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STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

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**NOTICE TO CONTRACTORS  
AND**

**SPECIAL PROVISIONS**

**FOR CONSTRUCTION ON STATE HIGHWAY IN**

**TEHAMA COUNTY IN RED BLUFF FROM 0.5 MILE SOUTH TO DIAMOND AVENUE OVERCROSSING AND  
FROM 0.6 MILE SOUTH TO ROUTE 5/36 SEPARATION**

**DISTRICT 02, ROUTE 5**

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**For Use in Connection with Standard Specifications Dated MAY 2006, Standard Plans Dated MAY 2006, and Labor  
Surcharge and Equipment Rental Rates.**

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**CONTRACT NO. 02-3C2604**

**02-Teh-5-R24.4/R24.9,R25.9/R26.5**

**Bids Open: February 14, 2007**

**Dated: January 16, 2007**

**AADD**

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# IMPORTANT SPECIAL NOTICES

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- Attention is directed to Section 3, "Award and Execution of Contract," of these special provisions regarding submittal of the documents identified in Section 3-1.025, "Insurance Policies," of the Standard Specifications.

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# STANDARD PLANS LIST

The Standard Plan sheets applicable to this contract include, but are not limited to those indicated below. The Revised Standard Plans (RSP) and New Standard Plans (NSP) which apply to this contract are included as individual sheets of the project plans.

A10A	Acronyms and Abbreviations (Sheet 1 of 2)
A10B	Acronyms and Abbreviations (Sheet 2 of 2)
A10C	Symbols (Sheet 1 of 2)
A10D	Symbols (Sheet 2 of 2)
A20B	Pavement Markers and Traffic Lines, Typical Details
A40B	Shoulder Rumble Strip Details – Ground-In Indentations
A73C	Delineators, Channelizers and Barricades
RSP A74	Survey Monuments
D75C	Pipe Inlets – Ladder and Trash Rack Details
D77A	Grate Details
T1A	Temporary Crash Cushion, Sand Filled (Unidirectional)
T1B	Temporary Crash Cushion, Sand Filled (Bidirectional)
T2	Temporary Crash Cushion, Sand Filled (Shoulder Installations)
T3	Temporary Railing (Type K)
T10	Traffic Control System for Lane Closure On Freeways and Expressways
T15	Traffic Control System for Moving Lane Closure on Multilane Highways
T52	Temporary Water Pollution Control Details (Temporary Straw Bale Barrier)
T56	Temporary Water Pollution Control Details (Temporary Fiber Roll)
RS1	Roadside Signs, Typical Installation Details No. 1
RS2	Roadside Signs – Wood Post, Typical Installation Details No. 2

**DEPARTMENT OF TRANSPORTATION**

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**NOTICE TO CONTRACTORS**

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**CONTRACT NO. 02-3C2604**

**02-Teh-5-R24.4/R24.9,R25.9/R26.5**

Sealed proposals for the work shown on the plans entitled:

**STATE OF CALIFORNIA; DEPARTMENT OF TRANSPORTATION; PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY IN TEHAMA COUNTY IN RED BLUFF FROM 0.5 MILE SOUTH TO DIAMOND AVENUE OVERCROSSING AND FROM 0.6 MILE SOUTH TO ROUTE 5/36 SEPARATION**

will be received at the Department of Transportation, 1120 N Street, Room 0200, MS #26, Sacramento, CA 95814, until 2 o'clock p.m. on February 14, 2007, at which time they will be publicly opened and read in Room 0100 at the same address.

Proposal forms for this work are included in a separate book entitled:

**STATE OF CALIFORNIA; DEPARTMENT OF TRANSPORTATION; PROPOSAL AND CONTRACT FOR CONSTRUCTION ON STATE HIGHWAY IN TEHAMA COUNTY IN RED BLUFF FROM 0.5 MILE SOUTH TO DIAMOND AVENUE OVERCROSSING AND FROM 0.6 MILE SOUTH TO ROUTE 5/36 SEPARATION**

General work description: Widen shoulders and add rumble strip.

This project has a goal of 3 percent disabled veteran business enterprise (DVBE) participation.

No prebid meeting is scheduled for this project.

Bids are required for the entire work described herein.

At the time this contract is awarded, the Contractor shall possess either a Class A license or one of the following Class C licenses: C-12.

The Contractor must also be properly licensed at the time the bid is submitted, except that on a joint venture bid a joint venture license may be obtained by a combination of licenses after bid opening but before award in conformance with Business and Professions Code, Section 7029.1.

This contract is subject to state contract nondiscrimination and compliance requirements pursuant to Government Code, Section 12990.

This project is subject to the State Small Business Preference, Non-Small Business Subcontractor Preference, and California Company Reciprocal Preference.

The District in which the work for this project is located has been incorporated into the Department's Northern Region. References in the Instruction to Bidders or the General Conditions or in the special provisions to the district shall be deemed to mean the Northern Region. The office of the District Director for the Northern Region is located at Marysville.

Inquiries or questions based on alleged patent ambiguity of the plans, specifications or estimate must be communicated as a bidder inquiry prior to bid opening. Any such inquiries or questions, submitted after bid opening, will not be treated as a bid protest.

The Department will consider bidder inquiries only when made in writing and shall be submitted to CALTRANS North Region Construction Office by either E-mail or Fax:

E-mail: [inquiry\\_nr\\_bid@dot.ca.gov](mailto:inquiry_nr_bid@dot.ca.gov)

FAX Number: (530) 822-4324

Responses to the bidder will be posted on the Internet at:

[www.dot.ca.gov/dist3/departments/construction/bidders/find\\_res.htm](http://www.dot.ca.gov/dist3/departments/construction/bidders/find_res.htm)

Project plans, special provisions, and proposal forms for bidding this project can only be obtained at the Department of Transportation, Plans and Bid Documents, Room 0200, MS #26, Transportation Building, 1120 N Street, Sacramento, California 95814, FAX No. (916) 654-7028, Telephone No. (916) 654-4490. Use FAX orders to expedite orders for project plans, special provisions and proposal forms. FAX orders must include credit card charge number, card expiration date and authorizing signature. Project plans, special provisions, and proposal forms may be seen at the above Department of Transportation office and at the offices of the District Directors of Transportation at Irvine, Oakland, and the district in which the work is situated. Standard Specifications and Standard Plans are available through the State of California, Department of Transportation, Publications Unit, 1900 Royal Oaks Drive, Sacramento, CA 95815, Telephone No. (916) 445-3520.

The successful bidder shall furnish a payment bond and a performance bond.

Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the county, or counties, in which the work is to be done have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates for this project, available at the Labor Compliance Office at the offices of the District Director of Transportation for the district in which the work is situated, and available from the California Department of Industrial Relations' Internet Web Site at: <http://www.dir.ca.gov>. Future effective general prevailing wage rates which have been predetermined and are on file with the Department of Industrial Relations are referenced but not printed in the general prevailing wage rates.

DEPARTMENT OF TRANSPORTATION

Deputy Director Transportation Engineering

Dated January 16, 2007

D02BAL

**COPY OF ENGINEER'S ESTIMATE  
(NOT TO BE USED FOR BIDDING PURPOSES)**

**02-3C2604**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
1	074016	CONSTRUCTION SITE MANAGEMENT	LS	LUMP SUM
2	074017	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	LUMP SUM
3	074028	TEMPORARY FIBER ROLL	LF	80
4	074036	TEMPORARY STRAW BALE BARRIER	LF	42
5	074042	TEMPORARY CONCRETE WASHOUT (PORTABLE)	LS	LUMP SUM
6 (S)	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM
7 (S)	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM
8 (S)	128650	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2
9	152469	ADJUST UTILITY COVER TO GRADE	EA	1
10	011090	MODIFY GMP INLET	EA	1
11	152604	MODIFY INLET	EA	2
12	160101	CLEARING AND GRUBBING	LS	LUMP SUM
13	190101	ROADWAY EXCAVATION	CY	390
14	190110	LEAD COMPLIANCE PLAN	LS	LUMP SUM
15	198007	IMPORTED MATERIAL (SHOULDER BACKING)	TON	110
16	390102	ASPHALT CONCRETE (TYPE A)	TON	1090
17	394002	PLACE ASPHALT CONCRETE (MISCELLANEOUS AREA)	SQFT	440
18	394054	SHOULDER RUMBLE STRIP (AC, GROUND-IN INDENTATIONS)	LF	3540
19	510502	MINOR CONCRETE (MINOR STRUCTURE)	CY	.7
20	750001	MISCELLANEOUS IRON AND STEEL	LB	1509

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity
21	810116	SURVEY MONUMENT (TYPE D)	EA	1
22	820108	DELINEATOR (CLASS 2)	EA	11
23 (S)	840560	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)	LF	1550

**STATE OF CALIFORNIA**  
**DEPARTMENT OF TRANSPORTATION**

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**SPECIAL PROVISIONS**

**Annexed to Contract No. 02-3C2604**

**SECTION 1. SPECIFICATIONS AND PLANS**

The work embraced herein shall conform to the provisions in the Standard Specifications dated May 2006, and the Standard Plans dated May 2006, of the Department of Transportation insofar as the same may apply, and these special provisions.

In case of conflict between the Standard Specifications and these special provisions, the special provisions shall take precedence over and shall be used in lieu of the conflicting portions.

**AMENDMENTS TO MAY 2006 STANDARD SPECIFICATIONS**

**UPDATED DECEMBER 11, 2006**

Amendments to the Standard Specifications set forth in these special provisions shall be considered as part of the Standard Specifications for the purposes set forth in Section 5-1.04, "Coordination and Interpretation of Plans, Standard Specifications and Special Provisions," of the Standard Specifications. Whenever either the term "Standard Specifications is amended" or the term "Standard Specifications are amended" is used in the special provisions, the text or table following the term shall be considered an amendment to the Standard Specifications. In case of conflict between such amendments and the Standard Specifications, the amendments shall take precedence over and be used in lieu of the conflicting portions.

**SECTION 1: DEFINITIONS AND TERMS**

Issue Date: October 6, 2006

Section 1-1.01, "General," of the Standard Specifications is amended by adding the following:

- The Department is gradually changing the style and language of the specifications. The new style and language includes:

1. Use of:

- 1.1. Imperative mood
- 1.2. Introductory modifiers
- 1.3. Conditional clauses

2. Elimination of:

- 2.1. Language variations
- 2.2. Definitions for industry-standard terms
- 2.3. Redundant specifications
- 2.4. Needless cross-references

- The use of this new style does not change the meaning of a specification not yet using this style.
- The specifications are written to the Bidder before award and the Contractor after. Before award, interpret sentences written in the imperative mood as starting with "The Bidder must" and interpret "you" as "the Bidder" and "your" as "the Bidder's." After award, interpret sentences written in the imperative mood as starting with "The Contractor must" and interpret "you" as "the Contractor" and "your" as "the Contractor's."

Contract No. 02-3C2604

- Unless an object or activity is specified to be less than the total, the quantity or amount is all of the object or activity.
- A list in the specifications is inclusive unless the items listed are specified as choices.
- Interpret terms as defined in the Contract documents. A term not defined in the Contract documents has the meaning defined in Means Illustrated Construction Dictionary, Condensed Version, Second Edition.

Section 1, "Definitions and Terms," of the Standard Specifications is amended by adding the following sections:

**1-1.082 BUSINESS DAY**

- Day on the calendar except Saturday or holiday.

**1-1.084 CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES**

- The California Manual on Uniform Traffic Control Devices for Streets and Highways (California MUTCD) is issued by the Department of Transportation and is the Federal Highway Administration's MUTCD 2003 Edition, as amended for use in California.

**1-1.245 HOLIDAY**

- Day designated as a State holiday under Govt Code § 6700 et seq. except September 9th, "Admission Day." The day after Thanksgiving Day is a non-working day. Interpret "legal holiday" as "holiday."

Section 1-1.255, "Legal Holidays," of the Standard Specifications is deleted.

Section 1-1.265, "Manual on Uniform Traffic Control Devices," of the Standard Specifications is deleted.

Section 1-1.266, "Manual on Uniform Traffic Control Devices California Supplement," of the Standard Specifications is deleted.

Section 1-1.39 "State," of the Standard Specifications is amended to read:

**1-1.39 STATE**

- The State of California, including its agencies, departments, or divisions, whose conduct or action is related to the work.

**SECTION 3: AWARD AND EXECUTION OF CONTRACT**

Issue Date: December 11, 2006

Section 3-1.025, "Insurance Policies," of the Standard Specifications is amended to read:

**3-1.025 INSURANCE POLICIES**

- The successful bidder shall submit:
  1. Copy of its commercial general liability policy and its excess policy or binder until such time as a policy is available, including the declarations page, applicable endorsements, riders, and other modifications in effect at the time of contract execution. Standard ISO form No. CG 0001 or similar exclusions are allowed if not inconsistent with Section 7-1.12, "Indemnification and Insurance." Allowance of additional exclusions is at the discretion of the Department.
  2. Certificate of insurance showing all other required coverages. Certificates of insurance, as evidence of required insurance for the auto liability and any other required policy, shall set forth deductible amounts applicable to each policy and all exclusions that are added by endorsement to each policy. The evidence of insurance shall provide that no cancellation, lapse, or reduction of coverage will occur without 10 days prior written notice to the Department.
  3. A declaration under the penalty of perjury by a certified public accountant certifying the accountant has applied Generally Accepted Accounting Principles (GAAP) guidelines confirming the successful bidder has sufficient funds and resources to cover any self-insured retentions if the self-insured retention is \$50,000 or higher.
- If the successful bidder uses any form of self-insurance for workers compensation in lieu of an insurance policy, it shall submit a certificate of consent to self-insure in accordance with the provisions of Section 3700 of the Labor Code.

Section 3-1.03, "Execution of Contract," of the Standard Specifications is amended to read:

### **3-1.03 EXECUTION OF CONTRACT**

- The contract shall be signed by the successful bidder and returned, together with the contract bonds and the documents identified in Section 3-1.025, "Insurance Policies," within 10 business days of receiving the contract for execution.

Section 3-1.04, "Failure to Execute Contract," of the Standard Specifications is amended to read:

### **3-1.04 FAILURE TO EXECUTE CONTRACT**

- Failure of the lowest responsible bidder, the second lowest responsible bidder, or the third lowest responsible bidder to execute the contract as required in Section 3-1.03, " Execution of Contract," within 10 business days of receiving the contract for execution shall be just cause for the forfeiture of the proposal guaranty. The successful bidder may file with the Department a written notice, signed by the bidder or the bidder's authorized representative, specifying that the bidder will refuse to execute the contract if it is presented. The filing of this notice shall have the same force and effect as the failure of the bidder to execute the contract and furnish acceptable bonds within the time specified.

## **SECTION 7: LEGAL RELATIONS AND RESPONSIBILITIES**

Issue Date: December 11, 2006

Section 7-1.01A(6), "Workers' Compensation," of the Standard Specifications is amended to read:

### **7-1.101A(6) (Blank)**

The first sentence of the eighth paragraph of Section 7-1.09, "Public Safety," of the Standard Specifications is amended to read:

- Signs, lights, flags, and other warning and safety devices and their use shall conform to the requirements set forth in Part 6 of the California MUTCD.

The sixteenth paragraph of Section 7-1.09, "Public Safety," of the Standard Specifications is amended to read:

- When vertical clearance is temporarily reduced to 15.5 feet or less, low clearance warning signs shall be placed in accordance with Part 2 of the California MUTCD and as directed by the Engineer. Signs shall conform to the dimensions, color, and legend requirements of the California MUTCD and these specifications except that the signs shall have black letters and numbers on an orange retroreflective background. W12-2P signs shall be illuminated so that the signs are clearly visible.

Section 7-1.12, "Indemnification and Insurance," of the Standard Specifications is amended to read:

### **7-1.12 INDEMNIFICATION AND INSURANCE**

- The Contractor's obligations regarding indemnification of the State of California and the requirements for insurance shall conform to the provisions in Section 3-1.025, "Insurance Policies," and Sections 7-1.12A, "Indemnification," and 7-1.12B, "Insurance," of this Section 7-1.12.

#### **7-1.12A Indemnification**

- The Contractor shall defend, indemnify, and save harmless the State, including its officers, employees, and agents (excluding agents who are design professionals) from any and all claims, demands, causes of action, damages, costs, expenses, actual attorneys' fees, losses or liabilities, in law or in equity (Section 7-1.12A Claims) arising out of or in connection with the Contractor's performance of this contract for:

1. Bodily injury including, but not limited to, bodily injury, sickness or disease, emotional injury or death to persons, including, but not limited to, the public, any employees or agents of the Contractor, the State, or any other contractor; and

2. Damage to property of anyone including loss of use thereof; caused or alleged to be caused in whole or in part by any negligent or otherwise legally actionable act or omission of the Contractor or anyone directly or indirectly employed by the Contractor or anyone for whose acts the Contractor may be liable.

- Except as otherwise provided by law, these requirements apply regardless of the existence or degree of fault of the State. The Contractor is not obligated to indemnify the State for Claims arising from conduct delineated in Civil Code Section 2782 and to Claims arising from any defective or substandard condition of the highway that existed at or before the start of work, unless this condition has been changed by the work or the scope of the work requires the Contractor to maintain existing highway facilities and the Claim arises from the Contractor's failure to maintain. The Contractor's defense and indemnity obligation shall extend to Claims arising after the work is completed and accepted if the Claims are directly related to alleged acts or omissions by the Contractor that occurred during the course of the work. State inspection is not a waiver of full compliance with these requirements.

- The Contractor's obligation to defend and indemnify shall not be excused because of the Contractor's inability to evaluate liability or because the Contractor evaluates liability and determine that the Contractor is not liable. The Contractor shall respond within 30 days to the tender of any Claim for defense and indemnity by the State, unless this time has been extended by the State. If the Contractor fails to accept or reject a tender of defense and indemnity within 30 days, in addition to any other remedy authorized by law, the Department may withhold such funds the State reasonably considers necessary for its defense and indemnity until disposition has been made of the Claim or until the Contractor accepts or rejects the tender of defense, whichever occurs first.

- With respect to third-party claims against the Contractor, the Contractor waives all rights of any type to express or implied indemnity against the State, its officers, employees, or agents (excluding agents who are design professionals).

- Nothing in the Contract is intended to establish a standard of care owed to any member of the public or to extend to the public the status of a third-party beneficiary for any of these indemnification specifications.

#### **7-1.12B Insurance**

##### **7-1.12B(1) General**

- Nothing in the contract is intended to establish a standard of care owed to any member of the public or to extend to the public the status of a third-party beneficiary for any of these insurance specifications.

##### **7-1.12B(2) Casualty Insurance**

- The Contractor shall procure and maintain insurance on all of its operations with companies acceptable to the State as follows:

1. The Contractor shall keep all insurance in full force and effect from the beginning of the work through contract acceptance.
2. All insurance shall be with an insurance company with a rating from A.M. Best Financial Strength Rating of A- or better and a Financial Size Category of VII or better.
3. The Contractor shall maintain completed operations coverage with a carrier acceptable to the State through the expiration of the patent deficiency in construction statute of repose set forth in Code of Civil Procedure Section 337.1.

##### **7-1.12B(3) Workers' Compensation and Employer's Liability Insurance**

- In accordance with Labor Code Section 1860, the Contractor shall secure the payment of worker's compensation in accordance with Labor Code Section 3700.

- In accordance with Labor Code Section 1861, the Contractor shall submit to the Department the following certification before performing the work:

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

- Contract execution constitutes certification submittal.
- The Contractor shall provide Employer's Liability Insurance in amounts not less than:

1. \$1,000,000 for each accident for bodily injury by accident
2. \$1,000,000 policy limit for bodily injury by disease
3. \$1,000,000 for each employee for bodily injury by disease

- If there is an exposure of injury to the Contractor's employees under the U.S. Longshoremen's and Harbor Workers' Compensation Act, the Jones Act, or under laws, regulations, or statutes applicable to maritime employees, coverage shall be included for such injuries or claims.

**7-1.12B(4) Liability Insurance**

**7-1.12B(4)(a) General**

- The Contractor shall carry General Liability and Umbrella or Excess Liability Insurance covering all operations by or on behalf of the Contractor providing insurance for bodily injury liability and property damage liability for the following limits and including coverage for:

1. Premises, operations, and mobile equipment
2. Products and completed operations
3. Broad form property damage (including completed operations)
4. Explosion, collapse, and underground hazards
5. Personal injury
6. Contractual liability

- The Contractor shall not require certified Small Business subcontractors to carry Liability Insurance that exceeds the limits in Section 7-1.12B(4)(b), "Liability Limits/Additional Insureds," of these specifications. The maximum required Liability Insurance limits in Section 7-1.12B(4)(b), "Liability Limits/Additional Insureds," of these specifications shall apply to certified Small Business subcontractors for work performed on the project, regardless of tier. The provisions of Section 7-1.12B(4)(b), "Liability Limits/Additional Insureds," shall be included in all subcontracts for all tiers.

**7-1.12B(4)(b) Liability Limits/Additional Insureds**

- The limits of liability shall be at least the amounts shown in the following table:

Total Contract Bid, or Total Small Business Subcontract <sup>4</sup>	For Each Occurrence <sup>1</sup>	Aggregate for Products/Completed Operation	General Aggregate <sup>2</sup>	Umbrella or Excess Liability <sup>3</sup>
≤\$1,000,000	\$1,000,000	\$2,000,000	\$2,000,000	\$5,000,000
>\$1,000,000 ≤\$5,000,000	\$1,000,000	\$2,000,000	\$2,000,000	\$10,000,000
>\$5,000,000 ≤\$25,000,000	\$2,000,000	\$2,000,000	\$4,000,000	\$15,000,000
>\$25,000,000	\$2,000,000	\$2,000,000	\$4,000,000	\$25,000,000

1. Combined single limit for bodily injury and property damage.
2. This limit shall apply separately to the Contractor's work under this contract.
3. The umbrella or excess policy shall contain a clause stating that it takes effect (drops down) in the event the primary limits are impaired or exhausted.
4. "Total Contract Bid," is the amount of contract awarded to the Contractor, and the "Total Small Business Subcontract," is the amount of subcontracted work to a certified Small Business.

- The State, including its officers, directors, agents (excluding agents who are design professionals), and employees, shall be named as additional insureds under the General Liability and Umbrella Liability Policies with respect to liability arising out of or connected with work or operations performed by or on behalf of the Contractor under this contract. Coverage for such additional insureds does not extend to liability:

1. Arising from any defective or substandard condition of the roadway which existed at or before the time the Contractor started work, unless such condition has been changed by the work or the scope of the work requires the Contractor to maintain existing roadway facilities and the claim arises from the Contractor's failure to maintain;
2. For claims occurring after the work is completed and accepted unless these claims are directly related to alleged acts or omissions of the Contractor that occurred during the course of the work; or
3. To the extent prohibited by Insurance Code Section 11580.04

- Additional insured coverage shall be provided by a policy provision or by an endorsement providing coverage at least as broad as Additional Insured (Form B) endorsement form CG 2010, as published by the Insurance Services Office (ISO), or other form designated by the Department.

**7-1.12B(4)(c) Contractor's Insurance Policy is Primary**

- The policy shall stipulate that the insurance afforded the additional insureds applies as primary insurance. Any other insurance or self-insurance maintained by the State is excess only and shall not be called upon to contribute with this insurance.

**7-1.12B(5) Automobile Liability Insurance**

- The Contractor shall carry automobile liability insurance, including coverage for all owned, hired, and nonowned automobiles. The primary limits of liability shall be not less than \$1,000,000 combined single limit each accident for bodily injury and property damage. The umbrella or excess liability coverage required under Section 7-1.12B(4)(b) also applies to automobile liability.

**7-1.12B(6) Policy Forms, Endorsements, and Certificates**

- The Contractor shall provide its General Liability Insurance under Commercial General Liability policy form No. CG0001 as published by the Insurance Services Office (ISO) or under a policy form at least as broad as policy form No. CG0001.

**7-1.12B(7) Deductibles**

- The State may expressly allow deductible clauses, which it does not consider excessive, overly broad, or harmful to the interests of the State. Regardless of the allowance of exclusions or deductions by the State, the Contractor is responsible for any deductible amount and shall warrant that the coverage provided to the State is in accordance with Section 7-1.12B, "Insurance."

**7-1.12B(8) Enforcement**

- The Department may assure the Contractor's compliance with its insurance obligations. Ten days before an insurance policy lapses or is canceled during the contract period, the Contractor shall submit to the Department evidence of renewal or replacement of the policy.

- If the Contractor fails to maintain any required insurance coverage, the Department may maintain this coverage and withhold or charge the expense to the Contractor or terminate the Contractor's control of the work in accordance with Section 8-1.08, "Termination of Control."

- The Contractor is not relieved of its duties and responsibilities to indemnify, defend, and hold harmless the State, its officers, agents, and employees by the Department's acceptance of insurance policies and certificates.

- Minimum insurance coverage amounts do not relieve the Contractor for liability in excess of such coverage, nor do they preclude the State from taking other actions available to it, including the withholding of funds under this contract.

**7-1.12B(9) Self-Insurance**

- Self-insurance programs and self-insured retentions in insurance policies are subject to separate annual review and approval by the State.

- If the Contractor uses a self-insurance program or self-insured retention, the Contractor shall provide the State with the same protection from liability and defense of suits as would be afforded by first-dollar insurance. Execution of the contract is the Contractor's acknowledgement that the Contractor will be bound by all laws as if the Contractor were an insurer as defined under Insurance Code Section 23 and that the self-insurance program or self-insured retention shall operate as insurance as defined under Insurance Code Section 22.

**SECTION 12: CONSTRUCTION AREA TRAFFIC CONTROL DEVICES**

Issue Date: October 6, 2006

The first sentence of the second paragraph of Section 12-1.01, "Description," of the Standard Specifications is amended to read:

- Attention is directed to Part 6 of the California MUTCD.

Section 12-2.01, "Flaggers," of the Standard Specifications is amended to read:

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## **12-2.01 FLAGGERS**

- Flaggers while on duty and assigned to traffic control or to give warning to the public that the highway is under construction and of any dangerous conditions to be encountered as a result thereof, shall perform their duties and shall be provided with the necessary equipment in conformance with Part 6 of the California MUTCD. The equipment shall be furnished and kept clean and in good repair by the Contractor at the Contractor's expense.

The first paragraph of Section 12-3.01, "General," of the Standard Specifications is amended to read:

- In addition to the requirements in Part 6 of the California MUTCD, all devices used by the Contractor in the performance of the work shall conform to the provisions in this Section 12-3.

The second sentence of the first paragraph of Section 12-3.06, "Construction Area Signs," of the Standard Specifications is amended to read:

- Construction area signs are shown in or referred to in Part 6 of the California MUTCD.

The first sentence of the fourth paragraph of Section 12-3.06, "Construction Area Signs," of the Standard Specifications is amended to read:

- All construction area signs shall conform to the dimensions, color and legend requirements of the plans, Part 6 of the California MUTCD and these specifications.

The first sentence of the eighth paragraph of Section 12-3.06, "Construction Area Signs," of the Standard Specifications is amended to read:

- Used signs with the specified sheeting material will be considered satisfactory if they conform to the requirements for visibility and legibility and the colors conform to the requirements in Part 6 of the California MUTCD.

## **SECTION 49: PILING**

Issue Date: May 1, 2006

The first sentence of the sixth paragraph of Section 49-1.03, "Determination of Length," of the Standard Specifications is amended to read:

- Indicator compression pile load testing shall conform to the requirements in ASTM Designation: D 1143-81.

The first sentence of the seventh paragraph of Section 49-1.03, "Determination of Length," of the Standard Specifications is amended to read:

- Indicator tension pile load testing shall conform to the requirements in ASTM Designation: D 3689-90.

## **SECTION 51: CONCRETE STRUCTURES**

Issue Date: September 15, 2006

The first sentence of the eleventh paragraph of Section 51-1.05, "Forms," of the Standard Specifications is amended to read:

- Form panels for exposed surfaces shall be furnished and placed in uniform widths of not less than 3 feet and in uniform lengths of not less than 6 feet, except at the end of continuously formed surfaces where the final panel length required is less than 6 feet.

The first sentence of the eleventh paragraph of Section 51-1.06C, "Removing Falsework," of the Standard Specifications is amended to read:

- Falsework for box culverts and other structures with decks lower than the roadway pavement and with span lengths of 14 feet or less shall not be released until the last placed concrete has attained a compressive strength of 1,600 psi, provided that curing of the concrete is not interrupted.

The table in the sixth paragraph of Section 51-1.12F, "Sealed Joints," of the Standard Specifications is amended to read:

Movement Rating (MR)	Seal Type
MR ≤ 5/8 inch	Type A or Type B
5/8 inch < MR ≤ 1-1/4 inches	Type A (silicone only) or Type B
1-1/4 inches < MR ≤ 2 inches	Type B
2 inches < MR ≤ 4 inches	Joint Seal Assembly (Strip Seal)
MR > 4 inches	Joint Seal Assembly (Modular Unit) or Seismic Joint

The first sentence of the eleventh paragraph of Section 51-1.12F(3)(b), "Type B Seal," of the Standard Specifications is amended to read:

- Samples of the prefabricated joint seals, not less than 3 feet in length, will be taken by the Engineer from each lot of material.

The fourth and fifth sentences of the sixth paragraph of Section 51-1.12H(1), "Plain and Fabric Reinforced Elastomeric Bearing Pads," of the Standard Specifications are amended to read:

- Each ply of fabric shall have a breaking strength of not less than 800 pounds per inch of width in each thread direction when 3" x 36" samples are tested on split drum grips. The bond between double plies shall have a minimum peel strength of 20 pounds per inch.

The hardness (Type A) requirement in the table in the eighth paragraph of Section 51-1.12H(1), "Plain and Fabric Reinforced Elastomeric Bearing Pads," of the Standard Specifications is amended to read:

Hardness (Type A)	D 2240 with 2kg mass.	55 ±5
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The first sentence of subparagraph A of the first paragraph of Section 51-1.12H(2), "Steel Reinforced Elastomeric Bearings," of the Standard Specifications is amended to read:

- The bearings shall consist of alternating steel laminates and internal elastomer laminates with top and bottom elastomer covers. Steel laminates shall have a nominal thickness of 0.075 inch (14 gage).

