Pull Box Installations)
ES-9B	Electrical Systems (Conduit Riser and Expansion Fitting, Structure Installations)
ES-9C	Electrical Systems (Structure Pull Box)
ES-9D	Electrical Systems (Structure Pull Box Installations)
	<b>ELECTRICAL SYSTEMS - ISOFOOTCANDLE DIAGRAMS AND FOUNDATION DETAILS</b>
RSP ES-10A	Electrical Systems (Isofootcandle Diagrams)
RSP ES-10B	Electrical Systems (Isofootcandle Diagrams)
ES-11	Electrical Systems (Foundation Installations)
	<b>ELECTRICAL SYSTEMS - SPLICING, FUSE RATING, KINKING AND BANDING DETAILS</b>
ES-13A	Electrical Systems (Splicing Details)
ES-13B	Electrical Systems (Fuse Rating, Kinking and Banding Detail)
	<b>ELECTRICAL SYSTEMS - SIGN ILLUMINATION EQUIPMENT AND CONTROLS</b>
ES-15A	Electrical Systems (Sign Illumination Equipment)
ES-15C	Electrical Systems (Sign Illumination Equipment)
ES-15D	Electrical Systems (Lighting and Sign Illumination Control)
	<b>ELECTRICAL SYSTEMS - CLOSED CIRCUIT TELEVISION POLE AND FOUNDATION DETAILS</b>
ES-16B	Electrical Systems (Closed Circuit Television, 25' to 45' Pole)

**Add to section 5-1.20A:**

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

**Coincident or Adjacent Contracts**

Contract no.	County–Route–Post Mile	Location	Type of work
12-0F96C4	ORA-5-3.7/6.2	Dana Point	Highway Construction
12-0E3104	ORA-74-0.0/1.6	San Juan Capistrano	Highway Construction
12-0F96A4	ORA-5-3.0/3.7	San Clemente	Highway Construction

**Add to section 10-1.02:**

Do not place the uppermost layer of new pavement until all underlying conduits and loop detectors are installed.

Before starting the traffic signal functional test at any location, all items of work related to signal control must be completed and all roadside signs, pavement delineation, and pavement markings must be in place at that location.

Construction of the new structural section adjacent to the existing traveled way must be performed in successive and once all operations are under way, concurrent operations of excavating, preparing subgrade, placing base materials, and paving. Excavation within 8 feet of the existing traveled way must not precede the paving operation by more than 5 working days unless:

1. Authorized
2. Material is placed and compacted against the vertical cuts within 8 feet of the existing traveled way. During excavation operations, native material may be used for this purpose except once the placing of the structural section starts, structural material must be used. Place the material to the top of the existing pavement and taper at a slope of 4:1 (horizontal:vertical) or flatter to the bottom of the excavation. Do not use treated base for the taper.

At the end of each working day if a difference in excess of 0.5 feet exists between the elevation of the existing pavement and the elevation of an excavation within 8 feet of the traveled way, place and compact material against the vertical cut adjacent to the traveled way. During the excavation operation, you may use native material for this purpose except once the placing of the structural section starts, structural material must be used. Place the material to the top of the existing pavement and taper at a slope of 4:1 (horizontal:vertical) or flatter to the bottom of the excavation. Do not use treated base for the taper.

**Delete the 1st through 5th paragraphs of the RSS for section 12-4.03.**

**Add to section 12-4.03:**

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

Type of facility	Route or segment	Period	Damages/interval (\$)
Mainline	Northbound	1st half hour	\$5,000 / 10 minutes
	Southbound	2nd half hour	\$7,500 / 10 minutes
	Route 5 from south of Avenida Pico to San Juan Creek Road	2nd hour and beyond	\$10,000 / 10 minutes
Connector/Ramp	NB and SB I-5	1st half hour	\$1,700 / 10 minutes
	Off-Ramps to PCH/Camino Las Ramblas,	2nd half hour	\$2,500 / 10 minutes
	NB and SB I-5 On-Ramps/Loop On-Ramp from PCH/Camino Las Ramblas, NB I-5 On-Ramp from Camino Capistrano	2nd hour and beyond	\$3,400 / 10 minutes

