



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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**APPLICABLE STANDARDS**

**BOOK 3**

**Sacramento River Viaduct and West End  
Viaduct Deck Rehabilitation**

**FOR DESIGN AND CONSTRUCTION ON STATE HIGHWAY IN**  
**Sacramento/West Sacramento in Sacramento County**

**DISTRICT 03, ROUTE US-50/I-5**

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**For Use in Connection with Standard Specifications Dated 2010, Standard Plans Dated 2010, and Labor  
Surcharge and Equipment Rental Rates.**

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**CONTRACT NO. 03-2F21U4**  
**On Routes US-50 PM 2.5-3.2/L0-0.06 & I-5 PM 23.6/24.2**  
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**Dated: July 17, 2013**

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# **1 INDEX OF STANDARDS, MANUALS, GUIDELINES AND REFERENCES**

# 1 INDEX OF STANDARDS, MANUALS, GUIDELINES AND REFERENCES

| Availability Legend   |              |   |  |                           |                 |
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| Ref #   | Organization | Standard  | Publication Year / Last Updated (Revision) | Availability (E / IS / W) | √ If Applicable |
| 1   | AASHTO       | <a href="#">A Guide for Accommodating Utilities within Highway Right-of-Way</a>           | 4 <sup>th</sup> Edition 2005               | IS                        | √               |
| 2   | AASHTO       | <a href="#">A Guide for Achieving Flexibility in Highway Design</a>                       | 1st Edition 2004                           | IS                        | √               |
| 3   | AASHTO       | <a href="#">A Guide for Methods and Procedures in Contract Maintenance</a>                | 2nd Edition 2002                           | IS                        | √               |
| 4   | AASHTO       | <a href="#">A Guide for the Development of Rest Areas on Major Arterials and Freeways</a> | 3rd Edition 2001                           | IS                        |                 |
| 5   | AASHTO       | <a href="#">A Guide for Transportation Landscape and Environmental Design</a>             | 2nd Edition 1991                           | IS                        |                 |
| 6   | AASHTO       | <a href="#">A Guide to Small Sign Support Hardware</a>                                    | June 1998                                  | IS                        | √               |
| 7   | AASHTO       | <a href="#">A Guide to Standardized Highway Barrier Hardware</a>                          | 2nd Edition 1995                           | IS                        | √               |
| 8   | AASHTO       | <a href="#">A Guide to Standardized Highway Lighting Pole Hardware</a>                    | April 1980                                 | IS                        | √               |
| 9   | AASHTO       | <a href="#">A Manual of User Benefit Analysis for Highways</a>                            | 3rd Edition 2010                           | IS                        | √               |
| 10  | AASHTO       | <a href="#">A Policy on Design Standards- Interstate System</a>                           | 5th Edition 2005                           | IS                        | √               |
| 11  | AASHTO       | <a href="#">A Policy on Geometric Design of Highways and Streets - "The Green Book"</a>   | 5th Edition 2004                           | IS                        | √               |
| 12  | AASHTO       | <a href="#">A Policy On the Accommodation Of Utilities Within Freeway Right of Way</a>    | 5th Edition October 2005                   | IS                        | √               |
| 13  | AASHTO       | <a href="#">AASHTO Bridge Element Inspection Manual, 1st Edition BEM-1 BEM-1-UL</a>       | 2011                                       | IS                        |                 |

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| 14  | AASHTO       | <a href="#">AASHTO LRFD Bridge Construction Specifications, 3rd Edition, 2010 Interim Revisions</a>   | 2010                                       | IS                        |                 |
| 15  | AASHTO       | <a href="#">AASHTO LRFD Bridge Construction Specifications, 3rd Edition, with 2010 Interim Revisions LRFDCONS-3-M</a>                                   | 3rd Edition 2010                           | IS                        |                 |
| 16  | AASHTO       | <a href="#">AASHTO LRFD Bridge Construction Specifications, 3rd Edition, with 2010 Interim Revisions, Single User Digital Publication LRFDCONS-3-UL</a> | 3rd Edition 2010                           | IS                        |                 |
| 17  | AASHTO       | <a href="#">AASHTO LRFD Bridge Design Specifications, Customary U.S. Units, 5th Edition, with 2010 Interim Revisions LRFDUS-5-M</a>                     | 5th Edition 2010                           | IS                        |                 |
| 18  | AASHTO       | <a href="#">AASHTO LRFD Bridge Design Specifications, Customary U.S. Units, 5th Edition, with 2010 Interim Revisions LRFDUS-5-UL</a>                    | 5th Edition 2010                           | IS                        |                 |
| 19  | AASHTO       | <a href="#">AASHTO LRFD Bridge Design Specifications, Customary U.S. Units, 5th Edition, 2010 Interim Revisions</a>                                     | 2010                                       | IS                        |                 |
| 20  | AASHTO       | <a href="#">AASHTO LRFD Bridge Design Specifications, Customary U.S. Units, Second Edition, Single User Digital Publication LRFDUS-2-UL</a>             | 2nd Edition 1998                           | IS                        |                 |
| 21  | AASHTO       | <a href="#">AASHTO LRFD Bridge Design Specifications</a>  | 4th Edition 2007                           | IS                        |                 |
| 22  | AASHTO       | <a href="#">AASHTO LRFD Design Examples—Horizontally Curved Steel Bridges GHC-4I1-OL</a>  | 2006                                       | IS<br>W                   |                 |

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| Ref #   | Organization | Standard  | Publication Year / Last Updated (Revision) | Availability (E / IS / W) | √ If Applicable |
| 23  | AASHTO       | <a href="#">AASHTO LRFD Movable Highway Bridge Design Specifications, 2008 Interim Revisions LRFDMOV-2-I1</a>                                 | 2008                                       | IS                        |                 |
| 24  | AASHTO       | <a href="#">AASHTO LRFD Movable Highway Bridge Design Specifications, 2010 Interim Revisions LRFDMOV-2-I2-OL LRFDMOV-2-I2</a>                 | 2010                                       | IS                        |                 |
| 25  | AASHTO       | <a href="#">AASHTO LRFD Movable Highway Bridge Design Specifications, 2011 Interim Revisions LRFDMOV-2-I3-OL LRFDMOV-2-I3</a>                 | 2011                                       | IS                        |                 |
| 26  | AASHTO       | <a href="#">AASHTO LRFD Movable Highway Bridge Design Specifications, 2nd Edition, with 2008, 2010 and 2011 Interim Revisions LRFDMOV-2-M</a> | 2nd Edition 2007                           | IS                        |                 |
| 27  | AASHTO       | <a href="#">AASHTO/AWS D1.5M/D1.5:2010 Bridge Welding Code, 6th Edition, AASHTO 2011 Interim Revisions BWC-6-I1 BWC-6-I1-OL</a>               | 2011                                       | IS                        |                 |
| 28  | AASHTO       | <a href="#">AASHTO/AWS D1.5M/D1.5:2010 Bridge Welding Code, 6th Edition, with 2011 AASHTO Interim Revisions BWC-6-M</a>                       | 6th Edition 2010                           | IS                        |                 |
| 29  | AASHTO       | <a href="#">Above and Beyond</a>  | January 2008                               | IS<br>W                   |                 |
| 30  | AASHTO       | <a href="#">An Informational Guide for a Training Program of Right-of-Way Personnel</a>   | 2nd Edition 1975                           | IS                        |                 |
| 31  | AASHTO       | <a href="#">Asset Management Data Collection Guide, AASHTO-AGC-ARTBA Task Force 45 Document</a>   | June 2006                                  | IS                        |                 |
| 32  | AASHTO       | <a href="#">Best Practices in Context-Sensitive Solutions, 2005 Competition</a>   | 2005                                       | IS                        |                 |

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| 33  | AASHTO       | <a href="#">Best Practices in Context-Sensitive Solutions, 2006 Competition</a>   | 2006                                       | IS                        |                 |
| 34  | AASHTO       | <a href="#">Best Practices in Environmental Partnering: Raising the Bar</a>   | 1998                                       | IS                        | √               |
| 35  | AASHTO       | <a href="#">Construction Handbook for Bridge Temporary Works, 1st Edition, 2008 Interim Revisions CHBTW-1-II</a>            | 2008                                       | IS                        |                 |
| 36  | AASHTO       | <a href="#">Construction Handbook for Bridge Temporary Works, 1st Edition, with 2008 Interim Revisions CHBTW-1-M</a>        | 1st Edition 1995                           | IS                        |                 |
| 37  | AASHTO       | <a href="#">Construction Manual for Highway Construction</a>  | 4th Edition 1990                           | IS                        | √               |
| 38  | AASHTO       | <a href="#">Design Drawing Presentation Guidelines, G 1.2 - 2003</a>  | 2003                                       | IS<br>W                   | √               |
| 39  | AASHTO       | <a href="#">Design Policy Archive, 1st Edition, Single-User CD-ROM</a>  | January 2004                               | IS                        | √               |
| 40  | AASHTO       | <a href="#">Driving to Success with CSS</a>   | 2007                                       | IS                        | √               |
| 41  | AASHTO       | <a href="#">EMS Implementation Handy Guide Number One: Making the Case for an Environmental Management System</a>           | May 2004                                   | IS                        | √               |
| 42  | AASHTO       | <a href="#">EMS Implementation Handy Guide Number Two: EMS, A Bridge for Organizational Coordination and Communications</a> | May 2004                                   | IS                        | √               |
| 43  | AASHTO       | <a href="#">Environmental Successes in Transportation Project Development</a>   | 2001                                       | IS                        | √               |
| 44  | AASHTO       | <a href="#">Foundation Investigation Manual</a>   | 2nd Edition 1978                           | IS                        |                 |
| 45  | AASHTO       | <a href="#">Guidance on Sharing Freeway and Highway Rights-of-Way for Telecommunications</a>                                | 1997                                       | IS                        |                 |
| 46  | AASHTO       | <a href="#">Guide Design Specifications for Bridge Temporary Works, 1st Edition, with 2008 Interim Revisions</a>            | 1st Edition 1995                           | IS                        |                 |

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| 47  | AASHTO       | <a href="#">Guide Design Specifications for Bridge Temporary Works, 1st Edition, with 2008 Interim Revisions GSBTW-1-M</a>                                 | 1995                                       | IS                        |                 |
| 48  | AASHTO       | <a href="#">Guide Design Specifications for Bridge Temporary Works, 2008 Interim Revisions GWBTW-1-I1</a>  | 2008                                       | IS                        |                 |
| 49  | AASHTO       | <a href="#">Guide for Commonly Recognized Structural Elements and its 2002 Interim Revisions</a>   | November 2001                              | IS                        |                 |
| 50  | AASHTO       | <a href="#">Guide for Consultant Contracting</a>   | March 2008                                 | IS                        | √               |
| 51  | AASHTO       | <a href="#">Guide for Contracting, Selecting, and Managing Consultants in Preconstruction Engineering</a>  | 3rd Edition 1996                           | IS                        | √               |
| 52  | AASHTO       | <a href="#">Guide for Design of Pavement Structures and 1998 Supplement</a>  | 1993                                       | IS                        | √               |
| 53  | AASHTO       | <a href="#">Guide for Design-Build Procurement</a>   | January 2008                               | IS                        | √               |
| 54  | AASHTO       | <a href="#">Guide for High-Occupancy Vehicle (HOV) Facilities</a>  | 3rd Edition 2004                           | IS                        |                 |
| 55  | AASHTO       | <a href="#">Guide for Park-and-Ride Facilities</a>   | 2nd Edition 2004                           | IS                        |                 |
| 56  | AASHTO       | <a href="#">Guide for Pavement Friction</a>  | 1st Edition 2008                           | IS                        | √               |
| 57  | AASHTO       | <a href="#">Guide for Snow and Ice Control</a>   | 1999                                       | IS                        | √               |
| 58  | AASHTO       | <a href="#">Guide for the Development of Bicycle Facilities</a>  | 3rd Edition 1999                           | IS                        |                 |
| 59  | AASHTO       | <a href="#">Guide for the Planning, Design, and Operation of Pedestrian Facilities</a>   | 1st Edition 2004                           | IS                        | √               |
| 60  | AASHTO       | <a href="#">Guide Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges, 2005 Interim LRFR-1-I1-UL LRFR-1-I1</a> | 2005                                       | IS                        |                 |

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| 61  | AASHTO       | <a href="#">Guide Manual for Condition Evaluation and Load and Resistance Factor Rating (LRFR) of Highway Bridges, 1st Edition, with 2005 Interim Revisions LRFR-1-M-UL</a>        | 2003                                       | IS                        |                 |
| 62  | AASHTO       | <a href="#">Guide on Evaluation and Abatement of Traffic Noise</a>   | 1993                                       | IS                        | √               |
| 63  | AASHTO       | <a href="#">Guide Specification and Commentary for Vessel Collision Design of Highway Bridges</a>  | February 1991                              | IS                        |                 |
| 64  | AASHTO       | <a href="#">Guide Specification for Application of Coating Systems with Zinc-Rich Primers to Steel Bridges, S 8.1 - 2006</a>   | 2006                                       | IS<br>W                   |                 |
| 65  | AASHTO       | <a href="#">Guide Specifications - Thermal Effects in Concrete Bridge Superstructures</a>  | 1st Edition 1989                           | IS                        |                 |
| 66  | AASHTO       | <a href="#">Guide Specifications for Cathodic Protection of Concrete Bridge Decks</a>  | July 1994                                  | IS                        |                 |
| 67  | AASHTO       | <a href="#">Guide Specifications for Concrete Overlay of Pavements and Bridge Decks</a>  | 1990                                       | IS                        |                 |
| 68  | AASHTO       | <a href="#">Guide Specifications for Design and Construction of Segmental Concrete Bridges, 2nd Edition, 2003 Interims Revisions GSCB-2-II</a>                                     | 2003                                       | IS                        |                 |
| 69  | AASHTO       | <a href="#">Guide Specifications for Design and Construction of Segmental Concrete Bridges, 2nd Edition, 2003 Interims Revisions, Single User Digital Publication GSCB-2-II-UL</a> | 2003                                       | IS                        |                 |

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| 70  | AASHTO       | <a href="#">Guide Specifications for Design and Construction of Segmental Concrete Bridges, 2nd Edition, with 2003 Interim Revisions GSCB-2-M</a>                                   | 2nd Edition 1999                           | IS                        |                 |
| 71  | AASHTO       | <a href="#">Guide Specifications for Design and Construction of Segmental Concrete Bridges, 2nd Edition, with 2003 Interim Revisions, Single User Digital Publication GSCB-2-UL</a> | 2nd Edition 1999                           | IS                        |                 |
| 72  | AASHTO       | <a href="#">Guide Specifications for Design of FRP Pedestrian Bridges</a>   | 1st Edition 2008                           | IS                        |                 |
| 73  | AASHTO       | <a href="#">Guide Specifications for Design of Pedestrian Bridges</a>   | 1st Edition 1997                           | IS                        |                 |
| 74  | AASHTO       | <a href="#">Guide Specifications for Fracture Critical Non-Redundant Steel Bridge Members, 2nd Edition, 1978, with 1981, 1983, 1984, 1985, and 1986 Interim Revisions</a>           | 2nd Edition 1996                           | IS                        |                 |
| 75  | AASHTO       | <a href="#">Guide Specifications for Geotextiles in Separate Applications</a>   | 1990                                       | IS                        |                 |
| 76  | AASHTO       | <a href="#">Guide Specifications for Highway Bridge Fabrication with HPS 70W (HPS 485W) Steel</a>   | 2nd Edition 2003                           | IS                        |                 |
| 77  | AASHTO       | <a href="#">Guide Specifications for Highway Construction</a>   | 9th Edition 2008                           | IS                        | √               |
| 78  | AASHTO       | <a href="#">Guide Specifications for Polymer Concrete Bridge Deck Overlays</a>  | October 1995                               | IS                        |                 |
| 79  | AASHTO       | <a href="#">Guide Specifications for Polymer Modified Asphalt</a>   | February 1992                              | IS                        | √               |
| 80  | AASHTO       | <a href="#">Guide Specifications for Seismic Design of Highway Bridges</a>  | 1st Edition 1983                           | IS                        |                 |

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| 81  | AASHTO       | <a href="#">Guide Specifications for Seismic Isolation Design, 3rd Edition GSID-3</a>                                     | 3rd Edition 2010                           | IS                        |                 |
| 82  | AASHTO       | <a href="#">Guide Specifications for Seismic Isolation Design, 3rd Edition, Single User Digital Publication GSID-3-UL</a> | 3rd Edition 2010                           | IS                        |                 |
| 83  | AASHTO       | <a href="#">Guide Specifications for Shotcrete Repair of Highway Bridges</a>  | February 1998                              | IS                        |                 |
| 84  | AASHTO       | <a href="#">Guide Specifications for Strength Design of Truss Bridges (Load Factor Design)</a>                            | 1985                                       | IS                        |                 |
| 85  | AASHTO       | <a href="#">Guide Specifications for Strength Evaluation of Existing Steel and Concrete Bridges</a>                       | 1st Edition 1989                           | IS                        |                 |
| 86  | AASHTO       | <a href="#">Guide Specifications for Structural Design of Sound Barriers, 1992 Interim</a>                                | 1992                                       | IS                        |                 |
| 87  | AASHTO       | <a href="#">Guide Specifications for Structural Design of Sound Barriers, 2002 Interim</a>                                | 2002                                       | IS                        |                 |
| 88  | AASHTO       | <a href="#">Guide Specifications for Structural Design of Sound Barriers, with 1992 and 2002 Interims</a>                 | 1989                                       | IS                        |                 |
| 89  | AASHTO       | <a href="#">Guide Specifications for the Design of Stress-Laminated Wood Decks</a>  | April 1991                                 | IS                        |                 |
| 90  | AASHTO       | <a href="#">Guide to Quality in Preconstruction Engineering</a>   | 1st Edition 2002                           | IS                        | √               |
| 91  | AASHTO       | <a href="#">Guide to Standardized Highway Drainage Products</a>   | November 1999                              | IS                        | √               |
| 92  | AASHTO       | <a href="#">Guide to Wetland Mitigation Issues for Transportation Designers</a>   | September 1996                             | IS                        | √               |

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| 93  | AASHTO       | <a href="#">Guidelines and Guide Specifications for Using Pozzolanic Stabilized Mixture (Base Course or Subbase) and Fly Ash for In-Place Subgrade Soil Modifications</a> | 1990                                       | IS                        | √               |
| 94  | AASHTO       | <a href="#">Guidelines for Bridge Management Systems</a>  | 1st Edition 1993                           | IS                        |                 |
| 95  | AASHTO       | <a href="#">Guidelines for Design Details, G 1.4 - 2006</a>   | December 2006                              | IS<br>W                   | √               |
| 96  | AASHTO       | <a href="#">Guidelines for Design for Constructibility, 2nd Edition, G 12.1 - 2003</a>  | 2003                                       | IS<br>W                   | √               |
| 97  | AASHTO       | <a href="#">Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)</a>  | 1st Edition 2001                           | IS                        |                 |
| 98  | AASHTO       | <a href="#">Guidelines for Historic Bridge Rehabilitation and Replacement</a>   | 1st Edition 2008                           | IS                        |                 |
| 99  | AASHTO       | <a href="#">Guidelines for Maintenance Management Systems</a>   | 1st Edition 2004                           | IS                        | √               |
| 100   | AASHTO       | <a href="#">Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways</a>  | 4th Edition 2001                           | IS                        | √               |
| 101   | AASHTO       | <a href="#">Guidelines for Value Engineering</a>  | 3rd Edition 2010                           | IS                        | √               |
| 102   | AASHTO       | <a href="#">Hazardous Waste Guide for Project Development</a>   | 1st Edition 1990                           | IS                        | √               |
| 103   | AASHTO       | <a href="#">Highway Drainage Guidelines</a>   | 4th Edition 2007                           | IS                        | √               |
| 104   | AASHTO       | <a href="#">Highway Safety Design and Operations Guide</a>  | 3rd Edition 1997                           | IS                        | √               |
| 105   | AASHTO       | <a href="#">Hot-Mix Asphalt Paving Handbook</a>   | 2nd Edition 2000                           | IS                        | √               |
| 106   | AASHTO       | <a href="#">Implementation Manual for Quality Assurance</a>   | February 1996                              | IS                        | √               |
| 107   | AASHTO       | <a href="#">Improving the Quality of Environmental Documents</a>  | May 2006                                   | IS                        | √               |

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| 108   | AASHTO       | <a href="#">In Situ Soil Improvement Techniques</a>  | 1st Edition 1990                           | IS                        | √               |
| 109   | AASHTO       | <a href="#">Informational Guide on Fencing Controlled Access Highways</a>                                    | 3rd Edition 1990                           | IS                        | √               |
| 110   | AASHTO       | <a href="#">Inspectors' Guide for Shotcrete Repair of Bridges</a>  | December 1999                              | IS                        |                 |
| 111   | AASHTO       | <a href="#">Maintenance Manual for Roadways and Bridges</a>  | 4th Edition 2007                           | IS                        | √               |
| 112   | AASHTO       | <a href="#">Manual for Bridge Evaluation</a>   | 2nd Edition 2011                           | IS                        |                 |
| 113   | AASHTO       | <a href="#">Manual for Condition Evaluation of Bridges, 2nd Edition with 2001 and 2003 Interim Revisions</a> | 2nd Edition 2000                           | IS                        |                 |
| 114   | AASHTO       | <a href="#">Manual for Corrosion Protection of Concrete Components in Bridges</a>                            | 1992                                       | IS                        |                 |
| 115   | AASHTO       | <a href="#">Manual on Subsurface Investigations</a>  | 1st Edition 1988                           | IS                        | √               |
| 116   | AASHTO       | <a href="#">Manual on Uniform Traffic Control Devices</a>  | 2009 Edition                               | IS<br>W                   | √               |
| 117   | AASHTO       | <a href="#">Mechanistic-Empirical Pavement Design Guide, Interim Edition: A Manual of Practice</a>           | 2008                                       | IS                        | √               |
| 118   | AASHTO       | <a href="#">Model Drainage Manual, CD-ROM</a>  | 3rd Edition 2005                           | IS                        | √               |
| 119   | AASHTO       | <a href="#">Movable Bridge Inspection, Evaluation, and Maintenance Manual</a>                                | 1st Edition 1998                           | IS                        |                 |
| 120   | AASHTO       | <a href="#">National Transportation Communications for ITS Protocol (NTCIP)</a>                              |  | IS                        | √               |
| 121   | AASHTO       | <a href="#">National Transportation Product Evaluation Program (NTPEP)</a>                                   |  | IS                        | √               |
| 122   | AASHTO       | <a href="#">Partnering Handbook</a>  | 2005                                       | IS                        | √               |
| 123   | AASHTO       | <a href="#">Pavement Deflection Data Exchange: Technical Data Guide</a>                                      | 1998                                       | IS                        | √               |
| 124   | AASHTO       | <a href="#">Pavement Management Guide</a>  | 1st Edition 2001                           | IS                        | √               |

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| Ref #   | Organization | Standard   | Publication Year / Last Updated (Revision) | Availability (E / IS / W) | √ If Applicable |
| 125   | AASHTO       | <a href="#">Policy on Land Use and Source Control Aspects of Traffic Noise Attenuation</a>   | 1980                                       | IS                        |                 |
| 126   | AASHTO       | <a href="#">Practitioner's Handbook #1: Maintaining a Project File and Preparing an Administrative Record for a NEPA Study</a>                     | 2006                                       | IS<br>W                   | √               |
| 127   | AASHTO       | <a href="#">Practitioner's Handbook #10: Using the Transportation Planning Process to Support the NEPA Process</a>                                 | 2008                                       | IS<br>W                   | √               |
| 128   | AASHTO       | <a href="#">Practitioner's Handbook #2: Responding to Comments on an Environmental Impact Statement</a>  | 2006                                       | IS<br>W                   | √               |
| 129   | AASHTO       | <a href="#">Practitioner's Handbook #3: Managing the NEPA Process for Toll Lanes and Toll Roads</a>  | 2006                                       | IS<br>W                   | √               |
| 130   | AASHTO       | <a href="#">Practitioner's Handbook #4: Tracking Compliance with Environmental Commitments/Use of Environmental Monitors</a>                       | 2006                                       | IS<br>W                   | √               |
| 131   | AASHTO       | <a href="#">Practitioner's Handbook #5: Utilizing Community Advisory Committees for NEPA Studies</a>   | 2007                                       | IS<br>W                   | √               |
| 132   | AASHTO       | <a href="#">Practitioner's Handbook #6: Consulting under Section 106 of the National Preservation Act</a>  | 2007                                       | IS<br>W                   | √               |
| 133   | AASHTO       | <a href="#">Practitioner's Handbook #7: Defining the Purpose and Need, and Determining the Range of Alternatives for Transportation Projects</a>   | 2007                                       | IS<br>W                   | √               |
| 134   | AASHTO       | <a href="#">Practitioner's Handbook #8: Developing and Implementing an Environmental Management System in a State Department of Transportation</a> | 2007                                       | IS<br>W                   | √               |
| 135   | AASHTO       | <a href="#">Practitioner's Handbook #9: Using the SAFETEA-LU Environmental Review Process (23 U.S.C. § 139)</a>                                    | 2008                                       | IS<br>W                   | √               |

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| 136   | AASHTO       | <a href="#">Programmatic Agreement Toolkit CD-ROM</a>  | 2005                                       | IS                        | √               |
| 137   | AASHTO       | <a href="#">Provisional Standards</a>  | 2011 Edition                               | IS                        | √               |
| 138   | AASHTO       | <a href="#">Quality Assurance Guide Specification, 1st Edition</a>                                   | 1st Edition 1996                           | IS                        | √               |
| 139   | AASHTO       | <a href="#">Recommendations for the Qualification of Structural Bolting Inspectors, G 4.2 - 2006</a> | December 2006                              | IS                        |                 |
| 140   | AASHTO       | <a href="#">Report of the AASHTO Task Force on Corridor Preservation</a>                             | 1st Edition 1990                           | IS                        |                 |
| 141   | AASHTO       | <a href="#">Report on Cold Recycling of Asphalt Pavements</a>  | 1988                                       | IS                        |                 |
| 142   | AASHTO       | <a href="#">Right of Way and Utilities Guidelines and Best Practices</a>                             | January 6, 2004                            | IS                        | √               |
| 143   | AASHTO       | <a href="#">Roadside Design Guide, 4th Edition</a>   | 4th Edition 2011                           | IS                        | √               |
| 144   | AASHTO       | <a href="#">Roadway Lighting Design Guide</a>  | October 2005                               | IS                        | √               |
| 145   | AASHTO       | <a href="#">Sample Owners Quality Assurance Manual, G 4.4 - 2006</a>                                 | 2006                                       | IS<br>W                   | √               |
| 146   | AASHTO       | <a href="#">SDMS™ Data Structure Technical Guide</a>   | 2000                                       | IS                        |                 |
| 147   | AASHTO       | <a href="#">Segregation—Causes and Cures for Hot-Mix Asphalt</a>                                     | 1st Edition 1997                           | IS                        | √               |
| 148   | AASHTO       | <a href="#">Shop Detail Drawing Review/Approval Guidelines, G 1.1-2000</a>                           | 2000                                       | IS<br>W                   | √               |
| 149   | AASHTO       | <a href="#">Shop Detail Drawings Presentation Guidelines, G 1.3-2002</a>                             | 2002                                       | IS<br>W                   | √               |
| 150   | AASHTO       | <a href="#">Standard Specifications for Highway Bridges</a>  | 13th Edition 1983                          | IS                        |                 |
| 151   | AASHTO       | <a href="#">Standard Specifications for Highway Bridges</a>  | 17th Edition 2002                          | IS                        |                 |
| 152   | AASHTO       | <a href="#">Standard Specifications for Highway Bridges</a>  | 2nd Edition 1935                           | IS                        |                 |

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| Ref #   | Organization | Standard  | Publication Year / Last Updated (Revision) | Availability (E / IS / W) | √ If Applicable |
| 153   | AASHTO       | <a href="#">Standard Specifications for Highway Bridges</a>   | 8th Edition 1961                           | IS                        |                 |
| 154   | AASHTO       | <a href="#">Standard Specifications for Highway Bridges and Incidental Structures</a>   | 1st Edition 1931                           | IS                        |                 |
| 155   | AASHTO       | <a href="#">Standard Specifications for Movable Highway Bridges, with 1992, 1993, and 1995 Interims</a>   | August 1988                                | IS                        |                 |
| 156   | AASHTO       | <a href="#">Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 5th Edition, 2010 Interim Revisions</a><br><a href="#">LTS-5-I1</a><br>LTS-5-I1-UL | 2010                                       | IS                        | √               |
| 157   | AASHTO       | <a href="#">Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 5th Edition, 2011 Interim Revisions</a><br><a href="#">LTS-5-I2</a><br>LTS-5-I2-UL | 2011                                       | IS                        | √               |
| 158   | AASHTO       | <a href="#">Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 5th Edition, with 2010 and 2011 Interim Revisions</a><br><a href="#">LTS-5-M</a>   | 5th Edition 2009                           | IS                        | √               |
| 159   | AASHTO       | <a href="#">Standard Specifications for Transportation Materials and Methods of Sampling and Testing, 31st Edition, and Provisional Standards, 2011 Edition with single-user CD-ROM</a>           | 31st Edition 2011                          | IS                        | √               |
| 160   | AASHTO       | <a href="#">Steel Bridge Bearing Design and Detailing Guidelines, G9.1-2004</a>   | 2004                                       | IS                        |                 |

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| 161   | AASHTO                         | <a href="#">Steel Bridge Erection Guide Specification, Sample Erection Plans, S10.1-2007</a>  | 2007                                       | IS                        |                 |
| 162   | AASHTO                         | <a href="#">Steel Bridge Fabrication Guide Specification, S 2.1-2002</a>  | 2002                                       | IS                        |                 |
| 163   | AASHTO                         | <a href="#">Steel Bridge Fabrication QC/QA Guide Specification, S 4.1-2002</a>  | 2002                                       | IS                        |                 |
| 164   | AASHTO                         | <a href="#">Strategic Highway Safety Plan - A Comprehensive Plan to Substantially Reduce Vehicle-Related Fatalities and Injuries on the Nation's Highways</a> | 2005                                       | IS                        | √               |
| 165   | AASHTO                         | <a href="#">Taking the High Road: The Environmental and Social Contributions of America's Highway Programs</a>  | 1st Edition 2001                           | IS                        | √               |
| 166   | AASHTO                         | <a href="#">The Use and State-of-the-Practice of Fiber Reinforced Concrete</a>  | 2001                                       | IS                        |                 |
| 167   | AASHTO                         | <a href="#">Uniform Vehicle Code—Millenium Edition</a>  | Millenium Edition                          | IS                        | √               |
| 168   | AASHTO                         | <a href="#">Using the Environmental Management System to Meet Transportation Challenges and Opportunities. An Implementation Guide</a>                        | 2003                                       | IS                        | √               |
| 169   | AASHTO                         | <a href="#">Virtual Superpave Laboratory Interactive CD-ROM</a>   | 2005                                       | IS                        |                 |
| 170   | ACI                            | <a href="#">ACI-318-08 Building Code Requirements for Structural Concrete and Commentary (Includes Errata)</a>  | January 1, 2008                            | IS                        | √               |
| 171   | ADAAG                          | <a href="#">American with Disabilities Act Accessibility Guidelines for Buildings and Facilities</a>  | September 2002                             | W                         | √               |
| 172   | Aluminum Association for Alloy | <a href="#">Aluminum Books and Alloys Number 319.0</a>  | Various                                    | IS                        |                 |