The third sentence of the fourth paragraph of Section 51-1.17, "Finishing Bridge Decks," of the Standard Specifications is amended to read:

- The surfaces shall have a profile trace showing no high points in excess of 0.25 inch, and the portions of the surfaces within the traveled way shall have a profile count of 5 or less in any 100-foot section.

## SECTION 52: REINFORCEMENT

Issue Date: May 30, 2006

The table in the eleventh paragraph of Section 52-1.07, "Placing," of the Standard Specifications is amended to read:

Height Zone (H) (Feet above ground)	Wind Pressure Value (psf)
H ≤ 30	20
30 < H ≤ 50	25
50 < H ≤ 100	30
H > 100	35

The table in the second paragraph of Section 52-1.08B(1), "Mechanical Splices," of the Standard Specifications is amended to read:

Reinforcing Bar Number	Total Slip
4	0.010-inch
5	0.010-inch
6	0.010-inch
7	0.014-inch
8	0.014-inch
9	0.014-inch
10	0.018-inch
11	0.018-inch
14	0.024-inch
18	0.030-inch

The subparagraph under the sixth paragraph of Section 52-1.08B(2), "Butt Welded Splices," of the Standard Specifications is amended to read:

- The minimum preheat and interpass temperatures shall be 400° F for Grade 40 bars and 600° F for Grade 60 bars. Immediately after completing the welding, at least 6 inches of the bar on each side of the splice shall be covered by an insulated wrapping to control the rate of cooling. The insulated wrapping shall remain in place until the bar has cooled below 200° F.

The first sentence of the fifth paragraph of Section 52-1.08C, "Service Splice and Ultimate Butt Splice Testing Requirements," of the Standard Specifications is amended to read:

- Prequalification and production sample splices shall be 1) a minimum length of 5 feet for reinforcing bars No. 9 and smaller, and 6.5 feet for reinforcing bars No. 10 and larger, with the splice located at mid-point; and 2) suitably identified before shipment with weatherproof markings that do not interfere with the Engineer's tamper-proof markings or seals.

The second sentence of the second paragraph of Section 52-1.08C(3), "Ultimate Butt Splice Test Criteria," of the Standard Specifications is amended to read:

- Control bars shall be 1) a minimum length of 5 feet for reinforcing bars No. 9 and smaller, and 6.5 feet for reinforcing bars No. 10 and larger, and 2) suitably identified before shipment with weatherproof markings that do not interfere with the Engineer's tamper-proof markings or seals.

**SECTION 55: STEEL STRUCTURES**

Issue Date: May 1, 2006

The CVN impact value for Grade HPS 50W in the table in the fifth paragraph of Section 55-2.01, "Description," of the Standard Specifications is amended to read:

Grade HPS 50W* (4 inches and under in thickness)	20 at 10° F
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Item B of the first paragraph of Section 55-3.10, "Fastener Threads," of the Standard Specifications is amended to read:

- B. Internal threads shall conform to the requirements in ASTM Designation: A 563.

The third paragraph of Section 55-3.19, "Bearings and Anchorages," of the Standard Specifications is amended to read:

- Immediately before setting bearing assemblies or masonry plates directly on ground concrete surfaces, the Contractor shall thoroughly clean the surfaces of the concrete and the metal to be in contact and shall apply a coating of polysulfide or polyurethane caulking conforming to the requirements in ASTM Designation: C 920, Type S, Grade NS, Class 25, Use M, to contact areas to provide full bedding.

Item D of the first paragraph of Section 55-4.01, "Measurement," of the Standard Specifications is amended to read:

- D. To determine the pay quantities of galvanized metal, the weight to be added to the calculated weight of the base metal for the galvanizing will be determined from the table of weights of zinc coatings specified in ASTM Designation: A 153/A 153M.

#### **SECTION 59: PAINTING**

Issue Date: May 1, 2006

The third paragraph of Section 59-2.12, "Painting," of the Standard Specifications is amended to read:

- Contact surfaces of stiffeners, railings, built up members or open seam exceeding 6 mils in width that would retain moisture, shall be caulked with polysulfide or polyurethane sealing compound conforming to the requirements in ASTM Designation: C 920, Type S, Grade NS, Class 25, Use O, or other approved material.

The fourth paragraph of Section 59-2.12, "Painting," of the Standard Specifications is amended to read:

- The dry film thickness of the paint will be measured in place with a calibrated Type 2 magnetic film thickness gage in conformance with the requirements in SSPC-PA 2, "Measurement of Dry Coating Thickness with Magnetic Gages," of the "SSPC: The Society for Protective Coatings," except that there shall be no limit to the number or location of spot measurements to verify compliance with specified thickness requirements.

#### **SECTION 75: MISCELLANEOUS METAL**

Issue Date: May 1, 2006

The last sentence of the thirteenth paragraph of Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications is amended to read:

- Thread dimensions for internally threaded concrete anchorage devices shall conform to the requirements in ASTM Designation: A 563.

The twenty-fourth paragraph of Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications is amended to read:

- Sealing compound, for caulking and adhesive sealing, shall be a polysulfide or polyurethane material conforming to the requirements in ASTM Designation: C 920, Type S, Grade NS, Class 25, Use O.

Item C of the fourth paragraph of Section 75-1.035, "Bridge Joint Restrainer Units," of the Standard Specifications is amended to read:

- C. Nuts shall conform to the requirements in ASTM Designation: A 563 including Appendix X1, except lubrication is not required.

The sixth paragraph of Section 75-1.05, "Galvanizing," of the Standard Specifications is amended to read:

- Galvanizing of iron and steel hardware and nuts and bolts, when specified or shown on the plans, shall conform to the requirements in ASTM Designation: A 153/A 153M, except whenever threaded studs, bolts, nuts, and washers are specified to conform to the requirements in ASTM Designation: A 307, A 325, A 449, A 563, or F 436 and zinc coating is required, they shall be hot-dip zinc coated or mechanically zinc coated in conformance with the requirements in the ASTM Designations. Unless otherwise specified, galvanizing shall be performed after fabrication.

The eighth paragraph of Section 75-1.05, "Galvanizing," of the Standard Specifications is amended to read:

- Tapping of nuts or other internally threaded parts to be used with zinc coated bolts, anchor bars or studs shall be done after galvanizing and shall conform to the requirements for thread dimensions and overtapping allowances in ASTM Designation: A 563.

**SECTION 86: SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS**

Issue Date: December 11, 2006

The traffic signal controller cabinet requirement in the table in Section 86-2.08A, "Conductor Identification," of the Standard Specifications is amended to read:

Traffic Signal	Ungrounded Circuit Conductor	Blk	None	CON-1	6
Controller Cabinet	Grounded Circuit Conductor	Wht	None	CON-2	6

The first sentence of the first paragraph of Section 86-4.06, "Pedestrian Signal Faces," of the Standard Specifications is amended to read:

- Message symbols for pedestrian signal faces shall be white WALKING PERSON and Portland orange UPRAISED HAND conforming to the requirements in the Institute of Transportation Engineers Standards: "Pedestrian Traffic Control Signal Indications" and the "California MUTCD."

The second sentence of the tenth paragraph of Section 86-4.07, "Light Emitting Diode Pedestrian Signal Face 'Upraised Hand' Module," of the Standard Specifications is amended to read:

- The color of "UPRAISED HAND" shall be Portland orange conforming to the requirements of the Institute of Transportation Engineers Standards: "Pedestrian Traffic Control Signal Indications" and the "California MUTCD."

The first paragraph of Section 86-8.01, "Payment," of the Standard Specifications is amended to read:

- The contract lump sum price or prices paid for signal, ramp metering, flashing beacon, lighting, sign illumination, traffic monitoring station, highway advisory radio systems, closed circuit television systems, or combinations thereof; for modifying or removing those systems; for temporary systems; or the lump sum or unit prices paid for various units of those systems; or the lump sum or per foot price paid for conduit of the various sizes, types and installation methods listed in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in furnishing and installing, modifying, or removing the systems, combinations or units thereof, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer, including any necessary pull boxes (except when the type required is shown as a separate contract item); excavation and backfill; concrete foundations (except when shown as a separate contract item); pedestrian barricades; furnishing and installing illuminated street name signs; installing sign panels on pedestrian barricades, on flashing beacon standards, and on traffic signal mast arms; restoring sidewalk, pavement and appurtenances damaged or destroyed during construction; salvaging existing materials; and making all required tests.

**SECTION 91: PAINT**

Issue Date: May 1, 2006

Section 91-3, "Paints for Timber," of the Standard Specifications is amended to read:

**91-3 PAINTS FOR TIMBER**

**91-3.01 WOOD PRIMER, LATEX-BASE**

**Classification:**

- This specification covers a ready-mixed priming paint for use on unpainted wood or exterior woodwork. It shall conform with the requirements in the Detailed Performance Standards of the Master Painters Institute (MPI) for exterior wood primers, and be listed on the Exterior Latex Wood Primer MPI List Number 6.

## **91-3.02 PAINT; LATEX-BASE FOR EXTERIOR WOOD, WHITE AND TINTS**

### **Classification:**

• This specification covers a ready-mixed paint for use on wood surfaces subject to outside exposures. This paint shall conform to the requirements in the Detailed Performance Standards of the Master Painters Institute (MPI) for Paint, Latex, Exterior, and shall be listed on the following MPI Approved Products List:

- A. Exterior Latex, Flat MPI Gloss Level 1, MPI List Number 10.
- B. Exterior Latex, Semi-Gloss, MPI Gloss Level 5, MPI List Number 11.
- C. Exterior Latex, Gloss, MPI Gloss Level 6, MPI List Number 119.

• Unpainted wood shall first be primed with wood primer conforming to the provisions in Section 91-3.01, "Wood Primer, Latex-Base."

Section 91-4, "Miscellaneous Paints," of the Standard Specifications is amended to read:

## **91-4 MISCELLANEOUS PAINTS**

### **91-4.01 THROUGH 91-4.04 (BLANK)**

## **91-4.05 PAINT; ACRYLIC EMULSION, EXTERIOR WHITE AND LIGHT AND MEDIUM TINTS**

### **Classification:**

• This specification covers an acrylic emulsion paint designed for use on exterior masonry. This paint shall conform to the requirements in the Detailed Performance Standards of the Master Painters Institute (MPI) for Paint, Latex, Exterior, and shall be listed on the following MPI Approved Products Lists:

- A. Exterior Latex, Flat MPI Gloss Level 1, MPI List Number 10.
- B. Exterior Latex, Semi-Gloss, MPI Gloss Level 5, MPI List Number 11.
- C. Exterior Latex, Gloss, MPI Gloss Level 6, MPI List Number 119.

• This paint may be tinted by using "universal" or "all purpose" concentrates.

## **SECTION 92: ASPHALTS**

Issue Date: November 3, 2006

Section 92, "Asphalts," of the Standard Specifications is amended to read:

### **92-1.01 DESCRIPTION**

• Asphalt is refined petroleum or a mixture of refined liquid asphalt and refined solid asphalt that are prepared from crude petroleum. Asphalt is:

1. Free from residues caused by the artificial distillation of coal, coal tar, or paraffin
2. Free from water
3. Homogeneous

### **92-1.02 MATERIALS**

#### **GENERAL**

• Furnish asphalt under the Department's "Certification Program for Suppliers of Asphalt." The Department maintains the program requirements, procedures, and a list of approved suppliers at:

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

- Transport, store, use, and dispose of asphalt safely.
- Prevent the formation of carbonized particles caused by overheating asphalt during manufacturing or construction.

## GRADES

- Performance graded (PG) asphalt binder is:

Performance Graded Asphalt Binder

Property	AASHTO Test Method	Specification				
		Grade				
		PG 58-22 <sup>a</sup>	PG 64-10	PG 64-16	PG 64-28	PG 70-10
Original Binder						
Flash Point, Minimum °C	T 48	230	230	230	230	230
Solubility, Minimum % <sup>b</sup>	T 44	99	99	99	99	99
Viscosity at 135°C, <sup>c</sup> Maximum, Pa·s	T 316	3.0	3.0	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T 315	58 1.00	64 1.00	64 1.00	64 1.00	70 1.00
RTFO Test, <sup>e</sup> Mass Loss, Maximum, %	T 240	1.00	1.00	1.00	1.00	1.00
RTFO Test Aged Binder						
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T 315	58 2.20	64 2.20	64 2.20	64 2.20	70 2.20
Ductility at 25°C Minimum, cm	T 51	75	75	75	75	75
PAV <sup>f</sup> Aging, Temperature, °C	R 28	100	100	100	100	110
RTFO Test and PAV Aged Binder						
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum G*/sin(delta), kPa	T 315	22 <sup>d</sup> 5000	31 <sup>d</sup> 5000	28 <sup>d</sup> 5000	22 <sup>d</sup> 5000	34 <sup>d</sup> 5000
Creep Stiffness, Test Temperature, °C Maximum S-value, Mpa Minimum M-value	T 313	-12 300 0.300	0 300 0.300	-6 300 0.300	-18 300 0.300	0 300 0.300

Notes:

- Use as asphalt rubber base stock for high mountain and high desert area.
- The Engineer waives this specification if the supplier is a Quality Supplier as defined by the Department's "Certification Program for Suppliers of Asphalt."
- The Engineer waives this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.
- Test the sample at 3°C higher if it fails at the specified test temperature. G\*/sin(delta) remains 5000 kPa maximum.
- "RTFO Test" means the asphaltic residue obtained using the Rolling Thin Film Oven Test, AASHTO Test Method T 240 or ASTM Designation: D 2872. The residue from mass change determination may be used for other tests.
- "PAV" means Pressurized Aging Vessel.

- Performance graded polymer modified asphalt binder (PG Polymer Modified) is:

Performance Graded Polymer Modified Asphalt Binder <sup>a</sup>

Property	AASHTO Test Method	Specification Grade		
		PG 58-34 PM	PG 64-28 PM	PG 76-22 PM
Original Binder				
Flash Point, Minimum °C	T 48	230	230	230
Solubility, Minimum % <sup>b</sup>	T 44 <sup>c</sup>	98.5	98.5	98.5
Viscosity at 135°C, <sup>d</sup> Maximum, Pa·s	T 316	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T 315	58 1.00	64 1.00	76 1.00
RTFO Test, Mass Loss, Maximum, %	T 240	0.60	0.60	0.60
RTFO Test Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T 315	58 2.20	64 2.20	76 2.20
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum (delta), %	T 315	Note e 80	Note e 80	Note e 80
Elastic Recovery <sup>f</sup> , Test Temp., °C Minimum recovery, %	T 301	25 75	25 75	25 65
PAV <sup>g</sup> Aging, Temperature, °C	R 28	100	100	110
RTFO Test and PAV Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum G*sin(delta), kPa	T 315	16 5000	22 5000	31 5000
Creep Stiffness, Test Temperature, °C Maximum S-value, MPa Minimum M-value	T 313	-24 300 0.300	-18 300 0.300	-12 300 0.300

Notes:

- a. Do not modify PG Polymer Modified using acid modification.
- b. The Engineer waives this specification if the supplier is a Quality Supplier as defined by the Department's "Certification Program for Suppliers of Asphalt."
- c. The Department allows ASTM D 5546 instead of AASHTO T 44
- d. The Engineer waives this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.
- e. Test temperature is the temperature at which G\*/sin(delta) is 2.2 kPa. A graph of log G\*/sin(delta) plotted against temperature may be used to determine the test temperature when G\*/sin(delta) is 2.2 kPa. A graph of (delta) versus temperature may be used to determine delta at the temperature when G\*/sin(delta) is 2.2 kPa. The Engineer also accepts direct measurement of (delta) at the temperature when G\*/sin(delta) is 2.2 kPa.
- f. Tests without a force ductility clamp may be performed.
- g. "PAV" means Pressurized Aging Vessel.

**SAMPLING**

- Provide a sampling device in the asphalt feed line connecting the plant storage tanks to the asphalt weighing system or spray bar. Make the sampling device accessible between 24 and 30 inches above the platform. Provide a receptacle for flushing the sampling device.
  - Include with the sampling device a valve:
    1. Between 1/2 and 3/4 inch in diameter
    2. Manufactured in a manner that a one-quart sample may be taken slowly at any time during plant operations

3. Maintained in good condition
  - Replace failed valves.
  - In the Engineer's presence, take 2 one-quart samples per operating day. Provide round, friction top, one-quart containers for storing samples.

#### **92-1.03 EXECUTION**

- If asphalt is applied, you must comply with the heating and application specifications for liquid asphalt in Section 93, "Liquid Asphalts."

#### **92-1.04 MEASUREMENT**

- If the contract work item for asphalt is paid by weight, the Department measures asphalt tons by complying with the specifications for weight determination of liquid asphalt in Section 93, "Liquid Asphalts."
  - The Engineer determines the asphalt weight from volumetric measurements if you:

1. Use a partial asphalt load
2. Use asphalt at a location other than a mixing plant and no scales within 20 miles are available and suitable
3. Deliver asphalt in either of the following:

- 3.1. A calibrated truck with each tank accompanied by its measuring stick and calibration card
- 3.2. A truck equipped with a calibrated thermometer that determines the asphalt temperature at the delivery time and with a vehicle tank meter complying with the specifications for weighing, measuring, and metering devices in Section 9-1.01, "Measurement of Quantities"

- If you furnish asphalt concrete from a mixing plant producing material for only one project, the Engineer determines the asphalt quantity by measuring the volume in the tank at the project's start and end provided the tank is calibrated and equipped with its measuring stick and calibration card.

- The Engineer determines pay quantities from volumetric measurements as follows:
  1. Before converting the volume to weight, the Engineer reduces the measured volume to that which the asphalt would occupy at 60 °F.
  2. The Engineer uses 235 gallons per ton and 8.51 pounds per gallon for the average weight and volume for PG and PG Polymer Modified asphalt grades at 60 °F.
  3. The Engineer uses the Conversion Table in Section 93, "Liquid Asphalts."

### **SECTION 93: LIQUID ASPHALTS**

Issue Date: November 3, 2006

The ninth paragraph of Section 93-1.04, "Measurement," of the Standard Specifications is amended to read:

- The following Legend and Conversion Table is to be used for converting volumes of liquid asphalt products, Grades 70 to 3000, inclusive, and paving asphalt Grades PG 58-22, PG 64-10, PG 64-16, PG 64-28, and PG 70-10, and Grades PG 58-34 PM, PG 64-28 PM, and PG 76-22 PM.

### **END OF AMENDMENTS**

#### **SECTION 2. PROPOSAL REQUIREMENTS AND CONDITIONS**

##### **2-1.01 GENERAL**

The bidder's attention is directed to the provisions in Section 2, "Proposal Requirements and Conditions," of the Standard Specifications and these special provisions for the requirements and conditions which the bidder must observe in the preparation of the proposal form and the submission of the bid.

The bidder shall complete the "List of Subcontractors" form in the Proposal and Contract book, listing the name, address, and portion of work to be performed by each subcontractor listed. In addition to the subcontractors required to be listed in conformance with Section 2-1.054, "Required Listing of Proposed Subcontractors," of the Standard Specifications, the bidder

shall list on this form each first tier Disabled Veteran Business Enterprise subcontractor to be used for credit in meeting the goal. A first tier subcontractor is one to whom the bidder proposes to directly subcontract portions of the work.

The Bidder's Bond form mentioned in the last paragraph in Section 2-1.07, "Proposal Guaranty," of the Standard Specifications will be found following the signature page of the Proposal.

Submit request for substitution of an "or equal" item, and the data substantiating the request to the Department of Transportation, P.O. Box 911, Marysville, CA 95901, Attn: NRCO/Contract Administration Engineer, so that the request is received by the Department by close of business on the fourth day, not including Saturdays, Sundays and legal holidays, following bid opening.

In conformance with Public Contract Code Section 7106, a Noncollusion Affidavit is included in the Proposal. Signing the Proposal shall also constitute signature of the Noncollusion Affidavit.

Failure of the bidder to fulfill the requirements of the Special Provisions for submittals required to be furnished after bid opening, (including but not limited to DVBE submittals, and escrowed bid documents or prequalification materials when required), may subject the bidder to a determination of the bidder's responsibility in the event it is the apparent low bidder on any subsequent public works contracts.

## **2-1.02 DISABLED VETERAN BUSINESS ENTERPRISE (DVBE)**

It is the policy of the Department that Disabled Veteran Business Enterprises (DVBEs) shall be provided the opportunity for full participation in the performance of contracts financed solely with state funds. The Contractor shall take all necessary and reasonable steps to ensure that DVBEs have such opportunity to participate in the performance of this contract. The Contractor shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of subcontracts.

It is the bidder's responsibility to make a sufficient portion of the work available to subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DVBE subcontractors and suppliers, so as to assure meeting the goal for DVBE participation or to provide information to establish that, prior to bidding, the bidder made good faith efforts to do so.

Section 999, et seq., of the Military and Veterans Code sets forth requirements for DVBE participation goals, summarized as follows:

- A. "Disabled Veteran Business Enterprise" (DVBE) means a business concern certified as a DVBE by the Office of Small Business and DVBE Services, Department of General Services.
- B. DVBEs must be certified on the date bids for the project are opened before credit may be allowed toward the DVBE goal. It is the Contractor's responsibility to verify that DVBEs are certified.
- C. The disabled veteran business owner must be domiciled in the State of California.
- D. A DVBE may participate as a prime contractor, as a subcontractor, as a joint venture partner with a prime or subcontractor, or as a vendor of material or supplies.
- E. The DVBE must perform a commercially useful function, that is, be responsible for the execution of a distinct element of the work and carry out its responsibility by actually performing, managing, or supervising the work. An extra participant will not be considered to perform a commercially useful function.
- F. Credit for DVBE prime contractors will be 100 percent of the contract price.
- G. Credit for participation of a DVBE subcontractor, supplier, or broker will be 100 percent provided such DVBE is performing a commercially useful function.
- H. A DVBE broker shall submit the required declarations and federal tax returns at the time of performance.

Failure to carry out the requirements of Section 999, et seq., of the Military and Veterans Code shall constitute a material breach of this contract and may result in termination of the contract or other remedy the Department deems appropriate.

A DVBE joint venture partner must be responsible for specific contract items of work, or portions thereof. The DVBE joint venture partner must share in the ownership, control, management responsibilities, risks, and profits of the joint venture. The DVBE joint venture must submit the joint venture agreement with the Caltrans Bidder DVBE Information form required in Section 2-1.02B, "Submission of DVBE Information," elsewhere in these special provisions.

Section 10115 of the Public Contract Code requires the Department to establish a goal for Disabled Veteran Business Enterprise (DVBE) participation in contracts.

### **2-1.02A DVBE GOAL FOR THIS PROJECT**

#### **The Disabled Veteran Business Enterprise (DVBE) participation goal for this project: 3 percent.**

The Office of Small Business and DVBE Services, Department of General Services, is located at 707 Third Street, West Sacramento, CA 95605. It may be contacted at (800) 559-5529 or (916) 375-4940 or its internet web site at <http://www.pd.dgs.ca.gov/smbus/default.htm> for program information.

## **2-1.02B SUBMISSION OF DVBE INFORMATION**

The required DVBE information shall be submitted on the "CALTRANS BIDDER - DVBE INFORMATION" form included in the Proposal. If this information is not submitted with the bid, the DVBE information forms shall be removed from the documents prior to submitting the bid.

If the DVBE information is not submitted with the bid, the apparent successful bidder (low bidder), the second low bidder and the third low bidder shall submit the DVBE information to the following address: Department of Transportation, MS 43, Attn: Office Engineer, 1727 30th Street, Sacramento, California 95816 so the information is received by the Department no later than 4:00 p.m. on the fourth day, not including Saturdays, Sundays and legal holidays, following bid opening. Failure to submit the required DVBE information by the time specified will be grounds for finding the bid or proposal nonresponsive. Other bidders need not submit DVBE information unless requested to do so by the Department.

The bidder's DVBE information shall establish that either it met the goal or that, prior to bidding, it made good faith efforts to meet the goal. Information demonstrating that a good faith effort to meet the DVBE goal has been made by the bidder shall be submitted on the "DVBE INFORMATION GOOD FAITH EFFORTS" form included in the Proposal.

Bidders are cautioned that even though their submittal indicates they will meet the stated DVBE goal, their submittal should also include their good faith efforts information along with their DVBE goal information to protect their eligibility for award of the contract in the event the Department, in its review, finds that the goal has not been met.

The bidder's DVBE information shall include the names of all DVBE firms that will participate, with a complete description of work or supplies to be provided by each and the dollar value of each DVBE transaction. When 100 percent of a contract item of work is not to be performed or furnished by a DVBE, a description of the exact portion of that work to be performed or furnished by that DVBE shall be included in the DVBE information, including the planned location of that work.

A bidder shall be deemed to have made good faith efforts if, within the time specified by the Department, it submits documentary evidence that all of the following actions were taken:

- A. Contact was made with the Office of Small Business and DVBE services, Department of General Services or their web site at <http://www.pd.dgs.ca.gov/smbus/default.htm> to identify Disabled Veteran Business Enterprises.
- B. Advertising was published in trade media and media focusing on Disabled Veteran Business Enterprises, unless time limits imposed by the Department do not permit that advertising.
- C. Invitations to bid were submitted to potential Disabled Veteran Business Enterprise contractors.
- D. Available Disabled Veteran Business Enterprises were considered.

## **2-1.03 SMALL BUSINESS AND NON-SMALL BUSINESS SUBCONTRACTOR PREFERENCES**

Attention is directed to the Small Business Procurement and Contract Act, Government Code Section 14835, et seq. and to the Small Business regulations at Title 2, California Code of Regulations, Section 1896, et seq.

Bidders, subcontractors, and suppliers who wish to be certified as Small Businesses under the provisions of those laws and regulations, shall be certified as Small Business by the Office of Small Business and DVBE Services, Department of General Services, 707 Third Street, West Sacramento, CA 95605.

Attention is directed to "Award and Execution of Contract" of these special provisions.

### **2-1.03A SMALL BUSINESS PREFERENCE**

To request Small Business Preference, bidders shall fill out and sign the "Request for Small Business Preference and Non-small Business Subcontractor Preference" form in the Proposal and shall attach a copy of their Office of Small Business and DVBE Services small business certification letter to the form. The bidder's signature on the "Request for Small Business Preference" certifies that the bidder is certified as a Small Business at the time and day of bid opening or has applied for certification and is subsequently certified by the Department of General Services.

### **2-1.03B NON-SMALL BUSINESS SUBCONTRACTOR PREFERENCE**

To request Non-small Business Subcontractor Preference, bidders shall fill out and sign the "Request for Small Business Preference and Non-small Business Subcontractor Preference" form in the Proposal. The bidder's signature certifies that the bidder commits to subcontract at least 25 percent of its bid amount with one or more subcontractors or suppliers that are certified as Small Businesses.

The bidder shall also fill out the "CALTRANS BIDDER - SMALL BUSINESS SUBCONTRACTOR - INFORMATION" form. If the Small Business Subcontractor information is not submitted with the bid, the form shall be removed from the documents and submitted in the same time and manner specified for DVBE information in "Submission of DVBE Information" of these special provisions. The bidder shall attach a copy of the Office of Small Business and DVBE Services small business certification letter for each listed subcontractor or supplier, to the form. The listed subcontractors and suppliers shall be certified as Small Business at the time and day of bid opening or have applied for certification and are

subsequently certified by the Department of General Services. Each listed subcontractor or supplier shall be designated to perform a commercially useful function.

#### **2-1.04 CALIFORNIA COMPANY PREFERENCE**

Attention is directed to "Award and Execution of Contract" of these special provisions.

In conformance with the requirements of Section 6107 of the Public Contract Code, a "California company" will be granted a reciprocal preference for bid comparison purposes as against a nonresident contractor from any state that gives or requires a preference to be given contractors from that state on its public entity construction contracts.

A "California company" means a sole proprietorship, partnership, joint venture, corporation, or other business entity that was a licensed California contractor on the date when bids for the public contract were opened and meets one of the following:

- A. Has its principal place of business in California.
- B. Has its principal place of business in a state in which there is no local contractor preference on construction contracts.
- C. Has its principal place of business in a state in which there is a local contractor construction preference and the Contractor has paid not less than \$5000 in sales or use taxes to California for construction related activity for each of the five years immediately preceding the submission of the bid.

To carry out the "California company" reciprocal preference requirements of Section 6107 of the Public Contract Code, all bidders shall fill out and sign the California Company Preference form in the Proposal. The bidder's signature on the California Company Preference form certifies, under penalty of perjury, that the bidder is or is not a "California company" and if not, the amount of the preference applied by the state of the nonresident Contractor.

A nonresident Contractor shall disclose any and all bid preferences provided to the nonresident Contractor by the state or country in which the nonresident Contractor has its principal place of business.

Proposals without the California Company Preference form filled out and signed may be rejected.

### **SECTION 3. AWARD AND EXECUTION OF CONTRACT**

The bidder's attention is directed to the provisions in Section 3, "Award and Execution of Contract," of the Standard Specifications and these special provisions for the requirements and conditions concerning award and execution of contract.

Requests for relief of bid and bid protests are to be delivered to the following address: Department of Transportation, MS 43, Attn: Office Engineer, 1727 30th Street, Sacramento, CA 95816 or by facsimile to the Office Engineer at (916) 227-6282.

The award of the contract, if made, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed and who has met the goal for DVBE participation or has demonstrated, to the satisfaction of the Department, good faith efforts to do so.

The contract shall be executed by the successful bidder and shall be returned, together with the contract bonds and the documents identified in Section 3-1.025, "Insurance Policies," of the Standard Specifications, to the Department so that it is received within 10 days, not including Saturdays, Sundays and legal holidays, after the bidder has received the contract for execution. Failure to do so shall be just cause for forfeiture of the proposal guaranty. The executed contract documents shall be delivered to the following address: Department of Transportation MS 43, Attn: Office Engineer, 1727 30th Street, Sacramento, CA 95816.