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

Chart no. 1 Freeway Lane Requirements																											
County: Orange					Route/Direction: 5/NB and 5/SB										PM: 6.2/8.7												
Closure limits: Just south of Via California to San Juan Creek Road																											
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Mondays through Thursdays		2	2	2	2	2																				2	2
Fridays		2	2	2	2	2																				3	2
Saturdays		2	2	2	2	2	2	2																		3	2
Sundays		2	2	2	2	2	2	2	2	3																2	2
Legend:																											
2		Provide at least 2 adjacent through freeway lanes open in direction of travel																									
3		Provide at least 3 adjacent through freeway lanes open in direction of travel																									
		Work allowed within the highway where shoulder or lane closure is not required																									
REMARKS:																											

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

Chart no. 2 Complete Freeway Closure Hours																										
County: Orange					Route/Direction: 5/NB										PM: 3.3/7.0											
Closure limits: From south of Avenida Pico to north of Camino Las Ramblas																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C																					
Fridays																										
Saturdays																										
Sundays																										

Legend:

C Freeway or expressway may be closed completely

No complete freeway or expressway closure is allowed

REMARKS:  
For Detour Plan No. 1 on Motorist Information Plan MI-3 (2 nights for removal and installation of overhead sign bridge structure only).

Chart no. 3 Complete Freeway Closure Hours																										
County: Orange					Route/Direction: 5/SB										PM: 7.0/8.7											
Closure limits: From south of San Juan Creek Rd to north of Camino Las Ramblas																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C																					
Fridays		C	C	C	C																					
Saturdays		C	C	C	C	C																				
Sundays		C	C	C	C	C																				

Legend:

C Freeway or expressway may be closed completely

No complete freeway or expressway closure is allowed

REMARKS:  
For Detour Plan No. 2 on Motorist Information Plan MI-4 (2 nights for removal and installation of overhead sign bridge structure only).

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

Chart no. 4 Complete Ramp Closure Hours																											
County: Orange					Route/Direction: 5/NB and 5/SB										PM: 6.4/7.5												
Closure limits: NB and SB I-5 Off-Ramps to PCH/Camino Las Ramblas NB and SB I-5 On-Ramps from PCH/Camino Las Ramblas NB I-5 On-Ramp from Camino Capistrano																											
From hour to hour																											
	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Mondays through Thursdays	C	C	C	C	C																				C	C	
Fridays	C	C	C	C	C																					C	C
Saturdays	C	C	C	C	C	C	C																			C	C
Sundays	C	C	C	C	C	C	C	C	C																	C	C

Legend:

C Ramp may be closed completely

Work allowed within the highway where shoulder or lane closure is not required

REMARKS:  
 For Detour Plan No. 5 on Motorist Information Plan MI-6. Applicable for bridge saw cutting/erect falsework (one time only) and remove falsework (one time only).  
 For Detour Plan No. 6 on Motorist Information Plan MI-6. Applicable for bridge saw cutting/erect falsework (two times only) and remove falsework (two times only).  
 For Detour Plan No. 9 on Motorist Information Plan MI-8 and Detour Plan No. 10 on Motorist Information Plan MI-9. Applicable for freeway temporary and permanent striping and pavement marking only.

**Chart no. 5  
Complete Ramp Closure Hours**

County: Orange	Route/Direction: 5/NB and 5/SB	PM: 6.4/6.8																								
Closure limits: NB I-5 Off-Ramp to Camino Las Ramblas SB I-5 Loop On-Ramp from Camino Las Ramblas																										
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Mondays through Thursdays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Fridays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Saturdays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
Sundays	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

**Legend:**

C Ramp may be closed completely

Work allowed within the highway where shoulder or lane closure is not required

**REMARKS:**

For Detour Plan No. 3 on Motorist Information Plan MI-5.  
 For Detour Plan No. 4 on Motorist Information Plan MI-5.  
 Maximum 9 consecutive calendar days closure allowed one time only at each location for ramp construction work shown in Stage 1 Phase 2 and Stage 2 Phase 1.  
 Closure must start on Friday at 23:00 hour and end 9 consecutive calendar days later on Sunday at 23:00 hour.