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| 173   | American Congress on Surveying and Mapping and the American Society of Civil Engineers | <a href="#">Definitions of Surveying and Associated Terms</a>  | 1978                                       | IS                        | √               |
| 174   | American Iron and Steel Institute  | <a href="#">Handbook of Steel Drainage and Highway Construction Products</a>   | 2007                                       | W                         | √               |
| 175   | ANSI   | <a href="#">Illuminating Engineering Society of North America Roadway Lighting ANSI Approved</a>   | July 1, 2000                               | IS                        | √               |
| 176   | ANSI   | <a href="#">Standard for Welding Procedure and Performance Qualification</a>   | November 4, 2004                           | IS                        | √               |
| 177   | API  | <a href="#">Recommended Practice for Planning, Design, and Constructing Fixed Offshore Platforms – Load and Resistance Factor Design</a> | July 1, 1993                               | IS                        |                 |
| 178   | APWA   | <a href="#">American Public Works Association Standard Location for Utilities in Public Right of Ways</a>                                | February 29, 2000                          | W                         | √               |
| 179   | APWA   | <a href="#">Standard Location for Utilities in Public Rights of Way</a>  | 1968                                       | W                         | √               |
| 180   | AREMA  | <a href="#">American Railway Engineering and Maintenance of Way Association Publications</a>   | Various                                    | W                         |                 |
| 181   | ASCE   | <a href="#">Practical Highway Aesthetics</a>   | 1977                                       | IS                        | √               |
| 182   | ASTM   | <a href="#">American Society of Testing and Materials Standards</a>  | 2009                                       | IS                        | √               |
| 183   | Bellcore / Telcordia   | <a href="#">Document No. GR-326, Issue 04, Generic Requirements for Single-Mode Optical Fiber Connectors and Jumper Assemblies</a>       | February 2010                              | IS                        |                 |
| 184   | BNSF/UPRR  | <a href="#">Guidelines For Railroad Grade Separation Projects</a>  | January 24, 2007                           | W                         |                 |

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| 185   | California Department of Agriculture       | <a href="#">California Noxious Weed Law, California Statutes and the current state list prohibited noxious weeds and restricted noxious weeds ("Noxious Plants of California")</a>       | October 20, 2003                           | W                         | √               |
| 186   | California Environmental Protection Agency | <a href="#">Managing Asbestos Waste</a>  | April 2003                                 | W                         | √               |
| 187   | Cal-OSHA                                   | <a href="#">Cal-OSHA Safety Manual</a>   |  | IS                        | √               |
| 188   | Caltrans                                   | <a href="#">2006 Revised Standards Plans and New Standard Plans</a>  | Various                                    | W                         |                 |
| 189   | Caltrans                                   | <a href="#">A Summary of Prevailing Wage Requirements for Contract Analysts and Contract Managers</a>  | April 2006                                 | E                         | √               |
| 190   | Caltrans                                   | <a href="#">A Test Plan for the Characterization and Qualification of Highway Bridge Seismic Isolation Bearing Devices</a>   | February 8, 2011                           | W                         |                 |
| 191   | Caltrans                                   | <a href="#">A Test Plan for the Characterization and Qualification of Highway Bridge Seismic Isolator and Damping Devices</a>  | February 23, 1995                          | W                         |                 |
| 192   | Caltrans                                   | <a href="#">Additional Calibration of Traffic Noise Prediction Models</a>  | August 27, 2003                            | W                         | √               |
| 193   | Caltrans                                   | <a href="#">Asphalt Rubber Usage Guide</a>   | January 2003                               | E                         | √               |
| 194   | Caltrans                                   | <a href="#">Berm and Wall Options, Coding of Low Barriers, Zero Height Index, Grade Corrections, and Other Issues in Sound32/ Sound 2000 and LeqV2 Traffic Noise Prediction Programs</a> | January 17, 2002                           | W                         | √               |
| 195   | Caltrans                                   | <a href="#">Bridge Computer Manual</a>   | April 4, 2007                              | W                         |                 |
| 196   | Caltrans                                   | <a href="#">Bridge Construction Records and Procedures Manual, Volume I</a>  | June 30, 2008                              | W                         |                 |
| 197   | Caltrans                                   | <a href="#">Bridge Construction Records and Procedures Manual, Volume II</a>   | August 1, 2008                             | W                         |                 |
| 198   | Caltrans                                   | <a href="#">Bridge Deck Construction Manual</a>  | January 1991                               | W                         |                 |

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| 199   | Caltrans     | <a href="#">Bridge Design Aids</a>   | April 2005                                 | W                         |                 |
| 200   | Caltrans     | <a href="#">Bridge Design Details</a>  | August 12, 2007                            | W                         |                 |
| 201   | Caltrans     | <a href="#">Bridge Design Practice Manual</a>  | October 25, 2007                           | W                         |                 |
| 202   | Caltrans     | <a href="#">Bridge Design Specifications</a>   | November 7, 2008                           | W                         |                 |
| 203   | Caltrans     | <a href="#">Bridge Memo To Designers</a>   | December 17, 2007                          | W                         |                 |
| 204   | Caltrans     | <a href="#">Bridge Standard Detail Sheets</a>  | August 2, 2011                             | W                         |                 |
| 205   | Caltrans     | <a href="#">Bridge Structural Reference Sheets</a>   | October 27, 2006                           | W                         |                 |
| 206   | Caltrans     | <a href="#">Bridge Strudl Manual</a>   | November 25, 2003                          | W                         |                 |
| 207   | Caltrans     | <a href="#">CADD Users Manual</a>  | October 30, 2008                           | W                         | √               |
| 208   | Caltrans     | <a href="#">California Amendments to the AASHTO LRFD Bridge Design Specifications – Fourth Edition</a> | September 29, 2010                         | W                         |                 |
| 209   | Caltrans     | <a href="#">California Bank and Shore Rock Slope Protection, plus Appendix</a>                         | 3rd Edition October 2000                   | W                         |                 |
| 210   | Caltrans     | <a href="#">California Code Regulations Title 24</a>   | Portions                                   | W                         | √               |
| 211   | Caltrans     | <a href="#">California Foundation Manual</a>   | July 1997                                  | E                         | √               |
| 212   | Caltrans     | <a href="#">California Highway Barrier Aesthetics</a>  | June 2002                                  | E                         | √               |
| 213   | Caltrans     | <a href="#">California Manual on Uniform Traffic Control Devices (CA MUTCD)</a>                        | 2012                                       | W                         | √               |
| 214   | Caltrans     | <a href="#">California Seismic Hazard Map and Report</a>   | July 1996                                  | W                         | √               |
| 215   | Caltrans     | <a href="#">California Sign Chart</a>  | September 2006                             | W                         | √               |

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| 216   | Caltrans     | <a href="#">California Sign Specifications</a>  | September 28, 2006                         | W                         | √               |
| 217   | Caltrans     | <a href="#">California Test Methods</a>   | Various                                    | W                         | √               |
| 218   | Caltrans     | <a href="#">California Vehicle Noise Emission Levels</a>  | January 1987                               | W                         | √               |
| 219   | Caltrans     | <a href="#">Caltrans Strategic Plan 2007-2012</a>   | December 17, 2007                          | W                         | √               |
| 220   | Caltrans     | <a href="#">Changeable Message Sign Guidelines</a>  | April 2006                                 | W                         | √               |
| 221   | Caltrans     | <a href="#">CHP/Caltrans Call Box and Motorist Aid Guidelines</a>   | May 1999                                   | E                         | √               |
| 222   | Caltrans     | <a href="#">Code of Safe Practices for Geotechnical Drilling</a>  | October 27, 2005                           | W                         | √               |
| 223   | Caltrans     | <a href="#">Code of Safe Surveying Practices</a>  | 2002                                       | E                         | √               |
| 224   | Caltrans     | <a href="#">Confidentiality Agreement</a>   | October 2003                               | W                         | √               |
| 225   | Caltrans     | <a href="#">Construction Manual</a>   | September 2007                             | W                         | √               |
| 226   | Caltrans     | <a href="#">Construction Policy Bulletins</a>   | Various                                    | W                         | √               |
| 227   | Caltrans     | <a href="#">Construction Procedure Directives</a>   | Various                                    | W                         | √               |
| 228   | Caltrans     | <a href="#">Construction Site Best Management Practices (BMPs) Field Manual and Troubleshooting Guide</a> | January 2003                               | W                         | √               |
| 229   | Caltrans     | <a href="#">Construction Site Best Management Practices (BMPs) Manual</a>                                 | May 2004                                   | W                         | √               |
| 230   | Caltrans     | <a href="#">Construction Site BMPs Details and Drawings</a>   | Various                                    | W                         | √               |
| 231   | Caltrans     | <a href="#">Construction Site BMPs Fact Sheets</a>  | Various                                    | W                         | √               |
| 232   | Caltrans     | <a href="#">Construction Site BMPs Symbols</a>  |  | W                         | √               |
| 233   | Caltrans     | <a href="#">Construction Site Storm Water Quality Sampling Guidance Manual</a>                            | December 2003                              | W                         | √               |

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| 234   | Caltrans     | <a href="#">Construction Storm Water Coordinator Guidance Manual</a>                                    | January 2003                               | W                         | √               |
| 235   | Caltrans     | <a href="#">Continuously Reinforced Concrete Pavement (CRCP) Design and Construction Guide</a>          | June 5, 2007                               | W                         | √               |
| 236   | Caltrans     | <a href="#">Corrosion Guidelines</a>  | September 2003                             | W                         | √               |
| 237   | Caltrans     | <a href="#">Cost Effectiveness-Public Interest Finding Guidelines</a>                                   | November 2006                              | E                         | √               |
| 238   | Caltrans     | <a href="#">Deputy Directives by Number</a>   | Various                                    | E                         | √               |
| 239   | Caltrans     | <a href="#">Design Information Bulletin</a>   | Various                                    | E                         | √               |
| 240   | Caltrans     | <a href="#">Design Memoranda</a>  | Various                                    | E                         | √               |
| 241   | Caltrans     | <a href="#">Director's Policies by Number</a>   | Various                                    | E                         | √               |
| 242   | Caltrans     | <a href="#">Distance Limits for Traffic Noise Prediction Models Technical Advisory, Noise TAN-02-02</a> | April 24, 2002                             | W                         | √               |
| 243   | Caltrans     | <a href="#">Division of Construction Storm Water Management Enforcement Guidance Manual</a>             | December 2003                              | W                         | √               |
| 244   | Caltrans     | <a href="#">Dowel Bar Retrofit - MTAG Vol. II - Rigid Pavement Preservation Chapter 6</a>               | 2nd Edition<br>January 18, 2008            | W                         | √               |
| 245   | Caltrans     | <a href="#">Drafting and Plans Manual of Instructions</a>   | March 1996                                 | W                         | √               |
| 246   | Caltrans     | <a href="#">Element Inspection</a>  | September 2000                             | W                         | √               |
| 247   | Caltrans     | <a href="#">Encroachment Permits Application Guide</a>  | January 2009                               | W                         | √               |
| 248   | Caltrans     | <a href="#">Encroachment Permits Manual</a>   | 7 <sup>th</sup> Edition                    | W                         | √               |
| 249   | Caltrans     | <a href="#">Encroachment Permits Utility and Tree Trimming Special Provisions</a>                       | December 2008                              | W                         | √               |

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| 250   | Caltrans     | <a href="#">Engineering Services General Directory</a>   | February 5, 2002                           | W                         | √               |
| 251   | Caltrans     | <a href="#">Erosion Control Toolbox</a>  |  | W                         | √               |
| 252   | Caltrans     | <a href="#">Falsework Manual</a>   | January 1988                               | W                         |                 |
| 253   | Caltrans     | <a href="#">Field Guide for Construction Site Dewatering</a>                                       | October 2001                               | W                         | √               |
| 254   | Caltrans     | <a href="#">Field Guide to Partnering on Caltrans Projects</a>                                     | July 2008                                  | W                         | √               |
| 255   | Caltrans     | <a href="#">Flagging Instruction Handbook</a>  | May 2007                                   | W                         | √               |
| 256   | Caltrans     | <a href="#">Flexible Pavement Design Examples - New Construction</a>                               | September 28, 2006                         | W                         | √               |
| 257   | Caltrans     | <a href="#">Flexible Pavement Guidance</a>   | 2011                                       | W                         | √               |
| 258   | Caltrans     | <a href="#">Flexible Pavement Rehabilitation Design Examples</a>                                   | June 2006                                  | W                         | √               |
| 259   | Caltrans     | <a href="#">Flexible Pavement Rehabilitation Using Pulverization</a>                               | June 2008                                  | W                         | √               |
| 260   | Caltrans     | <a href="#">Fog Seal Guidelines</a>  | October 2003                               | W                         | √               |
| 261   | Caltrans     | <a href="#">Foundation Manual</a>  | November 2008                              | W                         | √               |
| 262   | Caltrans     | <a href="#">Foundation Report Preparation for Bridges</a>  | December 2009                              | W                         |                 |
| 263   | Caltrans     | <a href="#">General Guidelines for Studying the Effects of Noise Barriers on Distant Receivers</a> | November 30, 1998                          | W                         |                 |
| 264   | Caltrans     | <a href="#">Geotechnical Manual</a>  | July 2, 2010                               | W                         | √               |
| 265   | Caltrans     | <a href="#">GS Procedure: Overhead Sign Foundation Guidelines</a>                                  | March 1, 2006                              | W                         | √               |
| 266   | Caltrans     | <a href="#">GS Procedure: Report Titles and Guidelines</a>   | January 1, 2006                            | W                         | √               |
| 267   | Caltrans     | <a href="#">Guidance for Temporary Soil Stabilization</a>  | July 2003                                  | W                         | √               |

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| Ref #   | Organization | Standard   | Publication Year / Last Updated (Revision) | Availability (E / IS / W) | √ If Applicable |
| 268   | Caltrans     | <a href="#">Guide for Design and Construction of New Jointed Plain Concrete Pavements</a>                              | January 9, 2008                            | W                         | √               |
| 269   | Caltrans     | <a href="#">Guidelines and Specifications for Trenchless Technology</a>  | July 2008                                  | W                         | √               |
| 270   | Caltrans     | <a href="#">Guidelines for Preparing Geotechnical Design Reports</a>   | December 2006                              | W                         | √               |
| 271   | Caltrans     | <a href="#">Guidelines for Structures Foundation Reports</a>   | March 2006                                 | W                         |                 |
| 272   | Caltrans     | <a href="#">Highway Design Manual</a>  | 6th Edition May 7, 2012                    | W                         | √               |
| 273   | Caltrans     | <a href="#">Highway Traffic Noise Analysis and Abatement, Policy and Guidelines</a>                                    | June 1995                                  | W                         | √               |
| 274   | Caltrans     | <a href="#">HOV Guidelines for Planning, Design and Operations</a>   | 2003                                       | W                         | √               |
| 275   | Caltrans     | <a href="#">Implementation of Caltrans 2009 Seismic Design Procedures</a>  | August 6, 2009                             | W                         |                 |
| 276   | Caltrans     | <a href="#">Independent Assurance Manual</a>   | July 2005                                  | W                         | √               |
| 277   | Caltrans     | <a href="#">Index of California Test Methods</a>   | Portions                                   | W                         | √               |
| 278   | Caltrans     | <a href="#">Jointed Plain Concrete Pavement (JPCP) Preservation and Rehabilitation Design Guide</a>                    | September 18, 2008                         | W                         | √               |
| 279   | Caltrans     | <a href="#">Labor Compliance Manual</a>  | 1st Edition                                | W                         | √               |
| 280   | Caltrans     | <a href="#">Labor Surcharge and Equipment Rental Rate Information - Effective April 1, 2011 through March 31, 2012</a> | 2007                                       | W                         | √               |
| 281   | Caltrans     | <a href="#">Landscape Architecture PS&amp;E Guide</a>  | January 2008                               | W                         | √               |
| 282   | Caltrans     | <a href="#">Life Cycle Cost Analysis Procedures Manual</a>   | November 2007<br>Updated August 2010       | W                         | √               |

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| 283   | Caltrans     | <a href="#">Local Agency Structure Representative (LASR) Guidelines</a>                        | August 2008                                | W                         | √               |
| 284   | Caltrans     | <a href="#">LRFD Guidelines for the Seismic Design of Highway Bridges</a>                      | November 2001                              | W                         |                 |
| 285   | Caltrans     | <a href="#">Main Streets: Flexibility in Design &amp; Operations</a>                           | January 2005                               | W                         | √               |
| 286   | Caltrans     | <a href="#">Maintenance Manual</a>   | Volume 1<br>July 2006                      | W                         | √               |
| 287   | Caltrans     | <a href="#">Maintenance Technical Advisory Guide (TAG)</a>                                     | October 2003                               | W                         | √               |
| 288   | Caltrans     | <a href="#">Miscellaneous equipment rental rate book</a>                                       | 08-01-08<br>03-31-09                       | W                         | √               |
| 289   | Caltrans     | <a href="#">New Product Evaluation Guidelines</a>  | June 1, 2008                               | W                         | √               |
| 290   | Caltrans     | <a href="#">Office of Specially of Funded Projects (OSFP) Information and Procedures Guide</a> |  | W                         | √               |
| 291   | Caltrans     | <a href="#">Office of Structural Materials Practices and Procedures Manual</a>                 | April 2010                                 | W                         | √               |
| 292   | Caltrans     | <a href="#">Open Graded Friction Course Usage Guide</a>  | February 8, 2006                           | W                         | √               |
| 293   | Caltrans     | <a href="#">OSFP Information and Procedure Guide</a>   | July 2007                                  | W                         | √               |
| 294   | Caltrans     | <a href="#">Outline of Field Construction Practices</a>  | January 2009                               | W                         | √               |
| 295   | Caltrans     | <a href="#">Overhead and Roadside Sign Structures Reference Sheets</a>                         | January 2006                               | W                         | √               |
| 296   | Caltrans     | <a href="#">Oversight Engineer Field Guidelines</a>  | June 2005                                  | W                         | √               |
| 297   | Caltrans     | <a href="#">Pavement Program Website</a>   |  | W                         | √               |
| 298   | Caltrans     | <a href="#">Pavement Tapers and Transitions Guide</a>  | December 31, 2008                          | W                         | √               |

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| 299   | Caltrans     | <a href="#">Pavement Technical Guidance</a>  |  | W                         | √               |
| 300   | Caltrans     | <a href="#">Pedestrian and Bicycle Facilities in California</a>  | July 2005                                  | W                         | √               |
| 301   | Caltrans     | <a href="#">Plans Preparation Manual</a>   | January 2008                               | W                         | √               |
| 302   | Caltrans     | <a href="#">Plans Preparation Manual Reference EZ Guide</a>  | March 2006                                 | W                         | √               |
| 303   | Caltrans     | <a href="#">Policy on High and Low Risk Underground Facilities Within Highway Rights of Way</a>              | January 1997                               | W                         | √               |
| 304   | Caltrans     | <a href="#">Pre-Qualified Products List (Pending)</a>  | Various                                    | W                         | √               |
| 305   | Caltrans     | <a href="#">Prestress Manual</a>   | January 2005                               | W                         |                 |
| 306   | Caltrans     | <a href="#">Project Development Procedure Manual</a>   | 7th Edition                                | W                         | √               |
| 307   | Caltrans     | <a href="#">Project Development Workflow Tasks Manual</a>  | October 2004                               | W                         | √               |
| 308   | Caltrans     | <a href="#">Quality Control Manual for Hot Mix Asphalt for the Quality Control Quality Assurance Process</a> | June 2009                                  | W                         | √               |
| 309   | Caltrans     | <a href="#">Ramp Meter Design Manual</a>   | January 2000                               | W                         |                 |
| 310   | Caltrans     | <a href="#">Ready to List and Construction Contract Award Guide (RTL Guide)</a>                              | September 2008                             | W                         | √               |
| 311   | Caltrans     | <a href="#">Right of Way Manual</a>  |  | W                         | √               |
| 312   | Caltrans     | <a href="#">Safety Manual</a>  |  | W                         | √               |
| 313   | Caltrans     | <a href="#">Sample Mitigation Monitoring Reporting Record (MMRR) form</a>                                    |  | W                         | √               |
| 314   | Caltrans     | <a href="#">Sample Permits, Agreements, and Mitigation (PAM) form [xls]</a>                                  |  | W                         | √               |
| 315   | Caltrans     | <a href="#">Seismic Design Criteria</a>  | 2006                                       | W                         |                 |
| 316   | Caltrans     | <a href="#">Shoulder Backing</a>   | September 30, 2006                         | W                         | √               |

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| 317   | Caltrans     | <a href="#">Signal, Lighting and Electrical Systems Design Guide</a>  | 5th Edition April 2007                     | W                         | √               |
| 318   | Caltrans     | <a href="#">Soil and Rock Logging, Classification, and Presentation Manual</a>  | June 2007                                  | W                         | √               |
| 319   | Caltrans     | <a href="#">Specifications for Changeable Message Sign System</a>   | February 2003                              | W                         | √               |
| 320   | Caltrans     | <a href="#">Standard Environmental Reference</a>  | November 2010                              | W                         | √               |
| 321   | Caltrans     | <a href="#">Standard Highway Signs</a>  | 2004                                       | W                         | √               |
| 322   | Caltrans     | <a href="#">Standard Plans 2010</a>   | 2010                                       | W                         | √               |
| 323   | Caltrans     | <a href="#">Standard Special Provisions</a>   | January 20, 2012                           | W                         | √               |
| 324   | Caltrans     | <a href="#">Standard Special Provisions (SSPs) Updates</a>  | February 17, 2012                          | W                         | √               |
| 325   | Caltrans     | <a href="#">Standard Specifications</a>   | 2010                                       | W                         | √               |
| 326   | Caltrans     | <a href="#">Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual</a>     | March 2007                                 | W                         | √               |
| 327   | Caltrans     | <a href="#">Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Review Guidance Manual</a> | December 2003                              | W                         | √               |
| 328   | Caltrans     | <a href="#">Storm Water Quality Handbook: Maintenance Staff Guide</a>   | May 2003                                   | W                         | √               |
| 329   | Caltrans     | <a href="#">Storm Water Quality Handbook: Project Planning and Design Guide</a>   | May 2007                                   | W                         | √               |
| 330   | Caltrans     | <a href="#">Stormwater Management Enforcement Guidance Manual Appendices</a>  | Various                                    | W                         | √               |
| 331   | Caltrans     | <a href="#">Stormwater Pollution Prevention Bulletins Web Page Only</a>   |  | W                         | √               |

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| 332   | Caltrans     | <a href="#">Stormwater Pollution Prevention Related College Courses Web Page Only</a>                                      |  | W                         | √               |
| 333   | Caltrans     | <a href="#">Stormwater Pollution Prevention Training Courses + a video</a>   |  | W                         | √               |
| 334   | Caltrans     | <a href="#">Stormwater Quality Preparation Manual Attachments SWPPP</a>  | March 1, 2007                              | W                         | √               |
| 335   | Caltrans     | <a href="#">Stormwater Quality Templates and Samples</a>   | 2007                                       | W                         | √               |
| 336   | Caltrans     | <a href="#">Structural Design Electronic Procedures</a>  |  | W                         |                 |
| 337   | Caltrans     | <a href="#">Structural Detailing Standards</a>   | June 2005                                  | W                         | √               |
| 338   | Caltrans     | <a href="#">Structure Document Request Guidelines</a>  | October 14, 2003                           | W                         | √               |
| 339   | Caltrans     | <a href="#">Su Propiedad - Su Proyecto de Transportacion</a>   |  | W                         | √               |
| 340   | Caltrans     | <a href="#">Surveys Manual</a>   | September 2006                             | W                         | √               |
| 341   | Caltrans     | <a href="#">Tack Coat Guidelines</a>   | July 2006                                  | W                         | √               |
| 342   | Caltrans     | <a href="#">Technical Advisory Guide (TAG) for Bonded Wearing Course Pilot Projects</a>                                    | October 2003                               | W                         |                 |
| 343   | Caltrans     | <a href="#">Technical Advisory Guide for Microsurfacing Pilot Projects</a>   | October 2003                               | W                         |                 |
| 344   | Caltrans     | <a href="#">Technical Noise Supplement</a>   | October 1998                               | W                         | √               |
| 345   | Caltrans     | <a href="#">The Plant Setback and Spacing Guide</a>  |  | W                         |                 |
| 346   | Caltrans     | <a href="#">Traffic Manual (Current)</a>   | September 26, 2006                         | W                         | √               |
| 347   | Caltrans     | <a href="#">Traffic Noise Analysis Protocol for New Highway Construction and Highway Reconstruction Projects</a>           | October 1998                               | W                         | √               |
| 348   | Caltrans     | <a href="#">Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction and Retrofit Barrier Projects</a> | August 14, 2006                            | W                         | √               |

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| 349   | Caltrans     | <a href="#">Traffic Noise Attenuation as a Function of Ground and Vegetation</a>   | June 1995                                  | W                         |                 |
| 350   | Caltrans     | <a href="#">Traffic Volumes on California State Highways</a>   | 2007                                       | W                         | √               |
| 351   | Caltrans     | <a href="#">Transportation- and Construction- Induced Vibration Guidance Manual</a>  | June 2004                                  | W                         |                 |
| 352   | Caltrans     | <a href="#">Transportation Electrical Equipment Specifications (TEES)</a>  | January 5, 2007                            | W                         | √               |
| 353   | Caltrans     | <a href="#">Transportation Management Plan Guidelines</a>  | May 1, 2004                                | W                         | √               |
| 354   | Caltrans     | <a href="#">Transportation Permits Manual</a>  | November 1, 2006                           | W                         | √               |
| 355   | Caltrans     | <a href="#">Trenching and Shoring Manual</a>   | January 1990                               | W                         | √               |
| 356   | Caltrans     | <a href="#">Unified Soil Classification System</a>   |  | W                         | √               |
| 357   | Caltrans     | <a href="#">Water Pollution Control Pamphlets</a>  | January 2005                               | W                         | √               |
| 358   | Caltrans     | <a href="#">Water Pollution Control Program (WPCP) Attachments</a>   | 2007                                       | W                         | √               |
| 359   | Caltrans     | <a href="#">Water Pollution Control Program (WPCP) Attachments</a>   | 2003                                       | W                         | √               |
| 360   | Caltrans     | <a href="#">Your Property - Your Transportation Project</a>  | July 2008                                  | W                         | √               |
| 361   | Caltrans     | <a href="#">Your Rights and Benefits as a Displaced Business, Farm or Nonprofit Organization Under the Uniform Relocation Assistance Program</a> |  | W                         |                 |
| 362   | Caltrans     | <a href="#">Your Rights and Benefits as a Displacee Under the Uniform Relocation Assistance Program (Mobile Home)</a>                            |  | W                         |                 |
| 363   | Caltrans     | <a href="#">Your Rights and Benefits as a Displacee Under the Uniform Relocation Assistance Program Residential</a>                              | 2007                                       | W                         |                 |

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| 364   | CPUC                              | <a href="#">PUC General Orders, Codes, Laws, Policies, Rules of Practice &amp; Procedure</a>  | Various                                    | W                         | √               |
| 365   | EIA                               | <a href="#">Electronics Industries Alliance (EIA) Standards</a>   | Various                                    | IS                        | √               |
| 366   | EIA/TIA Collaboration             | <a href="#">455-171A-FOTP-171</a>   | June 1, 2001                               | IS                        | √               |
| 367   | EIA/TIA Collaboration             | <a href="#">Fiber Optic Test Procedure (FOTP) Standards</a>   | Various                                    | IS                        |                 |
| 368   | Federal Geographic Data Committee | <a href="#">FGDC Geospatial Standards</a>   | Various                                    | IS                        | √               |
| 369   | FHWA                              | <a href="#">Advance Course on Soil Slope Stability: Volume I, Slope Stability Manual FHWA-SA-94-005</a>   | April 1994                                 | IS                        | √               |
| 370   | FHWA                              | <a href="#">Advance Course on Soil Slope Stability: Volume II, Slope Stability Manual FHWA-SA-94-006</a>  | April 1994                                 | IS                        | √               |
| 371   | FHWA                              | <a href="#">An Analysis of Factors Contributing to "Walking Along Roadway" Crashes: Research Study and Guidelines for Sidewalks and Walkways FHWA RD-01-101</a> | February 2002                              | W                         | √               |
| 372   | FHWA                              | <a href="#">BIKESAFE Bicycle Safety Guide FHWA-SA-05-006</a>  | May 2006                                   | W                         | √               |
| 373   | FHWA                              | <a href="#">CBEAR - Bearing Capacity Analysis of Shallow Foundations Users Manual FHWA-SA-94-034</a>  | June 1982                                  | W                         |                 |
| 374   | FHWA                              | <a href="#">Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications FHWA-ED-88-053</a>                             | February 2003                              | W                         | √               |
| 375   | FHWA                              | <a href="#">Code of Federal Regulations, Title 23 (Highways), Chapter 1, Part 752 Landscape and Roadside Development</a>  | 2005                                       | W                         | √               |

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| 376   | FHWA         | <a href="#">Com624P – Laterally Loaded Pile Analysis Program for the Microcomputer Version 2.0</a><br><a href="#">FHWA-SA-91-048</a>                               | August 1993                                | W                         | √               |
| 377   | FHWA         | <a href="#">Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes</a><br><a href="#">FHWA-NHI-00-044</a> | September 2000                             | W                         | √               |
| 378   | FHWA         | <a href="#">Culvert Inspection Manual</a><br><a href="#">FHWA-IP-86-2</a>  | July 1986                                  |                           | √               |
| 379   | FHWA         | <a href="#">Design and Construction of Driven Pile Foundations, Volume I</a><br><a href="#">FHWA-HI-97-013</a>   | November 1998                              | W                         | √               |
| 380   | FHWA         | <a href="#">Design and Construction of Driven Pile Foundations, Volumes II</a><br><a href="#">FHWA-HI-97-014</a>   | November 1988                              | W                         | √               |
| 381   | FHWA         | <a href="#">Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach</a>  |  | W                         | √               |
| 382   | FHWA         | <a href="#">Design Manual for Permanent Ground Anchor Walls</a><br><a href="#">FHWA-RD-97-130</a>  | September 1998                             |                           | √               |
| 383   | FHWA         | <a href="#">Design of Urban Highway Drainage</a><br><a href="#">FHWA-TS-79-225</a>   | August 1979                                | W                         | √               |
| 384   | FHWA         | <a href="#">Determination of Pile Driveability and Capacity from Penetration Tests Volume I</a><br><a href="#">FHWA-RD-96-179</a>                                  | May 1997                                   | IS                        | √               |
| 385   | FHWA         | <a href="#">Determination of Pile Driveability and Capacity from Penetration Tests Volume II</a><br><a href="#">FHWA-RD-96-180</a>                                 | May 1997                                   | IS                        | √               |
| 386   | FHWA         | <a href="#">Determination of Pile Driveability and Capacity from Penetration Tests Volume III</a><br><a href="#">FHWA-RD-96-181</a>                                | May 1997                                   | IS                        |                 |