A "Payee Data Record" form will be included in the contract documents to be executed by the successful bidder. The purpose of the form is to facilitate the collection of taxpayer identification data. The form shall be completed and returned to the Department by the successful bidder with the executed contract, contract bonds and the documents identified in Section 3-1.025, "Insurance Policies," of the Standard Specifications,. For the purposes of the form, payee shall be deemed to mean the successful bidder. The form is not to be completed for subcontractors or suppliers. Failure to complete and return the "Payee Data Record" form to the Department as provided herein will result in the retention of 20 percent of payments due the Contractor and penalties of up to \$20,000. This retention of payments for failure to complete the "Payee Data Record" form is in addition to any other retention of payments due the Contractor.

Attention is also directed to "Small Business and Non-small Business Subcontractor Preferences" of these special provisions.

A bidder who is certified as a Small Business by the Office of Small Business and DVBE Services, Department of General Services, will be allowed a preference in the award of this contract under the following conditions:

- A. The bidder filled out and signed the "Request for Small Business Preference and Non-small Business Subcontractor Preference" form, requesting Small Business preference, and attached a copy of its Office of Small Business and DVBE Services small business certification letter to the form; and

B. The apparent low bidder is not certified as a Small Business.

A bidder who is not certified as a Small Business by the Office of Small Business and DVBE Services, Department of General Services, will be allowed a preference in the award of this contract under the following conditions:

- A. The bidder filled out and signed the "Request for Small Business Preference and Non-small Business Subcontractor Preference" form, requesting Non-small Business Subcontractor preference and notifying the Department that it commits to subcontract at least 25 percent of its bid amount with one or more Small Businesses, and submitted the "CALTRANS BIDDER – SMALL BUSINESS SUBCONTRACTOR – INFORMATION" form listing the subcontractors and suppliers it commits to subcontract with; and
- B. The apparent low bidder is not certified as a Small Business, and has not filled out and signed the "Request for Small Business Preference and Non-small Business Subcontractor Preference."

The small business preference will be a reduction in the bid submitted by the small business contractor, for bid comparison purposes, by an amount equal to 5 percent of the amount bid by the apparent low bidder, the amount not to exceed \$50,000. If this reduction results in the small business contractor becoming the low bidder, or in a precise tie with a non-small business apparent low bidder, then the contract will be awarded to the small business contractor on the basis of the actual bid of the small business contractor notwithstanding the reduced bid price used for bid comparison purposes.

The Non-Small Business Subcontractor preference will be a reduction in the bid submitted by the Non-small Business contractor requesting the preference, for bid comparison purposes, by an amount equal to 5 percent of the amount bid by the apparent low bidder, the amount not to exceed \$50,000. If this reduction results in the Non-small Business contractor requesting the preference becoming the low bidder, or in a precise tie with a Non-small Business apparent low bidder not requesting the preference, then the contract will be awarded to the Non-small Business contractor requesting the preference on the basis of its actual bid notwithstanding the reduced bid price used for bid comparison purposes. Application of the Non-Small Business Subcontractor preference shall not result in the displacement of a Small Business in winning the award.

Attention is also directed to "California Company Preference" of these special provisions.

The amount of the California company reciprocal preference shall be equal to the amount of the preference applied by the state of the nonresident contractor with the lowest responsive bid, except where the "California company" is eligible for a California Small Business Preference or a California Non-small Business Subcontractor Preference, in which case the preference applied shall be the greater of the two, but not both.

If the bidder submitting the lowest responsive bid is not a "California company" and with the benefit of the reciprocal preference, a "California company's" responsive bid is equal to or less than the original lowest responsive bid, the "California company" will be awarded the contract at its submitted bid price except as provided below.

Small business bidders shall have precedence over nonsmall business bidders in that the application of the "California company" preference for which nonsmall business bidders may be eligible shall not result in the denial of the award to a small business bidder.

DVBE bidders shall have precedence over non-DVBE bidders in that in the event the application of the small business preference to more than one bidder results in a precise tie in the bid amounts used for comparison purposes, the award shall go to the DVBE that is also a small business. This precedence shall not apply to the application of the California company reciprocal preference.

#### **SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES**

Attention is directed to the provisions in Section 8-1.03, "Beginning of Work," Section 8-1.06, "Time of Completion," and Section 8-1.07, "Liquidated Damages," of the Standard Specifications and these special provisions.

The Contractor shall begin work within 15 calendar days after the contract has been approved by the Attorney General or the attorney appointed and authorized to represent the Department of Transportation.

This work shall be diligently prosecuted to completion before the expiration of **20 WORKING DAYS** beginning on the fifteenth calendar day after approval of the contract.

The Contractor shall pay to the State of California the sum of \$2900 per day, for each and every calendar day's delay in finishing the work in excess of **20 WORKING DAYS**.

#### **SECTION 5. GENERAL**

##### **SECTION 5-1. MISCELLANEOUS**

### **5-1.01 LINES AND GRADES**

Attention is directed to Section 5-1.07, "Lines and Grades," of the Standard Specifications.

Stakes or marks will be set by the Engineer in conformance with the requirements in Chapter 12, "Construction Surveys," of the Department's Surveys Manual.

### **5-1.017 CONTRACT BONDS**

Attention is directed to Section 3-1.02, "Contract Bonds," of the Standard Specifications and these special provisions.

The payment bond shall be in a sum not less than one hundred percent of the total amount payable by the terms of the contract.

### **5-1.018 GUARANTEE**

#### **GENERAL**

The Contractor shall guarantee the work is in accordance with contract requirements and remains free from substantial defects in materials and workmanship for a period of one year after contract acceptance. For certain portions of the work where the Director relieves the Contractor of responsibility in accordance with Section 7-1.15, "Relief from Maintenance and Responsibility," of the Standard Specifications, the guarantee period starts on the relief date and ends one year thereafter.

Substantial defects in materials and workmanship means defective work objectively manifested by damaged, displaced, or missing parts or components and workmanship resulting in improper function of materials, components, equipment, or systems, as installed or manufactured by the Contractor, subcontractor, supplier, or manufacturer.

During the guarantee period, the Contractor shall repair or replace contract work and associated work which is not in accordance with contract requirements or has substantial defects in materials and workmanship. The Contractor shall perform the corrective work with no expense to the Department other than State-provided field inspection services.

The guarantee of work excludes damage or displacement that is outside the control of the Contractor and caused by normal wear and tear, improper operation, insufficient maintenance, abuse, unauthorized modification, or natural disaster as described in Section 7-1.165, "Damage by Storm, Flood, Tsunami or Earthquake," of the Standard Specifications.

The Contractor shall have the same insurance coverage during corrective work operations as prior to contract acceptance, in accordance with Section 7-1.12, "Indemnification and Insurance," of the Standard Specifications.

The contract bonds furnished in accordance with Section 3-1.02, "Contract Bonds," of the Standard Specifications must remain in full force and effect during the guarantee period and until all corrective work is complete.

In the case of conflict between this guarantee provision and any warranty provision included in the contract, the warranty provision shall govern for the specific construction product or feature covered.

#### **CORRECTIVE WORK**

During the guarantee period, the Department will monitor performance of the highway facilities completed by the Contractor and will perform a thorough review of the contract work at least 60 days before the expiration of the one-year guarantee.

If the Engineer discovers contract work not in compliance with contract requirements or that has substantial defects in materials and workmanship, at any time during the guarantee period, a list of items that require corrective work will be developed and forwarded to the Contractor. Within 15 days of receipt of a list, the Contractor shall submit to the Engineer a detailed plan for performing corrective work. The work plan shall include a start to finish schedule. It shall include a list of labor, equipment, materials, and any special services intended to be used. It shall clearly show related work including traffic control, temporary delineation, and permanent delineation.

The Contractor shall start the corrective and related work within 15 days of receiving notice from the Engineer that the Contractor's work plan is approved. The corrective work shall be diligently prosecuted and completed within the time allotted in the approved work plan.

If the Engineer determines that corrective work, covered by the guarantee, is urgently needed to prevent injury or property damage, the Engineer will give the Contractor a request to start emergency repair work and a list of items that require repair work. The Contractor shall mobilize within 24 hours and diligently perform emergency repair work on the damaged highway facilities. The Contractor shall submit a work plan within 5 days of starting emergency repair work.

If the Contractor fails to commence and execute, with due diligence, corrective work and related work required under the guarantee in the time allotted, the Engineer may proceed to have the work performed by State forces or other forces at the Contractor's expense. Upon demand, the Contractor shall pay all costs incurred by the Department for work performed by State forces or other forces including labor, equipment, material, and special services.

## **PAYMENT**

Full compensation for performing corrective work; and related work such as traffic control, temporary delineation, and permanent delineation, and to maintain insurance coverage and bonds, shall be considered as included in the contract prices paid for the various contract items of work and no separate payment will be made therefor.

### **5-1.019 COST REDUCTION INCENTIVE**

Attention is directed to Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications.

Prior to preparing a written cost reduction proposal, the Contractor shall request a meeting with the Engineer to discuss the proposal in concept. Items of discussion will also include permit issues, impact on other projects, impact on the project schedule, peer reviews, overall merit of the proposal, and review times required by the Department and other agencies.

If a cost reduction proposal submitted by the Contractor, and subsequently approved by the Engineer, provides for a reduction in contract time, 50 percent of that contract time reduction shall be credited to the State by reducing the contract working days, not including plant establishment. Attention is directed to "Beginning of Work, Time of Completion and Liquidated Damages" of these special provisions regarding the working days.

If a cost reduction proposal submitted by the Contractor, and subsequently approved by the Engineer, provides for a reduction in traffic congestion or avoids traffic congestion during construction, 60 percent of the estimated net savings in construction costs attributable to the cost reduction proposal will be paid to the Contractor. In addition to the requirements in Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications, the Contractor shall provide detailed comparisons of the traffic handling between the existing contract and the proposed change, and estimates of the traffic volumes and congestion.

### **5-1.02 LABOR NONDISCRIMINATION**

Attention is directed to the following Notice that is required by Chapter 5 of Division 4 of Title 2, California Code of Regulations.

#### **NOTICE OF REQUIREMENT FOR NONDISCRIMINATION PROGRAM**

##### **(GOV. CODE, SECTION 12990)**

Your attention is called to the "Nondiscrimination Clause", set forth in Section 7-1.01A(4), "Labor Nondiscrimination," of the Standard Specifications, which is applicable to all nonexempt State contracts and subcontracts, and to the "Standard California Nondiscrimination Construction Contract Specifications" set forth therein. The specifications are applicable to all nonexempt State construction contracts and subcontracts of \$5,000 or more.

### **5-1.022 PAYMENT OF WITHHELD FUNDS**

Payment of withheld funds shall conform to Section 9-1.065, "Payment of Withheld Funds," of the Standard Specifications and these special provisions.

Funds withheld from progress payments to ensure performance of the contract that are eligible for payment into escrow or to an escrow agent pursuant to Section 10263 of the California Public Contract Code do not include funds withheld or deducted from payment due to failure of the Contractor to fulfill a contract requirement.

### **5-1.03 INTEREST ON PAYMENTS**

Interest shall be payable on progress payments, payments after acceptance, final payments, extra work payments, and claim payments as follows:

- A. Unpaid progress payments, payment after acceptance, and final payments shall begin to accrue interest 30 days after the Engineer prepares the payment estimate.
- B. Unpaid extra work bills shall begin to accrue interest 30 days after preparation of the first pay estimate following receipt of a properly submitted and undisputed extra work bill. To be properly submitted, the bill must be submitted within 7 days of the performance of the extra work and in conformance with the provisions in Section 9-1.03C, "Records," and Section 9-1.06, "Partial Payments," of the Standard Specifications. An undisputed extra work bill not submitted within 7 days of performance of the extra work will begin to accrue interest 30 days after the preparation of the second pay estimate following submittal of the bill.
- C. The rate of interest payable for unpaid progress payments, payments after acceptance, final payments, and extra work payments shall be 10 percent per annum.

- D. The rate of interest payable on a claim, protest or dispute ultimately allowed under this contract shall be 6 percent per annum. Interest shall begin to accrue 61 days after the Contractor submits to the Engineer information in sufficient detail to enable the Engineer to ascertain the basis and amount of said claim, protest or dispute.

The rate of interest payable on any award in arbitration shall be 6 percent per annum if allowed under the provisions of Civil Code Section 3289.

**5-1.04 PUBLIC SAFETY**

The Contractor shall provide for the safety of traffic and the public in conformance with the provisions in Section 7-1.09, "Public Safety," of the Standard Specifications and these special provisions.

The Contractor shall install temporary railing (Type K) between a lane open to public traffic and an excavation, obstacle or storage area when the following conditions exist:

- A. Excavations-The near edge of the excavation is 12 feet or less from the edge of the lane, except:
  - 1. Excavations covered with sheet steel or concrete covers of adequate thickness to prevent accidental entry by traffic or the public.
  - 2. Excavations less than one foot deep.
  - 3. Trenches less than one foot wide for irrigation pipe or electrical conduit, or excavations less than one foot in diameter.
  - 4. Excavations parallel to the lane for the purpose of pavement widening or reconstruction.
  - 5. Excavations in side slopes, where the slope is steeper than 4:1 (horizontal:vertical).
  - 6. Excavations protected by existing barrier or railing.
- B. Temporarily Unprotected Permanent Obstacles-The work includes the installation of a fixed obstacle together with a protective system, such as a sign structure together with protective railing, and the Contractor elects to install the obstacle prior to installing the protective system; or the Contractor, for the Contractor's convenience and with permission of the Engineer, removes a portion of an existing protective railing at an obstacle and does not replace such railing complete in place during the same day.
- C. Storage Areas-Material or equipment is stored within 12 feet of the lane and the storage is not otherwise prohibited by the provisions of the Standard Specifications and these special provisions.

The approach end of temporary railing (Type K), installed in conformance with the provisions in this section "Public Safety" and in Section 7-1.09, "Public Safety," of the Standard Specifications, shall be offset a minimum of 15 feet from the edge of the traffic lane open to public traffic. The temporary railing shall be installed on a skew toward the edge of the traffic lane of not more than one foot transversely to 10 feet longitudinally with respect to the edge of the traffic lane. If the 15-foot minimum offset cannot be achieved, the temporary railing shall be installed on the 10 to 1 skew to obtain the maximum available offset between the approach end of the railing and the edge of the traffic lane, and an array of temporary crash cushion modules shall be installed at the approach end of the temporary railing.

Except for installing, maintaining and removing traffic control devices, whenever work is performed or equipment is operated in the following work areas, the Contractor shall close the adjacent traffic lane unless otherwise provided in the Standard Specifications and these special provisions:

Approach Speed of Public Traffic (Posted Limit) (Miles Per Hour)	Work Areas
Over 45	Within 6 feet of a traffic lane but not on a traffic lane
35 to 45	Within 3 feet of a traffic lane but not on a traffic lane

The lane closure provisions of this section shall not apply if the work area is protected by permanent or temporary railing or barrier.

When traffic cones or delineators are used to delineate a temporary edge of a traffic lane, the line of cones or delineators shall be considered to be the edge of the traffic lane, however, the Contractor shall not reduce the width of an existing lane to less than 10 feet without written approval from the Engineer.

When work is not in progress on a trench or other excavation that required closure of an adjacent lane, the traffic cones or portable delineators used for the lane closure shall be placed off of and adjacent to the edge of the traveled way. The spacing of the cones or delineators shall be not more than the spacing used for the lane closure.

Suspended loads or equipment shall not be moved nor positioned over public traffic or pedestrians.

Full compensation for conforming to the provisions in this section "Public Safety," including furnishing and installing temporary railing (Type K) and temporary crash cushion modules, shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

#### **5-1.05 TESTING**

Testing of materials and work shall conform to the provisions in Section 6-3, "Testing," of the Standard Specifications and these special provisions.

Whenever the provisions of Section 6-3.01, "General," of the Standard Specifications refer to tests or testing, it shall mean tests to assure the quality and to determine the acceptability of the materials and work.

The Engineer will deduct the costs for testing of materials and work found to be unacceptable, as determined by the tests performed by the Department, and the costs for testing of material sources identified by the Contractor which are not used for the work, from moneys due or to become due to the Contractor. The amount deducted will be determined by the Engineer.

#### **5-1.06 REMOVAL OF ASBESTOS AND HAZARDOUS SUBSTANCES**

When the presence of asbestos or hazardous substances are not shown on the plans or indicated in the specifications and the Contractor encounters materials which the Contractor reasonably believes to be asbestos or a hazardous substance as defined in Section 25914.1 of the Health and Safety Code, and the asbestos or hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed to be safe. The Contractor shall immediately cease work in the affected area and report the condition to the Engineer in writing.

In conformance with Section 25914.1 of the Health and Safety Code, removal of asbestos or hazardous substances including exploratory work to identify and determine the extent of the asbestos or hazardous substance will be performed by separate contract.

If delay of work in the area delays the current controlling operation, the delay will be considered a right of way delay and the Contractor will be compensated for the delay in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

#### **5-1.065 SOLID WASTE DISPOSAL AND RECYCLING REPORT**

This work shall consist of reporting disposal and recycling of construction solid waste, as specified in these special provisions. For the purposes of this section, solid waste includes construction and demolition waste debris, but not hazardous waste.

Annually by the fifteenth day of January, the Contractor shall complete and certify Form CEM-2025, "Solid Waste Disposal and Recycling Report," which quantifies solid waste generated by the work performed and disposed of in landfills or recycled during the previous calendar year. The amount and type of solid waste disposed of or recycled shall be reported in either tons or cubic feet. The Contractor shall also complete and certify Form CEM-2025 within 5 days following contract acceptance.

Form CEM-2025, "Solid Waste Disposal and Recycling Report" can be downloaded at:

<http://www.dot.ca.gov/hq/construc/manual2001>

If the Contractor has not submitted Form CEM-2025, by the dates specified above, the Department will withhold the amount of \$10,000 for each missing or incomplete report. The moneys withheld will be released for payment on the next monthly estimate for partial payment following the date that a complete and acceptable Form CEM-2025 is submitted to the Engineer. Upon completion of all contract work and submittal of the final Form CEM-2025, remaining withheld funds associated with this section, "Solid Waste Disposal and Recycling Report," will be released for payment. Withheld funds in conformance with this section shall be in addition to other moneys withheld provided for in the contract. No interest will be due the Contractor on withheld amounts.

Full compensation for preparing and submitting Form CEM-2025, "Solid Waste Disposal and Recycling Report," shall be considered as included in the contract price for the various items of work involved and no additional compensation will be allowed therefor.

#### **5-1.07 (BLANK)**

#### **5-1.08 (Blank)**

### **5-1.09 SUBCONTRACTING**

Attention is directed to the provisions in Section 8-1.01, "Subcontracting," of the Standard Specifications, Section 2, "Proposal Requirements and Conditions," and Section 3, "Award and Execution of Contract," of these special provisions.

Pursuant to the provisions in Section 1777.1 of the Labor Code, the Labor Commissioner publishes and distributes a list of contractors ineligible to perform work as a subcontractor on a public works project. This list of debarred contractors is available from the Department of Industrial Relations web site at:

<http://www.dir.ca.gov/DLSE/Debar.html>

Unauthorized substitution of a listed subcontractor may constitute a violation of the "Subletting and Subcontracting Fair Practices Act" and may subject the Contractor to the penalties imposed therein.

#### **5-1.09A DVBE SUBCONTRACTING**

The DVBEs listed by the Contractor in response to the provisions in Section 2-1.02B, "Submission of DVBE Information," and Section 3, "Award and Execution of Contract," of these special provisions, which are determined by the Department to be certified DVBEs, shall perform the work and supply the materials for which they are listed, unless the Contractor has received prior written authorization to perform the work with other forces or to obtain the materials from other sources.

Unauthorized substitution of a DVBE may also constitute a violation of California Code of Regulations Section 1896.64. The Contractor shall not be entitled to payment for the work or material unless it is performed or supplied by the listed DVBE or by other forces (including those of the Contractor) pursuant to prior written authorization of the Engineer.

The provisions in Section 2-1.02, "Disabled Veteran Business Enterprise (DVBE)," of these special provisions that DVBEs shall be certified on the date bids are opened does not apply to substitutions after award of the contract.

The Contractor shall maintain records of all subcontracts entered into with certified DVBE subcontractors and records of materials purchased from certified DVBE suppliers. The records shall show the name and business address of each DVBE subcontractor or vendor and the total dollar amount actually paid each DVBE subcontractor or vendor.

The Contractor agrees that the awarding department will have the right to review, obtain and copy all records pertaining to performance of DVBEs during the contract. The Contractor agrees to provide the awarding department with any relevant information requested and shall permit access to its premises, upon reasonable notice, during normal business hours for the purpose of interviewing employees and inspecting and copying such books, records, accounts and other material that may be relevant to a matter under investigation for the purpose of determining compliance with Public Contract Code Section 10115 et seq. The Contractor further agrees to maintain such records for a period of three (3) years after final payment under the contract.

#### **5-1.09B NON-SMALL BUSINESS SUBCONTRACTING**

The Small Business subcontractors listed by the Contractor in response to the provisions in Section 2-1.03B, "Non-small Business Subcontractor Preference," and Section 3, "Award and Execution of Contract," of these special provisions, which are determined by the Department to be certified as Small Business, shall perform the work and supply the materials for which they are listed, unless the Contractor has received prior written authorization to perform the work with other forces or to obtain the materials from other sources.

Unauthorized substitution of a Small Business subcontractor may also constitute a violation of California Code of Regulations Section 1896.10 and may subject the Contractor to the sanctions referenced therein.

The provisions in Section 2-1.03B, "Non-small Business Subcontractor Preference," of these special provisions that Small Business subcontractors shall be certified on the date bids are opened does not apply to substitutions after award of the contract.

The Contractor shall maintain records of all subcontracts entered into with certified Small Business subcontractors and records of materials purchased from certified Small Business suppliers. The records shall show the name and business address of each Small Business subcontractor or vendor and the total dollar amount actually paid each Small Business subcontractor or vendor.

The Contractor agrees that the awarding department will have the right to review, obtain and copy all records pertaining to performance of Small Businesses during the contract. The Contractor agrees to provide the awarding department with any relevant information requested and shall permit access to its premises, upon reasonable notice, during normal business hours for the purpose of interviewing employees and inspecting and copying such books, records, accounts and other material that may be relevant to a matter under investigation for the purpose of determining compliance with California Code of Regulations Section 1896, et seq. The Contractor further agrees to maintain such records for a period of three (3) years after final payment under the contract.

### **5-1.10 PROMPT PROGRESS PAYMENT TO SUBCONTRACTORS**

Attention is directed to the provisions in Sections 10262 and 10262.5 of the Public Contract Code concerning prompt payment to subcontractors.

### **5-1.103 RECORDS**

The Contractor shall maintain cost accounting records for the contract pertaining to, and in such a manner as to provide a clear distinction between, the following 6 categories of costs of work during the life of the contract:

- A. Direct costs of contract item work.
- B. Direct costs of changes in character in conformance with Section 4-1.03C, "Changes in Character of Work," of the Standard Specifications.
- C. Direct costs of extra work in conformance with Section 4-1.03D, "Extra Work," of the Standard Specifications.
- D. Direct costs of work not required by the contract and performed for others.
- E. Direct costs of work performed under a notice of potential claim in conformance with the provisions in Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications.
- F. Indirect costs of overhead.

Cost accounting records shall include the information specified for daily extra work reports in Section 9-1.03C, "Records," of the Standard Specifications. The requirements for furnishing the Engineer completed daily extra work reports shall only apply to work paid for on a force account basis.

The cost accounting records for the contract shall be maintained separately from other contracts, during the life of the contract, and for a period of not less than 3 years after the date of acceptance of the contract. If the Contractor intends to file claims against the Department, the Contractor shall keep the cost accounting records specified above until complete resolution of all claims has been reached.

### **5-1.104 INTERNET DAILY EXTRA WORK REPORT**

When extra work is being paid for on a force account basis, the Contractor shall submit daily extra work reports in conformance with the provisions in Section 9-1.03C, "Records," of the Standard Specifications and these special provisions.

The Contractor shall send daily extra work reports to the Engineer using the Department's Internet extra work billing system. The reports shall conform to the requirements in the "iCAS User's Guide" (Guide). The Guide is available from the Department, and is also found at:

[http://www.dot.ca.gov/hq/construc/ewb/EWB\\_INSTRUCTION.pdf](http://www.dot.ca.gov/hq/construc/ewb/EWB_INSTRUCTION.pdf)

The Department will provide system accounts to the Contractor's authorized representatives when at least one of the representatives has received training. The Department will provide system training to at least one of the Contractor's authorized representatives within 30 days of the Contractor's request for training. The Department will assign an account and user identification to the Contractor's authorized representatives, and each Contractor's authorized representative shall maintain a unique password. A daily extra work report that the Contractor's authorized representative sends to the Department using the Internet extra work billing system will be considered signed by the Contractor. A daily extra work report that the Engineer approves using the Internet extra work billing system will be considered signed by the Engineer.

Daily extra work reports that include billing for materials shall be substantiated by a valid copy of a vendor's invoice in conformance to the requirements in Section 9-1.03C, "Records," of the Standard Specifications. Each materials invoice shall clearly identify the relative daily extra work report and the associated cost of the materials. In addition to postal service and parcel service and if approved by the Engineer, invoices may be sent by facsimile or as an electronic-mail attachment.

The Contractor shall maintain the Contractor's interface with the Department's Internet extra work billing system. If the Contractor is using the file transfer process to submit extra work reports, it shall conform to the file transfer format and process defined in the Guide.

### **5-1.11 COMPENSATION ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS**

The provisions of this section shall apply only to the following contract items:

ITEM CODE	ITEM
390102	ASPHALT CONCRETE (TYPE A)

The compensation payable for paving asphalt used in asphalt concrete will be increased or decreased in conformance with the provisions of this section for paving asphalt price fluctuations exceeding 10 percent (Iu/Ib is greater than 1.10 or less than 0.90) which occur during performance of the work.

The adjustment in compensation will be determined in conformance with the following formulae when the item of asphalt concrete is included in a monthly estimate:

- A. Total monthly adjustment = AQ
- B. For an increase in paving asphalt price index exceeding 10 percent:

$$A = 0.90 (Iu/Ib - 1.10) Ib$$

- C. For a decrease in paving asphalt price index exceeding 10 percent:

$$A = 0.90 (Iu/Ib - 0.90) Ib$$

- D. Where:

- A = Adjustment in dollars per ton of paving asphalt used to produce asphalt concrete rounded to the nearest \$0.01.
- Iu = The California Statewide Paving Asphalt Price Index which is in effect on the first business day of the month within the pay period in which the quantity subject to adjustment was included in the estimate.
- Ib = The California Statewide Paving Asphalt Price Index for the month in which the bid opening for the project occurred.
- Q = Quantity in tons of paving asphalt that was used in producing the quantity of asphalt concrete shown under "This Estimate" on the monthly estimate using the amount of asphalt determined by the Engineer.

The adjustment in compensation will also be subject to the following:

- A. The compensation adjustments provided herein will be shown separately on payment estimates. The Contractor shall be liable to the State for decreased compensation adjustments and the Department may deduct the amount thereof from moneys due or that may become due the Contractor.
- B. Compensation adjustments made under this section will be taken into account in making adjustments in conformance with the provisions in Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications.
- C. In the event of an overrun of contract time, adjustment in compensation for paving asphalt included in estimates during the overrun period will be determined using the California Statewide Paving Asphalt Price Index in effect on the first business day of the month within the pay period in which the overrun began.

The California Statewide Paving Asphalt Price Index is determined each month on the first business day of the month by the Department using the median of posted prices in effect as posted by Chevron, Mobil, and Unocal for the Buena Vista, Huntington Beach, Kern River, Long Beach, Midway Sunset, and Wilmington fields.

In the event that the companies discontinue posting their prices for a field, the Department will determine an index from the remaining posted prices. The Department reserves the right to include in the index determination the posted prices of additional fields.

The California Statewide Paving Asphalt Price Index is available on the Division of Engineering Services website at:

[http://www.dot.ca.gov/hq/esc/oe/asphalt\\_index/astable.html](http://www.dot.ca.gov/hq/esc/oe/asphalt_index/astable.html)

#### 5-1.12 AREAS FOR CONTRACTOR'S USE

Attention is directed to the provisions in Section 7-1.19, "Rights in Land and Improvements," of the Standard Specifications and these special provisions.

The highway right of way shall be used only for purposes that are necessary to perform the required work. The Contractor shall not occupy the right of way, or allow others to occupy the right of way, for purposes which are not necessary to perform the required work.

No State-owned parcels adjacent to the right of way are available for the exclusive use of the Contractor within the contract limits. The Contractor shall secure, at the Contractor's own expense, areas required for plant sites, storage of equipment or materials, or for other purposes.

No area is available within the contract limits for the exclusive use of the Contractor. However, temporary storage of equipment and materials on State property may be arranged with the Engineer, subject to the prior demands of State maintenance forces and to other contract requirements. Use of the Contractor's work areas and other State-owned property shall be at the Contractor's own risk, and the State shall not be held liable for damage to or loss of materials or equipment located within such areas.

### **5-1.13 PAYMENTS**

Attention is directed to Sections 9-1.06, "Partial Payments," and 9-1.07, "Payment After Acceptance," of the Standard Specifications and these special provisions.

For the purpose of making partial payments pursuant to Section 9-1.06, "Partial Payments," of the Standard Specifications, the amount set forth for the contract items of work hereinafter listed shall be deemed to be the maximum value of the contract item of work which will be recognized for progress payment purposes:

- A. Clearing and Grubbing \$2000

After acceptance of the contract pursuant to the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, the amount, if any, payable for a contract item of work in excess of the maximum value for progress payment purposes hereinabove listed for the item, will be included for payment in the first estimate made after acceptance of the contract.

No partial payment will be made for any materials on hand which are furnished but not incorporated in the work.

### **5-1.14 PROJECT INFORMATION**

The information in this section has been compiled specifically for this project and is made available for bidders and Contractors. Other information referenced in the Standard Specifications and these special provisions do not appear in this section. The information is subject to the conditions and limitations set forth in Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work," and Section 6-2, "Local Materials," of the Standard Specifications. Bidders and Contractors shall be responsible for knowing the procedures for obtaining information.

Data and information available for inspection and/or purchase, at the North Region Construction Office, are as follows:

Cross Sections

Cross sections are available in paper copy.

The \_North Region Construction Office is located at 379 Colusa Highway Yuba City, Ca 95991.