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

Chart no. 6 Complete Conventional Highway Closure Hours																												
County: Orange					Route/Direction: Camino Las Ramblas										PM: 6.2/8.7													
Closure limits: Station 20+00 to 30+00																												
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Mondays through Thursdays		C	C	C	C	C																				C	C	
Fridays		C	C	C	C	C																					C	C
Saturdays		C	C	C	C	C	C																				C	C
Sundays		C	C	C	C	C	C																				C	C
<b>Legend:</b> <input checked="" type="checkbox"/> C Conventional highway may be closed completely <input type="checkbox"/> No complete conventional highway closure is allowed																												
<b>REMARKS:</b> For Detour Plan No. 7 and Detour Plan No. 8 on Motorist Information Plan MI-7. Applicable for bridge saw cutting/erect falsework (two times only) and remove falsework (two times only). Drainage work is also allowed during the same closure time.																												

Replace section 14-11.03 with:

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

**14-11.03A General**

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

Section 14-11.03 includes specifications for hazardous waste management while excavating, stockpiling, transporting, placing, and disposing of material containing hazardous waste concentrations of aerially deposited lead (ADL). Handle material containing nonhazardous waste concentrations of lead under section 7-1.02K(j)(iii).

ADL is present within the project limits.

The Department has received from the DTSC a variance regarding the use of material containing ADL. The variance applies if Type Y-1 material is shown. The variance is available for inspection at the Department of Transportation, District 12, 3347 Michelson Drive, Suite 100, Irvine, CA 92612-8894. Environmental Engineering Branch.

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

**Type Y-1:** Material that contains ADL in average concentrations (using the 90 percent Upper Confidence Limit) of 1.5 mg/L or less extractable lead (based on a modified waste extraction test using deionized water as the extractant) and 1,411 mg/kg or less total lead. This material is a California hazardous waste that may be reused as permitted under the variance of the DTSC provided that the lead contaminated soil is placed a minimum of 5 feet above the maximum historic water table elevation and covered with at least 1 foot of non-hazardous soil.

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

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

Type Y-1 material exists between from the edges of existing pavement, from the northbound 348+00 to 353+00 stations, and from a depth of 0.0 to 4.0 feet below existing grade, as shown.

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

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

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

Include perimeter air monitoring incorporating upwind and downwind locations as shown or as authorized. Monitor with personal air samplers using National Institute of Safety and Health Method 7082. Sampling must achieve a detection limit of 0.05  $\mu\text{g}/\text{m}^3$  of air per day. Conduct daily monitoring while clearing and grubbing and performing earthwork operations. Analyze a single representative daily sample for lead. Analyze the sample and provide results to the Engineer within 24 hours. Analyses must be performed by a laboratory accredited by the Environmental Lead Laboratory-Accreditation Program of the American Industrial Hygiene Association. Average lead concentrations must not exceed 1.5  $\mu\text{g}/\text{m}^3$  of air per day and 0.15  $\mu\text{g}/\text{m}^3$  per day on a rolling 90-day basis. Calculate average daily concentrations based on monitoring to date, and projection based on those monitoring trends for the next 90 days or to the end of work subject to the lead compliance plan if less than the specified averaging period. If concentrations exceed these levels stop work and modify the work to prevent release of lead. Monitor under the direction of a CIH. The air monitoring data must be reviewed by and signed by the CIH.

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

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

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

1. Excavation schedule by location and date
2. Temporary locations of stockpiled material
3. Survey methods for Type Y-1 material burial locations
4. Dust control measures
5. Air monitoring. Include the following information:
  - 5.1. Location and type of equipment
  - 5.2. Sampling frequency
  - 5.3. Name and address of the accredited laboratory where the analysis was performed
6. Transportation equipment and routes
7. Method for preventing spills and tracking material onto public roads
8. Truck waiting and staging areas
9. Example of bill of lading to be carried by trucks transporting Type Y-1 or Y-2, material. The bill of lading must include:
  - 9.1. US Department of Transportation (US DOT) description including shipping name
  - 9.2. Hazard class
  - 9.3. Identification number
  - 9.4. Handling codes
  - 9.5. Quantity of material
  - 9.6. Volume of material
10. Spill Contingency Plan for material containing ADL

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

Within 5 business days of completing placement of Type Y-1 material at a burial location, submit a report for that burial location, including "Burial Location of Soil Containing Aerial Deposited Lead" form and electronic geospatial vector data shapefiles of the top and bottom perimeters of the burial location. Submit to the Engineer and to:

ADL@dot.ca.gov

The Engineer notifies you of acceptance or rejection of the burial location report within 5 business days of receipt. If the report is rejected, you have 5 business days to submit a corrected report.