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| 387   | FHWA         | <a href="#">Drilled and Grouted Micropiles: State of Practice Review Volume I</a><br><a href="#">FHWA-RD-96-016</a>                                | July 1997                                  | IS                        |                 |
| 388   | FHWA         | <a href="#">Drilled and Grouted Micropiles: State of Practice Review Volume II</a><br><a href="#">FHWA-RD-96-017</a>                               | July 1997                                  | IS                        |                 |
| 389   | FHWA         | <a href="#">Drilled and Grouted Micropiles: State of Practice Review Volume III</a><br><a href="#">FHWA-RD-96-018</a>                              | July 1997                                  | IS                        |                 |
| 390   | FHWA         | <a href="#">Drilled and Grouted Micropiles: State of Practice Review Volume IV</a><br><a href="#">FHWA-RD-96-019</a>                               | July 1997                                  | IS                        |                 |
| 391   | FHWA         | <a href="#">Drilled Shafts: Construction Procedures and Design Methods</a><br><a href="#">FHWA-IF-99-025</a>                                       | August 1999                                | W                         |                 |
| 392   | FHWA         | <a href="#">Drilled Shafts: Construction Procedures and LRFD Design Methods</a><br><a href="#">FHWA-NHI-10-016</a>                                 | May 2010                                   | W                         |                 |
| 393   | FHWA         | <a href="#">Durability Analysis of Aluminized Type 2 Corrugated Metal Pipe</a><br><a href="#">FHWA-RD-97-140</a>                                   | December 1996                              | W                         | √               |
| 394   | FHWA         | <a href="#">EMBANK- A Microcomputer Program to Determine One-Dimensional Compression Due to Embankment Loads</a><br><a href="#">FHWA-SA-92-045</a> | May 1993                                   | IS                        | √               |
| 395   | FHWA         | <a href="#">Extrapolation of Pile Capacity From Non-Failed Load Tests</a><br><a href="#">FHWA-RD-99-170</a>  | December 1999                              | W                         |                 |
| 396   | FHWA         | <a href="#">Flexibility in Highway Design</a><br><a href="#">FHWA-PD-97-062</a>  |  | W                         | √               |
| 397   | FHWA         | <a href="#">Geocomposite Drains, Volume 1</a><br><a href="#">FHWA-RD-86-171</a>  | October 1986                               | IS                        | √               |
| 398   | FHWA         | <a href="#">Geocomposite Drains, Volume 2</a><br><a href="#">FHWA-RD-86-172</a>  | October 1986                               | IS                        | √               |
| 399   | FHWA         | <a href="#">Geosynthetic Design and Construction Guidelines</a><br><a href="#">FHWA-HI-95-038</a>  | April 1998                                 | W                         | √               |

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| 400   | FHWA         | <a href="#">Geosynthetic Mechanically Stabilized Earth Slopes on Firm Foundations FHWA-SA-93-025</a>  | June 1989                                  | IS                        | √               |
| 401   | FHWA         | <a href="#">Geotechnical Engineering Circular No. 1 - Dynamic Compaction FHWA-SA-95-037</a>   | 1995                                       | W                         | √               |
| 402   | FHWA         | <a href="#">Geotechnical Engineering Circular No. 2 - Earth Retaining Systems FHWA-SA-95-037</a>  | February 1997                              | IS                        | √               |
| 403   | FHWA         | <a href="#">Geotechnical Engineering Circular No. 3 - Earthquake Engineering for Highways, Design Examples, Volume 2 (ISDDC) FHWA-SA-97-077</a>   | May 1997                                   | W                         |                 |
| 404   | FHWA         | <a href="#">Geotechnical Engineering Circular No. 3 - Earthquake Engineering for Highways, Design Principles, Volume 1 (ISDDC) FHWA-SA-97-076</a> | May 1997                                   | W                         |                 |
| 405   | FHWA         | <a href="#">Geotechnical Engineering Circular No. 5 Evaluation of Soil and Rock Properties FHWA-IF-02-034</a>                                     | April 2002                                 | W                         | √               |
| 406   | FHWA         | <a href="#">Geotechnical Engineering Circular No. 6 - Shallow Foundations FHWA-IF-02-054</a>  | September 2002                             | W                         | √               |
| 407   | FHWA         | <a href="#">Geotechnical Engineering Circular No. 7 - Soil Nail Walls FHWA-IF-03-017</a>  | March 2003                                 | W                         | √               |
| 408   | FHWA         | <a href="#">Geotechnical Engineering Circular No. 8 - Design and Construction of Continuous Flight Auger Piles</a>                                | 2007                                       | W                         |                 |
| 409   | FHWA         | <a href="#">Geotechnical Engineering Circular Number 4, Ground Anchors and Anchored Systems FHWA-IF-99-015</a>                                    | June 1999                                  | W                         | √               |
| 410   | FHWA         | <a href="#">Geotechnical Engineering Investigation Handbook</a>   | 2nd Edition 2005                           | IS                        | √               |

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| Ref #   | Organization | Standard  | Publication Year / Last Updated (Revision) | Availability (E / IS / W) | √ If Applicable |
| 411   | FHWA         | <a href="#">Geotechnical Instrumentation FHWA-HI-98034</a>  | October 1998                               | IS                        | √               |
| 412   | FHWA         | <a href="#">Geotechnical Publications FHWA-RD-00-167</a>  | December 2000                              | W                         | √               |
| 413   | FHWA         | <a href="#">GT-1 Guidelines for the Design of Mechanically Stabilized Earth Walls with Inextensible Reinforcements</a>    | February 2008                              | IS                        | √               |
| 414   | FHWA         | <a href="#">GT-15 - Geotechnical Differing Site Conditions FHWA-1996</a>  | May 2, 1996                                | W                         | √               |
| 415   | FHWA         | <a href="#">GT-16 Determination of Unknown Subsurface Bridge Foundations, NCHRP 21-5 Interim Report Summary FHWA-1998</a> | December 1996                              | IS                        |                 |
| 416   | FHWA         | <a href="#">Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains FHWA-TS-84-204</a> | April 1984                                 | W                         | √               |
| 417   | FHWA         | <a href="#">Guidelines for Cone Penetration Test - Performance and Design FHWA-TS-78-209</a>                              | July 1977                                  | IS                        | √               |
| 418   | FHWA         | <a href="#">Handbook on Design and Construction of Drilled Shafts under Lateral Load FHWA-IP-84-11</a>                    | 1984                                       | IS                        |                 |
| 419   | FHWA         | <a href="#">High-Performance Concrete (HPC) Defined for Highway Structures</a>  | April 6, 2011                              | W                         |                 |
| 420   | FHWA         | <a href="#">Highway Traffic Noise Analysis and Abatement, Policy and Guidelines</a>                                       | June 1995                                  | W                         |                 |
| 421   | FHWA         | <a href="#">Highway Utility Guide FHWA-SA-93-049</a>  | June 1993                                  | W                         | √               |
| 422   | FHWA         | <a href="#">Hollow Core Soil Nails State of the Practice</a>  | April 2006                                 | W                         | √               |
| 423   | FHWA         | <a href="#">How to Develop a Pedestrian Safety Action Plan FHWA-SA-05-12</a>  | May 2008                                   | W                         | √               |

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| Ref #   | Organization | Standard   | Publication Year / Last Updated (Revision) | Availability (E / IS / W) | √ If Applicable |
| 424   | FHWA         | <a href="#">Hydraulic Design Series No. 5 (HEC-5), Hydraulic Design of Highway Culverts</a><br><a href="#">FHWA-NHI-01-020</a>   | May 2005                                   | W                         | √               |
| 425   | FHWA         | <a href="#">Hydraulic Design Series No. 9 (HEC-9), Debris Control Structures Evaluation and Countermeasures</a><br><a href="#">FHWA-IF-04-016</a>                      | October 2005                               | W                         | √               |
| 426   | FHWA         | <a href="#">Hydraulic Design Series Number 1, Hydraulics of Bridge Waterways</a><br><a href="#">FHWA-EPD-86-101</a>  | March 1978                                 | W                         | √               |
| 427   | FHWA         | <a href="#">Hydraulic Design Series Number 3, Design Charts for Open-Channel Flow</a><br><a href="#">FHWA-EPD-86-102</a>   | August 1961                                | W                         | √               |
| 428   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 11 (HEC-11), Design of Riprap Revetment</a><br><a href="#">FHWA-IP-89-016</a>  | March 1989                                 | W                         | √               |
| 429   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 13 (HEC-13), Hydraulic Design of Improved Inlets for Culverts</a><br><a href="#">FHWA-EFD-86-109</a>                 | August 1972                                | W                         | √               |
| 430   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 14 (HEC-14), Hydraulic Design of Energy Dissipaters for Culverts and Channels</a><br><a href="#">FHWA-NHI-06-086</a> | July 2006                                  | W                         | √               |
| 431   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 15 (HEC-15), Design of Roadside Channels with Flexible Linings</a><br><a href="#">FHWA-NHI-05-114</a>                | September 2005                             | W                         | √               |
| 432   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 17 (HEC-17), The Design of Encroachments on Flood Plains Using Risk Analysis</a><br><a href="#">FHWA-EPD-86-112</a>  | April 1981                                 | W                         |                 |

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| 433   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 18 (HEC-18), Evaluating Scour at Bridges</a><br><a href="#">FHWA-NHI-01-001</a>                       | May 2001                                   | W                         |                 |
| 434   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 2 (HEC-2), Highway Hydrology</a><br><a href="#">FHWA-NHI-02-001</a>                                   | October 2002                               | W                         | √               |
| 435   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 21 (HEC-21), Design of Bridge Deck Drainage Systems</a><br><a href="#">FHWA-SA-92-010</a>             | May 1993                                   | W                         |                 |
| 436   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 22 (HEC-22), Urban Drainage Design Manual</a><br><a href="#">FHWA-NHI-01-021</a>                      | August 2001                                | W                         | √               |
| 437   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 23 (HEC-23), Bridge Scour and Stream Instability Countermeasures-Experience, Selection and Design</a> | July 1997                                  | W                         | √               |
| 438   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 24 (HEC-24), Highway Stormwater Pump Station Design</a><br><a href="#">FHWA-NHI-01-007</a>            | February 2001                              | W                         |                 |
| 439   | FHWA         | <a href="#">Hydraulic Engineering Circular Number 4 (HEC-4), Introduction to Highway Hydraulics</a><br><a href="#">FHWA-NHI-01-019</a>                  | August 2001                                | W                         | √               |
| 440   | FHWA         | <a href="#">Hydraulics of Iowa DOT Slope-Tapered Pipe Culverts</a><br><a href="#">FHWA-RD-01-077</a>  | June 2001                                  | W                         |                 |
| 441   | FHWA         | <a href="#">Lateral Support Systems and Underpinning, Volume 1</a><br><a href="#">FHWA-RD-75-128</a>  | April 1976                                 | W                         |                 |
| 442   | FHWA         | <a href="#">Lateral Support Systems and Underpinning, Volume 2</a><br><a href="#">FHWA-RD-75-129</a>  | April 1976                                 | W                         |                 |

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| 443   | FHWA         | <a href="#">Lateral Support Systems and Underpinning, Volume 3 FHWA-RD-75-130</a>   | April 1976                                 | W                         |                 |
| 444   | FHWA         | <a href="#">Load and Resistance Factor Design (LRFD) for Highway Bridge Substructures FHWA-HI-98-032</a>                          | 1998                                       | W                         |                 |
| 445   | FHWA         | <a href="#">Load Transfer for Drilled Shafts in Intermediate Geomaterials FHWA RD-95-038</a>                                      | November 1996                              | W                         |                 |
| 446   | FHWA         | <a href="#">Manual for Design &amp; Construction Monitoring of Soil Nail Walls - CADD Files FHWA-SA-96-069R</a>                   | October 1998                               | W                         | √               |
| 447   | FHWA         | <a href="#">Manual for Design &amp; Construction Monitoring of Soil Nail Walls Appendices FHWA-SA-96-069R</a>                     | October 1998                               | W                         | √               |
| 448   | FHWA         | <a href="#">Manual for Design &amp; Construction Monitoring of Soil Nail Walls FHWA-SA-96-069R</a>                                | October 1998                               | W                         | √               |
| 449   | FHWA         | <a href="#">Manual on Design and Construction of Driven Pile Foundations FHWA/DP-66-1</a>   | April 1996                                 | IS                        | √               |
| 450   | FHWA         | <a href="#">Manual on Design and Construction of Driven Pile Foundations FHWA-HI-97-013</a>                                       | November 1998                              | W                         | √               |
| 451   | FHWA         | <a href="#">Manual on Design and Construction of Driven Pile Foundations FHWA-HI-97-014</a>                                       | November 1998                              | W                         | √               |
| 452   | FHWA         | <a href="#">Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Design and Construction Guidelines FHWA-NHI-00-043</a> | March 2001                                 | W                         | √               |
| 453   | FHWA         | <a href="#">Pedestrian Facilities Users Guide</a>   | August 2000                                | W                         | √               |
| 454   | FHWA         | <a href="#">PEDSAFE Pedestrian Safety Guide FHWA-SA-04-003</a>  | September 2004                             | W                         | √               |

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| 455   | FHWA         | <a href="#">Permanent Ground Anchors, Volume 1, Final Report</a><br><a href="#">FHWA-DP-90-068</a>                                   | April 1990                                 | W                         |                 |
| 456   | FHWA         | <a href="#">Permanent Ground Anchors, Volume 2, Field Demonstration Project Summaries</a><br><a href="#">FHWA-DP-90-068</a>          | April 1990                                 | W                         |                 |
| 457   | FHWA         | <a href="#">Prefabricated Vertical Drains Volume I, Engineering Guidelines</a><br><a href="#">FHWA-RD-86-168</a>                     | August 1986                                | W                         |                 |
| 458   | FHWA         | <a href="#">Prefabricated Vertical Drains Volume II, Engineering Guidelines</a><br><a href="#">FHWA-RD-86-169</a>                    | August 1986                                | IS                        |                 |
| 459   | FHWA         | <a href="#">Prefabricated Vertical Drains Volume III, Engineering Guidelines</a><br><a href="#">FHWA-RD-86-170</a>                   | August 1986                                | IS                        |                 |
| 460   | FHWA         | <a href="#">Pressuremeter Test for Highway Applications</a><br><a href="#">FHWA-IP-89-008</a>  | July 1989                                  | IS                        | √               |
| 461   | FHWA         | <a href="#">Reinforced Soil Structures, Volume I: Design and Construction Guidelines</a><br><a href="#">FHWA-RD-89-043</a>           | November 1990                              | IS                        | √               |
| 462   | FHWA         | <a href="#">Reinforced Soil Structures, Volume II: Summary of Research and Systems Information</a><br><a href="#">FHWA-RD-89-044</a> | November 1989                              | IS                        | √               |
| 463   | FHWA         | <a href="#">RSS Reinforced Slope Stability A Microcomputer Program User’s Manual</a><br><a href="#">FHWA-SA-96-039</a>               | January 1997                               | IS                        | √               |
| 464   | FHWA         | <a href="#">Soil Nailing Field Inspectors Manual</a><br><a href="#">FHWA-SA-93-068</a>   | April 1994                                 | W                         | √               |
| 465   | FHWA         | <a href="#">Soils and Foundations Workshop Manual Volume I</a><br><a href="#">FHWA-NHI-06-088</a>                                    | 3rd Edition<br>December 2006               | W                         | √               |
| 466   | FHWA         | <a href="#">Soils and Foundations Workshop Manual Volume II</a><br><a href="#">FHWA-NHI-06-089</a>                                   | 3rd Edition<br>December 2006               | W                         | √               |

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| 467   | FHWA         | <a href="#">South Dakota Culvert Inlet Design Coefficients</a><br><a href="#">FHWA-RD-01-076</a>                                    | February 1996                              | W                         |                 |
| 468   | FHWA         | <a href="#">Spread Footings for Highway Bridges</a><br><a href="#">FHWA-RD-86-185</a>   | October 1987                               | IS                        |                 |
| 469   | FHWA         | <a href="#">Static Testing of Deep Foundations</a><br><a href="#">FHWA-SA-91-042</a>  | February 1992                              | W                         |                 |
| 470   | FHWA         | <a href="#">Subsurface Investigations – Geotechnical Site Characterization; Reference Manual</a><br><a href="#">FHWA-NHI-01-031</a> | May 2002                                   | W                         | √               |
| 471   | FHWA         | <a href="#">Subsurface Investigations</a><br><a href="#">FHWA-HI-97-021</a>   | November 1997                              | W                         | √               |
| 472   | FHWA         | <a href="#">Subsurface Utility Engineering</a>  | May 24, 2007                               | W                         | √               |
| 473   | FHWA         | <a href="#">Summary Report of Research on Permanent Ground Anchor Walls; Volume I</a><br><a href="#">FHWA-RD-98-065</a>             | September 1998                             | W                         |                 |
| 474   | FHWA         | <a href="#">Summary Report of Research on Permanent Ground Anchor Walls; Volume II</a><br><a href="#">FHWA-RD-98-066</a>            | September 1998                             | IS                        |                 |
| 475   | FHWA         | <a href="#">Summary Report of Research on Permanent Ground Anchor Walls; Volume III</a><br><a href="#">FHWA-RD-98-067</a>           | September 1998                             | W                         |                 |
| 476   | FHWA         | <a href="#">Summary Report of Research on Permanent Ground Anchor Walls; Volume IV</a><br><a href="#">FHWA-RD-98-068</a>            | September 1998                             | W                         |                 |
| 477   | FHWA         | <a href="#">The Cone Penetration Test</a><br><a href="#">FHWA-SA-91-043</a>   | 2007                                       | W                         | √               |
| 478   | FHWA         | <a href="#">The Osterberg CELL for Load Testing Drilled Shafts and Driven Piles</a><br><a href="#">FHWA-SA-94-035</a>               | February 1995                              | IS                        |                 |
| 479   | FHWA         | <a href="#">Tiebacks</a><br><a href="#">FHWA-RD-82-047</a>  | July 1982                                  | W                         | √               |

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| Ref #   | Organization                                      | Standard  | Publication Year / Last Updated (Revision) | Availability (E / IS / W) | √ If Applicable |
| 480   | FHWA  | <a href="#">Utility Relocation and Accommodation on Federal-Aid Highway FHWA-IF-03-014</a>                  | 6th Edition January 2003                   | W                         | √               |
| 481   | Illuminating Engineering Society of North America | <a href="#">Roadway Lighting, ANSI Approved</a>   | July 1, 2000                               | IS                        | √               |
| 482   | Institute of Transportation Engineering (ITE)     | <a href="#">Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities</a> | January 2005                               | IS                        |                 |
| 483   | Institute of Transportation Engineering (ITE)     | <a href="#">Enhancing Intersection Safety Through Roundabouts</a>   | December 2008                              | IS                        |                 |
| 484   | Institute of Transportation Engineering (ITE)     | <a href="#">Freeway and Interchange Geometric Design Handbook</a>   | January 2005                               | IS                        | √               |
| 485   | Institute of Transportation Engineering (ITE)     | <a href="#">Parking Generation</a>  | 3rd Edition                                | IS                        |                 |
| 486   | Institute of Transportation Engineering (ITE)     | <a href="#">Traffic Engineering Handbook</a>  | 6th Edition 2009                           | IS                        | √               |
| 487   | Institute of Transportation Engineering (ITE)     | <a href="#">Traffic Engineering Handbook</a>  | 5th Edition                                | IS                        | √               |
| 488   | Institute of Transportation Engineering (ITE)     | <a href="#">Transportation Impact Analyses for Site Development</a>   | January 2006                               | IS                        | √               |

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| 489   | Institute of Transportation Engineering (ITE) | <a href="#">Transportation Planning Handbook</a>   | 3rd Edition                                | IS                        | √               |
| 490   | Institute of Transportation Engineering (ITE) | <a href="#">Trip Generation</a>  | 8th Edition                                | IS                        | √               |
| 491   | Institute of Transportation Engineering (ITE) | <a href="#">Trip Generation</a>  | 7th Edition                                | IS                        | √               |
| 492   | Institute of Transportation Engineering (ITE) | <a href="#">Trip Generation and Trip Generation Handbook</a>   | 2nd Edition & 7th Edition                  | IS                        | √               |
| 493   | Institute of Transportation Engineering (ITE) | <a href="#">Urban Street Geometric Design Handbook</a>   | December 2008                              | IS                        |                 |
| 494   | International Code Council (ICC)              | <a href="#">International Building Code</a>  | 2009                                       | IS                        | √               |
| 495   | International Municipal Signal Association    | <a href="#">IMSA Catalog on Cables</a><br><a href="#">IMSA Specification No. 50-2 on Loop Detector Lead-In Cable</a> | 2007<br>February 1, 2001                   | W                         | √               |
| 496   | International Society of Arboriculture (ISA)  | <a href="#">Guide for Plant Appraisal</a>  | 9th Edition 2000                           | IS                        | √               |
| 497   | ISO   | <a href="#">ISO 9000</a>   | October 16, 2005                           | IS                        | √               |
| 498   | ISOA  | <a href="#">Guide for Plant Appraisal Workbook</a>   | 2000                                       | IS                        | √               |
| 499   | Military Specifications                       | <a href="#">MIL-A-8625FC</a>   | September 10, 1993                         | IS                        | √               |

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| 500   | National Fire Protection Agency (NFPA)                                | <a href="#">National Electric Code Standards</a>  | 2008                                       | IS                        | √               |
| 501   | National Spatial Data Infrastructure (NSDI)                           | <a href="#">Geospatial Positioning Accuracy Standards, Part 3: National Standards for Spatial Data Accuracy, FGDC-STD-007.3-1998</a>  | 1998                                       | W                         | √               |
| 502   | NCHRP   | <a href="#">Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features</a>  | 1993                                       | W                         | √               |
| 503   | NCHRP   | <a href="#">Synthesis 360, Rock-Socketed Shafts for Highway Structure Foundations</a>   | September 1, 2006                          | W                         |                 |
| 504   | NCHRP   | <a href="#">Synthesis 368, Cone Penetration Testing</a>   |  | W                         | √               |
| 505   | NCHRP   | <a href="#">Web Document 16 - Improved Surface Drainage of Pavements – Final Report (Project I-29)</a><br><br><a href="#">Proposed Design Guidelines for Reducing Hydroplaning on New and Rehabilitated Pavements - TRB</a> | June 1998                                  | IS                        | √               |
| 506   | NEMA  | <a href="#">National Electrical Manufacturers Association (NEMA) Standards</a>  | Various                                    | IS                        | √               |
| 507   | NEMA Joint Publication / Insulated Cable Engineers Association (ICEA) | <a href="#">NEMA WC57-2004</a>  | December 20, 2004                          | IS                        | √               |

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| 508   | NEMA Joint Publication/<br>Insulated Cable Engineers Association (ICEA) | <a href="#">ANSI/NEMA WC70-2009</a><br><a href="#">ANSI/NEMA WC 71-1999</a><br><a href="#">NEMA WC 74-2006</a>   | June 8, 2009<br><br>January 1, 1999<br><br>January 1, 2006 | IS                        | √               |
| 509   | Statue  | <a href="#">California State Statutes XXXX</a>   |  | IS                        | √               |
| 510   | The Society for Protective Coatings                                     | <a href="#">QP2 Standard Procedure for Evaluating the Qualifications of Painting Contractors to Remove Hazardous Paint</a>   | Various  | IS                        | √               |
| 511   | TIA   | <a href="#">455-59-FOTP-59</a>   | February 1, 2000   | IS                        | √               |
| 512   | TIA   | <a href="#">492AAAA</a>  | November 1, 2009   | IS                        | √               |
| 513   | TIA   | <a href="#">526-14-A-OFSTP-14</a>  | August 1, 1998   | IS                        | √               |
| 514   | TRB   | <a href="#">Highway Capacity Manual</a>  | 2000   | IS                        | √               |
| 515   | U.S. Geological Survey  | <a href="#">Users Manual for Program PEAKFQ, Annual Flood Frequency Analysis Using Bulletin 17B Guidelines</a>   | January 30, 1998   | W                         | √               |
| 516   | US Army Corps of Engineers (COE)  | <a href="#">Methods Used in Tieback Wall Design and Construction to Prevent Local Anchor Failure, Progressive Anchorage Failure, and Ground Mass Stability Failure</a> | December 2002  | W                         |                 |
| 517   | US Army Corps of Engineers (COE)  | <a href="#">Wetlands Delineation Manual</a>  | January 1987   | W                         |                 |
| 518   | US DOT  | <a href="#">National ITS Architecture</a>  | Various  | IS                        | √               |

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| 519   | US General Services Administration | <a href="#">Federal Color Standard, 595, Rev B</a>  | December 15, 1989                          | W                         |                 |
| 520   | USDA                               | <a href="#">RUS 7 CFR 1755.900 (Part A)</a><br><a href="#">RUS 7 CFR 1755.900 (Part B)</a><br><a href="#">RUS 7 CFR 1755.900 (Part C)</a> | February 17, 2009                          | W                         | √               |
| 521   | USDA                               | <a href="#">RUS Splicing Standard PC-2, Section 3.3</a>   | February 27, 1995                          | W                         | √               |
| 522   | USGS                               | <a href="#">Generalized Skew Coefficients for Flood-Frequency Analysis in California</a>  | June 8, 2007                               | IS                        | √               |
| 523   | Caltrans                           | <a href="#">2010 Revised Standard Plans</a>   | April 20, 2012                             | W                         | √               |

Item 207 The CADD User Manual is currently being updated. Revisions to be released in January 2014

## 2 MODIFICATIONS TO DEPARTMENT (CALTRANS) MANUALS

The following notes apply to the Caltrans Manuals used on this Project:

1. The Department (Caltrans) Manuals were created as an internal guidance document for use by various Department (Caltrans) personnel. As such, the Manuals are written as a guidance documents and not as mandatory requirements. For purposes of design-build projects, the Design-Builder shall assume that all provisions of the Manual, including the figures and tables, are mandatory and guidelines shall be assumed to be requirements. All words such as “should,” “may,” “must,” “might,” “could,” and “can” shall mean “shall” unless the context requires otherwise, as determined in the sole discretion of Department. The Design-Builder shall disregard qualifying words such as “usually,” “normally,” and “generally.” It shall be in Department’s sole discretion to determine when the context does not require a provision to be mandatory.
2. Department (Caltrans) Manuals are standard documents for use by Department (Caltrans) personnel. For purposes of design-build projects, the Design-Builder shall assume that all of the provisions of the Standards are requirements.
3. Individual manuals are available in electronic format. All the Department (Caltrans) manuals can be accessed at the following Web Site: <http://caltrans-opac.ca.gov/publicat.htm>
4. If the department (Caltrans) Manual expires during the course of the Project the Design-Builder shall contact Department to determine if they should continue to use the manual or if it will be replaced.
5. Any references related to pay items or quantities, measurement for payment, method of measurement, basis of payment, extra work, adjustment of unit prices, or similar phrases shall be disregarded by the Design-Builder , since the Contract Price is full compensation for the Work.
6. No changes have been made to provisions in the Manual that do not apply to design-build contracts, but that provide general information (e.g., descriptions of Department (Caltrans) divisions and their duties, descriptions of legal authority, or descriptions of internal Department (Caltrans) procedures); however, in some cases it may not be clear whether rights or responsibilities are applicable to the Design-Builder. If it is unclear whether specific provisions in the Manual are applicable to the Design-Builder, the Design-Builder shall raise the issue with Department and Department shall make that determination in its sole discretion.
7. The Design-Builder shall disregard the paragraphs within the manuals relating to questions. All questions shall be taken to the Department’s Contract Manager.
8. All references to the Engineer shall mean the Design-Builder unless otherwise directed by Department.
9. All references to the Agency shall mean Department (Caltrans), unless noted otherwise.
10. All references to Caltrans shall mean the Design-Builder, unless otherwise noted.
11. All references to Caltrans offices and personnel shall mean the Design-Builder’s similar offices and personnel.

12. When the Manual refers to an action being necessary or needed, the Design-Builder shall construe the action as required unless the context requires otherwise, as determined in the sole discretion of Department.
13. In addition, phrases relating to items such as activity[ies] that “will be” conducted, that are “most easily accomplished by”, that “are recommended”, that “is usually necessary”, that “should preferably be” done, that “might require”, that “is necessary” or “as necessary”, that “are” (or “is”) “required” or “done” shall be construed to be mandatory requirements unless the context requires otherwise, as determined in the sole discretion of Department. Phrases relating to problems with activity[ies] that should not be conducted, such as “is not normally used,” “is not good practice,” “should never be done,” “cannot be used,” or “should be avoided” shall be construed as prohibited. It shall be in Department’s sole discretion to determine when the context either requires or does not require a provision to be mandatory.
14. Where the notes refer to items that are indicated in the plans or special provisions or required in the plans or special provisions, the plans or special provisions shall mean the Design-Builder’s plans or special provisions.
15. Where the notes refer to the Engineer, they shall mean the Design-Builder unless otherwise specified below.
16. When the Manual refers to other manuals, the version of these manuals applicable to this design-build project is the version current at the time of the date of this Invitation. For Bid (IFB) unless modified by Addendum or Change Order.
17. References to approved products or materials shall mean Approved by Caltrans.
18. References to payment, pay items and quantities are hereby deleted.
19. All references to the Inspector, the Field Inspector, the Project Engineer, the Engineer, the Materials Engineer, the District Materials Engineer, the Survey Crew, the Project Supervisor, the Agency Certified Technician, the Certified Plant Technician, and the Representative of the Office of Materials shall mean the Design-Builder, unless noted otherwise.
20. All references to the Department (Caltrans) facilities, including the Office of Materials Laboratory, Central Laboratory, Cement Laboratory, Concrete & Metals Laboratory, Aggregate Laboratory, Chemical Laboratory, Mix Design Laboratory, District Laboratory, and the Laboratory shall mean the Design-Builder’s similar Laboratory facilities, unless noted otherwise.
21. The Design-Builder shall use forms as required to report the same information and in the same format as the Caltrans forms shown in the Manuals.
22. The Design-Builder shall complete all laboratory testing at a Department certified and approved facility with current AASHTO Materials Reference Laboratory (AMRL) certification.

### **3 MODIFICATIONS TO TECHNICAL MEMORANDA (NOT USED)**

## 4 DESIGN-BUILD MODIFICATIONS TO THE CALTRANS STANDARD SPECIFICATIONS 2010 EDITION

### General

These Contract Provisions are a revised version of the *Caltrans Standard Specifications 2010 Edition* and contain requirements generally applicable to the Work to be performed by Design-Builder. In certain cases provisions in the Standard Specifications have been superseded by other provisions of the Contract Documents. For ease of reference, this document uses the same section numbers as the Standard Specifications and identifies provisions of the Contract Documents that have replaced or modified the standard clauses. If there are conflicts between the “General” Modifications and the Specific Modifications below, the Specific Modifications have precedence over the General Modifications. If the Design-Builder believes that a modification is unclear, the Design-Builder shall have the obligation to raise the issue with Department. Regardless of whether the Design-Builder raises the issue, Department shall always have the right to notify the Design-Builder if the Design-Builder is interpreting the modification incorrectly. Any references to other standards, codes, or criteria, or to the latest version of other standards, codes, or criteria in the Project Requirements of the Contract Documents shall mean the latest version as of the Request for Proposals (RFP) issue date. Those standard specifications that are left blank are not modified in this Modification document, but they may be modified by Special Provisions or other Contract Documents. All Sections are incorporated herein, except as otherwise provided in the Contract Documents, and with the following general and specific exceptions:

#### *General Exceptions:*

1. When these Specifications refer to “Measurement for Payment,” “Method of Measurement,” or “Payment Quantities,” such language shall be disregarded. It is not the intent of the Design-Build Contract that the various components of the Work will be measured for payment. Final payment will be at the Contract Price for the completed Project irrespective of the quantities of the various components incorporated in the Work.
2. When these Specifications refer to “basis of payment,” “unit prices,” or “adjustments of unit prices,” such references and language shall be disregarded, except unit prices as identified in the Project Requirements, applicable to disincentives for Nonconforming Work or incentives for surface ride quality shall be either the specific dollar amount set forth in the standard specifications or a unit price proposed by the Design-Builder and Approved by Department.
3. When these Specifications refer to “extra work,” “compensation for,” “at the Department’s expense,” “quantity adjustments,” “equivalent quantities,” or similar phrases, such references shall be disregarded. It is intended that the payment of the Contract Price will be full compensation for all Work performed pursuant to the Design-Build Contract unless specific provisions for additional payments are contained in the Contract Documents. An exception to this general exclusion will be the provisions of Sections 10 thru 99, as modified by the Special Provisions, relating to incentives for surface ride quality and disincentives for Nonconforming Work.
4. When these specifications refer to the term “Special Provision,” such term shall mean Contract Documents.
5. When these specifications refer to the term “incidental” such term shall mean that the costs shall be included in the Design-Builder’s Price Proposal.

## **A. Section 1 through 9 - General Provisions – Specific Modifications**

### *Section 1 General*

#### **1-1.01 GENERAL**

This section is applicable to this project.