## **SECTION 6. (BLANK)**

## **SECTION 7. (BLANK)**

## **SECTION 8. MATERIALS**

### **SECTION 8-1. MISCELLANEOUS**

#### **8-1.01 PREQUALIFIED AND TESTED SIGNING AND DELINEATION MATERIALS**

The Department maintains the following list of Prequalified and Tested Signing and Delineation Materials. The Engineer shall not be precluded from sampling and testing products on the list of Prequalified and Tested Signing and Delineation Materials.

The manufacturer of products on the list of Prequalified and Tested Signing and Delineation Materials shall furnish the Engineer a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each type of traffic product supplied.

For those categories of materials included on the list of Prequalified and Tested Signing and Delineation Materials, only those products shown within the listing may be used in the work. Other categories of products, not included on the list of Prequalified and Tested Signing and Delineation Materials, may be used in the work provided they conform to the requirements of the Standard Specifications.

Materials and products may be added to the list of Prequalified and Tested Signing and Delineation Materials if the manufacturer submits a New Product Information Form to the New Product Coordinator at the Transportation Laboratory. Upon a Departmental request for samples, sufficient samples shall be submitted to permit performance of required tests. Approval of materials or products will depend upon compliance with the specifications and tests the Department may elect to perform.

#### **PAVEMENT MARKERS, PERMANENT TYPE**

##### **Retroreflective With Abrasion Resistant Surface (ARS)**

1. Apex, Model 921AR (4" x 4")
2. Ennis Paint, Models C88 (4" x 4"), 911 (4" x 4") and 953 (2.75" x 4.5")
3. Ray-O-Lite, Model "AA" ARS (4" x 4")
4. 3M Series 290 (3.5" x 4")
5. 3M Series 290 PSA, with pressure sensitive adhesive pad (3.5" x 4")

##### **Retroreflective With Abrasion Resistant Surface (ARS)**

(for recessed applications only)

1. Ennis Paint, Model 948 (2.3" x 4.7")
2. Ennis Paint, Model 944SB (2" x 4")\*
3. Ray-O-Lite, Model 2002 (2" x 4.6")
4. Ray-O-Lite, Model 2004 ARS (2" x 4")\*

\*For use only in 4.5 inch wide (older) recessed slots

##### **Non-Reflective, 4-inch Round**

1. Apex Universal (Ceramic)
2. Apex Universal, Models 929 (ABS) and 929PP (Polypropylene)
3. Glowlite, Inc. (Ceramic)
4. Hi-Way Safety, Inc., Models P20-2000W and 2001Y (ABS)
5. Interstate Sales, "Diamond Back" (Polypropylene)
6. Novabrite Models Cdot (White) Cdot-y (Yellow), Ceramic
7. Novabrite Models Pdot-w (White) Pdot-y (Yellow), Polypropylene
8. Three D Traffic Works TD10000 (ABS), TD10500 (Polypropylene)

#### **PAVEMENT MARKERS, TEMPORARY TYPE**

##### **Temporary Markers For Long Term Day/Night Use (6 months or less)**

1. Vega Molded Products "Temporary Road Marker" (3" x 4")

##### **Temporary Markers For Short Term Day/Night Use (14 days or less)**

(For seal coat or chip seal applications, clear protective covers are required)

1. Apex Universal, Model 932
2. Filtrona Extrusion, Models T.O.M., T.R.P.M., and "HH" (High Heat)
3. Hi-Way Safety, Inc., Model 1280/1281
4. Glowlite, Inc., Model 932

#### **STRIPING AND PAVEMENT MARKING MATERIAL**

##### **Permanent Traffic Striping and Pavement Marking Tape**

1. Advanced Traffic Marking, Series 300 and 400
2. Brite-Line, Series 1000
3. Brite-Line, "DeltaLine XRP"
4. Swarco Industries, "Director 35" (For transverse application only)
5. Swarco Industries, "Director 60"
6. 3M, "Stamark" Series 380 and 5730
7. 3M, "Stamark" Series 420 (For transverse application only)

##### **Temporary (Removable) Striping and Pavement Marking Tape (6 months or less)**

1. Advanced Traffic Marking, Series 200
2. Brite-Line, Series 100

3. Garlock Rubber Technologies, Series 2000
4. P.B. Laminations, Aztec, Grade 102
5. Swarco Industries, "Director-2"
6. Trelleborg Industries, R140 Series
7. 3M Series 620 "CR", and Series A750
8. 3M Series A145, Removable Black Line Mask  
(Black Tape: for use only on Asphalt Concrete Surfaces)
9. Advanced Traffic Marking Black "Hide-A-Line"  
(Black Tape: for use only on Asphalt Concrete Surfaces)
10. Brite-Line "BTR" Black Removable Tape  
(Black Tape: for use only on Asphalt Concrete Surfaces)
11. Trelleborg Industries, RB-140  
(Black Tape: for use only on Asphalt Concrete Surfaces)

**Preformed Thermoplastic (Heated in place)**

1. Flint Trading Inc., "Hot Tape"
2. Flint Trading Inc., "Premark," "Premark 20/20 Flex," and "Premark 20/20 Flex Plus"
3. Ennis Paint Inc., "Flametape"

**Ceramic Surfacing Laminate, 6" x 6"**

1. Highway Ceramics, Inc.

**CLASS 1 DELINEATORS**

**One Piece Driveable Flexible Type, 66-inch**

1. Filtrona Extrusion, "Flexi-Guide Models 400 and 566"
2. Carsonite, Curve-Flex CFRM-400
3. Carsonite, Roadmarker CRM-375
4. FlexStake, Model 654 TM
5. GreenLine Models HWD1-66 and CGD1-66

**Special Use Type, 66-inch**

1. Filtrona Extrusion, Model FG 560 (with 18-inch U-Channel base)
2. Carsonite, "Survivor" (with 18-inch U-Channel base)
3. Carsonite, Roadmarker CRM-375 (with 18-inch U-Channel base)
4. FlexStake, Model 604
5. GreenLine Models HWDU and CGD (with 18-inch U-Channel base)
6. Impact Recovery Model D36, with #105 Driveable Base
7. Safe-Hit with 8-inch pavement anchor (SH248-GP1)
8. Safe-Hit with 15-inch soil anchor (SH248-GP2) and with 18-inch soil anchor (SH248-GP3)

**Surface Mount Type, 48-inch**

1. Bent Manufacturing Company, Masterflex Model MF-180EX-48
2. Carsonite, "Super Duck II"
3. FlexStake, Surface Mount, Models 704 and 754 TM
4. Impact Recovery Model D48, with #101 Fixed (Surface-Mount) Base
5. Three D Traffic Works "Channelflex" ID No. 522248W

**CHANNELIZERS**

**Surface Mount Type, 36-inch**

1. Bent Manufacturing Company, Masterflex Models MF-360-36 (Round) and MF-180-36 (Flat)
2. Filtrona Extrusion, Flexi-Guide Models FG300PE and FG300UR
3. Carsonite, "Super Duck" (Flat SDF-436, Round SDR-336)
4. Carsonite, "Super Duck II" Model SDCF203601MB "The Channelizer"
5. FlexStake, Surface Mount, Models 703 and 753 TM
6. GreenLine, Model SMD-36
7. Hi-way Safety, Inc. "Channel Guide Channelizer" Model CGC36

8. Impact Recovery Model D36, with #101 Fixed (Surface-Mount) Base
9. Safe-Hit, Guide Post, Model SH236SMA
10. Three D Traffic Works "Channelflex" ID No. 522053W

**Lane Separation System**

1. Filtrona Extrusion, "Flexi-Guide (FG) 300 Curb System"
2. Qwick Kurb, "Klemmfix Guide System"
3. Recycled Technology, Inc. "Safe-Lane System"
4. Dura-Curb System

**CONICAL DELINEATORS, 42-inch**

(For 28-inch Traffic Cones, see Standard Specifications)

1. Bent Manufacturing Company "T-Top"
2. Plastic Safety Systems "Navigator-42"
3. Radiator Specialty Company "Enforcer"
4. Roadmaker Company "Stacker"
5. Traffix Devices "Grabber"
6. Three D Traffic Works "Ringtop" TD7000, ID No. 742143

**OBJECT MARKERS**

**Type "K", 18-inch**

1. Filtrona Extrusion, Model FG318PE
2. Carsonite, Model SMD 615
3. FlexStake, Model 701 KM
4. Safe-Hit, Model SH718SMA

**Type "K-4" / "Q" Object Markers, 24-inch**

1. Bent Manufacturing "Masterflex" Model MF-360-24
2. Filtrona Extrusion, Model FG324PE
3. Carsonite, Super Duck II
4. FlexStake, Model 701KM
5. Safe-Hit, Models SH824SMA\_WA and SH824GP3\_WA
6. The Line Connection, Model DP21-4Q
7. Three D Traffic Works ID No. 531702W and TD 5200
8. Three D Traffic Works ID No. 520896W

**CONCRETE BARRIER MARKERS AND  
TEMPORARY RAILING (TYPE K) REFLECTORS**

**Impactable Type**

1. ARTUK, "FB"
2. Filtrona Extrusion, Models PCBM-12 and PCBM-T12
3. Duraflex Corp., "Flexx 2020" and "Electriflexx"
4. Hi-Way Safety, Inc., Model GMKRM100
5. Plastic Safety Systems "BAM" Models OM-BARR and OM-BWAR
6. Three D Traffic Works "Roadguide" Model TD 9304

**Non-Impactable Type**

1. ARTUK, JD Series
2. Plastic Safety Systems "BAM" Models OM-BITARW and OM-BITARA
3. Vega Molded Products, Models GBM and JD
4. Plastic Vacuum Forming, "Cap-It C400"

**METAL BEAM GUARD RAIL POST MARKERS**

(For use to the left of traffic)

1. Filtrona Extrusion, "Mini" (3" x 10")
2. Creative Building Products, "Dura-Bull, Model 11201"

3. Duraflex Corp., "Railrider"
4. Plastic Vacuum Forming, "Cap-It C300"

#### **CONCRETE BARRIER DELINEATORS, 16-inch**

(For use to the right of traffic)

1. Filtrona Extrusion, Model PCBM T-16
2. Safe-Hit, Model SH216RBM

#### **CONCRETE BARRIER-MOUNTED MINI-DRUM (10" x 14" x 22")**

1. Stinson Equipment Company "SaddleMarker"

#### **SOUND WALL DELINEATOR**

(Applied vertically. Place top of 3" x 12" reflective element at 48 inches above roadway)

1. Filtrona Extrusion, PCBM S-36

#### **GUARD RAILING DELINEATOR**

(Place top of reflective element at 48 inches above plane of roadway)

##### **Wood Post Type, 27-inch**

1. Filtrona Extrusion, FG 427 and FG 527
2. Carsonite, Model 427
3. FlexStake, Model 102 GR
4. GreenLine GRD 27
5. Safe-Hit, Model SH227GRD
6. Three D Traffic Works "Guardflex" TD9100

##### **Steel Post Type**

1. Carsonite, Model CFGR-327 with CFGRBK300 Mounting Bracket

#### **RETROREFLECTIVE SHEETING**

##### **Channelizers, Barrier Markers, and Delineators**

1. Avery Dennison T-6500 Series (For rigid substrate devices only)
2. Avery Dennison WR-7100 Series
3. Nippon Carbide Industries, Flexible Ultralite Grade (ULG) II
4. Reflexite, PC-1000 Metalized Polycarbonate
5. Reflexite, AC-1000 Acrylic
6. Reflexite, AP-1000 Metalized Polyester
7. Reflexite, Conformalight, AR-1000 Abrasion Resistant Coating
8. 3M, High Intensity

##### **Traffic Cones, 13-inch Sleeves**

1. Reflexite SB (Polyester), Vinyl or "TR" (Semi-transparent)

##### **Traffic Cones, 4-inch and 6-inch Sleeves**

1. Nippon Carbide Industries, Flexible Ultralite Grade (ULG) II
2. Reflexite, Vinyl, "TR" (Semi-transparent) or "Conformalight"
3. 3M Series 3840
4. Avery Dennison S-9000C

##### **Barrels and Drums**

1. Avery Dennison WR-6100
2. Nippon Carbide Industries, Flexible Ultralite Grade (ULG) II
3. Reflexite, "Conformalight", "Super High Intensity" or "High Impact Drum Sheeting"
4. 3M Series 3810

**Barricades: Type I, Medium-Intensity (Typically Enclosed Lens, Glass-Bead Element)**

1. Nippon Carbide Industries, CN8117
2. Avery Dennison, W 1100 series
3. 3M Series CW 44

**Barricades: Type II, Medium-High-Intensity (Typically Enclosed Lens, Glass-Bead Element)**

1. Avery Dennison, W-2100 Series

**Signs: Type II, Medium-High-Intensity (Typically Enclosed Lens, Glass-Bead Element)**

1. Avery Dennison, T-2500 Series
2. Nippon Carbide Industries, Nikkalite 18000

**Signs: Type III, High-Intensity (Typically Encapsulated Glass-Bead Element)**

1. Avery Dennison, T-5500 and T-5500A, and T-6500 Series
2. Nippon Carbide Industries, Nikkalite Brand Ultralite Grade II
3. 3M 3870 and 3930 Series

**Signs: Type IV, High-Intensity (Typically Unmetallized Microprismatic Element)**

1. Avery Dennison, T-6500 Series
2. Nippon Carbide Industries, Crystal Grade, 94000 Series
3. Nippon Carbide Industries, Model No. 94847 Fluorescent Orange
4. Nippon Carbide Industries, Model No. 94844 Fluorescent Yellow Green
5. 3M Series 3930
6. 3M Series 3924S, Fluorescent Orange

**Signs: Type VI, Elastomeric (Roll-Up) High-Intensity, without Adhesive**

1. Avery Dennison, WU-6014
2. Novabrite LLC, "Econobrite"
3. Reflexite "Vinyl"
4. Reflexite "SuperBright"
5. Reflexite "Marathon"
6. 3M Series RS20

**Signs: Type VII, Super-High-Intensity (Typically Unmetallized Microprismatic Element)**

1. 3M Series 3924S, Fluorescent Orange
2. 3M LDP Series 3970

**Signs: Type VIII, Super-High-Intensity (Typically Unmetallized Microprismatic Element)**

1. Avery Dennison, T-7500 Series
2. Avery Dennison, T-7511 Fluorescent Yellow
3. Avery Dennison, T-7513 Fluorescent Yellow Green
4. Avery Dennison, W-7514 Fluorescent Orange
5. Nippon Carbide Industries, Nikkalite Crystal Grade Series 92800
6. Nippon Carbide Industries, Nikkalite Crystal Grade Model 92844 Fluorescent Yellow/Green
7. Nippon Carbide Industries, Nikkalite Crystal Grade Model 92847 Fluorescent Orange

**Signs: Type IX, Very-High-Intensity (Typically Unmetallized Microprismatic Element)**

1. 3M VIP Series 3981 Diamond Grade Fluorescent Yellow
2. 3M VIP Series 3983 Diamond Grade Fluorescent Yellow/Green
3. 3M VIP Series 3990 Diamond Grade

**SPECIALTY SIGNS**

1. Hallmark Technologies, Inc., All Sign STOP Sign (All Plastic), 30 inches
2. Reflexite "Endurance" Work Zone Sign (with Semi-Rigid Plastic Substrate)

## **SIGN SUBSTRATE**

### **Fiberglass Reinforced Plastic (FRP)**

1. Fiber-Brite
2. Sequentia, "Polyplate"
3. Intoplast Group "InteCel" (0.5 inch for Post-Mounted CZ Signs, 48-inch or less)

### **Aluminum Composite**

1. Alcan Composites "Dibond Material, 80 mils" (for temporary construction signs only)
2. Mitsubishi Chemical America, Alpolic 350 (for temporary construction signs only)

## **SECTION 8-2. CONCRETE**

### **8-2.01 PORTLAND CEMENT CONCRETE**

Portland cement concrete shall conform to the provisions in Section 90, "Portland Cement Concrete," of the Standard Specifications and these special provisions.

References to Section 90-2.01, "Portland Cement," of the Standard Specifications shall mean Section 90-2.01, "Cement," of the Standard Specifications.

Mineral admixture shall be combined with cement in conformance with the provisions in Section 90-4.08, "Required Use of Mineral Admixtures," of the Standard Specifications for the concrete materials specified in Section 56-2, "Roadside Signs," of the Standard Specifications.

The requirements of Section 90-4.08, "Required Use of Mineral Admixture," of the Standard Specifications shall not apply to Section 19-3.025C, "Soil Cement Bedding," of the Standard Specifications.

The Department maintains a list of sources of fine and coarse aggregate that have been approved for use with a reduced amount of mineral admixture in the total amount of cementitious material to be used. A source of aggregate will be considered for addition to the approved list if the producer of the aggregate submits to the Transportation Laboratory certified test results from a qualified testing laboratory that verify the aggregate complies with the requirements. Prior to starting the testing, the aggregate test shall be registered with the Department. A registration number can be obtained by calling (916) 227-7228. The registration number shall be used as the identification for the aggregate sample in correspondence with the Department. Upon request, a split of the tested sample shall be provided to the Department. Approval of aggregate will depend upon compliance with the specifications, based on the certified test results submitted, together with any replicate testing the Department may elect to perform. Approval will expire 3 years from the date the most recent registered and evaluated sample was collected from the aggregate source.

Qualified testing laboratories shall conform to the following requirements:

- A. Laboratories performing ASTM Designation: C 1293 shall participate in the Cement and Concrete Reference Laboratory (CCRL) Concrete Proficiency Sample Program and shall have received a score of 3 or better on all tests of the previous 2 sets of concrete samples.
- B. Laboratories performing ASTM Designation: C 1260 shall participate in the Cement and Concrete Reference Laboratory (CCRL) Pozzolan Proficiency Sample Program and shall have received a score of 3 or better on the shrinkage and soundness tests of the previous 2 sets of pozzolan samples.

Aggregates on the list shall conform to one of the following requirements:

- A. When the aggregate is tested in conformance with the requirements in California Test 554 and ASTM Designation: C 1293, the average expansion at one year shall be less than or equal to 0.040 percent; or
- B. When the aggregate is tested in conformance with the requirements in California Test 554 and ASTM Designation: C 1260, the average of the expansion at 16 days shall be less than or equal to 0.15 percent.

The amounts of cement and mineral admixture used in cementitious material shall be sufficient to satisfy the minimum cementitious material content requirements specified in Section 90-1.01, "Description," or Section 90-4.05, "Optional Use of Chemical Admixtures," of the Standard Specifications and shall conform to the following:

- A. The minimum amount of cement shall not be less than 75 percent by weight of the specified minimum cementitious material content.
- B. The minimum amount of mineral admixture to be combined with cement shall be determined using one of the following criteria:

1. When the calcium oxide content of a mineral admixture is equal to or less than 2 percent by weight, the amount of mineral admixture shall not be less than 15 percent by weight of the total amount of cementitious material to be used in the mix.
  2. When the calcium oxide content of a mineral admixture is greater than 2 percent by weight, and any of the aggregates used are not listed on the approved list as specified in these special provisions, then the amount of mineral admixture shall not be less than 25 percent by weight of the total amount of cementitious material to be used in the mix.
  3. When the calcium oxide content of a mineral admixture is greater than 2 percent by weight and the fine and coarse aggregates are listed on the approved list as specified in these special provisions, then the amount of mineral admixture shall not be less than 15 percent by weight of the total amount of cementitious material to be used in the mix.
  4. When a mineral admixture that conforms to the provisions for silica fume in Section 90-2.04, "Admixture Materials," of the Standard Specifications is used, the amount of mineral admixture shall not be less than 10 percent by weight of the total amount of cementitious material to be used in the mix.
  5. When a mineral admixture that conforms to the provisions for silica fume in Section 90-2.04, "Admixture Materials," of the Standard Specifications is used and the fine and coarse aggregates are listed on the approved list as specified in these special provisions, then the amount of mineral admixture shall not be less than 7 percent by weight of the total amount of cementitious material to be used in the mix.
- C. The total amount of mineral admixture shall not exceed 35 percent by weight of the total amount of cementitious material to be used in the mix. Where Section 90-1.01, "Description," of the Standard Specifications specifies a maximum cementitious content in pounds per cubic yard, the total weight of cement and mineral admixture per cubic yard shall not exceed the specified maximum cementitious material content.

### **SECTION 8-3. (BLANK)**

### **SECTION 9. (BLANK)**

## **SECTION 10. CONSTRUCTION DETAILS**

### **SECTION 10-1. GENERAL**

#### **10-1.01 ORDER OF WORK**

Order of work shall conform to the provisions in Section 5-1.05, "Order of Work," of the Standard Specifications and these special provisions.

Shoulders shall be paved to within 0.15 ft of finished grade whenever public traffic is within 6 ft of the shoulder.

Attention is directed to "Material Containing Lead" of these special provisions regarding roadway excavation operations.

Attention is directed to "Water Pollution Control" of these special provisions regarding the submittal and approval of the Water Pollution Control Program prior to performing work having potential to cause water pollution.

At the end of each working day if a difference in excess of 0.15 foot exists between the elevation of the existing pavement and the elevation of excavations within 8 feet of the traveled way, material shall be placed and compacted against the vertical cuts adjacent to the traveled way. During excavation operations, native material may be used for this purpose; however, once placing of the structural section commences, structural material shall be used. The material shall be placed as shown on the "Open Trench Signing and Marking" detail of the plans. Full compensation for placing the material on a 1:4 slope, regardless of the number of times the material is required, and subsequent removing or reshaping of the material to the lines and grades shown on the plans shall be considered as included in the contract price paid for the materials involved and no additional compensation will be allowed therefor. No payment will be made for material placed in excess of that required for the structural section.

#### **10-1.02 MATERIAL CONTAINING LEAD**

This work shall consist of handling material containing lead in conformance with the Standard Specifications and these special provisions. Material within the project limits has not been designated or determined to contain aerially deposited lead. Material within the project limits does not require special disposal however, low levels of lead are present within the project limits.

Lead has been detected within the top 0.6 m of material in unpaved areas within the highway right of way. Levels of lead found within the project limits range from less than 2.5 to 530 mg/kg total lead with an average concentration of 34 mg/kg total lead, as analyzed by EPA Test Method 6010 or EPA Test Method 7000 series.

After the Contractor has completed handling materials containing lead, in conformance with the plans, Standard Specifications, and these special provisions, the Contractor shall have no responsibility for such materials in place and shall not be obligated for further cleanup, removal, or remedial actions for such materials.

Handling material containing lead shall be in conformance with rules and regulations including, but not limited to, those of the following agencies:

California Division of Occupational Safety and Health Administration (Cal-OSHA)  
California Central Regional Water Quality Control Board, Region 5R – Central Valley

Full compensation for conforming to the requirements of this section, except for the Lead Compliance Plan, shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

### **LEAD COMPLIANCE PLAN**

The Contractor shall prepare a project specific Lead Compliance Plan to prevent or minimize worker exposure to lead while handling material containing lead. Attention is directed to Title 8, California Code of Regulations, Section 1532.1, "Lead," for specific Cal-OSHA requirements when working with lead.

The Lead Compliance Plan shall contain the elements listed in Title 8, California Code of Regulations, Section 1532.1(e)(2)(B). Before submission to the Engineer, the Lead Compliance Plan shall be approved by an Industrial Hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene. The Plan shall be submitted to the Engineer at least 7 days prior to beginning work in areas containing lead.

Prior to performing work in areas containing lead, personnel who have no prior training, including State personnel, shall complete a safety training program provided by the Contractor, that meets the requirements of Title 8, California Code of Regulations, Section 1532.1, "Lead," and the Contractor's Lead Compliance Program.

Personal protective equipment, training, and washing facilities, required by the Contractor's Lead Compliance Plan shall be supplied to State personnel by the Contractor. The number of State personnel will be 5.

The contract lump sum price paid for Lead Compliance Plan shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing the Lead Compliance Plan, including paying the Certified Industrial Hygienist, and for providing personal protective equipment, training and medical surveillance, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

### **10-1.03 WATER POLLUTION CONTROL**

#### **GENERAL**

Water pollution control work shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications, section of these special provisions entitled "Relations With California Regional Water Quality Control Board," and these special provisions.

The Contractor shall perform water pollution control work in conformance with the requirements in the "Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual" and addenda in effect on the day the Notice to Contractors is dated. This manual is referred to as the "Preparation Manual." Copies of the Preparation Manual may be obtained from:

State of California  
Department of Transportation  
Publication Distribution Unit  
1900 Royal Oaks Drive  
Sacramento, California 95815  
Telephone: (916) 445-3520

The Preparation Manual and other references for performing water pollution control work are available from the Department's Construction Storm Water and Water Pollution Control web site at:

<http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm>

The Contractor shall designate in writing a Water Pollution Control Manager (WPCM). The Contractor shall ensure that the WPCM is qualified to prepare and implement the WPCP.

The WPCM shall be:

1. Responsible for water pollution control work.
2. The primary contact for water pollution control work.

3. Have authority to mobilize crews to make immediate repairs to water pollution control practices.

The Contractor may designate one manager to prepare the WPCP and a different manager to implement the plan.

#### **WATER POLLUTION CONTROL PROGRAM**

The Contractor shall submit a Water Pollution Control Program (WPCP) to the Engineer for approval. The WPCP shall conform to the requirements in the Preparation Manual and these special provisions.

The WPCP shall include water pollution control practices:

- A. For storm water and non-storm water from areas outside of the job site related to construction activities for this contract such as:
  1. Staging areas.
  2. Storage yards.
  3. Access roads.
- B. Appropriate for each season as described in "Implementation Requirements" of these special provisions.

The WPCP shall include a schedule that:

- A. Describes when work activities that could cause water pollution will be performed.
- B. Identifies soil stabilization and sediment control practices for disturbed soil area.
- C. Includes dates when these practices will be 25, 50, and 100 percent complete.
- D. Shows 100 percent completion of these practices before the rainy season.

The WPCP shall include the following temporary water pollution control practices and their associated contract items of work as shown on the plans or specified in these special provisions:

- A. Temporary Sediment Control
  1. Temporary Fiber Roll
  2. Temporary Straw Bail Barrier
- B. Waste Management and Materials Pollution Control
  1. Temporary Concrete Washout (Portable)

Within 5 days after contract approval, the Contractor shall submit 2 copies of the WPCP to the Engineer. The Contractor shall allow 5 days for the Engineer's review. If revisions are required, the Engineer will provide comments and specify the date that the review stopped. The Contractor shall revise and resubmit the WPCP within 5 days of receipt of the Engineer's comments. The Engineer's review will resume when the complete WPCP is resubmitted. When the Engineer approves the WPCP, the Contractor shall submit 3 copies of the approved WPCP to the Engineer. The Contractor may proceed with construction activities if the Engineer conditionally approves the WPCP while minor revisions are being completed. If the Engineer fails to complete the review within the time allowed and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay, the Contractor will be compensated for resulting losses, and an extension of time will be granted, as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The Contractor shall not perform work that may cause water pollution until the WPCP has been approved by the Engineer. The Engineer's review and approval shall not waive any contract requirements and shall not relieve the Contractor from complying with Federal, State and local laws, regulations, and requirements.

If there is a change in construction schedule or activities, the Contractor shall prepare an amendment to the WPCP to identify additional or revised water pollution control practices. The Contractor shall submit the amendment to the Engineer for review within a time agreed to by the Engineer not to exceed the number of days specified for the initial submittal of the WPCP. The Engineer will review the amendment within the same time allotted for the review of the initial submittal of the WPCP.

If directed by the Engineer or requested in writing by the Contractor and approved by the Engineer, changes to the water pollution control work specified in these special provisions will be allowed. Changes may include addition of new water

pollution control practices. The Contractor shall incorporate these changes in the WPCP. Additional water pollution control work will be paid for as extra work in accordance with Section 4-1.03, "Extra work," of the Standard Specifications.

The Contractor shall keep a copy of the approved WPCP at the job site. The WPCP shall be made available when requested by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or the local storm water management agency. Requests from the public shall be directed to the Engineer.

### **IMPLEMENTATION REQUIREMENTS**

The Contractor shall construct, inspect, maintain, remove, and dispose of the water pollution control practices.

The Contractor's responsibility for WPCP implementation shall continue throughout any temporary suspension of work ordered in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications.

If the Contractor or the Engineer identifies a deficiency in the implementation of the approved WPCP, the deficiency shall be corrected immediately, unless an agreed date for correction is approved in writing by the Engineer. The deficiency shall be corrected before the onset of precipitation. If the Contractor fails to correct the deficiency by the agreed date or before the onset of precipitation, the Department may correct the deficiency and deduct the cost of correcting deficiencies from payments.

#### **Year-Round**

The Contractor shall monitor the National Weather Service weather forecast on a daily basis during the contract. The Contractor may use an alternative weather forecasting service if approved by the Engineer. Appropriate water pollution control practices shall be in place before precipitation.

The Contractor may discontinue earthwork operations for a disturbed area for up to 21 days and the disturbed soil area will still be considered active. When earthwork operations in the disturbed area have been completed, the Contractor shall implement appropriate water pollution control practices within 15 days, or before predicted precipitation, whichever occurs first.

Soil stabilization and sediment control practices conforming to these special provisions shall be in place during the rainy season between October 15 and April 15.

The Contractor shall implement soil stabilization and sediment control practices a minimum of 10 days before the start of the rainy season.

### **INSPECTION AND MAINTENANCE**

The WPCM shall inspect the water pollution control practices identified in the WPCP as follows:

- A. Before a forecasted storm,
- B. After precipitation that causes site runoff,
- C. At 24-hour intervals during extended precipitation,
- D. On a predetermined schedule, a minimum of once every two weeks outside of the defined rainy season, and
- E. On a predetermined schedule, a minimum of once a week during the defined rainy season.

The WPCM shall oversee the maintenance of the water pollution control practices.

The WPCM shall use the Storm Water Quality Construction Site Inspection Checklist provided in the Preparation Manual or an alternative inspection checklist provided by the Engineer. A copy of the completed site inspection checklist shall be submitted to the Engineer within 24 hours of finishing the inspection.