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

Copies of the bills of lading must be submitted as an informational submittal upon placement of Type Y-1 material in its final location.

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

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

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

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

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

**14-11.03B Materials**

Not Used

**14-11.03C Construction**

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

Not Used

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

Place Type Y-1 material as shown and cover with a minimum 1 foot layer of nonhazardous soil or the pavement structure. Temporary surplus material may be generated on this project due to the requirements of stage construction.

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

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

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

Survey the location of the bottom and top perimeters of each area where you bury Type Y-1 material (burial locations). The survey must be performed by or under the direction of one of the following:

1. Land surveyor licensed under the Bus & Prof Code, Chp 15 (commencing with § 8700)
2. Civil engineer licensed prior to January 1, 1982 under the Bus & Prof Code, Chp 7 (commencing with § 6700)

Survey 10 points to determine each burial location horizontally and vertically within the specified accuracies and to create closed polygons of the perimeters of the bottom and top of the burial location. If 10 points are not sufficient to define the polygon, add additional points until the polygon is defined. Establish the position of the bottom and top perimeters before placing subsequent layers of material that obstruct the location.

Report each burial location in California State Plane Coordinates in US Survey feet within the appropriate zone of the California Coordinate System of 1983 (CCS83) and in latitude and longitude. Horizontal positions must be referenced to CCS83 (epoch 2007.00 or later National Geodetic Survey [NGS] or California Spatial Reference Center [CSRC] published epoch) to an accuracy of 3 ft horizontally. The elevation of points identifying the burial location must locate the bottom and top of Type Y-1 material to an accuracy of 1 ft vertically. Elevations of the bottom and top of Type Y-1 material must be referenced to North American Vertical Datum of 1988 (NAVD88). Report accuracy of spatial data in US Survey feet under Federal Geographic Data Committee (FGDC)-STD-007.1-1998.

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

Before traveling on public roads, remove loose and extraneous material from surfaces outside the cargo areas of the transporting vehicles and cover the cargo with tarpaulins or other cover, as outlined in the approved excavation and transportation plan. You are responsible for costs due to spillage of material containing lead during transport. Transportation routes for Type Y-1 or Y-2 material must only include the highway.

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

Not Used

**14-11.03D Payment**

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

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

**Replace section 14-11.09 with:**

**14-11.09 TREATED WOOD WASTE**

**14-11.09A General**

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

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

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

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

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

**14-11.09B Materials**

Not Used

**14-11.09C Construction**

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

Not Used

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

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

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

Maintain records of personnel training for 3 years.

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

Store TWW before disposal using the following methods:

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

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

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

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

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

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

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

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

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

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

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

Dispose of TWW within:

1. 90 days of generation if stored on blocks
2. 180 days of generation if stored on a containment surface or pad
3. 1 year of generation if stored in a water-resistant container or within 90 days after the container is full, whichever is shorter
4. 1 year of generation if storing in a storage building as defined in 22 CA Code of Regs, Div. 4.5, Chp. 34, § 67386.6(a)(2)(C)

#### **14-11.09D Payment**

Not Used

**Replace "Reserved" in section 39-1.18 with:**

**39-1.18A General**

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

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

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

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

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

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

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

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

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

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

**Aggregate Quality Control During Lime Treatment**

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

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

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

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

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

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

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

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

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

Treated aggregate must not have lime balls or clods.

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

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

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

Do not treat RAP.

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

If marination is required:

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

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

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

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

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

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

Proportion dry lime by weight with a continuous operation.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Not Used

**Replace "Reserved" in section 39-1.19 with:**

**39-1.19A General**

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

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

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

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

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

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

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

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

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

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

**Aggregate Quality Control During Lime Treatment**

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

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

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

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

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

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

### **39-1.19B Materials**

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

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

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

Treated aggregate must not have lime balls or clods.

### **39-1.19C Construction**

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

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

Treat aggregate separate from HMA production.