#### **1-1.02 STYLE VARIATIONS**

This section is applicable to this project.

#### **1-1.03–1-1.04 RESERVED**

#### **1-1.05 REFERENCES**

This section is deleted in its entirety. Provisions regarding “References” in this section are set forth in Book 1, Section 1 “Contract Components; Interpretation of Contract Documents” of the Contract Documents.

#### **1-1.06 ABBREVIATIONS**

This section is applicable to this project.

#### **1-1.07 DEFINITIONS**

##### **1-1.07A General**

Interpret terms as defined in the Contract documents. References to “Bid Item List” shall mean Price Proposal.

##### **1-1.07B Glossary**

This section is applicable to this project.

#### **1-1.08 DISTRICTS**

This section is applicable to this project.

#### **1-1.09 FREEZE-THAW AREAS**

This section is applicable to this project.

#### **1-1.10 RESERVED**

#### **1-1.11 WEB SITES, ADDRESSES, AND TELEPHONE NUMBERS**

This section is applicable to this project.

#### **1-1.12 MISCELLANY**

Make checks and bonds payable to the Department of Transportation.

#### **1-1.13–1-1.15 RESERVED**

***Section 2 Bidding***

This section is deleted in its entirety. Provisions regarding “Bidding” are set forth in the Instructions to Proposers (ITP) of the Contract Documents.

***Section 3 Contract Award and Execution***

This section is deleted in its entirety. Provisions regarding “Contract Award and Execution” are set forth in the Instruction to Proposers of the Contract Documents.

## **Section 4 Scope of Work**

### **4-1.01 GENERAL**

Section 4 includes specifications related to the scope of work.

### **4-1.02 INTENT**

The Contract intent is to provide for work completion using the best general practices.

Nothing in the specifications voids the Contractor's public safety responsibilities.

### **4-1.03 WORK DESCRIPTION**

This section is deleted in its entirety. Provisions regarding “Work Description” in this section are set forth in the Contract Documents.

### **4-1.04 USE OF MATERIALS FOUND ON THE JOB SITE**

This section is deleted in its entirety. Any materials required to be removed from the Project shall become the property of the Design-Builder and shall be disposed of at an appropriate off-site disposal facility provided by the Design-Builder unless otherwise provided in the Contract Documents.

### **4-1.05 CHANGES AND EXTRA WORK**

#### **4-1.05A General**

This section is deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

#### **4-1.05B Work-Character Changes**

This section is deleted in its entirety. Provisions regarding “Work-Character Changes” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

### **4-1.06 DIFFERING SITE CONDITIONS (23 CFR 635.109)**

#### **4-1.06A General**

Reserved

#### **4-1.06B Contractor's Notification**

This section is deleted in its entirety. Provisions regarding “Contractor’s Notification” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

#### **4-1.06C Engineer's Investigation and Decision**

This section is deleted in its entirety. Provisions regarding “Engineer’s Investigation and Decision” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

### **4-1.07 VALUE ENGINEERING**

#### **4-1.07A General**

Reserved

#### **4-1.07B Value Engineering Change Proposal**

This section is deleted in its entirety.

#### **4-1.07C Value Analysis Workshop**

This section is deleted in its entirety.

#### **4-1.08–4-1.12 RESERVED**

#### **4-1.13 CLEANUP**

This section is deleted in its entirety. Provisions regarding “Cleanup” in this section are set forth in Book 1, Section 20 “Acceptance of Project” of the Contract Documents.

## **Section 5 Control of Work**

### **5-1.01 GENERAL**

This section is applicable to this project.

### **5-1.02 CONTRACT COMPONENTS**

This section is hereby deleted in its entirety. Provisions regarding “Contract Components” in this section are set forth in the Book 1, Section 1 Contract Components; Interpretation of Contract Documents.

### **5-1.03 ENGINEER'S AUTHORITY**

This section is hereby deleted in its entirety. Provisions regarding “Engineer’s Authority” in this section are set forth in Book 1, Section 5 “Control of Work” of the Contract Documents. Department has the authority by written order to suspend the Work wholly or in part for the reasons delineated in Book 1, Section 15 “Termination for Convenience” of the Contract Documents. Failure to enforce a contract provision does not waive enforcement of any contract provision.

### **5-1.04–5-1.05 RESERVED**

### **5-1.06 PROTESTS**

This section is hereby deleted in its entirety. Provisions regarding “Protests” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

### **5-1.07–5-1.08 RESERVED**

### **5-1.09 PARTNERING**

#### **5-1.09A General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

#### **5-1.09B Partnering Facilitator, Workshops, and Monthly Evaluation Surveys**

This section is hereby deleted in its entirety. Provisions regarding “Partnering Facilitator, Workshops, and Monthly Evaluation Surveys” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

#### **5-1.09C Training in Partnering Skills Development**

This section is hereby deleted in its entirety. Provisions regarding “Training in Partnering Skills Development” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

#### **5-1.09D Payment**

This section is hereby deleted in its entirety. Provisions regarding “Payment” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

## **5-1.10–5-1.11 RESERVED**

### **5-1.12 ASSIGNMENT**

This section is hereby deleted in its entirety. Provisions regarding “Assignment” in this section are set forth in Book 1, Section 23 “Miscellaneous Provisions” of the Contract Documents.

### **5-1.13 SUBCONTRACTING**

#### **5-1.13A General**

This section is applicable to this project.

#### **5-1.13B Disadvantaged Business Enterprises**

##### **5-1.13B(1) General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 7 “Equal Employment opportunity; Subcontracts; Labor” of the Contract Documents.

##### **5-1.13B(2) Underutilized Disadvantaged Business Enterprises**

This section is hereby deleted in its entirety. Provisions regarding “Underutilized Disadvantaged Business Enterprises” in this section are set forth in Book 1, Section 7 “Equal Employment opportunity; Subcontracts; Labor” of the Contract Documents.

#### **5-1.13C Disabled Veteran Business Enterprises**

This section is hereby deleted in its entirety.

#### **5-1.13D Non–Small Businesses**

This section is hereby deleted in its entirety.

## **5-1.13E–5-1.13I Reserved**

## **5-1.14–5-1.15 RESERVED**

### **5-1.16 REPRESENTATIVE**

This section is hereby deleted in its entirety. Provisions regarding “Representative” in this section are set forth in Book 1, Section 23 “Miscellaneous Provisions” of the Contract Documents.

### **5-1.17 CHARACTER OF WORKERS**

This section is hereby deleted in its entirety. Provisions regarding “Character of Workers” in this section are set forth in Book 1, Section 7 “Equal Employment opportunity; Subcontracts; Labor” of the Contract Documents.

## **5-1.18–5-1.19 RESERVED**

### **5-1.20 COORDINATION WITH OTHER ENTITIES**

#### **5-1.20A General**

This section is applicable to this project.

## **5-1.20B Permits, Licenses, Agreements, and Certifications**

### **5-1.20B(1) General**

This section is applicable to this project.

### **5-1.20B(2) Before Award**

This section is applicable to this project.

### **5-1.20B(3) After Award**

This section is applicable to this project.

### **5-1.20B(4) Contractor–Property Owner Agreement**

This section is applicable to this project.

## **5-1.20C Railroad Relations**

Reserved

## **5-1.20D–5-1.20F Reserved**

## **5-1.21–5-1.22 RESERVED**

## **5-1.23 SUBMITTALS**

### **5-1.23A General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 2, Section 2 “Project Management” of the Contract Documents.

### **5-1.23B Action Submittals**

#### **5-1.23B(1) General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 2, Section 2 “Project Management” of the Contract Documents.

#### **5-1.23B(2) Shop Drawings**

This section is hereby deleted in its entirety. Provisions regarding “Shop Drawings” in this section are set forth in Book 2, Section 2 “Project Management” and Section 13 “Structures” of the Contract Documents.

#### **5-1.23B(3) Product Data**

Reserved

#### **5-1.23B(4) Samples**

Reserved

#### **5-1.23B(5) Test Samples**

This section is applicable to this project.

#### **5-1.23B(6) Quality Control Plans**

This section is hereby deleted in its entirety. Provisions regarding “Quality Control Plans” in this section are set forth in Book 2, Section 2 “Project Management” of the Contract Documents.

#### **5-1.23B(7) Work Plans**

Reserved

#### **5-1.23C Informational Submittals**

This section is applicable to this project.

#### **5-1.24–5-1.25 RESERVED**

#### **5-1.26 CONSTRUCTION SURVEYS**

This section is hereby deleted in its entirety. Provisions regarding “Construction Surveys” in this section are set forth in Book 2, Section 9 “Land Surveying” of the Contract Documents.

#### **5-1.27 RECORDS**

##### **5-1.27A General**

Reserved

##### **5-1.27B Record Retention**

This section is hereby deleted in its entirety. Provisions regarding “Record Retention” in this section are set forth in Book 1, Section 22 “Documents and Records” of the Contract Documents.

##### **5-1.27C Record Inspection, Copying, and Auditing**

This section is hereby deleted in its entirety. Provisions regarding “Record Inspection, Copying, and Auditing” in this section are set forth in Book 1, Section 22 “Documents and Records” of the Contract Documents.

##### **5-1.27D Cost Accounting Records**

This section is hereby deleted in its entirety. Provisions regarding “Cost Accounting Records” in this section are set forth in Book 1, Section 22 “Documents and Records” of the Contract Documents.

##### **5-1.27E Change Order Bills**

This section is hereby deleted in its entirety. Provisions regarding “Change Order Bills” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

#### **5-1.28–5-1.29 RESERVED**

#### **5-1.30 NONCOMPLIANT AND UNAUTHORIZED WORK**

This section is hereby deleted in its entirety. Provisions regarding “Noncompliant and Unauthorized Work” in this section are set forth in Book 1, Section 5 “Control of Work” of the Contract Documents.

### **5-1.31 JOB SITE APPEARANCE**

This section is applicable to this project.

### **5-1.32 AREAS FOR USE**

This section is applicable to this project. References to Section 7-1.05 shall mean Book 1, Section 18 “Indemnification” of the Contract Documents.

### **5-1.33 EQUIPMENT**

This section is applicable to this project.

### **5-1.34–5-1.35 RESERVED**

### **5-1.36 PROPERTY AND FACILITY PRESERVATION**

#### **5-1.36A General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 10 “Risk of Loss” of the Contract Documents.

#### **5-1.36B Landscape**

This section is applicable to this project.

#### **5-1.36C Railroad Property**

This section is hereby deleted in its entirety. Provisions regarding “Railroad Property” in this section are set forth in Book 1, Section 2 “Obligations of Design-Builder” of the Contract Documents.

#### **5-1.36D Nonhighway Facilities**

This section is applicable to this project.

### **5-1.37 MAINTENANCE AND PROTECTION**

#### **5-1.37A General**

This section is applicable to this project.

#### **5-1.37B Load Limits**

##### **5-1.37B(1) General**

**This section is applicable to this project.**

This section is applicable to this project.

##### **5-1.37B(2) Increased Load Carrying Capacity**

This section is applicable to this project.

#### **5-1.38 MAINTENANCE AND PROTECTION RELIEF**

This section is hereby deleted in its entirety. Provisions regarding “Maintenance and Protection Relief” in this section are set forth in Book 1, Section 10 “Risk of Loss” of the Contract Documents.

## **5-1.39 DAMAGE REPAIR AND RESTORATION**

### **5-1.39A General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 10 “Risk of Loss” of the Contract Documents.

### **5-1.39B Damage Caused by an Act of God**

This section is hereby deleted in its entirety. Provisions regarding “Damage Caused by an Act of God” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

### **5-1.39C Landscape Damage**

#### **5-1.39C(1) General**

This section is applicable to this project.

#### **5-1.39C(2) Plant Establishment Period of 3 Years or More**

This section is applicable to this project.

### **5-1.40–5-1.41 RESERVED**

### **5-1.42 REQUESTS FOR INFORMATION**

This section is applicable to this project.

## **5-1.43 POTENTIAL CLAIMS AND DISPUTE RESOLUTION**

### **5-1.43A General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 13 “Changes in the Work” and Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

### **5-1.43B Initial Potential Claim Record**

This section is hereby deleted in its entirety. Provisions regarding “Initial Potential Claim Record” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

### **5-1.43C Supplemental Potential Claim Record**

This section is hereby deleted in its entirety. Provisions regarding “Supplemental Potential Claim Record” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

### **5-1.43D Full and Final Potential Claim Record**

This section is hereby deleted in its entirety. Provisions regarding “Full and Final Potential Claim Record” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

## **5-1.43E Alternative Dispute Resolution**

### **5-1.43E(1) General**

#### **5-1.43E(1)(a) General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

#### **5-1.43E(1)(b) Establishment of Procedures**

This section is hereby deleted in its entirety. Provisions regarding “Establishment of Procedures” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

#### **5-1.43E(1)(c) Dispute Meetings**

This section is hereby deleted in its entirety. Provisions regarding “Dispute Meetings” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

#### **5-1.43E(1)(d) Informal Dispute Meetings**

This section is hereby deleted in its entirety. Provisions regarding “Informational Dispute Meetings” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

#### **5-1.43E(1)(e) Recommendations**

This section is hereby deleted in its entirety. Provisions regarding “Recommendations” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

#### **5-1.43E(1)(f) Completion of Alternative Dispute Resolution**

This section is hereby deleted in its entirety. Provisions regarding “Completion of Alternative Dispute Resolution” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

#### **5-1.43E(1)(g) Payment**

This section is hereby deleted in its entirety. Provisions regarding “Payment” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

### **5-1.43E(2) Dispute Resolution Advisor**

#### **5-1.43E(2)(a) General**

This section is not applicable and hereby deleted in its entirety.

**5-1.43E(2)(b) DRA Selection**

This section is not applicable and hereby deleted in its entirety.

**5-1.43E(2)(c) DRA Replacement**

This section is not applicable and hereby deleted in its entirety.

**5-1.43E(2)(d) DRA Traditional Dispute Meeting**

This section is not applicable and hereby deleted in its entirety.

**5-1.43E(3) Dispute Resolution Board**

**5-1.43E(3)(a) General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

**5-1.43E(3)(b) DRB Member Selection**

This section is hereby deleted in its entirety. Provisions regarding “DRB Member Selection” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

**5-1.43E(3)(c) DRB Member Replacement**

This section is hereby deleted in its entirety. Provisions regarding “DRB Member Replacement” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

**5-1.43E(3)(d) DRB Progress Meetings**

This section is hereby deleted in its entirety. Provisions regarding “DRB Progress Meeting” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

**5-1.43E(3)(e) DRB Traditional Dispute Meeting**

This section is hereby deleted in its entirety. Provisions regarding “DRB Traditional Dispute Meeting” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

**5-1.43F Reserved**

**5-1.44–5-1.45 RESERVED**

**5-1.46 FINAL INSPECTION AND CONTRACT ACCEPTANCE**

This section is hereby deleted in its entirety. Provisions regarding “Final Inspection and Contract Acceptance” in this section are set forth in Book 1, Section 20 “Acceptance of Project” of the Contract Documents.

**5-1.47–5-1.50 RESERVED**

## ***Section 6 Control of Material***

### **6-1 GENERAL**

#### **6-1.01 GENERAL**

Section 6 includes specifications related to control of materials.

### **6-2 MATERIAL SOURCE**

#### **6-2.01 GENERAL**

This section is applicable to this project.

#### **6-2.02 MATERIAL SOURCE**

This section is applicable to this project.

#### **6-2.03 DEPARTMENT-FURNISHED MATERIALS**

This section is applicable to this project.

#### **6-2.04 LOCAL MATERIALS**

This section is hereby deleted in its entirety. Provisions regarding “Local Materials” in this section are set forth in Book 1, Section 5 “Control of Work” of the Contract Documents.

#### **6-2.05 BUY AMERICA**

##### **6-2.05A General**

Reserved

##### **6-2.05B Crumb Rubber (Pub Res Code § 42703(D))**

This section is applicable to this project.

##### **6-2.05C Steel and Iron Materials (23 CFR 635.410)**

This section is applicable to this project.

### **6-3 QUALITY**

#### **6-3.01 GENERAL**

This section is applicable to this project.

#### **6-3.02 SPECIFIC BRAND OR TRADE NAME AND SUBSTITUTION**

This section is hereby deleted in its entirety.

#### **6-3.03 AUTHORIZED LABORATORY LISTS**

This section is applicable to this project.

#### **6-3.04 QUALITY CONTROL**

This section is applicable to this project.

## **6-3.05 QUALITY ASSURANCE**

### **6-3.05A General**

This section is applicable to this project.

### **6-3.05B Source Inspection Expense Deductions**

This section is applicable to this project.

### **6-3.05C Material Source Inspection and Testing**

This section is applicable to this project.

### **6-3.05D Job Site Inspection and Testing**

This section is applicable to this project.

### **6-3.05E Certificates of Compliance**

This section is applicable to this project.

### **6-3.05F Test Data, Test Reports, and Evaluation Reports**

Reserved

### **6-3.05G Test Samples**

This section is applicable to this project.

### **6-3.05H Reserved**

### **6-3.05I Authorized Facility Audit Lists**

This section is applicable to this project.

### **6-3.05J Quality Control Plans**

Reserved

### **6-3.05K Authorized Material Lists**

This section is applicable to this project.

### **6-3.05L Authorized Material Source Lists**

This section is applicable to this project.

## **6-3.06 GUARANTEE**

This section is hereby deleted in its entirety. Provisions regarding “Guarantee” in this section are set forth in Book 1, Section 21 “Warranties” of the Contract Documents.

**Section 7 Legal Relations and Responsibility to the Public**

**7-1.01 GENERAL**

This Section is applicable to this project.

**7-1.02 LAWS**

**7-1.02A General**

This section is applicable to this project.

**7-1.02B U.S. Fair Labor Standards Act**

This section is applicable to this project.

**7-1.02C Emissions Reduction**

This section is applicable to this project.

**7-1.02D–7-1.02H Reserved**

**7-1.02I Government Code**

**7-1.02I(1) General**

Reserved

**7-1.02I(2) Nondiscrimination**

This section is applicable to this project.

**7-1.02J Reserved**

**7-1.02K Labor Code**

**7-1.02K(1) General**

This section is applicable to this project.

**7-1.02K(2) Wages**

This section is applicable to this project.

**7-1.02K(3) Certified Payroll Records (Labor Code § 1776)**

This section is applicable to this project.

**7-1.02K(4) Apprentices**

This section is applicable to this project.

**7-1.02K(5) Working Hours**

This section is applicable to this project.

**7-1.02K(6) Occupational Safety and Health Standards**

**7-1.02K(6)(a) General**

This section is applicable to this project.

**7-1.02K(6)(b) Excavation Safety**

This section is applicable to this project.

**7-1.02K(6)(c) Tunnel Safety**

This section is applicable to this project.

**7-1.02K(6)(d) Confined Space Safety**

This section is applicable to this project.

**7-1.02K(6)(e)–7-1.02K(6)(i) Reserved**

**7-1.02K(6)(j) Lead Safety**

***7-1.02K(6)(j)(i) General***

Reserved

***7-1.02K(6)(j)(ii) Lead Compliance Plan***

This section is applicable to this project.

***7-1.02K(6)(j)(iii–viii) Reserved***

**7-1.02K(6)(k)–7-1.02K(6)(t) Reserved**

**7-1.02L Public Contract Code**

**7-1.02L(1) General**

Reserved

**7-1.02L(2) Antitrust Claims**

This section is applicable to this project.

**7-1.02M Public Resources Code**

**7-1.02M(1) General**

Reserved

**7-1.02M(2) Reserved**

**7-1.02M(3) Surface Mining and Reclamation Act**

This section is applicable to this project.

**7-1.02M(4)–7-1.02M(7) Reserved**

**7-1.02N Reserved**

**7-1.02O Vehicle Code**

This section is applicable to this project.

**7-1.02P–7-1.02Q Reserved**

**7-1.02R Environmental Stewardship**

This section is applicable to this project.

**7-1.02S–7-1.02Z Reserved**

**7-1.03 PUBLIC CONVENIENCE**

Provisions regarding “Public Convenience” are applicable to this project except when these Specifications refer to “extra work,” “compensation for,” “at the Department’s expense,” “quantity adjustments,” “equivalent quantities,” or similar phrases, such references shall be disregarded. It is the intent that the payment of the Contract Price will be full compensation for all Work performed pursuant to the Design-Build Contract unless specific provisions for additional payments are contained in the Contract Documents.

**7-1.04 PUBLIC SAFETY**

Provisions regarding “Public Safety” are applicable to this project, with the modifications noted below. When these provisions refer to Section 5-1.02 “Contract Components,” this means Book 1, Section 1 “Contract Components; Interpretation of Contract Documents.”

Replace “20 days” in the 14<sup>th</sup> paragraph of this section with: 25 days.

Replace “90 days” in the 14<sup>th</sup> paragraph of this section with: 125 days.

Add between the 18<sup>th</sup> and 19<sup>th</sup> paragraph of this section:

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

**7-1.05 INDEMNIFICATION**

**7-1.05A General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 18 “Indemnification” of the Contract Documents.

**7-1.05B Responsibility to Other Entities**

This section is hereby deleted in its entirety. Provisions regarding “Responsibility to Other Entities” in this section are set forth in Book 1, Section 18 “Indemnification” of the Contract Documents.

**7-1.06 INSURANCE****7-1.06A General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

**7-1.06B Casualty Insurance**

This section is hereby deleted in its entirety. Provisions regarding “Casualty Insurance” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

**7-1.06C Workers' Compensation and Employer's Liability Insurance**

This section is hereby deleted in its entirety. Provisions regarding “Worker’s Compensation and Employer’s Liability Insurance” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

**7-1.06D Liability Insurance****7-1.06D(1) General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

**7-1.06D(2) Liability Limits/Additional Insureds**

This section is hereby deleted in its entirety. Provisions regarding “Liability Limits/Additional Insureds” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

**7-1.06D(3) Contractor's Insurance Policy is Primary**

This section is hereby deleted in its entirety. Provisions regarding “Contractor’s Insurance Policy is Primary” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

**7-1.06E Automobile Liability Insurance**

This section is hereby deleted in its entirety. Provisions regarding “Automobile Liability Insurance” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

**7-1.06F Policy Forms, Endorsements, and Certificates**

This section is hereby deleted in its entirety. Provisions regarding “Policy Forms, Endorsements, and Certificates” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

**7-1.06G Deductibles**

This section is hereby deleted in its entirety. Provisions regarding “Deductibles” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

### **7-1.06H Enforcement**

This section is hereby deleted in its entirety. Provisions regarding “Enforcement” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

### **7-1.06I Self-Insurance**

This section is hereby deleted in its entirety. Provisions regarding “Self-Insurance” in this section are set forth in Book 1, Section 9 “Insurance” of the Contract Documents.

## **7-1.07 LEGAL ACTIONS AGAINST THE DEPARTMENT**

### **7-1.07A General**

This section is applicable to this project.

### **7-1.07B Seal Coat Claims**

This section is hereby deleted in its entirety.

## **7-1.08 PERSONAL LIABILITY**

This section is hereby deleted in its entirety. Provisions regarding “Personal Liability” in this section are set forth in Book 1, Section 23 “Miscellaneous Provisions” of the Contract Documents.

## **7-1.09–7-1.10 RESERVED**

## **7-1.11 FEDERAL LAWS FOR FEDERAL-AID CONTRACTS**

### **7-1.11A General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, “Exhibit D – Federal Laws for Federal-Aid Contracts” of the Contract Documents.

### **7-1.11B FHWA-1273**

This section is hereby deleted in its entirety. Provisions regarding “FHWA-1273” in this section are set forth in Book 1, “Exhibit D – Federal Laws for Federal-Aid Contracts” of the Contract Documents.

### **7-1.11C Female and Minority Goals**

This section is hereby deleted in its entirety. Provisions regarding “Female and Minority Goals” in this section are set forth in Book 1, “Exhibit D – Federal Laws for Federal-Aid Contracts” of the Contract Documents.

### **7-1.11D Training**

This section is hereby deleted in its entirety. Provisions regarding “Training” in this section are set forth in Book 1, “Exhibit D – Federal Laws for Federal-Aid Contracts” of the Contract Documents.

## ***Section 8 Prosecution and Progress***

### **8-1.01 GENERAL**

Section 8 includes specifications related to prosecuting the Contract and work progress.

### **8-1.02 SCHEDULE**

#### **8-1.02A General**

This section is hereby deleted in its entirety.

#### **8-1.02B Level 1 Critical Path Method Schedule**

##### **8-1.02B(1) General**

This section is hereby deleted in its entirety.

##### **8-1.02B(2) Schedule Format**

This section is hereby deleted in its entirety.

##### **8-1.02B(3) Updated Schedule**

This section is hereby deleted in its entirety.

#### **8-1.02C Level 2 Critical Path Method Schedule**

##### **8-1.02C(1) General**

This section is hereby deleted in its entirety.

##### **8-1.02C(2) Schedule Format**

This section is hereby deleted in its entirety.

##### **8-1.02C(3) Computer Software**

##### **8-1.02C(3)(a) General**

This section is hereby deleted in its entirety.

##### **8-1.02C(3)(b) Computer Software Training**

This section is hereby deleted in its entirety.

##### **8-1.02C(4) Data and Network Diagrams**

This section is hereby deleted in its entirety.

##### **8-1.02C(5) Baseline Schedule**

This section is hereby deleted in its entirety.

##### **8-1.02C(6) Updated Schedule**

This section is hereby deleted in its entirety.

##### **8-1.02C(7) Final Updated Schedule**

This section is hereby deleted in its entirety.

## **8-1.02D Level 3 Critical Path Method Schedule**

### **8-1.02D(1) General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

### **8-1.02D(2) Schedule Format**

This section is hereby deleted in its entirety. Provisions regarding “Schedule Format” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

### **8-1.02D(3) Computer Software**

This section is hereby deleted in its entirety. Provisions regarding “Computer Software” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

### **8-1.02D(4) Data, Network Diagrams, and Reports**

This section is hereby deleted in its entirety. Provisions regarding “Data, Network Diagrams, and Reports” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

### **8-1.02D(5) Preconstruction Scheduling Conference**

This section is hereby deleted in its entirety. Provisions regarding “Preconstruction Scheduling Conference” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

### **8-1.02D(6) Baseline Schedule**

This section is hereby deleted in its entirety. Provisions regarding “Baseline Schedule” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

### **8-1.02D(7) Updated Schedule**

This section is hereby deleted in its entirety. Provisions regarding “Updated Schedule” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

### **8-1.02D(8) Time Impact Analysis**

#### **8-1.02D(8)(a) General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

#### **8-1.02D(8)(b) Department-Owned Float**

This section is hereby deleted in its entirety. Provisions regarding “Department-Owned Float” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

#### **8-1.02D(8)(c) Ordered Changes**

This section is hereby deleted in its entirety. Provisions regarding “Ordered Changes” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

### **8-1.02D(9) Final Updated Schedule**

This section is hereby deleted in its entirety. Provisions regarding “Final Updated Schedule” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

### **8-1.02D(10) Payment**

This section is hereby deleted in its entirety. Provisions regarding “Payment” are set forth in Book 1, Section 11 “Payment” of the Contract Documents.

### **8-1.02E–8-1.02F Reserved**

### **8-1.03 PRECONSTRUCTION CONFERENCE**

This section is deleted in its entirety. Provisions regarding “Preconstruction Conference” in this section are set forth in Book 2, Section 2 “Project Management” of Contract Documents.

### **8-1.04 START OF JOB SITE ACTIVITIES**

This section is hereby deleted in its entirety. Provisions regarding “Start of Job Site Activities” in this section are set forth in Book 1, Section 4 “Time within which Project shall be Completed; Scheduling” of the Contract Documents.

#### **8-1.04A General**

Reserved

#### **8-1.04B Standard Start**

This section is hereby deleted in its entirety.

#### **8-1.04C Delayed Start**

Reserved

#### **8-1.04D Early Return-Early Start**

Reserved

#### **8-1.04E Next-Day Start**

Reserved

#### **8-1.04F–8-1.04J Reserved**

### **8-1.05 TIME**

This section is hereby deleted in its entirety. Provisions regarding “Time” in this section are set forth in Book 1, Section 4 “Time within which Project shall be Completed; Scheduling” of the Contract Documents.

### **8-1.06 SUSPENSIONS**

This section is hereby deleted in its entirety. Provisions regarding “Suspensions” in this section are set forth in Book 1, Section 14 “Suspension of Work” of the Contract Documents.

### **8-1.07 DELAYS**

#### **8-1.07A General**

This section is hereby deleted in its entirety. Provisions regarding “General” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

### **8-1.07B Time Adjustments**

This section is hereby deleted in its entirety. Provisions regarding “Time Adjustments” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

### **8-1.07C Payment Adjustments**

This section is hereby deleted in its entirety. Provisions regarding “Payment Adjustments” in this section are set forth in Book 1, Section 11 “Payment” of the Contract Documents.

### **8-1.08–8-1.09 RESERVED**

### **8-1.10 LIQUIDATED DAMAGES**

This section is hereby deleted in its entirety. Provisions regarding “Liquidated Damages” in this section are set forth in Book 1, Section 17 “Damages” of the Contract Documents.

### **8-1.11–8-1.12 RESERVED**

### **8-1.13 CONTRACTOR'S CONTROL TERMINATION**

This section is hereby deleted in its entirety. Provisions regarding “Contractor’s Control Termination” in this section are set forth in Book 1, Section 15 “Termination for Convenience” of the Contract Documents.

### **8-1.14 CONTRACT TERMINATION**

This section is hereby deleted in its entirety. Provisions regarding “Contract Termination” in this section are set forth in Book 1, Section 15 “Termination for Convenience” and Section 16 “Default” of the Contract Documents.

### **8-1.15–8-1.16 RESERVED**

## **Section 9 Payment**

### **9-1.01 GENERAL**

This section is applicable to this project.

### **9-1.02 MEASUREMENT**

#### **9-1.02A General**

This section is hereby deleted in its entirety. Provisions regarding "General" in this section are hereby replaced with the following: The purpose of measurement of quantities is to identify Quality Control and Verification testing frequency requirements as contained in the Materials Control Schedule and in tracking production rates for monthly payments to the Design-Builder based on percentage complete. All specifications within the *Caltrans Standard Specifications* containing sections describing Method of Measurement and Basis of Payment shall have the sections describing Method of Measurement and Basis of Payment deleted. The Design-Builder hereby acknowledges and agrees that the single lump sum Contract Price constitutes full compensation for performance of all of the Work, subject only to those exceptions specified in the Contract Documents.

#### **9-1.02B Weighing Equipment and Procedures**

##### **9-1.02B(1) General**

This section is applicable to this project.

##### **9-1.02B(2) Equipment**

This section is applicable to this project.

##### **9-1.02B(3) Procedures**

This section is applicable to this project.

#### **9-1.02C Final Pay Item Quantities**

This section is hereby deleted in its entirety.

#### **9-1.02D Quantities of Aggregate and Other Roadway Materials**

This section is applicable to this project.

### **9-1.03 PAYMENT SCOPE**

This section is hereby deleted in its entirety. Provisions regarding "Payment Scope" in this section are set forth in Book 1, Section 11 "Payment" of the Contract Documents.

### **9-1.04 FORCE ACCOUNT**

This section is applicable to this project.

#### **9-1.04A General**

This section is applicable to this project.

#### **9-1.04B Labor**

This section is applicable to this project.

#### **9-1.04C Materials**

This section is applicable to this project.

### **9-1.04D Equipment Rental**

#### **9-1.04D(1) General**

This section is applicable to this project.

#### **9-1.04D(2) Equipment On the Job Site**

This section is applicable to this project.

#### **9-1.04D(3) Equipment Not On the Job Site Required for Original-Contract Work**

This section is applicable to this project.

#### **9-1.04D(4) Equipment Not On the Job Site Not Required for Original-Contract Work**

This section is applicable to this project.