### **REPORTING REQUIREMENTS**

If the Contractor identifies discharges into surface waters or drainage systems causing or potentially causing pollution, or if the project receives a written notice or order from a regulatory agency, the Contractor shall immediately inform the Engineer. The Contractor shall submit a written report to the Engineer within 7 days of the discharge, notice or order. The report shall include the following information:

- A. The date, time, location, nature of the operation, type of discharge; and the cause of the notice or order.
- B. The water pollution control practices used before the discharge, or before receiving the notice or order.
- C. The date of placement and type of additional or altered water pollution control practices placed after the discharge, or after receiving the notice or order.
- D. A maintenance schedule for affected water pollution control practices.

## **PAYMENT**

During each estimate period the Contractor fails to conform to the provisions in this section, "Water Pollution Control," or fails to implement the water pollution control practices shown on the plans or specified elsewhere in these special provisions as items of work, the Department will withhold 25 percent of the progress payment.

Withholds for failure to perform water pollution control work will be in addition to all other withholds provided for in the contract. The Department will return performance-failure withholds in the progress payment following the correction for noncompliance.

The contract lump sum price paid for prepare water pollution control program shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing, obtaining approval of, and amending the WPCP, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payments for prepare water pollution control program will be made as follows:

- A. After the WPCP has been approved by the Engineer, up to 75 percent of the contract item price for prepare water pollution control program will be included in the monthly progress estimate.
- B. After acceptance of the contract in conformance with the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, payment for the remaining percentage of the contract item price for prepare water pollution control program will be made in conformance with the provisions in Section 9-1.07A, "Payment Prior to Proposed Final Estimate."

Implementation of water pollution control practices in areas outside the highway right of way not specifically provided for in the WPCP or in these special provisions will not be paid for.

Water pollution control practices for which there are separate contract items of work will be measured and paid for as those contract items of work.

### **10-1.04 CONSTRUCTION SITE MANAGEMENT**

Construction site management shall consist of controlling potential sources of water pollution before they come in contact with storm water systems or watercourses. The Contractor shall control material pollution and manage waste and non-storm water existing at the construction site by implementing effective handling, storage, use, and disposal practices.

Attention is directed to "Water Pollution Control" of these special provisions regarding the Contractor's appointment of a water pollution control manager (WPCM) for the project.

The Contractor shall train all employees and subcontractors regarding:

- A. Material pollution prevention and control;
- B. Waste management;
- C. Non-storm water management;
- D. Identifying and handling hazardous substances; and
- E. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances.

Training shall take place before starting work on this project. New employees shall receive the complete training before starting work on this project. The Contractor shall have regular meetings to discuss and reinforce spill prevention and control; material delivery, storage, use, and disposal; waste management; and non-storm water management procedures.

Instructions for material and waste handling, storage, and spill reporting and cleanup shall be posted at all times in an open, conspicuous, and accessible location at the construction site.

Nonhazardous construction site waste and excess material shall be recycled when practical or disposed of in accordance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications, unless otherwise specified.

Vehicles and equipment at the construction site shall be inspected by the WPCM on a frequent, predetermined schedule, and by the operator each day of use. Leaks shall be repaired immediately, or the vehicle or equipment shall be removed from the construction site.

### **SPILL PREVENTION AND CONTROL**

The Contractor shall implement spill and leak prevention procedures when chemicals or hazardous substances are stored. Spills of petroleum products; substances listed under CFR Title 40, Parts 110, 117, and 302; and sanitary and septic waste shall be contained and cleaned up as soon as is safe.

Minor spills involve small quantities of oil, gasoline, paint, or other material that can be controlled by the first responder upon discovery of the spill. Cleanup of minor spills includes:

- A. Containing the spread of the spill,
- B. Recovering the spilled material using absorption,
- C. Cleaning the contaminated area, and
- D. Disposing of contaminated material promptly and properly.

Semi-significant spills are those that can be controlled by the first responder with the help of other personnel. Cleanup of semi-significant spills shall be immediate. Cleanup of semi-significant spills includes:

- A. Containing the spread of the spill;
- B. Recovering the spilled material using absorption if the spill occurs on paved or an impermeable surface;
- C. Containing the spill with an earthen dike and digging up contaminated soil for disposal if the spill occurs on dirt;
- D. Covering the spill with plastic or other material to prevent contaminating runoff if the spill occurs during precipitation; and
- E. Disposing of contaminated material promptly and properly.

Significant or hazardous spills are those that cannot be controlled by construction personnel. Notifications of these spills shall be immediate. The following steps shall be taken:

- A. Construction personnel shall not attempt to cleanup the spill until qualified staff have arrived;
- B. Notify the Engineer and follow up with a written report;
- C. Obtain the services of a spills contractor or hazardous material team immediately;
- D. Notify the local emergency response team by dialing 911 and county officials at the emergency phone numbers kept on the construction site;
- E. Notify the Governor's Office of Emergency Services Warning Center at (805) 852-7550;
- F. Notify the National Response Center at (800) 424-8802 regarding spills of Federal reportable quantities in conformance with CFR Title 40, Parts 110, 119, and 302;
- G. Notify other agencies as appropriate, including:
  - 1. Fire Department,
  - 2. Public Works Department,
  - 3. Coast Guard,
  - 4. Highway Patrol,
  - 5. City Police or County Sheriff Department,
  - 6. Department of Toxic Substances,
  - 7. California Division of Oil and Gas,
  - 8. Cal OSHA, or
  - 9. Regional Water Resources Control Board.

The WPCM shall oversee and enforce proper spill prevention and control measures. Minor, semi-significant, and significant spills shall be reported to the Contractor's WPCM who shall notify the Engineer immediately.

The Contractor shall prevent spills from entering storm water runoff before and during cleanup. Spills shall not be buried or washed with water.

The Contractor shall keep material or waste storage areas clean, well organized, and equipped with enough cleanup supplies for the material being stored. Plastic shall be placed under paving equipment when not in use to catch drips.

### **MATERIAL MANAGEMENT**

Material shall be delivered, used, and stored for this contract in a manner that minimizes or eliminates discharge of material into the air, storm drain systems, or watercourses.

The Contractor shall implement the practices described in this section when taking delivery of, using, or storing the following materials:

- A. Hazardous chemicals including:
  - 1. Acids,
  - 2. Lime,
  - 3. Glues,
  - 4. Adhesives,
  - 5. Paints,

6. Solvents, and
  7. Curing compounds;
- B. Soil stabilizers and binders;
- C. Fertilizers;
- D. Detergents;
- E. Plaster;
- F. Petroleum products including:
1. Fuel,
  2. Oil, and
  3. Grease;
- G. Asphalt components and concrete components; and
- H. Pesticides and herbicides.

The Contractor shall supply the Material Safety Data Sheet to the Engineer for material used or stored. The Contractor shall keep an accurate inventory of material delivered and stored at the construction site.

Employees trained in emergency spill cleanup procedures shall be present when hazardous materials or chemicals are unloaded.

The Contractor shall use recycled or less hazardous products when practical.

Application of herbicides and pesticides shall be performed by a licensed applicator. The Contractor shall complete the Report of Chemical Spray forms when spraying herbicides or pesticides, and shall submit a copy to the Engineer before application.

### **Material Storage**

The Contractor shall store liquids, petroleum products, and substances listed in CFR Title 40, Parts 110, 117, and 302 in containers or drums approved by the United States Environmental Protection Agency, and place them in secondary containment facilities.

Secondary containment facilities shall be impervious to the materials stored there for a minimum contact time of 72 hours.

Throughout the rainy season secondary containment facilities shall be covered during non-working days and when precipitation is predicted. Secondary containment facilities shall be adequately ventilated.

The Contractor shall keep the secondary containment facility free of accumulated rainwater or spills. After precipitation, or in the event of spills or leaks, accumulated liquid shall be collected and placed into drums within 24 hours. These liquids shall be handled as hazardous waste in accordance with the provisions in "Hazardous Waste" of these special provisions, unless testing determines them to be nonhazardous.

Incompatible materials, such as chlorine and ammonia, shall not be stored in the same secondary containment facility.

Materials shall be stored in the original containers with the original product labels maintained in legible condition. Damaged or illegible labels shall be replaced immediately.

The secondary containment facility shall have the capacity to contain precipitation from a 24-hour-long, 25-year storm; and 10 percent of the aggregate volume of all containers, or all of the volume of the largest container within the facility, whichever is greater.

The Contractor shall store bagged or boxed material on pallets. Throughout the rainy season, bagged or boxed material shall be protected from wind and rain during non-working days and when precipitation is predicted.

The Contractor shall provide sufficient separation between stored containers to allow for spill cleanup or emergency response access. Storage areas shall be kept clean, well organized, and equipped with cleanup supplies appropriate for the materials being stored.

The Contractor shall repair or replace perimeter controls, containment structures, covers, and liners as needed. Storage areas shall be inspected before and after precipitation, and at least weekly during other times.

### **Stockpile Management**

The Contractor shall reduce or eliminate potential air and water pollution from stockpiled material including soil, paving material, or pressure treated wood. Stockpiles shall be located out of floodplains when possible, and at least 50 feet from concentrated flows of storm water, drainage courses, or inlets unless written approval is obtained from the Engineer.

The Contractor may discontinue adding or removing material for up to 21 days and a stockpile will still be considered active.

The Contractor shall protect active stockpiles with plastic or geotextile cover, soil stabilization measures, or with linear sediment barrier when precipitation is predicted. Active stockpiles of cold mix asphalt concrete shall be placed on an impervious surface and covered with plastic when precipitation is predicted.

The Contractor shall protect inactive soil stockpiles with a plastic or geotextile cover, or with soil stabilization measures at all times during the rainy season. A linear sediment barrier around the perimeter of the stockpile shall also be used. During the non-rainy season soil stockpiles shall be covered and protected with a linear sediment barrier when precipitation is predicted. The Contractor shall control wind erosion during dry weather as provided in Section 10, "Dust Control," of the Standard Specifications.

Stockpiles of portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, or aggregate subbase shall be covered with plastic or geotextile, or protected with a linear sediment barrier at all times during the rainy season, and when precipitation is predicted during the non-rainy season.

Stockpiles of cold mix asphalt concrete shall be placed on and covered with impermeable material at all times during the rainy season, and when precipitation is predicted during the non-rainy season.

Stockpiles of pressure treated wood shall be covered with impermeable material and placed on pallets at all times during the rainy season, and when precipitation is predicted during the non-rainy season.

The Contractor shall repair or replace linear sediment barriers and covers as needed or as directed by the Engineer to keep them functioning properly. Sediment shall be removed when it accumulates to 1/3 of the linear sediment barrier height.

## **WASTE MANAGEMENT**

### **Solid Waste**

The Contractor shall not allow litter or debris to accumulate anywhere on the construction site, including storm drain grates, trash racks, and ditch lines. The Contractor shall pick up and remove trash and debris from the construction site at least once a week. The WPCM shall monitor solid waste storage and disposal procedures on the construction site. The Contractor shall provide enough dumpsters of sufficient size to contain the solid waste generated by the project. Dumpsters shall be emptied when refuse reaches the fill line. Dumpsters shall be watertight. The Contractor shall not wash out dumpsters on the construction site. The Contractor shall provide additional containers and more frequent pickup during the demolition phase of construction

Solid waste includes:

- A. Brick,
- B. Mortar,
- C. Timber,
- D. Metal scraps,
- E. Sawdust,
- F. Pipe,
- G. Electrical cuttings,
- H. Non-hazardous equipment parts,
- I. Styrofoam and other packaging materials,
- J. Vegetative material and plant containers from highway planting, and
- K. Litter and smoking material, including litter generated randomly by the public.

Trash receptacles shall be provided and used in the Contractor's yard, field trailers, and locations where workers gather for lunch and breaks.

### **Hazardous Waste**

The Contractor shall implement hazardous waste management practices when waste is generated on the construction site from the following substances:

- A. Petroleum products,
- B. Asphalt products,
- C. Concrete curing compound,
- D. Pesticides,
- E. Acids,
- F. Paints,
- G. Stains,
- H. Solvents,
- I. Wood preservatives,
- J. Roofing tar, and

- K. Materials classified as hazardous by California Code of Regulations, Title 22, Division 4.5; or listed in CFR Title 40, Parts 110, 117, 261, or 302.

Nothing in these special provisions shall relieve the Contractor of the responsibility for compliance with Federal, State, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.

The WPCM shall oversee and enforce hazardous waste management practices. Production of hazardous materials and hazardous waste on the construction site shall be kept to a minimum. Perimeter controls, containment structures, covers, and liners shall be repaired or replaced when damaged.

The Contractor shall have a laboratory certified by the Department of Health Services (DHS) sample and test waste when hazardous material levels are unknown to determine safe methods for storage and disposal.

The Contractor shall segregate potentially hazardous waste from nonhazardous waste at the construction site. Hazardous waste shall be handled, stored, and disposed of as required in California Code of Regulations, Title 22, Division 4.5, Section 66262.34; and in CFR Title 49, Parts 261, 262, and 263.

The Contractor shall store hazardous waste in sealed containers constructed and labeled with the contents and date accumulated as required in California Code of Regulations, Title 22, Division 4.5; and in CFR Title 49, Parts 172, 173, 178, and 179. Hazardous waste containers shall be kept in temporary containment facilities conforming to the provisions in "Material Storage" of these special provisions.

There shall be adequate storage volume and containers shall be conveniently located for hazardous waste collection. Containers of hazardous waste shall not be overfilled and hazardous wastes shall not be mixed. Containers of dry waste that are not watertight shall be stored on pallets. The Contractor shall not allow potentially hazardous waste to accumulate on the ground. Hazardous waste shall be stored away from storm drains, watercourses, moving vehicles, and equipment.

The Contractor shall clean water based or oil based paint from brushes or equipment within a contained area and shall not contaminate soil, watercourses, or storm drain systems. Paints, thinners, solvents, residues, and sludges that cannot be recycled or reused shall be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths shall be disposed of as solid waste.

The Contractor shall dispose of hazardous waste within 90 days of being generated. Hazardous waste shall be disposed of by a licensed hazardous waste transporter using uniform hazardous waste manifest forms and taken to a Class I Disposal Site. A copy of the manifest shall be provided to the Engineer.

#### **Contaminated Soil**

The Contractor shall identify contaminated soil from spills or leaks by noticing discoloration, odors, or differences in soil properties. Soil with evidence of contamination shall be sampled and tested by a laboratory certified by DHS. If levels of contamination are found to be hazardous, the soil shall be handled and disposed of as hazardous waste.

Contaminated soil existing on the construction site before mobilization shall be handled and disposed of in accordance with "Material Containing Lead" of these special provisions.

The Contractor shall prevent the flow of water, including ground water, from mixing with contaminated soil by using one or a combination of the following measures:

- A. Berms,
- B. Cofferdams,
- C. Grout curtains,
- D. Freeze walls, or
- E. Concrete seal course.

If water mixes with contaminated soil and becomes contaminated, the water shall be sampled and tested by a laboratory certified by the DHS. If levels of contamination are found to be hazardous, the water shall be handled and disposed of as hazardous waste.

#### **Concrete Waste**

The Contractor shall implement practices to prevent the discharge of portland cement concrete or asphalt concrete waste into storm drain systems or watercourses.

Portland cement concrete or asphalt concrete waste shall be collected at the following locations and disposed of:

- A. Where concrete material, including grout, is used;
- B. Where concrete dust and debris result from demolition;
- C. Where sawcutting, coring, grinding, grooving, or hydro-concrete demolition of portland cement concrete or asphalt concrete creates a residue or slurry; or
- D. Where concrete trucks or other concrete-coated equipment is cleaned at the construction site.

### **Sanitary and Septic Waste**

Wastewater from sanitary or septic systems shall not be discharged or buried within the Department right of way. The WPCM shall inspect sanitary or septic waste storage and monitor disposal procedures at least weekly. Sanitary facilities that discharge to the sanitary sewer system shall be properly connected and free from leaks.

The Contractor shall obtain written approval from the local health agency, city, county, and sewer district before discharging from a sanitary or septic system directly into a sanitary sewer system, and provide a copy to the Engineer. The Contractor shall comply with local health agency requirements when using an on-site disposal system.

### **Liquid Waste**

The Contractor shall not allow construction site liquid waste, including the following, to enter storm drain systems or watercourses:

- A. Drilling slurries or fluids,
- B. Grease-free or oil-free wastewater or rinse water,
- C. Dredgings,
- D. Liquid waste running off a surface including wash or rinse water, or
- E. Other non-storm water liquids not covered by separate permits.

The Contractor shall hold liquid waste in structurally sound, leak proof containers such as:

- A. Sediment traps,
- B. Roll-off bins, or
- C. Portable tanks.

Liquid waste containers shall be of sufficient quantity and volume to prevent spills and leaks. The containers shall be stored at least 50 feet from storm drains, watercourses, moving vehicles, and equipment.

The Contractor shall remove and dispose of deposited solids from sediment traps as provided in "Solid Waste" of these special provisions, unless determined infeasible by the Engineer.

Liquid waste may require testing to determine hazardous material content before disposal.

Drilling fluids and residue shall be disposed of outside the highway right of way. If the Engineer determines that an appropriate location is available, fluids and residue exempt under California Code of Regulations, Title 23, Section 2511(g) may be dried by infiltration and evaporation in a leak proof container. The remaining solid waste may be disposed of as provided in "Solid Waste" of these special provisions.

## **NON-STORM WATER MANAGEMENT**

### **Water Control and Conservation**

The Contractor shall prevent erosion or the discharge of pollutants into storm drain systems or watercourses by managing the water used for construction operations. The Contractor shall obtain the Engineer's approval before washing anything on the construction site with water that could discharge into a storm drain system or watercourse. Discharges shall be reported to the Engineer immediately.

The Contractor shall implement water conservation practices when water is used on the construction site. Irrigation areas shall be inspected and watering schedules shall be adjusted to prevent erosion, excess watering, or runoff. The Contractor shall shut off the water source to broken lines, sprinklers, or valves, and they shall be repaired as soon as possible. When possible, water from waterline flushing shall be reused for landscape irrigation. Paved areas shall be swept and vacuumed, not washed with water.

Construction water runoff, including water from water line repair, shall be directed to areas to infiltrate into the ground and shall not be allowed to enter storm drain systems or watercourses. Spilled water shall not be allowed to escape water truck filling areas. When possible, the Contractor shall direct water from off-site sources around the construction site, or shall minimize contact with the construction site.

### **Illegal Connection and Discharge Detection and Reporting**

The Contractor shall inspect the construction site and the site perimeter before beginning work for evidence of illegal connections, discharges, or dumping. Subsequently, the construction site and perimeter shall be inspected on a frequent, predetermined schedule.

The Contractor shall immediately notify the Engineer when illegal connections, discharges, or dumping are discovered. The Contractor shall take no further action unless directed by the Engineer. Unlabeled or unidentifiable material shall be assumed to be hazardous.

The Contractor shall look for the following evidence of illegal connections, discharges, or dumping:

- A. Debris or trash piles,
- B. Staining or discoloration on pavement or soils,
- C. Pungent odors coming from drainage systems,
- D. Discoloration or oily sheen on water,
- E. Stains or residue in ditches, channels or drain boxes,
- F. Abnormal water flow during dry weather,
- G. Excessive sediment deposits,
- H. Nonstandard drainage junction structures, or
- I. Broken concrete or other disturbances near junction structures.

### **Vehicle and Equipment Cleaning**

The Contractor shall limit vehicle and equipment cleaning or washing on the construction site to that necessary to control vehicle tracking or hazardous waste. Vehicles and equipment shall not be cleaned on the construction site with soap, solvents, or steam until the Engineer has been notified. The resulting waste shall be contained and recycled, or disposed of as provided in "Liquid Waste" or "Hazardous Waste" of these special provisions, whichever is applicable. The Contractor shall not use diesel to clean vehicles or equipment, and shall minimize the use of solvents.

The Contractor shall clean or wash vehicles and equipment in a structure equipped with disposal facilities. If using a structure is not possible, vehicles and equipment shall be cleaned or washed in an outside area with the following characteristics:

- A. Located at least 50 feet from storm drainage systems or watercourses,
- B. Paved with asphalt concrete or portland cement concrete,
- C. Surrounded by a containment berm, and
- D. Equipped with a sump to collect and dispose of wash water.

When washing vehicles or equipment with water, the Contractor shall use as little water as possible. Hoses shall be equipped with a positive shutoff valve.

Wash racks shall discharge to a recycle system or to another system approved by the Engineer. Sumps shall be inspected regularly, and liquids and sediments shall be removed as needed.

### **Vehicle and Equipment Fueling and Maintenance**

The Contractor shall fuel or perform maintenance on vehicles and equipment off the construction site whenever practical. When fueling or maintenance must be done at the construction site, the Contractor shall designate a site, or sites, and obtain approval from the Engineer before using. The fueling or maintenance site shall be protected from storm water, shall be on level ground, and shall be located at least 50 feet from drainage inlets or watercourses. The WPCM shall inspect the fueling or maintenance site regularly. Mobile fueling or maintenance shall be kept to a minimum.

The Contractor shall use containment berms or dikes around the fueling and maintenance area. Adequate amounts of absorbent spill cleanup material and spill kits shall be kept in the fueling and maintenance area and on fueling trucks. Spill cleanup material and kits shall be disposed of immediately after use. Drip pans or absorbent pads shall be used during fueling or maintenance unless performed over an impermeable surface.

Fueling or maintenance operations shall not be left unattended. Fueling nozzles shall be equipped with an automatic shutoff control. Vapor recovery fueling nozzles shall be used where required by the Air Quality Management District. Nozzles shall be secured upright when not in use. Fuel tanks shall not be topped-off.

The Contractor shall recycle or properly dispose of used batteries and tires.

### **Material and Equipment Used Over Water**

Drip pans and absorbent pads shall be placed under vehicles or equipment used over water, and an adequate supply of spill cleanup material shall be kept with the vehicle or equipment. Drip pans or plastic sheeting shall be placed under vehicles or equipment on docks, barges, or other surfaces over water when the vehicle or equipment will be idle for more than one hour.

The Contractor shall provide watertight curbs or toe boards on barges, platforms, docks, or other surfaces over water to contain material, debris, and tools. Material shall be secured to prevent spills or discharge into water due to wind.

### **Structure Removal Over or Adjacent to Water**

The Contractor shall not allow demolished material to enter storm water systems or watercourses. The Contractor shall use covers and platforms approved by the Engineer to collect debris. Attachments shall be used on equipment to catch debris on small demolition operations. Debris catching devices shall be emptied regularly and debris shall be handled as provided in "Waste Management" of these special provisions.

The WPCM shall inspect demolition sites within 50 feet of storm water systems or watercourses every day.

### **Paving, Sealing, Sawcutting, and Grinding Operations**

The Contractor shall prevent the following material from entering storm drain systems or water courses:

- A. Cementitious material,
- B. Asphaltic material,
- C. Aggregate or screenings,
- D. Grinding or sawcutting residue,
- E. Pavement chunks, or
- F. Shoulder backing.

The Contractor shall cover drainage inlets and use linear sediment barriers to protect downhill watercourses until paving, sealing, sawcutting, or grinding operations are completed and excess material has been removed. Drainage inlets and manholes shall be covered during the application of seal coat, tack coat, slurry seal, or fog seal.

During the rainy season or when precipitation is predicted, paving, sawcutting, and grinding operations shall be limited to places where runoff can be captured. Seal coat, tack coat, slurry seal, or fog seal operations shall not begin if precipitation is predicted for the application or the curing period. The Contractor shall not excavate material from existing roadways during precipitation.

The Contractor shall vacuum up slurry from sawcutting operations immediately after the slurry is produced. Slurry shall not be allowed to run onto lanes open to public traffic or off the pavement.

The Contractor shall collect residue from portland cement concrete grinding operations with a vacuum attachment on the grinding machine. The residue shall not be left on the pavement or allowed to flow across the pavement.

Material excavated from existing roadways may be stockpiled as provided in "Stockpile Management" of these special provisions if approved by the Engineer. Asphalt concrete chunks used in embankment shall be placed above the water table and covered by at least one foot of material.

Substances used to coat asphalt trucks and equipment shall not contain soap, foaming agents, or toxic chemicals.

### **Thermoplastic Striping and Pavement Markers**

Thermoplastic striping and preheating equipment shutoff valves shall work properly at all times when on the construction site. The Contractor shall not preheat, transfer, or load thermoplastic within 50 feet of drainage inlets or watercourses. The Contractor shall not fill the preheating container to more than 6 inches from the top. Truck beds shall be cleaned daily of scraps or melted thermoplastic.

The Contractor shall not unload, transfer, or load bituminous material for pavement markers within 50 feet of drainage inlets or watercourses. All pressure shall be released from melting tanks before removing the lid to fill or service. Melting tanks shall not be filled to more than 6 inches from the top.

The Contractor shall collect bituminous material from the roadway after marker removal.

### **Pile Driving**

The Contractor shall keep spill kits and cleanup material at pile driving locations. Pile driving equipment shall be parked over drip pans, absorbent pads, or plastic sheeting where possible. When not in use, pile driving equipment shall be stored at least 50 feet from concentrated flows of storm water, drainage courses, or inlets. The Contractor shall protect pile driving equipment by parking it on plywood and covering it with plastic when precipitation is predicted. The WPCM shall inspect the pile driving area every day for leaks and spills.

The Contractor shall use vegetable oil instead of hydraulic fluid when practical.

### **Concrete Curing**

The Contractor shall not overspray chemical curing compound. Drift shall be minimized by spraying as close to the concrete as possible. Drainage inlets shall be covered before applying curing compound.

The Contractor shall minimize the use and discharge of water by using wet blankets or similar methods to maintain moisture when curing concrete.

## **Concrete Finishing**

The Contractor shall collect and dispose of water and solid waste from high-pressure water blasting. Drainage inlets within 50 feet shall be covered before sandblasting. The nozzle shall be kept as close to the surface of the concrete as possible to minimize drift of dust and blast material. Blast residue may contain hazardous material.

Containment structures for concrete finishing operations shall be inspected for damage before each day of use and before predicted precipitation. Liquid and solid waste shall be removed from the containment structure after each work shift.

## **DEWATERING**

Dewatering shall consist of discharging accumulated storm water, ground water, or surface water from excavations or temporary containment facilities. The Contractor shall discharge water within the limits of the project.

Dewatering discharge shall not cause erosion, scour, or sedimentary deposits that impact natural bedding materials.

The Contractor shall conduct dewatering activities in accordance with the Field Guide for Construction Dewatering available at:

<http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm>

Before dewatering the Contractor shall submit a Dewatering and Discharge Plan to the Engineer in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications and "Water Pollution Control," of these special provisions. At a minimum, the Dewatering and Discharge Plan shall include the following:

- A. A title sheet and table of contents;
- B. A description of the dewatering and discharge operations detailing the locations, quantity of water, equipment, and discharge point;
- C. The estimated schedule for dewatering and discharge (begin and end dates, intermittent or continuous);
- D. Discharge alternatives such as dust control or percolation; and
- E. Visual monitoring procedures with inspection log.

The Contractor shall not discharge storm water or non-storm water that has an odor, discoloration other than sediment, an oily sheen, or foam on the surface and shall notify the Engineer immediately upon discovery.

If water cannot be discharged within the project limits due to site constraints it shall be disposed of in the same manner specified for material in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

## **PAYMENT**

The contract lump sum price paid for construction site management shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in spill prevention and control, material management, waste management, non-storm water management, and dewatering and identifying, sampling, testing, handling, and disposing of hazardous waste, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

### **10-1.05 TEMPORARY CONCRETE WASHOUT (PORTABLE)**

A portable temporary concrete washout shall be furnished, maintained, and removed as specified in the approved Water Pollution Prevention Program in conformance with "Water Pollution Control" of these special provisions and as directed by the Engineer.

A portable temporary concrete washout shall consist of a commercially available drum at a minimum size of 55 gallons or alternate container upon written approval from the Engineer. The drum shall be stenciled "Concrete Waste Material." The letters shall be black and 4 inches in height on a white background. The top of the stenciling shall be 12 inches from the top of the barrel.

## **PLACEMENT**

A portable temporary concrete washout shall be as follows:

- A. A portable temporary concrete washout shall be in place prior to placement of concrete and shall be located in the immediate area of the concrete work as approved by the Engineer. The temporary concrete washout shall be located away from construction traffic or public access areas. After initial placement, temporary concrete washout shall be moved as needed for concrete construction work. When the temporary concrete washout is no longer required, as determined by the Engineer, it shall be removed and disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.
- B. A sign shall be installed adjacent to each washout at a location determined by the Contractor and approved by the Engineer. Signs shall be installed in conformance with the provisions in Section 12-3.06B, "Portable Signs" of the Standard Specifications. Each portable sign shall consist of a base, framework and a sign panel. The sign panel shall be made out of plywood and shall have a minimum size of 48" x 24". The sign panel shall read "Concrete Washout" with black letters, 6 inches in height, on a white background.
- C. The Contractor shall provide sufficient temporary concrete washout capacity to contain liquid and concrete waste generated by washout operations without seepage or spills.

Maintaining the portable temporary concrete washout shall include removing and disposing of concrete waste. Concrete waste material generated shall be removed each day and disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

The Contractor shall provide the name and location of the disposal facility to the Engineer before disposal of solid and liquid concrete waste. The Contractor shall provide verification that the off-site commercial or noncommercial disposal site has a permit issued by the California Regional Water Quality Control Board (RWQCB). If the disposal site is located outside of the State of California, the Contractor shall provide a copy of the permit issued by the state or local agency having jurisdiction over the disposal site.

When relocating or transporting a portable temporary concrete washout, the portable washout shall be properly secured to prevent spilling of concrete waste material.

## **PAYMENT**

The contract lump sum price paid for temporary concrete washout (portable) shall include full compensation for furnishing all labor, materials, tools, equipment, including the sign, and incidentals, and for doing all the work involved in furnishing, placing, maintaining, repairing, replacing, transporting, disposing of concrete waste, and removing the washout, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

### **10-1.06 TEMPORARY FIBER ROLL**

Temporary fiber roll shall be furnished, installed, maintained, and later removed at the locations shown on the approved Water Pollution Control Program (WPCP) in conformance with "Water Pollution Control" of these special provisions, and in conformance with details shown on the plans and these special provisions.