Do not treat RAP.

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

Lime treat and marinate coarse and fine aggregates separately.

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

Treat the aggregate and stockpile for marination only once.

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

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

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

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

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

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

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

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

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

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

Proportion lime and water with a continuous or batch operation.

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

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

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

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

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

Not Used

Replace "Reserved" in section 39-1.20 with:

**39-1.20A General**

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

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

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

For LAS, submit with the proposed JMF submittal:

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

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

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

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

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

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

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

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

1. Batch mixing:
  - 1.1. Production date
  - 1.2. Time of batch completion
  - 1.3. Mix size and type
  - 1.4. Each ingredient's weight
  - 1.5. Asphalt binder content as a percentage of the dry aggregate weight
  - 1.6. LAS content as a percentage of the asphalt binder weight

2. Continuous mixing:
  - 2.1. Production date
  - 2.2. Data capture time
  - 2.3. Mix size and type
  - 2.4. Flow rate of wet aggregate collected directly from the aggregate weigh belt
  - 2.5. Aggregate moisture content as percentage of the dry aggregate weight
  - 2.6. Flow rate of asphalt binder collected from the asphalt binder meter
  - 2.7. Flow rate of LAS collected from the LAS meter
  - 2.8. Asphalt binder content as percentage of total weight of mix calculated from:
    - 2.8.1. Aggregate weigh belt output
    - 2.8.2. Aggregate moisture input
    - 2.8.3. Asphalt binder meter output
  - 2.9. LAS content as percentage of the asphalt binder weight calculated from:
    - 2.9.1. Asphalt binder meter output
    - 2.9.2. LAS meter output

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

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

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

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

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

### **39-1.20B Materials**

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

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

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

Store and mix LAS under the manufacturer's instruction.

### **39-1.20C Construction**

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

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

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

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

### **39-1.20D Payment**

Not Used

**Replace section 40-1.01C(13) with:**

**40-1.01C(13) Profile Data and Straightedge Measurements**

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

1. Inertial profiler (IP) certification issued by the Texas Transportation Institute (TTI). The certification must not be more than 12 months old.
2. Operator certification for the IP issued by TTI. The operator must be certified for each different model of IP device operated. The certification must not be more than 36 months old.
3. List of manufacturer's recommended test procedures for IP calibration and verification.

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

smoothness@dot.ca.gov

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

smoothness@dot.ca.gov

Within 2 business days of performing straightedge testing, submit a report on areas requiring smoothness correction.

**Replace section 40-1.01C(14) with:**

**40-1.01C(14) Coefficient of Thermal Expansion**

Fabricate test specimens from a single sample of concrete for coefficient of thermal expansion testing under AASHTO T 336. Submit 4 test specimens for assurance testing. Submit your test data at:

<http://169.237.179.13/cte/>

**Replace "Reserved" in section 40-1.01D(1) with:**

Provide a QC manager under section 11.

**Replace "Reserved" in section 40-1.01D(2) with:**

Your personnel required to attend the prepaving conference must also complete Just-In-Time-Training (JITT) for JPCP.

At least 5 business days before JITT, submit:

1. Instructor's name and listed experience
2. JITT facility's location
3. One copy each of the following:
  - 3.1. Course syllabus
  - 3.2. Handouts
  - 3.3. Presentation materials

The Engineer provides training evaluation forms, and each attendee must complete them 5 business days after JITT, submit completed training evaluation forms to the Engineer and the electronic mailbox address:

Construction\_Engineering\_HQ@dot.ca.gov

JITT may be an extension of the prepaving conference and must be:

1. At least 4 hours long
2. Conducted at a mutually agreed place
3. Completed at least 20 days before you start paving activities
4. Conducted during normal working hours

Provide a JITT instructor who is experienced with the specified pavement construction methods, materials, and tests. The instructor must be neither your employee nor a Department field staff member. Upon JITT completion, the instructor must issue a certificate of completion to each participant.

The Engineer may waive training for personnel who have completed equivalent training within the 12 months preceding JITT. Submit certificates of completion for the equivalent training.

The Department reimburses you for 1/2 of the cost for providing the JITT. The Engineer determines the costs under section 9-1.04 except no markups are added. Costs include training materials; class site; and the JITT instructor's wages, including the instructor's travel, lodging, meals and presentation materials. The Department does not pay your costs for attending JITT.