#### **9-1.04D(5) Non-Owner-Operated Dump Truck Rental**

This section is applicable to this project.

### **9-1.05 EXTRA WORK PERFORMED BY SPECIALISTS**

This section is hereby deleted in its entirety. Provisions regarding “Extra Work Performed by Specialists” are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

### **9-1.06 CHANGED QUANTITY PAYMENT ADJUSTMENTS**

This section is hereby deleted in its entirety. Provisions regarding “Changed Quantity Payment Adjustments” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

### **9-1.07 PAYMENT ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS**

#### **9-1.07A General**

This section is hereby deleted in its entirety.

#### **9-1.07B Asphalt Quantities**

##### **9-1.07B(1) General**

Reserved

##### **9-1.07B(2) Hot Mix Asphalt**

This section is hereby deleted in its entirety.

##### **9-1.07B(3) Rubberized Hot Mix Asphalt**

This section is hereby deleted in its entirety.

##### **9-1.07B(4) Modified Asphalt Binder in Hot Mix Asphalt**

This section is hereby deleted in its entirety.

##### **9-1.07B(5) Hot Mix Asphalt Containing Reclaimed Asphalt Pavement**

This section is hereby deleted in its entirety.

##### **9-1.07B(6) Tack Coat**

This section is hereby deleted in its entirety.

**9-1.07B(7) Asphaltic Emulsion**

This section is hereby deleted in its entirety.

**9-1.07B(8) Slurry Seal**

This section is hereby deleted in its entirety.

**9-1.07B(9) Modified Asphalt Binder**

This section is hereby deleted in its entirety.

**9-1.07B(10) Other Materials**

This section is hereby deleted in its entirety.

**9-1.07C Payment Adjustments**

This section is hereby deleted in its entirety. Provisions regarding “Payment Adjustments” in this section are set forth in Book 1, Section 11 “Payment” of the Contract Documents.

**9-1.08–9-1.10 RESERVED**

**9-1.11 TIME-RELATED OVERHEAD**

**9-1.11A General**

This section is applicable to this project.

**9-1.11B Audit Examinations and Reports**

This section is applicable to this project.

**9-1.11C Payment**

This section is applicable to this project.

**9-1.12–9-1.14 RESERVED**

**9-1.15 WORK-CHARACTER CHANGES**

This section is hereby deleted in its entirety. Provisions regarding “Work-Character Changes” in this section are set forth in Book 1, Section 13 “Changes in the Work” of the Contract Documents.

**9-1.16 PROGRESS PAYMENTS**

This section is hereby deleted in its entirety. Provisions regarding “Progress Payments” in this section are set forth in Book 1, Section 11 “Payment” and Book 2, Section “Project Management” of the Contract Documents.

**9-1.16G–9-1.16M Reserved**

**9-1.17 PAYMENT AFTER CONTRACT ACCEPTANCE**

This section is hereby deleted in its entirety. Provisions regarding “Payments after Contract Acceptance” in this section are set forth in Book 1, Section 11 “Payment” of the Contract Documents.

**9-1.18–9-1.20 RESERVED**

**9-1.21 CLERICAL ERRORS**

This section is hereby deleted in its entirety. Provisions regarding “Clerical Errors” in this section are set forth in Book 1, Section 11 “Payment” of the Contract Documents.

## **9-1.22 ARBITRATION**

This section is hereby deleted in its entirety. Provisions regarding “Arbitration” in this section are set forth in Book 1, Section 19 “Partnering, Dispute Resolution” of the Contract Documents.

## **B. Sections 10 through 99**

### ***General Modifications***

1. On technical issues “The Engineer” shall mean the Design-Builder.
2. On Administrative issues “The Engineer” shall mean Department.

If the Design-Builder believes that a definition of “The Engineer” is unclear, the Design-Builder shall have the obligation to raise the issue with Department. Regardless of whether the Design-Builder raises the issue, Department shall always have the right to notify the Design-Builder if the Design-Builder is interpreting the definition of “The Engineer” incorrectly.

### ***Specific Modifications***

For any specific modifications on Section 10 through 99, please refer to the Exhibit 4-A, “Revised Standard Specifications – Section 10 to Section 99”.

## **EXHIBIT 4-A**

Revised Standard Specifications - Section 10 to Section 99





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**Replace "project" in the 3rd paragraph of section 12-3.07C with:**

10-19-12

work

**Replace the 3rd through 5th paragraphs of section 12-4.03 with:**

04-19-13

Submit closure schedules using the Department's Internet-based LCS program to show the locations and times of the proposed closures.

The Department provides LCS training. Request LCS training at least 30 days before submitting the 1st lane closure request. The Department provides the training within 15 days after your request. The training may be web based.

Except for web-based training, the training is held at a time and location you and the Engineer agree to.

For web-based training, the Engineer provides you the website address to access the training.

Within 5 business days after completion of the training, the Department provides LCS accounts and user identifications to your assigned representatives.

Each representative must maintain a unique password and current user information in the LCS.

You will be notified through LCS of unauthorized closures or closures that require coordination with other parties as a condition for authorization.

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

Cancel closure requests using LCS at least 48 hours before the time of the closure.

**Add between the 7th and 8th paragraphs of section 12-4.03:**

10-19-12

The contingency plan must identify the operations, equipment, processes, and materials that may fail and delay a reopening of a closure to traffic. List the additional or alternate equipment, materials, or workers necessary to ensure continuing operations and on-time opening of closures whenever a problem occurs. If the additional or alternate equipment, materials, or workers are not on site, specify their location, the method for mobilizing these items, and the required time to complete mobilization.

Based on the Engineer's review, additional materials, equipment, workers, or time to complete operations from that specified in the contingency plan may be required.

Provide a general time-scaled logic diagram displaying the major activities and sequence of planned operations that comply with the requirements of section 12-4.03. For each operation, identify the critical event when the contingency plan will be activated.

Submit any revisions to the contingency plan for an operation at least 3 business days before starting that operation. Do not close any lanes until the contingency plan has been authorized.

The 5th paragraph of section 5-1.23B(1) does not apply to reviewing contingency plans.

09-16-11

**Replace section 12-7 with:**

09-16-11

**12-7 RESERVED**

^^

**13 WATER POLLUTION CONTROL**

04-19-13

04-19-13

Delete item 3 in the list in the 4th paragraph of section 13-1.01A.

01-20-12

**Add to section 13-1.01A:**

01-20-12

Comply with the Department's general permit issued by the State Water Resources Control Board for *Order No. 99-06-DWQ, NPDES No. CAS000003, National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Caltrans)*. The Department's general permit governs stormwater and nonstormwater discharges from the Department's properties, facilities, and activities. The Department's general permit may be viewed at the Web site for the State Water Resources Control Board, Storm Water Program, Caltrans General Permit.

**Add to the list in the 1st paragraph of section 13-1.01D(3)b:**

10-21-11

- 3. Have completed SWRCB approved QSD training and passed the QSD exam

**Add to the list in the 2nd paragraph of section 13-1.01D(3)b:**

---

3. Have completed SWRCB approved QSP training and passed the QSP exam

10-21-11

**Replace "NEL violation" in item 3.6.2 in the list in the 1st paragraph of section 13-1.01D(3)(c) with:**

receiving water monitoring trigger

04-19-13

**Replace the 1st paragraph in section 13-2.01B with:**

Within 7 days after Contract approval, submit 2 copies of your WPCP for review. Allow 5 business days for review.

04-19-13

After the Engineer authorizes the WPCP, submit an electronic copy and 3 printed copies of the authorized WPCP.

If the RWQCB requires review of the authorized WPCP, the Engineer submits the authorized WPCP to the RWQCB for its review and comment. If the Engineer orders changes to the WPCP based on the RWQCB's comments, amend the WPCP within 3 business days.

**Replace the 1st paragraph in section 13-3.01B(2)(a) with:**

Within 15 days of Contract approval, submit 3 copies of your SWPPP for review. The Engineer provides comments and specifies the date when the review stopped if revisions are required. Change and resubmit a revised SWPPP within 15 days of receiving the Engineer's comments. The Department's review resumes when a complete SWPPP has been resubmitted.

04-19-13

When the Engineer authorizes the SWPPP, submit an electronic copy and 4 printed copies of the authorized SWPPP.

If the RWQCB requires review of the authorized SWPPP, the Engineer submits the authorized SWPPP to the RWQCB for its review and comment. If the Engineer requests changes to the SWPPP based on the RWQCB's comments, amend the SWPPP within 10 days.

**Replace "NELs" in item 3.1 in the 3rd paragraph of section 13-3.01B(2)(a) with:**

receiving water monitoring triggers

04-19-13

**Replace section 13-3.01B(6)(c) with:**

04-19-13

13-3.01B(6)(c) Receiving Water Monitoring Trigger Report

Whenever a receiving water monitoring trigger is exceeded, notify the Engineer and submit a receiving water monitoring trigger report within 48 hours after conclusion of a storm event. The report must include:

1. Field sampling results and inspections, including:
  - 1.1. Analytical methods, reporting units, and detection limits
  - 1.2. Date, location, time of sampling, visual observation and measurements
  - 1.3. Quantity of precipitation from the storm event
2. Description of BMPs and corrective actions

**Replace "NEL" in the 6th paragraph of section 13-3.01C(1) with:**

04-19-13

receiving water monitoring trigger

**Replace section 13-3.01C(3) with:**

04-19-13

**13-3.01C(3) Receiving Water Monitoring Trigger**

For a risk level 3 project, receiving water monitoring triggers must comply with the values shown in the following table:

**Receiving Water Monitoring Trigger**

| Parameter | Test method                                    | Detection limit (min) | Unit | Value                                  |
|-----------|--|-----------------------|------|--|
| pH        | Field test with calibrated portable instrument | 0.2                   | pH   | Lower limit = 6.0<br>Upper limit = 9.0 |
| Turbidity | Field test with calibrated portable instrument | 1                     | NTU  | 500 NTU max                            |

The storm event daily average for storms up to the 5-year, 24-hour storm must not exceed the receiving water monitoring trigger for turbidity.

The daily average sampling results must not exceed the receiving water monitoring trigger for pH.

---

**Delete "and NELs are violated" in the 3rd paragraph of section 13-3.03C.**

04-19-13

**Replace "working days" at each occurrence in section 13-3.04 with.**

original working days

10-19-12

**Delete the 1st sentence in the 2nd paragraph of section 13-4.03C(3).**

04-19-13

**Add between the 2nd and 3rd paragraphs of section 13-4.03C(3):**

Manage stockpiles by implementing water pollution control practices on:

04-19-13

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

**Replace the paragraph in section 13-4.04 with:**

Not Used

04-20-12

**Delete "or stockpile" in the 3rd paragraph of section 13-5.02F.**

10-19-12

**Replace section 13-5.03F with:**

**13-5.03F Reserved**

04-20-12

**Delete "or stockpile" in item 1 in the list in the 1st paragraph of section 13-5.03K.**

10-19-12



- 
4. Result in an installation that is equal to or better than the existing one in stability, support, and nonrocking characteristics
  5. Be fastened securely to the existing frame without projections above the surface of the road or into the clear opening

**Add to the end of section 15-4.01A(2):**

04-19-13

Allow 20 days for review of the bridge removal work plan.

**Replace the 1st paragraph of section 15-5.01C(1) with:**

10-19-12

Before starting deck rehabilitation activities, complete the removal of any traffic stripes, pavement markings, and pavement markers.

**Replace the 2nd and 3rd paragraphs of section 15-5.01C(2) with:**

10-19-12

Perform the following activities in the order listed:

1. Abrasive blast the deck surface with steel shot. Perform abrasive blasting after the removal of any unsound concrete and placement of any rapid setting concrete patches.
2. Sweep the deck surface.
3. Blow the deck surface clean using high-pressure air.

**Replace the 2nd paragraph of section 15-5.01C(4) with:**

10-19-12

Before removing asphalt concrete surfacing, verify the depth of the surfacing at the supports and midspans of each structure (1) in each shoulder, (2) in the traveled way, and (3) at the roadway crown, if a crown is present.

04-19-13

**Delete "and concrete expansion dams" in the 3rd paragraph of section 15-5.01C(4).**

**Replace the 2nd paragraph of section 15-5.03A(2) with:**

10-19-12

For a contract with less than 60 original working days, submit certificates of compliance for the filler material and bonding agents.

**Replace "51-1.02C" in the 1st paragraph of section 15-5.03B with:**

51-1.02F

04-19-13

**Replace the 4th paragraph of section 15-5.03B with:**

For a contract with less than 60 original working days, alternative materials must be authorized before use.

10-19-12

**Add between the 5th and 6th paragraphs of section 15-5.03C:**

The final surface finish of the patched concrete surface must comply with section 51-1.03F.

10-19-12

**Delete the 4th paragraph of section 15-5.05C.**

10-19-12

**Replace "51-1.03F(5)" in the 3rd paragraph of section 15-5.06C(1) with:**

51-1.01D(4)

10-19-12

**Replace "51-1.03E(5)" in the 5th paragraph of section 15-5.06C(1) with:**

51-1.03F(5)

10-19-12

**Delete the 9th paragraph of section 15-5.06C(1).**

10-19-12

**Delete the 15th paragraph of section 15-5.06C(1).**

04-19-13

---

**Add to section 15-5.06C(1):**

Texture the polyester concrete surface before gelling occurs by longitudinal tining under 51-1.03F(5)(b)(iii), except do not perform initial texturing.

10-19-12

**Replace section 15-5.06C(2) with:**

**15-5.06C(2) Reserved**

04-19-13

**Delete the 3rd paragraph of section 15-5.06D.**

04-19-13

**Replace the 1st paragraph in section 15-5.07B(4) with:**

Payment for furnishing dowels is not included in the payment for core and pressure grout dowel.

10-19-12

**Replace section 15-5.09 with:**

**15-5.09 POLYESTER CONCRETE EXPANSION DAMS**

04-19-13

**15-5.09A General**

Section 15-5.09 includes specifications for constructing polyester concrete expansion dams.

Polyester concrete expansion dams must comply with the specifications for polyester concrete overlays in section 15-5.06, except a trial slab is not required.

Reinforcement must comply with section 52.

**15-5.09B Materials**

Not Used

**15-5.09C Construction**

For new asphalt concrete overlays, place the asphalt concrete overlay before starting polyester concrete activities. Saw cut and remove asphalt concrete at expansion dam locations.

For existing asphalt concrete overlays, remove expansion dams and asphalt concrete to the limits shown. Removing expansion dams must comply with section 15-4 except a bridge removal work plan is not required.



---

**Add to the list in the 1st paragraph of section 19-3.01A(2)(d):**

9. Provisions for discontinuous rows of soil nails

01-20-12

**Replace "sets" in the 3rd and 4th paragraphs of section 19-3.01A(2)(d) with:**

copies

04-19-13

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

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

01-20-12

For ground anchor walls, a wall zone is the entire wall unless otherwise specified in the special provisions.

**Delete the 2nd sentence in the 4th paragraph of section 19-3.01A(3)(b).**

01-20-12

**Replace "90" in the paragraph of section 19-3.02G with:**

90-1

01-18-13

**Replace the heading of section 19-3.03C with:**

**19-3.03B(4) Cofferdams**

04-19-13

**Replace the heading of section 19-3.03D with:**

**19-3.03B(5) Water Control and Foundation Treatment**

04-19-13

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

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

01-20-12

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

Do not backfill over or place material over slurry cement backfill until 4 hours after placement. When concrete sand is used as aggregate and the in-place material is free draining, you may start backfilling as soon as the surface water is gone.

01-20-12

---

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

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.
5. Soil nail facing anchorages are attached or ground anchors are locked off.

**Replace the 2nd sentence in the 7th paragraph of section 19-3.04 with:**

01-18-13

Structure excavation more than 0.5 foot from the depth shown is paid for as a work-character change if you request an adjustment or the Engineer orders an adjustment.

**Replace "Contract completion time" in the 8th paragraph of section 19-6.03D with:**

10-19-12

work completion date

**Add to section 19:**

01-18-13

**19-10-19-20 RESERVED**

^^

**20 LANDSCAPE**

10-19-12

10-19-12

**Add "preparing holes," before "and" in the 1st paragraph of section 20-7.01A.**

**Replace "and handling" in the 1st paragraph of section 20-7.03A with:**

10-19-12

handling, and preparing holes

**Replace the 1st paragraph of section 20-7.03D with:**

10-19-12

The location of all plants is as shown unless the Engineer designates otherwise. If the Engineer designates the location of plants, the location will be marked by stakes, flags, or other markers.

**Replace item 1 in the list in the 1st paragraph of section 20-7.03I with:**

10-19-12

- 1. Preparing holes and planting plants

**Delete "Prepare Hole," in the last paragraph of section 20-7.04.**

10-19-12

^^

**21 EROSION CONTROL**

04-19-13

**Replace ", bonded fiber matrix, and polymer-stabilized fiber matrix" in the 1st paragraph of section 21-1.01B with:**

and bonded fiber matrix

04-20-12

**Delete the last paragraph of section 21-1.02E.**

04-20-12

**Replace section 21-1.02F(2) with:**

**21-1.02F(2) Reserved**

04-20-12

**Replace section 21-1.02J with:**

**21-1.02J Reserved**

04-20-12

**Replace the row for organic matter content in the table in the 4th paragraph of section 21-1.02M with:**

01-18-13

|                        |   |        |
|------------------------|---|--------|
| Organic matter content | TMECC 05.07-A<br>Loss-on-ignition organic matter method (LOI)<br>% dry weight basis | 30–100 |
|------------------------|---|--------|

**Replace the paragraph in section 21-1.02P with:**

10-19-12

Fiber roll must be a premanufactured roll filled with rice or wheat straw, wood excelsior, or coconut fiber. Fiber roll must be covered with biodegradable jute, sisal, or coir fiber netting secured tightly at each end and must be one of the following:

1. 8 to 10 inches in diameter and at least 1.1 lb/ft
2. 10 to 12 inches in diameter and at least 3 lb/ft

Fiber roll must have a minimum functional longevity of 1 year.





### **37-1.01B Definitions**

Reserved

### **37-1.01C Submittals**

Reserved

### **37-1.01D Quality Control and Assurance**

#### **37-1.01D(1) General**

Reserved

#### **37-1.01D(2) Preparing Conference**

For seal coats and micro-surfacing, schedule a preparing conference at a mutually agreed upon time and place to meet with the Engineer.

Preparing conference attendees must sign an attendance sheet provided by the Engineer. The preparing conference must be attended by your:

1. Project superintendent
2. Paving construction foreman
3. Traffic control foreman

Be prepared to discuss:

1. Quality control
2. Acceptance testing
3. Placement
4. Training on placement methods
5. Checklist of items for proper placement
6. Unique issues specific to the project, including:
  - 6.1. Weather
  - 6.2. Alignment and geometrics
  - 6.3. Traffic control issues
  - 6.4. Haul distances
  - 6.5. Presence and absence of shaded areas
  - 6.6. Any other local issues

### **37-1.02 MATERIALS**

Not Used

### **37-1.03 CONSTRUCTION**

Not Used

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**37-1.04 PAYMENT**

Not Used

**Replace "Reserved" in section 37-2.01D(1) with:**

01-18-13

Aggregate suppliers, chip spreader operators, emulsion distributor, and for coated chips, the coated chips producer must attend the prepaving conference.

**Add to section 37-2.03A:**

04-20-12

If you fail to place the permanent traffic stripes and pavement markings within the specified time, the Department withholds 50 percent of the estimated value of the seal coat work completed that has not received permanent traffic stripes and pavement markings.

**Add to section 37-3.01D(1):**

01-18-13

Micro-surfacing spreader operators must attend the prepaving conference.



---

If RAP is from multiple sources, blend the RAP thoroughly and completely. RAP stockpiles must be homogeneous.

Isolate the processed RAP stockpiles from other materials. Store processed RAP in conical or longitudinal stockpiles. Processed RAP must not be agglomerated or be allowed to congeal in large stockpiles.

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

1. Target air voids must equal  $7 \pm 1$  percent
2. Number of test specimens must be 4
3. Test specimen must be a 6-inch gyratory compacted specimen
4. Test temperature must be set at  $140 \pm 2$  degrees F
5. Measurements for impression must be taken at every 100 passes
6. Inflection point defined as the number of wheel passes at the intersection of the creep slope and the stripping slope
7. Testing shut off must be set at 25,000 passes

#### **39-1.02F(2) Substitution Rate of 15 Percent or Less**

For a RAP substitution rate of 15 percent or less, you may stockpile RAP during the entire project.

#### **39-1.02F(3) Substitution Rate Greater than 15 Percent**

For a RAP substitution rate greater than 15 percent, fractionate RAP into 2 sizes, a coarse fraction RAP retained on 1/4-inch screen and a fine fraction RAP passing 1/4-inch screen.

Sample and test processed RAP at a minimum frequency of 1 sample per 1000 tons with a minimum of 6 samples for each processed RAP stockpile. The asphalt binder content and specific gravity must meet the processed RAP quality characteristics. If a processed RAP stockpile is augmented, sample and test processed RAP quality characteristics at a minimum frequency of 1 sample per 500 tons of augmented RAP.

The processed RAP asphalt binder content must be within  $\pm 2.0$  percent of the average processed RAP stockpile asphalt binder content when tested under ASTM D 2172, Method B. If a new processed RAP stockpile is required, the average binder content of the new processed RAP stockpile must be within  $\pm 2.0$  percent of the average binder content of the original processed RAP stockpile.

The maximum specific gravity for processed RAP must be within  $\pm 0.06$  when tested under California Test 309 of the average maximum specific gravity reported on page 4 of your *Contractor Hot Mix Asphalt Design Data* form.

**Replace "less than 10 percent" in note "b" in the table in the 5th paragraph of section 39-1.02E with:**

10 percent or less

01-20-12

**Replace items 7 and 8 in the 5th paragraph of section 39-1.03A with:**

02-22-13

7. Substitution rate by more than 5 percent if your assigned RAP substitution rate is 15 percent or less
8. Substitution rate by more than 3 percent if your assigned RAP substitution rate is greater than 15 percent
9. Average binder content by more than 2 percent from the average binder content of the original processed RAP stockpile used in the mix design
10. Maximum specific gravity of processed RAP by more than  $\pm 0.060$  from the average maximum specific gravity of processed RAP reported on page 4 of your *Contractor Hot Mix Asphalt Design Data* form
11. Any material in the JMF

**Add to the 1st paragraph of section 39-1.03A:**

09-16-11

If RAP is used, use Laboratory Procedure LP-9.

**Replace the 1st paragraph of section 39-1.03B with:**

02-22-13

Perform a mix design that produces HMA with the values for the quality characteristics shown in the following table:

**HMA Mix Design Requirements**

| Quality characteristic   | Test method         | HMA type  |           |                  |
|--|---------------------|-----------|-----------|------------------|
|  |                     | A         | B         | RHMA-G           |
| Air void content (%)   | California Test 367 | 4.0       | 4.0       | Section 39-1.03B |
| Voids in mineral aggregate (% min.)<br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading | California Test 367 | 17.0      | 17.0      | --               |
|  |                     | 15.0      | 15.0      | --               |
|  |                     | 14.0      | 14.0      | 18.0–23.0        |
|  |                     | 13.0      | 13.0      | 18.0–23.0        |
| Voids filled with asphalt (%)<br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading       | California Test 367 | 65.0–75.0 | 65.0–75.0 | Note a           |
|  |                     | 65.0–75.0 | 65.0–75.0 |                  |
|  |                     | 65.0–75.0 | 65.0–75.0 |                  |
|  |                     | 65.0–75.0 | 65.0–75.0 |                  |
| Dust proportion<br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings                                 | California Test 367 | 0.6–1.2   | 0.6–1.2   | Note a           |
|  |                     | 0.6–1.2   | 0.6–1.2   |                  |
| Stabilometer value (min.)<br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings                       | California Test 366 | 30        | 30        | --               |
|  |                     | 37        | 35        | 23               |

<sup>a</sup> Report this value in the JMF submittal.

For RAP substitution rate greater than 15 percent, the mix design must comply with the additional quality characteristics shown in the following table:

**Additional HMA Mix Design Requirements  
for RAP Substitution Rate Greater Than 15 Percent**

| Quality characteristic   | Test method                                | HMA type |        |        |
|--|--|----------|--------|--------|
|  |  | A        | B      | RHMA-G |
| Hamburg wheel track<br>(minimum number of passes at 0.5 inch<br>average rut depth) | AASHTO<br>T 324<br>(Modified) <sup>a</sup> |          |        |        |
| PG-58  |  | 10,000   | 10,000 | --     |
| PG-64  |  | 15,000   | 15,000 |        |
| PG-70  |  | 20,000   | 20,000 |        |
| PG-76 or higher  |  | 25,000   | 25,000 |        |
| Hamburg wheel track<br>(inflection point minimum number of<br>passes)              | AASHTO<br>T 324<br>(Modified) <sup>a</sup> |          |        |        |
| PG-58  |  | 10,000   | 10,000 | --     |
| PG-64  |  | 10,000   | 10,000 |        |
| PG-70  |  | 12,500   | 12,500 |        |
| PG-76 or higher  |  | 15000    | 15000  |        |
| Moisture susceptibility<br>(minimum dry strength, psi)                             | California<br>Test 371 <sup>a</sup>        | 120      | 120    | --     |
| Moisture susceptibility<br>(tensile strength ration, %)                            | California<br>Test 371 <sup>a</sup>        | 70       | 70     | --     |

<sup>a</sup>Test plant produced HMA.

For HMA with RAP, the maximum binder replacement must be 25.0 percent of OBC for surface course and 40.0 percent of OBC for lower courses.

For HMA with a binder replacement less than or equal to 25 percent of OBC, you may request that the PG asphalt binder grade with upper and lower temperature classifications be reduced by 6 degrees C from the specified grade.

For HMA with a binder replacement greater than 25 percent but less than or equal to 40 percent of OBC, you must use a PG asphalt binder grade with upper and lower temperature classifications reduced by 6 degrees C from the specified grade.

09-16-11

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

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

01-20-12

**Add after the last paragraph of section 39-1.03C:**

For RAP substitution rate greater than 15 percent, submit with the JMF submittal:

02-22-13

1. California Test 371 tensile strength ratio and minimum dry strength test results
2. AASHTO T 324 (Modified) test results

For RAP substitution rate greater than 15 percent, submit California Test 371 and AASHTO T 324 (Modified) test results to the Engineer and to:

Moisture\_Tests@dot.ca.gov

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

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

01-20-12

**Replace the 2nd paragraph of section 39-1.03E with:**

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.

04-20-12

**Add between the 3rd and 4th paragraphs of section 39-1.03E:**

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:

04-20-12

$$\text{Asphalt Binder Set Point} = \frac{\frac{BC_{OBC}}{\left(1 - \frac{BC_{OBC}}{100}\right)} - R_{RAP} \left[ \frac{BC_{RAP}}{\left(1 - \frac{BC_{RAP}}{100}\right)} \right]}{100 + \frac{BC_{OBC}}{\left(1 - \frac{BC_{OBC}}{100}\right)}}$$

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:**

- 4. HMA quality specified in the table titled "HMA Mix Design Requirements" except:
  - 4.1. Air void content, design value  $\pm 2.0$  percent
  - 4.2. Voids filled with asphalt, report only
  - 4.3. Dust proportion, report only

04-20-12

**Replace the 12th paragraph of section 39-1.03E with:**

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.

04-20-12

**Replace the 14th paragraph of section 39-1.03E with:**

A verified JMF is valid for 12 months.

01-20-12

**Replace the last sentence in the 15th paragraph of section 39-1.03E with:**

This deduction does not apply to verifications initiated by the Engineer or JMF renewal.

01-20-12

**Replace the 16th paragraph of section 39-1.03E with:**

02-22-13

Except for RAP substitution rate greater than 15 percent, for any HMA produced under the QC/QA process the Department does not use California Test 371 test results for verification.

**Add between the 1st and 2nd paragraphs of section 39-1.03F:**

04-20-12

Target asphalt binder content on your Contractor *Job Mix Formula Proposal* form and the OBC specified on your *Contractor Hot Mix Asphalt Design Data* form must be the same.

**Delete the 4th paragraph of section 39-1.03F.**

01-20-12

**Replace items 3 and 5 in the 6th paragraph of section 39-1.03F with:**

01-20-12

3. Engineer verifies each proposed JMF renewal within 20 days of receiving verification samples.
5. For each HMA type and aggregate gradation specified, the Engineer verifies at the Department's expense 1 proposed JMF renewal within a 12-month period.

**Add between the 6th and 7th paragraphs of section 39-1.03F:**

01-20-12

The most recent aggregate quality test results within the past 12 months may be used for verification of JMF renewal or the Engineer may perform aggregate quality tests for verification of JMF renewal.

**Replace section 39-1.03G with:**

04-20-12

**39-1.03G Job Mix Formula Modification**

For an accepted JMF, you may change asphalt binder source one time during production.

Submit your modified JMF request a minimum of 3 business days before production. Each modified JMF submittal must consist of:

1. Proposed modified JMF on *Contractor Job Mix Formula Proposal* form
2. Mix design records on *Contractor Hot Mix Asphalt Design Data* form for the accepted JMF to be modified

- 
3. JMF verification on *Hot Mix Asphalt Verification* form for the accepted JMF to be modified
  4. Quality characteristics test results for the modified JMF as specified in section 39-1.03B. Perform tests at the mix design OBC as shown on the *Contractor Asphalt Mix Design Data* form
  5. If required, California Test 371 test results for the modified JMF.

With an accepted modified JMF submittal, the Engineer verifies each modified JMF within 5 business days of receiving all verification samples. If California Test 371 is required, the Engineer tests for California Test 371 within 10 days of receiving verification samples.

The Engineer verifies the modified JMF after the modified JMF HMA is placed on the project and verification samples are taken within the first 750 tons following sampling requirements in section 39-1.03E, "Job Mix Formula Verification." The Engineer tests verification samples for compliance with:

1. Stability as shown in the table titled "HMA Mix Design Requirements"
2. Air void content at design value  $\pm 2.0$  percent
3. Voids in mineral aggregate as shown in the table titled "HMA Mix Design Requirements"
4. Voids filled with asphalt, report only
5. Dust proportion, report only

If the modified JMF is verified, the Engineer revises your *Hot Mix Asphalt Verification* form to include the new asphalt binder source. Your revised form will have the same expiration date as the original form.

If a modified JMF is not verified, stop production and any HMA placed using the modified JMF is rejected.

The Engineer deducts \$2,000 from payments for each modified JMF verification. The Engineer deducts an additional \$2,000 for each modified JMF verification that requires California Test 371.

### **Add to section 39-1.03:**

01-20-12

#### **39-1.03H Job Mix Formula Acceptance**

You may start HMA production if:

1. The Engineer's review of the JMF shows compliance with the specifications.
2. The Department has verified the JMF within 12 months before HMA production.
3. The Engineer accepts the verified JMF.

### **Replace "3 days" in the 1st paragraph of section 39-1.04A with:**

01-20-12

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3 business days

**Replace the 2nd sentence in the 2nd paragraph of section 39-1.04A with:**

During production, take samples under California Test 125. You may sample HMA from:

01-20-12

**Replace the 2nd paragraph of section 39-1.04E with:**

For RAP substitution rate of 15 percent or less, sample RAP once daily.

02-22-13

For RAP substitution rate of greater than 15percent, sample processed RAP twice daily.

Perform QC testing for processed RAP aggregate gradation under California Test 367, appendix B, and submit the results with the combined aggregate gradation.

**Replace "5 days" in the 1st paragraph of section 39-1.06 with:**

5 business days

01-20-12

**Replace the 3rd paragraph of section 39-1.08A with:**

During production, you may adjust hot or cold feed proportion controls for virgin aggregate and RAP.

04-20-12

**Add to section 39-1.08A:**

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.

04-20-12

For RAP substitution rate of 15 percent or less, you may adjust the RAP by  $\pm 5$  percent.