Temporary fiber roll shall be installed on excavation and embankment slopes and other disturbed soil areas, active or nonactive.

Temporary fiber roll shall be one of the water pollution control practices for sediment control. The WPCP shall include the use of temporary fiber roll.

Temporary fiber roll shall be either Type 1 or Type 2.

## **MATERIALS**

### **Fiber Roll**

Fiber roll shall be either:

1. Constructed with a premanufactured blanket consisting of either wood excelsior, rice or wheat straw, or coconut fibers or a combination of these materials. The blanket shall be between 6 feet and 8 feet in width and between 65 feet and 95 feet in length. Wood excelsior shall be individual fibers, of which 80 percent shall be 6 inches or longer in length. The blanket shall have a photodegradable plastic netting or biodegradable jute, sisal, or coir fiber netting on at least one side. The blanket shall be rolled along the width and secured with jute twine spaced 6 feet apart along the full length of the roll and placed 6 inches from the ends of each roll. The finished roll shall be between 8 inches and 10 inches in diameter, a minimum of 20 feet in length, and shall weigh a minimum of 0.5 pound per linear foot. More than one blanket may be required to achieve the finished roll diameter. When more than one blanket is required, blankets shall be jointed longitudinally with an overlap of 6 inches along the length of the blanket.

2. A premanufactured roll of rice or wheat straw, wood excelsior, or coconut fiber encapsulated within a photodegradable plastic or biodegradable jute, sisal, or coir fiber netting. The netting shall have a minimum durability of one year after installation. The netting shall be secured tightly at each end of the roll. Rolls shall be between 8 inches and 12 inches in diameter. Rolls between 8 inches and 10 inches in diameter shall have a minimum weight of 1 pound per linear foot and a minimum length of 20 feet. Rolls between 10 inches and 12 inches in diameter shall have a minimum weight of 3 pounds per linear foot and a minimum length of 10 feet.

### **Stakes**

Wood stakes shall be a minimum of 1" x 1" x 24" in size for Type 1 installation, or a minimum of 1" x 2" x 24" in size for Type 2 installation. Wood stakes shall be untreated fir, redwood, cedar, or pine and cut from sound timber. They shall be straight and free of loose or unsound knots and other defects which would render them unfit for the purpose intended. Metal stakes shall not be used.

### **Rope**

Rope shall be biodegradable, such as sisal or manila, with a minimum diameter of 1/4 inch.

## **INSTALLATION**

Temporary fiber roll shall be installed as follows:

1. Temporary fiber roll (Type 1): Furrows shall be constructed to a depth between 2 inches and 4 inches, and to a sufficient width to hold the fiber roll. Stakes shall be installed 24 inches apart along the length of the fiber rolls and stopped at 12 inches from each end of the rolls. Stakes shall be driven to a maximum of 2 inches above, or flush with the top of the roll.
2. Temporary fiber roll (Type 2): Rope and notched stakes shall be used to restrain the fiber rolls against the slope. Stakes shall be driven into the slope until the notch is even with the top of the fiber roll. Rope shall be knotted at each stake and laced between stakes. After installation of the rope, stakes shall be driven into the slope such that the rope will hold the fiber roll tightly to the slope. Furrows will not be required.
3. Temporary fiber rolls shall be placed 10 feet apart along the slope for slope inclination (horizontal:vertical) of 2:1 and steeper, 15 feet apart along the slope for slope inclination between 2:1 and 4:1, 20 feet apart along the slope for slope inclination between 4:1 and 10:1, and a maximum of 50 feet apart along the slope for slope inclination of 10:1 and flatter.
4. The bedding area for the fiber roll shall be cleared of obstructions including rocks, clods, and debris greater than one inch in diameter before installation.
5. Temporary fiber rolls shall be installed approximately parallel to the slope contour.
6. Temporary fiber rolls shall be installed before the application of other temporary erosion control or soil stabilization materials in the same area.

When no longer required, as determined by the Engineer, temporary fiber rolls shall be removed and disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications. Temporary fiber rolls may be abandoned in place when approved in writing by the Engineer.

Ground disturbances including holes and depressions caused by the installation and removal of the temporary fiber roll shall be backfilled and repaired in conformance with the provisions in Section 15-1.02, "Preservation of Property," of the Standard Specifications.

## **MAINTENANCE**

Temporary fiber rolls shall be maintained to disperse concentrated water runoff and to reduce runoff velocities. Split, torn, or unraveling rolls shall be repaired or replaced. Broken or split stakes shall be replaced. Sagging or slumping fiber rolls shall be repaired with additional stakes or replaced. Locations where rills and other evidence of concentrated runoff have occurred beneath the rolls shall be corrected. Temporary fiber rolls shall be repaired or replaced within 24 hours of identifying the deficiency.

## **MEASUREMENT AND PAYMENT**

Quantities of temporary fiber rolls to be paid for will be determined by the linear foot measured along the centerline of the installed roll. Where temporary fiber rolls are joined and overlapped, the overlap will be measured as a single installed roll.

The contract price paid per linear foot for temporary fiber roll shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing temporary fiber rolls, complete

in place, including furrow excavation and backfill, and removal, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Damage to temporary fiber rolls resulting from the Contractor's vehicles, equipment, or operations shall be repaired at the Contractor's expense.

The cost of maintaining temporary fiber rolls will be borne equally by the State and the Contractor. The division of cost will be made by determining the cost of maintaining temporary fiber rolls in conformance with the provisions in Section 9-1.03, "Force Account Payment," of the Standard Specifications and paying half of that cost to the Contractor.

Cleanup, repair, removal, disposal, or replacement due to improper installation or the Contractor's negligence will not be considered as included in the cost for performing maintenance.

#### **10-1.07 TEMPORARY STRAW BALE BARRIER**

Temporary straw bale barriers shall be furnished, installed, maintained, and later removed at the locations shown on the approved Water Pollution Control Program (WPCP) in conformance with "Water Pollution Control" of these special provisions, and in conformance with details shown on the plans and these special provisions.

Temporary straw bale barriers shall be one of the water pollution control practices for sediment control. The WPCP shall include the use of temporary straw bale barriers.

#### **MATERIALS**

##### **Straw Bales**

Straw for straw bales shall conform to the provisions in Section 20-2.06, "Straw," of the Standard Specifications.

Straw bales shall be a minimum of 14 inches in width, 18 inches in height, 36 inches in length, and shall have a minimum weight of 50 pounds. Straw bales shall be composed entirely of vegetative matter, except for binding material.

Straw bales shall be bound by either wire, nylon, or polypropylene string. Jute or cotton binding shall not be used. Baling wire shall be a minimum of 16 gage in diameter. Nylon or polypropylene string shall be approximately 0.08-inch in diameter with 80 pounds of breaking strength.

##### **Stakes**

Stakes shall be wood or metal. Wood stakes shall be untreated fir, redwood, cedar, or pine and cut from sound timber. They shall be straight and free of loose or unsound knots or other defects which would render them unfit for the purpose intended. Wood stakes shall be 2" x 2". Metal stakes may be used as an alternative, and shall be a minimum 0.5-inch in diameter. Stakes shall be a minimum 48 inches in length. The tops of the metal stakes shall be bent at a 90-degree angle or capped with an orange or red plastic safety cap that fits snugly to the metal stake. The Contractor shall submit a sample of the metal stake and plastic cap, if used, for Engineer's approval before installation.

#### **INSTALLATION**

Temporary straw bale barriers shall be installed as follows:

1. In a single row of straw bales shall be placed end to end and keyed or trenched into the slope. Straw bales shall be placed so that the binding wire or string is not in contact with the ground. Straw bales shall be securely anchored in place by 2 stakes driven through each bale. The first stake in each bale shall be driven toward the previously laid bale to force the bales together.
2. The top of the stakes shall be driven flush or trimmed to a maximum of 2 inches above the straw bale.
3. The bedding area for the straw bale shall be cleared of obstructions including, rocks, clods, and debris greater than one inch in diameter before installation.
4. Temporary straw bale barriers shall be installed approximately parallel to the slope contour.
5. The last 6 feet of the temporary straw bale barrier shall be angled up-slope.

When the temporary straw bale barrier is no longer required, as determined by the Engineer, it shall be removed and disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications. The straw bales may be broken up and spread on slopes or other areas designated by the Engineer.

Ground disturbances, including holes and depressions caused by the installation and removal of the temporary straw bale barrier shall be backfilled and repaired in conformance with the provisions in Section 15-1.02, "Preservation of Property," of the Standard Specifications.

**MAINTENANCE**

Temporary straw bale barriers shall be maintained to provide sediment holding capacity. Straw bales shall be replaced when the binding fails and allows the straw to spill out. Broken or split stakes shall be replaced. Sagging or slumping straw bales shall be repaired with additional stakes or replaced.

When sediment exceeds 1/3 the height of the straw bale above ground, or when directed by the Engineer, sediment shall be removed. The removed sediment shall be deposited within the project limits in such a way that the sediment is not subject to erosion by wind or by water.

Temporary straw bale barrier shall be repaired or replaced on the same day the damage occurs. Locations where rills or other evidence of concentrated runoff has occurred between or beneath the temporary straw bale barrier shall be corrected. Temporary straw bale barrier damaged during the progress of work or resulting from the Contractor's vehicles, equipment, or operations shall be replaced or repaired at the Contractor's expense.

**MEASUREMENT AND PAYMENT**

Quantities of temporary straw bale barrier to be paid for will be determined by the linear foot measured parallel with the ground slope along the line of installed temporary straw bale barrier, deducting the widths of openings.

The contract price paid per linear foot for temporary straw bale barrier shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing temporary straw bale barriers, complete in place, including trench excavation and backfill, maintenance and removal, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

**10-1.08 OBSTRUCTIONS**

Attention is directed to Section 8-1.10, "Utility and Non-Highway Facilities," and Section 15, "Existing Highway Facilities," of the Standard Specifications and these special provisions.

The Contractor shall notify the Engineer and the appropriate regional notification center for operators of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire or other structure. Regional notification centers include, but are not limited to, the following:

Notification Center	Telephone Number
Underground Service Alert-Northern California (USA)	(800) 642-2444 (800) 227-2600
Underground Service Alert-Southern California (USA)	(800) 422-4133 (800) 227-2600

**10-1.09 CONSTRUCTION AREA TRAFFIC CONTROL DEVICES**

Flagging, signs, and temporary traffic control devices furnished, installed, maintained, and removed when no longer required shall conform to the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these special provisions.

Category 1 temporary traffic control devices are defined as small and lightweight (less than 100 pounds) devices. These devices shall be certified as crashworthy by crash testing, crash testing of similar devices, or years of demonstrable safe performance. Category 1 temporary traffic control devices include traffic cones, plastic drums, portable delineators, and channelizers.

If requested by the Engineer, the Contractor shall provide written self-certification for crashworthiness of Category 1 temporary traffic control devices at least 5 days before beginning any work using the devices or within 2 days after the request if the devices are already in use. Self-certification shall be provided by the manufacturer or Contractor and shall include the following:

- A. Date,
- B. Federal Aid number (if applicable),
- C. Contract number, district, county, route and post mile of project limits,
- D. Company name of certifying vendor, street address, city, state and zip code,
- E. Printed name, signature and title of certifying person; and
- F. Category 1 temporary traffic control devices that will be used on the project.

The Contractor may obtain a standard form for self-certification from the Engineer.

Category 2 temporary traffic control devices are defined as small and lightweight (less than 100 pounds) devices that are not expected to produce significant vehicular velocity change, but may cause potential harm to impacting vehicles. Category 2 temporary traffic control devices include barricades and portable sign supports.

Category 2 temporary traffic control devices shall be on the Federal Highway Administration's (FHWA) list of Acceptable Crashworthy Category 2 Hardware for Work Zones. This list is maintained by FHWA and can be located at:

[http://safety.fhwa.dot.gov/roadway\\_dept/road\\_hardware/listing.cfm?code=workzone](http://safety.fhwa.dot.gov/roadway_dept/road_hardware/listing.cfm?code=workzone)

The Department also maintains this list at:

<http://www.dot.ca.gov/hq/traffops/signtech/signdel/pdf/Category2.pdf>

Category 2 temporary traffic control devices that have not received FHWA acceptance shall not be used. Category 2 temporary traffic control devices in use that have received FHWA acceptance shall be labeled with the FHWA acceptance letter number and the name of the manufacturer. The label shall be readable and permanently affixed by the manufacturer. Category 2 temporary traffic control devices without a label shall not be used.

If requested by the Engineer, the Contractor shall provide a written list of Category 2 temporary traffic control devices to be used on the project at least 5 days before beginning any work using the devices or within 2 days after the request if the devices are already in use.

Category 3 temporary traffic control devices consist of temporary traffic-handling equipment and devices that weigh 100 pounds or more and are expected to produce significant vehicular velocity change to impacting vehicles. Temporary traffic-handling equipment and devices include crash cushions, truck-mounted attenuators, temporary railing, temporary barrier, and end treatments for temporary railing and barrier.

Type III barricades may be used as sign supports if the barricades have been successfully crash tested, meeting the NCHRP Report 350 criteria, as one unit with a construction area sign attached.

Category 3 temporary traffic control devices shall be shown on the plans or on the Department's Highway Safety Features list. This list is maintained by the Division of Engineering Services and can be found at:

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

Category 3 temporary traffic control devices that are not shown on the plans or not listed on the Department's Highway Safety Features list shall not be used.

Full compensation for providing self-certification for crashworthiness of Category 1 temporary traffic control devices and for providing a list of Category 2 temporary traffic control devices used on the project shall be considered as included in the prices paid for the various items of work requiring the use of the Category 1 or Category 2 temporary traffic control devices and no additional compensation will be allowed therefor.

#### **10-1.10 CONSTRUCTION AREA SIGNS**

Construction area signs for temporary traffic control shall be furnished, installed, maintained, and removed when no longer required in conformance with the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these special provisions.

Attention is directed to "Furnish Sign" of these special provisions.

Attention is directed to the provisions in "Prequalified and Tested Signing and Delineation Materials" of these special provisions. Type II retroreflective sheeting shall not be used on construction area sign panels. Type III, IV, VII, VIII, or IX retroreflective sheeting shall be used for stationary mounted construction area sign panels.

Unless otherwise shown on the plans or specified in these special provisions, the color of construction area warning and guide signs shall have black legend and border on orange background, except W10-1 or W47(CA) (Highway-Rail Grade Crossing Advance Warning) sign shall have black legend and border on yellow background.

Orange background on construction area signs shall be fluorescent orange.

Repair to construction area sign panels will not be allowed, except when approved by the Engineer. At nighttime under vehicular headlight illumination, sign panels that exhibit irregular luminance, shadowing or dark blotches shall be immediately replaced at the Contractor's expense.

The Contractor shall notify the appropriate regional notification center for operators of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to commencing excavation for construction area sign posts. The regional notification centers include, but are not limited to, the following:

Notification Center	Telephone Number
Underground Service Alert-Northern California (USA)	(800) 642-2444 (800) 227-2600
Underground Service Alert-Southern California (USA)	(800) 422-4133

Excavations required to install construction area signs shall be performed by hand methods without the use of power equipment, except that power equipment may be used if it is determined there are no utility facilities in the area of the proposed post holes. The post hole diameter, if backfilled with portland cement concrete, shall be at least 4 inches greater than the longer dimension of the post cross section.

Construction area signs placed within 15 feet from the edge of the travel way shall be mounted on stationary mounted sign supports as specified in "Construction Area Traffic Control Devices" of these special provisions.

The Contractor shall maintain accurate information on construction area signs. Signs that are no longer required shall be immediately covered or removed. Signs that convey inaccurate information shall be immediately replaced or the information shall be corrected. Covers shall be replaced when they no longer cover the signs properly. The Contractor shall immediately restore to the original position and location any sign that is displaced or overturned, from any cause, during the progress of work.

### 10-1.11 MAINTAINING TRAFFIC

Attention is directed to Section 7-1.08, "Public Convenience," Section 7-1.09, "Public Safety," and Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and to the provisions in "Public Safety" of these special provisions and these special provisions. Nothing in these special provisions shall be construed as relieving the Contractor from the responsibilities specified in Section 7-1.09, "Public Safety."

Lane closures shall conform to the provisions in section "Traffic Control System for Lane Closure" of these special provisions.

Closures are only allowed during the hours shown in the lane requirement charts included in this section "Maintaining Traffic," except for work required under Sections 7-1.08, "Public Convenience," and Section 7-1.09, "Public Safety."

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

Unless approved by the Engineer, the maximum length of a single stationary lane closure shall be 0.5 miles.

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders including sections closed to public traffic.

When work vehicles or equipment are parked within 6 feet of a traffic lane, the shoulder area shall be closed as shown on the plans.

If minor deviations from the lane requirement charts are required, a written request shall be submitted to the Engineer at least 15 days before the proposed date of the closure. The Engineer may approve the deviations if there is no significant increase in the cost to the State and if the work can be expedited and better serve the public traffic.

Designated legal holidays are: January 1st, the third Monday in February, the last Monday in May, July 4th, the first Monday in September, November 11th, Thanksgiving Day and the following Friday, and December 24th and 25th. When a designated legal holiday falls on a Friday, Saturday, Sunday, or Monday, the entire weekend (Saturday and Sunday) shall be considered designated legal holidays. When a designated legal holiday -falls on a Saturday, the preceding Friday shall be a designated legal holiday.

Special Days are:

Event	Month	Day (s)
Red Bluff Round Up	April	20, 21, 22
Tehama County Fair	September	20, 21, 22, 23
West Coast Monster Truck Nationals	October	1

Lane Closure Restriction for Designated Legal Holidays and Special Days										
Thu	Fri	Sat	Sun	Mon	Tues	Wed	Thu	Fri	Sat	Sun
x	<b>H</b> xx	xx	xx							
	<b>SD</b> xx									
x	xx	<b>H</b> xx	xx							
		<b>SD</b> xx								
	x	xx	<b>H</b> xx	xx						
			<b>SD</b> xx							
	x	xx	xx	<b>H</b> xx						
	x	xx	xx	<b>SD</b> xx						
				x	<b>H</b> xx					
				x	<b>SD</b> xx					
					x	<b>H</b> xx				
						<b>SD</b> xx				
						x	<b>H</b> xx	xx		xx
							<b>SD</b> xx			
Legends:										
	Refer to lane closure charts									
x	The full width of the traveled way shall be open for use by public traffic after 3pm.									
xx	The full width of the traveled way shall be open for use by public traffic.									
<b>H</b>	Designated Legal Holiday									
<b>SD</b>	Special Day									

Full compensation for furnishing, erecting, maintaining, and removing and disposing of the W20-1, W21-5b, and C24(CA) signs shall be considered as included in the contract lump sum price paid for construction area signs and no additional compensation will be allowed therefor.

Chart No. 1 Freeway/Expressway Lane Requirements																													
County:Teh					Route/Direction: 5/Northbound										PM:R24.4/R24.9, R25.9/R26.5														
Closure Limits:R24.4 to R24.9 (June 1-Sept. 14)																													
FROM HOUR TO HOUR 24 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24																													
Mondays through Thursdays					1	1	1	1	1	1	1	1	1	1	1	S	S	S	S	S	S	1	1	1	1	1	1	1	
Fridays					1	1	1	1	1	1	1	1	1	1							S	1	1	1	1	1	1	1	
Saturdays					1	1	1	1	1	1	1	1	1	1							S	1	1	1	1	1	1	1	
Sundays					1	1	1	1	1	1	1	1	1	1	1	1	1	1				S	1	1	1	1	1	1	1
Legend:																													
1					Provide at least one through freeway lane open in direction of travel, minimum of 12 ft wide, plus contiguous paved shoulder.																								
S					One lane open in direction of travel, minimum of 12 ft wide, plus contiguous paved shoulder. Traffic control surveillance shall be provided.																								
					Work permitted within project right of way where shoulder or lane closure is not required.																								
REMARKS:																													
<ul style="list-style-type: none"> <li>See Lane Closure Restriction for Designated Legal Holidays and Special Days table in Maintain Traffic of these special provisions for additional closure restrictions.</li> <li>Maximum closure length shall be 0.5 mile</li> <li>Only 1 closure in the same direction of travel at any one time</li> </ul>																													

Chart No. 2 Freeway/Expressway Lane Requirements																													
County:Teh					Route/Direction: 5/Northbound										PM:R24.4/R24.9, R25.9/R26.5														
Closure Limits:R24.4 to R24.9 (Sept 15-May 31)																													
FROM HOUR TO HOUR 24 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24																													
Mondays through Thursdays					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Fridays					1	1	1	1	1	1	1	1	1	1	1					1	1	1	1	1	1	1	1	1	
Saturdays					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Sundays					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Legend:																													
1					Provide at least one through freeway lane open in direction of travel, minimum of 12 ft wide, plus contiguous paved shoulder.																								
					Work permitted within project right of way where shoulder or lane closure is not required.																								
REMARKS: See Lane Closure Restriction for Designated Legal Holidays and Special Days table in Maintain Traffic of these special provisions for additional closure restrictions.																													
<ul style="list-style-type: none"> <li>Maximum closure length shall be 0.5 mile</li> <li>Only 1 closure in the same direction of travel at any one time</li> </ul>																													

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

County:Teh	Route/Direction: 5/Southbound	PM:R24.4/R24.9, R25.9/R26.5
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Closure Limits:R25.9 to R26.5 (June 1-Sept. 14)

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Mondays through Thursdays	1	1	1	1	1	1	1												S	1	1	1	1	1		
Fridays	1	1	1	1	1	1	1													S	1	1	1	1	1	
Saturdays	1	1	1	1	1	1	1	1	1	1									S	S	1	1	1	1	1	1
Sundays	1	1	1	1	1	1	1	1	1	1	1	1								S	1	1	1	1	1	1

Legend:

- 1 Provide at least one through freeway lane open in direction of travel, minimum of 12 ft wide, plus contiguous paved shoulder.
- S One lane open in direction of travel, minimum of 12 ft wide, plus contiguous paved shoulder. Traffic control surveillance shall be provided.
- Work permitted within project right of way where shoulder or lane closure is not required.

REMARKS:

- See Lane Closure Restriction for Designated Legal Holidays and Special Days table in Maintain Traffic of these special provisions for additional closure restrictions.
- Maximum closure length shall be 0.5 mile
- Only 1 closure in the same direction of travel at any one time

Chart No. 4 Freeway/Expressway Lane Requirements																								
County:Teh					Route/Direction: 5/Southbound										PM:R24.4/R24.9, R25.9/R26.5									
Closure Limits:R25.9 to R26.5 (Sept 15-May 31)																								
FROM HOUR TO HOUR																								
24 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24																								
Mondays through Thursdays																								
1 1 1 1 1 1 1 S S 1 1 1 S																								
Fridays																								
1 1 1 1 1 1 1 S S S																								
Saturdays																								
1 1 1 1 1 1 1 1 1 1 S S S S S S S 1 1 1 1 1 1																								
Sundays																								
1 1 1 1 1 1 1 1 1 1																								
Legend:																								
1 Provide at least one through freeway lane open in direction of travel, minimum of 12 ft wide, plus contiguous paved shoulder.																								
S One lane open in direction of travel, minimum of 12 ft wide, plus contiguous paved shoulder. Traffic control surveillance shall be provided.																								
Work permitted within project right of way where shoulder or lane closure is not required.																								
REMARKS:																								
<ul style="list-style-type: none"> <li>See Lane Closure Restriction for Designated Legal Holidays and Special Days table in Maintain Traffic of these special provisions for additional closure restrictions.</li> <li>Maximum closure length shall be 0.5 mile</li> <li>Only 1 closure in the same direction of travel at any one time</li> </ul>																								

**10-1.12 CLOSURE REQUIREMENTS AND CONDITIONS**

Closures shall conform to the provisions in "Maintaining Traffic" of these special provisions and these special provisions.

**CLOSURE SCHEDULE**

By noon Monday, the Contractor shall submit a written schedule of planned closures for the following week period, defined as Sunday noon through the following Sunday noon. Closures involving work (temporary barrier placement and paving operations) that will reduce horizontal clearances, traveled way inclusive of shoulders, to 2 lanes or less shall be submitted not less than 25 days and not more than 125 days before the anticipated start of operation. Closures involving work (pavement overlay, overhead sign installation, falsework and girder erection) that will reduce the vertical clearances available to the public, shall be submitted not less than 25 days and not more than 125 days before the anticipated start of operation.

The Closure Schedule shall show the locations and times of the proposed closures. The Closure Schedule request forms furnished by the Engineer shall be used. Closure Schedules submitted to the Engineer with incomplete or inaccurate information will be rejected and returned for correction and resubmittal. The Contractor will be notified of disapproved closures or closures that require coordination with other parties as a condition of approval.

The Engineer shall be notified of cancelled closures 2 business days before the date of closure.

Closures that are cancelled due to unsuitable weather may be rescheduled at the discretion of the Engineer.

**CONTINGENCY PLAN**

A detailed contingency plan shall be prepared for reopening closures to public traffic. If required by "Beginning of Work, Time of Completion and Liquidated Damages" of these special provisions, the contingency plan shall be submitted to the Engineer before work at the job site begins. Otherwise, the contingency plan shall be submitted to the Engineer within one business day of the Engineer's request.

## **LATE REOPENING OF CLOSURES**

If a closure is not reopened to public traffic by the specified time, work shall be suspended in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications. No further closures are to be made until the Engineer has accepted a work plan, submitted by the Contractor, that will insure that future closures will be reopened to public traffic at the specified time. The Engineer will have 2 business days to accept or reject the Contractor's proposed work plan. The Contractor will not be entitled to compensation for the suspension of work resulting from the late reopening of closures.

## **COMPENSATION**

The Engineer shall be notified of delays in the Contractor's operations due to the following conditions, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of those conditions, and the Contractor's loss due to that delay could not have been avoided by rescheduling the affected closure or by judicious handling of forces, equipment and plant, the delay will be considered a right of way delay and will be compensated in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications:

1. The Contractor's proposed Closure Schedule is denied and his planned closures are within the time frame allowed for closures in "Maintaining Traffic" of these special provisions, except that the Contractor will not be entitled to compensation for amendments to the Closure Schedule that are not approved.
2. The Contractor is denied a confirmed closure.

Should the Engineer direct the Contractor to remove a closure before the time designated in the approved Closure Schedule, delay to the Contractor's schedule due to removal of the closure will be considered a right of way delay and compensation for the delay will be determined in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

## **10-1.13 TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE**

A traffic control system shall consist of closing traffic lanes in conformance with the details shown on the plans, the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications, the provisions under "Maintaining Traffic", "Traffic Control Surveillance", and "Construction Area Signs" of these special provisions, and these special provisions.

The provisions in this section will not relieve the Contractor of responsibility for providing additional devices or taking measures as may be necessary to comply with the provisions in Section 7-1.09, "Public Safety," of the Standard Specifications.

During traffic stripe operations and pavement marker placement operations using bituminous adhesive, traffic shall be controlled, at the option of the Contractor, with either stationary or moving lane closures. During other operations, traffic shall be controlled with stationary lane closures. Attention is directed to the provisions in Section 84-1.04, "Protection From Damage," and Section 85-1.06, "Placement," of the Standard Specifications.

If components in the traffic control system are displaced or cease to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair the components to the original condition or replace the components and shall restore the components to the original location.

## **STATIONARY LANE CLOSURE**

When lane closures are made for work periods only, at the end of each work period, components of the traffic control system, except portable delineators placed along open trenches or excavation adjacent to the traveled way, shall be removed from the traveled way and shoulder. If the Contractor so elects, the components may be stored at selected central locations, designated by the Engineer within the limits of the highway right of way.

Truck mounted attenuators (TMA) shall be placed in stationary lane closures, immediately prior to the work being performed. Truck mounted attenuators shall conform to the provisions as specified in the subsection "Moving Lane Closure" below. Truck mounted attenuators used for stationary lane closures shall be mounted on vehicles with a gross weight of not less than 20,000 pounds.

Each vehicle used to place, maintain and remove components of a traffic control system on multilane highways shall be equipped with a Type II flashing arrow sign which shall be in operation when the vehicle is being used for placing, maintaining or removing the components. Vehicles equipped with Type II flashing arrow sign not involved in placing, maintaining or removing the components when operated within a stationary type lane closure shall only display the caution display mode. The sign shall be controllable by the operator of the vehicle while the vehicle is in motion. The flashing arrow sign shown on the plans shall not be used on the vehicles which are doing the placing, maintaining and removing of components of a traffic control system and shall be in place before a lane closure requiring the sign's use is completed.

## **MOVING LANE CLOSURE**

Flashing arrow signs used in moving lane closures shall be truck-mounted. Changeable message signs used in moving lane closure operations shall conform to the provisions in Section 12-3.12, "Portable Changeable Message Signs," of the Standard Specifications, except the signs shall be truck-mounted and the full operation height of the bottom of the sign may be less than 7 feet above the ground, but should be as high as practicable.

Truck-mounted attenuators (TMA) for use in moving lane closures shall be any of the following approved models, or equal:

1. Hexfoam TMA Series 3000, Alpha 1000 TMA Series 1000, and Alpha 2001 TMA Series 2001, manufactured by Energy Absorption Systems, Inc., 35 East Wacker Drive, Suite 1100, Chicago, IL 60601:
  - 1.1. Northern California: Traffic Control Service, Inc., 8585 Thys Court, Sacramento, CA 95828, telephone (800) 884-8274, FAX (916) 387-9734
  - 1.2. Southern California: Traffic Control Service, Inc., 1818 E. Orangethorpe, Fullerton, CA 92831-5324, telephone (800) 222-8274, FAX (714) 526-9501
2. Cal T-001 Model 2 or Model 3, manufacturer and distributor: Hexcel Corporation, 11711 Dublin Boulevard, P.O. Box 2312, Dublin, CA 94568, telephone (925) 551-4900
3. Renco Rengard Model Nos. CAM 8-815 and RAM 8-815, manufacturer and distributor: Renco Inc., 1582 Pflugerville Loop Road, P.O. Box 730, Pflugerville, TX 78660-0730, telephone (800) 654-8182

Each TMA shall be individually identified with the manufacturer's name, address, TMA model number, and a specific serial number. The names and numbers shall each be a minimum 1/2 inch high and located on the left (street) side at the lower front corner. The TMA shall have a message next to the name and model number in 1/2 inch high letters which states, "The bottom of this TMA shall be \_\_\_\_\_ inches  $\pm$  \_\_\_\_\_ inch above the ground at all points for proper impact performance." Any TMA which is damaged or appears to be in poor condition shall not be used unless recertified by the manufacturer. The Engineer shall be the sole judge as to whether used TMAs supplied under this contract need recertification. Each unit shall be certified by the manufacturer to meet the requirements for TMA in conformance with the standards established by the Transportation Laboratory.