**Replace section 40-1.01D(7)a with:**

**40-1.01D(7)(a) Coefficient of Thermal Expansion Testing**

Perform coefficient of thermal expansion testing under AASHTO T 336 at a frequency of 1 test for each 5,000 cu yd of paving but not less than 1 test for projects with less than 5,000 cu yd of concrete. This test is not used for acceptance.

For field qualification, perform coefficient of thermal expansion testing under AASHTO T 336.

**Replace section 40-1.01D(9) including the RSS for section 40-1.01D(9) with:**

**40-1.01D(9) Pavement Smoothness**

**40-1.01D(9)(a) General**

Notify the Engineer 2 business days before performing smoothness testing including IP calibration and verification testing. The notification must include start time and locations by station.

Before testing the pavement smoothness, remove foreign objects from the surface, and mark the beginning and ending station on the pavement shoulder.

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

1. Traffic lanes less than 1,000 feet in length including ramps, turn lanes, and acceleration and deceleration lanes
2. Areas within 15 feet of manholes
3. Shoulders
4. Weigh-in-motion areas
5. Miscellaneous areas such as medians, gore areas, turnouts, and maintenance pullouts

#### **40-1.01D(9)(b) Straightedge Testing**

Identify locations of areas requiring correction by:

1. Location Number
2. District-County-Route
3. Beginning station or post mile to the nearest 0.01 mile
4. For correction areas within a lane:
  - 4.1. Lane direction as NB, SB, EB, or WB
  - 4.2. Lane number from left to right in direction of travel
  - 4.3. Wheel path as "L" for left, "R" for right, or "B" for both
5. For correction areas not within a lane:
  - 5.1. Identify pavement area (i.e., shoulder, weight station, turnout)
  - 5.2. Direction and distance from centerline as "L" for left or "R" for right
6. Estimated size of correction area

#### **40-1.01D(9)(c) Inertial Profile Testing**

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

Conduct cross correlation IP verification test in the Engineer's presence before performing initial profiling. Verify cross correlation IP verification test at least annually. Conduct 5 repeat runs of the IP on an authorized test section. The test section must be on an existing concrete pavement surface 0.1 mile long. Calculate a cross correlation to determine the repeatability of your device under Section 8.3.1.2 of AASHTO R 56 using ProVAL profiler certification analysis with a 3 feet maximum offset. The cross correlation must be a minimum of 0.92.

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

1. Block test. Verify the height sensor accuracy under AASHTO R 57, section 5.3.2.3.
2. Bounce test. Verify the combined height sensor and accelerometer accuracy under AASHTO R 57, section 5.3.2.3.2.
3. DMI test. Calibrate the accuracy of the testing procedure under AASHTO R 56, section 8.4.
4. Manufacturer's recommended tests.

For IP testing, wheel paths are 3 feet from and parallel to the edge of a lane. Left and right are relative to the direction of travel. The IRI is the pavement smoothness along a wheel path of a given lane. The MRI is the average of the IRI values for the left and right wheel path from the same lane.

Operate the IP according to the manufacturer's recommendations and AASHTO R 57 at 1-inch recording intervals and a minimum 4 inch line laser sensor.

Collect IP data under AASHTO R 56. IP data must include:

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

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

YYYYMMDD\_TTCCRRR\_D\_L\_W\_S\_X\_PT.PPF

where:

YYYY = year

MM = Month, leading zero

DD = Day of month, leading zero

TT = District, leading zero

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

RRR = Route number, no leading zeros

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

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

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

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

X = Profile operation as "EXIST" for existing pavement, "PAVE" for after paving, or "CORR" for after final surface pavement correction

PT = Pavement type (i.e., "concrete", etc.)

Determine IRIs using the ProVAL ride quality analysis with 250 mm and IRI filters. While collecting the profile data to determine IRI, record the following locations in the raw profile data:

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

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

Determine the MRI for 0.1-mile fixed sections. A partial section less than 0.1 mile that is the result of an interruption to continuous pavement surface must comply with the MRI specifications for a full section. Adjust the MRI for a partial section to reflect a full section based on the proportion of a section paved.