02-22-13

For RAP substitution greater than 15, you may adjust the RAP by  $\pm 3$  percent.

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.

04-20-12

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**Replace the 3rd paragraph of section 39-1.08B with:**

09-16-11

Asphalt rubber binder must be from 375 to 425 degrees F when mixed with aggregate.

- **Replace section 39-1.11 with:**

01-18-13

- **39-1.11 CONSTRUCTION**

**39-1.11A General**

Do not place HMA on wet pavement or a frozen surface.

You may deposit HMA in a windrow and load it in the paver if:

1. Paver is equipped with a hopper that automatically feeds the screed
2. Loading equipment can pick up the windrowed material and deposit it in the paver hopper without damaging base material
3. Activities for deposit, pickup, loading, and paving are continuous
4. HMA temperature in the windrow does not fall below 260 degrees F

You may place HMA in 1 or more layers on areas less than 5 feet wide and outside the traveled way, including shoulders. You may use mechanical equipment other than a paver for these areas. The equipment must produce uniform smoothness and texture.

HMA handled, spread, or windrowed must not stain the finished surface of any improvement, including pavement.

Do not use petroleum products such as kerosene or diesel fuel to release HMA from trucks, spreaders, or compactors.

HMA must be free of:

1. Segregation
2. Coarse or fine aggregate pockets
3. Hardened lumps

**39-1.11B Longitudinal Joints****39-1.11B(1) General**

Longitudinal joints in the top layer must match specified lane edges. Alternate the longitudinal joint offsets in the lower layers at least 0.5 foot from each side of the specified lane edges. You may request other longitudinal joint placement patterns.

A vertical longitudinal joint of more than 0.15 ft is not allowed at any time between adjacent lanes open to traffic.

For HMA thickness of 0.15 ft or less, the distance between the ends of the adjacent surfaced lanes at the end of each day's work must not be greater than can be completed in the following day of normal paving.

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For HMA thickness greater than 0.15 ft, you must place HMA on adjacent traveled way lanes so that at the end of each work shift the distance between the ends of HMA layers on adjacent lanes is from 5 to 10 feet. Place additional HMA along the transverse edge at each lane's end and along the exposed longitudinal edges between adjacent lanes. Hand rake and compact the additional HMA to form temporary conforms. You may place Kraft paper or another authorized bond breaker under the conform tapers to facilitate the taper removal when paving operations resume.

### **39-1.11B(2) Tapered Notched Wedge**

For divided highways with an HMA lift thickness greater than 0.15 foot, you may construct a 1-foot wide tapered notched wedge joint as a longitudinal joint between adjacent lanes open to traffic. A vertical notch of 0.75 inch maximum must be placed at the top and bottom of the tapered wedge.

The tapered notched wedge must retain its shape while exposed to traffic. Pave the adjacent lane within 1 day.

Construct the tapered portion of the tapered notched wedge with an authorized strike-off device. The strike-off device must provide a uniform slope and must not restrict the main screed of the paver.

You may use a device attached to the screed to construct longitudinal joints that will form a tapered notched wedge in a single pass. The tapered notched wedge must be compacted to a minimum of 91 percent compaction.

Perform QC testing on the completed tapered notch wedge joint as follows:

1. Perform field compaction tests at the rate of 1 test for each 750-foot section along the joint. Select random locations for testing within each 750-foot section.
2. Perform field compaction tests at the centerline of the joint, 6 inches from the upper vertical notch, after the adjacent lane is placed and before opening the pavement to traffic.
3. Determine maximum density test results.
4. Determine percent compaction of the longitudinal joint as the ratio of the average of the field compaction values and the maximum density test results.

For HMA under QC/QA construction process, the additional quality control compaction results associated with the tapered notch wedge will not be included in the computation of any quality factor and process control.

For acceptance of the completed tapered notch wedge joint, take two 4- or 6-inch diameter cores 6 inches from the upper vertical notch of the completed longitudinal joint for every 3,000 feet at locations designated by the Engineer. Take cores after the adjacent lane is placed and before opening the pavement to traffic. Cores must be taken in the presence of the Engineer and must be marked to identify the test sites. Submit the cores. One core will be used for determination of the field density and 1 core will be used for dispute resolution. The Engineer determines:

1. Field compaction by measuring the bulk specific gravity of the cores under California Test 308, Method A
2. Percent compaction as the ratio of the average of the bulk specific gravity of the core for each day's production to the maximum density test value

For HMA under QC/QA construction process, the additional quality assurance testing by the Engineer to determine field compaction associated with the tapered notch wedge will not be included in the Engineer's verification testing and in the computation of any quality factor and process control.

Determine percent compaction values each day the joint is completed and submit values within 24 hours of testing. If the percent compaction of 1 day's production is less than 91 percent, that day's notched wedge joint is rejected. Discontinue placement of the tapered notched wedge and notify the Engineer of changes you will make to your construction process in order to meet the specifications.

For HMA under QC/QA construction process, quantities of HMA placed in the completed longitudinal joint will have a quality factor  $QF_{QC5}$  of 1.0.

### **39-1.11C Widening Existing Pavement**

If widening existing pavement, construct new pavement structure to match the elevation of the existing pavement's edge before placing HMA over the existing pavement.

### **39-1.11D Shoulders, Medians, and Other Road Connections**

Until the adjoining through lane's top layer has been paved, do not pave the top layer of:

1. Shoulders
2. Tapers
3. Transitions
4. Road connections
5. Driveways
6. Curve widenings
7. Chain control lanes
8. Turnouts
9. Turn pockets

If the number of lanes changes, pave each through lane's top layer before paving a tapering lane's top layer. Simultaneous to paving a through lane's top layer, you may pave an adjoining area's top layer, including shoulders. Do not operate spreading equipment on any area's top layer until completing final compaction.

### **39-1.11E Leveling**

If leveling with HMA is specified, fill and level irregularities and ruts with HMA before spreading HMA over the base, existing surfaces, or bridge decks. You may use mechanical equipment other than a paver for these areas. The equipment must produce uniform smoothness and texture. HMA used to change an existing surface's cross slope or profile is not paid for as HMA (leveling).

If placing HMA against the edge of existing pavement, sawcut or grind the pavement straight and vertical along the joint and remove extraneous material.

### **39-1.11F Compaction**

Rolling must leave the completed surface compacted and smooth without tearing, cracking, or shoving. Complete finish rolling activities before the pavement surface temperature is:

1. Below 150 degrees F for HMA with unmodified binder
  2. Below 140 degrees F for HMA with modified binder
  3. Below 200 degrees F for RHMA-G
-

If a vibratory roller is used as a finish roller, turn the vibrator off.

Do not use a pneumatic-tired roller to compact RHMA-G.

For Standard and QC/QA construction processes, if 3/4-inch aggregate grading is specified, you may use a 1/2-inch aggregate grading if the specified total paved thickness is at least 0.15 foot and less than 0.20 foot thick.

Spread and compact HMA under sections 39-3.03 and 39-3.04 if any of the following applies:

1. Specified paved thickness is less than 0.15 foot.
2. Specified paved thickness is less than 0.20 foot and 3/4-inch aggregate grading is specified and used.
3. You spread and compact at:
  - 3.1. Asphalt concrete surfacing replacement areas
  - 3.2. Leveling courses
  - 3.3. Areas for which the Engineer determines conventional compaction and compaction measurement methods are impeded

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

If you request and if authorized, you may cool HMA Type A and Type B with water when rolling activities are complete. Apply water under section 17-3.

Spread sand at a rate from 1 to 2 lb/sq yd on new RHMA-G, RHMA-O, and RHMA-O-HB pavement when finish rolling is complete. Sand must be free of clay or organic matter. Sand must comply with section 90-1.02C(4)(c). Keep traffic off the pavement until spreading sand is complete.

- **Replace the 5th and 6th paragraphs of section 39-1.12C with:**

07-20-12

On tangents and horizontal curves with a centerline radius of curvature 2,000 feet or more, the  $PI_0$  must be at most 2.5 inches per 0.1-mile section.

On horizontal curves with a centerline radius of curvature between 1,000 feet and 2,000 feet including pavement within the superelevation transitions, the  $PI_0$  must be at most 5 inches per 0.1-mile section.

**Add to section 39-1.12:**

01-20-12

**39-1.12E Reserved**

**Add to section 39-1.14:**

01-20-12

Prepare the area to receive HMA for miscellaneous areas and dikes, including any excavation and backfill as needed.

- **Replace "6.8" in item 3 in the list in the 4th paragraph of section 39-1.14 with:**

04-20-12

6.4

- **Replace "6.0" in item 3 in the list in the 4th paragraph of section 39-1.14 with:**

04-20-12

5.7

- **Replace "6.8" in the 1st paragraph of section 39-1.15B with:**

04-20-12

6.4

- **Replace "6.0" in the 1st paragraph of section 39-1.15B with:**

04-20-12

5.7

- **Replace the 1st paragraph of section 39-2.02B with:**

02-22-13

Perform sampling and testing at the specified frequency for the quality characteristics shown in the following table:

**Minimum Quality Control—Standard Construction Process**

| Quality characteristic   | Test method                | Minimum sampling and testing frequency                          | HMA type                     |                              |                              |                              |
|--|----------------------------|---|------------------------------|------------------------------|------------------------------|------------------------------|
|  |                            |   | A                            | B                            | RHMA-G                       | OGFC                         |
| Aggregate gradation <sup>a</sup>   | California Test 202        | 1 per 750 tons and any remaining part at the end of the project | JMF ± Tolerance <sup>b</sup> |
| Sand equivalent (min) <sup>c</sup>   | California Test 217        |   | 47                           | 42                           | 47                           | --                           |
| Asphalt binder content (%)   | California Test 379 or 382 |   | JMF±0.40                     | JMF±0.40                     | JMF ± 0.40                   | JMF ± 0.40                   |
| HMA moisture content (% max)   | California Test 226 or 370 | 1 per 2,500 tons but not less than 1 per paving day             | 1.0                          | 1.0                          | 1.0                          | 1.0                          |
| Field compaction (% max. theoretical density) <sup>d,e</sup>   | QC plan                    | 2 per business day (min.)                                       | 91–97                        | 91–97                        | 91–97                        | --                           |
| Stabilometer value (min) <sup>c</sup><br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings   | California Test 366        | 1 per 4,000 tons or 2 per 5 business days, whichever is greater | 30                           | 30                           | --                           | --                           |
|  |                            |   | 37                           | 35                           | 23                           | --                           |
| Air void content (%) <sup>c,f</sup>  | California Test 367        |   |                              | 4 ± 2                        | 4 ± 2                        | TV ± 2                       |
| Aggregate moisture content at continuous mixing plants and RAP moisture content at continuous mixing plants and batch mixing plants <sup>g</sup> | California Test 226 or 370 | 2 per day during production                                     | --                           | --                           | --                           | --                           |
| Percent of crushed particles coarse aggregate (% min)<br>One fractured face<br>Two fractured faces   | California Test 205        | As designated in the QC plan. At least once per project         | 90                           | 25                           | --                           | 90                           |
|  |                            |   | 75                           | --                           | 90                           | 75                           |
| Fine aggregate (% min)<br>(Passing no. 4 sieve and retained on no. 8 sieve.)   |                            |   |                              |                              |                              |                              |

|   |                         |  |  |  |                                    |             |
|---|-------------------------|--|--|--|------------------------------------|-------------|
| One fractured face  |                         |  | 70   | 20   | 70                                 | 90          |
| Los Angeles Rattler (% max)<br>Loss at 100 rev.<br>Loss at 500 rev.   | California Test 211     |  | 12<br>45   | --<br>50   | 12<br>40                           | 12<br>40    |
| Flat and elongated particles (% max by weight @ 5:1)  | California Test 235     |  | Report only                                      | Report only                                      | Report only                        | Report only |
| Fine aggregate angularity (% min) <sup>h</sup>  | California Test 234     |  | 45   | 45   | 45                                 | --          |
| Voids filled with asphalt (%) <sup>i</sup><br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading                             | California Test 367     |  | 65.0–75.0<br>65.0–75.0<br>65.0–75.0<br>65.0–75.0 | 65.0–75.0<br>65.0–75.0<br>65.0–75.0<br>65.0–75.0 | Report only                        | --          |
| Voids in mineral aggregate (% min) <sup>i</sup><br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading                        | California Test 367     |  | 17.0<br>15.0<br>14.0<br>13.0                     | 17.0<br>15.0<br>14.0<br>13.0                     | --<br>--<br>18.0–23.0<br>18.0–23.0 | --          |
| Dust proportion <sup>l</sup><br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings   | California Test 367     |  | 0.6-1.2<br>0.6–1.2                               | 0.6-1.2<br>0.6–1.2                               | Report only                        | --          |
| Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) <sup>j</sup><br>PG-58<br>PG-64<br>PG-70<br>PG-76 or higher | AASHTO T 324 (Modified) | 1 per 10,000 tons or 1 per project whichever is more | 10,000<br>15,000<br>20,000<br>25,000             | 10,000<br>15,000<br>20,000<br>25,000             | --                                 | --          |
| Hamburg wheel track (inflection point minimum number of passes) <sup>j</sup>  | AASHTO T 324 (Modified) | 1 per 10,000 tons or 1 per project                   |  |  | --                                 | --          |

|   |                     |   |  |  |  |  |
|---|---------------------|---|--|--|--|--|
| PG-58<br>PG-64<br>PG-70<br>PG-76 or higher                        |                     | whichever is more   | 10,000<br>10,000<br>12,500<br>15000                    | 10,000<br>10,000<br>12,500<br>15000                    |  |  |
| Moisture susceptibility (minimum dry strength, psi) <sup>j</sup>  | California Test 371 | For RAP ≥15%<br>1 per 10,000 tons or 1 per project whichever is greater | 120  | 120  | --   | --   |
| Moisture susceptibility (tensile strength ration, %) <sup>j</sup> | California Test 371 | For RAP ≥15%<br>1 per 10,000 tons or 1 per project whichever is greater | 70   | 70   | --   | --   |
| Smoothness  | Section 39-1.12     | --  | 12-foot straight-edge, must grind, and PI <sub>0</sub> |
| Asphalt rubber binder viscosity @ 375 °F, centipoises             | Section 39-1.02D    | Section 39-1.04C  | --   | --   | 1,500–4,000  | 1,500–4,000  |
| Asphalt modifier  | Section 39-1.02D    | Section 39-1.04C  | --   | --   | Section 39-1.02D                                       | Section 39-1.02D                                       |
| CRM   | Section 39-1.02D    | Section 39-1.04C  | --   | --   | Section 39-1.02D                                       | Section 39-1.02D                                       |

<sup>a</sup> Determine combined aggregate gradation containing RAP under California Test 367.

<sup>b</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.

<sup>c</sup> Report the average of 3 tests from a single split sample.

<sup>d</sup> Determine field compaction for any of the following conditions:

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

<sup>e</sup> To determine field compaction use:

1. In-place density measurements using the method specified in your QC plan.
2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.

<sup>f</sup> Determine the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

<sup>g</sup> For adjusting the plant controller at the HMA plant.

<sup>h</sup> The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

<sup>i</sup> Report only.

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<sup>j</sup> Applies to RAP substitution rate greater than 15 percent.

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

02-22-13

The Department samples for acceptance testing and tests for the quality characteristics shown in the following table:

**HMA Acceptance—Standard Construction Process**

| Quality characteristic  | Test method                | HMA type                     |                              |                              |                              |      |      |
|---|----------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------|------|
|   |                            | A                            | B                            | RHMA-G                       | OGFC                         |      |      |
| <b>Aggregate gradation<sup>a</sup></b>  |                            | JMF ± tolerance <sup>c</sup> |      |      |
| Sieve   | 3/4"                       |                              |                              |                              |                              | 1/2" | 3/8" |
| 1/2"  | X <sup>b</sup>             |                              |                              |                              |                              |      |      |
| 3/8"  |                            |                              |                              |                              |                              | X    |      |
| No. 4   |                            |                              |                              |                              |                              |      | X    |
| No. 8   | X                          |                              |                              |                              |                              | X    | X    |
| No. 200   | X                          | X                            | X                            |                              |                              |      |      |
| Sand equivalent (min) <sup>d</sup>  | California Test 217        | 47                           | 42                           | 47                           | --                           |      |      |
| Asphalt binder content (%)  | California Test 379 or 382 | JMF±0.40                     | JMF±0.40                     | JMF ± 0.40                   | JMF ± 0.40                   |      |      |
| HMA moisture content (% max)  | California Test 226 or 370 | 1.0                          | 1.0                          | 1.0                          | 1.0                          |      |      |
| Field compaction (% max. theoretical density) <sup>e, f</sup>   | California Test 375        | 91–97                        | 91–97                        | 91–97                        | --                           |      |      |
| Stabilometer value (min) <sup>d</sup><br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings  | California Test 366        | 30                           | 30                           | --                           | --                           |      |      |
|   |                            | 37                           | 35                           | 23                           | --                           |      |      |
| Air void content (%) <sup>d, g</sup>  | California Test 367        | 4 ± 2                        | 4 ± 2                        | TV ± 2                       | --                           |      |      |
| Percent of crushed particles<br>Coarse aggregate (% min)<br>One fractured face<br>Two fractured faces<br>Fine aggregate (% min)<br>(Passing no. 4 sieve and retained on no. 8 sieve.)<br>One fractured face | California Test 205        | 90                           | 25                           | --                           | 90                           |      |      |
|   |                            | 75                           | --                           | 90                           | 75                           |      |      |
|   |                            | 70                           | 20                           | 70                           | 90                           |      |      |
|   |                            |                              |                              |                              |                              |      |      |
| Los Angeles Rattler (% max)<br>Loss at 100 rev.<br>Loss at 500 rev.   | California Test 211        | 12                           | --                           | 12                           | 12                           |      |      |
|   |                            | 45                           | 50                           | 40                           | 40                           |      |      |
| Fine aggregate angularity (% min) <sup>h</sup>  | California Test 234        | 45                           | 45                           | 45                           | --                           |      |      |
| Flat and elongated particles (% max by weight @ 5:1)  | California Test 235        | Report only                  | Report only                  | Report only                  | Report only                  |      |      |
| Voids filled with asphalt (%) <sup>i</sup><br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading   | California Test 367        | 65.0–75.0                    | 65.0–75.0                    | Report only                  | --                           |      |      |
|   |                            | 65.0–75.0                    | 65.0–75.0                    |                              |                              |      |      |
|   |                            | 65.0–75.0                    | 65.0–75.0                    |                              |                              |      |      |
|   |                            | 65.0–75.0                    | 65.0–75.0                    |                              |                              |      |      |
| Voids in mineral aggregate  | California                 |                              |                              |                              | --                           |      |      |

|   |                         |  |  |  |  |
|---|-------------------------|--|--|--|--|
| (% min) <sup>i</sup><br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading   | Test 367                | 17.0<br>15.0<br>14.0<br>13.0                           | 17.0<br>15.0<br>14.0<br>13.0                           | --<br>--<br>18.0–23.0<br>18.0–23.0                     |  |
| Dust proportion <sup>i</sup><br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings   | California Test 367     | 0.6-1.2<br>0.6–1.2                                     | 0.6-1.2<br>0.6–1.2                                     | Report only  | --                                       |
| Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) <sup>j</sup><br>PG-58<br>PG-64<br>PG-70<br>PG-76 or higher | AASHTO T 324 (Modified) | 10,000<br>15,000<br>20,000<br>25,000                   | 10,000<br>15,000<br>20,000<br>25,000                   | --<br>--<br>--<br>--                                   | --<br>--<br>--<br>--                     |
| Hamburg wheel track (inflection point minimum number of passes) <sup>j</sup><br>PG-58<br>PG-64<br>PG-70<br>PG-76 or higher              | AASHTO T 324 (Modified) | 10,000<br>10,000<br>12,500<br>15000                    | 10,000<br>10,000<br>12,500<br>15000                    | --<br>--<br>--<br>--                                   | --<br>--<br>--<br>--                     |
| Moisture susceptibility (minimum dry strength, psi) <sup>j</sup>  | California Test 371     | 120  | 120  | --   | --                                       |
| Moisture susceptibility (tensile strength ration, %) <sup>j</sup>   | California Test 371     | 70   | 70   | --   | --                                       |
| Smoothness  | Section 39-1.12         | 12-foot straight-edge, must grind, and PI <sub>0</sub> | 12-foot straight-edge, must grind, and PI <sub>0</sub> | 12-foot straight-edge, must grind, and PI <sub>0</sub> | 12-foot straight-edge and must grind     |
| Asphalt binder  | Various                 | Section 92   | Section 92   | Section 92   | Section 92                               |
| Asphalt rubber binder   | Various                 | --   | --   | Section 92-1.01D(2) and section 39-1.02D               | Section 92-1.01D(2) and section 39-1.02D |
| Asphalt modifier  | Various                 | --   | --   | Section 39-1.02D                                       | Section 39-1.02D                         |
| CRM   | Various                 | --   | --   | Section 39-1.02D                                       | Section 39-1.02D                         |

<sup>a</sup> The Engineer determines combined aggregate gradations containing RAP under California Test 367.

<sup>b</sup> "X" denotes the sieves the Engineer tests for the specified aggregate gradation.

<sup>c</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.

<sup>d</sup> The Engineer reports the average of 3 tests from a single split sample.

<sup>e</sup> The Engineer determines field compaction for any of the following conditions:

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

<sup>f</sup> To determine field compaction, the Engineer uses:

1. California Test 308, Method A, to determine in-place density of each density core.
2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.

<sup>g</sup>The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

<sup>h</sup>The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

<sup>i</sup>Report only.

<sup>j</sup>Applies to RAP substitution rate greater than 15 percent.

**Replace the 5th paragraph of section 39-2.03A with:**

01-20-12

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

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot and any layer is less than 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.2 foot and any layer is less than 0.20 foot.

**Replace the 1st paragraph of section 39-3.02A with:**

02-22-13

The Department samples for acceptance testing and tests for the quality characteristics shown in the following table:

**HMA Acceptance—Method Construction Process**

| Quality characteristic  | Test method                | HMA type                     |                              |                              |                              |
|---|----------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|   |                            | A                            | B                            | RHMA-G                       | OGFC                         |
| Aggregate gradation <sup>a</sup>  | California Test 202        | JMF ± tolerance <sup>b</sup> |
| Sand equivalent (min) <sup>c</sup>  | California Test 217        | 47                           | 42                           | 47                           | --                           |
| Asphalt binder content (%)  | California Test 379 or 382 | JMF±0.40                     | JMF±0.40                     | JMF ± 0.40                   | JMF ± 0.40                   |
| HMA moisture content (% , max)  | California Test 226 or 370 | 1.0                          | 1.0                          | 1.0                          | 1.0                          |
| Stabilometer value (min) <sup>c</sup><br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings  | California Test 366        | 30                           | 30                           | --                           | --                           |
|   |                            | 37                           | 35                           | 23                           | --                           |
| Percent of crushed particles<br>Coarse aggregate (% min)<br>One fractured face<br>Two fractured faces<br>Fine aggregate (% min)<br>(Passing no. 4 sieve and retained on no. 8 sieve.)<br>One fractured face | California Test 205        | 90                           | 25                           | --                           | 90                           |
|   |                            | 75                           | --                           | 90                           | 75                           |
|   |                            | 70                           | 20                           | 70                           | 90                           |
| Los Angeles Rattler (% max)<br>Loss at 100 rev.<br>Loss at 500 rev.   | California Test 211        | 12                           | --                           | 12                           | 12                           |
|   |                            | 45                           | 50                           | 40                           | 40                           |
| Air void content (%) <sup>c, d</sup>  | California Test 367        | 4 ± 2                        | 4 ± 2                        | TV ± 2                       | --                           |
| Fine aggregate angularity (% min) <sup>e</sup>  | California Test 234        | 45                           | 45                           | 45                           | --                           |
| Flat and elongated particles (% max by weight @ 5:1)  | California Test 235        | Report only                  | Report only                  | Report only                  | Report only                  |
| Voids filled with asphalt (%) <sup>f</sup><br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading   | California Test 367        | 65.0–75.0                    | 65.0–75.0                    | Report only                  | --                           |
|   |                            | 65.0–75.0                    | 65.0–75.0                    |                              |                              |
|   |                            | 65.0–75.0                    | 65.0–75.0                    |                              |                              |
|   |                            | 65.0–75.0                    | 65.0–75.0                    |                              |                              |
|   |                            | 65.0–75.0                    | 65.0–75.0                    |                              |                              |
| Voids in mineral aggregate  | California                 |                              |                              |                              | --                           |

|   |                               |  |  |   |   |
|---|-------------------------------|--|--|---|---|
| (% min) <sup>f</sup>  | 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   |   |
| 3/4" grading  |                               | 13.0   | 13.0   | 18.0–23.0   |   |
| Dust proportion <sup>f</sup>  | California<br>Test 367        |  |  |   |   |
| No. 4 and 3/8" gradings   |                               | 0.6–1.2  | 0.6–1.2  | Report only                                       | --  |
| 1/2" and 3/4" gradings  |                               | 0.6–1.2  | 0.6–1.2  |   |   |
| Hamburg wheel track<br>(minimum number of passes at 0.5<br>inch average rut depth) <sup>g</sup> | AASHTO<br>T 324<br>(Modified) |  |  |   |   |
| PG-58   |                               | 10,000   | 10,000   | --  | --  |
| PG-64   |                               | 15,000   | 15,000   |   |   |
| PG-70   |                               | 20,000   | 20,000   |   |   |
| PG-76 or higher   |                               | 25,000   | 25,000   |   |   |
| Hamburg wheel track<br>(inflection point minimum number<br>of passes) <sup>g</sup>              | AASHTO<br>T 324<br>(Modified) |  |  |   |   |
| PG-58   |                               | 10,000   | 10,000   | --  | --  |
| PG-64   |                               | 10,000   | 10,000   |   |   |
| PG-70   |                               | 12,500   | 12,500   |   |   |
| PG-76 or higher   |                               | 15000  | 15000  |   |   |
| Moisture susceptibility<br>(minimum dry strength, psi) <sup>g</sup>                             | California<br>Test 371        | 120  | 120  | --  | --  |
| Moisture susceptibility<br>(tensile strength ration, %) <sup>g</sup>                            | California<br>Test 371        | 70   | 70   | --  | --  |
| Smoothness  | Section 39-<br>1.12           | 12-foot<br>straight-<br>edge and<br>must-grind | 12-foot<br>straight-<br>edge and<br>must-grind | 12-foot<br>straight-<br>edge and<br>must-grind    | 12-foot<br>straight-<br>edge and<br>must-grind    |
| Asphalt binder  | Various                       | Section 92                                     | Section 92                                     | Section 92  | Section 92  |
| Asphalt rubber binder   | Various                       | --   | --   | Section<br>92-1.01D(2)<br>and section<br>39-1.02D | Section<br>92-1.01D(2)<br>and section<br>39-1.02D |
| Asphalt modifier  | Various                       | --   | --   | Section<br>39-1.02D                               | Section<br>39-1.02D                               |
| CRM   | Various                       | --   | --   | Section<br>39-1.02D                               | Section<br>39-1.02D                               |

<sup>a</sup> The Engineer determines combined aggregate gradations containing RAP under California Test 367.

<sup>b</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.

<sup>c</sup> The Engineer reports the average of 3 tests from a single split sample.

<sup>d</sup> The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

<sup>e</sup> The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by

weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

<sup>f</sup> Report only.

<sup>g</sup> Applies to RAP substitution rate greater than 15 percent.

**Replace the 5th paragraph of section 39-2.03A with:**

01-20-12

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

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot and any layer is less than 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.2 foot and any layer is less than 0.20 foot.

**Replace the 1st paragraph of section 39-3.02A with:**

02-22-13

The Department samples for acceptance testing and tests for the quality characteristics shown in the following table:

**HMA Acceptance—Method Construction Process**

| Quality characteristic  | Test method                | HMA type                     |                              |                              |                              |
|---|----------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|   |                            | A                            | B                            | RHMA-G                       | OGFC                         |
| Aggregate gradation <sup>a</sup>  | California Test 202        | JMF ± tolerance <sup>b</sup> |
| Sand equivalent (min) <sup>c</sup>  | California Test 217        | 47                           | 42                           | 47                           | --                           |
| Asphalt binder content (%)  | California Test 379 or 382 | JMF±0.40                     | JMF±0.40                     | JMF ± 0.40                   | JMF ± 0.40                   |
| HMA moisture content (% max)  | California Test 226 or 370 | 1.0                          | 1.0                          | 1.0                          | 1.0                          |
| Stabilometer value (min) <sup>c</sup><br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings                  | California Test 366        | 30                           | 30                           | --                           | --                           |
|   |                            | 37                           | 35                           | 23                           | --                           |
| Percent of crushed particles<br>Coarse aggregate (% min)<br>One fractured face<br>Two fractured faces       | California Test 205        | 90                           | 25                           | --                           | 90                           |
|   |                            | 75                           | --                           | 90                           | 75                           |
| Fine aggregate (% min)<br>(Passing no. 4 sieve and retained on no. 8 sieve.)<br>One fractured face          | California Test 205        | 70                           | 20                           | 70                           | 90                           |
|   |                            |                              |                              |                              |                              |
| Los Angeles Rattler (% max)<br>Loss at 100 rev.<br>Loss at 500 rev.   | California Test 211        | 12                           | --                           | 12                           | 12                           |
|   |                            | 45                           | 50                           | 40                           | 40                           |
| Air void content (%) <sup>c, d</sup>  | California Test 367        | 4 ± 2                        | 4 ± 2                        | TV ± 2                       | --                           |
| Fine aggregate angularity (% min) <sup>e</sup>  | California Test 234        | 45                           | 45                           | 45                           | --                           |
| Flat and elongated particles (% max by weight @ 5:1)  | California Test 235        | Report only                  | Report only                  | Report only                  | Report only                  |
| Voids filled with asphalt (%) <sup>f</sup><br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading | California Test 367        | 65.0–75.0                    | 65.0–75.0                    | Report only                  | --                           |
|   |                            | 65.0–75.0                    | 65.0–75.0                    |                              |                              |
|   |                            | 65.0–75.0                    | 65.0–75.0                    |                              |                              |
|   |                            | 65.0–75.0                    | 65.0–75.0                    |                              |                              |
| Voids in mineral aggregate (% min) <sup>f</sup>   | 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   |   |
| 3/4" grading  |                               | 13.0   | 13.0   | 18.0–23.0   |   |
| Dust proportion <sup>f</sup>  | California                    |  |  |   |   |
| No. 4 and 3/8" gradings   | Test 367                      | 0.6–1.2  | 0.6–1.2  | Report only                                       | --  |
| 1/2" and 3/4" gradings  |                               | 0.6–1.2  | 0.6–1.2  |   |   |
| Hamburg wheel track<br>(minimum number of passes at 0.5<br>inch average rut depth) <sup>g</sup> | AASHTO<br>T 324<br>(Modified) |  |  |   |   |
| PG-58   |                               | 10,000   | 10,000   | --  | --  |
| PG-64   |                               | 15,000   | 15,000   |   |   |
| PG-70   |                               | 20,000   | 20,000   |   |   |
| PG-76 or higher   |                               | 25,000   | 25,000   |   |   |
| Hamburg wheel track<br>(inflection point minimum number<br>of passes) <sup>g</sup>              | AASHTO<br>T 324<br>(Modified) |  |  |   |   |
| PG-58   |                               | 10,000   | 10,000   | --  | --  |
| PG-64   |                               | 10,000   | 10,000   |   |   |
| PG-70   |                               | 12,500   | 12,500   |   |   |
| PG-76 or higher   |                               | 15000  | 15000  |   |   |
| Moisture susceptibility<br>(minimum dry strength, psi) <sup>g</sup>                             | California<br>Test 371        | 120  | 120  | --  | --  |
| Moisture susceptibility<br>(tensile strength ratio, %) <sup>g</sup>                             | California<br>Test 371        | 70   | 70   | --  | --  |
| Smoothness  | Section 39-<br>1.12           | 12-foot<br>straight-<br>edge and<br>must-grind | 12-foot<br>straight-<br>edge and<br>must-grind | 12-foot<br>straight-<br>edge and<br>must-grind    | 12-foot<br>straight-<br>edge and<br>must-grind    |
| Asphalt binder  | Various                       | Section 92                                     | Section 92                                     | Section 92  | Section 92  |
| Asphalt rubber binder   | Various                       | --   | --   | Section<br>92-1.01D(2)<br>and section<br>39-1.02D | Section<br>92-1.01D(2)<br>and section<br>39-1.02D |
| Asphalt modifier  | Various                       | --   | --   | Section<br>39-1.02D                               | Section<br>39-1.02D                               |
| CRM   | Various                       | --   | --   | Section<br>39-1.02D                               | Section<br>39-1.02D                               |

<sup>a</sup> The Engineer determines combined aggregate gradations containing RAP under California Test 367.