Approvals for new TMA designs proposed as equal to the above approved models shall be in conformance with the procedures (including crash testing) established by the Transportation Laboratory. For information regarding submittal of new designs for evaluation contact: Transportation Laboratory, 5900 Folsom Boulevard, Sacramento, California 95819.

New TMAs proposed as equal to approved TMAs or approved TMAs determined by the Engineer to need recertification shall not be used until approved or recertified by the Transportation Laboratory.

## **PAYMENT**

The contract lump sum price paid for traffic control system shall include full compensation for traffic control surveillance and for furnishing all labor (except for flagging costs), materials (including signs), tools, equipment, and incidentals, and for doing all the work involved in placing, removing, storing, maintaining, moving to new locations, replacing and disposing of the components of the traffic control system shown on the plans, and truck mounted attenuators for lane closures, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer. Flagging costs will be paid for as provided in Section 12-2.02, "Flagging Costs," of the Standard Specifications.

The adjustment provisions in Section 4-1.03, "Changes," of the Standard Specifications shall not apply to the item of traffic control system. Adjustments in compensation for traffic control system will be made only for increased or decreased traffic control system required by changes ordered by the Engineer and will be made on the basis of the cost of the increased or decreased traffic control necessary. The adjustment will be made on a force account basis as provided in Section 9-1.03, "Force Account Payment," of the Standard Specifications for increased work and estimated on the same basis in the case of decreased work.

Traffic control system required by work which is classed as extra work, as provided in Section 4-1.03D of the Standard Specifications, will be paid for as a part of the extra work.

## **10-1.14 TEMPORARY PAVEMENT DELINEATION**

Temporary pavement delineation shall be furnished, placed, maintained, and removed in conformance with the provisions in Section 12-3.01, "General," of the Standard Specifications and these special provisions. Nothing in these special provisions shall be construed as reducing the minimum standards specified in the California MUTCD or as relieving the Contractor from the responsibilities specified in Section 7-1.09, "Public Safety," of the Standard Specifications.

## **GENERAL**

Whenever the work causes obliteration of pavement delineation, temporary or permanent pavement delineation shall be in place prior to opening the traveled way to public traffic. Lane pavement delineation shall be provided at all times for traveled ways open to public traffic. On multilane roadways (freeways and expressways), edgeline delineation shall be provided at all times for traveled ways open to public traffic.

Work necessary, including required lines or marks, to establish the alignment of temporary pavement delineation shall be performed by the Contractor. Surfaces to receive temporary pavement delineation shall be dry and free of dirt and loose material. Temporary pavement delineation shall not be applied over existing pavement delineation or other temporary pavement delineation. Temporary pavement delineation shall be maintained until superseded or replaced with a new pattern of temporary pavement delineation or permanent pavement delineation.

Temporary pavement markers and removable traffic tape which conflicts with a new traffic pattern or which is applied to the final layer of surfacing or existing pavement to remain in place shall be removed when no longer required for the direction of public traffic, as determined by the Engineer.

## **TEMPORARY EDGELINE DELINEATION**

Whenever edgelines are obliterated on multilane roadways (freeways and expressways), the edgeline delineation to be provided for that area adjacent to lanes open to public traffic shall consist of, at the option of the Contractor, either solid 4 inch wide traffic stripe of the same color as the stripe the temporary edgeline delineation replaces or shall consist of traffic cones, portable delineators or channelizers placed at longitudinal intervals not to exceed 100 feet.

Traffic stripe (4 inch wide) placed for temporary edgeline delineation, which will require removal, shall consist of temporary removable construction grade striping and pavement marking tape listed in "Prequalified and Tested Signing and Delineation Materials" of these special provisions. Temporary removable construction grade striping and pavement marking tape when used shall be applied in conformance with the manufacturer's recommendations. Where removal of the 4-inch wide traffic stripe will not be required, painted traffic stripe used for temporary edgeline delineation shall conform to "Paint Traffic Stripe and Pavement Marking" of these special provisions, Section 84-3, "Painted Traffic Stripes And Pavement Markings," of the Standard Specifications, except for payment and the number of coats shall be, at the option of the Contractor, either one or 2 coats. The quantity of painted traffic stripe used for temporary edgeline delineation will not be included in the quantities of paint traffic stripe to be paid for.

The lateral offset for traffic cones, portable delineators or channelizers used for temporary edgeline delineation shall be determined by the Engineer. If traffic cones or portable delineators are used as temporary pavement delineation for edgelines, the Contractor shall provide personnel to remain at the project site to maintain the cones or delineators during hours of the day that the cones or delineators are in use.

Channelizers used for temporary edgeline delineation shall be the surface mounted type and shall be orange in color. Channelizer bases shall be cemented to the pavement in the same manner provided for cementing pavement markers to pavement in "Pavement Markers" of these special provisions, except epoxy adhesive shall not be used to place channelizers on the top layer of pavement. Channelizers shall be, at the Contractor's option, one of the surface mount types (36 inch) listed in "Prequalified and Tested Signing and Delineation Materials" of these special provisions.

Temporary edgeline delineation shall be removed when no longer required for the direction of public traffic, as determined by the Engineer.

Full compensation for furnishing, placing, maintaining, and removing temporary edgeline delineation shall be considered as included in the contract prices paid for the items of work that obliterated the edgeline pavement delineation and no separate payment will be made therefor.

### **10-1.15 PORTABLE CHANGEABLE MESSAGE SIGN**

Portable changeable message signs shall be furnished, placed, operated, and maintained at locations shown on the plans, described in these special provisions, or where designated by the Engineer and shall conform to the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these special provisions. Messages displayed on the portable changeable message signs shall be as specified on the plans and shall conform to Section 12-3.12 "Portable Changeable Message Signs," of the Standard Specifications and "Maintaining Traffic" of these special provisions.

A portable changeable message sign shall be placed in advance of the first warning sign for each stationary lane closure.

### **10-1.16 TRAFFIC CONTROL SURVEILLANCE**

Attention is directed to 7-1.09, "Public Safety", of the Standard Specifications and to "Traffic Control Systems for Lane Closure," of these special provisions.

Prior to commencing work the Contractor shall furnish a cost break-down for traffic control system showing the hourly cost for traffic control surveillance.

The Contractor shall provide traffic control surveillance in conformance with the charts included in "Maintaining Traffic," of these special provisions.

Surveillance shall consist of providing one employee (as a rover) with a pickup truck and one employee (as a queue warning) with a pickup truck with a truck mounted portable changeable message sign (PCMS) to maintain continuous traffic surveillance including patrolling the project looking for any traffic related incidents within the job limits that may delay public traffic and keeping the traveled way clear of any obstructions. Traffic handling devices damaged or destroyed shall immediately be temporarily replaced with flashers, flares, reflective devices or any other suitable means necessary to protect the traveling public until such time as a more adequate replacement can be accomplished.

The rover pickup truck (minimum 2000 pound rating) shall be equipped with rotary warning light, arrow board, front bumper push bar with rubber face, cellular phone, winch rated at minimum of 8000 pound, trailer hitch and balls (1.875 inch and 2.0 inch), two-way radios, and "CAUTION" sign attached to the tailgate, and any other items necessary to preserve and maintain traffic. The pickup shall have less than 50,000 miles on the odometer. Other items carried on the pickup truck shall include 5 gallons of unleaded gasoline, 5 gallons of diesel fuel, funnel-flexible spout, first aid kit, fire extinguisher aggregate rating of at least 4-B, C units, pry bar 3 ft or longer, 5 gallons of water, 2 ft push broom, square point shovel, fuses (highway flares - 15 minutes), cones, hydraulic jack - 2 ton floor, wood blocks, four way lug wrench (metric and standard), flashlight and spare batteries, booster cables, programmable scanners for scanning Caltrans and CHP, hydraulic jack - trolley type, heavy duty 60 amp battery, mechanic's tool kit, 5 gallon can with lid filled with absorbent material, and external speaker and address system.

When a Route 5 mainline backup occurs (defined as when traffic slows to 45 mph or less) the queue warning traffic surveillance unit shall activate the truck mounted PCMS to warn motorists of "TRAFFIC STOPPED AHEAD". The truck mounted PCMS shall be placed and periodically moved as necessary, to a location no more than 1500 ft and no less than 1000 ft prior to (upstream of) the end of the queue. The queue warning traffic surveillance unit shall notify the Engineer within 10 minutes of any Route 5 mainline back up.

The provisions in this section will not relieve the Contractor from his responsibility to provide additional devices or take such measures as may be necessary to comply with the provisions in section 7-1.09, "Public Safety", of the Standard Specifications.

Full compensation for traffic control surveillance shall be considered as included in the contract price paid for traffic control system and no separate payment will be made therefor.

#### **10-1.17 TEMPORARY CRASH CUSHION MODULE**

This work shall consist of furnishing, installing, and maintaining sand filled temporary crash cushion modules in groupings or arrays at each location shown on the plans, as specified in these special provisions or where designated by the Engineer. The grouping or array of sand filled modules shall form a complete sand filled temporary crash cushion in conformance with the details shown on the plans and these special provisions.

Attention is directed to "Public Safety", "Order of Work", and "Temporary Railing" of these special provisions.

Whenever the work or the Contractor's operations establishes a fixed obstacle, the exposed fixed obstacle shall be protected with a sand filled temporary crash cushion. The sand filled temporary crash cushion shall be in place prior to opening the lanes adjacent to the fixed obstacle to public traffic.

Sand filled temporary crash cushions shall be maintained in place at each location, including times when work is not actively in progress. Sand filled temporary crash cushions may be removed during a work period for access to the work provided that the exposed fixed obstacle is 15 feet or more from a lane carrying public traffic and the temporary crash cushion is reset to protect the obstacle prior to the end of the work period in which the fixed obstacle was exposed. When no longer required, as determined by the Engineer, sand filled temporary crash cushions shall be removed from the site of the work.

At the Contractor's option, the modules for use in sand filled temporary crash cushions shall be either Energite III Inertial Modules, Fitch Inertial Modules or Traffix Sand Barrels manufactured after March 31, 1997, or equal:

1. Energite III and Fitch Inertial Modules, manufactured by Energy Absorption Systems, Inc., 35 East Wacker Drive, Suite 1100, Chicago, IL 60601:
  - 1.1. Northern California: Traffic Control Service, Inc., 8585 Thys Court, Sacramento, CA 95828, telephone (800) 884-8274, FAX (916) 387-9734
  - 1.2. Southern California: Traffic Control Service, Inc., 1818 E. Orangethorpe, Fullerton, CA 92831-5324, telephone (800) 222-8274, FAX (714) 526-9501
2. Traffix Sand Barrels, manufactured by Traffix Devices, Inc., 220 Calle Pintoresco, San Clemente, CA 92672, telephone (949) 361-5663, FAX (949) 361-9205
  - 2.1. Northern California: United Rentals, Inc., 1533 Berger Drive, San Jose, CA 95112, telephone (408) 287-4303, FAX (408) 287-1929

2.2. Southern California: Statewide Safety & Sign, Inc., P.O. Box 1440, Pismo Beach, CA 93448, telephone (800) 559-7080, FAX (805) 929-5786

Modules contained in each temporary crash cushion shall be of the same type at each location. The color of the modules shall be the standard yellow color, as furnished by the vendor, with black lids. The modules shall exhibit good workmanship free from structural flaws and objectionable surface defects. The modules need not be new. Good used undamaged modules conforming to color and quality of the types specified herein may be utilized. If used Fitch modules requiring a seal are furnished, the top edge of the seal shall be securely fastened to the wall of the module by a continuous strip of heavy duty tape.

Modules shall be filled with sand in conformance with the manufacturer's directions, and to the sand capacity in pounds for each module shown on the plans. Sand for filling the modules shall be clean washed concrete sand of commercial quality. At the time of placing in the modules, the sand shall contain not more than 7 percent water as determined by California Test 226.

Modules damaged due to the Contractor's operations shall be repaired immediately by the Contractor at the Contractor's expense. Modules damaged beyond repair, as determined by the Engineer, due to the Contractor's operations shall be removed and replaced by the Contractor at the Contractor's expense.

Temporary crash cushion modules shall be placed on movable pallets or frames conforming to the dimensions shown on the plans. The pallets or frames shall provide a full bearing base beneath the modules. The modules and supporting pallets or frames shall not be moved by sliding or skidding along the pavement or bridge deck.

A Type R or P marker panel shall be attached to the front of the crash cushion as shown on the plans, when the closest point of the crash cushion array is within 12 feet of the traveled way. The marker panel, when required, shall be firmly fastened to the crash cushion with commercial quality hardware or by other methods determined by the Engineer.

At the completion of the project, temporary crash cushion modules, sand filling, pallets or frames, and marker panels shall become the property of the Contractor and shall be removed from the site of the work. Temporary crash cushion modules shall not be installed in the permanent work.

Temporary crash cushion modules placed in conformance with the provisions in "Public Safety" of these special provisions will not be measured nor paid for.

#### **10-1.18 EXISTING HIGHWAY FACILITIES**

The work performed in connection with various existing highway facilities shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Standard Specifications and these special provisions.

##### **MODIFY INLET**

Existing pipe inlets and concrete drainage inlets shall be modified as shown on the plans.

Portland cement concrete shall be minor concrete or may be produced from commercial quality concrete containing not less than 590 pounds of cement per cubic yard.

Where inlets are located in areas to be paved or surfaced, no individual structure shall be constructed to final grade until the paving or surfacing has been completed immediately adjacent to the structure.

##### **ADJUST FRAME AND COVER TO GRADE**

Frames and covers of existing utilities shall be adjusted to grade in conformance with the provisions in Section 15-2.05, "Reconstruction," of the Standard Specifications.

#### **10-1.19 CLEARING AND GRUBBING**

Clearing and grubbing shall conform to the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these special provisions.

Vegetation shall be cleared and grubbed only within the excavation and embankment slope lines.

At locations where there is no grading adjacent to a bridge or other structure, clearing and grubbing of vegetation shall be limited to 5 feet outside the physical limits of the bridge or structure.

Existing vegetation outside the areas to be cleared and grubbed shall be protected from injury or damage resulting from the Contractor's operations.

Activities controlled by the Contractor, except cleanup or other required work, shall be confined within the graded areas of the roadway.

Nothing herein shall be construed as relieving the Contractor of the Contractor's responsibility for final cleanup of the highway as provided in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications.

**10-1.20 EARTHWORK**

Earthwork shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications and these special provisions.

Surplus excavated material shall become the property of the Contractor and shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Where a portion of the existing surfacing is to be removed, the outline of the area to be removed shall be cut on a neat line with a power-driven saw to a minimum depth of 0.17-foot before removing the surfacing. Full compensation for cutting the existing surfacing shall be considered as included in the contract price paid per cubic yard for roadway excavation and no additional compensation will be allowed therefor.

Reinforcement or metal attached to reinforced concrete rubble placed in embankments shall not protrude above the grading plane. Prior to placement within 2 feet below the grading plane of embankments, reinforcement or metal shall be trimmed to no greater than 3/4 inch from the face of reinforced concrete rubble. Full compensation for trimming reinforcement or metal shall be considered as included in the contract prices paid per cubic yard for the types of excavation shown in the Engineer's estimate, or the contract prices paid for furnishing and placing imported borrow or embankment material, as the case may be, and no additional compensation will be allowed therefor.

**10-1.21 SHOULDER BACKING**

This work shall consist of constructing shoulder backing adjacent to the edge of new pavement surfacing in conformance with the details shown on the plans and these special provisions.

Material for shoulder backing shall be imported material or material processed from reclaimed portland cement concrete, lean concrete base, cement treated base, or a combination of any of these materials, conforming to the following grading and quality requirements:

Grading Requirements		Quality Requirements		
Sieve Sizes	Percentage Passing	Specification	California Test	Requirement
2"	100	Sand Equivalent	217	10 minimum-30 maximum
1"	75 - 100	Resistance (R-value)	301	50 minimum
No. 4	40 - 60	Percentage Crushed Particles	205	75% minimum
No. 30	12 - 35	Durability Index	229	20 minimum
No. 200	5 - 20			

At the option of the Contractor, aggregate for shoulder backing may consist of material processed from reclaimed asphalt concrete conforming to the following grading and quality requirements:

Grading Requirements		Quality Requirements		
Sieve Sizes	Percentage Passing	Specification	California Test	Requirement
2"	100	Resistance (R-value)	301	50 minimum
3/4"	70 - 100	Percentage Crushed Particles	205	75% minimum
No. 4	30 - 80	Durability Index	229	20 minimum

Coarse aggregate consisting of material retained on the No. 4 sieve, shall consist of material of which at least 75 percent by weight shall be crushed particles with a minimum of two fractured faces, as determined in conformance with California Test 205.

Shoulder backing material shall have a minimum unit weight of 135 pounds per cubic foot as determined in conformance with California Test 212.

Shoulder backing material shall not be treated with lime, cement, or other chemical mixtures.

Shoulder backing material consisting of reclaimed asphalt concrete, shall not be placed within 100 feet measured horizontally of any culvert, watercourse, or bridge within the project limits.

The areas where shoulder backing is to be constructed shall be cleared of weeds, grass, and debris. Removed weeds grass and debris shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Prior to placement of shoulder backing material, basement material shall be scarified to a minimum depth of 3 inches. Immediately prior to placement of shoulder backing material, scarified material shall be watered. Shoulder backing material shall be placed, watered, and rolled a minimum of two passes with a steel tired roller weighing not less than 8 tons to form a

smooth, compacted surface. Watering shall conform to the provisions in Section 17, "Watering," of the Standard Specifications.

Shoulder backing material shall not be deposited on new pavement surfacing prior to placing the material in the final position, nor shall the material be deposited onto new pavement surfacing during mixing, watering, and blading operations.

Shoulder backing construction shall be completed along the edges of any portion of new pavement surfacing within 5 days after completion of that portion of the new surfacing. Prior to opening a lane adjacent to uncompleted shoulder backing to uncontrolled public traffic, the Contractor shall furnish, place, and maintain portable delineators and W8-9 (LOW SHOULDER) signs off of and adjacent to the new pavement surfacing. Portable delineators shall be placed at the beginning and along the drop-off of the edge of pavement, in the direction of travel, at successive maximum intervals of 500 feet on tangents and 200 feet on curves. W8-9 (LOW SHOULDER) signs shall be placed at the beginning and along the drop-off at successive maximum intervals of 2,000 feet. The portable delineators and W8-9 (LOW SHOULDER) signs shall be maintained in place at each location until the shoulder backing is completed at that location. Portable delineators and signs shall conform to the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications, except the signs may be set on temporary portable supports or on barricades.

Quantities of imported material (shoulder backing) will be measured by the ton in conformance with the provisions in Section 9-1.01, "Measurement of Quantities," of the Standard Specifications, except that the weight of water in the aggregate will not be determined and no deduction will be made from the weight of material delivered to the work.

The contract price paid per ton for imported material (shoulder backing) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing shoulder backing, complete in place, including furnishing, placing, maintaining, and removing portable delineators, W8-9 (LOW SHOULDER) signs, and temporary supports or barricades for the signs, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

## **10-1.22 ASPHALT CONCRETE**

### **GENERAL**

Asphalt concrete shall be Type A and shall conform to the provisions in Section 39, "Asphalt Concrete," of the Standard Specifications and these special provisions.

The grade of asphalt binder to be mixed with aggregate for Type A asphalt concrete shall be Grade PG 64-28 PM conforming to the provisions in Section 92, "Asphalts," of the Standard Specifications.

California Test 367 is modified by amending Section C, "Optimum Bitumen Content," as follows:

### **C. OPTIMUM BITUMEN CONTENT**

1. Plot asphalt content versus void content for each specimen on Form TL-306 (Figure 3), and connect adjacent points with straight lines.
2. Modify Form TL-306 (Figure 3) to show stability on the vertical axis beginning with a stability value of 20 on the bottom horizontal line and ending with a value of 60 on the top horizontal line.
3. Plot stability versus asphalt content for each specimen on Form TL-306 (Figure 3) as modified in step 2 above and connect adjacent points with straight lines.
4. Select the theoretical asphalt content which is at the point passing through the minimum specification for stability from modified Figure 3.
5. Optimum asphalt content is determined as follows:
  - a. If voids are less than 4.0% at the asphalt content selected in Step 4, then select the asphalt content at 4.0% voids from Figure 3. Selected optimum asphalt content should be as close to 4.0% voids as possible.
6. To establish a recommended range, use the Optimum Bitumen Content (OBC) as the high value and 0.3% less as the low value where the OBC is 7.9% or less. When the OBC is between 8.0% and 8.6%, use it as the high value of the range and use 7.6% as the low value. When the OBC is greater than 8.6%, use it as the high value and 1.0% less as the low value.

If the recommended bitumen ratio range, as determined by California Test 367, is increased or decreased by the Engineer beyond the recommended range by more than 0.1 percent by weight of the dry aggregate, the compensation payable to the Contractor for asphalt concrete will be increased or decreased on the basis of the total increase or decrease in tonnes of asphalt binder times the cost of asphalt binder per tonne, f.o.b. the asphalt binder plant (including sales tax) plus the freight cost per tonne, at the carrier's established rates, for the delivery of the asphalt binder from the asphalt binder plant to the asphalt concrete plant being used for the project. In determining the cost of the asphalt binder, any cash or trade discount offered or available will be credited to the State notwithstanding the fact that such discount may not have been taken by the

purchaser. The highest value of the specified range will be considered to be the specified asphalt content for determining the total increase in asphalt binder and the lowest value of the specified range will be considered to be the specified asphalt content for determining the total decrease in asphalt binder.

The asphalt content of the asphalt mixture will be determined in conformance with the requirements in California Test 379, or in conformance with the requirements in California Test 382.

The amount of asphalt binder used in asphalt concrete placed in dikes, gutters, gutter flares, overside drains and aprons at the ends of drainage structures shall be increased one percent by weight of the aggregate over the amount of asphalt binder determined for use in asphalt concrete placed on the traveled way.

The aggregate for Type A asphalt concrete shall conform to the ¾" maximum, medium grading specified in Section 39-2.02, "Aggregate," of the Standard Specifications.

The aggregate for Type A asphalt concrete shall be lime treated in conformance with "Lime Treated Aggregates" of these special provisions.

In addition to aggregate quality requirements specified in Section 39-2.02, "Aggregate," in the Standard Specifications, aggregate from each source shall also conform to the following quality requirements:

Test	California Test	Requirement
Los Angeles Rattler Loss at 500 Rev. (Max)	211	25%
Durability Index Fine Aggregate (Df) (Max).	229	50

### RECLAIMED ASPHALT PAVEMENT

The Contractor may produce asphalt concrete using reclaimed asphalt pavement (RAP). Asphalt concrete produced using RAP shall conform to the provisions for asphalt concrete in this section, "Asphalt Concrete," and these special provisions. The Contractor may substitute RAP for a portion of the virgin aggregate in asphalt concrete in an amount not exceeding 15 percent of the asphalt concrete dry aggregate mass.

RAP shall be processed from asphalt concrete removed from pavement surfaces. RAP shall be stored in stockpiles on smooth surfaces free of debris and organic material. RAP stockpiles shall consist only of homogeneous RAP. The Contractor may process and stockpile RAP throughout the project's life. Processing and stockpiling operations shall prevent material contamination and segregation.

The Contractor shall determine the amount of asphalt binder to be mixed with the combined virgin aggregate and RAP in conformance with the requirements in California Test 367 amended by Lab Procedure-9 (LP-9), "Hot Mix Asphalt (HMA) Using Up To 15% Reclaimed Asphalt Pavement (RAP)." LP-9 is available at:

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

At least 21 days before starting production of asphalt concrete using RAP, the Contractor shall submit a proposed asphalt concrete mix design in writing to the Engineer. The mix design submittal shall consist of the following:

A. RAP:

1. Processed stockpile locations.
2. LP-9 test results.
3. Correlation factor for aggregate gradations from California Test 382 and LP-9.
4. Three 70-pound samples of processed RAP representing the material to be used. The three samples shall be split from the sample the Contractor uses to determine the mix design. The Contractor shall obtain and split the samples in conformance with the requirements in California Test 125 and LP-9.
5. The substitution rate for virgin aggregate and percent RAP.

B. Virgin aggregate and supplemental fine aggregate blend:

1. Percent passing values for each sieve size.
2. Aggregate quality tests results.
3. Each aggregate source to be used including producer, location, and California Mine Identification number.
4. Percentage of each aggregate stockpile, cold feed, and hot bin to be used.
5. Gradation of each aggregate stockpile, cold feed, and hot bin to be used.

C. Asphalt binder:

1. Source.
2. Material Safety Data Sheets.

D. Antistrip additives, if used:

1. Name of product.
2. Name of manufacturer.
3. Manufacturer's designation and proposed rate.
4. Location and method of addition.
5. Material Safety Data Sheets.

E. Asphalt concrete:

1. A completed mix design that reflects the percent of RAP to be used including the electronic worksheet identified in LP-9.
2. In graphical format, stability and air voids versus asphalt binder percentage of asphalt in conformance with the requirements in CTM 367.

Asphalt concrete production using RAP shall not begin until the Engineer approves the mix design. If the Engineer fails to review the mix design in 21 days, and if, in the opinion of the Engineer, work completion is delayed as a result of the failure to review, the Engineer will adjust payment and contract time in conformance with the requirements in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

If proposing a change in the RAP substitution rate, the Contractor shall notify the Engineer. If the substitution rate changes more than 5 percent by dry aggregate mass in the asphalt concrete mixture, the Contractor shall submit a new mix design.

The aggregate gradation for the asphalt concrete produced with RAP shall be calculated based on the mathematical combination of the virgin aggregate gradation during production and the daily RAP gradation. RAP shall be sampled and gradation shall be determined in conformance with the requirements in LP-9. RAP gradations shall be:

- A. Determined daily by the Contractor.
- B. Used for the mathematical combination of that day's asphalt concrete production.
- C. Reported to the Engineer.

The Contractor shall perform quality control testing of the RAP source each day asphalt concrete using RAP is produced.

The Contractor shall perform quality control testing of the aggregates and the asphalt concrete mixture at least once for every 1,000 tons of asphalt concrete using RAP produced, but not less than 2 tests per day.

Daily, the Contractor shall submit to the Engineer:

- A. Results for RAP gradation and the asphalt binder content in RAP determined in conformance with the requirements in LP-9.
- B. Mathematical calculation of the gradation of the virgin aggregate and RAP aggregate blend.
- C. Correlation factor for RAP burn-off determined in conformance with the requirements in LP-9.

RAP proportioning shall conform to the provisions for aggregate proportioning specified in Section 39-3.03, "Proportioning," of the Standard Specifications and these special provisions. The Contractor's mixing equipment shall have a device that safely provides a sample representative of the virgin aggregate and RAP incorporated into the asphalt concrete. The Contractor shall sample in conformance with the requirements in California Test 125 and LP-9.

The temperature of asphalt concrete using RAP shall not exceed 330° F.

If batch mixing is used, RAP shall be kept separate from the virgin aggregate until both ingredients enter the weighhopper or pugmill. After introduction to the pugmill and before asphalt binder is added, the mixing time for the virgin aggregate and RAP shall not be less than 5 seconds. After asphalt binder is added, the mixing time shall not be less than 30 seconds.

If continuous mixing is used, the RAP shall be protected from direct contact with the burner flame with a device such as a shield, separator, or second drum.

**PAINT BINDER (TACK COAT)**

Paint binder (tack coat) shall be applied to existing surfaces to be surfaced and between layers of asphalt concrete, except when eliminated by the Engineer.

Paint binder (tack coat) shall be, at the option of the Contractor, either rapid-setting asphaltic emulsion CRS-2, or PMCRS-2, or paving asphalt. Rapid-setting asphaltic emulsion shall conform to the provisions in Section 39-4.02, "Prime Coat and Paint Binder (Tack Coat)," and the provisions in Section 94, "Asphaltic Emulsions," of the Standard Specifications. When paving asphalt is used for paint binder, the grade will be determined by the Engineer. Paving asphalt shall conform to the provisions in Section 39-4.02, "Prime Coat and Paint Binder (Tack Coat)," and the provisions in Section 92, "Asphalts," of the Standard Specifications.

Paint binder (tack coat) shall be applied in the gallon per square yard range limits specified for the surfaces to receive asphalt concrete in the tables below. The exact application rate within the range will be determined by the Engineer.

Application Rates for Asphaltic Emulsion Paint Binder (Tack Coat) on Asphalt Concrete (except Open Graded) and on Portland Cement Concrete Pavement (PCCP)		
Type of surface to receive paint binder (tack coat)		Rapid-Setting Asphaltic Emulsion gal/sq yd (Note B)
Dense, compact surfaces, between layers, and on PCCP		0.02 - 0.04
Open textured, or dry, aged surfaces		0.04 - 0.09

Note B: Undiluted rapid-setting asphaltic emulsion.

Application Rates for Paint Binder (Tack Coat) on Asphalt Concrete (except Open Graded) and on Portland Cement Concrete Pavement (PCCP)	
Type of surface to receive paint binder (tack coat)	Paving Asphalt gal/sq yd
Dense, compact surfaces, between layers, and on PCCP	0.01 – 0.02
Open textured, or dry, aged surfaces	0.02 – 0.06

When asphaltic emulsion is used as paint binder (tack coat), asphalt concrete shall not be placed until the applied asphaltic emulsion has completely changed color from brown to black.

The miscellaneous areas to be paid for at the contract price per square foot for place asphalt concrete (miscellaneous area), in addition to the prices paid for the materials involved, shall be limited to the areas listed on the plans.