Determine the areas of localized roughness. Use the ProVAL smoothness assurance with a continuous IRI for each wheel path, 25-foot interval, and 250 mm and IRI filters.

**Replace the 2nd paragraph of the RSS for section 40-1.01D(13)(a) with:**

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

**Replace the paragraphs in section 40-1.01D(13)(d) including the RSS for section 40-1.01D(13)(d) with:**

Where testing with an IP is required, the pavement surface must have:

1. No areas of localized roughness with an IRI greater than 120 in/mi
2. MRI of 60 in/mi or less within a 0.1 mile section

Where testing with a straightedge is required, the pavement surface must not vary from the lower edge of the straightedge by more than:

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

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**Replace the 1st paragraph of the RSS for section 40-1.03E(6)(c) with:**

Install preformed compression seal in isolation joints.

**Replace the list for the 7th paragraph of section 40-1.03G with:**

1. Pavement surface must not vary from the lower edge of a 12-ft straightedge by more than:
  - 1.1. 0.01 foot when the straightedge is laid parallel with the centerline
  - 1.2. 0.02 foot when the straightedge is laid perpendicular to the centerline and extends from edge to edge of a traffic lane
  - 1.3. 0.02 foot when the straightedge is laid within 24 feet of a pavement conform
2. Dowel bars do not comply with specified placement tolerances
3. Concrete pavement thickness deficiency is greater than 0.05 foot
4. Final finishing does not comply with the specifications except coefficient of friction

**Add after the 9th paragraph of section 40-1.03G:**

Retest the test strip smoothness under section 40-1.01D(9).

**Replace "Reserved" in section 40-1.03L(1) of the RSS for section 40-1.03L with:**

Construct edge treatments as shown. Regrade when required for the preparation of safety edge areas.

Sections 40-1.03L(2) and 40-1.03L(3) do not apply to safety edges.

For safety edges placed after the concrete pavement is complete, concrete may comply with the requirements for minor concrete.

For safety edges placed after the concrete pavement is complete, install connecting bar reinforcement under section 52.

Saw cutting or grinding may be used to construct safety edges.

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

**Replace the 2nd and 3rd paragraphs of section 40-1.03Q(5) with:**

Do not start corrective work until:

1. Pavement has cured 10 days
2. Pavement has at least a 550 psi modulus of rupture
3. Your corrective method is authorized

Correct the entire lane width and begin and end grinding at lines perpendicular to the roadway centerline. The corrected area must have a uniform texture and appearance.

**Add after the 4th paragraph of section 40-1.03Q(5):**

If corrections are made within areas where testing with an IP is required, retest the entire lane length with an IP under section 40-1.01D(9).

If corrections are made within areas where testing with a 12-foot straightedge is required, retest the corrected area with a straightedge under section 40-1.01D(9).

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## 59 PAINTING

### **Add to the RSS for section 59-5.03A:**

Clean the inside surfaces of bolt holes under SSPC-SP 1. Any visible rust must be removed.

Paint the inside surfaces of bolt holes with 1 application of a zinc-rich primer, organic vehicle type, after the application of the undercoat of inorganic zinc on adjacent steel. Keep the steel surfaces adjacent to the bolt holes clean and protected from drippings during the application of the primer.

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## 65 CONCRETE PIPE

**Replace the 2nd paragraph in section 65-2.02A with:**

For cementitious material content, use one of the options shown in the following table. You may use SCM.

**Minimum Cementitious Material Content in Pounds per CY**

Minimum Concrete Cover	Minimum cementitious material content based on maximum water to cementitious material ratio	
	0.35	0.40
1.00 inch	470 lb/cu yd	470 lb/cu yd

**Add to section 65-2.03B:**

If you encounter solid rock or other unyielding material at the planned elevation of the bottom of the bedding shown, remove the material below the bottom of the bedding to a depth of 1/50 of the height of the embankment over the top of the culvert, but not less than 6 inches or more than 12 inches. Backfill the resulting trench below the bottom of the bedding with structure backfill material under section 19-3.03E. Do not compact the outer bedding before pipe placement.

The excavation and backfill below the planned elevation of the bottom of the bedding shown is change order work.