<sup>b</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.

<sup>c</sup> The Engineer reports the average of 3 tests from a single split sample.

<sup>d</sup> The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

<sup>e</sup> The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

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<sup>f</sup> Report only.

<sup>g</sup> Applies to RAP substitution rate greater than 15 percent.

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

285 degrees F

01-20-12

**Replace "5,000" in the 5th paragraph of section 39-4.02C with:**

10,000

02-22-13

**Replace the 7th paragraph of section 39-4.02C with:**

Except for RAP substitution rate of greater than 15 percent, the Department does not use results from California Test 371 to determine specification compliance.

02-22-13

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

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

02-22-13

**Minimum Quality Control—QC/QA Construction Process**

| Quality characteristic   | Test method                | Minimum sampling and testing frequency              | HMA Type                     |                              |                              | Location of sampling                              | Maximum reporting time allowance |
|--|----------------------------|---|------------------------------|------------------------------|------------------------------|---|----------------------------------|
|  |                            |   | A                            | B                            | RHMA-G                       |   |                                  |
| Aggregate gradation <sup>a</sup>   | California Test 202        | 1 per 750 tons                                      | JMF ± tolerance <sup>b</sup> | JMF ± tolerance <sup>b</sup> | JMF ± tolerance <sup>b</sup> | California Test 125                               | 24 hours                         |
| Asphalt binder content (%)   | California Test 379 or 382 |   | JMF±0.40                     | JMF±0.40                     | JMF ±0.40                    | Loose mix behind paver<br>See California Test 125 |                                  |
| Field compaction (% max. theoretical density) <sup>c,d</sup>   | QC plan                    |   | 92–96                        | 92–96                        | 91–96                        | QC plan   |                                  |
| Aggregate moisture content at continuous mixing plants and RAP moisture content at continuous mixing plants and batch mixing plants <sup>e</sup> | California Test 226 or 370 | 2 per day during production                         | --                           | --                           | --                           | Stock-piles or cold feed belts                    | --                               |
| Sand equivalent (min) <sup>f</sup>   | California Test 217        | 1 per 750 tons                                      | 47                           | 42                           | 47                           | California Test 125                               | 24 hours                         |
| HMA moisture content (%.max)   | California Test 226 or 370 | 1 per 2,500 tons but not less than 1 per paving day | 1.0                          | 1.0                          | 1.0                          | Loose Mix Behind Paver<br>See                     | 24 hours                         |

|   |                     |   |       |       |        |                     |          |
|---|---------------------|---|-------|-------|--------|---------------------|----------|
| Stabilometer value (min) <sup>f</sup>                                     | California Test 366 | 1 per 4,000 tons or 2 per 5 business days, whichever is greater |       |       |        | California Test 125 | 48 hours |
| No. 4 and 3/8" gradings   |                     |   | 30    | 30    | --     |                     |          |
| 1/2" and 3/4" gradings  |                     |   | 37    | 35    | 23     |                     |          |
| Air void content (%) <sup>f,g</sup>                                       | California Test 367 |   | 4 ± 2 | 4 ± 2 | TV ± 2 |                     |          |
| Percent of crushed particles coarse aggregate (% min.):                   | California Test 205 | As designated in QC plan.<br><br>At least once per project.     |       |       |        | California Test 125 | 48 hours |
| One fractured face  |                     |   | 90    | 25    | --     |                     |          |
| Two fractured faces   |                     |   | 75    | --    | 90     |                     |          |
| Fine aggregate (% min) (Passing no. 4 sieve and retained on no. 8 sieve): |                     |   |       |       |        |                     |          |
| One fractured face  |                     |   | 70    | 20    | 70     |                     |          |
| Los Angeles Rattler (% max):  | California Test 211 |   |       |       |        | California Test 125 |          |
| Loss at 100 rev.  |                     | 12  | --    | 12    |        |                     |          |
| Loss at 500 rev.  |                     |   | 45    | 50    | 40     |                     |          |
| Fine aggregate angularity (% min) <sup>h</sup>                            | California Test 234 |   | 45    | 45    | 45     | California Test 125 |          |

|   |                         |   |  |  |                                    |                     |  |
|---|-------------------------|---|--|--|------------------------------------|---------------------|--|
| Flat and elongated particle (% max by weight @ 5:1)   | California Test 235     |   | Report only                                      | Report only                                      | Report only                        | California Test 125 |  |
| Voids filled with asphalt (%) <sup>i</sup><br><br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading                         | California Test 367     |   | 65.0–75.0<br>65.0–75.0<br>65.0–75.0<br>65.0–75.0 | 65.0–75.0<br>65.0–75.0<br>65.0–75.0<br>65.0–75.0 | Report only                        |                     |  |
| Voids in mineral aggregate (% min.) <sup>i</sup><br><br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading                   | California Test 367     |   | 17.0<br>15.0<br>14.0<br>13.0                     | 17.0<br>15.0<br>14.0<br>13.0                     | --<br>--<br>18.0–23.0<br>18.0–23.0 |                     |  |
| Dust proportion <sup>i</sup><br><br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings   | California Test 367     |   | 0.6–1.2<br>0.6–1.2                               | 0.6–1.2<br>0.6–1.2                               | Report only                        |                     |  |
| Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) <sup>i</sup><br>PG-58<br>PG-64<br>PG-70<br>PG-76 or higher | AASHTO T 324 (Modified) | 1 per 10,000 tons or 1 per project whichever is greater | 10,000<br>15,000<br>20,000<br>25,000             | 10,000<br>15,000<br>20,000<br>25,000             | --                                 | --                  |  |

|  |                         |   |  |  |  |                  |          |
|--|-------------------------|---|--|--|--|------------------|----------|
| Hamburg wheel track (inflection point minimum number of passes) <sup>j</sup><br>PG-58<br>PG-64<br>PG-70<br>PG-76 or higher | AASHTO T 324 (Modified) | 1 per 10,000 tons or 1 per project whichever is greater | 10,000<br>10,000<br>12,500<br>15000                    | 10,000<br>10,000<br>12,500<br>15000                    | --   | --               |          |
| Moisture susceptibility (minimum dry strength, psi) <sup>j</sup>   | California Test 371     | 1 per 10,000 tons or 1 per project whichever is greater | 120  | 120  | --   | --               |          |
| Moisture susceptibility (tensile strength ratio, %) <sup>j</sup>   | California Test 371     | 1 per 10,000 tons or 1 per project whichever is greater | 70   | 70   | 70   | --               |          |
| Smoothness   | Section 39-1.12         | --  | 12-foot straight-edge, must-grind, and PI <sub>0</sub> | 12-foot straight-edge, must-grind, and PI <sub>0</sub> | 12-foot straight-edge, must-grind, and PI <sub>0</sub> | --               |          |
| Asphalt rubber binder viscosity @ 375 °F, centipoises  | Section 39-1.02D        | --  | --   | --   | 1,500–4,000  | Section 39-1.02D | 24 hours |
| CRM  | Section 39-1.02D        | --  | --   | --   | Section 39-1.02D                                       | Section 39-1.02D | 48 hours |

- <sup>a</sup> Determine combined aggregate gradation containing RAP under California Test 367.
- <sup>b</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.
- <sup>c</sup> Determines field compaction for any of the following conditions:
  - 1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot.
  - 2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.
- <sup>d</sup> To determine field compaction use:
  - 1. In-place density measurements using the method specified in your QC plan.
  - 2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.
- <sup>e</sup> For adjusting the plant controller at the HMA plant.
- <sup>f</sup> Report the average of 3 tests from a single split sample.
- <sup>g</sup> Determine the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.
- <sup>h</sup> The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.
- <sup>i</sup> Report only.
- <sup>j</sup> Applies to RAP substitution rate greater than 15 percent.

**Replace the 1st sentence in the 1st paragraph of section 39-4.03B(2) with:**

01-20-12

For aggregate gradation and asphalt binder content, the minimum ratio of verification testing frequency to quality control testing frequency is 1:5.

**Replace the 2nd "and" in the 7th paragraph of section 39-4.03B(2) with:**

01-20-12

or

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

02-22-13

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

**HMA Acceptance—QC/QA Construction Process**

| Index (i) | Quality characteristic   |                                  |      |      | Weighting factor (w) | Test method                | HMA type                     |                |                |
|-----------|--|----------------------------------|------|------|----------------------|----------------------------|------------------------------|----------------|----------------|
|           |  |                                  |      |      |                      |                            | A                            | B              | RHMA-G         |
|           |  | Aggregate gradation <sup>a</sup> |      |      |                      | California Test 202        | JMF ± Tolerance <sup>c</sup> |                |                |
|           | Sieve  | 3/4"                             | 1/2" | 3/8" |                      |                            |                              |                |                |
| 1         | 1/2"   | X <sup>b</sup>                   | --   | --   | 0.05                 |                            |                              |                |                |
| 1         | 3/8"   | --                               | X    | --   | 0.05                 |                            |                              |                |                |
| 1         | No. 4  | --                               | --   | X    | 0.05                 |                            |                              |                |                |
| 2         | No. 8  | X                                | X    | X    | 0.10                 |                            |                              |                |                |
| 3         | No. 200  | X                                | X    | X    | 0.15                 |                            |                              |                |                |
| 4         | Asphalt binder content (%)   |                                  |      |      | 0.30                 | California Test 379 or 382 | JMF±0.40                     | JMF±0.40       | JMF ± 0.40     |
| 5         | Field compaction (% max. theoretical density) <sup>d, e</sup>  |                                  |      |      | 0.40                 | California Test 375        | 92–96                        | 92–96          | 91–96          |
|           | Sand equivalent (min) <sup>f</sup>   |                                  |      |      |                      | California Test 217        | 47                           | 42             | 47             |
|           | Stabilometer value (min) <sup>f</sup><br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings   |                                  |      |      |                      | California Test 366        | 30<br>37                     | 30<br>35       | --<br>23       |
|           | Air void content (%) <sup>f, g</sup>   |                                  |      |      |                      | California Test 367        | 4 ± 2                        | 4 ± 2          | TV ± 2         |
|           | Percent of crushed particles coarse aggregate (% min)<br>One fractured face<br>Two fractured faces<br>Fine aggregate (% min)<br>(Passing no. 4 sieve and retained on No. 8 sieve.)<br>One fractured face |                                  |      |      |                      | California Test 205        | 90<br>75<br>70               | 25<br>--<br>20 | --<br>90<br>70 |
|           | HMA moisture content (% , max)   |                                  |      |      |                      | California Test 226 or 370 | 1.0                          | 1.0            | 1.0            |

|  |   |  |                               |  |  |                                    |
|--|---|--|-------------------------------|--|--|------------------------------------|
|  | Los Angeles Rattler (% max)<br>Loss at 100 rev.<br>Loss at 500 rev.   |  | California<br>Test 211        | 12<br>45   | --<br>50   | 12<br>40                           |
|  | Fine aggregate angularity<br>(% min) <sup>h</sup>   |  | California<br>Test 234        | 45   | 45   | 45                                 |
|  | Flat and elongated particle<br>(% max by weight @ 5:1)  |  | California<br>Test 235        | Report only                                      | Report only                                      | Report only                        |
|  | Voids in mineral aggregate<br>(% min) <sup>i</sup><br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading                             |  | California<br>Test 367        | 17.0<br>15.0<br>14.0<br>13.0                     | 17.0<br>15.0<br>14.0<br>13.0                     | --<br>--<br>18.0–23.0<br>18.0–23.0 |
|  | Voids filled with asphalt (%) <sup>1</sup><br>No. 4 grading<br>3/8" grading<br>1/2" grading<br>3/4" grading                                     |  | California<br>Test 367        | 65.0–75.0<br>65.0–75.0<br>65.0–75.0<br>65.0–75.0 | 65.0–75.0<br>65.0–75.0<br>65.0–75.0<br>65.0–75.0 | Report only                        |
|  | Dust proportion <sup>i</sup><br>No. 4 and 3/8" gradings<br>1/2" and 3/4" gradings   |  | California<br>Test 367        | 0.6–1.2<br>0.6–1.2                               | 0.6–1.2<br>0.6–1.2                               | Report only                        |
|  | Hamburg Wheel Tracker<br>(minimum number of passes at<br>0.5 inch average rut depth) <sup>j</sup><br>PG-58<br>PG-64<br>PG-70<br>PG-76 or higher |  | AASHTO<br>T 324<br>(Modified) | 10,000<br>15,000<br>20,000<br>25,000             | 10,000<br>15,000<br>20,000<br>25,000             | --                                 |
|  | Hamburg Wheel Tracker<br>(inflection point minimum<br>number of passes) <sup>j</sup><br>PG-58<br>PG-64<br>PG-70<br>PG-76 or higher              |  | AASHTO<br>T 324<br>(Modified) | 10,000<br>15,000<br>20,000<br>25,000             | 10,000<br>15,000<br>20,000<br>25,000             | --                                 |
|  | Moisture susceptibility<br>(minimum dry strength, psi) <sup>j</sup>   |  | California<br>Test 371        | 120  | 120  | --                                 |
|  | Moisture susceptibility<br>(tensile strength ratio %) <sup>j</sup>  |  | California<br>Test 371        | 70   | 70   | 70                                 |

|  |                       |  |                 |  |  |  |
|--|-----------------------|--|-----------------|--|--|--|
|  | Smoothness            |  | Section 39-1.12 | 12-foot straight-edge, must grind, and PI <sub>0</sub> | 12-foot straight-edge, must grind, and PI <sub>0</sub> | 12-foot straight-edge, must grind, and PI <sub>0</sub> |
|  | Asphalt binder        |  | Various         | Section 92   | Section 92   | Section 92   |
|  | Asphalt rubber binder |  | Various         | --   | --   | Section 92-1.01D(2) and section 39-1.02D               |
|  | Asphalt modifier      |  | Various         | --   | --   | Section 39-1.02D                                       |
|  | CRM                   |  | Various         | --   | --   | Section 39-1.02D                                       |

- <sup>a</sup> The Engineer determines combined aggregate gradations containing RAP under California Test 367.
- <sup>b</sup> "X" denotes the sieves the Engineer tests for the specified aggregate gradation.
- <sup>c</sup> The tolerances must comply with the allowable tolerances in section 39-1.02E.
- <sup>d</sup> The Engineer determines field compaction for any of the following conditions:
  1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot and less than 0.20 foot.
  2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.
- <sup>e</sup> To determine field compaction, the Engineer uses:
  1. California Test 308, Method A, to determine in-place density of each density core.
  2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.
- <sup>f</sup> The Engineer reports the average of 3 tests from a single split sample.
- <sup>g</sup> The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.
- <sup>h</sup> The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.
- <sup>i</sup> Report only.
- <sup>j</sup> Applies to RAP substitution rate greater than 15 percent.

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

01-20-12

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

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

^^

**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 the 4th item of the list in the 2nd paragraph in section 40-1.01D(13)(c)(2).**

01-20-12

**Replace the 1st and 2nd items 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 the 2nd item in the 2nd paragraph of section 40-1.01D(13)(g):**

01-20-12

2. One test for every 4,000 square yards of concrete pavement with tie bars or remaining fraction of that area. Each tie bar test consists of 2 cores with 1 on each tie-bar-end to expose both ends and allow measurement.

**Replace section 40-1.01D(13)(h) with:**

01-20-12

40-1.01D(13)(h) Bar Reinforcement

Bar reinforcement is accepted based on inspection before concrete placement.

**Replace the paragraph in section 40-1.02B(2) with:**

01-20-12

PCC for concrete pavement must comply with section 90-1 except as otherwise specified.

**Replace the paragraphs in section 40-1.02D with:**

01-20-12

Bar reinforcement must be deformed bars.

If the project is not shown to be in high desert or any mountain climate region, bar reinforcement must comply with section 52.

If the project is shown to be in high desert or any mountain climate regions, bar reinforcement must be one of the following:

1. Epoxy-coated bar reinforcement under section 52-2.03B except bars must comply with either ASTM A 706/A 706M; ASTM A 996/A 996M; or ASTM A 615/A 615M, Grade 40 or 60. Bars must be handled under ASTM D 3963/D 3963M and section 52-2.02C.
2. Low carbon, chromium steel bar complying with ASTM A 1035/A 1035M

---

**Replace the paragraphs in section 40-1.02E with:**

01-20-12

Tie bars must be deformed bars.

If the project is not shown to be in high desert or any mountain climate region, tie bars must be one of the following:

1. Epoxy-coated bar reinforcement. Bars must comply with either section 52-2.02B or 52-2.03B except bars must comply with either ASTM A 706/A 706M; ASTM A 996/A 996M; or ASTM A 615/A 615M, Grade 40 or 60.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.
3. Low carbon, chromium-steel bars under ASTM A 1035/A 1035M.

If the project is shown to be in high desert or any mountain climate region, tie bars must be one of the following:

1. Epoxy-coated bar reinforcement. Bars must comply with section 52-2.03B except bars must comply with either ASTM A 706/A 706M; ASTM A 996/A 996M; or ASTM A 615/A 615M, Grade 40 or 60.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.

Fabricate, sample, and handle epoxy-coated tie bars under ASTM D 3963/D 3963M, section 52-2.02C, or section 52-2.03C.

Do not bend tie bars.

**Replace the 1st, 2nd, and 3rd paragraphs in section 40-1.02F with:**

01-20-12

Dowel bars must be plain bars. Fabricate, sample, and handle epoxy-coated dowel bars under ASTM D 3963/D 3963M and section 52-2.03C except each sample must be 18 inches long.

If the project is not shown to be in high desert or any mountain climate region, dowel bars must be one of the following:

1. Epoxy-coated bars. Bars must comply with ASTM A 615/A 615M, Grade 40 or 60. Epoxy coating must comply with either section 52-2.02B or 52-2.03B.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.
3. Low carbon, chromium-steel bars under ASTM A 1035/A 1035M.

---

If the project is shown to be in high desert or any mountain climate region, dowel bars must be one of the following:

1. Epoxy-coated bars. Bars must comply with ASTM A 615/A 615M, Grade 40 or 60. Epoxy coating must comply with section 52-2.03B.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.

**Replace the paragraphs in section 40-1.02G with:**

01-20-12

For dowel and tie bar baskets, wire must comply with ASTM A 82/A 82M and be welded under ASTM A 185/A 185M, Section 7.4. The minimum wire-size no. is W10. Use either U-frame or A-frame shaped assemblies.

If the project is not shown to be in high desert or any mountain climate region. Baskets may be epoxy-coated, and the epoxy coating must comply with either section 52-2.02B or 52-2.03B.

If the project is shown to be in high desert or any mountain climate region, wire for dowel bar and tie bar baskets must be one of the following:

1. Epoxy-coated wire complying with section 52-2.03B
2. Stainless-steel wire. Wire must be descaled, pickled, and polished solid stainless-steel. Wire must comply with (1) the chemical requirements in ASTM A 276/A 276M, UNS Designation S31603 or S31803 and (2) the tension requirements in ASTM A 1022/ A 1022M.

Handle epoxy-coated tie bar and dowel bar baskets under ASTM D 3963/D 3963M and either section 52-2.02B or 52-2.03B.

Fasteners must be driven fasteners under ASTM F 1667. Fasteners on lean concrete base or HMA must have a minimum shank diameter of 3/16 inch and a minimum shank length of 2-1/2 inches. For asphalt treated permeable base or cement treated permeable base, the shank diameter must be at least 3/16 inch and the shank length must be at least 5 inches.

Fasteners, clips, and washers must have a minimum 0.2-mil thick zinc coating applied by either electroplating or galvanizing.

**Replace the 1st paragraph in section 40-1.02H with:**

01-20-12

---

Chemical adhesive for drilling and bonding dowels and tie bars must be on the Authorized Material List. The Authorized Material List indicates the appropriate chemical adhesive system for the concrete temperature and installation conditions.

**Replace section 40-1.02I(2) with:**

01-20-12

**40-1.02I(2) Silicone Joint Sealant**

Silicone joint sealant must be on the Authorized Material List.

**Replace the last sentence in section 40-1.02I(4) with:**

01-20-12

Show evidence that the seals are compressed from 30 to 50 percent for the joint width at time of installation.

**Replace the paragraph in section 40-1.02L with:**

01-20-12

Water for core drilling may be obtained from a potable water source, or submit proof that it does not contain:

1. More than 1,000 parts per million of chlorides as Cl
2. More than 1,300 parts per million of sulfates as SO<sub>4</sub>
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<br>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 2nd paragraph in section 40-1.03I with:**

01-20-12

4. Use tie bar baskets. Anchor baskets at least 200 feet in advance of pavement placement activity. If you request a waiver, describe the construction limitations or restricted access preventing the advanced anchoring. After the baskets are anchored and before paving, demonstrate the tie bars do not move from their specified depth and alignment during paving. Use fasteners to anchor tie bar baskets.

**Replace "The maximum distance below the depth shown must be 0.05 foot." in the table in section 40-1.03J with:**

01-20-12

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

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

01-20-12

**40-1.03L Finishing****40-1.03L(1) General**

Reserved

**40-1.03L(2) Preliminary Finishing**40-1.03L(2)(a) General

Preliminary finishing must produce a smooth and true-to-grade finish. After preliminary finishing, mark each day's paving with a stamp. The stamp must be authorized before paving starts. The stamp must be approximately 1 by 2 feet in size. The stamp must form a uniform mark from 1/8 to 1/4 inch deep. Locate the mark  $20 \pm 5$  feet from the transverse construction joint formed at each day's start of paving and  $1 \pm 0.25$  foot from the pavement's outside edge. The stamp mark must show the month, day, and year of placement and the station of the transverse construction joint. Orient the stamp mark so it can be read from the pavement's outside edge.

Do not apply more water to the pavement surface than can evaporate before float finishing and texturing are completed.

40-1.03L(2)(b) Stationary Side Form Finishing

If stationary side form construction is used, give the pavement a preliminary finish by the machine float method or the hand method.

If using the machine float method:

1. Use self-propelled machine floats.
2. Determine the number of machine floats required to perform the work at a rate equal to the pavement delivery rate. If the time from paving to machine float finishing exceeds 30 minutes, stop pavement delivery. When machine floats are in proper position, you may resume pavement delivery and paving.
3. Run machine floats on side forms or adjacent pavement lanes. If running on adjacent pavement, protect the adjacent pavement surface under section 40-1.03P. Floats must be hardwood, steel, or steel-shod wood. Floats must be equipped with devices that adjust the underside to a true flat surface.

If using the hand method, finish pavement smooth and true to grade with manually operated floats or powered finishing machines.

#### 40-1.03L(2)(c) Slip-Form Finishing

If slip-form construction is used, the slip-form paver must give the pavement a preliminary finish. You may supplement the slip-form paver with machine floats.

Before the pavement hardens, correct pavement edge slump in excess of 0.02 foot exclusive of edge rounding.

#### **40-1.03L(3) Final Finishing**

After completing preliminary finishing, round the edges of the initial paving widths to a 0.04-foot radius. Round transverse and longitudinal construction joints to a 0.02-foot radius.

Before curing, texture the pavement. Perform initial texturing with a burlap drag or broom device that produces striations parallel to the centerline. Perform final texturing with a steel-tined device that produces grooves parallel with the centerline.

Construct longitudinal grooves with a self-propelled machine designed specifically for grooving and texturing pavement. The machine must have tracks to maintain constant speed, provide traction, and maintain accurate tracking along the pavement surface. The machine must have a single row of rectangular spring steel tines. The tines must be from 3/32 to 1/8 inch wide, on 3/4-inch centers, and must have enough length, thickness, and resilience to form grooves approximately 3/16 inch deep. The machine must have horizontal and vertical controls. The machine must apply constant down pressure on the pavement surface during texturing. The machines must not cause ravel.

Construct grooves over the entire pavement width in a single pass except do not construct grooves 3 inches from the pavement edges and longitudinal joints. Final texture must be uniform and smooth. Use a guide to properly align the grooves. Grooves must be parallel and aligned to the pavement edge across the pavement width. Grooves must be from 1/8 to 3/16 inch deep after the pavement has hardened.

For irregular areas and areas inaccessible to the grooving machine, you may hand-construct grooves under section 40-1.03L(2) using the hand method. Hand-constructed grooves must comply with the specifications for machine-constructed grooves.

---

Initial and final texturing must produce a coefficient of friction of at least 0.30 when tested under California Test 342. Notify the Engineer when the pavement is scheduled to be opened to traffic to allow at least 25 days for the Department to schedule testing for coefficient of friction. Notify the Engineer when the pavement is ready for testing which is the latter of:

1. Seven days after paving
2. When the pavement has attained a modulus of rupture of 550 psi

The Department tests for coefficient of friction within 7 days of receiving notification that the pavement is ready for testing.

Do not open the pavement to traffic unless the coefficient of friction is at least 0.30.

#### **40-1.03M Reserved**

#### **Replace the 4th paragraph of 40-1.03P with:**

01-20-12

Construct crossings for traffic convenience. If authorized, you may use RSC for crossings. Do not open crossings until the Department determines that the pavement's modulus of rupture is at least 550 psi under California Test 523 or California Test 524.

#### **Replace the 1st paragraph of section 40-6.01A with:**

01-20-12

Section 40-6 includes specifications for applying a high molecular weight methacrylate resin system to pavement surface cracks that do not extend the full slab depth.

#### **Replace the 4th paragraph of section 40-6.01C(2) with:**

01-20-12

If the project is in an urban area adjacent to a school or residence, the public safety plan must also include an airborne emissions monitoring plan prepared by a CIH certified in comprehensive practice by the American Board of Industrial Hygiene. Submit a copy of the CIH's certification. The CIH must monitor the emissions at a minimum of 4 points including the mixing point, the application point, and the point of nearest public contact. At work completion, submit a report by the industrial hygienist with results of the airborne emissions monitoring plan.

01-20-12

#### **Delete the 1st sentence of the 2nd paragraph in section 40-6.02B.**

#### **Replace the 4th item in the last paragraph in section 40-6.03A with:**

---

4. Coefficient of friction is at least 0.30 under California Test 342 01-20-12

**Replace the paragraph in section 40-6.04 with:**

Not Used 01-20-12

**Add to section 40:**

**40-7–40-15 RESERVED**

01-20-12

^^

**41 CONCRETE PAVEMENT REPAIR**

10-19-12

**Replace "41-1.02" in the 1st paragraph of section 41-3.02 with:**

41-2.02 10-19-12

**Add to section 41-4.03:**

**41-4.03J–41-4.03M Reserved**

10-19-12

**Replace "41-8" in the 3rd paragraph of section 41-7.03 with:**

41-9 except 10-19-12







04-19-13

**Replace "previously welded splice" and its definition in section 48-2.01B with:**

04-19-13

**previously welded splice:** Splice made in a falsework member in compliance with AWS D1.1 or other recognized welding standard before contract award.

04-19-13

**Delete "field" in the 1st sentence of the 5th paragraph of section 48-2.01C(1).****Replace item 1 in the list in the 6th paragraph of section 48-2.01C(1) with:**

04-19-13

1. Itemize the testing, inspection methods, and acceptance criteria used

**Replace the 7th paragraph of section 48-2.01C(2) with:**

09-16-11

If you submit multiple submittals at the same time or additional submittals before review of a previous submittal is complete:

1. You must designate a review sequence for submittals
2. Review time for any submittal is the review time specified plus 15 days for each submittal of higher priority still under review

**Replace the 1st paragraph of section 48-2.01D(2) with:**

04-19-13

Welding must comply with AWS D1.1 or other recognized welding standard, except for fillet welds where the load demands are 1,000 lb or less per inch for each 1/8 inch of fillet weld.

**Replace the 1st through 3rd sentences in the 2nd paragraph of section 48-2.01D(2) with:**

04-19-13

Perform NDT on welded splices using UT or RT. Each weld and any repair made to a previously welded splice must be tested.

**Replace the 3rd paragraph of section 48-2.01D(2) with:**

04-19-13

For previously welded splices, perform and document all necessary testing and inspection required to certify the ability of the falsework members to sustain the design stresses.

^^

**49 PILING**

04-19-13

**Replace "sets" in the 1st paragraph of section 49-1.01C(2) with:**

copies

04-19-13

**Replace "set" in the 2nd paragraph of section 49-1.01C(2) with:**

copy

04-19-13

**Replace "Load Applied to Pile by Hydraulic Jack(s) Acting at One End of Test Beam(s) Anchored to the Pile" in the 5th paragraph of section 49-1.01D(2) with:**

"Tensile Load Applied by Hydraulic Jack(s) Acting Upward at One End of Test Beam(s)"

07-20-12

**Add to section 49-1.03:**

Dispose of drill cuttings under section 19-2.03B.

04-20-12

**Replace the 2nd paragraph of section 49-2.01D with:**

Furnish piling is measured along the longest side of the pile from the specified tip elevation shown to the plane of pile cutoff.

01-20-12

**Replace "sets" in the 1st paragraph of section 49-2.04A(3) with:**

copies

04-19-13

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**Replace the 3rd and 4th paragraphs of section 49-2.04B(2) with:**

10-19-12

Piles in a corrosive environment must be steam or water cured under section 90-4.03.

If piles in a corrosive environment are steam cured, either:

1. Keep the piles continuously wet for at least 3 days. The 3 days includes the holding and steam curing periods.
2. Apply curing compound under section 90-1.03B(3) after steam curing.

**Add to section 49-3.01A:**

01-20-12

Concrete must comply with section 51.

**Replace the 1st paragraph of section 49-3.01C with:**

01-20-12

Except for CIDH concrete piles constructed under slurry, construct CIP concrete piles such that the excavation methods and the concrete placement procedures provide for placing the concrete against undisturbed material in a dry or dewatered hole.

**Replace "Reserved" in section 49-3.02A(2) with:**

01-20-12

**dry hole:**

1. Except for CIDH concrete piles specified as end bearing, a drilled hole that:
  - 1.1. Accumulates no more than 12 inches of water in the bottom of the drilled hole during a period of 1 hour without any pumping from the hole during the hour.
  - 1.2. Has no more than 3 inches of water in the bottom of the drilled hole immediately before placing concrete.
2. For CIDH concrete piles specified as end bearing, a drilled hole free of water without the use of pumps.

**Replace "Reserved" in section 49-3.02A(3)(a) with:**

01-20-12

If plastic spacers are proposed for use, submit the manufacturer's data and a sample of the plastic spacer. Allow 10 days for review.

**Replace item 5 in the list in the 1st paragraph of section 49-3.02A(3)(b) with:**

10-19-12

5. Methods and equipment for determining:
  - 5.1. Depth of concrete
  - 5.2. Theoretical volume of concrete to be placed, including the effects on volume if casings are withdrawn
  - 5.3. Actual volume of concrete placed

**Add to the list in the 1st paragraph of section 49-3.02A(3)(b):**

01-18-13

8. Drilling sequence and concrete placement plan.

**Replace item 2 in the 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 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.