If the Contractor selects the batch mixing method, asphalt concrete shall be produced by the automatic batch mixing method in conformance with the provisions in Section 39-3.03A(2), "Automatic Proportioning," of the Standard Specifications.

If the finished surface of the asphalt concrete on Route 5 traffic lanes does not meet the specified surface tolerances, the surfacing shall be brought within tolerance by either (1) abrasive grinding (with fog seal coat on the areas which have been ground), (2) removal and replacement or (3) placing an overlay of asphalt concrete. The method will be selected by the Engineer. The corrective work shall be at the Contractor's expense.

If abrasive grinding is used to bring the finished surface to the specified surface tolerances, additional grinding shall be performed, as necessary, to extend the area ground in each lateral direction so that the lateral limits of grinding are at a constant offset from, and parallel to, the nearest lane line or pavement edge, and in each longitudinal direction so that the grinding begins and ends at lines normal to the pavement centerline, within any ground area. Ground areas shall be neat rectangular areas of uniform surface appearance. Abrasive grinding shall conform to the provisions in the first paragraph and the last 4 paragraphs in Section 42-2.02, "Construction," of the Standard Specifications.

In addition to the provisions in Section 39-5.01, "Spreading Equipment," of the Standard Specifications, asphalt paving equipment shall be equipped with automatic screed controls and a sensing device or devices.

When placing asphalt concrete to the lines and grades established by the Engineer, the automatic controls shall control the longitudinal grade and transverse slope of the screed. Grade and slope references shall be furnished, installed, and maintained by the Contractor. Should the Contractor elect to use a ski device, the minimum length of the ski device shall be 30 feet. The ski device shall be a rigid one piece unit and the entire length shall be utilized in activating the sensor.

When placing the initial mat of asphalt concrete on existing pavement, the end of the screed nearest the centerline shall be controlled by a sensor activated by a ski device not less than 30 feet long. The end of the screed farthest from centerline shall be controlled by a sensor activated by a similar ski device.

When paving contiguously with previously placed mats, the end of the screed adjacent to the previously placed mat shall be controlled by a sensor that responds to the grade of the previously placed mat and will reproduce the grade in the new mat within a 0.01-foot tolerance. The end of the screed farthest from the previously placed mat shall be controlled in the same way it was controlled when placing the initial mat.

Should the methods and equipment furnished by the Contractor fail to produce a layer of asphalt concrete conforming to the provisions, including straightedge tolerance, of Section 39-6.03, "Compacting," of the Standard Specifications, the paving operations shall be discontinued and the Contractor shall modify the equipment or methods, or furnish substitute equipment.

Should the automatic screed controls fail to operate properly during a day's work, the Contractor may manually control the spreading equipment for the remainder of that day. However, the equipment shall be corrected or replaced with alternative automatically controlled equipment conforming to the provisions in this section before starting another day's work.

The area to which paint binder has been applied shall be closed to public traffic. Care shall be taken to avoid tracking binder material onto existing pavement surfaces beyond the limits of construction.

A vertical longitudinal joint of more than 0.15-foot will not be allowed at any time between adjacent lanes open to public traffic.

Shoulders or median borders adjacent to a lane being paved shall be surfaced prior to opening the lane to public traffic.

**10-1.23 LIME TREATED AGGREGATES**

This work shall consist of furnishing and treating aggregates with lime in conformance with these special provisions.

Prior to being incorporated into Type A asphalt concrete aggregate shall be treated with a slurry of lime and water in conformance with these special provisions.

**MATERIALS**

Lime shall conform to the provisions in Section 24-1.02, "Materials," of the Standard Specifications and shall be a high-calcium hydrated lime. Water for mixing with aggregate and lime shall be free from oil and other impurities and shall contain not more than 650 parts per million of chlorides as Cl, and not more than 1,300 parts per million of sulfates as SO<sub>4</sub>.

Lime shall be added to the aggregate as slurry. The slurry of dry lime and water shall be prepared at a ratio of one part lime to 3 parts water.

Aggregate for Type A asphalt concrete shall conform to the aggregate quality requirements specified in Section 39, "Asphalt Concrete," of the Standard Specifications and these special provisions prior to the aggregate being treated with lime.

For Type A asphalt concrete, open graded asphalt concrete combined aggregate gradation will be determined after the aggregate has been treated with lime. Sampling of the combined aggregates shall be in conformance with the sampling requirements of the proportioning process being used for asphalt concrete production in conformance with the provisions in Section 39, "Asphalt Concrete," of the Standard Specifications and these special provisions.

The lime ratio for the combined aggregates shall be not less than 1.2 percent and not more than 1.5 percent. The lime ratio is the pounds of dry hydrated lime per 100 pounds of dry aggregate expressed as a percent of the dry aggregate. The exact proportion shall be determined by the Contractor and approved by the Engineer. The lime ratio of the combined aggregate shall not deviate from the approved lime ratio for combined aggregate by more than 0.2-percent when the individual sizes of aggregate are combined in the proportions designated in the approved asphalt concrete mix design. The water content of the slurry or the untreated aggregate shall have no bearing on the lime ratio.

Aggregate sizes shall be lime treated and cured separately. Lime shall be added to the separate sizes of aggregate in the following proportions:

	Aggregate Sizes	Lime Ratio
Coarse	Retained on No. 4 sieve	0.5 to 1.0
Fine	Passing the No. 4 sieve	1.5 to 2.0

The exact proportions of lime, and fine or coarse aggregates, for Type A asphalt concrete shall be determined by the Engineer as part of the mix design in conformance with the provisions in Section 39, "Asphalt Concrete," of the Standard Specifications and these special provisions.

The lime ratio for individual aggregate sizes shall not vary by more than 0.2-percent above or below the agreed lime ratio.

At the time of mixing the slurry with the aggregate, the moisture content of the aggregate shall be of sufficient quantity that complete coating of the aggregate with slurry is assured. Aggregate shall have been dried or drained such that no visible separation of water from the aggregate will take place.

Lime treated aggregate shall be free of lime balls and clods.

Once aggregate has been treated with lime, the aggregate shall not be treated with lime again.

### **PROPORTIONING**

Weighing and measuring devices used for the proportioning of ingredients, except continuous weigh belts, shall have been Type-approved by the Division of Measurement Standards, Department of Food and Agriculture, State of California. Weighing and measuring devices used in the proportioning of slurry shall be tested in conformance with California Test 109 and these special provisions.

Scales used to calibrate proportioning devices used in the production of lime slurry or lime treated aggregates shall conform to the provisions in Section 9-1.01, "Measurement of Quantities" of the Standard Specifications and shall be error tested in conformance with California Test 109 within 24 hours of calibrating the proportioning devices.

Slurry of dry lime and water shall be proportioned by weight or by volume as specified in these Special Provisions. The proportioning of lime and water shall be of either a continuous or a batch type operation.

#### **Proportioning for Lime Slurry by Continuous Mixing**

When a continuous proportioning operation for the production of slurry is used the proportioning device shall determine the exact ratio of water to lime at all production rates. Rate-of-flow indicators and totalizers for like materials shall be accurate within 0.5-percent when compared directly. The following methods shall be used:

- A. Dry lime shall be weighed using a belt scale. Belt scale accuracy shall be such that, when operating between 30 percent and 100 percent of production capacity, the average difference between the indicated weight of material delivered and the actual weight delivered will not exceed 0.5-percent of the actual weight for 3 individual runs. For any of the 3 individual runs, the indicated weight of material delivered shall not vary from the actual weight delivered by more than one percent of the actual weight. Test run duration shall be for at least 0.5-ton of dry lime. Tests shall be run using hydrated lime and shall be weighed on a platform scale located at the slurry proportioning plant. The platform scale shall have a maximum capacity not exceeding 2.5 tons with a maximum graduation size of one pound.
- B. Water to be used in the slurry shall be measured with a meter. Meter accuracy shall be such that, when operating between 50 percent and 100 percent of production capacity, the difference between the indicated weight of water delivered and the actual weight delivered shall not exceed one percent of the actual weight for 3 individual runs. Tests shall be weighed on a platform scale located at the slurry proportioning plant. The platform scale shall have a maximum capacity not exceeding 2.5 tons with a maximum graduation size of one pound. Test run duration shall be for at least 300 gallons.
- C. Meters and scales used for the continuous proportioning of dry lime and water shall be equipped with rate-of-flow indicators to show the rates of delivery of dry lime and water and resettable totalizers so that the total amounts of dry lime and water introduced into slurry storage tank can be determined. Individual feeds for water and dry lime shall be equipped with no-flow devices which shall stop slurry production when either of the individual ingredients is not being delivered to the slurry storage tank.

#### **Proportioning for Lime Slurry by Batch Mixing**

When a batch type proportioning operation for the production of slurry is used the following methods shall be used:

- A. Dry lime shall be proportioned by weight. The weighing of the dry lime shall be performed at the slurry production site. The scale shall be appropriate for the amount of lime draft used. When the proportioning operation uses a dry lime draft of less than 10 tons, an automatic batch controller shall be utilized. Automatic batch controllers used for Type A asphalt concrete shall conform to the provisions in Section 39, "Asphalt Concrete," of the Standard Specifications.
- B. Water to be used in the slurry shall be measured with a meter. Meter accuracy shall be such that, when operating between 50 percent and 100 percent of production capacity, the difference between the indicated weight of water delivered and the actual weight delivered shall not exceed one percent of the actual weight for 3 individual runs. Tests shall be weighed on a platform scale located at the slurry proportioning plant. The platform scale shall have a maximum capacity not exceeding 2.5 tons with a maximum graduation size of one pound. Test run duration shall be for at least 300 gallons.
- C. The water meter shall be equipped with a resettable totalizer. When an automatic controller is used to batch the dry lime it shall also control the proportioning of the water. When an automatic controller is used to proportion the water the indicated draft of the water shall be within one percent of its total draft weight.

### **Proportioning for Lime Treated Aggregate Production**

Slurry and aggregate proportioning shall be of the continuous type.

Slurry shall be introduced into the mixer through a meter conforming to the provisions in Section 9-1.01, "Measurement of Quantities," of the Standard Specifications. The meter shall be the weight flow of Coriolis effect type. The system shall be capable of varying the rate of delivery of slurry proportionate with the delivery of aggregate.

The slurry meter shall function with such accuracy that, when operated at rates commensurate with aggregate delivery, the average difference between the indicated weight of material delivered and the actual weight delivered shall not exceed 0.5-percent of the actual weight for 3 runs of at least 4 ton. For any of 3 individual runs of at least 4 ton, the indicated weight of material delivered shall not vary from the actual weight delivered by more than one percent of the actual weight. Tests shall be weighed on a platform scale located at the slurry proportioning plant. The platform scale shall have a maximum capacity not exceeding 2.5 tons with a maximum graduation size of one pound. Test run duration shall be for at least 300 gallons.

The aggregate shall be weighed using a belt scale. The belt scale shall be of such accuracy that, when the plant is operating between 30 percent and 100 percent of belt capacity, the average difference between the indicated weight of material delivered and the actual weight delivered shall not exceed one percent of the actual weight for 3 individual 3 minute runs. For any of the 3 individual 3 minute runs, the indicated weight of material delivered shall not vary from the actual weight delivered by more than 2 percent of the actual weight.

The actual weight of material delivered for aggregate weigh belt calibrations shall be determined by a vehicle scale conforming to the provisions in Section 9-1.01, "Measurement of Quantities," of the Standard Specifications. The vehicle scale shall be located at the plant site and shall be error checked within 24 hours of checking the plant's proportioning devices. The meters and belt scales used for proportioning aggregates and slurry shall be equipped to facilitate accuracy checks. These accuracy checks shall be performed before production begins and at other times determined by the Engineer.

The belt scale for the aggregate and the slurry meter shall be interlocked so that the rates of feed of the aggregates and slurry are adjusted automatically at all production rates and production rate changes to maintain the agreed lime ratio. The plant shall not be operated unless this automatic system is operating and in good working condition.

The slurry meter and the aggregate feeder shall be equipped with devices by which the rate of feed can be determined while the plant is in full operation. Meters and belt scales used for proportioning aggregates and slurry shall be equipped with rate-of-flow indicators to show the rates of delivery of slurry and aggregate, and resettable totalizers so that the total amounts of slurry and aggregate introduced into the mixer can be determined. Rate-of-flow indicators and totalizers for like materials shall be accurate to within 0.5-percent when compared directly. The slurry totalizer shall not register when the slurry metering system is not delivering material to the mixer.

A monitoring device shall be located either in the stream of aggregate feed or where the device will monitor movement of the belt by detecting revolutions of the tail pulley on the belt feeder. The device for monitoring no flow or belt movement, as the case may be, shall stop the slurry and aggregate proportioning automatically and immediately when there is no flow.

### **MIXING AND STORAGE**

The lime slurry shall be stored in a central mixing tank provided with an agitator that both mixes and keeps the lime in suspension until applied to the aggregate. Agitation shall be continuous while the slurry is in storage and the storage time shall not exceed 24 hours. Agitation shall be such that a build-up of consolidated lime on the bottom or sides of the storage tank is prevented. The storage tank for slurry shall be equipped with a float-type device for automatic and immediate cut-off of the proportioning of slurry and aggregate when the level of slurry is lowered sufficiently to expose the pump suction line.

The rate of feed to the continuous mixer used for production of the lime treated aggregate shall not exceed the rate of feed that will permit complete mixing of all the material. Dead areas in the mixer, in which the material does not move or is not sufficiently agitated, shall be corrected by a reduction in the volume of material or by other adjustments. The mixer shall be equipped with paddles of a type and arrangement that provides sufficient mixing action and movement to the mixture. The mixer shall produce a homogeneous mixture of thoroughly and uniformly coated aggregates at discharge from the mixer.

After the slurry has been added to the aggregate, the lime treated aggregate shall be placed in stockpiles and cured for not less than 24 hours but not more than 24 days before being incorporated into the asphalt concrete. Lime treated aggregate stored in excess of 24 days shall not be used in the work.

### **PRODUCTION DATA COLLECTION**

The device that controls the proportioning of slurry to aggregate shall produce a log of production data. The log of production data shall consist of a series of sets of data captured at 10-minute intervals throughout the period of daily production. Each set of production data shall be a register of production activity at that time and not a summation of the data over the preceding 10 minutes. The amount of material represented by each set of data shall be that amount produced for the period of time from 5 minutes before and 5 minutes after the capture time. Collected data shall be held in storage by the plant control device for the duration of the contract. The daily log shall be submitted to the Engineer, in electronic and printed media, at the end of each production shift, or as requested by the Engineer, and shall include the following:

- A. Date of production.
- B. Time of day the data is captured.
- C. Aggregate size being treated.
- D. Rate of flow of the wet aggregate, collected directly from the aggregate weigh belt.
- E. Moisture content of the aggregate about to be treated, expressed as a percent of the dry aggregate.
- F. Rate of flow of the dry aggregate calculated from the wet aggregate flow rate.
- G. Rate of flow of the lime slurry measured by the slurry meter.
- H. Rate of flow of dry lime, calculated from the slurry meter output.
- I. Agreed lime ratio for the individual aggregate size being treated.
- J. Actual lime ratio calculated from the aggregate weigh belt and the slurry meter output, expressed as a percent of the dry aggregate.
- K. Calculated difference between the agreed lime ratio and the actual lime ratio.
- L. Portions of dry lime and water as proportioned at the time of the slurry production.

Electronic media containing recorded production data shall be presented in a tab delimited format on a 3-1/2 inch diskette with a capacity of at least 1.44 megabytes. Each set of continuous production data shall be LFCR (line feed carriage return, one line, separate record) with allowances for sufficient fields to satisfy the amount of data required by these specifications. The reported data shall be in the above order and shall include data titles at least once per report.

### **CONTRACTOR QUALITY CONTROL**

The Contractor shall control the lime treatment operation. Should it become evident that the Contractor does not have control of the process, lime treatment of aggregates for the contract shall cease until such time as the problem is identified and corrected. Evidence that the Contractor is not controlling the production shall include, but not be limited to, the following:

- A. Data has not been submitted to the Engineer.
- B. Collected data has not been complete, timely, or in the correct format.
- C. The Contractor has not taken corrective actions when necessary.
- D. Corrective actions taken have not been successful or timely.
- E. Plant production has not been stopped when proportioning tolerances have been exceeded.
- F. Any of the devices used for the production of lime treated aggregates has failed to function during production.

The Contractor shall determine the moisture content of the aggregate at least once during each 2 hours of production and shall adjust the slurry to aggregate proportioning accordingly. Aggregate moisture content determinations shall be representative of the amount of moisture in the aggregate being treated. Moisture content shall be calculated in conformance with California Test 226 or 370 and as a percent of the dry weight of the aggregate. The Engineer will use the same California Test for the verification of moisture content.

The following actions shall be taken by the Contractor:

- A. When 3 consecutive sets of recorded production data indicates deviation greater than 0.2-percent above or below the agreed lime ratio, production of lime treated aggregates shall cease.
- B. When a set of recorded production data indicates a deviation of greater than 0.4-percent above or below the agreed lime ratio, production of lime treated aggregates shall cease and the material represented by that set of data shall not be used for the manufacture of asphalt concrete.
- C. When 20 percent or more of the total daily production indicates deviation of greater than 0.2-percent above or below the agreed lime ratio, production shall cease and the total day's production shall not be used for the manufacture of asphalt concrete.

When production is stopped for failure to conform to these special provisions, the Contractor shall implement corrective measures, shall notify the Engineer before proceeding, and shall conduct a successful 15-minute test run prior to resuming production.

### **PAYMENT**

Full compensation for lime treated aggregates for use in the manufacture of Type A asphalt concrete shall be considered as included in the contract price paid per ton for asphalt concrete of the type or types involved and no separate payment will be made therefor.

#### **10-1.24 SHOULDER RUMBLE STRIP (ASPHALT CONCRETE, GROUND-IN INDENTATIONS)**

This work shall consist of constructing shoulder rumble strips by grinding indentations in new or existing asphalt concrete surfacing as shown on the plans and as specified in these special provisions.

The method and equipment for constructing ground-in indentations shall be selected by the Contractor.

Shoulder rumble strips shall not be constructed on structures or approach slabs.

Rumble strips shall be constructed within 2 inches of the required alignment. The grinding equipment shall be equipped with a sighting device that will enable the operator to maintain the alignment of the rumble strip.

Indentations shall not vary from the dimensions shown on the plans by more than 0.06-inch or 1/16 inch in depth or 10 percent in length and width.

Finished shoulder rumble strips not meeting the specified tolerances shall be brought within tolerance by either abrasive grinding, or removal and replacement. The corrective method will be selected by the Engineer. Ground surface areas shall be neat and uniform in appearance. The corrective work shall be at the Contractor's expense.

Residue shall be removed from the roadbed by use of vacuum equipment. Residue from the removal operations shall not flow across the pavement nor flow into gutters or other drainage facilities. Residue shall be removed from pavement surfaces before the residue is dispersed by action of traffic or wind.

All removed material shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Fog seal coat, in conformance with the provisions in Section 37-1, "Seal Coats," of the Standard Specifications, shall be applied to the areas ground.

Shoulder rumble strip (asphalt concrete, ground-in indentations) will be measured by the linear foot along each shoulder on which the rumble strip is constructed, without deductions for gaps between the indentations.

The contract price paid per linear foot for shoulder rumble strip (asphalt concrete, ground-in indentations) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing shoulder rumble strip (asphalt concrete, ground-in indentations), complete in place, including furnishing and applying fog seal coat to the actual ground areas, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

#### **10-1.25 CONCRETE STRUCTURES**

Portland cement concrete structures shall conform to the provisions in Section 51, "Concrete Structures," of the Standard Specifications and these special provisions.

#### **10-1.26 FURNISH SIGN**

Signs shall be fabricated and furnished in accordance with details shown on the plans, the Traffic Sign Specifications, and these special provisions.

Traffic Sign Specifications for California sign codes are available for review at:

<http://www.dot.ca.gov/hq/traffops/signtech/signdel/specs.htm>

Traffic Sign Specifications for signs referenced with Federal MUTCD sign codes can be found in Standard Highway Signs Book, administered by the Federal Highway Administration, which is available for review at:

[http://mutcd.fhwa.dot.gov/ser-shs\\_millennium.htm](http://mutcd.fhwa.dot.gov/ser-shs_millennium.htm)

Information on cross-referencing California sign codes with the Federal MUTCD sign codes is available at:

<http://www.dot.ca.gov/hq/traffops/signtech/signdel/specs.htm>

Temporary or permanent signs shall be free from blemishes that may affect the serviceability and detract from the general sign color and appearance when viewing during daytime and nighttime from a distance of 25 feet. The face of each finished sign shall be uniform, flat, smooth, and free of defects, scratches, wrinkles, gel, hard spots, streaks, extrusion marks, and air bubbles. The front, back, and edges of the sign panels shall be free of router chatter marks, burns, sharp edges, loose rivets, delaminated skins, excessive adhesive over spray and aluminum marks.

#### **SHEET ALUMINUM**

Alloy and temper designations for sheet aluminum shall be in accordance with ASTM Designation: B 209.

The Contractor shall furnish the Engineer a Certificate of Compliance in conformance with Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for the sheet aluminum.

Sheet aluminum shall be pretreated in accordance to ASTM Designation: B 449. Surface of the sheet aluminum shall be cleaned, deoxidized, and coated with a light and tightly adherent chromate conversion coating free of powdery residue. The conversion coating shall be Class 2 with a weight between 10 milligrams per square foot and 35 milligrams per square foot, and an average weight of 25 milligrams per square foot. Following the cleaning and coating process, the sheet aluminum shall be protected from exposure to grease, oils, dust, and contaminants.

Sheet aluminum shall be free of buckles, warps, dents, cockles, burrs, and defects resulting from fabrication. Base plate for standard route marker shall be die cut.

### **RETROREFLECTIVE SHEETING**

The Contractor shall furnish retroreflective sheeting for sign background and legend in conformance with ASTM Designation: D 4956 and "Prequalified and Tested Signing and Delineation Materials" of these special provisions.

Retroreflective sheeting shall be applied to sign panels as recommended by the retroreflective sheeting manufacturer without stretching, tearing, and damage.

Class 1, 3, or 4 adhesive backing shall be used for Type II, III, IV, VII, VIII, and IX retroreflective sheeting. Class 2 adhesive backing may also be used for Type II retroreflective sheeting. The adhesive backing shall be pressure sensitive and fungus resistant.

When the color of the retroreflective sheeting determined from instrumental testing is in dispute, the Engineer's visual test will govern.

### **PROCESS COLOR AND FILM**

The Contractor shall furnish and apply screened process color, non-reflective opaque black film, and protective overlay film of the type, kind, and product that are approved by the manufacturer of the retroreflective sheeting.

The Contractor shall furnish the Engineer a Certificate of Compliance in accordance to Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for the screened process color, non-reflective opaque black film, and protective overlay film.

The surface of the screened process color shall be flat and smooth. When the screened process colors determined from the instrumental testing in accordance to ASTM Designation: D 4956 are in dispute, the Engineer's visual test will govern.

The Contractor shall provide patterns, layouts, and set-ups necessary for the screened process.

The Contractor may use green, red, blue, and brown reverse-screened process colors for background and non-reflective opaque black film or black screened process color for legend. The coefficient of retroreflection for reverse-screened process colors on white retroreflective sheeting shall not be less than 70 percent of the coefficient of retroreflection specified in ASTM Designation: D 4956.

The screened process colors and non-reflective opaque black film shall have the same outdoor weatherability as that of the retroreflective sheeting.

After curing, screened process colors shall withstand removal when tested by applying 3M Company Scotch Brand Cellophane Tape No. 600 or equivalent tape over the color and removing with one quick motion at 90° angle.

### **SINGLE SHEET ALUMINUM SIGN**

Single sheet aluminum signs shall be fabricated and furnished with or without frame. The Contractor shall furnish the sheet aluminum in accordance to "Sheet Aluminum" of these special provisions. Single sheet aluminum signs shall be fabricated from sheet aluminum alloy 6061-T6 or 5052-H38.

Single sheet aluminum signs shall not have a vertical splice in the sheet aluminum. For signs with depth greater than 48 inches, one horizontal splice will be allowed in the sheet aluminum.

Framing for single sheet aluminum signs shall consist of aluminum channel or rectangular aluminum tubing. The framing shall have a length tolerance of  $\pm 1/8$  inch. The face sheet shall be affixed to the frame with rivets of 3/16-inch diameter. Rivets shall be placed within the web of channels and shall not be placed less than 1/2 inch from edges of the sign panels. Rivets shall be made of aluminum alloy 5052 and shall be anodized or treated with conversion coating to prevent corrosion. The exposed portion of rivets on the face of signs shall be the same color as the background or legend where the rivets are placed.

Finished signs shall be flat within a tolerance of  $\pm 1/32$  inch per linear foot when measured across the plane of the sign in all directions. The finished signs shall have an overall tolerance within  $\pm 1/8$  inch of the detailed dimensions.

Aluminum channels or rectangular aluminum tubings shall be welded together with the inert gas shielded-arc welding process using E4043 aluminum electrode filler wires as shown on the plans. Width of the filler shall be equal to wall thickness of smallest welded channel or tubing.

### **FIBERGLASS REINFORCED PLASTIC PANEL SIGN**

The Contractor shall furnish fiberglass reinforced plastic panel sign in accordance with ASTM Designation: D 3841 and "Prequalified and Tested Signing and Delineation Materials" of these special provisions.

Fiberglass reinforced plastic shall be acrylic modified and ultraviolet stabilized for outdoor weatherability. The plastic shall contain additives designed to suppress fire ignition and flame propagation. When tested in accordance with the requirements in the ASTM Designation: D 635, the extent of burning shall not exceed one inch.

Fiberglass reinforced plastic shall be stabilized to prevent the release solvents and monomers. The front and back surfaces of the laminate shall be clean and free of constituents and releasing agents that can interfere with the bonding of retroreflective sheeting.

The fiberglass reinforced plastic panel sign shall be weather resistant Grade II thermoset polyester laminate.

The fiberglass reinforced plastic panels shall be minimum 0.135-inch thick. Finished fiberglass reinforced plastic panel signs shall be flat within a tolerance of  $\pm 1/32$  inch per linear foot when measured across the plane of the sign in all directions. The finished signs shall have an overall tolerance within  $\pm 1/8$  inch of the specified dimensions.

Color of fiberglass reinforced plastic panels shall be uniform gray within Munsell color range of N7.5 to N8.5.

Fiberglass reinforced plastic panels shall be cut from a single piece of laminate. Bolt holes shall be predrilled. The predrilled bolt holes, panel edges, and the front and back surfaces of the panels shall be true and smooth. The panel surfaces shall be free of visible cracks, pinholes, foreign inclusions, warping and wrinkles that can affect performance and serviceability.

### **10-1.27 MISCELLANEOUS IRON AND STEEL**

Miscellaneous iron and steel shall conform to the provisions in Section 75, "Miscellaneous Metal," of the Standard Specifications.

### **10-1.28 MONUMENTS**

Survey monuments shall be constructed in conformance with the provisions in Section 81, "Monuments," of the Standard Specifications and these special provisions.

Concrete shall be Class 3 or minor concrete at the option of the Contractor.

The cast steel and gray cast iron frames and covers, including hardware, shall conform to the provisions in Section 55-2, "Materials," of the Standard Specifications.

### **10-1.29 MARKERS AND DELINEATORS**

Markers and delineators shall conform to the provisions in Section 82, "Markers and Delineators," of the Standard Specifications and these special provisions.

Markers and delineators on flexible posts shall conform to the provisions in "Prequalified and Tested Signing and Delineation Materials" of these special provisions. Flexible posts shall be made from a flexible white plastic which shall be resistant to impact, ultraviolet light, ozone, and hydrocarbons. Flexible posts shall resist stiffening with age and shall be free of burns, discoloration, contamination, and other objectionable marks or defects which affect appearance or serviceability.

Retroreflective sheeting for metal and flexible target plates shall be the retroreflective sheeting designated for channelizers, markers, and delineators conforming to the requirements in ASTM Designation: D 4956-95 and in conformance with the provisions in "Prequalified and Tested Signing and Delineation Materials" of these special provisions.

### **10-1.30 THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)**

Sprayable thermoplastic traffic stripes (traffic lines) shall be applied in conformance with the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these special provisions.

Sprayable thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in State Specification No. PTH-02SPRAY.

Retroreflectivity of the sprayable traffic stripes shall conform to the requirements in ASTM Designation: D 6359-99. White sprayable thermoplastic traffic stripes shall have a minimum initial retroreflectivity of  $250 \text{ mcd m}^{-2} \text{ lx}^{-1}$ . Yellow sprayable thermoplastic traffic stripes shall have a minimum initial retroreflectivity of  $150 \text{ mcd m}^{-2} \text{ lx}^{-1}$ .

At the option of the Contractor, permanent traffic striping and pavement marking tape conforming to the provisions in "Prequalified and Tested Signing and Delineation Materials" of these special provisions may be placed instead of the sprayable thermoplastic traffic stripes. Permanent tape, if used, shall be installed in conformance with the manufacturer's specifications.

Where striping joins existing striping, as shown on the plans, the Contractor shall begin and end the transition from the existing striping pattern into or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern.

Sprayable thermoplastic material shall be applied to the pavement at a minimum thickness of 0.039-inch and a minimum rate of 0.13-lb/ft. The minimum application rate is based on a solid stripe of 4 inches in width.

Sprayable thermoplastic material shall be applied to the pavement at a temperature between 351° F and 401° F, unless a different temperature is recommended by the manufacturer.

Sprayable thermoplastic traffic stripes shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.

If permanent tape is placed instead of sprayable thermoplastic traffic stripes, the tape will be measured and paid for by the linear foot as thermoplastic traffic stripe (sprayable).

Sprayable thermoplastic traffic stripes will be measured by the linear foot along the line of the traffic stripes, without deductions for gaps in broken traffic stripes. A double traffic stripe, consisting of two 4-inch wide yellow stripes, will be measured as one traffic stripe.

The contract price paid per linear foot for thermoplastic traffic stripe (sprayable) shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in applying sprayable thermoplastic traffic stripes (regardless of the number, widths, and patterns of individual stripes involved in each traffic stripe) including establishing alignment for stripes, and layout work, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.