**Replace section 83-2.02E(5) with:**

**83-2.02E(5) Sand-Filled Crash Cushions**

Install sand-filled crash cushions at the following location:

1. 103' Lt "A" 361+00.

The modules must be one of the modules shown in the following table:

Module	Manufacturer	Distributors
Energite III and Fitch Inertial Modules	ENERGY ABSORPTION SYSTEMS, INC. 70 W MADISON ST, STE 2350 CHICAGO IL 60602	TRAFFIC CONTROL SERVICE, INC. 8585 THYS CT SACRAMENTO CA 95828 Telephone: (916) 387-9733 Fax: (916) 387-9734  TRAFFIC CONTROL SERVICE, INC. 1818 E ORANGETHORPE FULLERTON CA 92831-5324 Telephone: (714) 526-9500 Fax: (714) 526-9561
TrafFix Sand Barrels	TRAFFIX DEVICES, INC. 220 CALLE PINTORESCO SAN CLEMENTE CA 92672 Telephone: (949) 361-5663 Fax: (949) 361-9205	UNITED RENTALS, INC. 1533 BERGER DR SAN JOSE CA 95112 Telephone: (408) 287-4303 Fax: (408) 287-1929  STATEWIDE SAFETY & SIGN P.O. BOX 1440 PISMO BEACH CA 93448 Telephone: (805) 929-5070 Fax: (805) 929-5786
CrashGard Model CC-48 Sand Barrels	PLASTIC SAFETY SYSTEMS, INC. 2444 BALDWIN RD CLEVELAND, OH 44104	CAPITOL BARRICADE, INC 6001 ELVAS AVE SACRAMENTO CA 95819 Telephone: (916) 451-5176 Fax: (916) 451-5388  CAPITOL BARRICADE, INC 1661 EAST MINER AVE STOCKTON CA 95205 Telephone: (209) 469-2663 Fax: (916) 451-5388  SIERRA SAFETY 9093 OLD STATE HWY NEWCASTLE CA 95658 Telephone: (916) 663-2026 Fax: (916) 663-1858  ALERT O LITE 2020 N WINERY RD FRESNO CA 93703 Telephone: (559) 386-4570  STEVENSON SUPPLY 3601 REGIONAL PKWY SANTA ROSA CA 95403 Telephone: (707) 575-3335  HI WAY SAFETY, INC. 13310 5TH ST CHINO CA 91710 Telephone: (909) 591-1781 Fax: (909) 627-0999

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The modules must have been manufactured after March 31, 1997.

Use only one type of module at any one location. The modules must be the standard yellow color furnished by the manufacturer and must have black lids. The exterior components of the modules must be formulated or processed to resist deterioration from ambient UV rays. The modules must be free from structural flaws and surface defects.

Submit a certificate of compliance for each crash cushion.

Sand used to fill the modules must be clean, washed, commercial-quality concrete sand. When placed in the modules, the sand must contain no more than 7 percent water as analyzed under California Test 226.

Fill the modules with sand and securely attach lids under the manufacturer's instructions.

A Type R or Type P marker panel must be attached to the front of the crash cushion if the closest point of the crash cushion array is within 12 feet of the traveled way. Fasten the marker panel to the crash cushion with commercial-quality hardware or by other authorized methods.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Replacement parts must be provided within 5 business days after receipt of failed pull box, cover, or both at no cost to the Department and must be delivered to the Department's Maintenance Electrical Shop at Batavia Maintenance Yard, 1808 North Batavia, Orange, CA 92865.

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

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

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

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

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

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

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

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

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

Manufacturer's instructions must provide guidance on:

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

Tier 22 load rating must be labeled or stenciled by the manufacturer on the inside and outside of the pull box and on the underside of the cover.

**86-2.06B(3) Construction**

Do not install pull box in curb ramps or driveways.

A pull box for a post or a pole standard must be located within 5 feet of the standard. Place a pull box adjacent to the back of the curb or edge of the shoulder. If this is impractical, place the pull box in a suitable, protected, and accessible location.

Bury pull box in soil 6 to 8 inches below grade. Cover the pull box with a plastic sheet before burying it.

Plastic sheets must be 20 mil thick and made of HDPE or PVC virgin compounds.

If only the cover is to be replaced, anchor the cover to the pull box.