**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
1. Have a minimum wall thickness of 0.025 inch
2. Have an inside diameter exceeding the maximum outside diameter of the strand by 0.025 to 0.14 inch

Split sheathing must overlap at least 3/8 inch.

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

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

**Add to section 50-1.03B(1):**

01-20-12

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

**Add to section 50-1.03B(2):**

09-16-11

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

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

Distribute the debonded strands symmetrically about the vertical centerline of the girder. The debonded lengths of pairs of strands must be equal.

Do not terminate debonding at any one cross section of the member for more than 40 percent of the debonded strands or 4 strands, whichever is greater.

Thoroughly seal the ends with waterproof tape to prevent the intrusion of water or cement paste before placing the concrete.

^^

## 51 CONCRETE STRUCTURES

04-19-13

### Replace the paragraphs of section 51-1.01A with:

10-19-12

Section 51-1 includes general specifications for constructing concrete structures.

Earthwork for the following concrete structures must comply with section 19-3:

1. Sound wall footings
2. Sound wall pile caps
3. Culverts
4. Barrier slabs
5. Junction structures
6. Minor structures
7. Pipe culvert headwalls, endwalls, and wingwalls for a pipe with a diameter of 5 feet or greater

Falsework must comply with section 48-2.

Joints must comply with section 51-2.

Elastomeric bearing pads must comply with section 51-3.

Reinforcement for the following concrete structures must comply with section 52:

1. Sound wall footings
2. Sound wall pile caps
3. Barrier slabs
4. Junction structures
5. Minor structures
6. PC concrete members

You may use RSC for a concrete structure only where the specifications allow the use of RSC.

### Replace the heading of section 51-1.01D(4) with:

04-19-13

#### Testing Concrete Surfaces

---

**Add to section 51-1.01D(4)(a):**

04-19-13

The Engineer tests POC deck surfaces for smoothness and crack intensity.

**Add to the list in the 1st paragraph of section 51-1.01D(4)(b):**

04-19-13

3. Completed deck surfaces, including ramps and landings of POCs

**Replace the 4th paragraph in section 51-1.01D(4)(b) with:**

04-19-13

Except for POCs, surface smoothness is tested using a bridge profilograph under California Test 547. Two profiles are obtained in each lane approximately 3 feet from the lane lines and 1 profile is obtained in each shoulder approximately 3 feet from the curb or rail face. Profiles are taken parallel to the direction of traffic.

**Add between the 5th and 6th paragraphs of section 51-1.01D(4)(b):**

04-19-13

POC deck surfaces must comply with the following smoothness requirements:

1. Surfaces between grade changes must not vary more than 0.02 foot from the lower edge of a 12-foot-long straightedge placed parallel to the centerline of the POC
2. Surface must not vary more than 0.01 foot from the lower edge of a 6-foot-long straightedge placed perpendicular to the centerline of the POC

**Add to section 51-1.01D(4)(d):**

04-19-13

The Engineer measures crack intensity of POC deck surfaces after curing, before prestressing, and before falsework release. Clean the surface for the Engineer to measure surface crack intensity.

In any 100 sq ft portion of a new POC deck surface, if there are more than 10 feet of cracks having a width at any point of over 0.02 inch, treat the deck with methacrylate resin under section 15-5.05. Treat the entire deck width between the curbs to 5 feet beyond where the furthest continuous crack emanating from the 100 sq ft section is 0.02 inch wide. Treat the deck surface before grinding.

---

**Add to section 51-1.03C(2)(c)(i):**

04-20-12

Permanent steel deck forms are only allowed where shown or if specified as an option in the special provisions.

**Replace the 3rd paragraph of section 51-1.03C(2)(c)(ii) with:**

04-20-12

Compute the physical design properties under AISI's *North American Specification for the Design of Cold-Formed Steel Structural Members*.

**Replace the 8th paragraph of section 51-1.03D(1) with:**

10-19-12

Except for concrete placed as pipe culvert headwalls and endwalls, slope paving and aprons, and concrete placed under water, consolidate concrete using high-frequency internal vibrators within 15 minutes of placing concrete in the forms. Do not attach vibrators to or hold them against forms or reinforcing steel. Do not displace reinforcement, ducts, or prestressing steel during vibrating.

**Add to section 51-1.03E(5):**

08-05-11

Drill the holes without damaging the adjacent concrete. If reinforcement is encountered during drilling before the specified depth is attained, notify the Engineer. Unless coring through the reinforcement is authorized, drill a new hole adjacent to the rejected hole to the depth shown.

**Add to section 51-1.03F(5)(a):**

04-19-13

For approach slabs, sleeper slabs, and other roadway surfaces of concrete structures, texture the roadway surface as specified for bridge deck surfaces in section 51-1.03F(5)(b).

**Replace "Reserved" in section 51-1.03F(5)(b) with:**

04-20-12

**51-1.03F(5)(b)(i) General**

Except for bridge widenings, texture the bridge deck surfaces longitudinally by grinding and grooving or by longitudinal tining.

10-19-12

For bridge widenings, texture the deck surface longitudinally by longitudinal tining.

04-20-12

In freeze-thaw areas, do not texture PCC surfaces of bridge decks.

**51-1.03F(5)(b)(ii) Grinding and Grooving**

When texturing the deck surface by grinding and grooving, place a 1/4 inch of sacrificial concrete cover on the bridge deck above the finished grade shown. Place items to be embedded in the concrete based on the final profile grade elevations shown. Construct joint seals after completing the grinding and grooving.

Before grinding and grooving, deck surfaces must comply with the smoothness and deck crack treatment requirements.

Grind and groove the deck surface as follows:

1. Grind the surface to within 18 inches of the toe of the barrier under section 42-3. Grinding must not reduce the concrete cover on reinforcing steel to less than 1-3/4 inches.
2. Groove the ground surfaces longitudinally under section 42-2. The grooves must be parallel to the centerline.

**51-1.03F(5)(b)(iii) Longitudinal Tining**

When texturing the deck surface by longitudinal tining, perform initial texturing with a burlap drag or broom device that produces striations parallel to the centerline. Perform final texturing with spring steel tines that produce grooves parallel with the centerline.

The tines must:

1. Be rectangular in cross section
2. Be from 3/32 to 1/8 inch wide on 3/4-inch centers
3. Have enough length, thickness, and resilience to form grooves approximately 3/16 inch deep

Construct grooves to within 6 inches of the layout line of the concrete barrier toe. Grooves must be from 1/8 to 3/16 inch deep and 3/16 inch wide after concrete has hardened.

For irregular areas and areas inaccessible to the grooving machine, you may hand construct grooves. Hand-constructed grooves must comply with the specifications for machine-constructed grooves.

Tining must not cause tearing of the deck surface or visible separation of coarse aggregate at the surface.

**Add to section 51-1.03F:**

04-19-13

**51-1.03F(6) Finishing Pedestrian Overcrossing Surfaces**

Construct deck surfaces, including ramps and landings of POCs to the grade and cross section shown. Surfaces must comply with the specified smoothness, surface texture, and surface crack requirements.

---

The Engineer sets deck elevation control points for your use in establishing the grade and cross section of the deck surface. The grade established by the deck elevation control points includes all camber allowances. Except for landings, elevation control points include the beginning and end of the ramp and will not be closer together than approximately 8 feet longitudinally and 4 feet transversely to the POC centerline. Landing elevation control points are at the beginning and the end of the landing.

Broom finish the deck surfaces of POCs. Apply the broom finish perpendicular to the path of travel. You may apply water mist to the surface immediately before brooming.

Clean any discolored concrete by abrasive blast cleaning or other authorized methods.

**Replace the paragraphs of section 51-1.04 with:**

10-19-12

If concrete involved in bridge work is not designated by type and is not otherwise paid for under a separate bid item, the concrete is paid for as structural concrete, bridge.

The payment quantity for structural concrete includes the volume in the concrete occupied by bar reinforcing steel, structural steel, prestressing steel materials, and piling.

The payment quantity for seal course concrete is the actual volume of seal course concrete placed except the payment quantity must not exceed the volume of concrete contained between vertical planes 1 foot outside the neat lines of the seal course shown. The Department does not adjust the unit price for an increase or decrease in the seal course concrete quantity.

Structural concrete for pier columns is measured as follows:

1. Horizontal limits are vertical planes at the neat lines of the pier column shown.
2. Bottom limit is the bottom of the foundation excavation in the completed work.
3. Upper limit is the top of the pier column concrete shown.

The payment quantity for drill and bond dowel is determined from the number and depths of the holes shown.

**Replace section 51-2.01B(2) with:**

04-19-13

**51-2.01B(2) Reserved**

04-19-13

**Delete the 4th paragraph of section 51-2.01C.**

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**Replace "SSPC-QP 3" in the 1st paragraph of section 51-2.02A(2) with:**

AISC-420-10/SSPC-QP 3

10-19-12

**Replace the 2nd and 3rd paragraphs of section 51-2.02B(3)(b) with:**

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:

04-20-12

1. Top width within 1/8 inch of the width shown or ordered
2. Bottom width not varying from the top width by more than 1/16 inch for each 2 inches of depth
3. Uniform width and depth

Cutting grooves in existing decks includes cutting any conflicting reinforcing steel.

**Replace "sets" in the 1st and 2nd paragraphs of section 51-2.02D(1)(c)(ii) with:**

copies

04-19-13

**Replace "set" in the 7th paragraph of section 51-2.02D(1)(c)(ii) with:**

copy

04-19-13

**Add to the 1st paragraph of section 51-2.02D(3):**

POC deck surfaces must comply with section 51-1.03F(6) before placing and anchoring joint seal assemblies.

04-19-13

**Replace "sets" in the 2nd paragraph of section 51-2.02E(1)(c) with:**

copies

04-19-13

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**Replace "set" in the 6th paragraph of section 51-2.02E(1)(c) with:**

04-19-13

copy

**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.

**Replace "sets" in the 1st and 2nd paragraphs of section 51-2.02F(1)(c) with:**

04-19-13

copies

**Add between the 1st and 2nd paragraphs of section 51-4.01A:**

10-19-12

Prestressing concrete members must comply with section 50.

**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.

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**Replace "sets" in the 1st paragraph of section 51-4.01C(3) with:**

Copies

04-19-13

**Delete the 1st and 2nd paragraphs of section 51-4.02A.**

10-19-12

**Replace the 3rd paragraph of section 51-4.02B(2) with:**

04-20-12

For segmental or spliced-girder construction, materials for construction joints or closure joints at exterior girders must match the color and texture of the adjoining concrete.

**Add to section 51-4.02B(2):**

04-20-12

At spliced-girder closure joints:

1. If shear keys are not shown, the vertical surfaces of the girder segment ends must be given a coarse texture as specified for the top surface of PC members.
2. Post-tensioning ducts must extend out of the vertical surface of the girder segment closure end sufficiently to facilitate splicing of the duct.

For spliced girders, pretension strand extending from the closure end of the girder segment to be embedded in the closure joint must be free of mortar, oil, dirt, excessive mill scale and scabby rust, and other coatings that would destroy or reduce the bond.

**Add to section 51-4.03B:**

04-20-12

The specifications for prestressing force distribution and sequencing of stressing in the post-tensioning activity in 50-1.03B(2)(a) do not apply if post-tensioning of spliced girders before starting deck construction is described. The composite deck-girder structure must be post-tensioned in a subsequent stage.

Temporary spliced-girder supports must comply with the specifications for falsework in section 48-2.

Before post-tensioning of spliced girders, remove the forms at CIP concrete closures and intermediate diaphragms to allow inspection for concrete consolidation.



- 
- 1.4. Concrete crib members
  - 1.5. Mechanically-stabilized-embankment concrete panels
  - 1.6. Masonry block sound walls
  2. Deformed or plain bars complying with ASTM A 615/A 615M, Grade 40 or 60, in:
    - 2.1. Slope and channel paving
    - 2.2. Concrete barriers Type 50 and 60
  3. Plain bars for spiral or hoop reinforcement in structures and concrete piles

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

04-20-12

9. Shear reinforcement stirrups in PC girders

**Replace the 6th paragraph of section 52-6.01D(4)(a) with:**

01-18-13

Before performing service splice or ultimate butt splice testing, perform total slip testing on the service splice or ultimate butt splice test samples under section 52-6.01D(4)(b).

**Replace section 52-6.02D with:**

**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.
2. For "Necking (Option II)," the largest measured strain must be at least:
  - 2.1 Six percent for no. 11 and larger bars
  - 2.2 Nine percent for no. 10 and smaller bars

**Replace the 2nd and 3rd paragraphs of section 52-6.03B with:**

01-18-13

Do not splice the following by lapping:

1. No. 14 bars





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**Replace "SSPC-QP 3 or AISC SPE, Certification P-1 Enclosed" in item 3 in the list in the 1st paragraph of section 59-2.01D(1) with:**

AISC-420-10/SSPC-QP 3 (Enclosed Shop)

10-19-12

**Replace the paragraphs in section 59-2.03A with:**

Clean and paint all exposed structural steel and other metal surfaces.

10-19-12

You must provide enclosures for cleaning and painting structural steel. Cleaning and painting of new structural steel must be performed in an Enclosed Shop as defined in AISC-420-10/SSPC-QP 3. Maintain atmospheric conditions inside enclosures within specified limits.

Except for blast cleaning within closed buildings, perform blast cleaning and painting during daylight hours.

**Replace item 1 in the list in the 2nd paragraph of section 59-2.03C(1) with:**

1. Apply a stripe coat of undercoat paint on all edges, corners, seams, crevices, interior angles, junctions of joining members, weld lines, and similar surface irregularities. The stripe coat must completely hide the surface being covered. If spot blast cleaning portions of the bridge, apply the stripe coat of undercoat paint before each undercoat and follow with the undercoat as soon as practical. If removing all existing paint from the bridge, apply the undercoat first as soon as practical and follow with the stripe coat of undercoat paint for each undercoat.

10-19-12

**Replace the heading of section 59-2.03C(2) with:**

**Zinc Coating System**

04-19-13

**Add to section 59-2.03C(2)(a):**

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

04-19-13

**Zinc Coating System**

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

<sup>a</sup>If no finish coats are described, a final coat of inorganic zinc primer is required.

<sup>b</sup>Exterior grade latex must comply with section 91-2.02 unless otherwise specified.

<sup>c</sup>Includes the following locations:

1. New and existing contact surfaces
2. Existing member surfaces under new HS bolt heads, nuts, or washers
3. Bare surfaces of existing steel after trimming, cutting, drilling, or reaming
4. Areas within a 4-inch radius from the point of application of heat for welding or flame cutting

**Add to section 59-2.03C:**

04-19-13

**59-2.03C(3) Moisture-Cured Polyurethane Coating System**

Reserved

**59-2.03C(4) State Specification Paint Waterborne Coating System**

59-2.03C(4)(a) General

The State Specification PWB coating system for existing structural steel must comply with the requirements shown in the following table:

**State Specification PWB Coating System**

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

<sup>a</sup>Includes locations of spot blast cleaning

**59-2.03C(4)(b) Finish Coats**

Pressure rinse undercoated surfaces to receive finish coats. Perform pressure rinsing no sooner than 72 hours after the final application of undercoat.

The 1st finish coat must be applied within 48 hours of pressure rinsing.

Apply the 1st finish coat in 2 applications. The 1st application consists of a spray-applied mist application. Apply the 2nd application after the mist application has dried to a set-to-touch condition as determined using the procedure in section 7 of ASTM D 1640.

Apply the 2nd finish coat after the 1st finish coat has dried 12 hours unless authorized. You may apply the 2nd finish coat in a single application.

**Add to section 59-5.01:**

04-19-13

Where specified, prepare and paint sign structures under sections 59-2 and 59-3.

Instead of submitting proof of the certification complying with SSPC-QP 1, you may submit documentation with the painting quality work plan showing compliance with the requirements in section 3 of SSPC-QP 1.

Instead of submitting proof of the certification complying with SSPC-QP 2, you may submit documentation with the painting quality work plan showing compliance with the requirements in sections 4.2 through 4.4 of SSPC-QP 2, Category A.

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Instead of submitting proof of the certification complying with AISC-420-10/SSPC-QP 3 (Enclosed Shop), you may submit documentation with the painting quality work plan showing compliance with the requirements in sections 5 through 18 of AISC-420-10/SSPC-QP3.

**Replace the paragraphs of section 59-5.03 with:**

04-19-13

**59-5.03A General**

You may prepare and paint sign structures before or after erection. After erection, repair damaged paint to the satisfaction of the Engineer.

The total dry film thickness of finish coats on contact surfaces of galvanized HS bolted connections (1) must be from 1 to 4 mils and (2) may be applied in 1 application.

**59-5.03B Undercoating of Ungalvanized Surfaces**

Blast-cleaned surfaces must receive a single undercoat consisting of an inorganic zinc coating as specified in AASHTO M 300, Type I or Type II, except:

1. The first 2 sentences of section 5.6 do not apply
2. Section 5.6.1 does not apply

If you propose to use a coating that is not on the Authorized Material List, submit the required documentation specified in section 5.6 of AASHTO M 300. Allow 30 days for the Engineer's review.

**59-5.03C Testing of Inorganic Zinc Coating**

Perform adhesion and hardness testing no sooner than 72 hours after application of the single undercoat of inorganic zinc coating.

**59-5.03D Finish Coating**

The exposed area of inorganic zinc coating must receive a minimum of 2 finish coats of exterior grade latex paint.

The 1st finish coat color must match no. 24558 of FED-STD-595. The 2nd finish coat color must match no. 24491 of FED-STD-595. The total dry film thickness of the applications of the 2nd finish coat must be not less than 2 mils.

**Replace "solider" in the 5th paragraph of section 59-9.03 with:**

04-19-13

soldier





**Replace the row under "Rock class" in the table titled "Minimum Concrete Penetration"  
in section 72-3.03E with:**

|       |       |       |        |        |
|-------|-------|-------|--------|--------|
| 1/2 T | 1/4 T | Light | Facing | Cobble |
|-------|-------|-------|--------|--------|

01-20-12

**Add to section 72-11.01B:**

Expanded polystyrene and premolded expansion joint filler must comply with section 51-2.

01-18-13

**Replace the 1st paragraph of section 72-11.01C(2) with:**

Construct and finish minor concrete slope paving under section 51-1.

01-18-13





- 
1. Comply with ASTM F 1667
  2. Be at least 1-3/4 inches long
  3. Be manufactured from 9-gage galvanized wire

Wire ties used to fasten barbed wire and wire mesh to metal posts must be at least 11-gage galvanized wire complying with ASTM F 626. Clips and hog rings used for metal posts must be at least 9-gage galvanized wire complying with ASTM F 626.

**Replace the 8th through 14th paragraphs of section 80-2.03 with:**

10-19-12

Attach the wire mesh and barbed wire to each post.

Securely fasten tension wires to wood posts. Make a single or double loop around each post at each attachment point and staple the wire to the post. Use wire ties, hog rings, or wire clips to fasten the wires to the metal posts.

Connect each wood brace to its adjacent post with a 3/8 by 4-inch steel dowel. Twist the tension wires until the installation is rigid.

Stretch barbed wire and wire mesh fabric and fasten to each wood or steel end, corner, or gate post. Apply tension according to the manufacturer's instructions using a mechanical stretcher or other device designed for such use. If no tension is specified by the manufacturer, use 250 pounds for the required tension. Evenly distribute the pull over the longitudinal wires in the wire mesh such that no more than 50 percent of the original depth of the tension curves is removed. Do not use a motorized vehicle, truck, or tractor to stretch the wire.

Attach barbed wire and wire mesh fabric to the private-property side of posts. On curved alignments, place the wire mesh and barbed wire on the face of the post against which the normal pull of the wire mesh and wire will be exerted. Terminate the wire mesh and barbed wire at each end, corner, pull, and gate post in the new fence line. Attach wire mesh and barbed wire to each wood or steel end, corner, pull, or gate post by wrapping each horizontal strand around the post and tying it back on itself with at least 4 tightly-wound wraps.

At line posts, fasten the wire mesh to the post at the top and bottom and at intermediate points not exceeding 10 inches apart. Fasten each line of barbed wire to each line post. Use wire ties or clips to fasten the wires to metal posts under the post manufacturer's instructions. Drive staples crosswise with the grain of the wood and pointed slightly downward. Drive staples just short of actual contact with the wires to allow free longitudinal movement of those wires and to prevent damage to the wire's protective coating. Secure all wires to posts to maintain horizontal alignment.

Splices in barbed wire and wire mesh are allowed provided there are no more than 2 splices per 50 feet of fence. Use commercially-available galvanized mechanical wire splices or a wire splice created by tying



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## 84 TRAFFIC STRIPES AND PAVEMENT MARKINGS

01-20-12

**Replace the 1st paragraph in section 84-2.04 with:**

01-20-12

A double extruded thermoplastic traffic stripe consisting of two 4-inch wide yellow stripes is measured as 2 traffic stripes.

A double sprayable thermoplastic traffic stripe consisting of two 4-inch wide yellow stripes is measured as 1 traffic stripe.

**Add to section 84:**

01-20-12

### **84-6 THERMOPLASTIC TRAFFIC STRIPES AND PAVEMENT MARKINGS WITH ENHANCED WET NIGHT VISIBILITY**

Reserved

**84-7–84-10 RESERVED**

^^

**86 ELECTRICAL SYSTEMS**

10-19-12

**Replace section 86-2.06 with:**

01-20-12

**86-2.06 PULL BOXES**

**86-2.06A General**

**86-2.06A(1) Cover Marking**

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

Marking letters must be 1 to 3 inches high.

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

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

**86-2.06A(2) Installation and Use**

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

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

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

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

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

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

**86-2.06B Non-Traffic-Rated Pull Boxes**

Reserved

**86-2.06C Traffic Pull Boxes**

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

Frame must be anchored to the box with 1/4 by 2-1/4 inch concrete anchors. Four concrete anchors must be included for No. 3-1/2(T) pull box; one placed in each corner. Six concrete anchors must be included for No. 5(T) and No. 6(T) pull boxes; one placed in each corner and one near the middle of each of the longer sides.

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

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

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

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

**Replace "project" in the 3rd paragraph of section 86-2.11A with:**

10-19-12

work

**Replace "Contract" in item 2 in the list in the 11th paragraph of section 86-2.11A with:**

10-19-12

work

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|  |             |         |        |
|--|-------------|---------|--------|
| Grab breaking load, lb, 1-inch grip min, in each direction           | ASTM D 4632 | 200     | 250    |
| Apparent elongation, percent min, in each direction                  | ASTM D 4632 | 10      | 50     |
| Water flow rate, gal per minute/sq ft min and max average roll value | ASTM D 4491 | 100-200 | 75-200 |
| Permittivity, sec <sup>-1</sup> min                                  | ASTM D 4491 | 1.0     | 1.0    |
| Apparent opening size, inches max average roll value                 | ASTM D 4751 | 0.023   | 0.012  |
| Ultraviolet resistance, % min retained grab breaking load, 500 hr.   | ASTM D 4355 | 70      | 70     |

**Replace the table in the 1st paragraph of section 88-1.02H with:**

01-20-12

**Temporary Cover**

| Property   | Test        | Values |          |
|--|-------------|--------|----------|
|  |             | Woven  | Nonwoven |
| Grab breaking load, lb, 1-inch grip min, in each direction           | ASTM D 4632 | 200    | 200      |
| Apparent elongation, percent min, in each direction                  | ASTM D 4632 | 15     | 50       |
| Water flow rate, gal per minute/sq ft min and max average roll value | ASTM D 4491 | 4-10   | 80-120   |
| Permittivity, sec <sup>-1</sup> min                                  | ASTM D 4491 | 0.05   | 1.0      |
| Apparent opening size, inches max average roll value                 | ASTM D 4751 | 0.023  | 0.012    |
| Ultraviolet resistance, % min retained grab breaking load, 500 hr.   | ASTM D 4355 | 70     | 70       |

**Replace section 88-1.02P with:**

01-18-13

**88-1.02P Biaxial Geogrid**

Geosynthetics used for biaxial geogrid must be a punched and drawn polypropylene material formed into an integrally formed biaxial grid. When tested under the referenced test methods, properties of biaxial geogrid must have the values shown in the following table:



**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.

^^

**91 PAINT**

10-19-12

**Add to section 91-2:**

10-19-12

**91-2.03 MOISTURE-CURED POLYURETHANE COATING**

Reserved

**Replace "saint" in the 1st paragraph of section 91-4.05 with:**

10-19-12

paint

^^

**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,<br>Test temperature at 10<br>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 |

## **5 MODIFICATIONS TO SPECIAL PROVISIONS**

### **5.1 General**

The following non-Standard Special Provisions (nSSP) listed in this Section 5 shall be used when the item specified is included in the work for this Project.

### **5.2 Draft nSSPs**

The following nSSPs are in draft format and shall be edited by the Design-Builder according to the instructions in the hidden text included in the nSSP, and the guidelines given in the Department’s Ready-To-List Guide. Once edits are complete, the nSSP shall be submitted to the Department for review and approval.

Edits to these nSSPs within the limits of what is allowed by the hidden text instructions of the nSSP will require up to two weeks for each review by the Department. Edits beyond what is allowed by the hidden text instructions will require up to four weeks for each review.

The Design Builder shall bear the risk of schedule impacts associated with nSSP reviews. Once approved for use, each approved nSSP shall follow the same process as Standard Special Provisions (SSPs) for inclusion in RFC packages, except that written notice of approval shall accompany the nSSP.

1. Shall be provided by the District.

### **5.3 Approved nSSPs**

The following nSSPs are pre-approved for use on this project and shall be edited by the Design-Builder only according to the instruction in the hidden text included in the nSSP, and the guidelines given in the Department’s Ready-To-List Guide. These nSSPs shall follow the same process as Standard Special Provisions (SSPs) for inclusion in RFC packages.

1. Section 15-5.09 “Multilayer Polymer Overlay” - Add Section 15-5.09

## **1. MULTILAYER POLYMER OVERLAY**

**Add section 15-5.09 with:**

### **15-5.09 MULTILAYER POLYMER OVERLAY**

#### **15-5.09A General**

##### **15-5.09A (1) Summary**

Section 15-5.09 includes specifications for placing a multilayer polymer overlay system consisting of three layers of polymer resin binder combined with a blend of specially selected aggregate broadcast onto the spread resin binder at bridge decks.

Surface preparation must comply with section 15-5.01C (2).

A technical representative from the material manufacturer must be present during the overlay application.

Multilayer polymer overlay also includes

1. Shipping and handling of the overlay materials from the manufacturer's plant to jobsite
2. Price per day and expenses for the technical representative
3. Furnishing, constructing, and disposing of trial overlays and base

##### **15-5.09A (2) Submittals**

Submit a work plan for overlay placement. Include the following:

1. Schedule of overlay work and testing
2. Description of equipment for applying polymer resin
3. Description of equipment for measuring, mixing, placing, and finishing the multilayer polymer overlay
4. Method for isolating expansion joints
5. Cure time for multilayer polymer overlay
6. Description of equipment for applying sand
7. Method for storage and handling of polymer resin and multilayer polymer overlay components
8. Method for disposal of excess polymer resin, multilayer polymer overlay components and containers

For each shipment of polymer resin binder, submit a material safety data sheet for each component.

Submit aggregate and resin volumes recorded from the volumetric mixer at the end of each work shift.

##### **15-5.09B Quality Control and Assurance**

Complete a trial overlay before starting production overlay activities. One or more trial overlays must be placed on a previously constructed concrete base to determine the initial set time and to demonstrate the effectiveness of the mixing, placing and finishing equipment proposed.

The trial overlay must:

1. Be at least 12 feet wide by 6 feet long and the same thickness as the project overlay
2. Be constructed on a prepared concrete base
3. Be placed within the project limits at an authorized location
4. Be constructed using the same equipment as the production work
5. Replicate field conditions for the production work
6. Be used to determine the initial polymer resin binder set time
7. Demonstrate suitability of the proposed means and methods

The Engineer determines acceptability of the trial overlay test area. : The trial overlay test area is acceptable if:

1. Work is completed and overlay is fully cured within the time permitted for traffic control.
2. The coefficient of friction of the trial overlay test area is at least 0.35 when measured under California Test 342.

If a test area fails to meet the acceptability, the test will be rejected, and the trial overlay must be removed and replaced until the test area complies with acceptability

Dispose of the trial overlay and concrete base after acceptance.

**15-5.09C MATERIALS**

The multilayer polymer overlay must consist of one of the following overlay systems:

| PRODUCT NAME  | SUPPLIER  |
|---|---|
| POLY-CARB Mark 163<br>Flexogrid Overlay System  | <u>Dow Chemical.</u><br>33095 Bainbridge Road<br>Solon, OH 44139<br>Telephone:<br><u>(866) 765-9227</u>   |
| Low Modulus Polysulfide<br>Epoxy Overlay (T-48)   | Transpo Industries Inc.<br>20 Jones Street<br>New Rochelle, NY 10801<br>Telephone: (914) 636-1000<br><u>Telephone: (800) 321-7870</u><br><u>info@transpo.com</u>      |
| <u>E-Bond 526</u>   | Transpo Industries Inc.<br>20 Jones Street<br>New Rochelle, NY 10801<br>Telephone: (914) 636-<br>1000Telephone: <u>(800) 321-<br/>7870</u><br><u>info@transpo.com</u> |
| Unitex Pro-Poxy <sup>TM</sup> Type III<br>DOT<br>Epoxy <u>Polymer</u> Overlay<br>System | Unitex<br>3101 Gardner Avenue<br>Kansas City, MO 64120<br>Telephone: (800) 821-5846   |
| Tyregrip ®  | Ennis Traffic Safety<br>Solutions<br>Telephone: (800) 331-8118<br>ennisflint.com  |
| <u>Kwik Bond PPC-MLS</u><br><u>Polyester Multilayer System</u>                          | <u>Kwik Bond Polymers</u><br><u>923 Teal Drive</u><br><u>Benicia, CA 94510</u><br><u>Telephone (866) 434-1772</u><br><u>info@kwikbondpolymers.co</u><br><u>m</u>      |

**15-5.09D CONSTRUCTION**

The manufacturer's representative determines and the Engineer authorizes the exact percentage of polymer resin binder at the time of placing.

Multilayer polymer overlay system must conform to the following requirements:

1. Overlay thickness must be 3/8 inch.
2. Surface preparation must comply with section 15-5.01C (2). Placement method, deck surface temperature, and three layers of resin and aggregate must be in conformance with the manufacturer's recommendations and as authorized by the Engineer
3. Each polymer resin and combined aggregate layer must cure the minimum duration recommended by the manufacturer.
4. The surface of the overlay must conform to the provisions in section 51-1.03F(5) and these special provisions before starting overlay work.
5. The surface texture of the overlay must be uniform and must have a coefficient of friction of not less than 0.35 as measured by California Test 342. Any surfacer that fails to conform to the above friction requirements shall be reapplied.
6. The smoothness of the finished surface will be tested with a straightedge. The surface must not vary more than 0.02 foot in any direction from the lower edge of a  $12 \pm 0.2$ -foot-long straightedge placed in any direction. Any surface that fails to conform to the above tolerance must be removed as recommended by the manufacturer and the overlay must be reapplied.
7. The minimum time following final finishing and before traffic and equipment is permitted on the overlay must be as recommended by the manufacturer.

Equipment must be fitted with suitable traps, filters, drip pans, or other devices as necessary to prevent oil or other deleterious material from being deposited on the deck.

When magnesium phosphate concrete is placed before the deck overlay, the magnesium phosphate concrete must be placed at least 72 hours before placing the polymer binder coat.

When modified high alumina based concrete is placed before the deck overlay, the polymer binder coat must not be placed on the existing concrete deck surface until at least 30 minutes after final set.

Expansion joints and deck drains must be adequately isolated prior to overlaying.

#### **15-5.09E PAYMENT**

Multilayer polymer overlay will be measured by the square foot based on the dimensions shown.

Prepare concrete deck surface is paid for separately.